



# **ALAMEDA-CONTRA COSTA TRANSIT DISTRICT TRANSIT ASSET MANAGEMENT PLAN**

THIS PAGE INTENTIONALLY BLANK

**DOCUMENT CONTROL HISTORY**


<b>Version</b>	<b>Document Title</b>	<b>Date</b>	<b>Comments</b>
Draft A	Transit Asset Management Plan	2/22/2018	ABB Initial Draft
Draft B	Transit Asset Management Plan	3/7/2018	ABB Second Draft
C	Images and Pagination	3/9/2018	ABB Final

THIS PAGE INTENTIONALLY BLANK

## DOCUMENT DEVELOPMENT COMMITTEE

Recipient Name	Title	Email	Team
Salvador Llamas	Chief Operating Officer	sllamas@actransit.org	AC Transit
Ahsan Baig	Chief Information Officer	abaig@actransit.org	AC Transit
Ramakrishna Pochiraju	Executive Director of Planning & Engineering	rpochiraju@actransit.org	AC Transit
Steve Keller	Executive Director of Safety, Security and Training	skeller@actransit.org	AC Transit
Roland Fecteau	Director of Maintenance	rfecteau@actransit.org	AC Transit
Chris Andrichak	Director of Management and Budget	candrichak@actransit.org	AC Transit
Joe Callaway	Director of Capital Projects	jcallaway@actransit.org	AC Transit
William Tonis	Director of Project Controls and Systems Analysis	wtonis@actransit.org	AC Transit
Robert Del Rosario	Director of Service Development and Planning	rdelrosa@actransit.org	AC Transit
Rick Wrzesinski	Facilities Maintenance Manager	rwrzesin@actransit.org	AC Transit
Stuart Hoffman	Technical Services Manager	shoffman@actransit.org	AC Transit
Patricia Broadbent	Senior Project Manager	pbroadbent@actransit.org	AC Transit
Blossom Albuquerque	Operations Data Systems Administrator	balbuquerque@actransit.org	AC Transit
Estee Sepulveda	External Affairs Representative	esepulveda@actransit.org	AC Transit
John L. Wimmer	Principal Consultant, Practice Lead	John.Wimmer@us.abb.com	ABB
Surasish Nag	Principal Consultant	Surasish.Nag@us.abb.com	ABB
Hand Hendriks	Senior Business Consultant	Hans.Hendriks@ca.abb.com	ABB
Mario Pineda	Senior Project Manager	Mario.Pineda@us.abb.com	ABB

## AUTHORITY ACCEPTANCE

Recipient Name	Title	Signature
Salvador Llamas	Chief Operating Officer	

## ACKNOWLEDGEMENTS

This document is the culmination of a collaborative effort during the period of October 2017 through March 2018 between AC Transit (The District) and ABB Asset Management Consulting Services (ABB). The entire core team members are shown above as the Document Development Committee.

This initiative began with ABB assisting with the finalization of the District's Transit Asset Management Policy No. 463. The development of this TAM Plan included an Independent assessment conducted by ABB in a series of workshops to measure the levels of maturity and compliance against the requirements of the Federal Transit Administration's (FTA's) Final Rule on Transit Asset Management as well as considerations for International Best Practices.



## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	8
1. INTRODUCTION .....	12
1.1 OVERVIEW OF AC TRANSIT .....	12
1.2 TAM APPROACH .....	12
1.3 FEDERAL TAM REQUIREMENTS.....	16
2. ASSET MANAGEMENT POLICY .....	22
2.1 TAM APPROACH AND VISION.....	23
3. LEVELS OF SERVICE (LOS) .....	25
3.1 RIDERSHIP TRENDS.....	26
3.2 INCREASE RIDERSHIP INITIATIVE .....	27
3.3 TAM TECHNOLOGY RESOURCES.....	28
3.4 PERFORMANCE MEASURES .....	29
4. TRANSIT ASSET INVENTORY .....	32
4.1 ASSET INVENTORY.....	32
4.2 ASSET CONDITION.....	35
5. TAM RISK OVERSIGHT .....	38
6. ASSET LIFECYCLE STRATEGIES.....	39
6.1 LIFECYCLE MANAGEMENT STRATEGIES.....	40
7. INVESTMENT PRIORITIZATION AND FUNDING .....	42
7.1 PROCESS OVERVIEW .....	42
7.2 CAPITAL INVESTMENT PRIORITIZATION .....	43
7.3 CAPITAL INVESTMENT PLANNING & BUDGET.....	46
8. IMPLEMENTATION STRATEGY & EVALUATION PLAN.....	48
8.1 IMPLEMENTATION.....	48
8.2 ABB ASSESSMENT REFERENCE.....	48
APPENDIX A: TRANSIT ASSET MANAGEMENT POLICY NO. 463.....	50
APPENDIX B: ORGANIZATION MISSION AND GOALS .....	55
APPENDIX C: KEY DEFINITIONS .....	57

THIS PAGE INTENTIONALLY BLANK



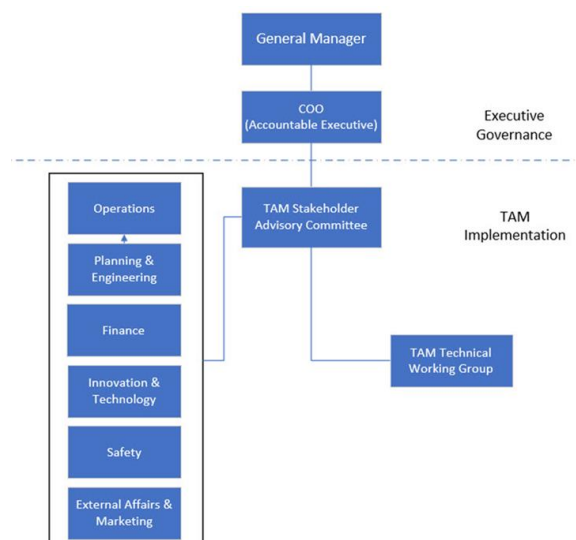
## EXECUTIVE SUMMARY

Transit Asset Management (TAM) is a business model that prioritizes funding based on the condition of transit assets, in order to achieve or maintain transit networks in a State of Good Repair (SGR). In July 2016, the Federal Transit Administration (FTA) issued a final rule requiring transit agencies to maintain and document minimum TAM standards. Federal law requires recipients and sub-recipients of Federal financial assistance to develop a Transit Asset Management Plan that is due to be completed on October 1, 2018. Accordingly, AC Transit's Board of Directors adopted a Transit Asset Management Policy – Board Policy No. 463 which outlines the District's overall asset management approach in a manner consistent with current federal regulations and sets the direction for establishing and following through with TAM strategies that are achievable with available funds.

Transit Asset Management Policy (TAM Policy) – Board Policy No. 463 provides the General Manager or designee with overall responsibility for overseeing the development of asset management plans and procedures, in cooperation with the executive leadership team, and reporting to the Board on the status of asset management for the District. Implementation of the TAM Policy and Transit Asset Management Plan (TAM Plan) will be a shared responsibility for all departments within the District regarding expectations and mandatory requirements.

A Transit Asset Management Core Team was established to improve and modernize asset management programs and deliver an updated TAM Plan that complies with the FTA TAM Final Rule and Board Policy No. 463. The TAM Stakeholder Advisory Committee includes representation of key stakeholders from departments that play a critical role in the lifecycle management of District assets, while the TAM Technical Working Group is represented by frontline managers and employees that execute deliverables of the TAM Plan. Figure 1 illustrates the TAM Core Team structure:

FIGURE 1 – TAM CORE TEAM STRUCTURE



### Transit Asset Management Plan Elements

The FTA regulation defines the District as a Tier I agency and, as such, the District has implemented a TAM Plan that includes the following nine (9) TAM Elements listed as described in the approved Transit Asset Management Board Policy No. 463.

- ✓ Inventory of assets – A register of capital assets and information about those assets
- ✓ Condition assessment – A rating of the assets' physical state
- ✓ Decision support tool – Analytic process/ tool to assist in capital asset investment prioritization needs
- ✓ Prioritized list of investments – A prioritized list of projects or programs to manage or improve the SGR of capital assets
- ✓ TAM and SGR policy – Executive-level direction regarding expectations for transit asset management
- ✓ Implementation strategy – Operational actions to achieve District TAM goals and policies
- ✓ Key annual activities – Describe the key TAM activity four-year plan
- ✓ Identification of resources – List resources needed to carry out the TAM Plan
- ✓ Evaluation plan – Monitor and update to support continuous TAM improvement

### Asset Inventory and Condition Assessment

This TAM plan includes objectives and strategies that will optimize the management of fleet and facilities assets to ensure alignment with the FTA reporting requirements for the National Transit Database (NTD). District assets are registered and monitored in a hierarchy of asset categories and asset classes. Categories include fleet, facilities and systems. Under each category there are asset classes that include for example: buses, operations facilities, and security infrastructure. Table 1 illustrates the hierarchy of AC Transit's current asset categories and asset classes.

TABLE 1 – ASSET HIERARCHY

Fleet	Facilities	Systems
Buses	Operation Facilities	Security Infrastructure
Cutaways	Service Facilities	Revenue Collection
Cars, Vans, Trucks	Support Facilities	Communications, Monitoring, SCADA
Service Vehicles	Ancillary Structures	Innovation and Technology Assets

AC Transit uses Ellipse™ Enterprise Asset Management and Asset Performance Management software to manage all of the lifecycle management activities. During asset procurement and receipt or acceptance, specific asset identification, useful life, warranty and maintenance interval information data is collected from the Original Equipment Manufacturer (OEM). Fleet and facilities maintenance programs are updated with multiple scheduled maintenance activities required to meet Original Equipment Manufacturer (OEM) recommended maintenance intervals, along with safety and regulatory compliance. This practice ensures the asset data is properly recorded into the EAMS for effective and efficient lifecycle management. Ellipse asset data is captured to consolidate and create the Alameda-Contra Costa Transit District Asset Inventory Report. A detailed inventory of each District asset is provide by asset category and asset class.

### **Condition Assessment – Vehicles**

Condition ratings for vehicles are expressed in terms of the percentage of assets that are ‘at’, or ‘beyond’ the Useful Life Benchmark (ULB) based on FTA Circular 9030.1D, paragraph 4.a.

### **Condition Assessment – Facilities and Facility Equipment**

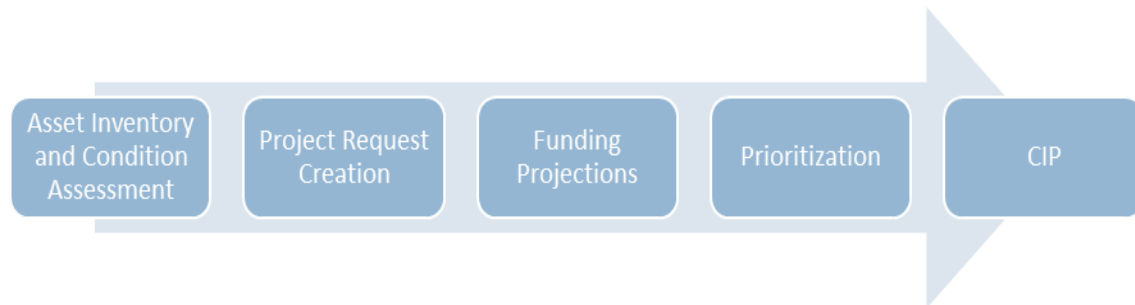
In order to determine an asset’s condition, the FTA’s Transit Economic Requirements Model (TERM) scale is being used. A TERM scale condition rating ranges from (5) Excellent to (1) Poor. Per the FTA TAM Final Ruling, assets with a condition rating score of 3.0 and above are in a state of good repair. Assets with a condition score lower than 2.9 are not in a state of good repair, and may require prioritization during capital programing to ensure safe, efficient, and reliable transit service.

### **Decision Support Tools and Investment Prioritization**

Part of the asset management process is optimizing how funds are allocated based on the assessed asset inventory to help achieve and maintain a state of good repair. This includes both capital and operating funds. AC Transit’s capital budget funds the planning, design, acquisition, capital maintenance and rehabilitation of all assets subject to the TAM Plan. The operating budget funds the use and routine maintenance of those same assets, including the staff needed to perform those functions.

AC Transit’s Capital Plan and Projects Board Policy No. 314 establishes the process for submission and approval of capital projects and a Capital Improvement Plan (CIP) by the General Manager and then by the Board. This policy also outlines the District’s five-year CIP which shall be updated every two years. The basic process for assembling a multi-year CIP is shown below in Figure 2

FIGURE 2 – MULTI-YEAR CAPITAL INVESTMENT PLAN PROCESS



Project requests are created by District staff and have a set of required fields to assist in the prioritization process. The asset inventory and condition assessment is used to create project requests based on the asset age or condition rating (as applicable to that asset class). There are two main fields for prioritization. The first field categorizes the project within five priority groupings: Safety, Compliance, Maintenance, Business Case and Enhancement. The second field consists of the relatively self-explanatory entries of High, Medium, and Low priority.

### **Implementation Strategy, Resources and Continuous Improvement**

Key annual activities supporting the TAM Plan and asset lifecycle management are detailed within Board Policies, Fleet and Facilities Maintenance Plans and Standard Operating Procedures. These activities align with the District’s business goals and objectives providing “Line-of-Sight” organizational alignment to ensure a consistent collection and analysis of data as a fundamental element of AC Transit’s TAM Plan implementation approach.

