



Transit Asset Management Plan

2022



Document Control History

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A	9/28/2022	2022 RTA Transit Asset Management Plan. Complete update of the 2018 RTA TAM Plan.

Agency Self-Certification


Agency Name	Regional Transportation Authority of Middle Tennessee
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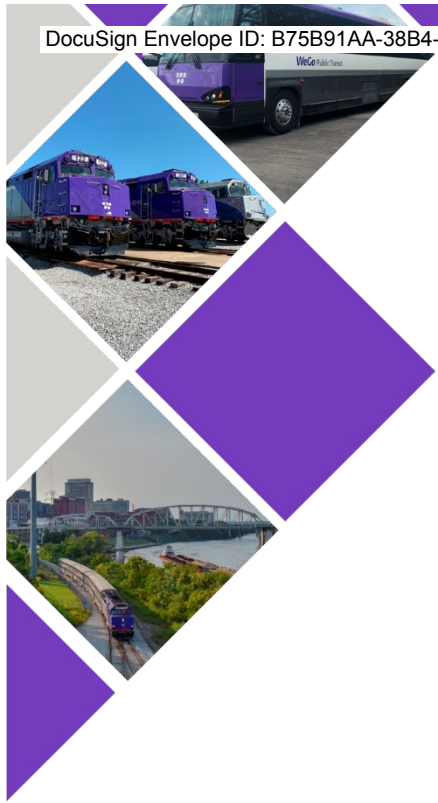
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Chapter 1

INTRODUCTION AND CONTEXT FOR TAM AT RTA

A Transit Asset Management Plan (TAM Plan) is a strategic and systematic planning tool to manage transit capital assets based on careful planning and improved decision-making and is required of all providers by the Federal Transit Administration (FTA). A TAM Plan uses transit asset conditions to guide how to manage capital assets and prioritize funding to improve or maintain the overall transit fleet and facilities to a target level of State of Good Repair (SGR). The federal government defines a State of Good Repair as “the condition in which an asset is able to operate at a full level of performance.” (49 CFR § 625.5) A TAM Plan is essentially a business model that evaluates asset conditions to develop a prioritized asset replacement strategy. This document is the first update to the original Regional Transportation Authority of Middle Tennessee TAM Plan.

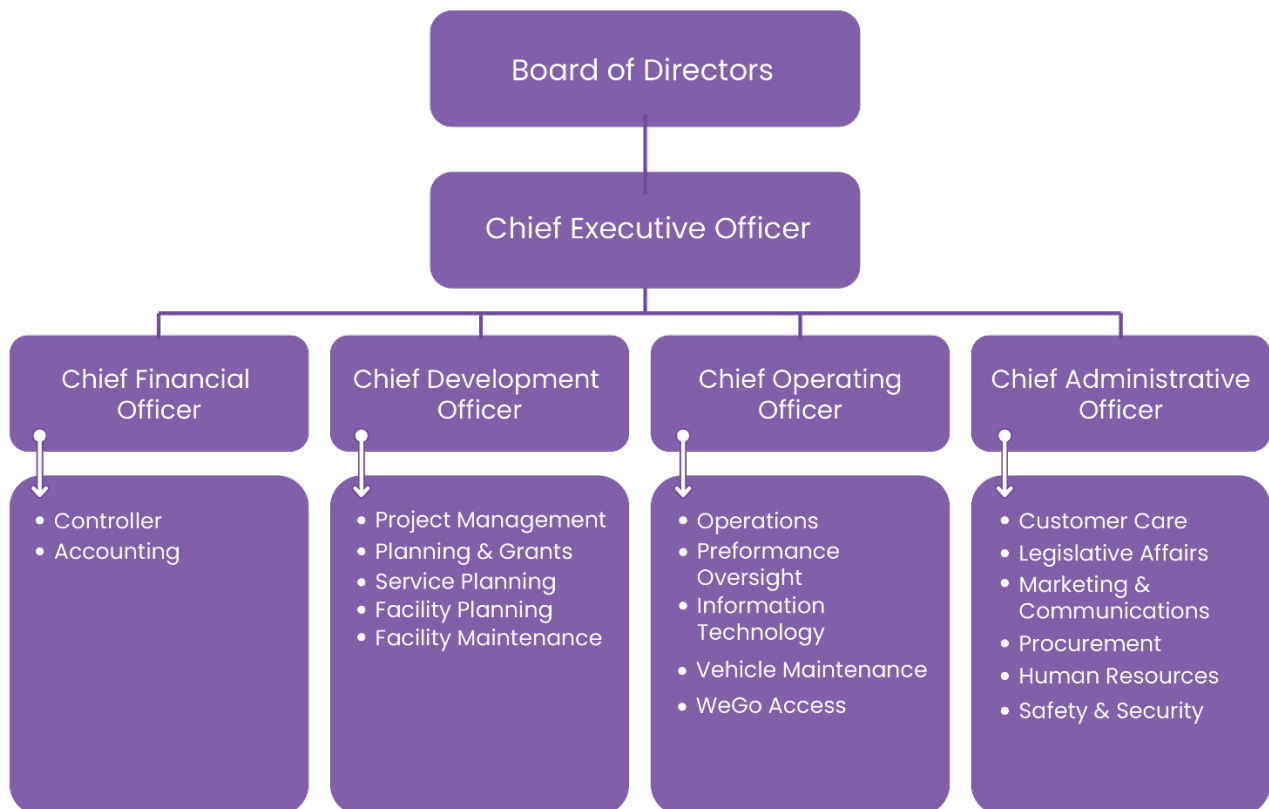
1.1. THE REGIONAL TRANSPORTATION AUTHORITY OF MIDDLE TENNESSEE (RTA)

