



Transit Asset Management Plan

FY 2023 – 2026

September 2022



Prepared by:



THE GOODMAN CORPORATION



Fleet Maintenance Specialists Inc.

CONTENTS

CHAPTER 1: Approval and Concurrence	5
Approval and Concurrence.....	6
CHAPTER 2: Introduction and Executive Summary	7
Executive Summary	8
State of Good Repair (SoGR).....	8
Introduction.....	9
Agency Information	9
History.....	9
Fixed Route Service	10
Brio Bus Rapid Transit.....	10
Paratransit Service.....	11
Streetcar Service.....	11
TAM Purpose.....	12
TAM & SoGR Policy.....	13
Continuous Improvement Evaluation Plan	14
Roles & Responsibilities	15
City of El Paso Strategic Goals.....	16
TAM Goals and Objectives.....	17
Proposed TAM Goals.....	17
Project-Based Goals	17
Summary of TAM Plan Objectives.....	18
Chapter Organization.....	19
CHAPTER 3: Capital Asset Inventory	20
Asset Inventory	21
Asset Category.....	21
Rolling Stock	21
Fixed Route Vehicles	21
Brio Vehicles	24
Paratransit Vehicles	25
Streetcar Vehicles	28
Equipment	28
Non-Revenue Vehicles	28
Maintainable Equipment.....	30

Ticket Vending Machines	31
Facilities.....	34
Shelters	34
Infrastructure.....	35
Streetcar	35
Summary	35
CHAPTER 4: Condition Assessment	36
Condition Assessment.....	37
Rolling Stock Condition Assessment	37
Fixed Route Vehicles	38
Paratransit Vehicles	41
Streetcar Vehicles	42
Preventative Maintenance.....	42
Fixed Route Buses.....	42
Paratransit Vehicles	44
Streetcars.....	44
Equipment Condition Assessment	44
Non-Revenue Vehicles	44
Other Maintainable Equipment	45
Equipment Preventative Maintenance	46
Facility Condition Assessment	46
Overview and Definitions.....	46
Condition Assessment.....	47
Inventory and Condition.....	48
Transit Operations Center.....	48
Sun Metro LIFT Facility.....	49
Arves E. Jones, Sr. Transit Center at Northgate.....	50
Al Jefferson Westside Transfer Center	51
Glory Road Transfer Center	52
Bert Williams Downtown Santa Fe Transit Center.....	53
Maintenance Services Facility	54
Arturo Tury Benavides Cielo Vista Transit Center	55
Robert E. McKee Five Points Transit Center.....	56
Nestor A. Valencia Mission Valley Transit Center	57
Union Plaza Transit Terminal Parking Garage.....	58
Union Depot.....	59

Union Depot Maintenance Facility	60
Preventative Maintenance.....	61
Infrastructure Condition Assessment.....	62
Performance Restriction	62
CHAPTER 5: Decision Support Tool	65
Decision Support Tool	66
Rolling Stock Budget	66
Capital Investment Needs – Narrative	67
FY21 Replacement Plan	68
Analytical Tools	69
TERM-Lite	69
TAPT	71
Maintenance	74
Review of Maintenance Costs.....	74
Maintenance Strategy	75
Overhaul Strategy	75
Disposal Strategy	75
Acquisition & Renewal Strategy.....	75
Future TAM Decision Support Tool	76
Summary	76
CHAPTER 6: Investment Prioritization.....	77
Investment Prioritization.....	78
Asset Performance Measures	78
Current Inventory Review	78
Funding	80
FY 2023 Capital Program	82
Sun Metro TAM Goals (Project-Based).....	84
Short-Term Goals.....	84
Long-Term Goals.....	86
Schedules.....	87
Summary	87
APPENDIX A: Preventative Maintenance Forms.....	88
APPENDIX B: Asset Audit Report – On Site Visit	107





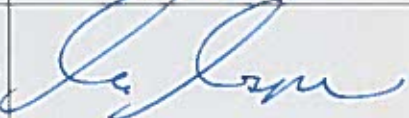


CHAPTER 1: Approval and Concurrence

As part of the Federal Transit Administration (FTA) Transit Asset Management (TAM) Program, the Accountable Executive designated within this Plan must sign off on the 2022 TAM Plan and provides assurance that all the information within is correct. The TAM Plan also has received concurrence from the additional division heads within the maintenance and operations divisions within Sun Metro.

Approval and Concurrence

Table 1 Approval and Concurrence Signatures

Roles	Date	Signature
TAM Accountable Executive Approval		
Ellen Smyth, Chief Transit & Field Operations Officer	9-29-2022	
Division Managers and/or Assistant Directors		
Anthony Dekeyzer, Assistant Director of Operations	9-29-2022	
Danny Meza, Fleet Maintenance Chief	9-30-2022	
Carlos Becerra, Facilities Maintenance Manager	09/30/2022	
Everett Esparza, Chief Streetcar Officer	9/30/22	



CHAPTER 2: Introduction and Executive Summary

All transit agencies are required to develop and implement a TAM plan that serves as a guide for operations and maintains capital assets in its efforts to provide public transportation and received federal financial assistance under 49 United States Code (U.S.C.) Chapter 53 as a recipient or subrecipient. This TAM Plan is intended to assist Sun Metro in maintaining all their assets in a state of good repair (SoGR) in the performance of operating the transit system.

Executive Summary

The purpose of this document is to update the TAM Plan for Sun Metro, El Paso’s regional transit agency. Sun Metro established its first TAM Plan in 2018 and is required to update this plan every four (4) years. The TAM Plan is developed in response to the U.S. Department of Transportation (DOT) Federal Transit Administration (FTA) Title 49 Code of Federal Regulations (CFR) Parts 625¹ and 630² (81 FR 48962 and 48970, effective 2016). These regulations apply to public transit agencies who operate transit service and receives federal financial assistance under 49 U.S.C. Chapter 53 and provide reporting in National Transit Database (NTD).

The TAM Plan will address the SoGR needs through a comprehensive and strategic program that supports better maintenance of capital assets through their lifetime. As stated on the FTA website³, every TAM Plan should:

- “Outline how people, processes, and tools come together to address asset management policy and goals
- Provide accountability and visibility for further understanding of leveraging asset management practices
- Support planning, budgeting, and communications to internal and external stakeholders”

State of Good Repair (SoGR)

According to the American Public Transportation Association (APTA), SoGR is a condition in which assets are fit for the purpose for which they were intended.

This TAM Plan covers Sun Metro’s rolling stock, including articulated buses, transit buses, streetcars, and cutaway buses that are maintained by Sun Metro and its third party contractor, MV Transportation; assets including non-revenue vehicles, in-ground tracks, rail safety equipment, and equipment over \$50,000 in value; and facilities, including maintenance, administrative offices, and transit centers.

Sun Metro’s Chief Transit & Field Operations Officer, Ellen Smyth, is designated as the Accountable Executive defined by 49 CFR Part 625 and is the person who has ultimate responsibility for carrying out the TAM plan, policies, and procedures.

¹ “PART 625 - TRANSIT ASSET MANAGEMENT.” Federal Register :: Request Access, <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-625>.

² PART 630 – NATIONAL TRANSIT DATABASE.” Federal Register :: Request Access, <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-630>

³ “TAM Plans.” Asset Management, Federal Transit Administration, <https://www.transit.dot.gov/TAM/TAMPlans>.

Introduction

Agency Information

History

El Paso’s transit services started in 1880s with horse and mule-drawn trolleys between the city and Juarez, Mexico. Trolleys were eventually replaced with streetcars and then buses. Sun City Area Transit (SCAT) was started in 1977 through the City of El Paso, which eventually became Sun Metro in 1987.

Through the National Transit Database (NTD), El Paso reports a service area of 251 square miles and serves a population of 803,086. Due to coronavirus pandemic, service has been reduced across all services as reported in the NTD. A comparison of pre-pandemic service vs. reduced services are below.

Table 2 Service Consumption Comparisons – 2019 vs. 2020

Service Consumption	2019	2020	% Change
Annual Passenger Miles (PMT)	77,143,168	41,680,941	-45.97%
Annual Unlinked Trips (UPT)	11,513,869	6,070,634	-47.27%
Average Weekday UPT	37,836	19,867	-47.49%
Average Saturday UPT	23,142	14,005	-39.48%
Average Sunday UPT	12,554	7,086	-43.56%
Annual Vehicle Revenue Miles	9,324,225	7,538,539	-19.15%

Overall, the service ridership decreased by over 45% from 2019, but in 2020, service routes only decreased by 19%. Service was further reduced in 2021 to accommodate the lower ridership numbers. This caused peak vehicles for fixed route to drop from over 121 vehicles in 2019 to 86 vehicles in 2022.



Figure 1 Brio BRT Stop

Fixed Route Service

Fixed route service has 113 vehicles with five (5) 60-foot articulated buses, 70 40-foot buses, and 38 35-foot buses. The fixed route system consists of 51 bus routes with service to corridors including Downtown, Westside, South Central, North Central, Northeast, Eastside, Mission Valley, Express/Special Routes, and Project Amistad routes. Headways vary between routes from 15 minutes to 80 minutes. The service area is shown below.

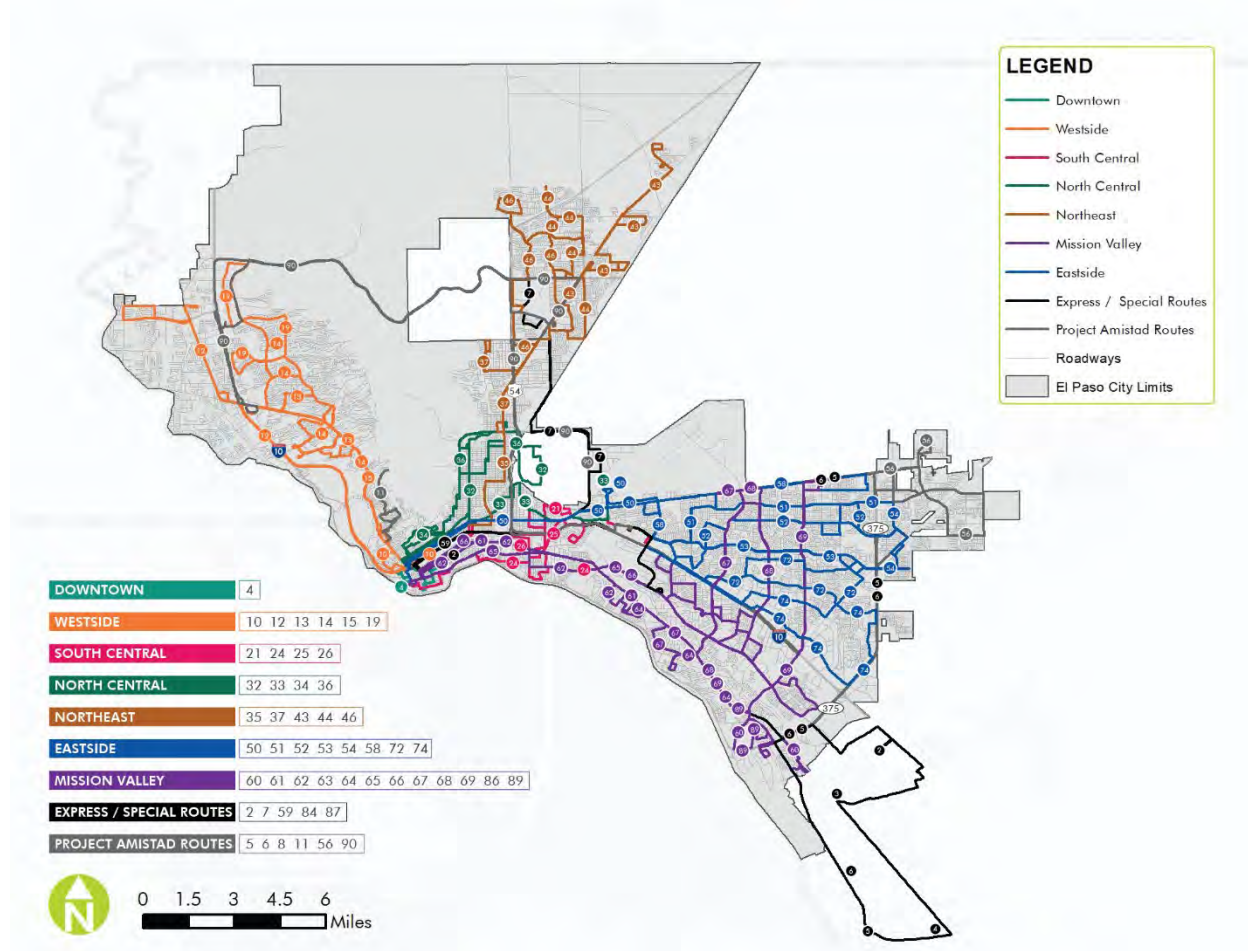


Figure 2 Fixed Route Service Map

Brio Bus Rapid Transit

The fixed route system also has three bus rapid transit (BRT) routes, branded as Brio, currently in operation with the Montana Corridor beginning operation later in 2022. Sun Metro has 48 60-foot articulated buses for the Brio service. Brio operates 15-minute headways during the week and 20-25 minute headways on weekends and holidays. The routes are shown below.

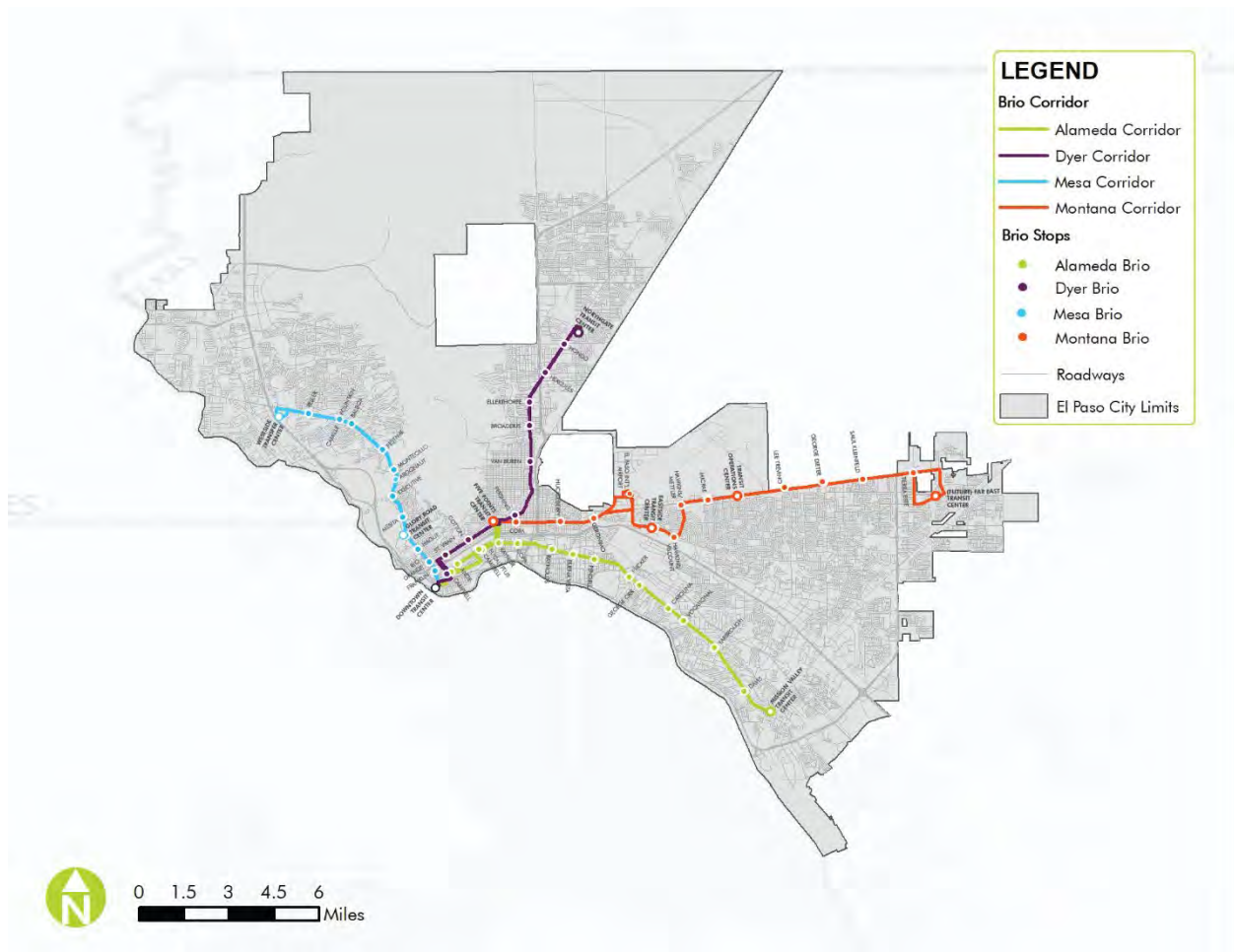


Figure 3 Brio Service Map

Paratransit Service

In addition to the fixed route service, Sun Metro provides LIFT service for eligible paratransit riders through its service provider, MV Transportation. Paratransit services run at the same time as the fixed route service and provides an origin-to-destination service for its eligible riders. MV Transportation operates 68 vehicles with 63 cutaway buses and 5 automobiles in the execution of the paratransit services. Services are limited to the 3/4 mile radius surrounding the fixed routes.

Streetcar Service

Streetcar service is operated on a fixed guideway of rail and Overhead Contact System (OCS). The streetcar operates on 4.8 miles of track with 27 stops. The service is operated by six (6) refurbished 1940s Presidents' Conference Committee (PCC) streetcars that were restored in 2015 and became

operational in 2018. The service is operated from Wednesday to Sunday with no service on Monday or Tuesday.

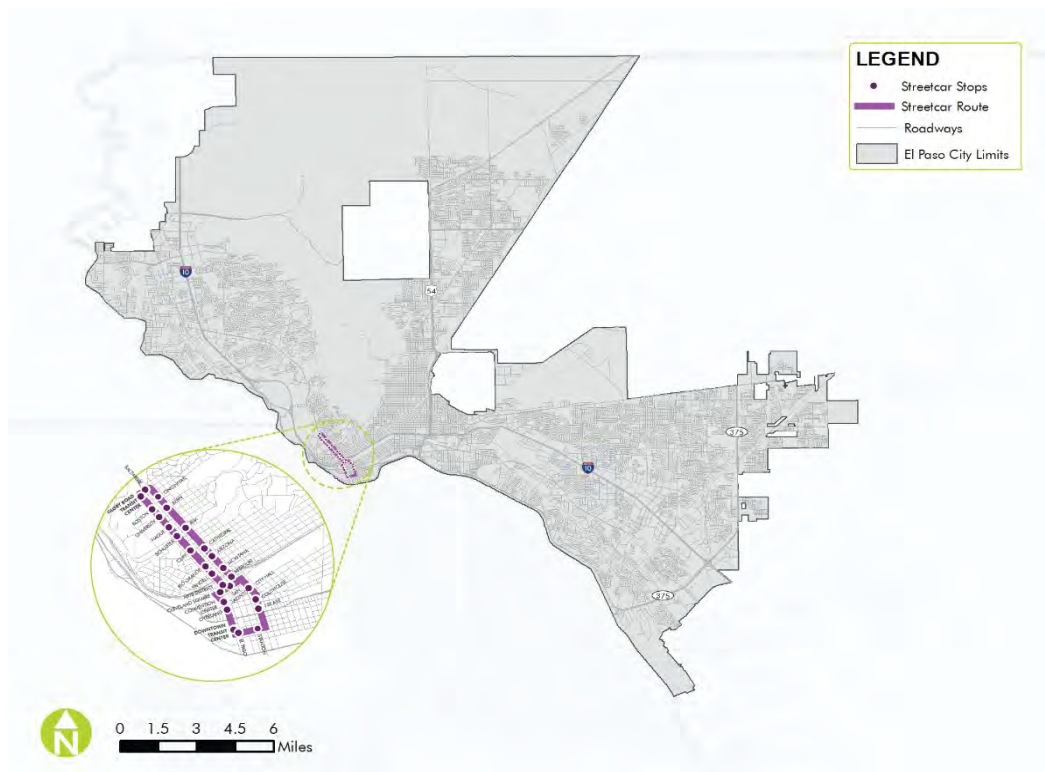


Figure 4 Streetcar Map

TAM Purpose

As stated in 49 CFR Part 625, the TAM system was established to “monitor and manage public transportation capital assets to enhance safety, reduce maintenance costs, increase reliability, and improve performance.” There are two tiers in the TAM system and have different requirements in their TAM plans.

- A Tier I Provider is a transit agency that owns, operates, or manages either:
 - 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
 - Rail transit.
- A Tier II Provider is a transit agency that owns, operates, or manages:
 - 100 or fewer vehicles in revenue service during peak regular service across all non-rail fixed route modes in any one non-fixed route mode,
 - A subrecipient under 5311 Rural Area Formula Program, or
 - Any American Indian tribe.

Sun Metro currently operates less than 100 vehicles in peak fixed route service; however, the streetcars are operated on a rail throughout downtown El Paso. Also, Sun Metro's peak fixed route service prior to the pandemic operated over 101 vehicles. Because of those two factors, Sun Metro is considered a Tier I Provider. As a Tier I Provider, Sun Metro is required to include specific factors into their TAM Plan.

Tier 1 TAM Plan Requirements

- Asset Inventory
- Condition Assessment
- Decision Support Tool
- Prioritized Investments
- TAM and SoGR Policies
- Implementation Strategy
- Key Annual Activities
- Identification of Resources
- Evaluation Plan

TAM & SoGR Policy

Sun Metro's policy for TAM is to improve the overall transit system for El Paso through the systematic improvement of infrastructure and assets used in the implementation of transit. Sun Metro's objective through this TAM Plan and Policy is to maximize all assets to their full potential through effective maintenance and management in all divisions to deliver consistent and reliable transit services. In its maintenance of assets, Sun Metro must balance the risks and costs associated with each asset to keep all assets in a SoGR.

Sun Metro's SoGR goals and objectives constitute a commitment to maintaining assets in a state of good repair, which will assist Sun Metro in providing optimal service for its riders while reducing the monetary costs and safety risks associated with assets that have condition rating below SoGR. Sun Metro will prioritize its resources to address the percentage of vehicles below the SoGR along with its prioritized replacement schedule simultaneously.

This TAM Plan and Policy applies to the entire organization and will adopt these policies and procedures at all levels of staff to ensure providing reliable, safe, clean transit services with the best assets possible. Sun Metro expects all its employees, from mechanics and drivers to executive staff, to adopt the TAM and SoGR policies to ensure the effectiveness of the TAM Plan.

For NTD reporting, Sun Metro is required to update an annual data report that reflects the SoGR performance targets for the following year, condition information, and an annual narrative report that provides a description of any changes in the condition or replacement progress of the transit system from the previous year. Sun Metro is required to provide this information as a beneficiary of Federal financial assistance under 49 U.S.C. chapter 53 must comply with the applicable requirements of 49 U.S.C. 5335, as set forth in the reference documents.

These policies operate under the DOT FTA Title 49 CFR Parts 625 and 630, dated 2016.

Continuous Improvement Evaluation Plan

As per FTA TAM guidance⁴, this TAM Plan will implement a TAM evaluation process with its objective to have continuous improvements to its policies, procedures, and services. Continuous improvements can be through incremental improvements over time or breakthrough improvements all at one time. Sun Metro will have both types of improvements as the TAM Plan continues to evolve and change. If Sun Metro were to receive a competitive grant, a large vehicle replacement could be considered a breakthrough improvement, while the gradual reduction of older vehicles to lower the age of the fleet could be considered an incremental improvement. Continuous improvements typically run through PDCA cycle – Plan, Do, Check, and Act.

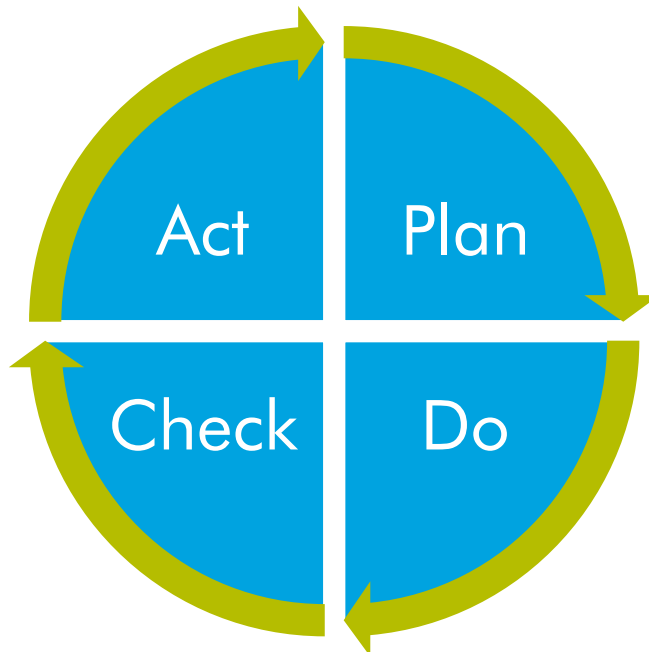


Figure 5 PDCA Cycle

To achieve continuous improvements, Sun Metro has the following TAM Goals:

- Utilizing consistent policies and procedures across all divisions
- Maintaining a single SoGR database that includes all assets that all data can be organized
- Improving communication within Sun Metro
- Reducing overall maintenance costs through SoGR policy

In order to ensure continuous improvements, Sun Metro can self-monitor its policies and procedures through audits, NTD reporting, triennial reviews, and other review processes.

⁴ Template User Manual. Federal Transit Administration, Feb. 2022, https://www.transit.dot.gov/sites/fta.dot.gov/files/2022-02/TAMPLATE-User-Manual_0.pdf.