Asset lifecycle management is an ever-changing environment with advances in technology, changes in regulation, funding availability and asset management best practices. Therefore, the TAM Plan will be considered a “living document” reviewed and revised, as necessary, on an annual basis. The revisions will come from the TAM Advisory Committee and TAM Technical Working group with inputs from various internal and external stakeholders. Initial and ongoing training of District employees on the TAM Plan will become part of the business culture to ensure employees are equipped to execute the deliverables of the TAM Plan and facilitate a continuous TAM improvement process.

## 1. INTRODUCTION

---

### 1.1 OVERVIEW OF AC TRANSIT

The Alameda-Contra Costa Transit District (AC Transit) is the third-largest public bus-only transit property in California, serving 13 cities and 9 adjacent unincorporated areas in Alameda and Contra Costa counties. AC Transit has been serving the East Bay since 1960, taking over from the Key System and its predecessors that carried passengers via buses, horse-drawn rail streetcars, electric streetcars, and ferries over the previous 100 years. AC Transit's origins date back to 1869; the year America's two coasts were connected by transcontinental rail. In that same year, AC Transit's predecessor began carrying passengers from the Jack London Waterfront into burgeoning Oakland in a horse-drawn rail car.

AC Transit has a long-standing commitment to preserving and improving the quality and quantity of transit service for 1.5 million East Bay passengers that populate a 364 square mile service area. AC Transit carries about 200,000 riders on an average weekday, along 151 service lines while generating over 20 million annual miles on its bus fleet. As AC Transit strives to serve the greatest number of passengers at a reasonable cost and fare, AC Transit's mission is *"Connecting our communities with safe, reliable, sustainable service... we'll get you there."*

Transit Asset Management (TAM) is a business model that prioritizes funding based on the condition of transit assets, in order to achieve or maintain transit networks in a State of Good Repair (SGR). In July 2016, the Federal Transit Administration (FTA) issued a final rule requiring transit agencies to maintain and document minimum TAM standards. Federal law requires recipients and sub-recipients of Federal financial assistance to develop a Transit Asset Management Plan that is due to be completed on October 1, 2018. Accordingly, AC Transit's Board of Directors adopted a Transit Asset Management Policy – Board Policy No. 463 which outlines the District's overall asset management approach in a manner consistent with current federal regulations and sets the direction for establishing and following through with transit asset management strategies that are achievable with available funds.

Transit Asset Management Policy – Board Policy No. 463 provides the General Manager or designee with overall responsibility for overseeing the development of asset management plans and procedures, in cooperation with the executive leadership team, and reporting to the Board on the status of asset management for the District. Implementation of the TAM Policy and TAM Plan will be a shared responsibility for all departments within the District regarding expectations and mandatory requirements.

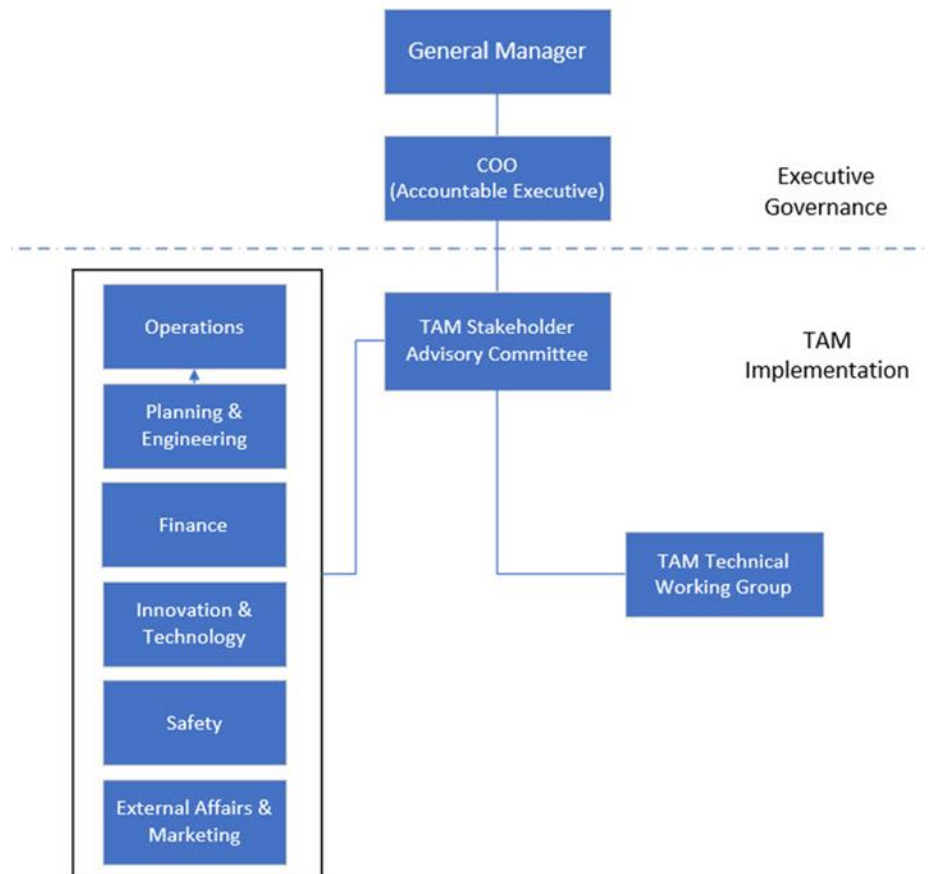
### 1.2 TAM APPROACH

---

A District Transit Asset Management Core Team was established to improve and modernize asset management programs and deliver an updated Transit Asset Management Plan that complies with the FTA TAM Final Rule and Board Policy No. 463. The TAM Stakeholder Advisory Committee includes representation of key stakeholders from departments that play a critical

role in the lifecycle management of District assets, while the TAM Technical Working Group is represented by frontline managers and employees that execute deliverables of the TAM Plan. Figure 3 illustrates the TAM Core Team structure which is comprised of two categories: Executive Governance and TAM Implementation.

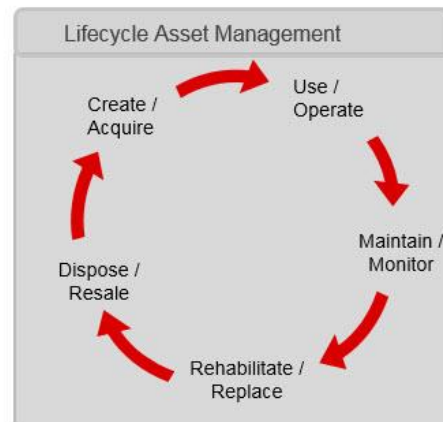
FIGURE 3 – TAM CORE TEAM



This Plan sets forth AC Transit’s approach to improving its TAM capabilities in compliance with requirements initially established by the Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) Act of 2012 and further defined by the Federal Transit Administration’s (FTA’s) Final Rule on TAM (49 CFR 625 and 630). Known as the TAM Plan, this master document sets agency-wide objectives and strategies for delivering all commitments in AC Transit’s TAM Policy and its mission. In addition, this TAM Plan identifies priority projects to improve AC Transit’s TAM capabilities across the agency, and, by reference, specifies the lifecycle management activities outlined in the Fleet and Facilities Maintenance Plans (FMPs) for each department that is responsible for the operations and/or maintenance of a given Asset Class.

AC Transit's core business is to provide safe, reliable and sustainable transportation options to the communities it serves. To accomplish this, AC Transit must continually improve its management of fleet and facilities. When executed properly, Transit Asset Management improves coordination of *all* departments across *all* phases of an asset's lifecycle as shown in Figure 4 to manage assets and required resources more efficiently.

FIGURE 4- TYPICAL LIFECYCLE PHASES OF A TRANSIT ASSET



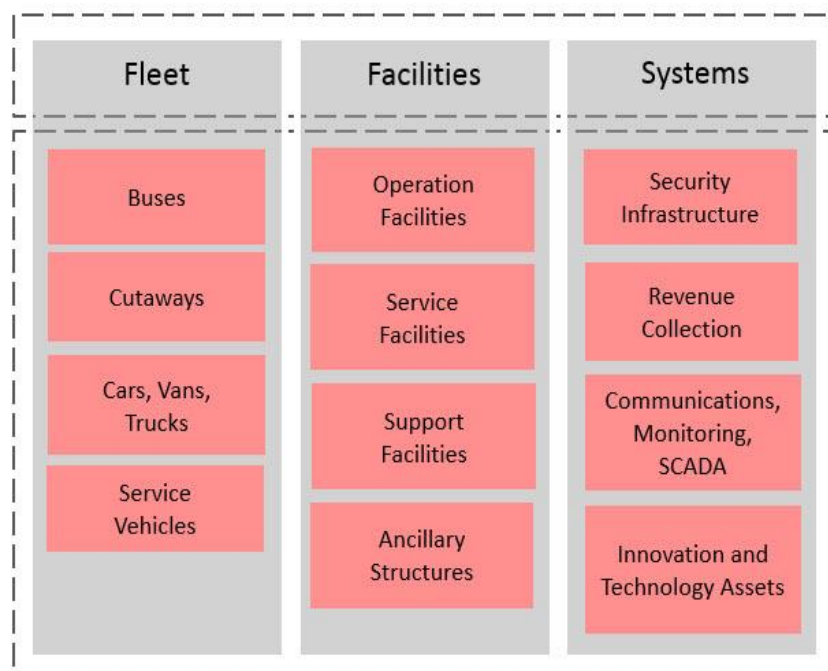
The TAM Plan aims to optimize the costs, risks, and performance of the transit system, and provide a range of benefits to AC Transit through an ongoing planning effort as depicted in Figure 5. In addition, the TAM Plan enhances the District's ability to communicate with the public and legislators about the District's successful approach to asset management, the benefits of investing in the transit system and the consequences of underinvestment.

FIGURE 5 – ASSET MANAGEMENT OPTIMIZES COST, PERFORMANCE, AND RISK



Federal regulations currently require that all assets used in the provision of public transit be subject to this TAM Plan. Industry best practices suggest that the scope of this TAM Plan should be expanded to include all Transit Assets and Land Assets procured through AC Transit's capital program. Land Assets are included in the scope of AC Transit's inventory as part of current asset management practices. Although acquisition and maintenance of these assets compete for the same capital dollars, the TAM Plan is not currently proposing any changes to the strategy for managing land assets. Accordingly, this TAM Plan includes objectives and strategies to optimize the management of Fleet and Facilities Assets that align with FTA reporting requirements for the National Transit Database (NTD). Figure 6 illustrates the hierarchy of AC Transit's current asset categories and asset classes.

FIGURE 6 – AC TRANSIT'S ASSET HIERARCHY: CATEGORIES AND CLASSES





## 1.3 FEDERAL TAM REQUIREMENTS

### 1.3.1 OVERVIEW

As part of MAP-21 and the subsequent *Fixing America's Surface Transportation* (FAST) Act, the FTA has enacted regulations for transit asset management that require transit service providers to establish asset management performance measures and targets, and develop a TAM Plan.

The final TAM Rule was published on July 26, 2016 and went into effect on October 1, 2016. The rule itself amended the United States (U.S.) Code of Federal Regulations (CFR) Title 49 Parts 625 and 630, which relate to TAM and the NTD respectively. The TAM Final Rule distinguishes requirements between larger and smaller or rural transit agencies. Based on the criteria, and the type of service provided, AC Transit is a Tier 1 provider.

FTA defines a Tier I provider as:

- “Owns, operates, or manages either 101 or more vehicles in revenue service during peak regular service or in any one non-fixed route mode” Or,
- “Operates rail transit.”

### 1.3.2 STATE OF GOOD REPAIR PERFORMANCE MEASURES

The TAM Rule requires that transit agencies establish state of good repair (SGR) performance measures and targets for each asset class. As a Tier I provider, AC Transit must report on the SGR measures for the following asset categories:

- Rolling stock (revenue vehicles): Percent of vehicles that have either met or exceeded their Useful Life Benchmark (ULB)
- Equipment (including non-revenue service vehicles): Percent of vehicles that have either met or exceeded their ULB
- Facilities: Percent of facilities rated below condition 3 on the FTA TERM scale

Note: Infrastructure (rail fixed guideway, track, signals and systems) does not apply to AC Transit because it is a bus-only transit property

Transit agencies may also develop additional SGR performance measures for each asset category or class. AC Transit has chosen to do so. And, although the District's immediate focus is on the National Transportation Database (NTD) Reporting requirements, there are many other key performance indicators that allow AC Transit to more closely monitor asset performance as well as business process performance to aide in day-to-day operational effectiveness and efficiencies. These measures may be added to future iterations of the TAM Plan. The District's performance measures can be found on the agency's intra-net MYACT.

### 1.3.3 TAM PLAN REQUIREMENTS

As a Tier I provider, AC Transit must develop its own TAM Plan that includes all nine (9) elements of the Final Rule. These elements must:

- Define the TAM and SGR policy
- Include the capital asset inventory
- Provide asset condition assessment information
- Describe the decision support tools used to prioritize capital investment needs
- Identify project-based prioritization of investments
- Discuss the TAM Plan implementation strategy
- Describe the key TAM activities to be undertaken during the four year horizon period
- List resources needed to carry out the TAM Plan
- Outline how the TAM Plan will be monitored and updated to support continuous improvement

In order to provide a visual of the federal regulations and elements listed above, Table 2 below reflects the strategies that AC Transit plans to implement. This table also describes the criteria for TAM Plan compliance that will be addressed in the initially submitted TAM Plan.