The Regional Transportation Authority (RTA) of Middle Tennessee was originally created by state statute in 1988 and is led by a Board of Directors composed of city and county mayors and community leaders. Member jurisdictions are listed in Table 1. RTA contracts with the Nashville Metropolitan Transit Authority (MTA) to manage the all RTA operations in accordance with the policies set by the RTA Board. Although both RTA and MTA do business as “WeGo Public Transit,” this TAM Plan will refer to RTA rather than its public-facing name of WeGo. Figure 1 shows the organizational chart of the agency.

Table 1. RTA Member Jurisdictions

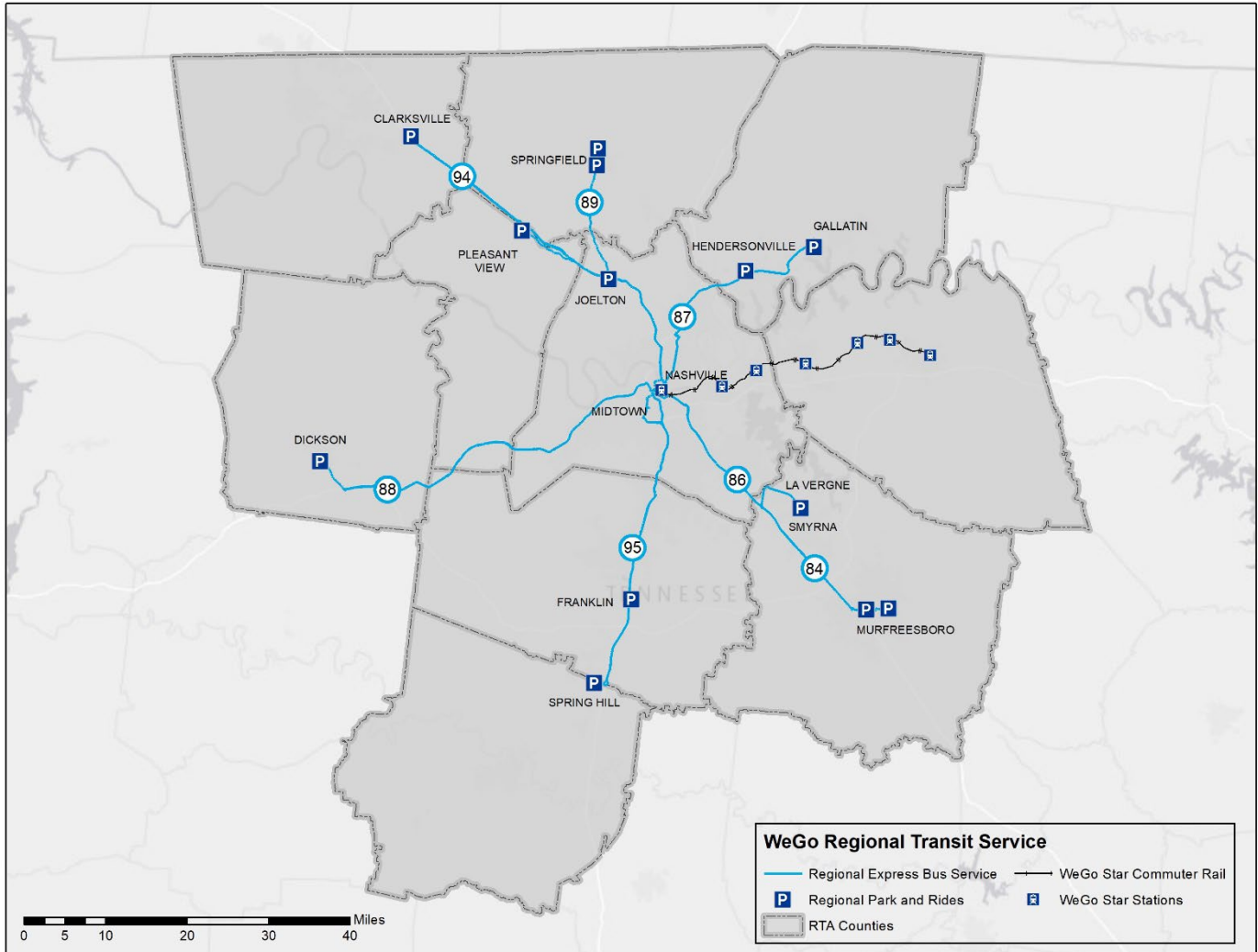
<p>Cheatham County Ashland City</p> <p>Davidson County Belle Meade Metro Nashville-Davidson County Goodlettsville</p> <p>Dickson County City of Dickson Dickson County</p> <p>Maury County Columbia</p> <p>Montgomery County Clarksville Montgomery County</p>	<p>Robertson County Robertson County Springfield</p> <p>Rutherford County La Vergne Murfreesboro Rutherford County Smyrna</p> <p>Sumner County Gallatin Hendersonville Portland Sumner County Westmoreland White House</p>	<p>Williamson County Brentwood Franklin Spring Hill Williamson County</p> <p>Wilson County Lebanon Mt. Juliet Wilson County</p>
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Figure 1. Middle Tennessee RTA Organizational Chart