Roles & Responsibilities

The TAM Plan incorporated feedback and input across Sun Metro's transit divisions including the following:

- Operations and Fleet Maintenance divisions including:
 - Fixed-route bus services including Brio bus rapid transit operated by Sun Metro out of the Transit Operations Center
 - Paratransit services operated by MV Transportation out of the Sun Metro LIFT Building
 - Streetcar services operated by the Sun Metro/City of El Paso out of the Maintenance Service Facility
- Facilities Maintenance
- Executive Staff

Each of these divisions work to ensure that the requirements of the FTA TAM program are fulfilled, and assets are kept in a SoGR. Furthermore, managers and assistant directors of each division will be considered asset managers and should maintain their assets in the percentage of SoGR laid out in the TAM Plan.

- **Accountable Executive** – Chief Transit & Field Operations Officer, the Individual who has the ultimate responsibility for carrying out the safety management system of Sun Metro; carrying out the TAM Plan, Policies, and Procedures' and control or direction over the human and capital resources needed to develop and maintain the TAM Plan in accordance with 49 US Code (U.S.C) 5326.
- **Division Managers** – Individuals responsible for managing and maintaining human and capital assets within their designated division and are responsible to reporting failures and needed replacements to the Accountable Executive.
 - Operations - Assistant Director of Operations
 - Fleet – Fleet Maintenance Chief
 - Facilities – Maintenance Manager
 - Streetcar – Transit Superintendent of Operations
 - Assets – Transit Facilities Maintenance Superintendent
- **All other Sun Metro Employees** – Stakeholders in the operation and maintenance throughout the lifecycle of capital assets.

City of El Paso Strategic Goals

Sun Metro's TAM Plan supports the City of El Paso's overall strategic goals and will continue to throughout the next four years. The 2022 City of El Paso Strategic Plan⁵ works to set priorities, focus resources, and strengthen operations of the City, including in transit. The City has laid out eight (8) goals which were originally in the City's "20 in 2020 Strategic Plan" and now updated in the City's "30 by 30 Strategic Plan", including three (3) that incorporate transit and are a part of Sun Metro goals:

- **Goal 1 - Cultivate an Environment Conducive to Strong, Economic Development**
 - Activate targeted redevelopment including high priority corridor development plans
 - Expand downtown revitalization through streetcar corridor vibrancy

- **Goal 7 - Enhance and Sustain El Paso's Infrastructure Network**
 - Implement improvements and activate programming that supports and promotes multimodal transportation
 - Create and implement a comprehensive facility and fleet investment plan

- **Goal 8 - Nurture and Promote a Healthy, Sustainable Community**
 - Evaluate and integrate key policies, practices and space planning improving community health outcomes and risk reduction
 - Develop a bond package focused on addressing identified community priorities and needs aligned with targeted areas of investment

For Goal 1, transit and multimodal transit options are an important part of developing strong, economic centers. In an article entitled, "Transportation, Jobs, and Economic Growth" for Access Magazine⁶, Martin Wachs, Professor Emeritus of Civil and Environmental Engineering and City and Regional Planning at the University of California, Berkeley, and former Director of the Institute of Transportation Studies and of the University of California Transportation Center, demonstrates how infrastructure investments foster both short-term (construction jobs) and long-term (on-going access to jobs) economic growth. With the adoption of the Infrastructure Investment and Jobs Act in 2021, the City's focus to improving infrastructure and corridor redevelopment fall in line with the government's priorities and will be a focus of competitive grant opportunities.

"Sound transportation investments lower the costs of moving people and goods. This increases economic productivity, which roughly can be measured as the output of goods and services per dollar of private and public investment."

- Martin Wachs

⁵ <https://www.elpasotexas.gov/assets/Documents/CoEP/Government/Strategic-Planning/2022-Strategic-Plan-Booklet.pdf>

⁶ Wachs, Martin. "Transportation, Jobs, and Economic Growth." Access Magazine, 2011. https://www.accessmagazine.org/wp-content/uploads/sites/7/2016/01/access38_transportation_growth.pdf

For Goal 7, the City's goal is inextricably linked to Sun Metro and its goals moving forward. Multimodal options allow for greater movement throughout the City. Through Sun Metro's completion of the streetcar system in 2018 and its continuing development of bus rapid transit through the Brio system, Sun Metro provides a variety of options throughout the high priority corridors such as downtown, the University of Texas – El Paso, and along Montana Avenue. Maintaining transit infrastructure through a SoGR and asset management is a focus of Sun Metro's moving forward. Through the development of this TAM Plan, Sun Metro will create a SoGR database that will be the basis for a facility and fleet investment plan through replacement and disposal.

For Goal 8, Sun Metro can contribute to development of a healthy, sustainable community. By providing a reliable transit service, choice riders (those who do not depend on transit), are more likely to ride and remove cars from the roads and reduce emissions. The transit system uses compressed natural gas (CNG) instead of diesel or gasoline, which also reduces emissions. Sun Metro has been awarded federal grant funding for the addition of electric vehicles (EVs) in its transit system moving forward. When Sun Metro adds EVs to its fleet, there would need to be consideration of the assets involved with the use of these vehicles as well as the asset management to keep the fleet in an SoGR. There are considerable opportunities for grant opportunities through the DOT and other government programs to employ EVs into transit.

TAM Goals and Objectives

Proposed TAM Goals

Sun Metro has developed TAM goals and objectives as part of developing its TAM plan. The following asset management goals were established to promote TAM activities into daily operations and achieving the best transit service.

- Maintain the inventory in an overall SoGR performance target for optimal service
- Improve Sun Metro's asset management efficiency through communication and connectiveness
- Reduce safety-related incidents through maintaining assets in a SoGR
- Create a schedule that allow for prudent asset investment to meet performance targets

Project-Based Goals

Sun Metro has project-based TAM Goals that are further reviewed in Chapter 6, Investment Prioritization. Below is a brief summary of the project goals for the next four (4) years.

Sun Metro TAM Project Goal Summation

- Short Term Goals
 - Current Capital Improvement Completion
 - Vehicle Disposition
 - Replacement Plan Update
 - Electric Vehicle Implementation
 - Staffing Review

- Long Term Goals
 - Fleet and Support Equipment Update based on Useful Life Benchmarks (ULB)
 - Multi-year Bus Procurement Development
 - Mid-life Engine Replacement Program
 - Disposal of Facilities that are Past their ULB or Surplus

Summary of TAM Plan Objectives

As adopted in the original 2018 TAM Plan, Sun Metro maintains a set of TAM objectives that are aligned with the vision and mission of the agency. These objectives guide Sun Metro as it continues to evaluate its TAM policies and procedures.

TAM Objectives

- Attain the best asset conditions achievable, given available resources
- Maintain assets in a SoGR
- Deliver an efficient and effective asset management program that preserves, expands, and modernizes the agency's transportation infrastructure
- Achieve and maintain compliance with federal regulations
- Enhance communications and ensure transparency about capital programming prioritization and investment decisions
- Create a set of implementation activities to maintain the TAM Plan and integrate asset management functions into day-to-day operations

Chapter Organization

The Sun Metro TAM Plan is organized into the following chapters to address FTA requirements.

Table 3 Chapter Organization

Chapter	Subject
Chapter 1	Approval and Concurrence
Chapter 2	Introduction and Executive Summary
Chapter 3	Capital Asset Inventory
Chapter 4	Condition Assessment
Chapter 5	Decision Support Tool
Chapter 6	Investment Prioritization
Chapter 7	Summary



CHAPTER 3: Capital Asset Inventory

Per Title 49 CFR Part 625, a capital asset means a unit of rolling stock, a facility, a unit of equipment, or an element of infrastructure used for providing public transportation. In order to maintain all assets in a SoGR, a detailed inventory is required of all assets owned or used in delivery of transit services.

Asset Inventory

An accurate inventory of all assets is the building block of any TAM Plan. For the TAM Plan, the inventory should include all capital assets that Sun Metro owns and/or has direct capital responsibility in process of operating transit services. The inventory and condition assessment must be at a level of detail sufficient to model asset condition and support investment prioritization. The following is a breakdown of Sun Metro’s assets. Each section is broken down by asset category and then by transit service.

Asset Categories include:

- Rolling Stock
- Equipment
- Facilities
- Infrastructure

Asset Category

A grouping of asset classes, including a grouping of equipment, a grouping of rolling stock, a grouping of infrastructure, and a grouping of facilities.

Rolling Stock

Fixed Route Vehicles

The fixed route vehicles consist of transit buses and articulated buses used for all Sun Metro fixed routes. All buses are directly operated by Sun Metro. Currently, there are 113 vehicles that run fixed route service.

Table 4 Fixed Route Vehicle Inventory

Unit ID	Year	Make	Service	Original Cost
0401	2004	35ft New Flyer	Fixed Route	\$329,485.00
0402	2004	35ft New Flyer	Fixed Route	\$324,559.03
0403	2004	35ft New Flyer	Fixed Route	\$327,585.00
404	2004	35ft New Flyer	Fixed Route	\$324,559.03
405	2004	35ft New Flyer	Fixed Route	\$324,559.03
406	2004	35ft New Flyer	Fixed Route	\$324,559.03
0407	2004	35ft New Flyer	Fixed Route	\$324,559.03
0408	2004	35ft New Flyer	Fixed Route	\$324,559.03
0410	2004	35ft New Flyer	Fixed Route	\$324,559.03
0412	2004	35ft New Flyer	Fixed Route	\$324,559.03
414	2004	35ft New Flyer	Fixed Route	\$325,059.03
416	2004	35ft New Flyer	Fixed Route	\$324,559.03
0419	2004	35ft New Flyer	Fixed Route	\$322,959.03
420	2004	35ft New Flyer	Fixed Route	\$322,959.03

Unit ID	Year	Make	Service	Original Cost
421	2004	35ft New Flyer	Fixed Route	\$322,959.03
423	2004	35ft New Flyer	Fixed Route	\$320,859.03
0424	2004	35ft New Flyer	Fixed Route	\$320,859.03
0680	2007	40ft NABI	Fixed Route	\$397,172.00
0681	2007	40ft NABI	Fixed Route	\$397,172.00
0682	2007	40ft NABI	Fixed Route	\$397,172.00
0683	2007	40ft NABI	Fixed Route	\$397,010.02
684	2007	40ft NABI	Fixed Route	\$397,172.00
0685	2007	40ft NABI	Fixed Route	\$397,172.00
0686	2007	40ft NABI	Fixed Route	\$397,172.00
0688	2007	40ft NABI	Fixed Route	\$397,172.00
0689	2007	40ft NABI	Fixed Route	\$397,172.00
0692	2007	40ft NABI	Fixed Route	\$397,172.00
0693	2007	40ft NABI	Fixed Route	\$397,172.00
0694	2007	40ft NABI	Fixed Route	\$397,172.00
0695	2007	40ft NABI	Fixed Route	\$397,172.00
0697	2007	40ft NABI	Fixed Route	\$397,172.00
0698	2007	40ft NABI	Fixed Route	\$397,172.00
0901	2008	40ft NABI	Fixed Route	\$404,412.00
0902	2008	40ft NABI	Fixed Route	\$404,412.00
0903	2008	40ft NABI	Fixed Route	\$404,412.00
0904	2008	40ft NABI	Fixed Route	\$404,412.00
0905	2008	40ft NABI	Fixed Route	\$404,412.00
0906	2008	40ft NABI	Fixed Route	\$404,412.00
0907	2008	40ft NABI	Fixed Route	\$404,412.00
0908	2008	40ft NABI	Fixed Route	\$397,430.00
0909	2008	40ft NABI	Fixed Route	\$397,430.00
0910	2008	40ft NABI	Fixed Route	\$397,430.00
0911	2008	40ft NABI	Fixed Route	\$397,430.00
0912	2008	40ft NABI	Fixed Route	\$397,430.00
0913	2008	40ft NABI	Fixed Route	\$397,430.00
0914	2008	40ft NABI	Fixed Route	\$397,430.00
0915	2008	40ft NABI	Fixed Route	\$397,430.00
0916	2008	40ft NABI	Fixed Route	\$397,430.00
0917	2008	40ft NABI	Fixed Route	\$397,430.00
0918	2008	40ft NABI	Fixed Route	\$397,430.00
0919	2008	40ft NABI	Fixed Route	\$397,430.00
0922	2008	40ft NABI	Fixed Route	\$397,430.00
0923	2008	40ft NABI	Fixed Route	\$397,430.00
924	2008	40ft NABI	Fixed Route	\$397,430.00
0925	2008	40ft NABI	Fixed Route	\$397,430.00
0926	2008	40ft NABI	Fixed Route	\$397,430.00

Unit ID	Year	Make	Service	Original Cost
0927	2008	40ft NABI	Fixed Route	\$397,430.00
0928	2008	40ft NABI	Fixed Route	\$397,430.00
0929	2008	40ft NABI	Fixed Route	\$397,430.00
0931	2008	40ft NABI	Fixed Route	\$397,430.00
0932	2008	40ft NABI	Fixed Route	\$397,430.00
0934	2008	40ft NABI	Fixed Route	\$397,430.00
0935	2008	40ft NABI	Fixed Route	\$397,430.00
0936	2008	40ft NABI	Fixed Route	\$397,430.00
0939	2008	40ft NABI	Fixed Route	\$397,430.00
1001	2010	35ft NABI	Fixed Route	\$453,605.36
1003	2010	35ft NABI	Fixed Route	\$453,564.90
1004	2010	35ft NABI	Fixed Route	\$461,405.80
1005	2010	35ft NABI	Fixed Route	\$461,422.46
1006	2010	35ft NABI	Fixed Route	\$461,409.37
1007	2010	35ft NABI	Fixed Route	\$461,434.36
1008	2010	35ft NABI	Fixed Route	\$461,424.84
14401	2014	40ft New Flyer	Fixed Route	\$285,128.83
14402	2014	40ft New Flyer	Fixed Route	\$285,128.82
14403	2014	40ft New Flyer	Fixed Route	\$285,128.83
14404	2014	40ft New Flyer	Fixed Route	\$285,128.82
14405	2014	40ft New Flyer	Fixed Route	\$285,128.82
14406	2014	40ft New Flyer	Fixed Route	\$285,128.83
14407	2014	40ft New Flyer	Fixed Route	\$285,128.83
14408	2014	40ft New Flyer	Fixed Route	\$285,128.83
14409	2014	40ft New Flyer	Fixed Route	\$285,128.83
14410	2014	40ft New Flyer	Fixed Route	\$285,128.82
14411	2014	40ft New Flyer	Fixed Route	\$285,128.83
14413	2014	40ft New Flyer	Fixed Route	\$285,128.83
14414	2014	40ft New Flyer	Fixed Route	\$285,128.83
14414	2014	40ft New Flyer	Fixed Route	\$285,128.83
14415	2014	40ft New Flyer	Fixed Route	\$285,128.82
14416	2014	40ft New Flyer	Fixed Route	\$285,128.83
14417	2014	40ft New Flyer	Fixed Route	\$285,128.83
14418	2014	40ft New Flyer	Fixed Route	\$285,128.83
14419	2014	40ft New Flyer	Fixed Route	\$285,128.83
14420	2014	40ft New Flyer	Fixed Route	\$285,128.82
14421	2014	40ft New Flyer	Fixed Route	\$285,128.82
14422	2014	40ft New Flyer	Fixed Route	\$285,128.83
14697	2014	60ft New Flyer	Fixed Route	\$376,388.08
14698	2014	60ft New Flyer	Fixed Route	\$376,388.09
14699	2014	60ft New Flyer	Fixed Route	\$376,388.08
14208	2014	ARBOC	Fixed Route	\$128,074.92

Unit ID	Year	Make	Service	Original Cost
14209	2014	ARBOC	Fixed Route	\$128,074.92
14210	2014	ARBOC	Fixed Route	\$128,074.91
16201	2016	ARBOC	Fixed Route	\$265,674.76
16203	2016	ARBOC	Fixed Route	\$268,438.75
16202	2016	ARBOC	Fixed Route	\$265,681.25
17301	2017	35ft New Flyer	Fixed Route	\$561,381.69
17302	2017	35ft New Flyer	Fixed Route	\$561,381.69
18698	2018	60ft New Flyer	Fixed Route	\$843,486.84
18699	2018	60ft New Flyer	Fixed Route	\$843,531.31
21301	2022	35ft New Flyer	Fixed Route	\$590,287.96
21302	2022	35ft New Flyer	Fixed Route	\$590,287.96
21303	2022	35ft New Flyer	Fixed Route	\$590,287.96
21304	2022	35ft New Flyer	Fixed Route	\$590,287.96
21305	2022	35ft New Flyer	Fixed Route	\$590,287.96
21306	2022	35ft New Flyer	Fixed Route	\$590,287.96

Brio Vehicles

Brio service uses all 60-foot articulated buses for the rapid transit service. All buses are directly operated by Sun Metro. Currently, there are 48 vehicles that run Brio BRT service.

Table 5 Brio Vehicle Inventory

Unit ID	Year	Make	Service	Original Cost
14601	2014	60ft New Flyer	BRIO	\$376,388.08
14602	2014	60ft New Flyer	BRIO	\$376,388.08
14603	2014	60ft New Flyer	BRIO	\$376,388.08
14604	2014	60ft New Flyer	BRIO	\$376,388.08
14605	2014	60ft New Flyer	BRIO	\$376,388.08
14606	2014	60ft New Flyer	BRIO	\$376,388.08
14607	2014	60ft New Flyer	BRIO	\$376,388.08
14608	2014	60ft New Flyer	BRIO	\$376,388.08
14609	2014	60ft New Flyer	BRIO	\$376,388.08
14610	2014	60ft New Flyer	BRIO	\$376,388.08
18601	2018	60ft New Flyer	BRIO	\$843,486.84
18602	2018	60ft New Flyer	BRIO	\$108,300.07
18603	2018	60ft New Flyer	BRIO	\$843,486.84
18604	2018	60ft New Flyer	BRIO	\$843,486.84
18605	2018	60ft New Flyer	BRIO	\$843,486.84
18606	2018	60ft New Flyer	BRIO	\$843,486.84

Unit ID	Year	Make	Service	Original Cost
18607	2018	60ft New Flyer	BRIO	\$843,486.84
18608	2018	60ft New Flyer	BRIO	\$843,486.84
18609	2018	60ft New Flyer	BRIO	\$843,486.84
18610	2018	60ft New Flyer	BRIO	\$843,486.84
18611	2018	60ft New Flyer	BRIO	\$843,486.84
18612	2018	60ft New Flyer	BRIO	\$843,486.84
18613	2018	60ft New Flyer	BRIO	\$843,486.84
18614	2018	60ft New Flyer	BRIO	\$843,486.84
18615	2018	60ft New Flyer	BRIO	\$843,486.84
18616	2018	60ft New Flyer	BRIO	\$843,486.84
18617	2018	60ft New Flyer	BRIO	\$843,486.84
18618	2018	60ft New Flyer	BRIO	\$843,486.84
18619	2018	60ft New Flyer	BRIO	\$843,486.84
18620	2018	60ft New Flyer	BRIO	\$843,486.84
18621	2018	60ft New Flyer	BRIO	\$843,486.84
18622	2018	60ft New Flyer	BRIO	\$843,531.31
20601	2020	60ft New Flyer	BRIO	\$843,486.84
20602	2020	60ft New Flyer	BRIO	\$851,978.05
20603	2020	60ft New Flyer	BRIO	\$851,978.05
20604	2020	60ft New Flyer	BRIO	\$851,978.05
20605	2020	60ft New Flyer	BRIO	\$851,978.05
20606	2020	60ft New Flyer	BRIO	\$851,978.05
20607	2020	60ft New Flyer	BRIO	\$851,978.05
20608	2020	60ft New Flyer	BRIO	\$851,978.05
20609	2020	60ft New Flyer	BRIO	\$851,978.05
20610	2020	60ft New Flyer	BRIO	\$851,978.05
20611	2020	60ft New Flyer	BRIO	\$851,978.05
20612	2020	60ft New Flyer	BRIO	\$851,978.05
20613	2020	60ft New Flyer	BRIO	\$851,978.05
20614	2020	60ft New Flyer	BRIO	\$851,978.05
21601	2022	60ft New Flyer	BRIO	\$670,819.07
21602	2022	60ft New Flyer	BRIO	\$670,819.06

Paratransit Vehicles

Paratransit vehicles consist of cutaway vehicles equipped with hydraulic mobility device lifts in the performance of delivering Americans with Disabilities Act (ADA) complementary paratransit services. All buses are owned by Sun Metro and operated by MV Transportation. There are 68 paratransit vehicles in the inventory.

Table 6 Paratransit Vehicle Inventory

Unit ID	Year	Make	Original Cost
2802	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2803	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2804	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2805	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2806	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2808	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2809	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2810	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2812	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2813	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2814	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2816	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2817	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2818	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2819	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2820	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2821	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2822	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2824	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2825	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2826	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2827	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2828	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2830	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2831	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2832	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2834	2012	Aerotech 240-16 Passenger w/2	\$113,688.00
2901	2012	GLAVAL -Universal	\$109,739.00
2903	2012	GLAVAL -Universal	\$109,739.00
2905	2014	GLAVAL -Universal	\$109,739.00
2906	2014	GLAVAL -Universal	\$109,739.00
2907	2014	GLAVAL -Universal	\$109,739.00
2908	2014	GLAVAL -Universal	\$109,739.00
2909	2014	GLAVAL -Universal	\$109,739.00
2910	2014	GLAVAL -Universal	\$109,739.00
2912	2014	GLAVAL -Universal	\$109,739.00
2913	2014	GLAVAL -Universal	\$109,739.00
2914	2014	GLAVAL -Universal	\$109,739.00
2916	2014	GLAVAL -Universal	\$109,739.00
2917	2014	GLAVAL -Universal	\$109,739.00
2918	2014	GLAVAL -Universal	\$109,739.00
2919	2014	GLAVAL -Universal	\$109,739.00
2921	2014	GLAVAL -Universal	\$109,739.00
2922	2014	GLAVAL -Universal	\$109,739.00
2923	2014	GLAVAL -Universal	\$109,739.00
2924	2014	GLAVAL -Universal	\$109,739.00

Unit ID	Year	Make	Original Cost
14201	2014	Arboc	\$128,074.92
14202	2014	Arboc	\$128,074.91
14203	2014	Arboc	\$128,074.92
14204	2014	Arboc	\$128,074.92
14205	2014	Arboc	\$128,074.91
14206	2014	Arboc	\$128,074.92
14207	2014	Arboc	\$128,074.91
15091	2015	Ford Taurus	\$21,692.00
16049	2016	Ford Taurus	\$21,803.00
16084	2016	Ford Taurus	\$21,403.00
16086	2016	Ford Taurus	\$21,403.00
16087	2016	Ford Taurus	\$21,403.00
2201	2022	Glaval	\$107,622.05
2202	2022	Glaval	\$107,622.05
2203	2022	Glaval	\$107,622.05
2204	2022	Glaval	\$107,622.05
2205	2022	Glaval	\$107,622.05
2206	2022	Glaval	\$107,622.05
2207	2022	Glaval	\$107,622.05
2208	2022	Glaval	\$107,622.05
2209	2022	Glaval	\$107,622.05
2210	2022	Glaval	\$107,622.05

Sun Metro is currently in the process of disposing of several vehicles from the paratransit service. The following table details the vehicles that are still a part of the inventory in September 2022 but will be disposed of in the next few months.

Table 7 Vehicles to be Disposed

Unit ID	Year	Make	Age	Condition	Original Cost
10	2010	FORD ECONOLINE 350 (SUPPORT)	12	1.0	\$26,660.00
11	2010	FORD ECONOLINE 350 (SUPPORT)	12	1.0	\$26,660.00
2131	2012	MV-1 (Fred Wilson)	10	1.0	\$68,715.00
2132	2012	MV-1 (Fred Wilson)	10	1.0	\$68,715.00
2133	2012	MV-1 (Fred Wilson)	10	1.0	\$68,715.00
2801	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2807	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2811	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2815	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2829	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2833	2012	Aerotech 240-16 Passenger w/2	10	1.7	\$113,688.00
2902	2012	GLAVAL -Universal	10	1.9	\$109,739.00
2915	2014	GLAVAL -Universal	8	2.0	\$109,739.00
2920	2014	GLAVAL -Universal	8	2.0	\$109,739.00
2925	2014	GLAVAL -Universal	8	2.0	\$109,739.00

Streetcar Vehicles

Sun Metro is responsible for the operation and maintenance of the El Paso Streetcar system, which includes six (6) refurbished PCC streetcars.

Table 8 Streetcar Inventory

Unit ID	Year	Make	Rehab Year	Rehab Cost
16001 / 1506	1937	PCC STREETCAR	2015	\$3,749,615.00
16002 / 1512	1937	PCC STREETCAR	2015	\$3,749,615.00
16003 / 1504	1937	PCC STREETCAR	2015	\$3,749,615.00
16004 / 1514	1937	PCC STREETCAR	2015	\$3,749,615.00
16005 / 1515	1937	PCC STREETCAR	2015	\$3,749,615.00
16006 / 1511	1937	PCC STREETCAR	2015	\$3,749,615.00

Equipment

Non-Revenue Vehicles

Sun Metro has a variety of support vehicles in the inventory. Ranging from street sweepers to a holiday-based rubber tire trolley, the 69 vehicles listed below are all maintained by Sun Metro staff at the Transit Operations Center.