TABLE 2 –TAM PLAN – U.S. 49 CFR COMPLIANCE MATRIX

No:	TAM	Requirement	TAM Plan Compliance
1	49CFR§625.25 (b)(1)	Inventory of the number and type of all capital assets a provider owns, except equipment with an acquisition value under \$50,000 that is not a service vehicle.	Capital Inventory for all asset-classes, including assets with an acquisition value greater than \$50,000, are presented in Section 4 ASSET INVENTORY of the TAM Plan.  Annual changes to the inventory will also be reported in Section 4 in future issues of the TAM Plan.
2	49CFR§625.25 (b)(1)	An inventory must also include third- party owned or jointly procured exclusive-use maintenance facilities, passenger station facilities, administrative facilities, rolling stock, and guideway infrastructure used by a provider in the provision	Ownership of inventory is included in Section 4 ASSET INVENTORY of the TAM Plan, which captures AC Transit - owned inventory.

No:	TAM	Requirement	TAM Plan Compliance
3	49CFR§625.25 (b)(2)	Condition assessment of those inventoried assets for which a provider has direct capital responsibility and to level of detail to monitor, predict performance of assets, and inform investment prioritization.	The assessed condition of the assets is included in Section 4.2 ASSET CONDITION of the TAM Plan.
4	49CFR§625.25 (b)(3)	Description of analytical processes or decision-support tools to estimate capital investment needs over time and develop its investment prioritization.	Use of tools, asset lifecycle strategies, and approaches to support decision making is described in Section 6 ASSET LIFECYCLE STRATEGIES of the TAM Plan
5	49CFR§625.25 (b)(4)	Project-based prioritization of investments.	The prioritized list of investment projects is set out in Section 7 INVESTMENT PRIORITIZATION AND FUNDING of the TAM Plan.
6	49CFR§625.25 (b)(5)	Provider's TAM and SGR policy.	Transit Asset Management Policy No. 463 is approved by the AC Transit's Board of Directors and is summarized in Section 2 "ASSET MANAGEMENT POLICY of the TAM Plan.
7	49CFR§625.25 (b)(6)	Provider's TAM Plan implementation strategy.	<p>TAM Plan implementation strategy is defined in Section 2 .1 TAM APPROACH AND VISION along with Section 6 ASSET LIFECYCLE STRATEGIES which includes the Lifecycle management activities addressed in the Fleet Management Plan and the Facilities Maintenance Plan.</p> <p>The TAM Plan and the Fleet &amp; Facilities Maintenance Plans will both be monitored and reviewed annually or if needed based on changing environment or business needs.</p>

No:	TAM	Requirement	TAM Plan Compliance
8	49CFR§625.25 (b)(7)	A description of key TAM activities that a provider intends to engage in over the TAM Plan horizon period.	Section 6 ASSET LIFECYCLE STRATEGIES describes the TAM business process activities. The TAM Plan and Fleet and Facilities Maintenance plans will be revised on an annual basis or as needed in case of operational environment or business condition changes.
9	49CFR§625.25 (b)(8)	A summary or list of the resources, including personnel that a provider needs to develop and carry out the TAM Plan.	Resource and access Plan is defined in Section 1 INTRODUCTION where the TAM Core Team is defined and in Section 7 INVESTMENT PRIOROTIZATION where capital investments are defined.
10	49CFR§625.25 (b)(9)	An outline of how a provider will monitor, update, and evaluate, as needed, it's TAM Plan and related business practices, to ensure the continuous improvement of its TAM practices.	TAM business processes related to TAM Planning and continuous improvement are included in Section 6 ASSET LIFECYCLE STRATEGIES in the TAM Plan.
<b>The following will be considered when developing investment prioritization:</b>			
11	49CFR§625.33 (a)	Include an investment prioritization that includes program of projects to improve or manage the SGR of capital assets for which the provider has direct capital responsibility over the TAM Plan horizon period;	Prioritization of investments, work Plans, cost and budget schedules by year are presented in Section 7 INVESTMENT PRIORITIZATION AND FUNDING in the TAM Plan.
12	49CFR§625.33 (b)	Rank projects to improve or manage the SGR of capital assets in order of priority and anticipated project year;	Prioritization of investments, work Plans, cost and budget schedules by year are presented in Section 7 "7 INVESTMENT PRIORITIZATION AND FUNDING in the TAM Plan.
13	49CFR§625.33 (c)	Ensure project rankings are consistent with its TAM policy and strategies;	The approach to prioritizing projects is set out in Section 6 ASSET LIFECYCLE STRATEGIES and in Section 7 7 INVESTMENT PRIORITIZATION AND FUNDING in the TAM Plan.

No:	TAM	Requirement	TAM Plan Compliance
14	49 CFR § 625.33 (d)	Give due consideration to state of good repair projects to improve those that pose an identified unacceptable safety risk;	Identification and management of risks are set out in Section 7 INVESTMENT PRIORITIZATION AND FUNDING in the TAM Plan.
15	49 CFR § 625.33 (e)	Take into consideration its estimation of funding levels from all available sources that it reasonably expects will be available in each fiscal year during the TAM Plan horizon period; and	Prioritization of investments, work plans, cost and budget schedules by fiscal year are presented in Section 7 INVESTMENT PRIORITIZATION AND FUNDING in the TAM Plan.
16	49 CFR § 625.33 (f)	Take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.	Strategies for maintaining assets are described in Section 6 ASSET LIFECYCLE STRATEGIES and in detail in the Fleet and Facilities Maintenance Plans.
17	49 CFR § 625.55 (a)(1) and (a)(2)	Each provider must submit the following reports: (1) An annual data report to FTA's National Transit Database that reflects the SGR performance targets for the following year and condition information for the provider's public transportation system (2) An annual narrative report to the National Transit Database that provides a description of any change in the condition of the provider's transit system from the previous year and describes the progress made during the year to meet the performance targets set in the previous reporting year."	NTD Reporting requirements are addressed in Section 1.3.4 which outlines the annual data report reflecting SGR Performance Targets for the upcoming year and the Narrative report will provide a description of changes in condition from the prior year.

Each section of the TAM Plan contains references to the requirements of the Final Rule on Asset Management in the U.S. CFR. A glossary of key terms can be found in Appendix B: Key Definitions.

### 1.3.4 TAM REPORTING REQUIREMENTS

The FTA requires transit providers to update TAM Plans in their entirety at least once every four (4) years, with the first completed TAM Plan required by October 1, 2018.

**The TAM Rule requires that agencies annually report on their progress towards meeting SGR performance targets and any change in condition from the previous year**

Reference: 49 CFR Part 625 Subpart E Section 625.55(a)(2) "Each provider must submit ... (2) An annual narrative report to the National Transit Database that provides a description of any change in the condition of the provider's transit system from the previous year and describes the progress made during the year to meet the performance targets set in the previous reporting year."

U.S. Title 49CFR§625.29 (a) states that a TAM Plan should cover a planning horizon of at least four (4) years. The District may amend the TAM Plan at any time but this should be initiated following any major change to the asset inventory, condition assessment, or capital investment. The TAM Plan should also be updated following any change to the prioritization processes affecting the timing of future projects. Although TAM Plans are required to be updated in their entirety at least once every four (4) years, AC Transit currently plans to review its TAM Plan annually and update it as needed to reflect current conditions.

In addition to the performance targets and TAM Plan, the TAM Final Rule requires that two (2) additional asset management reports be submitted to the NTD annually. The following reports are due to the NTD no later than four months after the District's fiscal year end:

- The **Data Report** should describe the condition of the transportation system currently and the SGR performance targets for the upcoming year.
- The **Narrative Report** should describe changes in the transportation system condition and report progress on meeting the performance targets from the prior year.

Figure 7 below shows an example of the National Transit Database, Transit Asset Management Plan, Performance Metrics and Targets Module Form A-90.

FIGURE 7 - NTD A-90 TAM TARGETS REPORT

	Annual Target	Annual Performance	Difference	Row Complete Yes / No
AB - Articulated bus	10%			No
AG - Automated guideway vehicle				
AO - Automobile				
BR - Over-the-road bus	10%			No
BU - Bus	10%			No
CC - Cable car				
CU - Cutaway Bus	10%			No

## 2. ASSET MANAGEMENT POLICY

AC Transit is committed to effectively managing its capital assets and maintaining its system in a State of Good Report to support safe, efficient, and reliable transit across the organization. An Asset Management Policy No. 463 has been approved by the District's Board of Directors apart from and prior to developing this TAM Plan.

This TAM Plan outlines AC Transit's overall asset management approach in a manner consistent with that policy and current federal regulations (49 U.S.C. 5326), and sets the direction for establishing and maintaining transit asset management strategies and plans that are achievable with available funds.

This TAM Plan complies with the Federal Requirements of MAP-21 law which reauthorized surface transportation programs, and introduced new NTD reporting requirements. These regulations were finalized in July 2016 with the revisions through the Federal Registry (The Final Rule) detailing the expected responsibilities for transit agencies. Newly included responsibilities mandate that transit agencies have TAM and SGR procedures in place. Accordingly, AC Transit commits to:

- Maintain an asset inventory that includes vehicles, facilities, and facility equipment used in the delivery of transit service;
- Identify safety-critical assets within the asset inventory and prioritize efforts to maintain those safety-critical assets in a SGR;
- Clearly define ownership, control, accountability, and reporting requirements for assets, including leased and third-party assets;
- Set asset performance targets and measure, monitor, and report on progress towards meeting those targets;
- Base capital project prioritization and other asset management decisions on asset criticality, condition, performance, available funding, safety considerations, and on the evaluation of alternatives that consider full lifecycle benefits, costs, and risks; and
- Maintain an agency-wide TAM Plan current with Federal Transit Administration requirements, AC Transit Board Policies, Fleet and Facilities Maintenance Plans, Standard Operating Procedures and Transit Asset Management best practices.

The approved Transit Asset Management Policy No. 463 is referenced as Appendix "A"

## 2.1 TAM APPROACH AND VISION

Transit Asset Management is a strategic approach in managing fleet and facilities; to optimize their performance; their useful life; and to minimize the total cost of ownership. AC Transit's TAM Vision is an extension of the mission statement *"Connecting our communities with safe reliable, sustainable service... we'll get you there."* The District's commitment to its Mission and the TAM Vision are reflected in Table 3 – AC Transit's TAM Vision. This table outlines the District's direction and vision to establish and continually improve asset management, strategies, and plans. It also includes goals and measures designed to monitor and continually improve performance.

Table 3 – AC TRANSIT'S TAM VISION

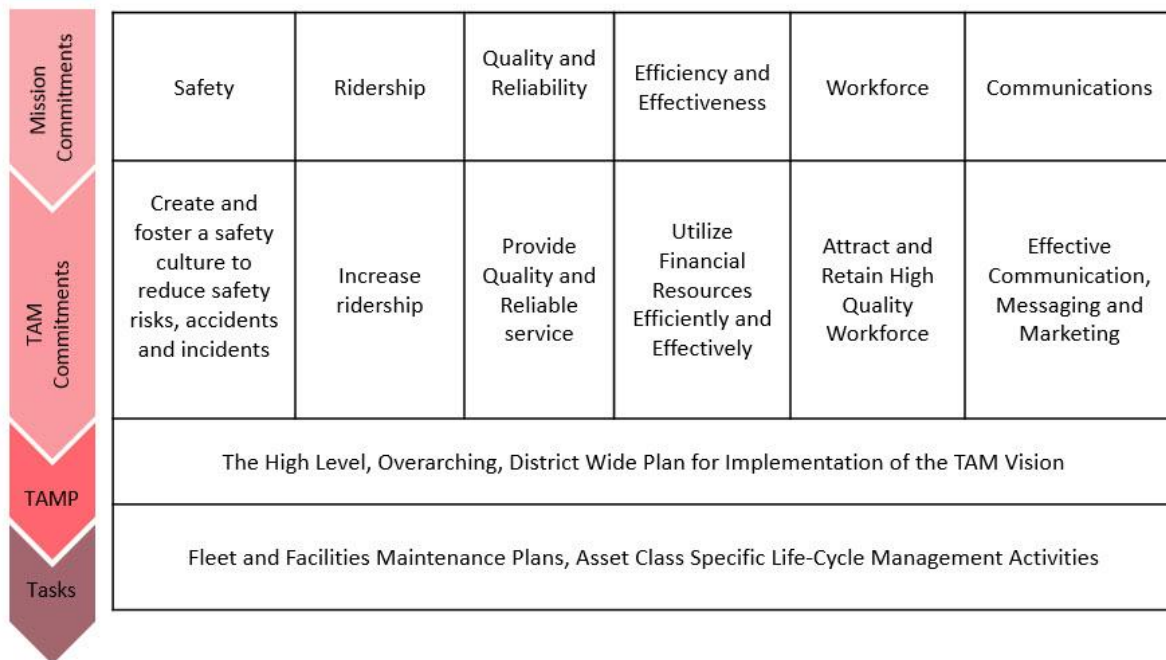
Mission /Commitment	TAM Vision Elements
Safety	AC Transit's TAM program intends to provide a safe and secure environment for the entire District community. To do that, we will foster a safety culture and align our asset and safety management practices and, will proactively review and communicate safety-related issues.
Ridership	The District creates innovative initiatives to improve its level of service and increase ridership on its Trunk, Urban Crosstown, Major Corridor, and Transbay routes. These initiatives include the AC Go service expansion plan, Flex Service program, Transbay Tomorrow, Double-decker bus procurements, and an on-time taskforce reviews that monitor
Quality and Reliability	Through improved management of our assets we will enhance the customer experience. We will deliver world-class customer service through improved internal/external communications, service reliability, convenience, accessibility, while meeting all agreed standards of service.  Our TAM Plan will enable us to continually improve the reliability of the transit system and the agency's overall efficiency. Our maintenance and capital programs will improve operational performance, reduce asset related risks, and reduce our SGR backlog. This will also help reduce the impact of our activities on the environment and develop ways to make our transit system more resilient.
Efficiency and Effectiveness	AC Transit will employ effective asset management business practices and tools, ensure optimal asset performance and useful life, and use timely, quality data to support transparent and cost-effective decision-making and accountability to stakeholders. The District will utilize historical data to better inform future investment decisions by accurately capturing capital and operating costs to assess and optimize the total cost of ownership of our assets. This program will result in the continued delivery of high-quality data that will enable AC Transit to prioritize funding needs and make more informed capital investment decisions for a sustainable and fiscally



Mission /Commitment	TAM Vision Elements
Workforce	AC Transit provides professional development programs that contribute to the growth and effectiveness of the organization by empowering employees to maximize their performance and achieve both personal and
Communications	The District promotes its services through advertising, public outreach, and public information efforts. The efforts reflect AC Transit's core values of providing safe, convenient, courteous, and reliable transit service to the public.