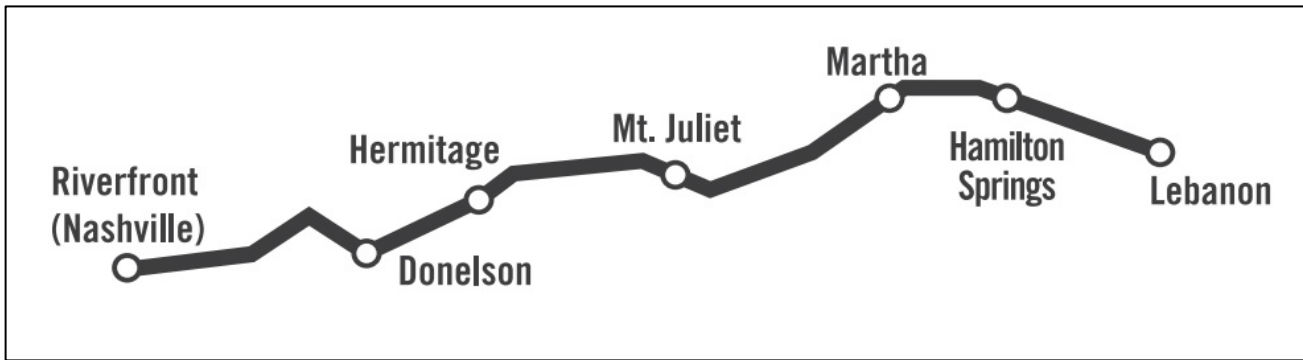


RTA operates seven express, regional bus routes between downtown Nashville and the following cities: Clarksville (#94), Dickson (#88), Franklin/Spring Hill (#95), Gallatin (#87), Joelton/Springfield (#89), La Vergne/ Smyrna (#86), and Murfreesboro (#84). These routes are illustrated in Figure 2. RTA owns all rolling stock used on these routes, though some are operated under contract with Gray Line of Tennessee.