Table 9 Non-Revenue Vehicle Inventory

Unit ID	Year	Make	Model	Original Cost
98	1995	Taylor Dunn Electruck	Electric Utility Truck	\$13,300.00
1115	1995	Yale	Forklift	\$16,409.00
109	1997	Chance Trolley	AH-28	\$298,396.00
9181	2000	Elgin	Street Sweeper	\$49,907.76
147	2001	Ford Crown Vic	4-door	\$24,599.00
148	2001	Ford Crown Vic	4-door	\$24,599.00
149	2001	Ford Crown Vic	4-door	\$24,599.00
1131	2001	Ford E31	Van	\$27,644.10
1132	2001	Ford E31	Van	\$27,644.10
1134	2001	Ford E31	Van	\$27,644.10
1135	2001	Ford E31	Van	\$27,644.10
1136	2001	Ford E31	Van	\$27,644.10
1138	2001	Ford E350	Van	\$40,550.00
1139	2001	Ford E350	Van	\$40,494.75
554	2002	Ford F150	Truck	\$21,750.00
556	2002	Ford F150	Truck	\$21,750.00
1141	2004	Ford	Van	\$22,626.47
1142	2004	Ford	Van	\$22,626.47

Unit ID	Year	Make	Model	Original Cost
1143	2004	Ford	Van	\$22,626.47
0041	2004	Hyster	Forklift	\$9,765.00
0042	2004	Hyster	Forklift	\$15,986.00
557	2008	Dodge Ram	Truck	\$26,957.00
558	2008	Dodge Ram	Truck	\$29,297.41
891	2008	Ford	Paratransit Van	\$57,299.00
894	2008	Ford	Paratransit Van	\$57,299.00
156	2009	Mobile Compressor	Compressor	\$10,960.00
9	2010	Ford E350	Van	\$25,710.00
12	2010	Ford E350	Van	\$25,710.00
13	2010	Ford E350	Van	\$25,710.00
14	2010	Ford E350	Van	\$25,710.00
15	2010	Ford E350	Van	\$25,710.00
16	2010	Ford E350	Van	\$25,710.00
17	2010	Ford E350	Van	\$25,710.00
18	2010	Ford E350	Van	\$25,710.00
19	2010	Ford E350	Van	\$25,710.00
20	2010	Ford E350	Van	\$25,710.00
559	2010	Dodge Ram	Truck	\$34,213.95
1066	2010	Challenger CH230	Bus	\$50,879.00
1067	2010	Challenger CH230	Bus	\$50,879.00
1069	2010	Challenger CH230	Bus	\$50,879.00
2134	2012	MV-1	Paratransit Vehicle	\$68,715.00
2135	2012	MV-1	Paratransit Vehicle	\$68,715.00
2136	2012	MV-1	Paratransit Vehicle	\$68,715.00
2137	2012	MV-1	Paratransit Vehicle	\$68,715.00
2139	2012	MV-1	Paratransit Vehicle	\$68,715.00
1126	2012	Tennant	Street Sweeper	\$49,907.76
1125	2012	Tennant	Street Sweeper	\$141,786.31
43	2014	Clark ECX25	Forklift	\$34,668.00
15080	2015	Chevrolet	Truck	\$19,584.29
15081	2015	Chevrolet	Truck	\$19,584.29
15082	2015	Chevrolet	Truck	\$19,584.29
16015	2016	Dodge Ram	Truck	\$24,145.00
80	2016	Cimline	Taring Trailer	\$58,092.50
PL1701	2017	Ford Transit	Van	\$108,300.07
TS1701	2017	Ford Transit	Van	\$108,300.07
TS1702	2017	Ford Transit	Van	\$108,300.07
TS1703	2017	Ford Transit	Van	\$108,300.07
TS1704	2017	Ford Transit	Van	\$108,300.07
TS1705	2017	Ford Transit	Van	\$108,300.07
TS1706	2017	Ford Transit	Van	\$108,300.07
TS1707	2017	Ford Transit	Van	\$108,300.07
TS1708	2017	Ford Transit	Van	\$108,300.07
TS1709	2017	Ford Transit	Van	\$108,300.07
TS1710	2017	Ford Transit	Van	\$108,300.07
TS1711	2017	Ford Transit	Van	\$108,300.07

Unit ID	Year	Make	Model	Original Cost
44	2017	Genie	Scissor Lift	\$32,511.24
FM-1801	2018	Freightliner	Truck M2106	\$121,490.00
FM-1901	2019	Freightliner	Truck M2106	\$126,390.15
M2001	2020	Ford F350	Truck	\$54,641.00

For non-revenue vehicles, Sun Metro is the process of disposing of two automobiles, listed below. Both automobiles are well past their ULB and have a condition rating lower than 3.0.

Table 10 Non-Revenue Vehicles to be Disposed

Unit ID	Year	Make	Age	Condition	Original Cost
160	2000	Honda Civic	22	2.0	\$20,960.00
161	2000	Honda Civic	22	2.0	\$20,960.00

Maintainable Equipment

While most of the maintenance bay equipment was constructed with the building, Sun Metro has purchased additional equipment that has exceeded the \$50,000 cost threshold. Currently, a new bus wash facility is being constructed at the LIFT facility and the equipment associated with the project will be included in the SoGR database once completed.

Table 11 Equipment Inventory

Unit ID	Equipment Description	Year	Original Cost
CAP0160419	Fuel Dispensing Equipment	2015	\$54,296.00
CAP0159158	Mobile Storage System	2013	\$74,246.00
CAP0159163	Parts Washer w/ retractable table	2013	\$82,415.00
CAP0159084	Lubrication Equip (Star Brake Lathe)	2012	\$99,750.00
CAP0160433	Scrubber Rider	1994	\$141,786.31
CAP0159165	Paint Booth & Equipment	2014	\$482,944.77
CAP0155293	108,000 Column Lift- 24 Volt DC	2011	\$56,833.50
CAP0160453	2016 Crimline Cracksealer	2016	\$58,092.50
CAP0159373	MSF Equipment	2013	\$86,000.00
CAP0160446	Rotary Lift	2010	\$104,029.57
CAP0160455	MSF Equipment	2013	\$500,000.00
CAP0160452	Base Bid Equipment Fueling Station	2015	\$2,618,790.10
CAP0160457	MSF Equipment- 4 Traction Power Stations and train wayside communication system	2013	\$6,128,029.62

Ticket Vending Machines

Sun Metro has 100 ticket vending machines (TVM) across its service area. Sun Metro is responsible for maintaining the machines and are notified of a malfunction through either the facilities maintenance division or through the cleaning services. Each machine had an average original cost of \$57,777.

Table 12 TVM Inventory

Unit ID	Equipment Description	Location
0148617	TVM- Downtown	DTC
0147909	TVM- Westside	WTC
0152516	TVM- Glory Road	GRTC
0151786	TVM- Mission Valley	MVTC
157211	TVM-1432	Five Points
158107	TVM-1434	Eastside
158169	D-26350-4411B G/A TVM	Montecillo Inbound
158150	D-26350-4411B G/A TVM	Rio Grande Outbound
158164	D-26350-4411B G/A TVM	Executive Inbound
158159	D-26350-4411B G/A TVM	Damaged, no longer usable
158155	D-26350-4411B G/A TVM	Medical Plaza Inbound
158143	D-26350-4411B G/A TVM	Rio Grande Inbound (Installed No Power)
158160	D-26350-4411B G/A TVM	Mesita Outbound
158162	D-26350-4411B G/A TVM	Executive Outbound
156979	D-26350-4411B G/A TVM	TOC (Tester, damaged)
156984	D-26350-4411B G/A TVM	Camille Outbound
158157	D-26350-4411B G/A TVM	Glory Road Inbound
158144	D-26350-4411B G/A TVM	Franklin Inbound
158152	D-26350-4411B G/A TVM	Medical Plaza Outbound
158148	D-26350-4411B G/A TVM	Balboa Inbound
156977	D-26350-4411B G/A TVM	Balboa Outbound
158146	D-26350-4411B G/A TVM	Franklin Outbound
156981	D-26350-4411B G/A TVM	Camille Inbound
158172	D-26350-4411B G/A TVM	Festival Inbound
158166	D-26350-4411B G/A TVM	Montecillo Outbound
156990	D-26350-4411B G/A TVM	Resler Inbound
158170	D-26350-4411B G/A TVM	Festival Outbound
156985	D-26350-4411B G/A TVM	Resler Outbound
CAP0159218	D263650-4411C G/A TVM	San Antonio IB/OB
CAP0159199	D263650-4411C G/A TVM	Ange OB (Alameda Brio)
CAP0159210	D263650-4411C G/A TVM	Laurel OP
CAP0159203	D263650-4411C G/A TVM	Raynor IB
CAP0159220	D263650-4411C G/A TVM	Copia IB
CAP0159194	D263650-4411C G/A TVM	Raynolds IB
CAP0159202	D263650-4411C G/A TVM	Buena Vista IB
CAP0159239	D263650-4411C G/A TVM	Clark IB
CAP0159232	D263650-4411C G/A TVM	Lakeside IB
CAP0159238	D263650-4411C G/A TVM	George Orr IB
CAP0159221	D263650-4411C G/A TVM	Carolina IB
CAP0159240	D263650-4411C G/A TVM	Riverside IB

Unit ID	Equipment Description	Location
CAP0159205	D263650-4411C G/A TVM	San Vicente IB
CAP0159200	D263650-4411C G/A TVM	Davis IB
CAP0159241	D263650-4411C G/A TVM	Davis OB
CAP0159201	D263650-4411C G/A TVM	San Vicente OB
CAP0159204	D263650-4411C G/A TVM	Riverside OB
CAP0159226	D263650-4411C G/A TVM	Carolina OB
CAP0159195	D263650-4411C G/A TVM	George Orr OB
CAP0159227	D263650-4411C G/A TVM	Lakeside OB
CAP0159233	D263650-4411C G/A TVM	Clark OB
CAP0159198	D263650-4411C G/A TVM	Buena Vista OB
CAP0159211	D263650-4411C G/A TVM	Raynolds OB
CAP0159196	D263650-4411C G/A TVM	Copia OB
CAP0159216	D263650-4411C G/A TVM	Raynor OB
CAP0159219	D263650-4411C G/A TVM	Myrtle/ Eucalyptus IB
CAP0159208	D263650-4411C G/A TVM	TOC (SPARE)
CAP0159230	D263650-4411C G/A TVM	Cotton IB
CAP0159214	D263650-4411C G/A TVM	Copia IB
CAP0159212	D263650-4411C G/A TVM	Broaddus IB
CAP0159213	D263650-4411C G/A TVM	Ellerthorpe IB
CAP0159236	D263650-4411C G/A TVM	Hercules IB
CAP0159228	D263650-4411C G/A TVM	Hondo Pass IB
CAP0159197	D263650-4411C G/A TVM	Hondo Pass OB
CAP0159237	D263650-4411C G/A TVM	Hercules OB
CAP0159222	D263650-4411C G/A TVM	Broaddus OB
CAP0159215	D263650-4411C G/A TVM	Monroe OB
CAP0159231	D263650-4411C G/A TVM	Cotton OB
CAP0159229	D263650-4411C G/A TVM	Ange OB (Dyer Brio)
CAP0159234	D263650-4411C G/A TVM	Kansas IB
CAP0159217	D263650-4411C G/A TVM	Copia OB
CAP0159206	D263650-4411C G/A TVM	Van Buren IB
CAP0159223	D263650-4411C G/A TVM	Ange IB
CAP0159207	D263650-4411C G/A TVM	Cambell OB
CAP0159235	D263650-4411C G/A TVM	Ellerthorpe OB
156991	SPX G/A TVM D26350-4411B	Mesita Inbound (At TOC temporarily)
156992	SPX G/A TVM D26350-4411B	Northgate Transfer Center
CAP0159209	D263650-4411C G/A TVM	DTC Outside 1
CAP0159224	D263650-4411C G/A TVM	DTC Outside 2
CAP0159225	D263650-4411C G/A TVM	MVTC
158168	On-street, 1 Line, Gen3, 20 Chan, TVM	Montecillo Inbound
158151	On-street, 1 Line, Gen3, 20 Chan, TVM	Rio Grande Outbound
158165	On-street, 1 Line, Gen3, 20 Chan, TVM	Executive Inbound
158158	On-street, 1 Line, Gen3, 20 Chan, TVM	Sun Bowl Inbound
158154	On-street, 1 Line, Gen3, 20 Chan, TVM	Medical Plaza Inbound
158143	On-street, 1 Line, Gen3, 20 Chan, TVM	Downtown Terminal
158161	On-street, 1 Line, Gen3, 20 Chan, TVM	Mesita Outbound
158163	On-street, 1 Line, Gen3, 20 Chan, TVM	Executive Outbound
156980	On-street, 1 Line, Gen3, 20 Chan, TVM	Balboa Inbound

Unit ID	Equipment Description	Location
156983	On-street, 1 Line, Gen3, 20 Chan, TVM	Camille Outbound
158156	On-street, 1 Line, Gen3, 20 Chan, TVM	Glory Road Inbound
158145	On-street, 1 Line, Gen3, 20 Chan, TVM	Franklin Inbound
158153	On-street, 1 Line, Gen3, 20 Chan, TVM	Medical Plaza Outbound
158149	On-street, 1 Line, Gen3, 20 Chan, TVM	Rio Grande Inbound
158174	On-street, 1 Line, Gen3, 20 Chan, TVM	Balboa Outbound
158147	On-street, 1 Line, Gen3, 20 Chan, TVM	Franklin Outbound
156982	On-street, 1 Line, Gen3, 20 Chan, TVM	Camille Inbound
158173	On-street, 1 Line, Gen3, 20 Chan, TVM	Festival Inbound
156989	On-street, 1 Line, Gen3, 20 Chan, TVM	Resler Inbound
158171	On-street, 1 Line, Gen3, 20 Chan, TVM	Festival Outbound
156986	On-street, 1 Line, Gen3, 20 Chan, TVM	Resler Outbound
158167	On-street, 1 Line, Gen3, 20 Chan, TVM	Montecillo Outbound



Figure 6 Brio BRT Stop

Facilities

The City of El Paso has 14 facilities in their inventory within the city limits. There are three (3) maintenance facilities – Transit Operations Center for fixed route service, Sun Metro LIFT for paratransit service, and Maintenance Services Facility for streetcar service. There are nine (9) transit transfer centers, and there are two (2) properties that are no longer actively used by Sun Metro. Those two (2) properties, Union Depot and the attached Maintenance Facility, are being leased to other entities.

Table 13 Facility Inventory

Name	Address	Type of Facility	Year Built
Transit Operations Center	10151 Montana Ave., El Paso, TX 79925	Admin/Ops/Maint	2013
Sun Metro LIFT	5081 Fred Wilson Ave, El Paso, TX 79906	Ops/Maint	2001
Arves E. Jones, Sr. Transit Center at Northgate	9348 Dyer St, El Paso, TX 79924	Parking Garage/Transit Center/Retail	2016
Al Jefferson Westside Transfer Center	7535 Remcon Cir., El Paso, TX 79912	Transit Center	2010
Glory Road Transfer Center	100 Glory Rd., El Paso, TX 79902	Parking Garage/Transit Center/Retail	2009
Bert Williams Downtown Santa Fe Transit Center	601 S Santa Fe St, El Paso, TX 79901	Transit Center	2008
Maintenance Services Facility	601a S Santa Fe St, El Paso, TX 79901	Ops/Maint	2013
Arturo Tury Benavides Cielo Vista Transit Center	1165 Sunmount Dr, El Paso, TX 79925	Transit Center	1996
Robert E. McKee Five Points Transit Center	2830 Montana Ave., El Paso, TX 79903	Transit Center	2013
Nestor A. Valencia Mission Valley Transit Center	9065 Alameda Ave, El Paso, TX 79907	Transit Center/Visitor Center	2009
Union Plaza Transit Terminal Parking Garage	400 W San Antonio Ave, El Paso, TX 79901	Parking Garage/Transit Center/Retail	1998
Upper East Side Transit Center	12781 Edgemere Blvd., El Paso, TX. 79938	Transit Center	2022
Union Depot	700 W San Francisco Ave, El Paso, TX 79901	Admin	1905
Union Depot Maintenance Facility	700 W San Francisco Ave, El Paso, TX 79901	Maint	1980

Shelters

For the fixed route, there are bus stops throughout the City. There are a total of 2,819 bus stops along the fixed routes and 90 stops along the Brio routes. There are 557 bus stop shelters along the fixed routes. There are 90 Brio shelters at each stop on the route.

Infrastructure

Streetcar

For the streetcar service, there are several items of infrastructure that are maintained by either the Streetcar or Facilities Maintenance divisions. There are 4.8 miles of track, 27 stops, and other infrastructure to power the streetcars.

There are 262 electric poles associated with the streetcar line. Overhead connection is necessary to power the streetcar and the electric poles are a part of infrastructure. A traction substation, traction current converter plant, rectifier station or traction power substation (TPSS) is an electrical substation that converts electric power from the form provided by the electrical power industry for public utility service to an appropriate voltage, current type, and frequency to supply railways, trams (streetcars) or trolleybuses with traction current. El Paso Streetcar has five (5) substations and are located at:

- TPSS A1 – Glory Road and Oregon
- TPSS A2 – Crosby and Stanton
- TPSS A3 – First and Campbell
- TPSS A4 – 601 Santa Fe Downtown Transit Center (DTC)
- TPSS S1 – 601 Santa Fe / A

Summary

Summary of Inventory

- 161 articulated and transit buses for fixed route revenue service
- 68 cutaway buses and automobiles for LIFT paratransit revenue service
- 6 PCC Streetcars
- 69 Non-Revenue Vehicles
- 15 Maintainable Equipment over \$50,000
- 100 TVMs
- 14 Facilities
- 4.8 Miles of in-street track for streetcars
- 5 TPSS stations and 262 electric poles for streetcars
- 557 shelters for fixed route, 90 shelters for Brio, and 27 shelters for streetcar



CHAPTER 4: Condition Assessment

Per the 49 CFR Part 625, a condition assessment is a rating of the assets' physical state to be completed for assets an agency has direct capital responsibility for and should be at a level of detail sufficient to monitor and predict performance of inventoried assets.

Condition Assessment

As required by the FTA, Sun Metro must maintain a condition assessment of those inventoried assets for which the provider has direct capital responsibility with information in a level of detail sufficient to monitor and predict the performance of the assets and to inform the investment prioritization.

Sun Metro strives to maintain all assets in a SoGR to provide the best service possible. To ascertain the SoGR of all assets, Sun Metro has used the FTA Transit Economic Requirement Model (TERM) conditional rating across all asset categories to better understand the replacement needs. The TERM Condition Assessment Scale is defined below.

Table 14 FTA TERM Condition Assessment Scale

Rating	Condition	Description
5	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4	Good	Good condition, but no longer new, may be slightly defective or deteriorated, but is overall functional
3	Adequate	Moderately deteriorated or defective; but has not exceeded useful life
2	Marginal	Defective or deteriorated in need of replacement; exceeded useful life
1	Poor	Critically damaged or in need of immediate repair; well past useful life

Rolling Stock Condition Assessment

Sun Metro reviewed the rolling stock inventory against several factors to determine their condition rating. Each vehicle type was reviewed against the typical ULB as listed in the table below. Each vehicle type was also reviewed for average mileage versus the minimum useful life accumulation of miles (500,000 miles for transit and articulated buses, 350,000 miles for cutaway buses). The fleet maintenance division also provided vehicle type ratings based on their history with the vehicles and preventative maintenance of the vehicles.

Table 15 Rolling Stock Useful Life Benchmarks

Component	Typical Useful Life
Articulated Bus	14
Transit Bus	14
Cutaway Bus	10
Automobile / Van	8
Streetcars	31

Vehicles that have already been identified for disposal have not been included in the Condition assessment.

Fixed Route Vehicles

Below is the breakdown of the vehicle types used for the fixed route service. Sun Metro staff maintains their own fleet for fixed route, so an average maintenance cost is also detailed below.

For the inventory, 57.5% of the fixed route fleet are past their ULB and have a condition rating below a 3.

Table 16 Condition Assessment - Fixed Route

Count	Year	Make	Mileage (Avg)	Original Cost (Avg)	Total Cost	Age	ULB	Maintenance Cost (Avg)	Condition (Avg)
17	2004	35ft New Flyer	674,170	\$324,338.56	\$5,513,755.45	18	14	\$645,675.82	1.8
15	2008	40ft NABI	669,800	\$397,161.20	\$5,957,418.02	15	14	\$479,489.87	2.8
33	2008	40ft NABI	647,198	\$398,911.03	\$13,164,064.00	14	14	\$423,319.64	2.9
7	2010	35ft NABI	478,694	\$459,181.01	\$3,214,267.09	12	14	\$322,775.43	3.7
22	2014	40ft New Flyer	373,485	\$285,128.83	\$6,272,834.19	8	14	\$362,677.36	3.8
3	2014	60ft New Flyer	345,359	\$376,388.08	\$1,129,164.25	8	14	\$438,152.33	3.9
3	2014	ARBOC	293,938	\$128,074.92	\$384,224.75	8	14	\$293,938.00	2.5
3	2016	ARBOC	167,588	\$266,598.25	\$799,794.76	6	14	\$167,588.00	2.4
2	2017	35ft New Flyer	152,304	\$561,381.69	\$1,122,763.38	5	14	\$107,340.50	4.5
2	2018	60ft New Flyer	184,206	\$843,509.08	\$1,687,018.15	4	14	\$102,481.00	4.7
6	2022	35ft New Flyer	N/A	\$590,287.96	\$3,541,727.76	0	14	N/A	5.0
113			398,674	\$420,996.42	\$42,787,031.80	8.9	14	\$334,343.80	3.5

For the Brio vehicles, the entire fleet are below the ULB and are in good condition. Mileage and maintenance costs are also lowered than the fixed route fleet.

Table 17 Condition Assessment - Brio

Count	Year	Make	Mileage (Avg)	Original Cost (Avg)	Total Cost	Age	ULB	Maintenance Cost (Avg)	Condition (Avg)
10	2014	60ft New Flyer	274,924	\$376,388.08	\$3,763,880.80	8	14	\$304,793.10	3.9
22	2018	60ft New Flyer	88,896	\$812,857.76	\$17,821,568.18	4	14	\$27,111.27	4.7
14	2020	60ft New Flyer	67,792	\$851,371.54	\$11,919,201.49	2	14	\$12,358.71	4.7
2	2022	60ft New Flyer	1,433	\$670,819.07	\$1,341,638.13	0	14	\$2,121.15	5.0
48			117,852	\$725,964.35	\$34,846,288.60	4.1	14	\$79,617.57	4.6

The minimum standard requirement set by the FTA for condition of revenue service vehicles is age compared to the ULB; however, the fleet maintenance division has been able to maintain vehicles past their ULB to keep transit services running. Due to that, Sun Metro has considered ULB, mileage, and feedback from the fleet maintenance division as the minimum standard for condition of revenue service vehicles.

When looking at the average original costs and the average maintenance costs for both fixed route and Brio vehicles, there are a significant number of fixed route vehicles that have spent more on maintenance than the original cost of the vehicles with 93 out of 113 vehicles. No Brio vehicles have an average maintenance cost to reach their average original cost as of 2022. Figures 7 and 8 show this comparison for fixed route and Brio vehicles respectively.

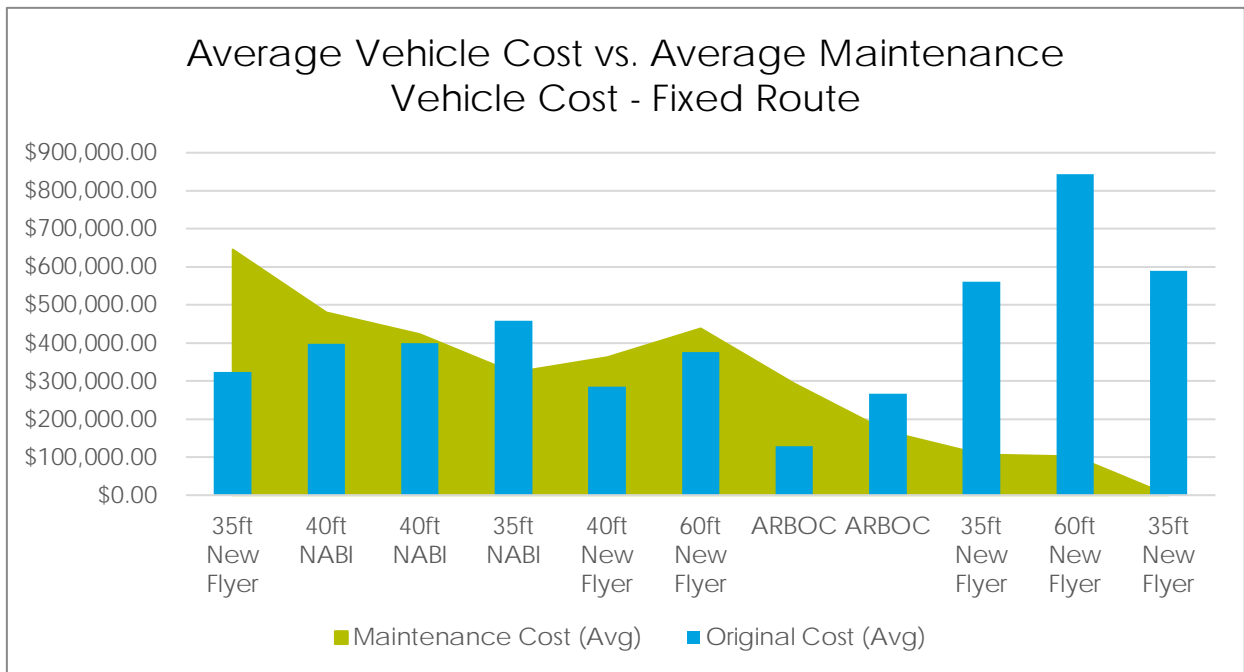


Figure 7 Average Vehicle Cost vs. Average Maintenance Cost – Fixed Route

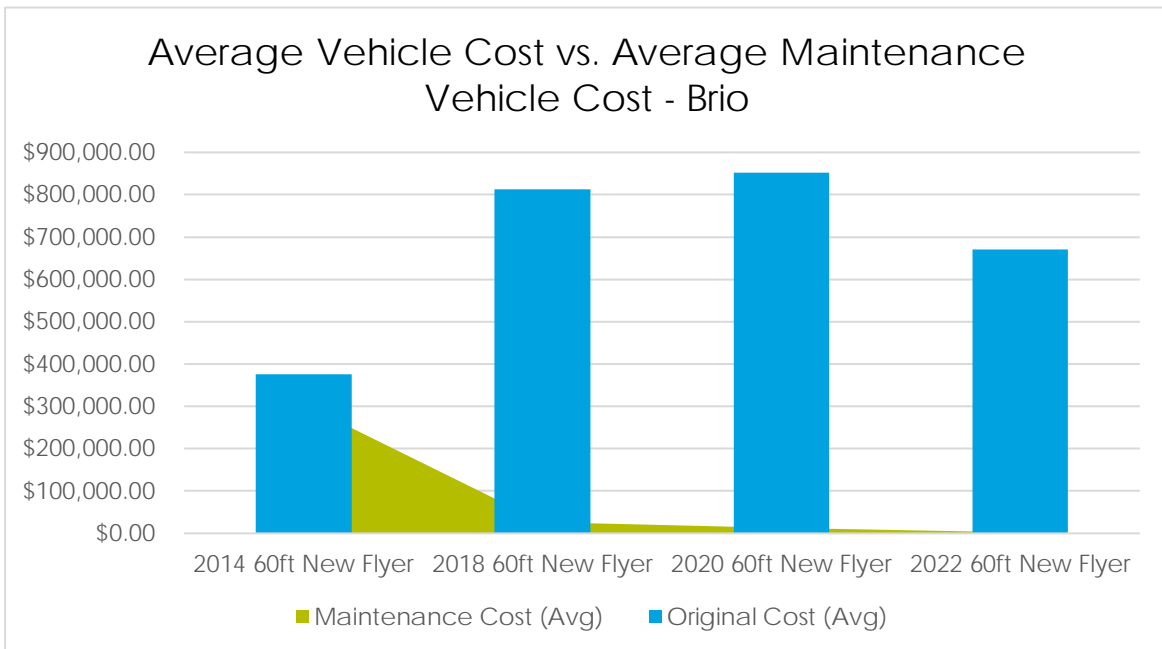


Figure 8 Average Vehicle Cost vs. Average Maintenance Cost – Brio

Figure 9 demonstrates the condition by vehicle type for both fixed route and Brio vehicles. Age and mileage have had a significant impact on condition ratings across the fleet.