These agency-wide elements are reflected into appropriate measures in the Fleet Maintenance Plan and the Facilities Maintenance Plan, setting clear expectations for how departments will manage their assets in line with AC Transit's overall mission. AC Transit has incorporated Life-Cycle Management Plans at the Asset Class level that consists of the various tasks performed on a routine basis with a strategic line-of-sight alignment as illustrated in Figure 8 below.

FIGURE 8 - ALIGNMENT OF DISTRICT TAM PLAN AND VISION COMMITMENTS



### 3. LEVELS OF SERVICE (LOS)

As a public transportation provider and mobility manager for the California East Bay Area, the District's goal is to provide service in an efficient, effective and equitable manner. To accomplish this goal, AC Transit's Board of Directors adopted Service Standards and Design Policy No. 545 that establishes guiding principles for the design and allocation of services to develop a marketable and well-used transit system based Local, Transbay and All Night Services. The Route Type Service Standard is shown below in Table 4.

Service design is continually examined to ensure that service is allocated correctly by measuring performance with respect to ridership, productivity, vehicle load, frequency, and on-time performance. Additional statistical modeling and correlation analysis is used to examine external factors such as variables gas prices, unemployment levels, and weather to model ridership trends and monitor changing trends that impact service types.

TABLE 4 - ROUTE TYPE SERVICE STANDARD

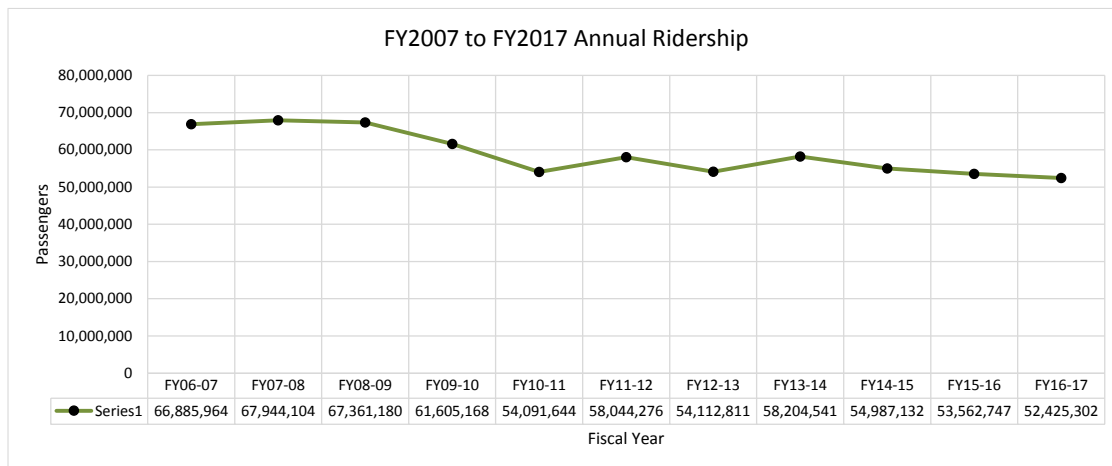
Route Type	Span of Service Standard	Weekday Peak Frequency Standard
<b>Trunk and Major Corridors</b>	LOS A (19 – 24 hrs. daily)	LOS C (15-20 minutes)
<b>Rapid Service</b>	LOS C (14 – 16 hrs. daily)	LOS B (10 – 14 minutes)
<b>Urban Crosstown / Feeder</b>	LOS C (14 – 16 hrs. daily)	LOS C (15 – 20 minutes)
<b>Suburban Crosstown / Feeder</b>	LOS C (14 – 16 hrs. daily)	LOS D (21 – 30 minutes)
<b>Very Low Density</b>	LOS C (14 – 16 hrs. daily)	LOS E (31 – 60 minutes)
<b>All Night (Owl) Service</b>	Owl Gap period	LOS E (31 – 60 minutes)
<b>Transbay</b>	LOS B: Bay Bridge Corridor (17 - 18 hrs. daily); LOS C: DB/San Mateo Corridor (14 - 16 hrs. daily)	LOS D (21 – 30 minutes)

The TAM Plan is built around achieving improvements towards its level of service that include Trunk, Urban Crosstown, Major Corridor, and Transbay types. These service types are directly impacted by its asset reliability standards, preventive maintenance programs, meantime to repair, and fuel efficiency standards. Managing these technical levels provide asset management decision making and investment prioritization to enhance the levels of service.

### 3.1 RIDERSHIP TRENDS

Increasing ridership is an overarching goal for the District. AC Transit's service options are a crucial part of the solution to the East Bay's economic, energy, and environmental challenges helping to bring a better quality of life in the communities it serves. As a key performance indicator, ridership is measured by the average daily passenger boardings. Based on past performance and demographics studies, AC Transit's Planning department has produced several ridership forecast scenarios. These ridership scenarios are a basis for other analyses related to TAM, and to help inform management decisions moving forward. Figure 9 below provides the ridership fluctuation over the last 10 years.

FIGURE 9 – FY 2007 TO 2017 ANNUAL RIDERSHIP



### 3.2 INCREASE RIDERSHIP INITIATIVE

To improve the District's level of service on its Trunk, Urban Crosstown, Major Corridor, and Transbay routes, the following innovative initiatives were implemented to increase ridership:

- AC Go Service expansion plan

Increase bus service by as much as 14%. Implementation over 3 phases began in June 2016, consists of new buses, newly redesigned routes, and more frequent service aimed at delivering more reliable and frequent service to expand ridership

- AC Transit Flex Service

One-year on-demand pilot program began in March 2017. Dynamic reservation based transit service developed as an alternative in service areas with lower demand ridership

- Transbay Tomorrow

Project to improve transit service across the bay bridge through reconfiguring existing service

- Double decker bus fleet

Procurement provides additional capacity to handle Transbay ridership capacity demands

- On-Time Performance Taskforce

Reviews monthly OTP performance by route with action items to identify and improve poor performing lines and increase OTP reliability.



### 3.3 TAM TECHNOLOGY RESOURCES

**The TAM Rule requires that TAM Plans describe decision support tools.**

Reference: 49 CFR Part 625 Subpart C Section 625.25(b) "Transit asset management Plan elements ... (3) A description of analytical processes or decision-support tools that a provider uses to estimate capital investment needs over time and develop its investment prioritization"

Information technology is a critical asset management enabler. Contemporary best practice either at the enterprise level or during any aspect of lifecycle management for individual asset classes is data driven and requires the application of innovative and creative information technologies. AC Transit's Department of Innovation and Technology provides and maintains technology tools that are primarily software-based. Table 5 below describes AC Transit's main technology tools used in support of this TAM Plan.

TABLE 5 – TECHNOLOGY PRODUCTSUSED THROUGHOUT AC TRANSIT

TECHNOLOGY	DESCRIPTION / CONFIGURATION	OWNER
Ellipse <sup>TM</sup>	Enterprise Asset Management System for Fleet and Facilities asset management. Software solution that improves planning, scheduling, routing and completing work orders based on priority, resources and assets.	Innovation and Technology
PeopleSoft	Enterprise Resource Planning System – Master inventory (other than assets) for the organization Finance-Human Resource (FHR) and Human Capital Management (HCM) information.	Innovation and Technology
S&A Systems FleetWatch	Fluid Management – provides real-time control and data acquisition for fluids and tank monitor systems to monitor fluid usage, schedule preventive maintenance, and reconcile fluids.	Innovation and Technology
Hastus	Scheduling & Dispatch – provides improved planning, scheduling, operations, passenger information and analysis.	Innovation and Technology / Operations
CAD/AVL	The CAD/AVL system connects our vehicles seamlessly with our back office scheduling and dispatching software. It automatically collects vital data used by dispatchers such as bus GPS locations, schedule adherence status, breakdowns and emergencies	Innovation and Technology / Operations



### 3.4 PERFORMANCE MEASURES

To comply with the FTA requirements associated with SGR, performance measures for capital assets have been established for each asset class along with performance targets. The following is a summary of the FTA requirements:

**The TAM Rule requires SGR performance measures for capital assets.**

Reference: 49CFRPart625, Subpart D, Section 625.43 “SGR performance measures for capital assets. (a) *Equipment: (non- revenue) service vehicles.* The performance measure for non-revenue, support-service and maintenance vehicles equipment is the percentage of those vehicles that have either met or exceeded their ULB. (b) *Rolling stock.* The performance measure for rolling stock is the percentage of revenue vehicles within a particular asset class that have either met or exceeded their ULB. (d) *Facilities.* The performance measure for facilities is the percentage of facilities within an asset class, rated below condition 3 on the TERM scale.

**The TAM Rule requires setting targets for performance measures.**

Reference: 49CFRPart625 Subpart D, Section 625.45 “(a)(1) A provider must set one or more performance targets for each applicable performance measure. (a)(2) A provider must set a performance target based on realistic expectations, and both the most recent data available and the financial resources from all sources that the provider reasonably expects will be available during the TAM Plan horizon period. (b)(2) At least once every fiscal year after initial targets are set, a provider must set performance targets for the following fiscal year.

Targets for vehicles are expressed in terms of percentage of assets that are at or beyond the Useful Life Benchmark (ULB), therefore the ideal situation is to be less than the target. For all non-revenue vehicles, the District identifies a particular useful life based on the vehicle characteristics at time of purchase, so the Useful Life (UL) and ULB are shown as ranges. Targets for facilities are expressed in terms of percentage of assets that are rated below the benchmark condition score, therefore the ideal situation is to be less than the target. All relative Targets are reflected below in Tables 6 and 7

TABLE 6 - FLEET PERFORMANCE TARGETS

Asset Class	UL	ULB	Target	Rationale
<i>Revenue Vehicles</i>				
Articulated Buses (AB)	12	14	10%	District standard practice is for all revenue vehicles to be replaced at end of useful life. Funding and procurement can
40ft/30ft Buses (BU)	12	14	10%	

Asset Class	UL	ULB	Target	Rationale
Over-The-Road Coach Buses (BR)	14	16	10%	delay this, but no more than 10% of buses beyond ULB is reasonable.
Vans/Cutaways (gasoline) (VN)	5	7	10%	
Vans/Cutaways (diesel) (VN)	7	9	10%	
Non-Revenue Vehicles				
Car	4-7	UL + 2	25%	Target based on reasonable long-term expectation for SGR of non-revenue vehicles. This is a multi-year goal to get back to the target rate within the next 5 years. Continuing current funding levels should allow for achieving of the target.
Truck/Van	4-12	UL + 3		

TABLE 7 - FACILITIES PERFORMANCE TARGETS

Asset Class	Condition Benchmark	Target	Rationale
Facilities	3	20%	Based on MTC analysis of 2015 RTCI information, District has a cost weighted average 3.29 condition rating and a target score of 23%. Facilities rated 2-3 are still functioning and safe and so having 20% not meeting target is reasonable.