Figure 2. RTA Member Counties and Routes



The RTA also oversees the WeGo Star, a regional commuter rail service formerly known as the Music City Star. Figure 3 indicates the location of the Star within the overall service area and identifies the Star's seven stations. The Star operates on a 32-mile section of track owned by the Nashville & Eastern Railroad Authority (NERA) and leased to the Nashville and Eastern Railroad (NERR), a short-line railroad owned by R.J. Corman Railroad Company. RTA contracts with Transit Solutions Group (TSG), a subsidiary of R.J. Corman Railroad Company, to provide service using rolling stock owned by RTA. As part of their contractual obligations, TSG also maintains the WeGo Star rolling stock and R.J. Corman maintains the rail infrastructure. TSG and/or R.J. Corman owns all equipment associated with maintenance and rolling stock. To provide oversight for TSG, RTA contracts with consultants to perform annual audits of TSG's maintenance of rolling stock and track/bridge infrastructure.

Figure 3. WeGo Star Stations

RTA also offers vanpool service. This regional transportation solution helps Middle Tennesseans lower their commute costs and extend the life of their personal vehicles by commuting together. RTA contracts with the Transportation Management Association (TMA) Group, a 501(c)(3) nonprofit corporation, to operate the vanpool program known as VanStar.

1.2. POLICY CONTEXT OF THE TAM PLAN

The requirements for a TAM plan fit within the overall context of transportation planning and the emphasis on performance planning that was established by MAP-21. Table 2 lists eight topic areas for performance planning as mandated by MAP-21 and carried forward by the FAST ACT and the Infrastructure Investment and Jobs Act (IIJA). The development of a TAM plan is just one of the linked planning efforts to be developed under the FTA and the Federal Highway Administration (FHWA).

Table 2. Performance Planning Mandated by MAP-21

FTA	FHWA
National Public Transit Safety Plan	Highway Asset Management Plan
Transit Asset Management Plan	Pavement and Bridge Condition
Public Transportation Agency Safety Plan	Safety Performance
	Highway Safety Improvement Plan
	System Performance and CMAQ

The FTA Final Rule, published as 81 FR 48889, later codified as 49 CFR § 625, carries out the mandate of 49 USC § 5326 for transit asset management to:

“The Federal Transit Administration is publishing a final rule to define the term state of good repair and to establish minimum Federal requirements for transit asset management that apply to all recipients and subrecipients of chapter 53 funds that own, operate, or manage public transportation capital assets. This final rule requires public transportation providers to develop and implement transit asset management (TAM) plans. TAM plans must include an asset inventory, condition assessments of inventoried assets, and a prioritized list of investments to improve the state of good

repair of their capital assets. This final rule also establishes state good repair standards and four state of good repair (SGR) performance measures. Transit providers are required to set performance targets for their capital assets based on the SGR measures and report their targets, as well as information related to the condition of their capital assets, to the National Transit Database.”

The four-year cycle for TAM plan updates was specifically designed to coincide with the cycle for State Transportation Improvement Programs (STIPs) and the Metropolitan Planning Organization’s Transportation Improvement Programs (TIPs). The Final Rule for Metropolitan Transportation Planning, issued in the Federal Register on May 27, 2016, indicated that states and MPOs, and local transit agencies are required to coordinate with one another in setting SGR targets for the TAM plan. In Middle Tennessee, the several transit agencies, the MPO (Greater Nashville Regional Council (GNRC), and the state jointly adopted a Memorandum of Understanding (MOU) committing to such coordination:

“In support of a performance-based approach to the metropolitan planning process, MTA, RTA, FTA, and the City of Murfreesboro Transportation Department will develop targets for transit performance measures in accordance with 49 CFR 625 – Transit Asset Management, and will share information and coordinate with the MPO regarding transit system condition, development methodology for targets, and investment priorities and strategies. MTA and RTA will share targets annually with the MPO. The MPO shall select performance for its metropolitan planning area in coordination, to the maximum extent practicable, with MTA and RTA.”