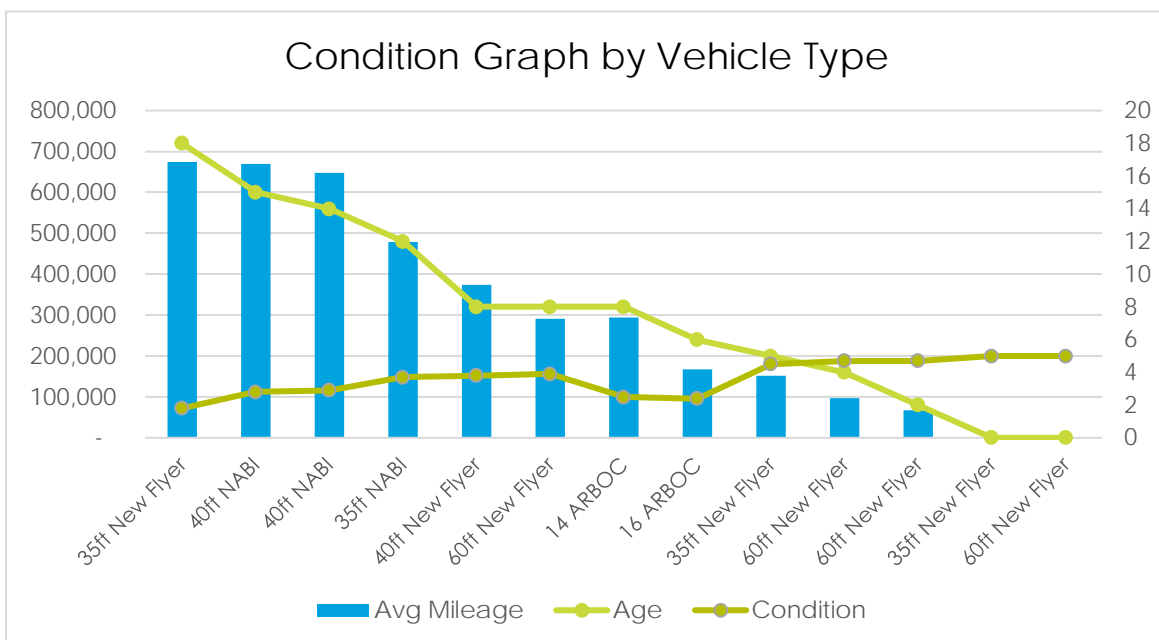


Figure 9 Condition Rating by Vehicle Type – Fixed Route and Brio

Paratransit Vehicles

Paratransit vehicles are owned by Sun Metro, but are maintained by their service contractor, MV Transportation. MV Transportation has considered the cost of maintenance in their contract, so detail maintenance numbers are not available. Sun Metro performs oversight of their contract to ensure that the vehicles are properly maintained.

Table 18 Condition Assessment - Paratransit

Count	Year	Make	Mileage (Avg)	Original Cost (Avg)	Total Cost	Age	ULB	Condition
27	2012	Aerotech 240	398,830	\$113,688	\$3,069,576	10	10	1.7
2	2012	GLAVAL Universal	335,201	\$109,739	\$219,478	10	10	1.9
17	2014	GLAVAL Universal	368,444	\$109,739	\$2,194,780	8	10	2.0
7	2014	ARBOC	246,884	\$128,075	\$896,524	8	10	2.2
1	2015	Ford Taurus	24,160	\$21,692	\$21,692	7	8	3.0
4	2016	Ford Taurus	25,795	\$21,503	\$86,012	6	8	4.0
10	2022	GLAVAL	N/A	\$107,622	\$1,076,221	0	10	5.0
68			287,616	\$106,398	\$7,564,283	7.0	9.4	2.47

Similar to the fixed route vehicles, the age and mileage have significantly impacted the condition of the paratransit vehicles, as shown in Figure 10.

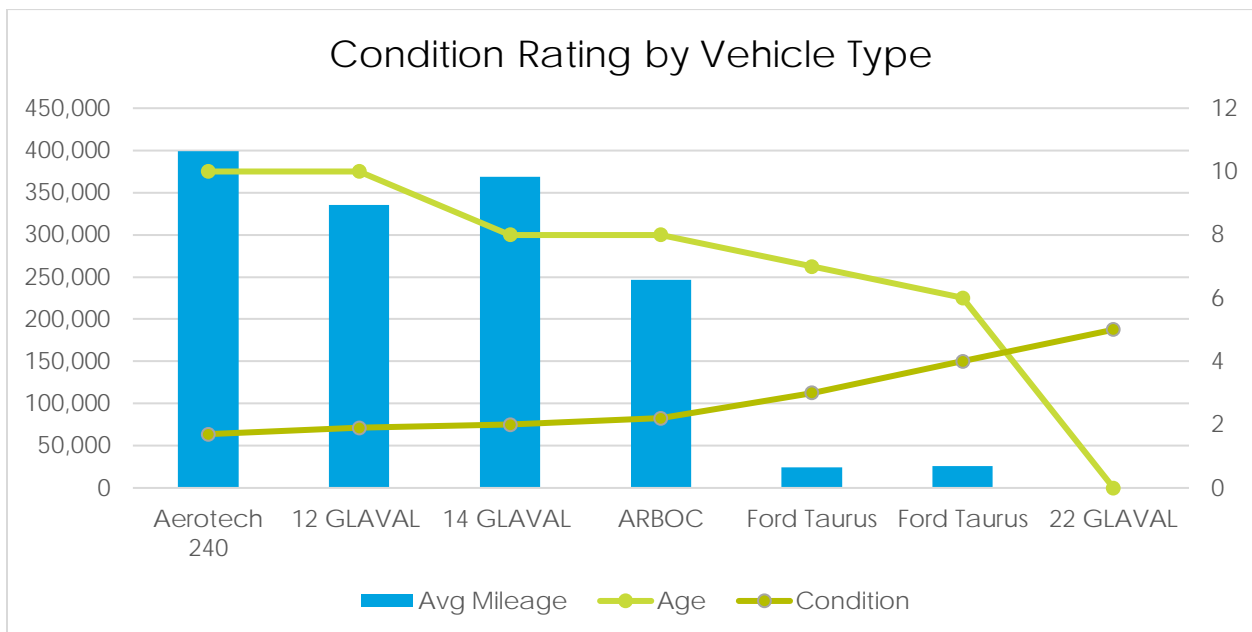


Figure 10 Condition Graph by Vehicle Type – Paratransit

Streetcar Vehicles

While the age of the streetcars is 85 years, the streetcars were rehabilitated in 2015 and began operations in 2018 so the age used in this TAM plan is seven (7) to determine the condition rating. All of the streetcars are maintained in excellent condition.

Table 19 Condition Assessment - Streetcar

Count	Year	Make	Rehab Year	Total Cost	Age After Rehab	ULB	Condition
6	1937	PCC STREETCAR	2015	\$22,497,690.03	7	31	4.5

Preventative Maintenance

Fixed Route Buses

Sun Metro has two sections of fleet maintenance at the Transit Operations Center – preventative maintenance (PM) inspections and repair work, both scheduled and unscheduled. Sun Metro uses Fleet-Net tracking software for their fleet maintenance repair history tracking.

Successful “On-Time” completion of a PM inspection is determined if the mileage at the time of inspection is between 5,500 – 6,500 miles since the last PM cycle (1,000-mile window of opportunity).

By tracking the mileage of the vehicles, the program will schedule and print the fleet specific preventive maintenance inspections due at the following intervals:

- “A” Inspections** are conducted every 6,000 (+/- 500) miles. This is a detailed inspection of items relating to the manufacturer’s recommendations of the buses and includes a “check off” process to ensure a thorough inspection is performed including: wheelchair lift or ramp function checks, oil changes, brake inspection, drivability testing, etc. Due to the arid (high dirt/dust and wind) climate and 4,000 ft. elevation, Sun Metro found it necessary to increase the frequency of cleaning the exterior of the engine radiator, air conditioning evaporator and condenser coils at every inspection cycle. This is far more often than the original equipment manufacturer (OEM) recommended interval but has benefited Sun Metro with less road calls and has minimized the failures of the air conditioning (A/C) systems because this process keeps the operating pressures and temperatures of the equipment low – which extends service life of the components. Acceleration performance is also checked on every PM cycle including the printing of the electronic “history” of the engine parameters since the last PM cycle (identifying defects and trouble codes). This information is reviewed by the PM Supervisors and the technicians to ensure the buses meet the acceleration requirements to satisfy the demands of the route profiles.

- **“B” Inspections** are conducted every 12,000 miles. This inspection includes all of the checks required in the previous “A” inspection and any additional checks and adjustments required by the vehicle OEM.
- **“C” Inspections** are scheduled every 24,000 miles. This inspection includes all of the checks required on the previous “A” and “B” inspections and any additional checks and more intense inspections required by the vehicle OEM. The differential and transmission lubricants are changed. The engine is tuned up and valves are adjusted as required on natural gas fueled engines as per Cummins OEM requirements.
- **“D” Inspections** are scheduled every 48,000 miles. This inspection includes all of the checks required on the previous “A, B and C” inspections. This interval would be equivalent to an annual inspection (if based on time) and includes closer examination of the engine performance including tune-up, complete A/C and heat performance checks including visual inspection of heating, ventilation, and air conditioning (HVAC) blower motor brushes and armatures.
- **“E” Inspections** have been initiated and scheduled at 144,000-mile intervals. This inspection involves a predictive method of component replacement rather than waiting for a component to fail to remove a component after it has served its “useful life” instead of waiting until the component fails. The bus will be less likely to be road called and the overall cost of rebuilding/remanufacturing the components diminishes because generally only “minor parts” will need to be replaced rather than major components. This effort is to ensure the reliability and economy of the bus maintenance throughout its life cycle expectations.

The Fleet Maintenance Division makes use of inspection check-off forms that have incorporated OEM requirements, geographical necessities, and historical trends. The Monthly review of road-call and defect historical trends make these forms “living documents” and are revised periodically.

Paint and Body Shop

The Paint and Body Shop is responsible for maintaining the internal and external appearance of the buses. Duties for this group includes the painting of bumpers, complete and spot painting and striping of the buses including support vehicles. As the fleet ages, this requirement becomes more demanding. Other tasks include fixing seats; flooring repairs; operator workstation repairs; removing graffiti; installing/repairing fare-boxes; and replacing seats. The shop also correct body related problems identified on defect cards and PM inspections. Similar in theory to the mechanical preventive maintenance inspections, routine “Body Inspections” are now in-place and scheduled through the body shop. Check-off sheets are used to ensure the body inspection tasks are completed during the inspection cycle. BPMI (Body Preventive Maintenance Inspection) are done yearly.

PM inspection checklists and BPMI checklist are included in an attachment to this plan.

Paratransit Vehicles

For the paratransit vehicles, MV Transportation performs the preventative maintenance and the scheduled and unscheduled repair work. Sun Metro performs spot checks on the maintenance as part of their oversight of the contract.

Streetcars

Preventative maintenance is conducted by the streetcar division at the Maintenance Services Facility. Preventative maintenance is conducted weekly, monthly, and at other regular intervals.

Equipment Condition Assessment

Per 49 CFR Part 625, equipment means an article of nonexpendable, tangible property having a useful life of at least one (1) year. Sun Metro has a variety of equipment and assets used in its transit services. For the purpose of this TAM Plan, equipment assets were considered to be non-revenue vehicles, TVMs, and equipment purchased separate from construction of a facility that had a value of over \$50,000.

Non-Revenue Vehicles

The FTA provides ULB available for some non-revenue vehicles, such as automobiles (8 years), vans (8 years), trucks (8 years), and cutaway buses (10 years). The ULB for the other equipment was established to be 14 years in the 2018 TAM Plan from the Transit Asset Prioritization Tool (TAPT). The fleet maintenance division provided conditional ratings based on their use of the non-revenue vehicles and assessment of condition.

Table 20 Condition Assessment - Non-Revenue Vehicles

Count	Year	Make	Model	Original Cost (Avg)	Age	ULB	Condition
1	1995	Taylor Dunn Electruck	Electric Utility Truck	\$13,300.00	27	8	2.3
1	1995	Yale	Forklift	\$16,409.00	27	14	3.5
1	1997	AH-28	CNG Streetcar	\$298,396.00	25	14	2.0
1	2000	Elgin	Street Sweeper	\$49,907.76	22	14	3.0
3	2001	Ford Crown Vic	4-door	\$24,599.00	21	8	2.5
5	2001	Ford E31	Van	\$27,644.10	21	8	2.5
2	2001	Ford E350	Van	\$40,550.00	21	8	2.5
2	2002	Ford F150	Truck	\$21,750.00	20	8	2.0
3	2004	Ford	Van	\$22,626.47	18	8	2.5
2	2004	Hyster	Forklift	\$12,875.50	18	14	3.5
2	2008	Dodge Ram	Truck	\$28,127.21	14	8	3.0
2	2008	Ford	Paratransit Van	\$57,299.00	14	8	2.5
1	2009	Mobile Compressor	Compressor	\$10,960.00	13	14	3.0

Count	Year	Make	Model	Original Cost (Avg)	Age	ULB	Condition
10	2010	Ford E350	Van	\$25,710.00	12	8	3.0
1	2010	Dodge Ram	Truck	\$34,213.95	12	8	3.0
3	2010	Challenger CH230	Bus	\$50,879.00	12	10	2.5
5	2012	MV-1	Paratransit Vehicle	\$68,715.00	10	8	1.0
2	2012	Tennant	Street Sweeper	\$95,847.04	10	14	2.0
1	2014	Clark ECX25	Forklift	\$34,668.00	8	14	4.0
3	2015	Chevrolet	Truck	\$19,584.29	7	8	4.0
1	2016	Dodge Ram	Truck	\$24,145.00	6	8	4.0
1	2016	Cimline	Taring Trailer	\$58,092.50	6	14	3.5
12	2017	Ford Transit	Van	\$108,300.07	5	8	4.0
1	2017	Genie	Scissor Lift	\$32,511.24	5	14	4.0
1	2018	Freightliner	Truck M2106	\$121,490.00	4	8	5.0
1	2019	Freightliner	Truck M2106	\$126,390.15	3	8	5.0
1	2020	Ford F350	Truck	\$54,641.00	2	8	5.0

Other Maintainable Equipment

All of the other equipment over \$50,000 is detailed below besides the TVMs. All of the equipment has a ULB of 14 years, and only the scrubber rider is past its ULB. All equipment is in good to excellent condition.

Table 21 Condition Assessment - Maintainable Equipment

Equipment Description	Year	Original Cost	Condition
Fuel Dispensing Equipment	2015	\$54,296.00	4.0
Mobile Storage System	2013	\$74,246.00	4.0
Parts Washer w/ retractable table	2013	\$82,415.00	5.0
Lubrication Equip (Star Brake Lathe)	2012	\$99,750.00	4.0
Scrubber Rider	1994	\$141,786.31	3.0
Paint Booth & Equipment	2014	\$482,944.77	5.0
108,000 Column Lift- 24 Volt DC	2011	\$56,833.50	4.0
Crimline Cracksealer	2016	\$58,092.50	4.0
MSF Equipment	2013	\$86,000.00	5.0
Rotary Lift	2010	\$104,029.57	4.0
MSF Equipment	2013	\$500,000.00	5.0
Base Bid Equipment Fueling Station	2015	\$2,618,790.10	4.0
MSF Equipment- 4 Traction Power Stations and train wayside communication system	2013	\$6,128,029.62	5.0

TVMs are maintained through Sun Metro. Of the 100 units, only four (4) TVMs have a condition below 2 and are identified below. All other TVMs have a condition of 4 to 5 and are in good working order.

Table 22 TVMs in Poor Condition

Unit ID	Equipment Description	Location
158159	D-26350-4411B G/A TVM	Damaged, no longer usable
158143	D-26350-4411B G/A TVM	Rio Grande Inbound (Installed No Power)
156979	D-26350-4411B G/A TVM	TOC (Tester, damaged)
CAP0159208	D263650-4411C G/A TVM	TOC (SPARE)

Equipment Preventative Maintenance

For the non-revenue vehicles, the fleet maintenance division maintains the same procedures as the rolling stock preventative maintenance procedures listed above.

All equipment is maintained by the facilities maintenance division. Equipment receives asset tags when valued over \$3,000 and are logged into Fleet-Net software. The software provides a schedule for routine checks and preventative maintenance procedures for all maintainable equipment. Similarly, the Fleet-Net software provide a schedule for maintenance on the TVMs.

Facility Condition Assessment

Overview and Definitions

Sun Metro owns and maintains 14 properties that consist administrative, maintenance, and passenger facilities.

Facilities Definitions

- **Administrative Facilities** – Facilities and offices which house the executive management and supporting activities for overall transit operations such as accounting, finance, engineering, legal, safety, security, customer services, scheduling, and planning. These buildings may include customer information or ticket sale offices that are owned by the transit agency but are not part of passenger stations.
- **Maintenance Facilities** – Facilities where routine maintenance repairs or heavy maintenance or unit rebuilds are conducted. Agencies must not report maintenance facilities where third-party vendors perform services, such as a local gasoline service or body shop.

- **Passenger Facilities** – Transportation, transit or transfer centers, park-and-ride facilities, and transit malls that have an enclosed structure (building) for passengers for items such as ticketing, information, restrooms, concessions, and telephones. Open shelters, canopies, lighting, signage, or ramps for accessibility alone are not enough to establish a passenger station.
 - Parking facilities include park-and-ride lots as well as parking garages. Note that passenger and parking facilities are often collectively referenced as "passenger facilities."

Condition Assessment

Sun Metro inspects facilities based on the approach detailed in FTA’s TAM Facility Performance Measure Reporting Guidebook: Condition Assessment Calculation⁷. FTA’s guidance supports the calculation of FTA’s mandated SoGR performance measure for facilities, which is the percentage of facilities within an asset class rated less than three (3) on the five (5) point scale used in TERM. These scales are used for administrative, maintenance, and passenger facilities.

Table 23 lists the specific components of a facility that are inspected. Sun Metro assesses these components separately for each building in a facility. The overall condition of the building is determined based on the median value of the individual components (rounding down if the median lies between two condition values). The condition of the facility is determined based on the median value of each building.

Table 23 ULB – Facility Components

Component	Typical Useful Life
Substructure	30
Shell	30
Interior	30
Conveyance	20
Plumbing	20
HVAC	20
Fire Protection	20
Electrical	30
Equipment	30
Site	30

⁷ TAM Facility Performance Measure Reporting Guidebook: Condition Assessment Calculation. Federal Transit Administration, Mar. 2018, <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/asset-management/60361/tam-facility-performance-measure-reporting-guidebook-v1-2.pdf>.

Inventory and Condition

Below are the ratings of Sun Metro’s facilities as reviewed by the facility maintenance division and consultants during the August 2022 site assessment. All facilities are maintained by the facility maintenance division except for the Maintenance Services Facility, which is maintained by the Streetcar division. All facilities are under a preventative maintenance schedule and are reviewed annually.

Transit Operations Center

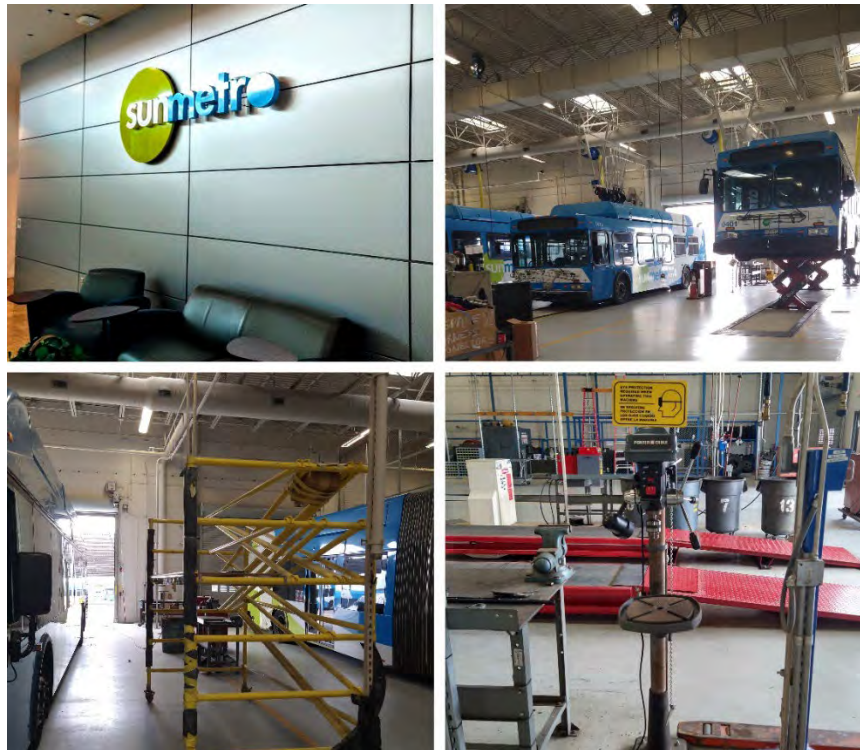


Figure 11 Transit Operations Center Site Visit

The Transit Operations Center (TOC) was in excellent, new condition. No issues documented with the facility.

Table 24 Transit Operations Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Admin. Building	5	5	5	N/A	5	5	5	5	N/A	5	5
Maint. Building	5	5	5	5	5	5	5	5	5	5	5
Fueling Building	5	5	5	5	5	5	5	5	5	5	5
Bus Wash Building	5	5	5	5	5	5	5	5	5	5	5
Overall	5	5	5	5	5	5	5	5	5	5	5

Sun Metro LIFT Facility

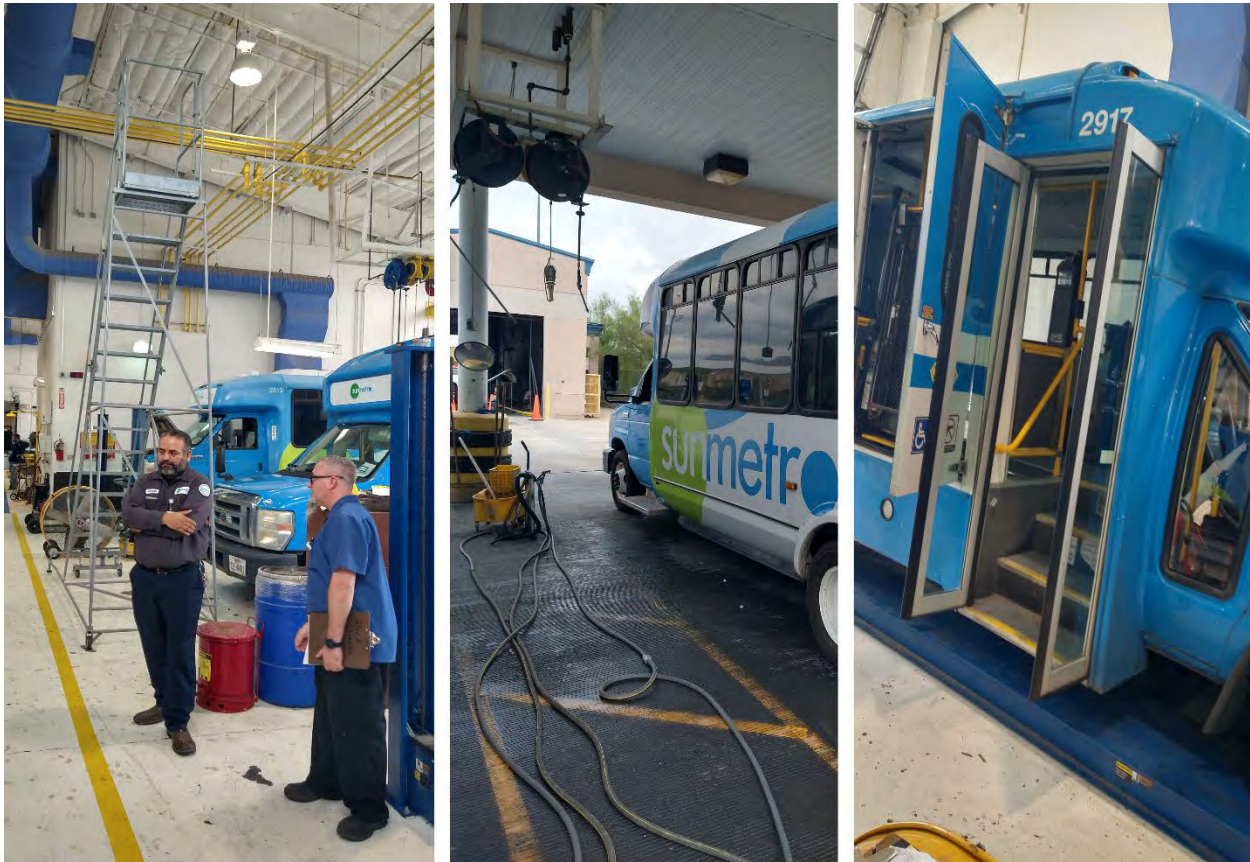


Figure 12 Sun Metro LIFT Facility Site Visit

The Sun Metro LIFT Facility was in good condition with clean interiors and exteriors. Most equipment was in good to excellent condition with exception of the parts washer, which was in marginal condition.