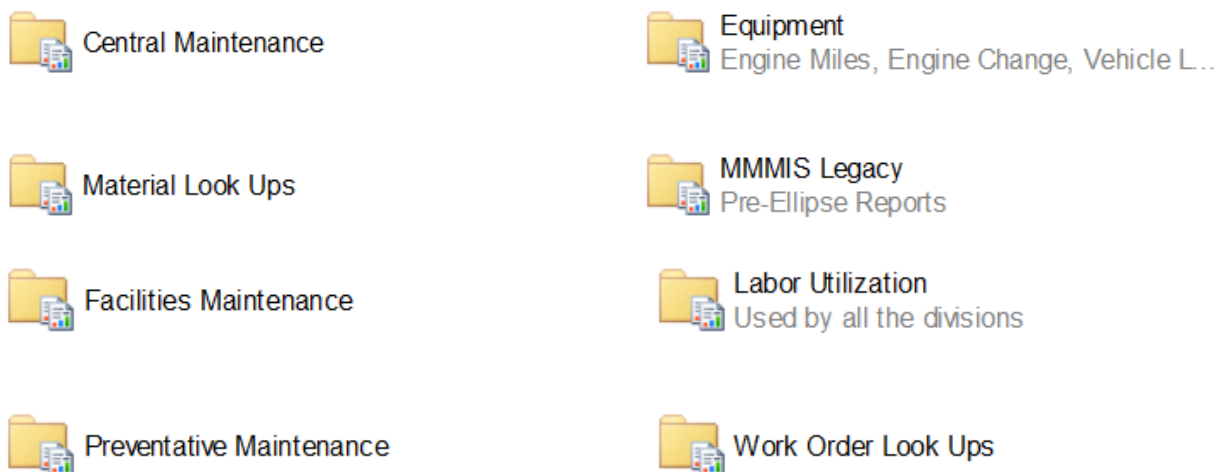


Additional asset management reports have been developed to manage and monitor the revenue fleet service demands, cost effectiveness, and reliability. AC Transit is transparent with its operational and Key Performance Indicator (KPI) statistics that reside on AC Transits intranet MYACT SharePoint platform through SQL Server Report Services (SSRS). These measures and associated Targets are outlined in the Fleet and Facilities Maintenance Plans with more than 75 additional reports that support efficiency and effectiveness monitoring. As shown below in Table 8 and Figure 10.

TABLE 8 - KEY PERFORMANCE MEASURE

KPI	Target
On Time Performance	72%
Miles Between Chargeable Road Calls	5400
Service Operated, Rollout	99.5%
Accident Rate	4
Maintenance Manpower Unavailability	22%
Operator Unavailability	22.5%
Logon Rate	95%
Ridership, Average Daily Passengers	N/A
Service Efficiency Standards Pay Hours to Platform Hours	N/A
Fare Revenues	N/A
Customer Complaints Complaints Per 100K Boardings	18

FIGURE 10 - SQL SERVER REPORT FOLDERS





## 4. TRANSIT ASSET INVENTORY

### 4.1 ASSET INVENTORY

AC Transit manages an asset portfolio estimated to be approximately \$ 865,577,693.00 original purchase value, not including all soft costs associated with asset replacement such as design and construction management costs. Soft costs could be estimated to be an additional 35% for major systems, and 10% for equipment and vehicles. The original purchase costs do not include contingency variables.

This asset portfolio is comprised of the Asset Type Fleet or Asset Type Facilities, by Asset Category and, by Asset Class. Table 9 summarizes AC Transit's asset inventory.

TABLE 9 – ASSET INVENTORY BY TYPE, CATEGORY AND CLASS

Type	Category	Class	Asset	Qty	Purchase Price	Total Purchase Price
Rolling Stock	Revenue Fleet	Buses	30' Feeder	90	\$31,777,710	\$280,116,266
			40' Standard & Commuter	400	\$180,291,481	
			45' Commuter	46	\$20,333,449	
			60' Articulated	84	\$46,630,843	
		Cutaway	26' Small Transit	10	\$1,082,783	
Equipment	Non-Revenue Fleet	Cars, Vans and Trucks	Non-Revenue Vehicle	136	\$3,559,689	\$32,556,437
	Equipment	Support Equipment	Forklifts, Trailers, Tugs	26	\$736,392	
	Maintenance	Facilities Critical Equipment	Shell, Structure, Interior, Plumbing, Electrical, Equipment, HVAC, Fire Systems, Conveyances, and SITE	390	\$28,260,356	
Facilities	Buildings (Properties & Structures)	Operations Facilities	General Office	7	\$58,081,280	\$520,095,109
			Central Maintenance		\$137,614,401	
			D2 Emeryville		\$50,100,000	
			D3 Richmond		\$43,600,000	
			D4 East Oakland		\$54,700,000	
			D6 Hayward		\$120,999,428	
			Training and Education Ctr.		\$55,000,000	

Type	Category	Class	Asset	Qty	Purchase Price	Total Purchase Price
Systems	Security Infrastructure		System includes cameras, Badge Readers, Back Room Equipment and Infrastructure	1	\$11,900,000	\$32,809,881
	Information Services Assets		System includes IT Capital Asset Inventory	1	\$4,000,000	
	CAD-AVL Inventory		(Includes all associated equipment)	1	\$6,251,480	
	Revenue Collection Equipment		Includes all Revenue Collection equipment and software	1	\$10,658,402	

A detailed Transit Asset inventory is maintained in the Ellipse™ Enterprise Asset Management System (EAMS). During asset procurement and receipt or acceptance, specific asset identification, useful life, warranty and maintenance interval information [data] is collected from the Original Equipment Manufacturer (OEM). This practice ensures the asset data is properly recorded into the EAMS for effective and efficient lifecycle management. Figure 11 below is an example of the Ellipse equipment register nameplate for a non-revenue vehicle asset.

FIGURE 11 – ELLIPSE EQUIPMENT REGISTER NAMEPLATE

Equipment Number

Description

Associated Equipment Item

General	Costing	Tracing	Condition	Classifications	Location	Extended Desc	Nameplate	Alternate References	Cont
Seq No	Mandator	Attribute Name	Attribute Description	Attribute Value	Description				
0001	<input type="checkbox"/>	LICENSE	VEHICLE LICENSE NUMBER	1497405					
0002	<input type="checkbox"/>	SRV_VEH_TYPE	SERVICE VEHICLE TYPE	1	SEDANS				
0003	<input type="checkbox"/>	EXP_SERV_YRS	AVERAGE EXPECTED SERVICE YEARS	5					
0004	<input type="checkbox"/>	YOM	YEAR OF MANUFACTURE	2016					
0005	<input type="checkbox"/>	CAPITAL_RESP	CAPITAL RESPONSIBILITY %	80					
0006	<input type="checkbox"/>	EST_COST	ESTIMATED COST	22500					
0007	<input type="checkbox"/>	EST_COST_YR	ESTIMATED COST YEAR	2016					
0008	<input checked="" type="checkbox"/>	NREV_FLEET	NON REVENUE FLEET	NR					
0009	<input type="checkbox"/>	AIM_TYPE	AIM_TYPE	A60	Service Vehicle Fleet				
0010	<input type="checkbox"/>	RVI_ID	REVENUE VEHICLE INVENTORY ID	217					
0011	<input type="checkbox"/>	FUEL	VEHICLE FUEL CAPACITY (GAL)	13.5					

Ellipse asset data is captured to consolidate and create the Alameda-Contra Costa Transit District Asset Inventory Report that resides on MYACT. Figures 12, 13 and 14 provide an example of an asset class contained in the AC Transit Asset Inventory report.

FIGURE 12 – REVENUE VEHICLE BUS ASSET CLASS

REVENUE VEHICLES	
2017-GILLIG G27D102N7	
SERIES	1581-1590
UL/ULB	14/16
UNIT COST/PO TOTAL	\$488,247/ \$4,882,470
LENGTH	40
SEATING	37
FUEL TYPE	DIESEL
ACTIVE VEHICLES:	10
RVI ID:	
	
2016-GILLIG HYBRID G27D102N6	
SERIES	1556-1580
UL/ULB	12/14
UNIT COST/PO TOTAL	\$699,060/ \$17,476,505
LENGTH	40
SEATING	37
FUEL TYPE	DIESEL
ACTIVE VEHICLES:	25
RVI ID:	
	

FIGURE 13 – OPERATIONS FACILITES ASSET CLASS





D3 - Richmond Division		2016 MacDonald Ave Richmond, CA. 94801			
PRIMARY MODE SERVED AT FACILITY		SQUARE FEET	266,000		
Motor Bus (MB) Maintenance Facility		ULB			
ADMINISTRATIVE AND MAINTENANCE FACILITY TYPE		CONDITION ASSESSMENT			
Maintenance Facility (Service and Inspection)		DATE OF CONDITION ASSESSMENT			
YEAR BUILT OR REHABILITATED		COST	\$43,600,000		
2016					
					
Critical Equipment List - Report					
BUILDING / FTA COMPONENT GROUPS	QTY	SUBCOMPONENTS	ACQUISITION OR REHABILITATIO N DATE	ULB	CONDITION RATING
<b>BUILDING AND GROUNDS</b>					
ELECTRICAL	1	EMERG LIGHTING	2016	20	3.00
ELECTRICAL	1	EMERGENCY GENERATOR	2017	10	5.00
ELECTRICAL	1	TRANSFER SWITCH	2016	10	5.00
<b>BUS WASH</b>					
EQUIPMENT	2	BUSWASH LANE 1	2017	20	5.00
<b>FUEL ISLAND</b>					
EQUIPMENT	1	DEF DISPENSER	2012	10	5.00
EQUIPMENT	2	AIR COMPRESSOR	2017	20	5.00
HYDROGEN COMPONENTS	1	FUEL DISPENSER	2017	15	5.00
FIRE PROTECTION	1	FIRE SPRINKLER SYSTEM	1986	25	3.00
EQUIPMENT	3	DEF DISPENSER	2012	10	5.00

FIGURE 14 – NON-REVENUE CARS ASSET CLASS

NON REVENUE VEHICLES		
2017 FORD CMAX HYBRID	ASSET TYPE: CAR	FLEET SIZE: 5
USE: POOL CAR		
UL/ULB: 7/9		
UNIT COST/PO TOTAL: \$28,050/ \$140,250		
AGE: 1		
2016 FORD CMAX HYBRID	ASSET TYPE: CAR	FLEET SIZE: 5
USE: POOL CAR		
UL/ULB: 7/9		
UNIT COST/PO TOTAL: \$22,500/ \$112,500		
AGE: 1		
2015 FORD CMAX HYBRID	ASSET TYPE: CAR	FLEET SIZE: 2
USE: POOL CAR		
UL/ULB: 7/9		
UNIT COST/PO TOTAL: \$23,005/ \$46,010		
AGE: 2		

## 4.2 ASSET CONDITION

**The TAM Rule requires inclusion of condition assessments in an agency's TAM Plan. Condition assessments should collect sufficient information to inform asset replacement.**

Reference: 49 CFR Part 625 Subpart C Section 625.25(b)(2) "... a TAM Plan must include ... (2) A condition assessment of those inventoried assets for which a provider has direct capital responsibility. A condition assessment must generate information in a level of detail sufficient to monitor and predict the performance of the assets and to inform the investment prioritization."

**Vehicle Condition Assessment:** Condition ratings for vehicles are expressed in terms of the percentage of assets that are 'at', or 'beyond' the Useful Life Benchmark (ULB) based on FTA Circular 9030.1D, paragraph 4.a.

**Facilities and Facility Equipment Condition Assessment:** In order to determine an asset's condition, the FTA's Transit Economic Requirements Model (TERM) scale is being used. A TERM scale condition rating ranges from (5) Excellent to (1) Poor. Per the FTA TAM Final Ruling, assets with a condition rating score of 3.0 and above are in a state of good repair. Assets with a condition score lower than 2.9 are not in a state of good repair, and may require prioritization during capital programming to ensure safe, efficient, and reliable transit service.

The District will utilize the ratings in the chart below when completing an asset condition assessment:

TABLE 10 - ASSET CONDITION ASSESSMENT RATING CRITERIA

Rating	Assessment	Criteria
5	<b>Excellent</b>	Asset performs its designed function
		Asset is new and within the warranty period
		Asset does not pose a known unacceptable safety risk
4	<b>Good</b>	Asset performs its designed function
		Asset has not met its useful life
		Asset does not pose a known unacceptable safety risk
3	<b>Adequate</b>	Asset performs its designed function
		Asset has not met its useful life
		Asset does not pose a known unacceptable safety risk
2	<b>Marginal</b>	Asset performs its designed function
		Asset has met its useful life
		Asset does not pose a known unacceptable safety risk
1	<b>Poor</b>	Asset has met its useful life
		Asset does not perform its designed function
		Asset poses a known unacceptable safety risk

For Facilities assets, condition assessments are scheduled and completed using in-house staff and outside contractors where a particular set of skills or experience are necessary. These results are compiled into The Condition Assessment Report which can aggregate (roll-up) the individual asset condition assessments to the Asset Class level. The formula for aggregation of this data is as follows:

$$\text{Asset Condition Assessment Formula} = \frac{\sum (\text{Asset Rating} \times \text{Asset Qty})}{\text{Asset Qty}}$$

Assets with a condition rating score of 3.0 and above are in a State of Good Repair (SGR). Assets with a condition score lower than 2.9 are **not** in a SGR, and may require prioritization during capital programming to ensure safe, efficient, and reliable transit service. Note that these condition scores can represent individual asset conditions or can represent the average condition of all assets in each category/sub category depending on aggregation. Table 11 provides an example of the facilities and facility equipment asset condition assessment summary report.