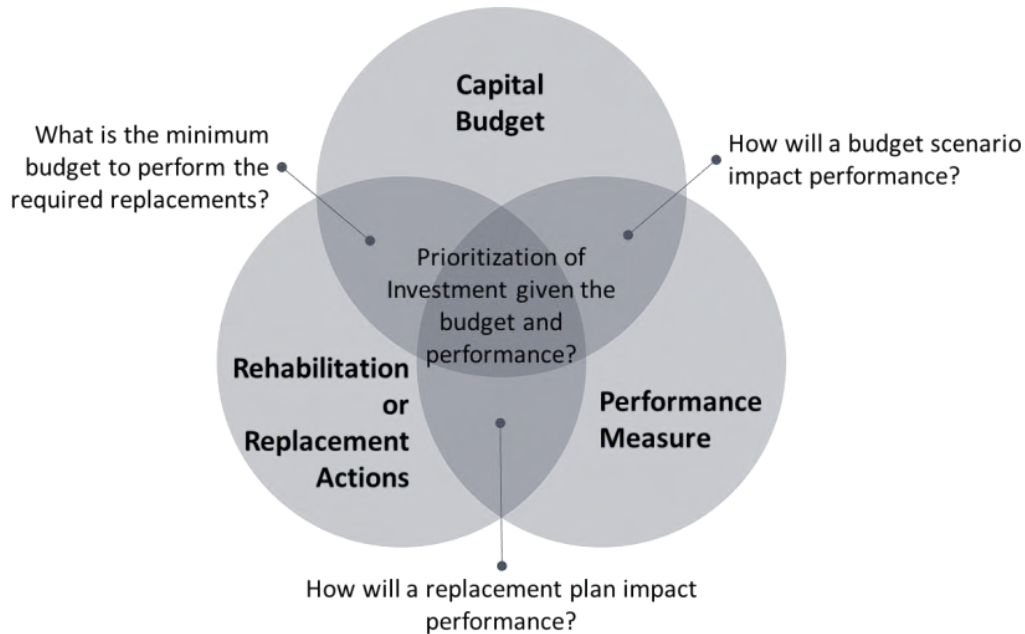
1.3. THE PURPOSE OF A TRANSIT ASSET MANAGEMENT PLAN (TAM PLAN)

RTA has a wide variety of capital assets to operate and maintain, including over-the-road buses, locomotives, cab cars, gallery cars, non-revenue service vehicles, equipment, and facilities. RTA, as a steward of these assets and provider of transit service to the public, must maintain, rehabilitate, and replace these physical assets to sustain an SGR at the agency, and to provide reliable, safe service to passengers. This TAM Plan provides a set of tools and an overall investment framework to guide RTA in managing its assets, prioritizing its capital investment, and achieving and maintaining SGR. The TAM Plan informs the more specific capital investment programs that are approved by the RTA Board of Directors annually.

A TAM plan is built upon certain fundamental questions a transit provider needs to answer when planning their capital investment. These questions are:

- What level of funding is needed to achieve SGR targets?
- How would higher or lower levels of funding impact the attainment of SGR targets?
- How should projects be prioritized to achieve the highest overall SGR? Which assets should be replaced or rehabilitated first, and why?

Figure 4. Elements of an SGR Framework to Prioritize Asset Replacement¹



RTA relies on its asset inventory, asset condition assessments, current performance metrics, and budgetary data to answer these questions. Having accurate, comprehensive data is a pillar of successful transit asset management planning.

The TAM Plan is meant to be a strategic management plan that will help RTA maintain assets in a State of Good Repair, which, in turn, supports the following:

- **Improving Stakeholder Communications:** by providing more accurate and timely data-driven knowledge that can be used in decision-making process, and by providing current and forecasted performance indicators that illustrate the outcomes of investments and decisions.
- **Improving Customer Service:** by improving on-time performance and the condition of vehicles and facilities.
- **Improving Cost Effectiveness:** by preserving and maintaining assets more effectively, and by utilizing preventive and predictive strategies to invest more efficiently.
- **Optimizing Resource Allocation:** by aligning investments with the agency’s overall goals and objectives as well as agency’s TAM goals and objectives; and by focusing on return of investment (ROI) through incorporating lifecycle costs, risk, and trade-off analyses.

These are considered the “drivers” of TAM practice at RTA and are illustrated in Figure 5.

¹ TCRP Report 157, “State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit,” Transportation Research Board (TRB), Sponsored by FTA, 2012.

Figure 5. Drivers of TAM Practices



1.4. COMPLIANCE WITH 49 CFR PART 625

FTA requires RTA to update its TAM Plan every four years. 49 CFR 625 also indicates that “A provider should amend its TAM plan whenever there is a significant change to the asset inventory, condition assessments, or investment prioritization that the provider did not reasonably anticipate during the development of the TAM plan.” Since 2018 FTA has also required RTA to submit an annual Asset Inventory Module (AIM) and narrative reports to the FTA’s National Transit Database (NTD), which must include updated information on:

- Condition assessments and analysis of asset performance
- A narrative report on changes in the fleet’s condition and the progress which has been made in achieving the annual targets
- Targets for the next fiscal year

1.4.1. Classification of Transit Providers

49 CFR § 625 outlines the requirements for a TAM plan depending on which "tier" a transit provider is classified. The defining characteristics of each tier are summarized in Table 3. Based on this classification, the RTA is a Tier I provider.