Table 25 Sun Metro LIFT Facility Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Sun Metro LIFT	4	5	4	5	4	5	5	4	4	4	4

Arves E. Jones, Sr. Transit Center at Northgate



Figure 13 Arves E. Jones, Sr. Transit Center at Northgate Site Visit

The Arves E. Jones, Sr. Transit Center at Northgate was in excellent condition with clean interiors and exteriors. There is vacant shell space that is currently not being utilized.

Table 26 Arves E. Jones, Sr. Transit Center at Northgate Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Arves E. Jones, Sr. Transit Center at Northgate	5	5	5	5	5	5	5	5	5	5	5

Al Jefferson Westside Transfer Center



Figure 14 Al Jefferson Westside Transfer Center Site Visit

The Al Jefferson Westside Transfer Center was in good condition with issues in the middle building with plumbing and door closure. The waiting areas were in need of fire extinguishers.

Table 27 Al Jefferson Westside Transfer Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Building A	4	4	4	N/A	N/A	3	1	4	4	4	4
Building B	4	3	4	N/A	3	3	4	4	N/A	4	4
Building C	4	4	4	N/A	N/A	3	1	4	N/A	4	4
Overall	4	4	4	N/A	4	3	4	4	4	4	4

Glory Road Transfer Center



Figure 15 Glory Road Transfer Center Site Visit

The Glory Road Transfer Center was in good condition with damage from a leak from the HVAC in the waiting area that has been repaired.

Table 28 Glory Road Transfer Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Glory Road Center	4	4	4	4	4	3	4	4	4	4	4

Bert Williams Downtown Santa Fe Transit Center



Figure 16 Bert Williams Downtown Santa Fe Transit Center Site Visit

The Bert Williams Downtown Santa Fe Transit Center was in adequate condition with some issues apparent in the floor and had a good amount of wear from heavy use.

Table 29 Bert Williams Downtown Santa Fe Transit Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Bert Williams Downtown Santa Fe Transit Center	3	2	3	N/A	3	3	4	3	3	2	3

Maintenance Services Facility



Figure 17 Maintenance Services Facility Site Visit

The Maintenance Services Facility is in excellent condition with a clean facility and well-maintained equipment.

Table 30 Maintenance Services Facility Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Maintenance Services Facility	5	5	5	5	5	5	5	5	5	5	5

Arturo Tury Benavides Cielo Vista Transit Center



Figure 18 Arturo Tury Benavides Cielo Vista Transit Center Site Visit

The Arturo Tury Benavides Cielo Vista Transit Center was in adequate condition with some issues with the gutters, HVAC, and lack of fire extinguishers or fire suppression systems.

Table 31 Arturo Tury Benavides Cielo Vista Transit Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Building A	3	2	3	N/A	N/A	2	1	3	4	2	3
Building B	3	3	3	N/A	N/A	2	1	3	N/A	2	3
Drivers Lounge	3	3	3	N/A	3	3	3	3	N/A	3	3
Overall	3	3	3	N/A	3	3	2	3	4	3	3

Robert E. McKee Five Points Transit Center



Figure 19 Robert E. McKee Five Points Transit Center Site Visit

The Robert E. McKee Five Points Transit Center was in good condition with some issues in one of the waiting areas with the HVAC and leaking through the outdoor light fixture.

Table 32 Robert E. McKee Five Points Transit Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Building A	4	4	3	N/A	N/A	3	4	4	4	4	4
Building B	4	4	4	N/A	4	3	4	4	4	4	4
Building C	4	2	3	N/A	N/A	2	4	4	4	3	3
Building D	4	4	3	N/A	4	3	4	4	4	4	4
Overall	4	4	3	N/A	4	3	4	4	4	4	4

Nestor A. Valencia Mission Valley Transit Center



Figure 20 Nestor A. Valencia Mission Valley Transit Center Site Visit

The Nestor A. Valencia Mission Valley Transit Center was in good condition with some issues with the HVAC.

Table 33 Nestor A. Valencia Mission Valley Transit Center Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Round Building	4	4	2	N/A	N/A	2	4	4	4	4	4
Welcome Center	4	4	4	N/A	4	4	4	4	N/A	4	4
Building C	4	4	3	N/A	N/A	2	4	4	N/A	4	3
Building D	4	4	3	N/A	4	2	4	4	4	4	4
Overall	4	4	3	N/A	4	2	4	4	4	4	4

Union Plaza Transit Terminal Parking Garage



Figure 21 Union Plaza Transit Terminal Parking Garage Site Visit

The Union Plaza Transit Terminal Parking Garage was in adequate condition with wear on the facility and TVM removed from the interior.

Table 34 Union Plaza Transit Terminal Parking Garage Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Union Plaza Transit Terminal Parking Garage	3	3	2	3	N/A	3	3	3	N/A	3	3

Union Depot



Figure 22 Union Depot Site Visit

The Union Depot is in marginal condition with visible issues to floor and roof of the facility. The building is in need of improvements while no Sun Metro operations are held in the building. Texas Tech University, Amtrak, and Greyhound lease offices in the building.

Table 35 Union Plaza Transit Terminal Parking Garage Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Union Plaza Transit Terminal Parking Garage	3	2	2	N/A	2	2	3	3	N/A	2	2

Union Depot Maintenance Facility



Figure 23 Union Depot Site Visit

The Union Depot is in marginal condition with HVAC issues and large areas not being used. A portion of the property is being unused, and the other areas are being leased to the rural provider and Greyhound.

Table 36 Union Plaza Transit Terminal Parking Garage Condition Rating

Facility	Sub	Shell	Int.	Convey.	Plumb.	HVAC	Fire	Elec.	Equip.	Site	Overall
Union Plaza Transit Terminal Parking Garage	3	2	2	2	2	1	3	3	3	2	2

Preventative Maintenance

Facility maintenance division also utilizes Fleet-Net software to create and maintain a schedule for the preventative maintenance. Supervisors generate an inspection report weekly with the necessary items of preventative maintenance due to be checked that week. Supervisors then assign a technician with a deadline to conduct the preventative maintenance check. If the technician is late, they must denote the reason why the inspection is late.

Preventative maintenance is done on the following schedule:

Table 37 Preventative Maintenance Schedule

Days	PM Items
7 days	Eyewash basin
14 days	CNG fuel dispenser
21 days	Sump pump
30 days	Building Inspection, floor drains, drinking fountains, HVAC filters, interior and exterior lighting, restrooms, ADA doors, irrigation system, painting booth, fire suppression systems, lift systems, air dryers, pressure washer, hose reels, pumps, bus wash
60 days	Fencing, boilers, roof exhaust fans, filters, bay door drains, brake drum lathes, grinders, compressor room machinery, dust collectors, hydraulic presses, paint gun washer, storm drains, sand traps, drill presses, wash basins, HVAC, restrooms, pumps, sprinklers, fountains
90 days	HVAC filters, fire extinguishers, drinking fountains, auxiliary generator, air-lube filters, freon recovery units, condenser filters, compressors, chop saw, electric hoists, electrical rooms, sandblaster, forklifts, genie boom, hose reel, hydraulic jack carts, lube rooms, overhead doors, generators, paint shaker, lifts, shear machine, metal bender, belt sander, welding machines, air handlers, cooling towers, roof turbines, water recycling tanks
120 days	Roofs, water heaters, sump pumps, lifts
180 days	Bitmec wash, battery charger room, ice machine, Mastercool portable units, overhead windows, heaters, generators

For shelters, the facility maintenance division also does the preventative maintenance. Sun Metro utilizes the Fleet-Net software to maintain the schedule. Brio and streetcar stations have preventative maintenance checks done every 180 days and fixed route checks are done every 400 days. Stations are cleaned daily by a contractor, which is randomly spot checked by Sun Metro staff.

Sun Metro utilizes various contractors for maintenance of different facility elements, including janitorial, landscaping, elevator, HVAC, shelter replacement, overhead door, fuel dispensing, and back flow. Contractors are required to perform preventive maintenance in accordance with the contract and OEM recommendations. Sun Metro reviews all preventative maintenance done by contractors and does not sign off on any invoices until the work is checked and approved.

Preventative maintenance checklists are attached in Appendix A.

Infrastructure Condition Assessment

For the streetcar system, there are several infrastructure components to maintain, including the following items:

- Rail – 4.8 miles
- Turnouts
- Overhead Contact System (OCS)
- Trolley Electric Poles

Table 38 Infrastructure Asset Values

Asset Type	Value
Track	\$13,346,950
Turnouts	\$1,710,000
Overhead Contact System	\$4,617,690
Trolley Electric Poles	\$1,945,362

Performance Restriction

As part of the TAM Plan, Sun Metro has to calculate a performance restriction for any service on a fixed guideway, which is a facility that has a separate right-of-way (ROW) or rail for the exclusive use of public transportation, or a fixed catenary system useable by other forms of transportation. The streetcar is a fixed catenary system that is useable by automobiles on the shared portion of the road.

For the Streetcar service, potential performance restrictions may be signaling issues, construction zones, maintenance work, or other issues. When it comes to a performance restriction, streetcar drivers are notified prior to service beginning. Since the service is mainly operated on weekends and afternoons, very few performance restrictions affect the service.

The streetcars have a maximum speed of 25 miles per hour along one corridor. Other sections have a slower speed limit that is stated in the table below. The speed limit is also affected by the traffic on the shared guideway since the streetcar shares the lane with automobile traffic. The entirety of the route is located in downtown El Paso as shown in Figure 24.

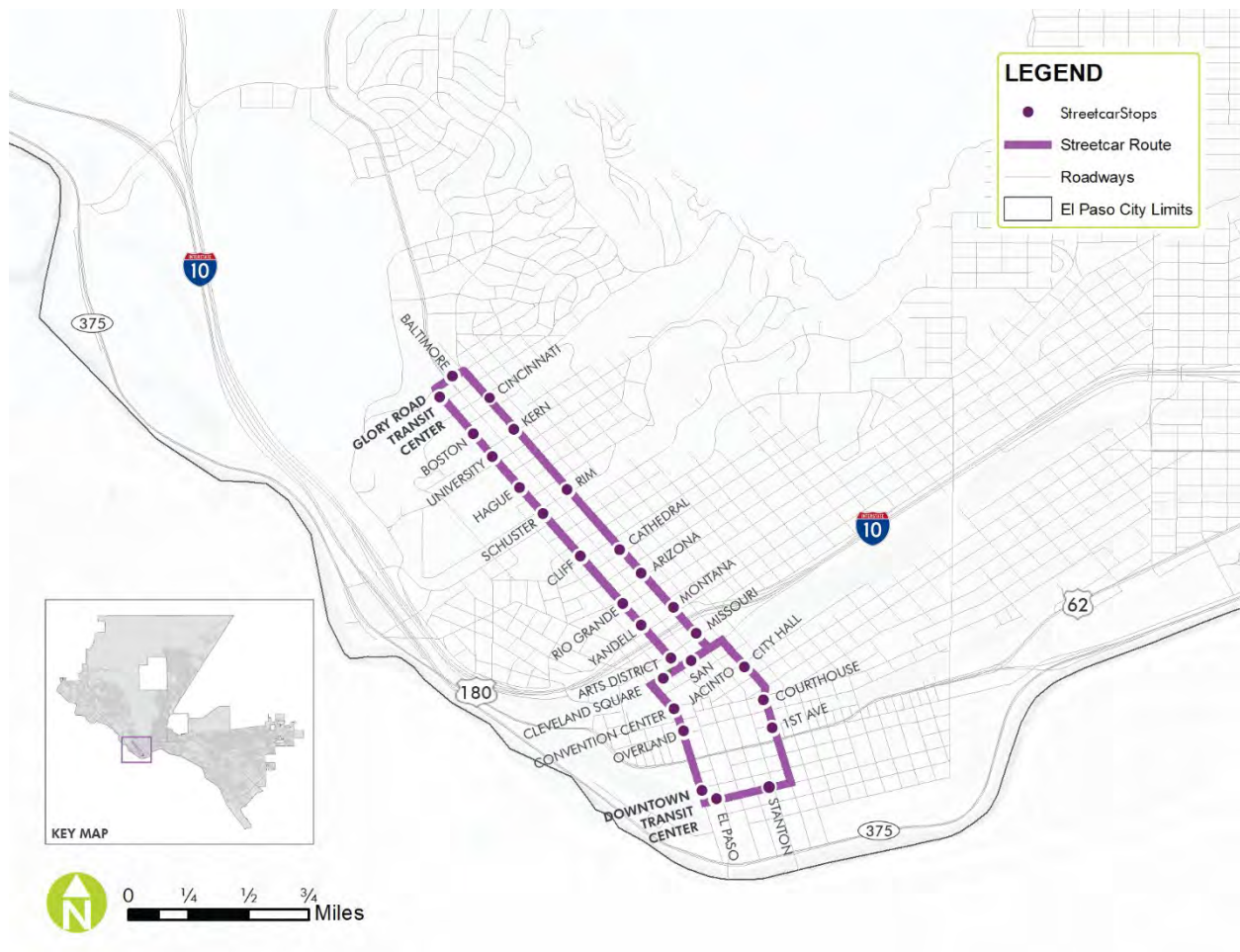


Figure 24 Streetcar Service Map

Sun Metro has a Track Access Program in order to maintain the in-street tracks that are essential to run the Streetcar service. As stated on the Sun Metro website, the Track Access Program Policy is to have any project within the El Paso Streetcar operation right of way, or 10 feet of any streetcar infrastructure, must obtain a permit. Applicants must do a training on track access. All construction or maintenance activity must not occur during revenue hours of the streetcar. This program will limit the number of performance restrictions on the Streetcar service.

Since the streetcar started in 2019 and then the pandemic in 2020 limited service and traffic in the downtown area, very few performance restrictions have occurred and so the calculations have not been able to be completed accurately.

Sun Metro’s next TAM will incorporate a performance restriction calculation.

Table 39 Performance Restriction Sample Sheet

ID	Description	From (mi.)	To (mi.)	Track Miles	MPH	PR MPH	PR (Y/N)	PR Narrative
1	Santa Fe Station to Father Rahm	0.00	0.05	0.05	10	N/A	N/A	N/A
2	Father Rahm to Kansas Turn	0.05	0.75	0.7	5	N/A	N/A	N/A
3	Kansas Turn to Franklin	0.75	1.05	0.3	10	N/A	N/A	N/A
4	Franklin to Stanton	1.05	1.15	0.1	5	N/A	N/A	N/A
5	Stanton Sect. 1	1.15	1.45	0.3	15	N/A	N/A	N/A
6	Stanton Sect. 2	1.45	2.55	1.1	20	N/A	N/A	N/A
7	Stanton to Baltimore	2.55	2.85	0.3	5	N/A	N/A	N/A
8	Baltimore	2.85	2.95	0.1	10	N/A	N/A	N/A
9	Baltimore to Oregon	2.95	3.15	0.2	5	N/A	N/A	N/A
10	Oregon Sect. 1	3.15	3.35	0.2	20	N/A	N/A	N/A
11	Oregon Sect. 2	3.35	3.75	0.4	25	N/A	N/A	N/A
12	Oregon to Franklin	3.75	4.35	0.8	15	N/A	N/A	N/A
13	Santa Fe Sect. 1	4.35	4.65	0.3	5	N/A	N/A	N/A
14	Santa Fe Sect. 2	4.65	4.70	0.05	20	N/A	N/A	N/A
15	Santa Fe Sect. 3	4.70	4.80	0.1	15	N/A	N/A	N/A



CHAPTER 5: Decision Support Tool

Per 49 CFR Part 625, the decision support tool is an analytic process or methodology: (1) To help prioritize projects to improve and maintain the state of good repair of capital assets within a public transportation system, based on available condition data and objective criteria; or (2) To assess financial needs for asset investments over time. The decision support tool can be a software program or a narrative-based analysis of the capital assets in a transit system.

Decision Support Tool

The purpose of the decision support tool is to determine an estimate on capital investment needs over time and develop Sun Metro’s investment prioritization. Asset management involves the installation and/or construction, preventative maintenance, replacement, and disposal of an asset. While there are costs to consider for preventative maintenance and breakdowns, the biggest cost consideration is vehicle replacement.

This section will review Sun Metro’s approach as part of cost prioritization. Sun Metro currently has a budget in place for vehicle replacement but is also going after competitive grants to fund more vehicle replacements. For the decision support tool, the fixed route and Brio vehicles were combined to match with Sun Metro’s budget for vehicle replacement.

For Sun Metro, the issues that need to be addressed are apparent for its initial capital investment needs. Based on the current SoGR percentage for all of its capital assets, there are areas of investment which would significantly improve Sun Metro percentages.

Sun Metro has considered several methods when it comes to the decision support process, including:

- Capital Investment Needs – Narrative based on the SoGR database
- Sun Metro’s FY2021 Replacement Schedule
- Analytical Tools
 - TERM Lite
 - Transit Cooperative Research Program (TCRP) Transit Asset Prioritization Tool (TAPT)

Rolling Stock Budget

Sun Metro’s budget is incorporated into the City’s annual budget, which has been released for FY2023. The recurring purchase of fixed route vehicles will be through an annual apportionment of Section 5307. Replacement vehicles for Paratransit/LIFT and support vehicles will be through Section 5339. The budget used for all decision support is the following:

Table 40 Vehicle Replacement Budget

Category	Annual Budget Amounts
Fixed Route	\$6,000,000
Paratransit/LIFT	\$1,000,000
Support Vehicles	\$60,000

Sun Metro also received a competitive grant award for \$8,800,000 in August 2022 for Paratransit/LIFT rolling stock to replace the buses with electric vehicles, which will be estimated to be used in FY2023. Sun Metro received this funding through the FTA’s Buses and Bus Facilities and Low- and No-Emission Vehicle programs. Sun Metro will match these funds with \$2,200,000 for a total amount of \$11,000,000 for new electric vehicles.

Capital Investment Needs – Narrative

For its fixed route and Brio rolling stock, 40% of rolling stock are past their ULB and have significant mileage over 500,000 miles. For its paratransit rolling stock, 42.6% of rolling stock are past their ULB and have mileage over 350,000 miles. In two years, 85.3% of the rolling stock will be past their ULB. Besides the 10 2022 GLAVAL paratransit buses and the five (5) Ford Taurus automobiles, the paratransit vehicles have a condition rating under 3 and should be replaced. Based on this information, Sun Metro has to replace or dispose of these vehicles to improve its SoGR percentages for its fleet.

Sun Metro also needs to reduce its spare ratio for its fixed routes. Spare ratio calculation has to include all vehicles for all services in the fleet and peak number of vehicles for all services. For buses for the fixed route and Brio services, there are 161 buses and articulated buses in the inventory. Due to changes from the pandemic, peak service is currently 86 vehicles used at peak service for the two services. When the Montana Brio launches later this year, peak service will increase to 94-100 vehicles. Spare ratios are calculated by the following equation:

$$\frac{\text{Total Number of Revenue Vehicles} - \text{Peak Service Vehicles}}{\text{Peak Service Vehicles}}$$

Peak Service Vehicles

Based on this equation, the current spare ratio is 87.2%. When the Montana Brio service starts, the spare ratio will decrease to 61%. However, this is still too high for the service. For a peak service of 100 vehicles, the number of spares should be 20 additional vehicles. Since there are a significant number of vehicles past the criteria listed in the table, Sun Metro is recommended to dispose of 40 vehicles from the inventory. This will get the spare ratio down to an appropriate level and reduce the cost to get the inventory closer to the performance target.

For its facilities, many of the transfer centers and maintenance facilities, 10 out of 14, are less than 15 years old. However, Union Dept and Union Depot Maintenance facilities have a rating less than 3 and have been a drain on time and resources. Below is the overall cost of materials and labor for FY2021 for the two properties.

Table 41 Union Depot Buildings Cost

Building	FY21 Material Cost	FY21 Labor Cost
Union Depot	\$105,479.25	\$102,462.82
Union Depot Maintenance	\$99,752.26	\$164,951.51

Due to the age of the two facilities, the cost to maintain them, and the fact that Sun Metro does not currently operate in either facility, Sun Metro is recommended to review options of disposing the facilities or transferring responsibility to another department of the City.

Currently, there is no plan for replacement for the streetcars and its associated infrastructure. As the vehicles have been through a recent rehabilitation and Sun Metro maintains a rigorous maintenance schedule, there is over 20 years until the streetcar would hit its ULB, and there is no modern replacement for these vehicles.

FY21 Replacement Plan

Sun Metro developed a replacement schedule in FY2021. The schedule looked at lifespan, original cost, estimated replacement cost, total repair costs, and its last mileage reading. Based on the data and the City’s budget for vehicle replacement, Sun Metro estimated a schedule for vehicle replacement for the next 10 years.

For the 35 40-foot fixed route rolling stock, 120 vehicles are over 500,000 miles. Of those vehicles, maintenance costs range from \$300,000 to \$815,000 over the vehicles’ lifecycles with the highest maintenance costs are for the 2004 buses.



Figure 25 Lifetime Maintenance Cost against Mileage

Sun Metro did not include mid-life rehabilitation into this replacement plan due to the number of vehicles already over the ULB. In future replacement plans and decision support tools, Sun Metro will consider mid-life rehabilitations as part of the replacement schedule.

For the articulated, BRIO buses, all of the vehicles are still in good condition with mileage under 300,000 miles for all of the vehicles. Vehicles for this service are at least five to six years away from needed replacement.

For the paratransit/LIFT buses, most of the vehicles are in marginal to poor condition and almost all buses are nearing or past their ULB. Since the maintenance costs are covered by the third-party contractor’s contract, Sun Metro does not have an accurate calculation of maintenance costs over the vehicles’ lifecycles.

Analytical Tools

Sun Metro used the TERM Lite and TAPT programs to review the fleet replacement. TERM Lite utilizes Microsoft Access and TAPT utilizes Microsoft Excel to predict transit asset conditions and prioritize asset replacement. Both tools review asset categories based on parameters inputted by Sun Metro. The funding sources used are outlined in Sun Metro’s budget. Since there are set budgets per service type, each category was reviewed individually.

TERM-Lite

Per the FTA website⁸, TERM Lite is an analysis tool designed to help transit agencies assess their SoGR backlog (total dollar value and by asset type); level of annual investment to attain SoGR or other investment objective; impact of variations in funding on future asset conditions and reinvestment needs; and investment priorities – by mode and asset type.

Based on the information provided by Sun Metro, TERM-Lite provides a prioritization strategy for the fixed route vehicles that looked at replacement costs versus the budget availability. In the TERM-Lite method, Sun Metro is advised to wait on replacing vehicles in 2023 and utilize two years of funding to replace the entirety of the 2004 fleet.

This method does not consider that some vehicles should be disposed of and not replaced based on the spare ratio as well as instituting a mid-life rehabilitation schedule. The disposition of 40 vehicles will dramatically improve the percentage of the fleet below ULB. Also, a mid-life rehabilitation schedule will allow the vehicles in the fleet under the ULB to successfully meet the ULB with less breakdowns and unscheduled maintenance costs.

Below is the first five (5) years in the schedule.

Table 42 Five-Year TERM-Lite Prioritization Strategy – Fixed Route

Count	Bus Type	Age	Year				
			1	2	3	4	5
17	35ft New Flyer	18	\$0.00	\$11,717,628	\$0.00	\$0.00	\$0
15	40ft NABI	15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
33	40ft NABI	14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
7	35ft NABI	12	\$0.00	\$0.00	\$4,817,539	\$0.00	\$0.00
22	40ft New Flyer	10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	60ft New Flyer	10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3	ARBOC	10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3	ARBOC	6	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	35ft New Flyer	5	\$0.00	\$282,371	\$0.00	\$0.00	\$0.00
24	60ft New Flyer	4	\$0.00	\$0.00	\$1,182,460	\$6,000,000	\$0.00
14	60ft New Flyer	2	\$0.00	\$0.00	\$0.00	\$0.00	\$6,000,000

⁸ TERM-Lite , Federal Transit Administration, <https://www.transit.dot.gov/TAM/TERMLite>.

Count	Bus Type	Age	Year				
			1	2	3	4	5
6	35ft New Flyer	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	60ft New Flyer	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Over the 20-year model, TERM-Lite advised Sun Metro to spend the \$6,000,000 per year budget or less 11 out of the 20 years. After the first few years of replacing vehicles due to ULB, the program begins advising staggered replacement of vehicle types by year eight (8). The total amount of expenditures for the fixed route is detailed in Figure 26.