TABLE 11 – FACILITIES CONDITION ASSESSMENT CHART

MAINTENANCE DEPARTMENT - ASSET INTELLIGENCE					
FACILITIES CONDITION ASSESSMENT ASSIGNMENT & EQUIPMENT SUMMARY					
Assignments, Equipment Quantity, Ratings Completed, Average Ratings by Component					
FACILITIES CONDITION ASSESSMENT SUMMARY CHART					
Assessment/ Rating Responsibility	FTA Component Group	Ellipse Subcomponent	Equip. QTY (Ratings Needed)	Ratings Completed (in last 365 days)	Average Rating (based on completed rating)
FAC	CONVEYANCES	VE - ELEVATOR,_EXECUTIVE	1	1	4.00
		VF - ELEVATOR,_FREIGHT	1	1	4.00
		VP - ELEVATOR,_PERSONNEL	16	15	4.00
	EQUIPMENT	AC - AIR_COMPRESSOR	26	25	3.22
		AR - AIR_RECIEVER	2	1	3.00
		B1 - BUSWASH_LANE_1	5	5	3.60
		B2 - BUSWASH_LANE_2	3	3	2.67
		CA - SECURITY_CAMERA	61	61	2.59
		EG - EMERGENCY_GENERATOR	8	8	3.00



## 5. TAM RISK OVERSIGHT

AC Transit's Transit Asset Management Risk Oversight is an ongoing process throughout the fiscal year. In accordance with Board Policy No. 101, Article 5, except for reports designated on the agenda as verbal reports, each agenda item submitted by Board Officers or their staff shall be supported by a written staff report and other supplemental documentation that may be necessary to enable the Board to make an informed decision on matters.

Regularly agenized Staff Reports are scheduled for the Board of Directors on a monthly, bi-monthly, quarterly and annual basis. Staff Reports provide detailed information to the Board of Directors on various topics related to Transit Asset Management by the following departments Operations, Planning, Finance and Audit, and External Affairs. Illustrated below in Figure 15 is the annual schedule of regularly agenized staff reports for the Board of Directors and department assignments:

FIGURE 15 – ANNUAL SCHEDULE OF BOARD OF DIRECTORS AGENDA

<b>OPERATIONS ITEMS (2nd Wed. of the Month)</b>	<b>EXTERNAL AFFAIRS ITEMS (4th Wed. of the Month)</b>	<b>BOARD OF DIRECTORS</b>
Quarterly (Feb., May, Aug., Nov.) Contracts/Purchasing Activity (CFO) Operations Performance Report (include Customer Service Call Center Figures) (COO)	Monthly Legislative Report (EDEAMC)	Monthly AAC Minutes (EDPE) Retirement Board Minutes (Wildmann)
Semi-Annual (May/Nov.) DBE/FTA Report and Goal Update (CCA)	Semi-Annual (April/Oct.) Status of the Next Generation of Clipper (CIO)	Quarterly (Feb., May, Aug., Nov.) Litigation Report - Closed Session (GC)
Annual (Jan.) State of the Bus Fleet (COO) Report on Class Spec Modifications in Prior Year (EDHR)	Annual (Jan.) Federal/State Advocacy Program (EDEAMC)	Semi-Annual (April/Nov.) Retirement Board Update (Wildmann)
<b>PLANNING ITEMS (2nd Wed. of the Month)</b>	<b>FINANCE AND AUDIT ITEMS (4th Wed. of the Month)</b>	Annual (As Indicated) Meetings in Contra Costa and South Alameda Co. (DS) Joint Meeting w/ Retirement Board (DS) Joint Meeting w/ AAC (DS) Adopt Appropriations Limit (July) (CFO)* * Post Notice 15 Days Prior to Adoptions Parcel Tax Oversight Committee Report - Dec. (CFO) Annual District Budget - June (CFO)
Quarterly (Feb., May, Aug., Nov.) Update on Bus Rapid Transit Project (EDPE) Update on Transbay Transit Center Project (EDPE) Involvement w/ External Planning Processes (EDPE)	Monthly Report on Investments (CFO) Fiscal Policies - One per month (CFO)	<b>FINANCING CORPORATION</b>
Annual (Oct.) Local/Transbay Ridership Report (EDPE)	Bi-Monthly (Oct., Dec., Feb., April, June, Aug.) Budget Update (CFO)	Quarterly (Feb., May, Aug., Dec.) Financial Statements (CFO)
Annual (June) CARB Update (COO) Update on SD2 Service/Operations (EDPE)	Quarterly (Feb., May, Aug., Nov.) Board/Officers Travel/Meeting Expenses (DS) Employee Out-of-State Travel (CFO) Surplus/Obsolete Materials (CFO)	Annual (Dec.) Year-End Audited Financial Statements (CFO)
Semi-Annual (Jan./July) Update on South County Corridors Project (EDPE)	Annual (As Indicated) Fare Structure Update - March (CFO) Audit Engagement Letter - June (CFO) Appropriations Limit (CFO) +Provide Notice (Post Resolution) - June + Establish Appropriations Limit - July (Board) Budget Calendar - Nov. (CFO) Year-End Audited Financial Statements - Nov. (CFO) Budget Revision/Financial Performance - Feb. (CFO)	

Administrative Regulation No. 101A: Board Agenda Item Preparation provides detailed requirements for Staff Report format and deadlines. The purpose of this Administrative Regulation is to ensure that members of the Board of Directors, Board Officers and Executive Staff are provided with the necessary information, sufficiently prior to meetings, to permit the adequate study and preparation needed to allow for making informed decisions.



## 6. ASSET LIFECYCLE STRATEGIES

### **The TAM Rule requires that TAM Plans provide the implementation strategy.**

Reference: 49 CFR Part 625 Subpart C Section 625.25(b) “Transit asset management Plan elements ... (6) a provider’s TAM Plan implementation strategy; (7) A description of key TAM activities that a provider intends to engage in over the TAM Plan horizon period”

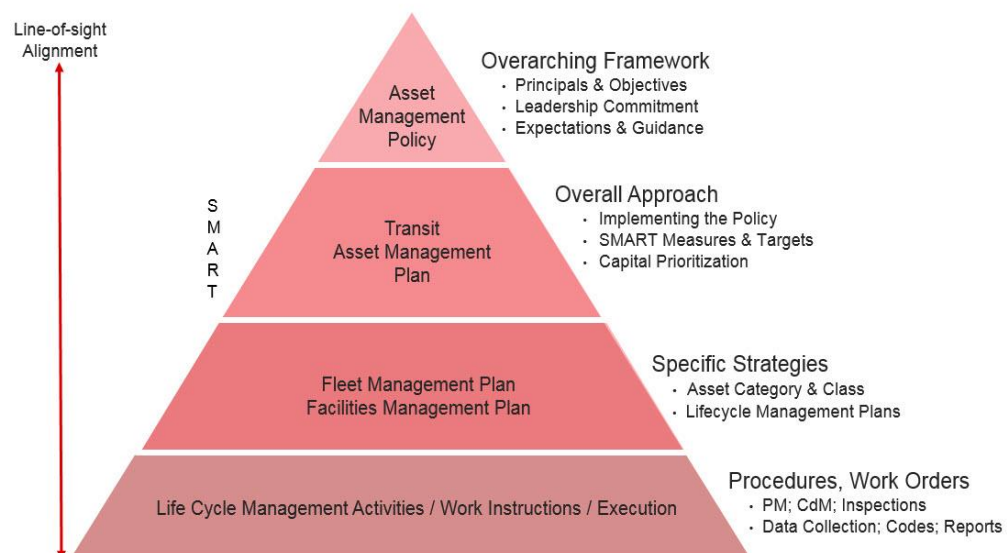
This section identifies AC Transit’s key asset management practices across the lifecycle for the Fleet and Facilities assets. The asset strategies, as captured in the Fleet and Facilities Maintenance Plans (FMPs), set out the approach for managing a specific asset class that will deliver AC Transit’s strategic objectives in line with the TAM Policy and the TAM Vision.

Recognizing that each asset category and asset class is challenged with a unique set of performance characteristics and resource requirements, AC Transit has developed these FMPs. These Plans provide guidance for managing the Fleet and Facilities to align with this TAM Plan.

AC Transit uses Ellipse™ Enterprise Asset Management and Asset Performance Management software to manage all of the lifecycle management activities. These activities actually make up the lifecycle strategies. This includes all of the Preventive Maintenance Tasks, Standard Operating Procedures (SOPs), Inspections and proactive maintenance activities performed to ensure consistent asset lifecycle management at the asset class level.

These activities all align with the organization’s business goals and objectives providing “Line-of-Sight” organizational alignment to ensure a consistent collection and analysis of data as a fundamental element of AC Transit’s implementation approach. AC Transit’s document hierarchy for these lifecycle activities are reflected in Figure 16.

FIGURE 16 – ASSET MANAGEMENT DOCUMENT HIERARCHY

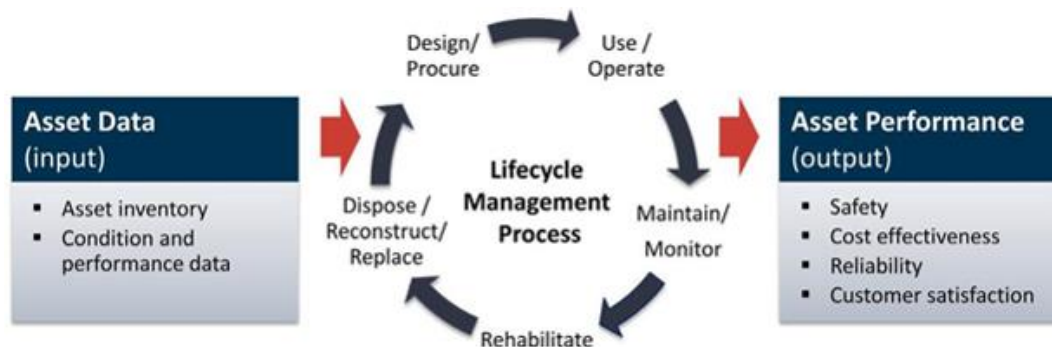




## 6.1 LIFECYCLE MANAGEMENT STRATEGIES

Transit Asset Management is a strategic approach in managing fleet and facilities; to optimize their performance; their useful life; and to minimize the total cost of ownership. AC Transit has developed a framework for asset management and implementing procedures in the form of Fleet and Facilities Maintenance Plan. These Maintenance Plans will be used to monitor and manage assets to achieve and maintain a state of good repair, improve safety and increase reliability and performance as shown in Figure 17 below. The purpose of these Maintenance Plans is to not only ensure that our assets are maintained in a state of good repair, but also help to enhance our operations by providing safe, frequent and reliable service.

FIGURE 17 – ASSET LIFECYCLE MANAGEMENT



### 6.1.1 FLEET MAINTENANCE PLAN

AC Transit has developed the Fleet Maintenance Plan to monitor and manage assets to achieve and maintain a state of good repair, improve safety and increase reliability and performance. The purpose of the Fleet Maintenance Plan is to provide an overview of the Department's budget, structure, asset management, and maintenance programs. For all operating revenue and non-revenue fleet assets, the Fleet Maintenance Plan addresses:

- Asset Inventory (A-00, A-30, R-20)
- Condition Assessment and Performance Measures
- Condition Reporting
- Organization Structure
- Fiscal Budget
- Replacement Schedule
- Maintenance Program Structure
- Training
- Vehicle Acceptance
- Decommissioning
- Preventative Maintenance, Inspections and Cleanliness Activities
- EAM and Work Control
- Warranty Program
- Capital Improvement Program

### 6.1.2 FACILITIES MAINTENANCE PLAN

AC Transit has developed the Facilities Maintenance Plan to monitor and manage AC Transit's assets to achieve and maintain a state of good repair, improve safety and increase reliability and performance. The purpose of the Facilities Maintenance Plan is to provide an overview of the department's budget, structure, asset management, and maintenance programs. For all operations and support facilities, the Facilities Maintenance Plan addresses:

- Asset Inventory (A-00, A-10, A-20)
- Condition Assessment and Performance Measures
- Condition Reporting
- Organization Structure
- Fiscal Budget
- Training
- Maintenance Program Structure
- Preventative Maintenance, Inspections and Cleanliness Activities
- Regulatory Compliance and Cleanliness
- Critical Equipment Inventory
- EAM and Work Control
- Warranty Program
- Capital Improvement Program
  - Improvement Cost Estimates
  - State of Good Repair Needs



## 7. INVESTMENT PRIORITIZATION AND FUNDING

### **The TAM Rule describes the specific requirements for investment prioritization.**

Reference: 49 CFR Part 625 Subpart C Section 625.33 “(a) A TAM Plan must include an investment prioritization that identifies a provider’s programs and projects to improve or manage over the TAM Plan horizon period the state of good repair of capital assets for which the provider has direct capital responsibility. (b) A provider must rank projects to improve or manage the state of good repair of capital assets in order of priority and anticipated project year. (c) A provider’s project rankings must be consistent with its TAM policy and strategies. (d) When developing an investment prioritization, a provider must give due consideration to those state of good repair projects to improve that pose an identified unacceptable safety risk when developing its investment prioritization. (e) When developing an investment prioritization, a provider must take into consideration its estimation of funding levels from all available sources that it reasonably expects will be available in each fiscal year during the TAM Plan horizon period. (f) When developing its investment prioritization, a provider must take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.”

This chapter identifies and highlights AC Transit’s asset investment needs (capital and operational budget needs, the process used to prioritize investments, and the anticipated impact on current and future staffing resources), based on AC Transit’s organizational goals, asset management strategies, core principles and processes.