Table 3. Defining Characteristics of Tier I and Tier II Transit Providers

Tier I Transit Providers	Tier II Transit Providers
<ul style="list-style-type: none"> ■ Operate rail ■ Own, operate, or manage 101 or more vehicles in revenue service during peak regular service across all fixed route mode of transportation ■ Own, operate, or manage 101 or more vehicles in revenue service during peak regular service in one non- fixed route mode of transportation 	<ul style="list-style-type: none"> ■ Own, operate, or manage 100 or less vehicles in revenue service during peak regular service across all non-rail fixed route modes ■ Own, operate, or manage 100 or less vehicles in revenue service during peak regular service in any one non-fixed route mode ■ Are a subrecipient under the Section 5311 Rural Area Formula Program ■ Are an American Indian tribe



1.4.2. TAM Plan Content Requirements

The required contents of TAM plans for Tier I agencies are summarized in Table 4 below. The table also provides a “crosswalk” between the FTA-required elements and the relevant chapter of this TAM plan. Appendix A provides a checklist for compliance with the FTA Final Rule.

Table 4. FTA TAM Plan Requirements² and Relevant RTA TAM Plan Chapters

Requirements	Description	Chapter of RTA TAM Plan
1. Inventory of Capital Assets	A register of capital assets and information about those assets.	Chapter 3 – Asset Inventory and Condition Assessment
2. Condition Assessment	A rating of the assets' physical state; to be completed for assets an agency has direct capital responsibility for; should be at a level of detail sufficient to monitor and predict the performance of inventoried assets	Chapter 3 – Asset Inventory and Condition Assessment
3. TAM and SGR Policy	A TAM policy is the executive-level direction regarding expectations for transit asset management; a TAM strategy consists of the actions that support the implementation of the TAM policy	Chapter 1 – Introduction & Context for TAM at RTA Chapter 2 –Self-Assessment: TAM Plan Implementation 2018-2022 Chapter 4 – State of Good Repair and Performance Targets
4. Decision Support Tool	An analytic process or tool that (1) assists in capital asset investment prioritization and/or (2) estimates capital needs over time (does not necessarily mean software)	Chapter 5 – Asset Prioritization and Decision Support Tool
5. Investment Prioritization	A prioritized list of projects or programs to manage or improve the SGR of a capital asset	Chapter 6 – Capital Budget and Investment Prioritization
6. Implementation Strategy	The operational actions that a transit provider decides to conduct, in order to achieve its TAM goals and policies	Chapter 7 – TAM Implementation Strategy & Key Activities
7. List of Key Activities over Plan Horizon Period	The actions needed to implement a TAM plan for each year of the plan's horizon	Chapter 7 – TAM Implementation Strategy & Key Activities
8. List of Resources for TAM Plan	A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM plan	Chapter 7 – TAM Implementation Strategy & Key Activities
9. Evaluation and Monitoring Plan	An outline of how a provider will monitor, update, and evaluate, as needed, its TAM plan and related business practices, to ensure the continuous improvement	Chapter 8 – Continuous Improvement & Monitoring

1.5. SUCCESSFULLY DEVELOPING AND IMPLEMENTING THE TAM PLAN

Table 5 lists some of the characteristics of what a TAM plan is intended to be, and to not be. A TAM plan is considered effective when it is successfully implemented, is integrated into the decision-making process, and is supported within the agency both vertically and horizontally.