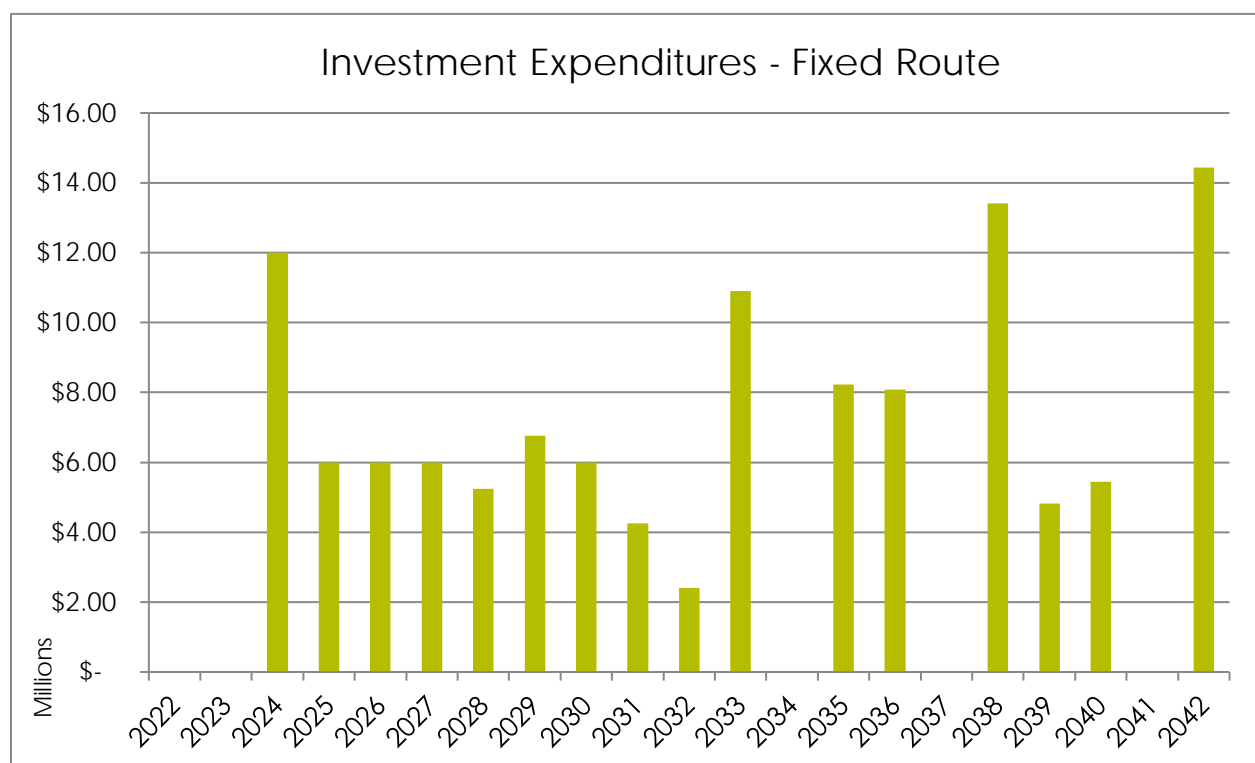


Figure 26 Investment Expenditures – Fixed Route

For the paratransit/LIFT rolling stock, TERM-Lite recommends replacing the whole of fleet (besides the ten (10) 2022 vehicles) within the first two (2) years. After utilizing the \$11,000,000 grant to replace aging vehicles with electric vehicles and using the budgeted \$1,000,000 a year for fleet replacement, the fleet will all be under the ULB threshold for several years, so Sun Metro can save for larger replacements in nine or 10 years. Below details the TERM-Lite replacement schedule.

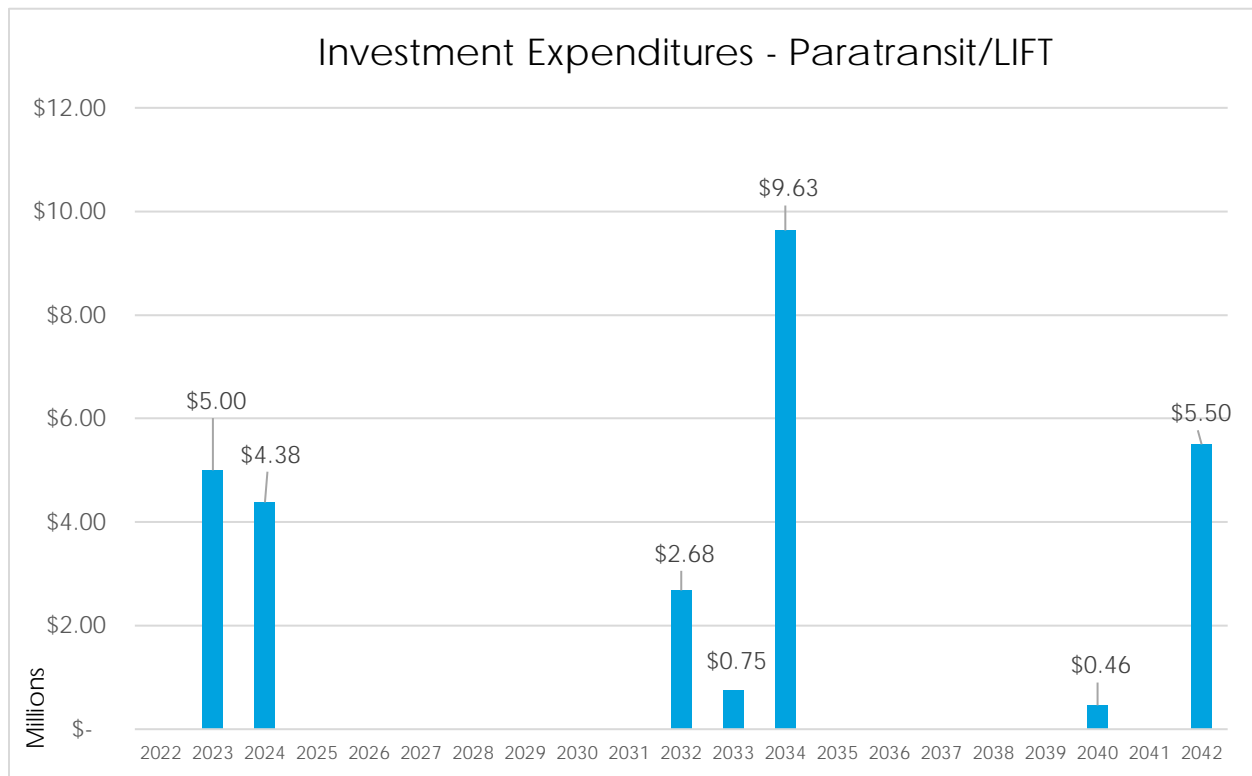


Figure 27 Investment Expenditures – Paratransit/LIFT

TAPT

Per the TCRP Report 172 Guidance for Developing a Transit Asset Management Plan (2014)⁹, “TAPT is used to model rehabilitation and replacement needs for transit capital assets. The tool supports definition of a range of different asset types. For a transit agency’s asset inventory, the tool predicts future conditions and performance, and helps prioritize asset rehabilitation and replacement. The tool includes three basic models:

- A model for vehicle assets
- A model for non-vehicle assets that can be modeled based on age
- A model for non-vehicle assets that can be modeled based on condition”

The TAPT reviewed both SoGR inventory as well NTD reporting for its calculations. This TAM Plan utilized the prioritization model which looks at minimizing lifecycle agency, user, and external costs against a set budget. The model prioritizes potential investments in decreasing order in a Prioritization Index (PI), where the PI is used as a project rank.

In the prioritization model, the Paratransit/LIFT vehicles (listed as “Demand Response” below) were identified as the priority replacement over the fixed route vehicles. The budget in TAPT keeps a set

⁹ National Academies of Sciences, Engineering, and Medicine 2014. Guidance for Developing a Transit Asset Management Plan. Washington, DC: The National Academies Press. <https://doi.org/10.17226/22306>.

amount per year so Sun Metro used the program funding in the City budget and did not include the additional \$11,000,000 for the Paratransit/LIFT vehicles.

In the model, “Fixed Route” includes the fixed route and Brio buses, and “Demand Response” includes the paratransit buses. In the model, the vehicle life expectancy for “Fixed Route” is 13 years, and “Demand Response” is 6 to 10 years.

This model only reviews replacement of the two class of vehicles: fixed route and paratransit/LIFT.

Table 43 TAPT Program List

Program Year	Asset ID Code	No. of Assets	Replacement Costs	PI	Project Code
2023	Demand Response 1	27	\$1,719,117	0.2754	Aerotech
2023	Demand Response 2	2	\$127,342	0.1064	12 GLAVAL
2023	Demand Response 3	17	\$1,082,407	0.1845	14 GLAVAL
2025	Demand Response 4	7	\$445,697	0.1064	ARBOC
2026	Fixed Route 2	15	\$7,439,272	0.1200	40ft NABI
2026	Fixed Route 3	33	\$16,366,398	0.1200	40ft NABI
2027	Fixed Route 4	7	\$3,471,660	0.0684	35ft NABI
2029	DR Automobile 1	1	\$38,756	0.1483	2015 Ford Taurus
2029	DR Automobile 2	4	\$155,024	0.1483	2016 Ford Taurus
2029	Fixed Route 1	17	\$8,431,174	0.1133	35ft NF
2029	Fixed Route 7	2	\$991,903	0.1133	35ft NF
2029	Fixed Route 10	6	\$2,975,709	0.1133	35ft NF
2030	Fixed Route 5	22	\$10,910,932	0.0684	40ft NF
2030	Demand Response 5	10	\$636,710	0.0391	22 GLAVAL
2031	Demand Response 1	27	\$1,719,117	0.0391	Aerotech
2031	Demand Response 2	2	\$127,342	0.0391	12 GLAVAL
2031	Demand Response 3	17	\$1,082,407	0.0391	14 GLAVAL
2033	Demand Response 4	7	\$445,697	0.0391	ARBOC
2035	Fixed Route 6	13	\$6,447,369	0.0863	60ft NF
2035	Fixed Route 8	24	\$11,902,835	0.0863	60ft NF
2035	Fixed Route 9	14	\$6,943,320	0.0863	60ft NF
2035	Fixed Route 11	2	\$991,903	0.0863	60ft NF
2037	DR Automobile 1	1	\$38,756	0.0493	2015 Ford Taurus
2037	DR Automobile 2	4	\$155,024	0.0493	2016 Ford Taurus
2038	Demand Response 5	10	\$636,710	0.0391	22 GLAVAL
2039	Demand Response 1	33	\$2,101,143	0.0391	Aerotech
2039	Demand Response 2	3	\$191,013	0.0391	12 GLAVAL
2039	Demand Response 3	20	\$1,273,420	0.0391	14 GLAVAL
2039	Fixed Route 2	15	\$7,439,272	0.0211	40ft NABI
2039	Fixed Route 3	33	\$16,366,398	0.0211	40ft NABI
2040	Fixed Route 4	7	\$3,471,660	0.0211	35ft NABI
2041	Demand Response 4	7	\$445,697	0.0391	ARBOC
2042	Fixed Route 1	17	\$8,431,174	0.0211	35ft NF
2042	Fixed Route 7	2	\$991,903	0.0211	35ft NF
2042	Fixed Route 10	6	\$2,975,709	0.0211	35ft NF

Since the \$11,000,000 for 50 new paratransit/LIFT vehicles was not considered in this model, Sun Metro reran the model with the addition of the electric vehicles. Sun Metro included the assumption that it would take two (2) electric vehicles to replace one (1) CNG vehicles. Sun Metro removed the 25 oldest paratransit/LIFT vehicles and ran the prioritization model again. By replacing the paratransit vehicles in the new model, the focus of the replacement schedule focuses more on the fixed route vehicles. Below is the program list based on this change.

Table 44 TAPT Program List – Electric Vehicles

Program Year	Asset ID Code	No. of Assets	Replacement Costs	PI	Project Code
2023	Demand Response 1	2	\$127,342	0.3762	Aerotech 240
2023	Demand Response 2	2	\$127,342	0.2193	12 GLAVAL
2023	Demand Response 3	17	\$1,082,407	0.2933	14 GLAVAL
2024	Demand Response 4	7	\$445,697	0.0941	ARBOC
2026	Fixed Route 2	15	\$7,439,272	0.1200	40ft NABI
2026	Fixed Route 3	33	\$16,366,398	0.1200	40ft NABI
2027	Fixed Route 4	7	\$3,471,660	0.0684	35ft NABI
2028	DR Automobile 1	1	\$38,756	0.0493	2015 Ford Taurus
2028	DR Automobile 2	4	\$155,024	0.0493	2016 Ford Taurus
2028	Fixed Route 1	17	\$8,431,174	0.0880	35ft NF
2028	Fixed Route 7	2	\$991,903	0.0880	35ft NF
2028	Fixed Route 10	6	\$2,975,709	0.0880	35ft NF
2030	Fixed Route 5	22	\$10,910,932	0.0684	40ft NF
2031	Demand Response 5	10	\$636,710	0.0412	22 GLAVAL
2031	Demand Response 6	50	\$3,183,550	0.0412	23/24 EVs
2032	Demand Response 1	2	\$127,342	0.0412	Aerotech 240
2032	Demand Response 2	2	\$127,342	0.0412	12 GLAVAL
2032	Demand Response 3	17	\$1,082,407	0.0412	14 GLAVAL
2033	Demand Response 4	7	\$445,697	0.0412	ARBOC
2035	Fixed Route 6	13	\$6,447,369	0.0863	60ft NF
2035	Fixed Route 8	24	\$11,902,835	0.0863	60ft NF
2035	Fixed Route 9	14	\$6,943,320	0.0863	60ft NF
2035	Fixed Route 11	2	\$991,903	0.0863	60ft NF
2036	DR Automobile 1	1	\$38,756	0.0493	2015 Ford Taurus
2036	DR Automobile 2	4	\$155,024	0.0493	2016 Ford Taurus
2039	Fixed Route 2	15	\$7,439,272	0.0211	40ft NABI
2039	Fixed Route 3	33	\$16,366,398	0.0211	40ft NABI
2040	Demand Response 5	10	\$636,710	0.0412	22 GLAVAL
2040	Demand Response 6	50	\$3,183,550	0.0412	23/24 EVs
2040	Fixed Route 4	7	\$3,471,660	0.0211	35ft NABI
2041	Demand Response 1	2	\$127,342	0.0412	Aerotech 240
2041	Demand Response 2	2	\$127,342	0.0412	12 GLAVAL
2041	Demand Response 3	17	\$1,082,407	0.0412	14 GLAVAL
2041	Fixed Route 1	17	\$8,431,174	0.0211	35ft NF
2041	Fixed Route 7	2	\$991,903	0.0211	35ft NF
2041	Fixed Route 10	6	\$2,975,709	0.0211	35ft NF
2042	Demand Response 4	7	\$445,697	0.0412	ARBOC

For TAPT, the ULB in the program is shorter than Sun Metro’s ULB. So, there are multiple replacements in the 20-year estimates, rather than one or two replacements. Sun Metro’s maintenance program focuses on maintaining vehicles for the full lifecycle.

Maintenance

Review of Maintenance Costs

Ongoing maintenance costs also factor into the prioritization of assets. Good preventative maintenance can keep buses on the road and functioning well until they reach their ULB. However, once a vehicle reaches its ULB, hits the average mileage threshold, and has a condition rating less than 3, Sun Metro should prioritize replacing that vehicle versus maintaining it.

In the FY2020 NTD Reporting, Sun Metro provided overall program maintenance operating costs.

Table 45 FY2020 NTD Maintenance Reporting

Service Type	Vehicle Maintenance	Facility Maintenance
Fixed Route	\$10,636,915	\$3,944,209
Paratransit/LIFT	\$911,869	\$746,075
Streetcar	\$528,582	\$392,151
Total	\$12,077,366	\$5,082,435

When comparing fleet maintenance costs, Sun Metro Reviewed three different vehicles, one from each of the following categories: the 2004 asset category, the 2007 asset category, and the 2022 asset category. When looking at monthly and yearly costs for fleet averages, there are significant differences in the amount of funds used a month or a year for the 2004 and 2007 vehicles versus the 2022 vehicle. The 2004 vehicle costs 120% more to maintain each month than the 2022 vehicle, and the 2007 vehicle costs 110% more. These percentages jump significantly when looking at the fleet average yearly costs with the 2004 asset category, 195% more, and the 2007 asset category which is 210% more than the 2022 asset category.

Below is the comparison of the three categories.

Table 46 Asset Category Maintenance Comparison

	Veh. #0403 2004 Asset Category	Veh. #0685 2007 Asset Category	Veh. #21301 2022 Asset Category
Vehicle Month Cost	\$12,053.75	\$5,629.03	\$2,039.43
Fleet Avg Monthly Cost	\$5,393.39	\$5,141.70	\$2,450.43
Vehicle Yearly Cost	\$50,650.51	\$31,186.87	\$8,976.55
Fleet Avg Yearly Cost	\$27,031.44	\$28,424.86	\$9,168.12
Vehicle Lifetime Cost	\$1,084,807.80	\$956,505.74	\$11,513.56
Fleet Avg. Lifetime Cost	\$1,041,749.87	\$878,341.16	\$11,139.25

Maintenance Strategy

For Sun Metro, both fleet and facility maintenance utilize the Fleet Net software to maintain maintenance records as well as set the schedule for preventative maintenance inspections. Every week, the maintenance supervisors print out the preventative maintenance needed and assign tasks out to staff. For fleet maintenance, the TOC facility is split between preventative maintenance inspections and repair work, both scheduled and unscheduled.

Overhaul Strategy

Sun Metro's overhaul strategy is also tracked through the Fleet Net software. For fleet maintenance, Sun Metro will begin tracking midlife rehabilitation schedules. Based on the mileage and age of the vehicles, Sun Metro will be notified when vehicles are reaching their midlife for rehabilitation. Also, during preventative maintenance inspections, mechanics will note if there are any needed replacements for transmission and other rehab items.

Before any massive overhaul of a vehicle that is approaching its ULB or have over 500,000 miles, the Fleet Maintenance Chief must be notified for approval of any work. The Fleet Maintenance Chief will consult the replacement schedule and notify the Assistant Director of Operations.

Disposal Strategy

Sun Metro's disposal strategy will also be tracked through the Fleet Net software. The replacement schedule and SoGR database will maintain an estimate of when vehicles will hit their ULB. Once the vehicle has hit 500,000 miles, the ULB has been reached, and the condition is below 3, the vehicle will be labeled being ready to be disposed. Any overhaul of the vehicle will need to be approved by the Fleet Maintenance Chief. Once the vehicle has been marked for disposal, the Assistant Director of Operations will work to either replace and/or dispose of the vehicle, depending on the need of the service. If the spare ratio is too high, Sun Metro may dispose of vehicles without replacement.

Acquisition & Renewal Strategy

In order to replace vehicles, Sun Metro will utilize their multi-year bus procurement for the different sizes of vehicles. By procuring a base purchase with multiple option years, this allows Sun Metro to speed up the administrative lead time to get vehicles faster. Sun Metro will utilize the SoGR database to estimate the vehicles most in need of replacement.

Future TAM Decision Support Tool

Currently, Sun Metro utilizes publicly available decision support tools, but Sun Metro is currently looking for a TAM-based software to track the inventory moving forward. As described in “TAM Decision Support Tool State of the Practice Synthesis”¹⁰, decision support tools can be different types of software packages. Commercial off the shelf packages include optional modules that may have asset tools for management. Enterprise Asset Management tools are packages specifically designed for TAM tracking and decision support and can tie into different processes. Custom software packages are also available which can be tailored to meet Sun Metro’s TAM needs.

Summary

Based on the analysis through both publicly available software packages and internal review, Sun Metro has reviewed different replacement schedules and will move forward with improving the SoGR percentage of the inventory.

¹⁰ Augustine, Noah and Bressette, Benjamin. TAM Decision Support Tool State of the Practice Synthesis: Transit Agency Use of Decision Support Tools. Cambridge, MA: Federal Transit Administration Transit Asset Management Program Office. <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-10/TAM-Decision-Support-Tool-State-of-Practice.pdf>



CHAPTER 6: Investment Prioritization

Per 49 CFR Part 625, investment prioritization means a Sun Metro's ranking of capital projects or programs to achieve or maintain a state of good repair. An investment prioritization is based on financial resources from all sources that a transit provider reasonably anticipates will be available over the TAM plan horizon period.

Investment Prioritization

The TAM plan is required to have a prioritization of investments that take into consideration funding levels from all sources over the next four (4) years of operations. By determining performance measures, current deficiencies, and funding sources to support the capital improvement projects.

Asset Performance Measures

Per 49 CFR Part 625, a performance measure means an expression based on a quantifiable indicator of performance or condition that is used to establish targets and to assess progress toward meeting the established targets. To determine where to prioritize investments, Sun Metro needs to establish performance targets for each asset class to attempt to achieve as a percentage of SoGR. The targets listed below are the ideal situation for Sun Metro’s asset inventory. For rolling stock, performance targets are set by the ULB, mileage, and condition ratings. For equipment, performance targets are set by the ULB and condition ratings. For facilities, performance targets are set by the condition ratings. For infrastructure, performance targets are set by the track availability and functionality.

Table 47 Performance Measures per Asset Category

Asset Category	Asset Class	Performance Target
Rolling Stock	Buses	<15% of fleet to exceed ULB of 14 years, 500,000 miles, and condition rating of less than 3
	Articulated Buses	<10% of fleet to exceed ULB of 14 years, 500,000 miles, and condition rating of less than 3
	Cutaway Buses/ Automobiles	<10% of fleet to exceed ULB of 10 years, 350,000 miles, and condition rating of less than 3
	Streetcar	<20% of fleet to exceed ULB of 31 years and condition rating of less than 3
Equipment	Non-Revenue Vehicles	<15% of fleet to exceed ULB of 8/14 years and condition rating of less than 3
	Ticket Vending Machines	<5% of machines to exceed ULB of 14 years and non-functioning
	Maintenance Equipment	<20% of equipment to have condition rating less than 3
Facilities	Admin/Maintenance	<10% of facilities to have condition rating less than 3
	Shelters	<10% of shelters to have condition rating less than 3
Infrastructure	Track and Other Equipment	Infrastructure to have >95% availability

Current Inventory Review

Sun Metro’s current asset inventory has not met some of their performance measures. The lower ranked items below the ULB will be the high priority when it comes to prioritization investment. For buses 40 feet and shorter, 60.2% of buses are past their ULB, over 500,000 miles, and have a condition rating of less than 3. For cutaway buses used in the paratransit/LIFT vehicles, 49.3% of

cutaways are past their ULB, over 500,000 miles, and have a condition rating of less than 3. Both sections desire to be less than 10% of assets to meet these criteria for disposal or replacement.

Table 48 Performance Measures and Targets

Rolling Stock						
Asset	FY22 # of Assets	# of Assets Past ULB, Mileage, & Condition	% of Assets Past Criteria	Unit Replace Value	# to be Disposed	Total Replacement Asset Value
30 ft Buses	6	0	0.0%	N/A	6	\$0
35 ft Buses	32	17	53.1%	\$590,000	10	\$4,130,000
40 ft Buses	70	48	68.6%	\$600,000	30	\$10,800,000
60 ft Buses	53	0	0.0%	\$670,000	0	\$0
Cutaway / Automobiles	68	29	42.6%	\$110,000	0	\$3,190,000
Streetcar	6	0	0.0%	N/A	0	\$0
Equipment						
Asset	FY22 # of Assets	# of Assets Past ULB & Condition	% of Assets Past Criteria	Unit Replace Value	# to be Disposed	Total Replacement Asset Value
Non-Rev. Vehicles	71	30	42.2%	\$62,000	0	\$1,860,000
TVM	100	4	0.0%	\$58,000	4	\$0
Other Equip.	13	0	0.0%	N/A – variety of equipment		
Facilities						
Facility	FY22 # of Assets	# of Assets Below 3 Condition	% of Assets Below 3 Condition	Unit Replace Value	# to be Disposed	Total Replacement Asset Value
Admin/Maint.	14	2	14.3%	N/A	2	N/A
Shelters	488		0.0%		0	
Rail Infrastructure						
Track	FY22 # of Track Miles	# of Track Miles w/ Performance Restriction (PR)	% of Track Miles w/ PR	Unit Replace Value	# to be Disposed	Total Replacement Asset Value
Streetcar	4.8	0.0	0.0%	N/A	0	N/A

Funding

Sun Metro is funded through a variety of sources – local sales tax, farebox, federal formula funds, state funds, and other local funds. Sun Metro received 0.5% of the local sales tax to help fund transit operations along with farebox revenues and other local funds. The federal funding is generally used to support capital expenses, such as maintenance and vehicle replacement.

When reviewing the City’s FY2023 Annual Budget, Sun Metro outlines their budget from general and enterprise funds of the City. The City has minimal funds attributed to Sun Metro’s operations. This is due to the other local funding available to Sun Metro, including sales tax and farebox revenue.

Table 49 City Budget – Maintenance and Repairs

Budget Item	FY22 Budget	FY23 Proposed Budget
Maintenance and Repairs	\$495,637	\$260,000

When reviewing the City’s adopted FY2022 and proposed FY2023 revenues for transit, 58.7% of the revenue comes from the local sales tax and 5.9% comes from the farebox revenues. There has been an increase in revenue by 30% from FY2022 to FY2023, the majority of that increase coming from intergovernmental revenues.

Table 50 City Budget - Revenues

Revenues	FY2022 Adopted	FY2023 Proposed	% Difference
Sales Taxes	\$50,600,000	\$54,720,000	8%
Fare Revenues	\$5,640,000	\$5,480,000	-3%
Intergovernmental Revenues	\$14,313,151	\$29,949,450	109%
Rents & Leases	\$55,000	\$55,000	0%
Other Revenues	\$920,000	\$2,265,000	146%
Total Revenues	\$71,528,151	\$93,165,450	30%

Of the fare revenues, the fixed route is estimated to be \$4,525,000 in FY2023 and paratransit/LIFT to be \$580,000.