### 7.1 PROCESS OVERVIEW

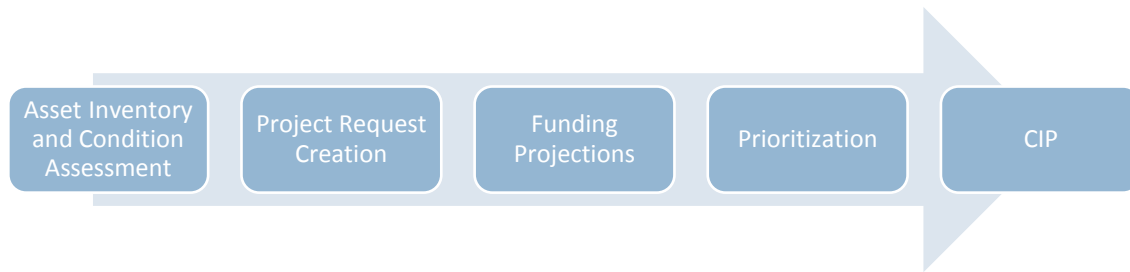
Part of the asset management process is optimizing how funds are spent based on the assessed asset inventory to help achieve and maintain a state of good repair. This includes both capital and operating funds. AC Transit’s capital budget funds the planning, design, acquisition, capital maintenance and rehabilitation of all assets subject to this TAM Plan. The operating budget funds the use and routine maintenance of those same assets, including the staff needed to perform those functions.

AC Transit currently adopts yearly operating and capital budgets. The capital budget for a given year is based on a longer-term Capital Improvement Plan (CIP) in which capital projects are programmed. AC Transit adopted a three-year CIP with the start of the FY 2016-17 budget year, and is in the process of transitioning to a five-year CIP. AC Transit has a Capital Plan and Projects Board Policy No. 314 that guides how projects and project requests are evaluated and programmed.

The Capital Plan and Project Board Policy No. 314 defines a Capital Programming Committee which is central to the CIP programming process. The committee is defined in the policy and includes executive directors and representatives from Capital Projects and Capital Planning. The

policy also defines that the five-year plan shall be updated on a two-year basis. The basic process for assembling a multi-year CIP is shown below in Figure 18.

FIGURE 18 – CAPITAL IMPROVEMENT PLANNING PROCESS



The start of the process is updating and analyzing the asset inventory and condition assessment so that programming can be based off an updated set of data. The next step is the creation of project requests based on the inventory and condition data. Then the capital funding projections for the span of the years to be programmed must be assembled. The District includes 10-year capital funding projections in its Short Range Transit Plan, separated into committed and possible amounts to use as a basis for the CIP programming.

Next is the prioritization process. Prioritization is an iterative process that works with the priority attributes of the requests and the funding available, as well as the timing of both the requests and the funding, to arrive at a CIP. Within the entire CIP and specific years, the funding available limits the requests that can be programmed, and the scope of the various funding sources also limits what projects can be linked to what funds. This step is driven by the Capital Programming Committee, which has the charge to work through this iterative programming process and assemble the CIP. The outcome after this process is a year-by-year list of projects and matched funding that becomes the CIP. This preliminary CIP is approved by the General Manager and then ultimately the Board of Directors. The CIP is then used to estimate the spending levels in any given year for inclusion into the budget process.

---

## 7.2 CAPITAL INVESTMENT PRIORITIZATION

AC Transit uses an existing capital project prioritization process which considers asset condition or age along with investment categorization.

The basic unit of the prioritization process is the project request. Project requests are created by District staff and have a set of required fields to assist in the prioritization process. The asset inventory and condition assessment is used in this step to create project requests based on the asset age or condition (as applicable to that asset class) for rehabilitation or replacement of the assets that are indicated within the CIP period. Requests can cover individual or groups of assets, and also include a cost estimate, sponsoring department and project manager information, and any relevant documentation.

There are two main fields for prioritization. The first field categorizes the project within five priority groupings, and the second assigns a priority within that grouping. The first field is shown in Table 12 below with the highest priority item at the top. The second field consists of the relatively self-explanatory entries of High, Medium, and Low priority.

TABLE 12 – CIP PRIORITIZATION CATEGORIES

Priority 1	Description
Safety	Requests that concern safety or security critical assets or initiatives. This applies to the safety of both riders and employees.
Compliance	Requests that are necessary to fulfil regulatory compliance requirements.
Maintenance	Requests for maintenance of existing assets. This encompasses the bulk of state of good repair requests.
Business Case	Requests that can show a quantifiable benefit from their implementation. These requests are generally not necessary from a maintenance standpoint but could save the District money in an identifiable and specific way.
Enhancement	Enhancement of existing assets or addition of new assets that are not required for maintenance purposes. Expansion projects.



All project requests must go through an approval workflow process before they are programmed. This workflow goes through six approval steps: (1) project controls; (2) project manager; (3) project controls; (4) committee reviewer; (5) General Manager; (6) Capital Planning Manager. Requests approved at the General Manager step (5) are then collected for the programming process. Once the programming has been completed the final step with the Capital Planning Manager creates a project from the request. An example of the Project Request Form is shown below in Figure 19

FIGURE 19 - PROJECT REQUEST FORM

Project Request	Cost	Dependency	Summary Cost/Benefits	Attachments
PC Business Unit ENT01		AC Transit		Base Currency US Dollar
Project Request ID 0000000496				
<b>Request Details</b>				
*Description GO - UST Replacement		Status Approved		
*Requester Pochiraju,Ramakrishna		Department 5005 Exec. Dir. Plan. Engineer. & Constr		
*Estimated Start 01/23/2018		*Estimated End 10/29/2018		
*Purpose Compliance		*Category ENVIRON		
Priority 1		Project : 3001		
*Executive Sponsor SECURITY Steven Keller		<input checked="" type="checkbox"/> Approved in Capital Improvement Program		
*Portfolio Manager 042111 Callaway,Joe				
<b>Notes</b>				
Cost \$600,000.00		Notes Comply with ACDEH violation notice. Created project 2167		
Last Update Date/Time 02/21/18 1:16:26PM				
Last Update User ID candrichak				
* Required Field				
<a href="#">Return to Program Management</a>				
<b>ProjectRequest ACT</b>				
Project Request ENT01: <b>Approved</b> <a href="#">View/Hide Comments</a>				
<div> <div> <b>Skipped</b>              William Tonis            ACT Project Request Reviewer            01/29/18 - 10:51 AM         </div> <div> <b>Approved</b>              Joe Callaway            ACT Project Manager            01/29/18 - 4:28 PM         </div> <div> <b>Skipped</b>              William Tonis            ACT Project Request Reviewer            01/29/18 - 4:28 PM         </div> <div> <b>Approved</b>              Steven Keller            ACTPROREQ Committee Approver            02/21/18 - 1:04 PM         </div> <div> <b>Approved</b>              Christopher Stephen Andrichak            ACT Project Rast BOD Approver            02/21/18 - 1:08 PM         </div> </div>				
<b>Comments</b>				

The prioritization and programming is performed by a committee comprised of the department executives, the Capital Projects Manager, and the Capital Planning and Grants Manager. The committee uses the prioritization fields and cost estimates from the project requests along with the capital funding projections to assemble the CIP.

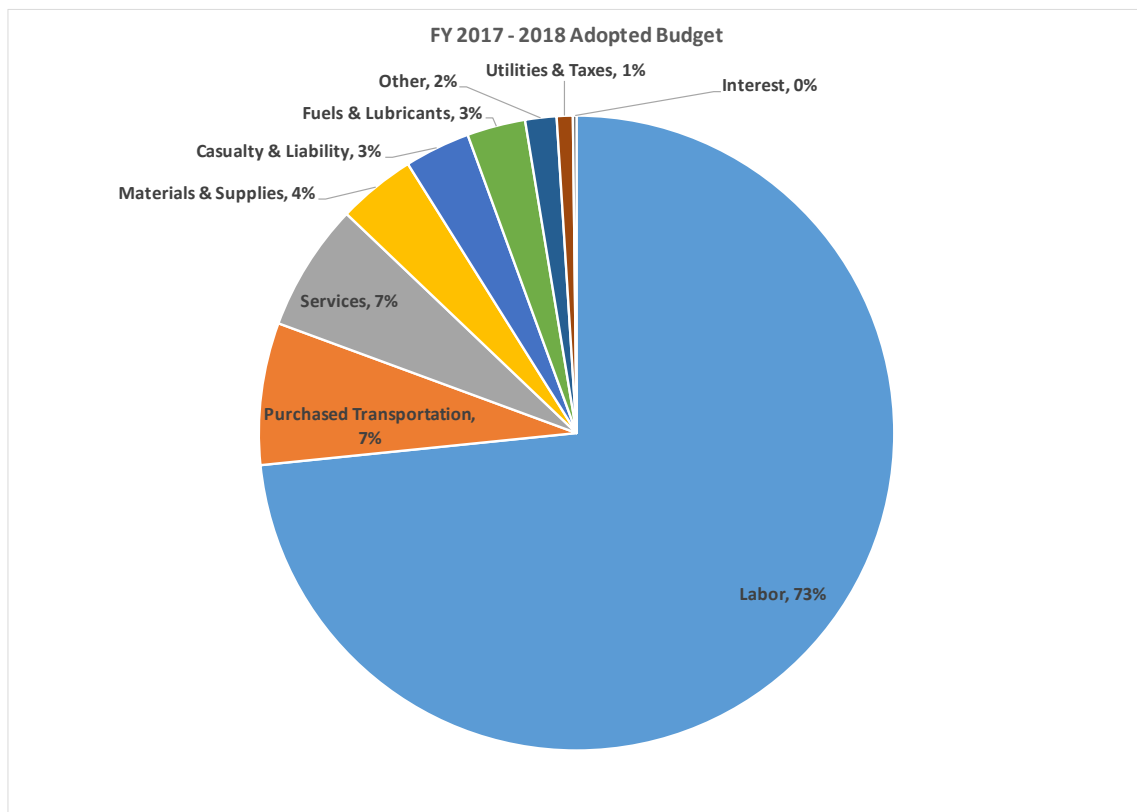


### 7.3 CAPITAL INVESTMENT PLANNING & BUDGET

AC Transit's operating budget funds service delivery and maintenance, including employee wages, spare parts, consumables, and a variety of support services used throughout the organization. This also includes payments to third-party contractors responsible for consulting and maintenance activities.

The operating budget is currently approved on a yearly basis through the Board of Directors. AC Transit's FY 2017-18 operating budget is \$420 million, with labor costs as the largest portion (73%) of the budget. Figure 20 below shows the composition of the FY 2017-18 operating budget.

FIGURE 20 – OPERATING EXPENSE BUDGET





Along with the operating budget the Board also approves a capital budget for the fiscal year. The capital budget for the year includes the projected grant and District Capital spending for the projects included in the CIP.

AC Transit currently has a three-year CIP that was adopted in June 2017. Figure 21 below shows the capital budget spending history and projection updated with the mid-year FY 2017-18 budget update in February 2018.

FIGURE 21 – CAPITAL PROGRAM SPENDING

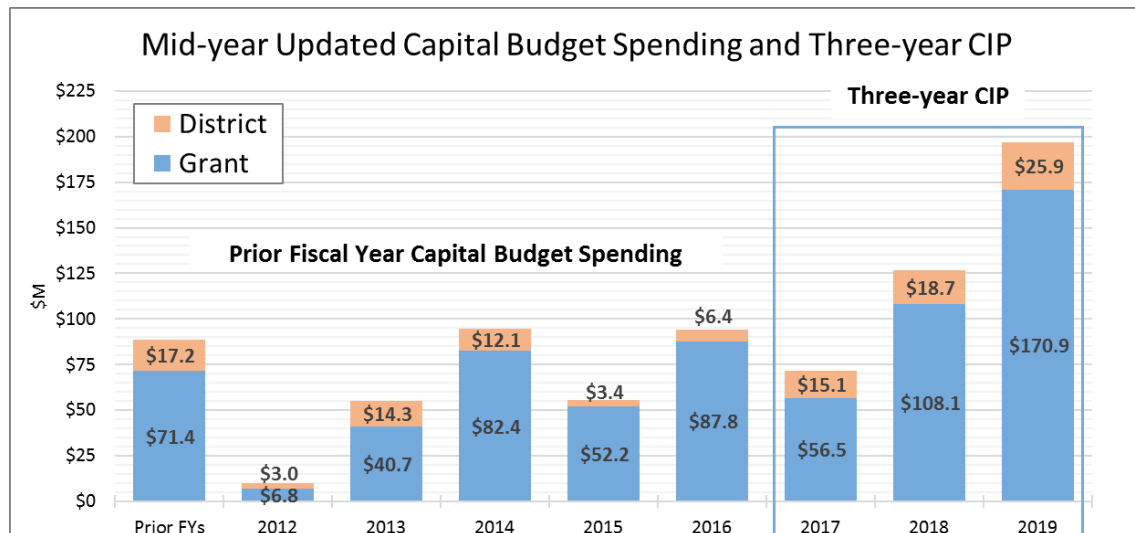
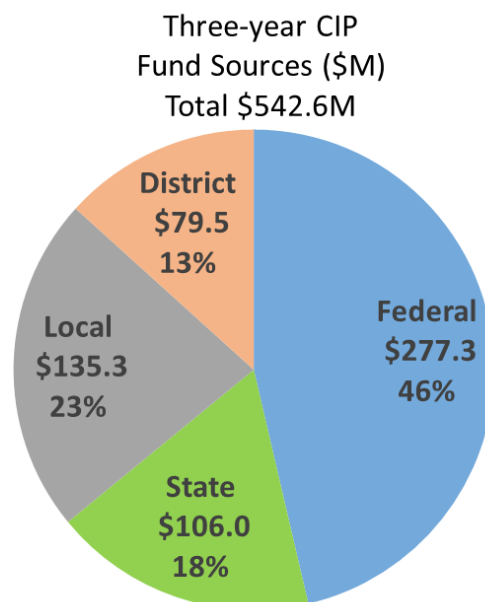


Figure 22 details the fund sources for three-year CIP (also updated for FY 2017-18 mid-year budget).