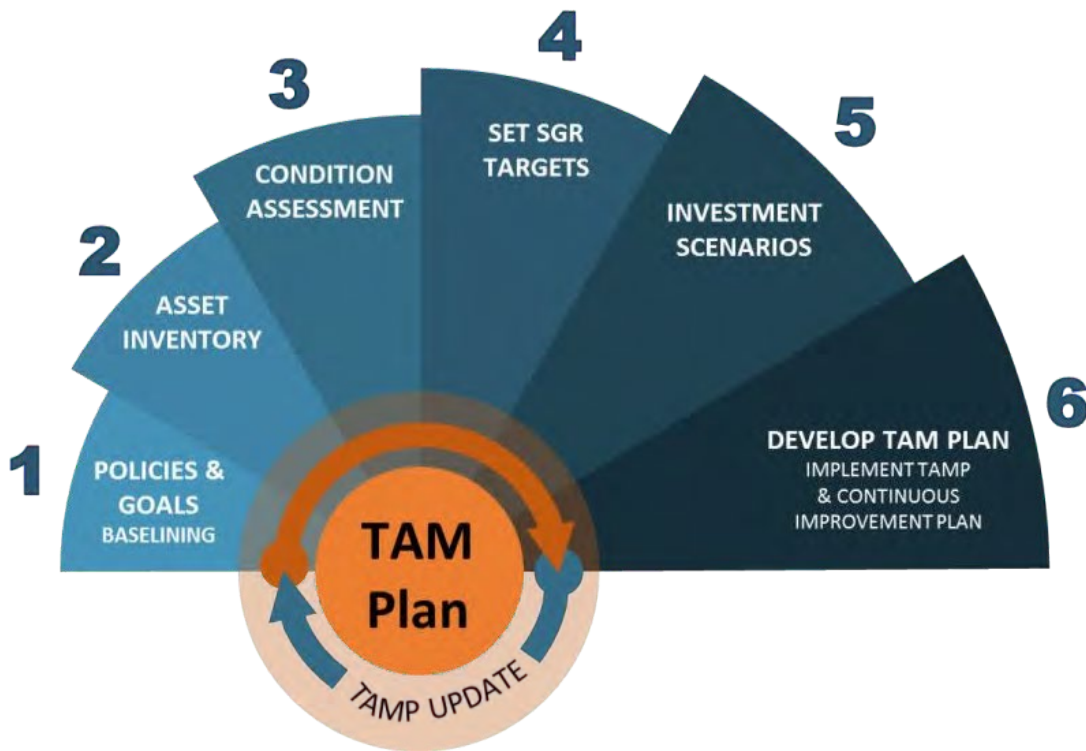
² Federal Transit Administration. <https://www.transit.dot.gov/TAM/TAMPlans>. Accessed 7/5/2022.

Table 5. Purposes of a Transit Asset Management Plan (TAM Plan)

A TAM Plan is NOT	A TAM Plan IS
An isolated new planning tool that is unrelated to other planning efforts.	One aspect of coordinated performance-based planning as established in MAP-21 and continued in the FAST ACT and IIJA.
A simple list of best practices in asset management.	A plan outlining specific steps for RTA to improve their asset management practices and processes.
A pointless planning exercise with no useful real-world application.	A framework to support decisions for optimized asset management within a given budget scenario.
A reference tool applicable only for the occasional tough decision.	A comprehensive plan supporting all asset management decisions.
A one-time effort to check off Federal requirements.	A foundation for optimizing long-term asset management.
A static plan.	A strategic plan with annual reports on performance targets, progress, and a four-year update cycle.

TCRP Report 172³ proposes a framework for developing a TAM plan as a logical, multi-step approach which can be tailored to the needs and size of the transit provider agency. The same approach has been used to develop this TAM plan. Figure 6 illustrates the relationship between TAM plan elements as envisioned in TCRP Report 172.

Figure 6. Multi-Step Approach to TAM Plan Development



³ TCRP Report 172, “Guidance for Developing a Transit Asset Management Plan,” Transportation Research Board (TRB), Sponsored by Federal Transit Administration, 2014.

1.6. TIME HORIZON FOR TAM PLAN UPDATE AND DATA SUBMISSIONS

49 CFR §625 established October 2018 as the deadline for developing the first complete TAM plan. The deadlines for all TAM requirements from 2022 to 2026 are listed below in Table 6.

Table 6. Schedule for TAM Plan Implementation and Ongoing Updates: 2022-2026

Required Task	Due Date
Complete Updated TAM Plan (2nd TAM Plan) Report FY21 AIM data to NTD Submit SGR targets for FY22 to NTD Submit narrative report to NTD	October 2022
Report FY22 AIM data to NTD Submit SGR targets for FY23 to NTD Submit narrative report to NTD	October 2023
Report FY23 AIM data to NTD Submit SGR targets for FY24 to NTD Submit narrative report to NTD	October 2024
Report FY24 AIM data to NTD Submit SGR targets for FY25 to NTD Submit narrative report to NTD	October 2025
Complete Updated TAM Plan (3rd TAM Plan) Report FY25 AIM data to NTD Submit SGR targets for FY26 to NTD Submit narrative report to NTD	October 2026