Federal funding is going to mainly support the preventative maintenance, capital improvement projects, and vehicle replacement programs. Sun Metro receives an annual apportionment of formula funding for 200,000 or more in population made up of Sections 5307, 5310, and 5339.

- Section 5307 Urbanized Area Formula Funding** – apportioned to urbanized area with a population of 50,000 or more. Eligible uses for Section 5307 include: planning, engineering, design and evaluation of transit projects and other technical transportation-related studies; capital investments in bus and bus-related activities such as replacement, overhaul and rebuilding of buses, crime prevention and security equipment and construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software.

- Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Formula Funding** – apportioned to urbanized area with a population of 200,000 or more to meet the transportation needs of older adults and people with disabilities. Eligible uses for Section 5310 include: purchase of buses or vans and ADA-compliant equipment; transit-related information technology systems; mobility management programs; purchase of transportation services; training programs; building accessible paths; and improving signage.
- Section 5339 Bus and Bus Facilities Formula Funding** – apportioned to transit agencies who receive 5307 and operate a fixed route bus service. Eligible uses for Section 5339 include: Capital projects to replace, rehabilitate and purchase buses, vans, and related equipment, and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.

Signed into law in 2021, the Bipartisan Infrastructure Law, enacted as the Infrastructure Investment and Jobs Act, has increased both formula and competitive funding for transit services and projects for most funding amounts. Below is the increased FY2022 formula funding for Sun Metro.

Table 51 FTA FY22 Formula Funding

Formula Funding Amount	FY21 Totals	FY 22 Totals	% Difference
FY22 Full Year Apportionment	\$16,605,076	\$20,902,304	26%
Section 5307 Urbanized Area Formula	\$14,313,151	\$18,384,324	28%
Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities	\$692,817	\$983,064	42%
Section 5339 Buses and Bus Facilities	\$1,599,108	\$1,534,916	-4%

Sun Metro also has the opportunity to go after competitive grants for the asset inventory through the FTA. The Infrastructure Investment and Jobs Act authorized up to \$108 billion for public transportation, and nearly \$1.5 billion in grants were set aside for bus and bus facilities modernization.

Sun Metro has already been successful in receiving competitive grants in 2022. Along with \$8,800,000 in federal funding for electric vehicles, Sun Metro was awarded \$450,000 from the American Rescue Plan Act of 2021 to conduct a transit study to attract new users to Sun Metro, stimulate economic activity, help reduce greenhouse gas emissions, and help reduce the effects of climate change.

Even more opportunities are available to El Paso, especially with the replacing the aged fleet. Per the FTA website, the following competitive grants may assist El Paso with their asset inventory.

Table 52 Competitive Grant Opportunities

Competitive Grant	Description
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Transportation Grants Program	USDOT's RAISE Transportation Discretionary Grants program funds' investments in transportation infrastructure, including transit. RAISE Transportation grants replace the BUILD and TIGER grant program.
Bus Exportable Power Systems	FTA's BEPS program enables public transportation agencies, communities, and states to access resilient and flexible power options through hybrid electric bus fleet vehicles during major power disruptions.
Flexible Funding Programs - Congestion Mitigation and Air Quality Program	CMAQ provides funding to areas in nonattainment or maintenance for ozone, carbon monoxide, and/or particulate matter.
Grants for Buses and Bus Facilities Program	In addition to the formula funding, the competitive Bus and Bus Facilities grants help modernize bus fleets and bus facilities across the country.
Low or No Emission Vehicle Program - 5339(c)	The Low or No Emission competitive program provides funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities.

FY 2023 Capital Program

Sun Metro's FY2023 Capital Program highlights their current capital needs across the asset categories. While there are some projects do not have estimates included, Sun Metro's current budget has a focus on vehicle replacement.

Table 53 FY2023 Schedule A -Capital Program

Project Name	Fund/Funding Source	FY 2023 Budget
Rolling Stock		
Paratransit Rolling Stock	Sun Metro Capital Funds	\$1,000,000
Fixed Route Rolling Stock	Grant Funding	\$6,000,000
Zaragoza Brio Service Buses	Sun Metro Capital Funds	TBD
Possible Match for LONO Grant (LIFT) - \$9 million	Sun Metro Capital Funds	\$2,200,000
Total		\$9,200,000
Equipment		
Non-Revenue Motor Pool Support Vehicles	Sun Metro Capital Funds	\$60,000
Rail Museum Design and install of New HVAC System	Grant Funding	\$160,000
Facility Equipment Upgrades	Sun Metro Capital Funds	\$300,000
TOC Industrial Racks	Sun Metro Capital Funds	\$150,000
Diagnostic Tools	Grant Funding	\$13,500
Brake Simulator	Grant Funding	\$45,000
Electrical Simulator	Grant Funding	\$75,000
Door Simulator	Grant Funding	\$60,000
Total		\$863,500

Facility		
ETC Addition Design	Sun Metro Capital Funds	\$200,000
MVTC Kitchen Rehab	Grant Funding	\$75,000
Sidewalk Construction	Sun Metro Capital Funds	\$200,000
Zaragoza Bridge Area Property Acquisition	Sun Metro Capital Funds	TBD
Zaragoza Super Stop P/D/C	Sun Metro Capital Funds	TBD
TOC Kitchen Upgrades	Sun Metro Capital Funds	\$55,000
TOC Concrete Repairs	Grant Funding	\$421,000
NGTC/WTC/FPTC Concrete Repairs	Grant Funding	\$332,000
Mesa Brio Pylon Removal and Replacement	Grant Funding	\$250,000
Shade Canopy West Lot TOC P/D/C	Sun Metro Capital Funds	\$300,000
Union Depot Renovation P/D/C	Sun Metro Capital Funds	TBD
Zaragoza Brio Service P/D/C	Sun Metro Capital Funds	TBD
Total		\$1,833,000

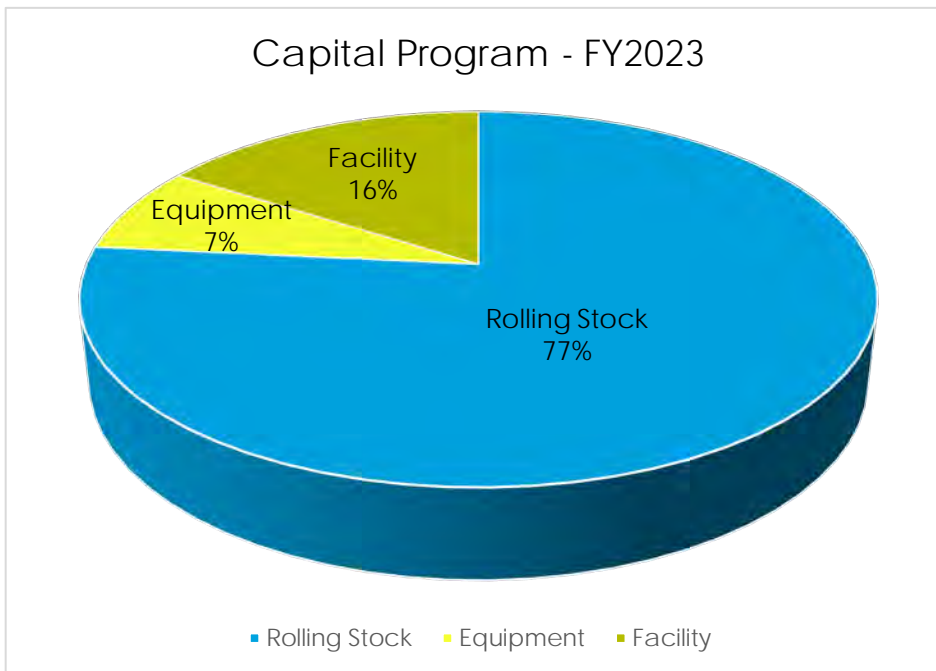


Figure 28 Capital Program Breakdown

Sun Metro TAM Goals (Project-Based)

Through the development of this TAM Plan, Sun Metro has developed several project-based short-term and long-term goals in order to keep the program within a SoGR repair.

Short-Term Goals

- **Execute the remaining capital improvement projects, including Montana Brio Rapid Transit System (Fall 2022)** – as listed as one of their on-going Capital Improvements, Sun Metro is transitioning from “hub-and-spoke” to a “node” system. As part of this transition, Sun Metro has developed new routes and access along the Montana Avenue corridor. Sun Metro committed \$25,400,000 to this project in the FY2022 Capital Program.
 - Along with the new Brio route, Sun Metro is also in the final stages of construction of the Upper East Side Transit Center to create a new transit center to access the system.
 - Sun Metro also committed \$1,600,000 of the FY2022 Capital program to bus stop enhancements throughout the system.
- **Disposition of older fleet (Fiscal Year (FY) 2023)** – As stated previously, peak vehicle service is 86 vehicles for the fixed route and Brio services. With the execution of the Montana Brio, peak will increase to 94-100 vehicles. Sun Metro currently has 161 vehicles on the inventory for fixed route and Brio services, which would mean a spare ratio of 87% (61% after the implementation of the Montana Brio). Sun Metro needs to reduce the number in its fleet down a spare ratio around 20% as required by the FTA. With 65 vehicles past the FTA’s guidance on ULB, Sun Metro should dispose of about 40 vehicles within the next fiscal year that are past the ULB.
 - By removing the additional vehicles from the fleet, Sun Metro can better utilize the resources and staff in fleet maintenance division. Removing the additional vehicles will reduce costs for preventative maintenance and decrease breakdowns in the older fleet that is already past the ULB.
- **Updating the vehicle replacement plan (FY2023)** – Sun Metro has a replacement schedule developed in 2021 that recommends the replacement of at least ten (10) vehicles a year based on local budgeting. This TAM Plan should serve as the basis for the updated replacement plan and provide options for competitive grant opportunities within the next four (4) years.
 - As part of the development of this TAM Plan, Sun Metro has been working on updated inventory of all assets, which will make up the framework of a new decision support tool for future TAM planning.
- **Integration of EVs (FY2023/2024)** – While EVs are becoming more and more popular for transit systems, Sun Metro currently does not have any EVs in place for either fixed route or paratransit services. Sun Metro has been awarded a competitive grant for \$8,800,000 worth of EVs for paratransit/LIFT services. EVs provide environmental benefits and potentially lower costs for fuel and maintenance. However, there should be considerable planning and

research on EV options and associated costs before implementation. Sun Metro should begin research on the possibility of introducing EVs immediately in anticipation of award of the grant and consider the pros and cons in early adoption.

- Battery-Electric Buses have been adopted by a variety of transit operations across the country. In 2020, Texas A&M Transportation Institute wrote a technical memorandum detailing their research and peer analysis of early adapters to electric buses title, “Analysis of Electric Bus Deployments at Transit Agencies.”¹¹The memo compared experiences with owning and operating battery-electric buses to varying degrees of success. Findings showed that while EVs had better fuel economy and reduced fuel costs, the range of the vehicles were reduced from other fuel sources. Some agencies experienced higher maintenance costs with maintaining EVs. Other agencies experienced higher costs in training fleet mechanics on EVs. Sun Metro needs to be aware of rising costs in maintaining vehicles after adding EVs into the inventory.
- Currently, there are a limited number of electric bus vendors that comply with Buy America regulations. While there are more EV manufacturers in Europe and Asia, there are six manufacturers available in the United States: BYD, Gillig, Green Power, New Flyer, Nova, and Proterra.¹²
- In the National Renewable Energy Laboratory report, “Financial Analysis of Battery Electric Transit Buses,” financial factors in purchasing and maintaining EVs were evaluated. While the grant for electric paratransit vehicles assists Sun Metro with acquiring the vehicles, other costs need to also be considered for the long-term life of the vehicle. Sun Metro will need to review depot versus fast chargers. Depot chargers are more economical and have a higher charge rate but have a higher cost at purchase.
- **Staffing changes (FY2023)** – The Facilities Maintenance Division has had issues with maintaining a full staff to be able to handle preventative maintenance and repairs of the Sun Metro facilities. Also, Sun Metro needs more staff to better monitor their subcontractor for paratransit, MV Transportation.
 - Sun Metro will need to prioritize monitoring their subcontractor, MV Transportation. Almost all of the current fleet of vehicles are past their ULB or about to hit their ULB. The conditions of these vehicles have ratings below 3, according to the fleet maintenance division. Once Sun Metro receives the electric vehicles for the paratransit service, the fleet maintenance division will need to maintain closer training and oversight of the replacement vehicles.

¹¹ Gick, Brittney N., Overman, John H., and Carlson, Todd B. Analysis of Electric Bus Deployment at Transit Agencies. TxDOT Research Project 0-9907-20, Technical Memorandum 3. May 2020. <https://static.tti.tamu.edu/tti.tamu.edu/documents/0-9907-20-TM3.pdf>

¹² Johnson, Caley, Nobler, Erin, Eudy, Leslie, and Jeffers, Matthew. Financial Analysis of Battery Electric Transit Buses. National Renewable Energy Laboratory. June 2020. https://afdc.energy.gov/files/u/publication/financial_analysis_be_transit_buses.pdf

Long-Term Goals

- **Maintain a fleet that meets the Performance Targets** – Currently the fixed route and Brio fleets have 40% of vehicles past the ULB for buses and articulated buses, and the paratransit fleet has 49% of vehicles past the ULB for cutaway buses. Furthermore, the paratransit fleet will have 86% of vehicles past the ULB in two (2) years. Through the development of an updated replacement plan, Sun Metro will work towards replacing and disposing vehicle in order to achieve this percentage.
- **Maintain a multi-year bus procurement to facilitate bus purchases** – Sun Metro currently has a singular bus procurement for 35-foot and 60-foot CNG Buses with New Flyer. This contract allows for Sun Metro to purchase up to 10 35-foot buses and 3 60-foot buses a year. By developing a procurement based on a base purchase that allows for multiple options, this can speed up the procurement process and limit the administrative lead time for replacement. If Sun Metro were to receive competitive grant funding for vehicle replacement, it would be able to utilize this procurement to achieve replacement as quickly as possible. Sun Metro will use the current contract to schedule the next multi-use bus procurement.
 - For paratransit vehicles, Sun Metro has utilized cooperative purchases for vehicles recently. When procuring electric vehicles for the Lift services, Sun Metro should utilize a similar procurement for the fleet.
- **Institute a consistent mid-life rehabilitation program** – While Sun Metro does have 40% of vehicles over the ULB and over half of the fleet has over 500,000 miles, the fleet maintenance division has worked hard to keep the condition of the vehicles at a passible level. Sun Metro does not currently have a policy in place for mid-life replacement of engines and does not currently go after federal funding for this replacement. Competitive federal funding is available for mid-life rehabilitation through Section 5339, Bus and Bus Facilities funding, and other discretionary transit grants, such as the RAISE grant. Sun Metro is going to continue to have high mileage on vehicles due to the nature of its system design. Therefore, it is imperative that Sun Metro develop a program and anticipate mid-life replacement for funding opportunities.
- **Disposal of facilities no longer used by Sun Metro** – Sun Metro has two facilities, the Union Depot, and the maintenance facility on the same property, that were formally used by the transit system; however, with the development of the Transit Operations Center in 2016, Sun Metro has officially stopped using those facilities within the last few years. The two facilities are now being leased – the Union Depot to Texas Tech University El Paso, Greyhound, and Amtrak and the maintenance facility to Greyhound and the other regional service providers. The Facility Maintenance division has expressed that a significant amount of time and expense to maintain these properties for the tenants. Specifically, in the Union Depot, the roof is failing and needs to be replaced, and in the maintenance facility, the air conditioning system needs to be replaced, which has been priced out to be over \$100,000. Sun Metro needs to consider the options for disposal of the properties while the current lease agreements are in place until 2025. The Union Depot is a historic property, and the maintenance facility has an in-ground fuel tank, which also need to be considered when planning for disposal.

Schedules

Currently, Sun Metro has a set replacement budget for rolling stock. Sun Metro has set a yearly schedule for vehicle replacement. The table below details the set schedule amounts.

Table 54 Replacement Schedule

Asset Category	Yearly Budget
Fixed Route Rolling Stock	\$6,000,000
Paratransit/LIFT Rolling Stock	\$1,000,000
Non-Revenue Vehicles (Equipment)	\$60,000 every other year

In addition to this funding, Sun Metro is actively going after competitive grants to replacement vehicles and equipment as opportunities arise until the fleet meets and maintains the performance target standards set forth in this TAM Plan.

At a minimum, Sun Metro will review the inventory of all assets for condition and ULB on an annual basis. Assets that fall below the criteria identified in this TAM Plan will be considered for replacement with the funding listed in Table 54. Sun Metro’s finance division will continue to review the degree to which investments made correspond with the priorities listed in this TAM Plan, as stated in the 2018 TAM Plan.

All annual maintenance activities have been detailed in this TAM Plan. Sun Metro will continue to report annual TAM performance measures and targets. During the NTD reporting, Sun Metro will review the policies and measurements laid out in this plan and make changes as it relates to Sun Metro’s current goals and objectives.

Summary

San Metro is moving forward with integrating asset management across all divisions and creating a single inventory list of assets. With this singular list, Sun Metro will be able to properly create a decision support tool that can be used on a regular basis.

As part of this TAM Plan, Sun Metro has set short-term and long-term project goals that will keep the assets in a SoGR. By setting performance measures and working towards achieving these goals, Sun Metro will improve their inventory of assets.

As stated in the 2018 TAM Plan, Sun Metro needs to continue to integrate TAM practices throughout the agency. The adoption of this TAM Plan by all divisions will help Sun Metro set performance targets and measurements for all transit assets. Furthermore, the TAM Plan should connect with the fleet and facility maintenance plans to maintain all assets in SoGR.



APPENDIX A: Preventative Maintenance Forms

Appendix A – Preventative Maintenance Forms

Attached is a sample of preventative maintenance forms for both fleet and facility.

There are five (5) different fleet preventative maintenance forms that correspond with the preventative maintenance procedures listed in Chapter 4 – Condition Assessment. The Preventative Maintenance “A” Form is included in this Appendix as an example of the fleet preventative maintenance forms.

There are 183 different facility preventative maintenance forms that correspond with the schedule of preventative maintenance listed in Chapter 4 – Condition Assessment. A sample of facility preventative maintenance forms is included in this Appendix.



Sun Metro
Inspection Checklist Items

Inspection Id: 04

Type: A

Item Number	Description
2004a	Make sure Vehicle Inspection Report is inside the Unit
2004b	Registration Sticker Expiration Date _____
2007	Headlights condition and aim Good ___ Bad ___
2008	Directionals working? Replace lenses if cracked or dark
2008a	NOTE: LED Lights are lifetime warranty (do not throw away)
2009	All clearance lights working? Yes ___ No ___
2009a	Report none working clearance lights & exterior reflectors
2010	Exterior reflectors Good ___ Bad ___
3000	Driver window condition and function
3000a	Move Left mirror up & down checking for looseness - Loose ___ Tight ___
3000b	Chk Silicone Seal For Mirror Wires Through Body ___ Bad ___ Good
3000c	Replace or install zip ties on wiring to exterior mirrors
3001	Left Front wheel nuts all there and tight? Yes ___ No ___
3001a	Left Front Tire Tread Depth ___ 32nd/ If less than 8/32nd report as defect (Y ___ / N ___)
3001b	Left Front Tire Air Pressure ___ PSI
3002a	Compartment Doors, panels & latches Operating Properly - Note Defects
3003	Left Rear Wheel nuts all there and tight? Yes ___ No ___
3003a	L. Rear Tire Tread Depth Inner ___ 32nd Outer ___ 32nd / If less than 6/32nd report as defect (Y ___ / N ___)
3003b	L. Rear Outer Tire Air Pressure Inner ___ PSI Outer ___ PSI
3004	Left side directionals working and condition
3005	Engine door condition and fit Good ___ Bad ___
3005a	Check that tailpipe is facing to left rear corner of unit Good ___ Bad ___
3005b	Write up as defect if not facing left ear corner
3006	Rear lights working and LED's Replace lenses if LED's out
3006b	NOTE: Both Sides LED's Must Be The Same Design (Do Not Mix)
3007a	License plate light Good ___ Bad ___
3008	Right Rear Wheel nuts all there and tight? Yes ___ No ___
3008a	R. Rear Tire Tread Depth Inner ___ 32nd Outer ___ 32nd / If less than 6/32nd report as defect (Y ___ / N ___)
3008b	R. Rear outer Tire Air Pressure Inner ___ PSI Outer ___ PSI
3008c	Hubometer condition OK ___ Bad ___
3010b	Fuel Door Magnets Both In Place Yes ___ No ___
3010c	Does Bus Engine Start With Fuel Door Open ___ Yes ___ No



Sun Metro Inspection Checklist Items

Inspection Id: 04

Type: A

Item Number	Description
3010d	If Engine Starts - Repair Safety Interlock Function
3011	Right Front wheel nuts all there and tight? Yes ___ No ___
3011a	Right Front Tire Tread Depth ___ 32nd / If less than 8/32nd report as defect (Y ___ / N ___)
3011b	Right Front Tire Air Pressure ___ PSI
3011c	Move Right mirror up & down checking for looseness - Loose ___ Tight ___
3011d	Chk Silicone Seal For Mirror Wires Through Body ___ Bad ___ Good
3011e	Replace or install zip ties on wiring to exterior mirrors
3099	XX
4000	ENGINE COMPARTMENT:CK ALT WIRING FOR CORROSION
4001	Inspect cooling system hoses and fittings for leaks & rubbing
4001a	Check For Loose Radiator Fan ___ Tight ___ Loose
4001b	Secure or Tie-Up All Hoses Hanging Lower Than Engine Cradle;
4001c	Completed; Yes ___ No ___
4001d	If Not Completed, Ste Reason Why Below:
4001e	_____
4001i	Check For Fuel Leak In Bat Box ___ Leaking ___ Not leaking
4002	Inspect cooling system radiator (Note Date on Radiator _____)
4002c	Belt Guard Installed ___ Yes ___ No (Repl If Guard Missing)
4003	Check condition of belts Good ___ Bad ___ write bad ones on defect section
4003b	REPLACE BOLT AND INSTALL NYLON LOCKING NUT ON TOP BRACKET OF BELT GUARD
4004	Check air compressor mounts & for leaks Good ___ Bad ___
4005	Check all fluids for level and contamination
4007	Change engine oil and filter(s) Take Oil Sample (Use Device While Running)
4007a	Drain and discard all filters
4007b	Properly dispose of used oil & drain tubs into oil drain
4008a	Take Transmission Oil Sample From Sample Plug (Under Trans)
4009	Check power steering fluid level & reservoir for leaks
4010	Check radiator coolant & condition of radiator Good ___ Bad ___
4010k	Ensure Hydraulic Hoses Connected To Fan Drive Have
4010l	Orange Sheathing ___ No ___ Yes (Install If Any Are Missing)
4011	Check/Service batteries & Cables (Use Caution Cleaning Batteries)
4011a	REMOVE CABLES FROM BATTERIES AND CLEAN THOROUGHLY
4011b	(NOTE - Do Not Use High Pressure Air/Water To Clean Batteries)



**Sun Metro
Inspection Checklist Items**

Inspection Id: 04

Type: A

Item Number	Description
4011c	Load Test Each Battery - All OK? Yes ___ No ___
4011d	Left Front battery load test results _____volts _____(initials)
4011e	Left Rear battery load test results _____volts _____(initials)
4011f	Right Front battery load test results _____volts _____(initials)
4011g	Right Rear battery load test results _____volts _____(initials)
4011h	Replace bad batteries Reconnect Battery Cables
4011i	Battery charge level _____12volts _____24volts (While Running)
4011j	24/12 volt disconnect switch test Passed___ Failed___
4011k	Battery hold down brackets Good ___ Bad ___
4011l	Check Battery Equalizer For Signs Of Overheating or Loose Connections
4011m	Equalizer Bad _____ Good _____
4012	Check all ignition wiring
4013b	If plug wires are cracked or worn replace them
4013c	Inspect Intake Piping Tighten Clamps 72 in lbs
4014	Change air filter REMEMBER 688-689 & 693 USE 2 DIFFERENT FILTERS FROM REST OF THIS FLEET
4015	Engine compartment lights Good___Bad___ report bad ones
4016	Check Exhaust System for Leaks (including blankets missing)
4016a	Note If Cat. Converter Monitors Are Flashing Codes (Yellow or Red)
4017	Grease Engine Door Hinge Fittings (4 fittings)
5000	****FIRE SUPPRESSION DETECTION SYSTEMS****
5001	Fire Suppression Green Light On? Yes ___ No ___ If No Repair Defect(s)
5001a	Clean Agent Cyl To Remove Dirt - Insp Cyl & Mount For Damage
5001b	Suppression Btle Gauge Needle Pointing "UP" In Green Zone Yes ___ No ___
5001c	If Not In Green Zone - Report as a defect
5001d	Manual Activation Button Safety Pin Installed Yes ___ No ___
5001e	Safety Pin Secured With Plastic Lockwire Seal (Not Zip-Tie)
5002a	Remove & insp All Blow-Off Caps / Repl Cracked or Missing Caps
5002b	Clean & Insp All Heat Actuated Thermostats - Repl If Damaged or Missing
5002c	Chk Function of Display Panel Back Up Battery - Unplug Fue Holder By
5002d	Batteries - Only "Service System" LED Should Be On
5002e	Reconnect Fuse Holder - The Green "System OK" LED Shoul Be On
6000	*****UNDERCHASSIS*****
6001	Grease all grease fittings under bus (before checking suspension)