FIGURE 22 - THREE-YEAR CIP FUND SOURCES



## 8. IMPLEMENTATION STRATEGY & EVALUATION PLAN

### 8.1 IMPLEMENTATION

Key annual activities supporting the TAM Plan and asset lifecycle management are detailed within Board Policies, Fleet and Facilities Maintenance Plans and Standard Operating Procedures. These activities align with the District's business goals and objectives providing "Line-of-Sight" organizational alignment to ensure a consistent collection and analysis of data as a fundamental element of AC Transit's TAM Plan implementation approach.

### 8.2 ABB ASSESSMENT REFERENCE

Asset lifecycle management is an ever-changing environment with advances in technology, changes in regulation, funding availability and asset management best practices. Therefore, the TAM Plan will be considered a "living document" reviewed and revised, as necessary, on an annual basis. The revisions will come from the TAM Advisory Committee and TAM Technical Working group with inputs from various internal and external stakeholders. Initial and ongoing training of District employees on the TAM Plan will become part of the business culture to ensure employees are equipped to execute the deliverables of the TAM Plan and facilitate a continuous TAM improvement process.


ABB Asset Management Consulting performed the Maturity Assessment and Gap Analysis focused primarily on the 10 specific business processes and 6 key enablers defined in FTA Report 0098 – Guidelines for Implementation of a Transit Asset Management Plan. Through collaborative efforts, ABB conducted detailed interviews and reviewed Policies, Standard Operating Procedures and other activities as well as the Fleet and Facilities Maintenance Plans (FMPs). The Assessment Results and proposed initiatives for continuous improvement is provided under separate cover.

The end result is that The District meets the requirements of 49 CFR 625 on Transit Asset Management and has also established a robust asset management framework in support of this TAM Plan that identifies a roadmap of recommendations for continuous improvement.



THIS PAGE INTENTIONALLY BLANK

## APPENDIX A: TRANSIT ASSET MANAGEMENT POLICY NO. 463

	<b>Board Policy No. 463</b> <b>TRANSIT ASSET MANAGEMENT POLICY</b>
<b>ADOPTED:</b> <b>RECENT AMENDMENT:</b> N/A <b>SEE ALSO:</b> 314, 462	<b>SUBJECT CATEGORY:</b> SECTION 400, OPERATIONS <b>SUBSECTION:</b> CHIEF OPERATING OFFICE <b>CONTROL DEPARTMENT:</b> OPERATIONS, CHIEF OPERATING OFFICER

## I. PURPOSE

The District is committed to effectively manage its capital assets and maintain its system in a State of Good Repair (SGR) to support safe, efficient, and reliable transit. This directive outlines the District's overall asset management approach in a manner consistent with current federal regulations (49 U.S. Code § 5326) and sets the direction for establishing and following through with transit asset management strategies and plans that are achievable with available funds. This directive complies with the Federal Transit Administration (FTA) Transit Asset Management (TAM) Final Ruling on July 26, 2016.

The purpose of the TAM Board Policy is to communicate to the Board of Directors, management, staff, and external stakeholders the District's commitment to maintain its system in a State of Good Repair; and foster a culture of continuous improvement in asset management planning and performance.

The difference between this policy and Board Policy 462 is this policy is specific to the management of District Transit Assets, as defined by the FTA, which have a value of \$50,000 or more and are included in the District's Transit Asset Inventory maintained in the Enterprise Asset Management System (EAMS).

## II. PERSONS AFFECTED

All District Board members, staff and members of the public are affected since the TAM Policy provides direction needed to assess, fund and maintain District assets in a State of Good Repair.

## III. DEFINITIONS

**"Transit Asset Management Plan (TAM Plan)"** means the Plan through which the District will document its' asset base, asset conditions, backlog and State of Good Repair, asset management policy, TAM goals and objectives, governance structure for asset management, strategy for capital asset funding and prioritization, and key priorities for asset management.

**"Transit Asset"** as defined by the FTA, means both fixed long-life infrastructure assets (including, for example, structures, tunnels, facilities, and maintenance of way) and equipment (bus, rail, and paratransit rolling Stock).

**“State of Good Repair (SGR)”** means a condition in which assets are fit for the purpose for which they were intended.

**“TAM Final Ruling”** means a set of federal regulations that sets out minimum asset management practices for transit providers to bring all of the nation’s transit assets into a state of good repair.

**“Capital Improvement Plan (CIP)”** means a short-range plan, usually four to ten years, which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for funding the plan. See Board Policy No. 314.

**“Tier I Agency”** as defined by the FTA, means agencies that operate rail, or with 101 vehicles or more across all fixed-route modes, or with 101 vehicles or more in one non-fixed route mode. Tier I agencies must develop their own TAM Plan.

#### IV. POLICY

##### A. Commitment to Maintaining Assets in a State of Good Repair

1. The District is committed to maintaining assets in a State of Good Repair through financial stewardship and reinvestment, transparency, and collaboration with its funding partners; promoting a culture that supports asset management across the organization; and by focusing on high quality data-driven asset condition and performance information to provide with safe, reliable, sustainable service for the communities served by AC Transit.
2. The District’s asset management program supports the timely implementation of projects and programs which maintain District assets in a State of Good Repair.

##### B. District TAM Vision

1. The District’s TAM Vision is an extension of its mission statement. It sets the direction for establishing and continually improving asset management strategies and plans, including setting goals, objectives, and measures to monitor and continually improve performance.

##### C. Lifecycle Management

1. A data-driven set of activities will be used to evaluate the cost, condition, and performance of each class of assets over their entire lifecycle.

##### D. Optimizing Use of District Funds across asset lifecycle

1. The Capital Improvement Plan (CIP) will be aligned with TAM investment priorities:
  - Public and employee safety
  - Optimized useful life and maintain existing assets.

- Replace assets in accordance to TAM targets
- Leverage available funds and optimize District costs
- Improve system-wide reliability
- Environmental sustainability goals

#### **E. TAM Plan Elements**

The FTA regulation defines the District as a Tier I agency and, as such, requires the District to implement a TAM Plan that includes the nine TAM Elements listed below.

1. Inventory of assets – A register of capital assets and information about those assets
2. Condition assessment – A rating of the assets' physical state
3. Decision support tool – Analytic process or tool to assist in capital asset investment prioritization needs
4. Prioritized list of investments – A prioritized list of projects or programs to manage or improve the SGR of capital assets
5. TAM and SGR policy – Executive-level direction regarding expectations for transit asset management
6. Implementation strategy – Operational actions to achieve District TAM goals and policies
7. Key annual activities – Describe the key TAM activity four-year plan
8. Identification of resources – List resources needed to carry out the TAM Plan
9. Evaluation plan – Monitor and update to support continuous TAM improvement

**V. AUTHORITY****A. Board Authority**

The Board of Directors has the authority to approve and amend the District's TAM Policy.

**B. General Manager Authority**

The General Manager or designee will have overall responsibility for overseeing the development of asset management plans and procedures, in cooperation with the executive leadership team, and reporting to the Board on the status of asset management for the District.

In accordance with this policy, implementation of the TAM Policy will be a shared responsibility for all departments within the District regarding expectations and mandatory requirements.

**VI. ATTACHMENTS**

None



THIS PAGE INTENTIONALLY BLANK

## APPENDIX B: ORGANIZATION MISSION AND GOALS

In July 2012, an executive strategy session was conducted to develop AC Transit's organizational goals and development of a performance management model. The session included conducting a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis and produced the current Mission Statement and five overarching organizational goals. The Strategic Plan is the foundation for the development of the Operating and Capital Budgets.

### Mission Statement

Connecting our communities with safe, reliable, sustainable service....we'll get you there.

### AC Transit's Organizational Goals

1. Provide Quality and Reliable Service
2. Increased Ridership
3. Create a Safety Culture
3. Utilize Financial Resources Efficiently and Effectively
4. Attract & Retain a High Quality Workforce
5. Effective Communication, Messaging & Marketing

To achieve these goals, AC Transit developed Key Performance Indicators (KPIs) to monitor performance of established targets, analyze KPI's throughout the year, and create reports that support data-driven decisions.

### Key Performance Indicator Targets

KPI	Target
On Time Performance	72%
Miles Between Chargeable Road Calls	5400
Service Operated, Rollout	99.5%
Accident Rate	4
Maintenance Manpower Unavailability	22%
Operator Unavailability	22.5%
Logon Rate	95%
Ridership, Average Daily Passengers	N/A
Service Efficiency Standards Pay Hours to Platform Hours	N/A
Fare Revenues	N/A
Customer Complaints Complaints Per 100K Boardings	18

### Transit Asset Management Policy

In February 2018, AC Transit's Board of Directors adopted a Transit Asset Management Policy – Board Policy No. 463 (Appendix A) which outlines the District's overall asset management approach in a manner consistent with current federal regulations (49 U.S. Code § 5326) and sets the direction for establishing and following through with transit asset management strategies and plans that are achievable with available funds.

THIS PAGE INTENTIONALLY BLANK

## APPENDIX C: KEY DEFINITIONS

**CBM:** CONDITION BASED MAINTENANCE

**CIP:** CAPITAL IMPROVEMENT PLAN

**CAD/AVL:** COMPUTER AIDED DISPATCH (CAD) AND AUTOMATED VEHICLE LOCATION (AVL)

**EAMS:** ENTERPRISE ASSET MANAGEMENT SYSTEM

**FMP:** FLEET AND FACILITIES MAINTENANCE PLANS

**FTA:** FEDERAL TRANSIT ADMINISTRATION

**NTD:** NATIONAL TRANSIT DATABASE

**PDM:** PREDICTIVE MAINTENANCE

**PM:** PREVENTATIVE MAINTENANCE

**OEM:** ORIGINAL EQUIPMENT MANUFACTURER

**SRTP:** SHORT RANGE TRANSIT PLAN

**SOP:** STANDARD OPERATING PROCEDURE

**State Of Good Repair (SGR):** Defined by 49 U.S.C. Chapter 53 as the “condition in which a [transit asset or] capital asset is able to [safely] operate at a full level of performance.” The State of Good Repair is further defined by an asset’s Useful Life Benchmark (for rolling stock and equipment) or physical condition (for facilities). Assets are considered in a State of Good Repair when they do not meet or exceed their ULB or physical condition threshold. Vehicle and equipment assets, for example, are considered in a State of Good Repair, when rated as a 2.5 or above on AC Transit’s TERM Lite scale, where 2.5 is equivalent to the ULB set for an asset class. Additionally, facilities, are considered in a State of Good Repair when rated as a 3 or above on FTA’s TERM scale. *Also see definition for Useful Life Benchmark.*

**TERM Scale:** The five category rating system used in the FTA’s Transit Economic Requirements Model (TERM) to describe the condition of an asset, where 5 is excellent condition and 1 is poor condition.

**Tier I Transit Provider:** An entity that receives Federal financial assistance under 49 U.S.C. Chapter 53, either directly from FTA or as a sub recipient, that owns, operates, or manages either (1) one hundred and one (101) or more vehicles in revenue service during peak regular service across all fixed route modes or in any one non-fixed route mode, or (2) rail transit.

**Transit Asset Management (TAM):** Defined by 49 U.S.C. Chapter 53 as “the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles, for the purpose of providing safe, cost-effective, and reliable public transportation.”

**Transit Asset Management Plan (TAM Plan):** This document, which describes: the capital asset inventory; condition of inventoried assets; TAM performance measures, targets, and prioritization of

investments aligned with the agency's TAM and SGR policy, strategic goals and objectives; as well as the strategies, activities, and resources required for delivering this Plan (including decision support tools and processes); and other agency-wide approaches to continually improve TAM practices. While this TAM Plan exists as a standalone document, LMPs may be considered an extension of the TAM Plan by reference.

**Useful Life:** Defined by 49 U.S.C. Chapter 53 as "either the expected life cycle of a capital asset or the acceptable period of use in service determined by FTA." It generally defines the minimum eligibility for retirement, replacement, or disposal of an asset.

**Useful Life Benchmark (ULB):** Defined by 49 U.S.C. Chapter 53 as "the expected life cycle or the acceptable period of use in service for a capital asset, as determined by a transit provider, or the default benchmark provided by FTA." The ULB is the realistic expectation for when an asset would be disposed or replaced based on operating environment and procurement timelines. It is not the same as "Useful Life" in FTA grant programs, is reported by age (in years), and usually only pertains to rolling stock or equipment. It is a single number shared for or within specified asset classes, although may vary across different asset classes and providers.

END