**Sun Metro
Inspection Checklist Items**

Inspection Id: 04

Type: A

Item Number	Description
6001a	See Lube Diagram In Service Manual
6002	Check Diff. Oil level. Top Off With Approved Fluid. Note all leaks.
6002b	Check differential for cracks OK___ Cracked___
6002c	Check diff radius and lateral rods Good___ Bad___
6002e	Check diff air ride bags Cracked? Leaking? Yes___ No___
6002f	Check rear brake shoes measurement _____" remaining
6002g	Check brake adjustment Good___ Bad___(Adjust if needed)
6002h	Check brake chambers for leaking and movement
6002i	Check brake hoses for leaks and or rubbing report if leaking or rubbing
6002j	Check shock absorbers rubber mounts and leaks Good___ Bad___
6002k	Check ride height (Adjust to required height in manual)
6020	Check front axle & suspension
6020b	Check axle radius and lateral rods Good___ Bad___
6020c	Check front brake shoes measurement _____" remaining
6020d	Check brake adjustment Good___ Bad___ If bad adjust brakes
6020e	Check brake chambers for leaking and movement
6020f	Check brake hoses for leaks and rubbing
6020g	Brake relay valves leaking when applied Yes___ No___
6025	Check steering linkage for loose and wear
6025a	Check tie rod ends for binding and loose
6025b	Check steering gear for leaks and loose bolts
6025c	Grease and check steering gear drive shaft
6026a	Check ride height (Adjust to required height in manual)
6027	Check axle air ride bags Cracked? Leaking? Yes___ No___
6040	Check Engine Mounts
6041	Secure & Tie-Up All Hoses Lower Than Engine Cradle
6041a	Completed ___ Yes ___ No
6041b	If Not Completed, State Reason Why Below:
6041c	_____
7000	*****HVAC SYSTEM*****
7000a	SAFETY EQUIPMENT IS TO BE USED DURING INSPECTION
7000b	Clean condenser and evaporator coils (Use caution)
7000c	Comb fins if bent over (Used correct fin pattern)



**Sun Metro
Inspection Checklist Items**

Inspection Id: 04

Type: A

Item Number	Description
7000d	Replace or clean evaporator filters
7000e	Remove condenser screen and remove debris from top
7001	Read gauges to system and note pressures High ___ Low ___
7001a	Push and hold TK on display panel of HVAC system (note codes)
7002	Compressor oil level 1/4 ___ 1/2 ___ Color _____
7003	Compressor clutch (Lubricate w/special grease & set gap if req)
7003a	Gap = 0.045+/- 0.005 in. Lube with TK Grease #204 476
7003c	Check A/C Belt Tension - Adjusted To Specs? ___ Yes ___ No
7003d	Tension - New Belt 230-240 Lbs. Old Belt 200 Lbs.
7004	START BUS AND NOTE THE FOLLOWING
7005	Gauge pressures at idle - High Side ___ Low Side ___
7006	Visually inspect HVAC copper lines to ensure that nothing is rubbing against them
7007	Visually inspect HVAC unit and note noisy motors
7007a	Rec. Dates on Cond. Motors _____ Evap. Motor _____
7007b	If motors are over 5 years old write up on defects as due
7008	Check moisture indicator in liquid line or receiver tank Green? Yes ___ No ___
7009	Check condition of inlet and outlet seals Good ___ Bad ___
7009a	NOTE: Bad seals mean poor A/C performance
7010	Engage fast idle on engine and wait 15 minutes to record pressures
7010a	Suction _____ PSIG
7010b	Discharge _____ PGIG
7010c	Ambient _____ F
7010d	Return Air _____ F
7010e	Check A/C temp. using laser temp. gun inside at rear vents
7010f	Record temperature reading _____ degrees
7010g	Check A/C temp. using laser temp. gun at Driver's vent area with fan booster on
7010h	Record temp. reading _____ degrees. If difference is higher then 10 degrees. (unit needs servicing)
7011	Check Dehydrator/Filter using laser temp gun _____ Degrees Dif?
7011a	Replace if only difference on inlet and outlet is 40 degrees or more
7012	Check heating system function including defroster function
7013	Replace or clean defroster filter
7015	Check boost pump for function. Date of install _____
7015a	Write boost pump as due on defects if over 5 years old



**Sun Metro
Inspection Checklist Items**

Inspection Id:04

Type:A

Item Number	Description
8000	*****NATURAL GAS FUEL SYSTEM*****
8000a	PERFORM PRE-USE INSPECTION ON SAFETY PLATFORM
8000b	IAW CHECKLIST MOUNTED ON PLATFORM
8000c	SERVICEABLE(init)_____ UNSERVICEABLE(init)_____
8001	NOTE: SAFETY GEAR TO BE WORN IN THIS AREA
8002	Check all fuel tanks for leaks and damage
8002a	Make Sure All Tank Valves Are Open (Note Closed Valve As Defect)
8002b	Check Vent For Leaking Tank (Cold Valve Indicates Leaking Valve)
8003	Check all connections for leaks
8004	Check all gauges for operation (Replace as necessary)
8004a	Replace Both Primary and Secondary Fuel Filter(s)
8005a	CAUTION - READ MANUAL SECTION 10A FOR PROPER PROCEDURE
8005b	SYSTEM MUST BE DEPRESSURIZED BEFORE SERVICING FILTERS
8006	Check Fuel Tank Securement And Covers OK ___ Bad ___
8006a	*****GAS DETECTION SYSTEM*****
8006b	Gas Detection Green Light On? Yes ___ No ___ If Not Report as Defect(
8006c	Examine Sensors For Contamination
8006d	Examine Sensor Wires For Pinched or Frayed
8006e	Test Operation Of Both Sensors & Display Module
8006f	Expose Each Sensor To 10 Seconds of Unburned Butane Gas
8006g	Verify Display Panel Indicates "Significant Alarm"
8006h	Certification date _____ Today's date
8006i	Inspector (Print Name) _____
9000	*****INTERIOR OF UNIT*****
9001	Driver's seat cushions Good ___ Bad ___ Replace if bad
9001a	Driver's seat controls all working? Yes ___ No ___
9001b	Lubricate slide mechanism
9001c	Check Driver's Plexiglass Barrier/Door For Sharp Edges
9001d	Check Barrier/Door Hinges for Misiing or Loose Bolts
9001e	Check Locking Magnet and Plate for Proper Securement
9002	Steering column secure to dash? Yes ___ No ___
9002a	Tilt and telescopic function Good ___ Bad ___
9002b	Steering wheel condition Good ___ Bad ___



Sun Metro
Inspection Checklist Items

Inspection Id: 04

Type: A

Item Number	Description
9002c	Horn working Yes___ No___
9002d	Back up horn working? Yes___ No___
9003	Dash gauges all working? Yes___ No___
9003a	Front PSI Gauge OK___ Bad___
9003b	Rear PSI Gauge OK___ Bad___
9003c	Volt Gauge OK___ Bad___
9004	Driver's control switches all working Yes___ No___
9004a	Note which one are not working properly
9004b	Yellow Extension On Hazard Switch? ___ No ___ Yes
9004c	Replace Extension If Missing
9005	Dash lights all working? Yes___ No___
9005a	Note which one are not working on defect section
9005b	Driver light working & cover on? Yes___ No___
9005c	Driver's fan working? Yes___ No___
9005d	Air Brake Test Park Brake (Max 2 PSI Drop in pressure)
9005e	Press Brake pedal to Floor (Max 3 PSI Drop in Pressure 1 minute)
9005f	Pump brakes slowly - low air light on at 60-85 PSI Yes___ No___
9005g	Pump brakes until park brake knob pops out Passed___ Failed___
9005h	Inspect, Clean & Lubricate Brake Treadle (Smooth Movement)
9005i	Voice Radio Test With Dispatcher Passed ___ Failed ___
9006	Sun visor(s) condition & function Good___ Bad___
9007	Driver's Sieman's control mounting brackets Good___ Bad___
9008	Air compressor build up test
9008a	80 PSI to 110 PSI in 45 seconds (full throttle) OK___ Bad___
9010	Interior seats all tight and secure Yes___ No___
9010a	W/C tie downs belts and function OK___ Bad___ Dirty___
9010b	W/C Flip seat function. Seat stays Up? ___Yes ___No
9010c	If No, replace gas cylinders
9010d	Seat inserts Dirty___ Clean___ Worn out___
9011	Remove all graffiti in interior
9012	Grab stanchions all tight and secure
9012a	Chime Switch Covers All On? (4 Locations) ___Missing Covers
9012b	Chime Strips/Cord Working & Secure? ___Yes ___No



Sun Metro
Inspection Checklist Items

Inspection Id: 04

Type: A

Item Number	Description
9012c	Stop Request Chime Working? <input type="checkbox"/> No <input type="checkbox"/> Yes
9012d	Stop Request Sign Working? <input type="checkbox"/> Yes <input type="checkbox"/> No
9012e	Stop Request Audio Working? <input type="checkbox"/> No <input type="checkbox"/> Yes
9013	Interior floor covering tight and secure (tripping hazards?)
9014	Lubricate and test emergency window functions
9014a	"Break Cover" for Door(s) Emergency Exit in Place? Yes <input type="checkbox"/> No <input type="checkbox"/>
9015	Roof escape hatch function and securement Good <input type="checkbox"/> Bad <input type="checkbox"/>
9016	Fire extinguisher condition & date OK <input type="checkbox"/> Date _____
9016a	Remember: Certification good for 1 year from date on tag
9016b	Emergency Triangle Kit Complete <input type="checkbox"/> Yes <input type="checkbox"/> No
9016c	Replace Parts As Necessary
9017	Interior lights Good <input type="checkbox"/> Bad <input type="checkbox"/> (repair as necessary)
9020	Wheelchair ramp function test Passed <input type="checkbox"/> Failed <input type="checkbox"/>
9020a	Condition of ramp Good <input type="checkbox"/> Bad <input type="checkbox"/>
9020b	Lubricate pivot points on ramp assembly
9020c	NOTE: Do not get lubricant on ramp surface (safety issue)
9020d	Outside Kneeling light and beeper working? Yes <input type="checkbox"/> No <input type="checkbox"/>
9020e	Check Fluid Level in Hydraulic Power Unit (Behind Dash Area)
9020f	Check Ramp Sensor For proper Adjustment OK <input type="checkbox"/> Bad <input type="checkbox"/>
9020g	Kneel unit. be sure kneel stays on down position for 1 minute
9021	Kneeling function test Passed <input type="checkbox"/> Failed <input type="checkbox"/>
9030	*****ENTRANCE DOOR*****
9031	Open and Close time? Open _____ sec. Close _____ sec.
9031a	Adjust if necessary to 3 sec to open & 3 sec to close
9032b	Do door bearings Have Play Yes <input type="checkbox"/> No <input type="checkbox"/> If yes write as defect
9032c	Note any binding of door panels
9032d	Condition of door seals Good <input type="checkbox"/> Bad <input type="checkbox"/>
9032e	NOTE: Bad door seals means poor A/C performance
9032f	Door mechanism compartment and door secure Yes <input type="checkbox"/> No <input type="checkbox"/>
9032g	Step lights inside and out working OK <input type="checkbox"/> Bad <input type="checkbox"/>
9040	*****EXIT DOOR*****
9041	Open and Close time? Open _____ seconds Close _____ seconds
9041c	Chk Operation of Sensitive Edge Alarm Buzzer and Light <input type="checkbox"/> Bad <input type="checkbox"/> Good



Sun Metro Inspection Checklist Items

Inspection Id: 04

Type: A

Item Number	Description
9041d	Do door bearings Have Play Yes___ No___ If yes write as defect
9041f	Condition of door seals Good___ Bad___
9041g	NOTE: Bad door seals means poor A/C performance
9041h	Door mechanism compartment and door secure Yes___ No___
9041i	Step lights inside and out working OK___ Bad___
9042a	Prepare Bus For Rear Door Class Function Test (2 People Required)
9042b	Move Door Control Handle to Rear Door Open Position
9042c	Ensure Green Light Above Door is on ___ Yes ___ No (Correct If No)
9042d	Doors Opened? ___ Yes ___ No (Correct If No)
9042e	Once Door Opens Move Door Control Handle To Close Position While
9042f	Person Stands In Door Opening (In Door Sensitive Edge Area)
9042h	Do Doors Reopen? ___ Yes ___ No (Correct Sensitive Edge if No)
9050	*****SECURITY CAMERA SYSTEM*****
9050a	NOTE Any Camera Location Missing Camera or Loose Mounting
9050b	NOTE Any Camera Not Pointed In Correct Direction
9050d	NOTE Any Camera Location With Any Attempt To Cover Camera Lense
9060	*****DESTINATION SIGNS*****
9060a	Destination Sign glass condition Good___ Bad___
9062	Check function of signs by entering 3 different codes to display
9062a	Note any areas that are not working
9090	ENSURE STEERING WHEEL AND SEATS ARE CLEAN
9099	XX
9910	Supervisor Signature of PM Completed
9911	_____
9912	Date Completed _____
9989	DEFECTS FOUND (PRINT CLEARLY)
99891	-----
99892	-----
99893	-----
99894	-----
99895	-----
99896	-----
99897	-----



**Sun Metro
Inspection Checklist Items**

Inspection Id: 04

Type: A

Item Number	Description
99898	-----
99899	-----
99900	-----
99901	-----
99902	-----
99903	-----
99904	-----
99905	-----
99906	-----
99907	
99908	
99909	
99910	
99911	
99912	
9999	List all parts that were not available to complete PM
9999a	PM Supervisor Signature _____
9999b	-----



Sun Metro Inspection Checklist Items

Inspection Id: I30

Type: A

Item Number	Description
100	-----OVERALL BUILDING INSPECTION-----
10000	BUILDING STRUCTURE▶ Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
10001	Are inside building tiles cracked or missing? ___YES OR ___NO
10002	Are sidewalks free of obstructions? ___YES OR ___NO
10003	Are outside curbs striped? ___NO OR ___YES
10004	Are bus parking pads free of holes or cracks? ___YES OR ___NO
10005	Are benches clean, safe, and well maintained? ___YES OR ___NO
10006	Are Walls/Roof/Windows clean and visible? ___YES OR ___NO
10007	Are there any safety hazards present? ___NO OR ___YES
10008	Is Building freshly painted or is paint in fair conditions? ___YES OR ___NO
10009	Hand rails secure and safe? ___YES OR ___NO
10010	Is Graffiti and vandalism present? ___YES OR ___NO
10011	Are any brown spots or leaks on ground or wall present? ___YES OR ___NO
10012	Are all cover plates, grates, assembled and well maintained? ___NO OR ___YES
10013	Is card reader working properly? ___YES OR ___NO
10014	Are all appliances working properly? ___YES OR ___NO
10015	Are all fabrics clean and odor free (carpet , sofa)? ___YES OR ___NO
10016	Are all control panels marked and labeled? ___YES OR ___NO
10017	Are elevator lights working and is lens free of trash and dust? ___YES OR ___NO
10018	Is elevator properly leveled at each floor? ___YES OR ___NO
10020	Is elevator certificate current? ___YES OR ___NO
10021	Are the doors uniformly operating and clear of graffiti? ___YES OR ___NO
10022	Is elevator clean and free of streaks and smears? ___YES OR ___NO
10023	Is emergency phone working properly? ___YES OR ___NO
10024	Is thresholds free of rust and wear? ___YES OR ___NO
10025	Is Furniture in good condition free of defects or regular wear and tear? ___YES OR ___NO
10026	Signage, posters, and menus hung in appropriate designated area? ___YES OR ___NO
10027	Concession area clean and free of trash, trays, food, etc? ___NO OR ___YES
20000	ELECTRICAL▶ Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
20001	Do electrical outlets and switches have exposed wires? ___YES OR ___NO
20002	Are outlets covers secure? ___YES OR ___NO
20003	Are all electrical panels properly labeled? ___YES OR ___NO
20004	Are Electrical panels free from obstruction 3ft in either direction? ___YES OR ___NO



Sun Metro Inspection Checklist Items

Inspection Id: I30

Type: A

Item Number	Description
20005	Are GFCI's working properly? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
30000	GROUNDS/ LANDSCAPING▶Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
30001	Are Exterior tiles cracked or missing? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30002	Are Outside building sidewalks free of obstruction? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
30003	Are Outside building curbs striped? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30004	Bus parking pads and sidewalks free of holes and cracks? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30005	Are Benches clean, safe and well maintained? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30006	Are signs visible, clean and free of damage? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
30007	Are parking lots well striped and visible? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30008	Is there adequate bike rack space available? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30009	Are indoor and outdoor Plants & Trees in healthy condition? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
30010	Are there branches broken or leaning? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30011	Sprinklers system show any leaks or broken valves? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
30012	Is ground cover exposed and or missing gravel or rock? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30013	Are weeds present? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
30014	Are there any tripping hazards present from roots? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
40000	LIGHTING▶Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
40001	Light fixtures clean and working properly and not broken or cracked? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
40002	Is lighting controller working properly? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
40003	Is wiring exposed? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
40004	Are all parking lot lights working properly? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50000	EQUIPMENT▶Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
50001	Are handdryers functional? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50002	Are Toilet paper and soap dispensers functional? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50003	Check exhaust fans for proper operation
50004	Is Ice maker functional? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50005	Check grease trap for leakage, damage, and is lid properly secure? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50006	Is regrigerator functional? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50007	Is stove Functional? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50008	Conditions of vending, change, and TVM machines up to company standard? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
50009	Any equipment that Sun Metro responsible for broken or not working properly? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60000	PLUMBING▶Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.



**Sun Metro
Inspection Checklist Items**

Inspection Id: I30

Type: A

Item Number	Description
60001	Are all toilets operable? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60002	Is water heater on. <input type="checkbox"/> YES OR <input type="checkbox"/> NO Is water heater leaking? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60003	Do we have leaking faucets or Pipes? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60004	Are backflows leaking? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60005	Is there rust or corrosion on all pipes? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60006	Are all clean outs covered and free of damage? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
60007	Are Water fountains functioning properly? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70000	SAFETY ►Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
70001	Are all ADA doors opening and closing properly? <input type="checkbox"/> YES OR <input type="checkbox"/> NO Are all ADA push buttons working properly? <input type="checkbox"/> NO OR <input type="checkbox"/> YES
70002	Are Stall doors/locks functioning properly in restrooms? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70003	Signs on buildings visible and clear of any blockage? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70004	Grab bars in toilet stalls secure and present? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70005	Designated accessible parking spaces clearly marked? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70006	Verified inspection card on each fire extinguisher? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70007	Doorways have an exit sign that is visible under any condition, even in darkness? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70008	Check status of fire panels is it in NORMAL STATUS? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70009	Any tripping, slipping or falling hazards? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
70010	Are the Safety Data Sheet updated? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80000	CUSTODIAL DUTIES ►Note: All applicable Safety Rules & Regulations Will Be Followed At all Times.
80001	Restrooms clean ? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80002	Trash cans overflowing? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80003	Floors, walls, ceilings free of trash, clutter and debris? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80004	Cleaning supplies clearly marked and in appropriate container? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80005	Stalls supplied with all appropriate amenities? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80006	Are cleaning services adequate for building? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80007	Are any unauthorized materials and hand bills or clutter in the area? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80008	Toiletries at appropriate level for terminal traffic? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80009	Supply closet neat and organized? <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80010	ARE FIRE RISER VALVES LOCKED WITH A CHAIN AND ARE VALVES IN THE OPEN POSTION. <input type="checkbox"/> YES OR <input type="checkbox"/> NO
80011	REPORT AN VISIBLE LEAKS
90000	DEFECTS FOUND
90001	



**Sun Metro
Inspection Checklist Items**

Inspection Id: I30
Type: A

Item Number	Description
90002	
90003	
90004	
90005	
90006	
90007	
90008	
90009	
90010	Technician Print:
90011	Technician Signature:
90012	Supervisor Signature:
90013	Time taken to accomplish PM: _____ Hours



Sun Metro Inspection Checklist Items

Inspection Id: ADA
Type: A

Item Number	Description
10000	*****ADA DOOR CHECKLIST*****
10001	****LOCATION MAIN ENTRANCE/RESTROOMS****
10002	1. IS THERE ANY VISIBLE DAMAGE TO ADA PUSH BUTTONS AND DOORS? ___ NO OR ___ YES
10003	2. ARE HANDLES LOOSE OR MISSING HARDWARE? ___ YES OR ___ NO
10004	3. ARE INFORMATIONAL STICKERS VISIBLE? ___ NO OR ___ YES DO ANY OF THE INFORMATIONAL STICKERS NEED TO BE REPLACED? ___ NO OR ___ YES
10005	4. ARE ADA PUSH BUTTON LETTERS VISABLE? ___ YES OR ___ NO
10006	5. ARE ALL ADA PUSH BUTTONS WORKING PROPERLY? ___ NO OR ___ YES
10007	6. IS DOOR CLOSER ARM LOOSE OR MISSING HARDWARE? ___ NO OR ___ YES
10008	7. DID YOU CONDUCT A FUNCTION TEST? ___ YES ___ NO ARE DOORS OPENING AND CLOSING PROPERLY? ___ YES OR ___ NO
10009	8. DO DOORS NEED ADJUSTING? ___ YES OR ___ NO
10010	
10011	
10012	LIST DEFICIENCIES FOUND DURING INSPECTION:
10013	
10014	
10015	
10016	
10017	
10018	TECHNICIAN PRINT:
10019	TECHNICIAN SIGNATURE:
10020	TIME TAKEN TO ACCOMPLISH PM: _____
10021	SUPERVISOR SIGNATURE:



Sun Metro Inspection Checklist Items

Inspection Id: FS
Type: A

Item Number	Description
10000	*****TOC FIRE SPRINKLER SYSTEM*****
10001	
10002	Did you Advise the following Depts. that you will run a test by phone call and or e-mail dispatcher 212-3306; Meza 212-3405; Safety 212-3382; Parts 212-3390; Farebox 212-3399; Body shop 212-3397
10003	Main display panel is located at IT RM 251. First riser is at RM 243 Farebox. A open the main valve, wait a few minutes the alarm should go off. Pressure gauges should not drop under 50psi. Close valve & reset panel.
10004	
10005	Main display panel is located at IT RM 125 next to Safety Dept. Admin building. Test point valve at Elect RM 124, test point valve inside RM 517
10006	
10007	Inform dispatch and all above the test is completed.
10008	
10009	List deficiencies found during inspection:
10010	
10011	TIME TAKEN TO ACCOMPLISH PM: ____ HOURS
20000	
20001	TECHNICIAN PRINT: _____
20002	
20003	TECHNICIAN SIGNATURE: _____
20004	
20005	SUPERVISOR SIGNATURE: _____



APPENDIX B: Asset Audit Report – On Site Visit

Appendix B – Asset Audit Report



Fleet Maintenance Specialists Inc.

Trip Report Asset Audit Report

Aug 29, 2022

Introduction

This report is meant to organize the asset audit we performed during the week of Aug 22, 2022

Transit Terminals

We inspected many transit terminals and for the most part the assets included the building and supporting sub systems such as HVAC, and janitorial. All of the facilities were relatively clean and for the most part the systems were all in operating order and most had janitorial on site cleaning the facility. There was one facility that the HVAC was not working, and the doors were propped open. We did note that the facilities were not designed as efficiently as they could have, and it is clear that design took precedence over efficiency. In some cases, there were four separate buildings with four separate HVAC systems. In addition, many of the buildings did not have fire sprinkler systems or fire extinguishers.

Maintenance Facilities

Lift operated by MV

The lift facility was inspected because the facility is owned by Sun Metro. We inspected each bay and documented a list of assets and locations in each bay We have attached the spreadsheet that identifies everything we documented in each bay within the facility as well as the yard and fueling facility. The facility was relatively clean and organized. A few things we noted was the MSDS book was not properly organized with index and tabs to make it easy to find the proper supplies sand safety response sheets.

Streetcar facility MSF

The streetcar garage was very clean well organized, and all of the assets were in a state of good repair. The facility was clean and organized and they had all of the appropriate tools and equipment by which to operate effectively. They have two bays and a catwalk for servicing the roof mounted equipment. We did ask them if the staff were trained for high voltage, and they responded that they were trained but were not certified for proper safety protocols and or equipment. This should be corrected based on 50-volt protocols and OSHA safety requirements.

Transit Operation Center Maintenance Yard (Montana)

This facility is fairly new and is very large. The shop includes a nonrevenue vehicle maintenance shop with five bays, a full body shop with four prep bays a ventilated paint mixing room and a paint booth, and a tire cage shop



Fleet Maintenance Specialists

1

31500 Grape Street 3-363
Ph:951-805-9217



Fleet Maintenance Specialists Inc.

area, as well as a full facility maintenance shop and including separate bus wash/steam bay and fueling station.

Sun Metro has one large parking lot sweeper, and the yard shows it, as it is very well taken care of. Again, we audited all the bays to identify all assets within the bays and documented the make, identifying information, color, and condition. Some of the equipment did not have asset tags nor the make, year, and model; so, we basically tried to identify the equipment by color or serial number when available. In addition, we identified the facility and location within the facility.

Vehicle Condition Assessment

We inspected one lift vehicle, three non-revenue vehicles and three HD forty-foot buses and one Articulated bus. We have attached the inspection document. On the most part the buses were in relatively good share however there were a few general fleet conditions that should be addressed.

1. All of the buses were dirty however the Lift vehicle was extremely dirty especially the floors.
2. The Lift vehicle has a very torn up driver's seat
3. There was old equipment that has been disconnected on the buses, but the subsystems are still on the bus and don't work. The rear door passenger operated touch clad system; the PA microphone is still on the bus, but it does not work.
4. There was one bus that had a grinding brake issue CS front wheel.
5. The steam cleaning was being performed as all of the engines were very clean.

Other noted items

6. They need to address the old shop site and the enormous amount of time and resources that they are spending on this facility.
7. They also need to sell or utilize the equipment that is still in the old shop.
8. The replacement schedule needs to be addressed so that they do not have the need to run significantly old buses.
9. They need to implement a formal midlife rehabilitation program utilizing available FTA funding.
10. The engines should not be replaced until the proper decisions are made with regards to the replacement of the vehicle and useful life.
11. They need to decide what they are going to do with the new park and ride that has all the store fronts that are at this time not being used?
12. We need to address future considerations for EV's charging, range, total vehicles.
13. SMF needs to address [NFPA 70E](#) regulations for installation and handling of High voltage for safe maintenance and operation of the vehicles. Staff are not yet certified. Go to link.