1.7. FROM VISION TO PLAN AND STRATEGY FOR TAM

Successful implementation of TAM practices will require that those practices are embraced agency-wide, supported by both a vision and a set of top-down directions and policies. The vision and these policies should be highly visible and frequently used by the agency's executive leadership team to communicate the importance and the role of TAM practices in meeting the expected level of service objectives. Vision, policies, and goals, if supported by the executive level and adopted across the agency, will create shared understanding, motivation, and coordination among the staff at all levels. Therefore, having a set of solid vision, policies, and goals, is the cornerstone of effective and successful TAM implementation. The following sections outline these for RTA's TAM practice.

RTA adopted the following as its TAM vision in 2018 and affirms it in this 2022 Update:

The Transit Asset Management (TAM) Plan has been developed to provide a strategic direction inclusive of roles and responsibilities for the Regional Transportation Authority of Middle Tennessee (RTA) and its contractors, to maintain its assets in a State of Good Repair (SGR). The plan will emphasize the goal of promoting a culture of asset management at RTA that will support how the Agency makes decisions and allocates funds for stewardship of transit assets strategically, maximizing the lifecycle of each component to make the best use of constrained resources. These decisions are supported by timely, reliable data, monitored and reviewed regularly, and used many times.

Subsequent chapters of the 2022 TAM Plan will address objectives, resources, and implementation.

1.8. RTA TRANSIT ASSET MANAGEMENT POLICIES AND GOALS

This 2022 TAM Plan Update incorporates the TAM policies and goals that RTA adopted in 2018 with a few revisions based on the agency’s experience in implementing the original TAM. These high-level policies and goals, presented in Table 7, cover multiple aspects of the RTA’s operation. Policies and goals pertain to planning, efficiency and safety, fiscal sustainability, human capital, and data and tools for executing the asset management program. These policies and goals will be the basis for the TAM implementation plan provided in Chapter 7.

Table 7. RTA’s TAM Policies and Goals

Focus Area	Policies	Goals
Planning	Provide agency-wide direction, fulfill all FTA requirements, and strive for continuous improvement in asset management practices	<ul style="list-style-type: none"> ■ Fulfill all FTA planning and reporting requirements per 49 CFR § 625 ■ Ensure that the agency has a well-defined vision, policies, and goals, and that these are reviewed as part of the continuous improvement plan ■ Align asset management and safety management practices
Efficiency and Safety	Proactively manage assets to improve operational efficiency and safety	<ul style="list-style-type: none"> ■ Maintain vehicles, equipment, systems, and facilities in a state of good repair ■ Develop and implement asset replacement and rehabilitation plans ■ Develop and implement programs of preventive maintenance for capital assets ■ Use asset data and subject matter expertise to identify recurring issues, reduce road calls, and move toward proactive management of assets
Fiscal Sustainability	Foster financial sustainability by implementing asset management and promoting the TAM culture at the agency	<ul style="list-style-type: none"> ■ Preserve current assets while planning for replacement and additions ■ Develop RTA’s annual budgeting process and Capital Improvement Program (CIP) in alignment with SGR targets in this TAM Plan ■ Utilize objective methods to prioritize capital projects ■ Ensure investment decisions are transparent and clearly communicated
Human Capital	Promote asset management culture at RTA and develop the human capital necessary for TAM implementation	<ul style="list-style-type: none"> ■ Document and manage organizational knowledge and lessons-learned ■ Recruit, develop, and retain a well-trained TAM workforce ■ Develop a succession plan for key roles at the agency
Data and Tools	Support data-driven decision-making through the use of analytical tools and reliable data.	<ul style="list-style-type: none"> ■ Collect relevant, timely, and accurate data to support decision-making ■ Develop data management protocols to reduce redundancy while following information security standards ■ Assess and implement tools to support data driven asset management decisions ■ Utilize historical data to identify recurring issues and failures

1.9. TAM ROLES AND RESPONSIBILITIES AT RTA

FTA requirements call for each provider to designate a single Accountable Executive, who is ultimately responsible for carrying out the plan. For RTA, the Chief Executive Officer (CEO) of the agency will serve as the Accountable Executive.

RTA's departments and offices have a shared commitment to developing the TAM plan, policies and goals, and the implementation roadmap to ensure the successful implementation of TAM practices at RTA. TAM roles and responsibilities within RTA are outlined below and illustrated in Figure 7.

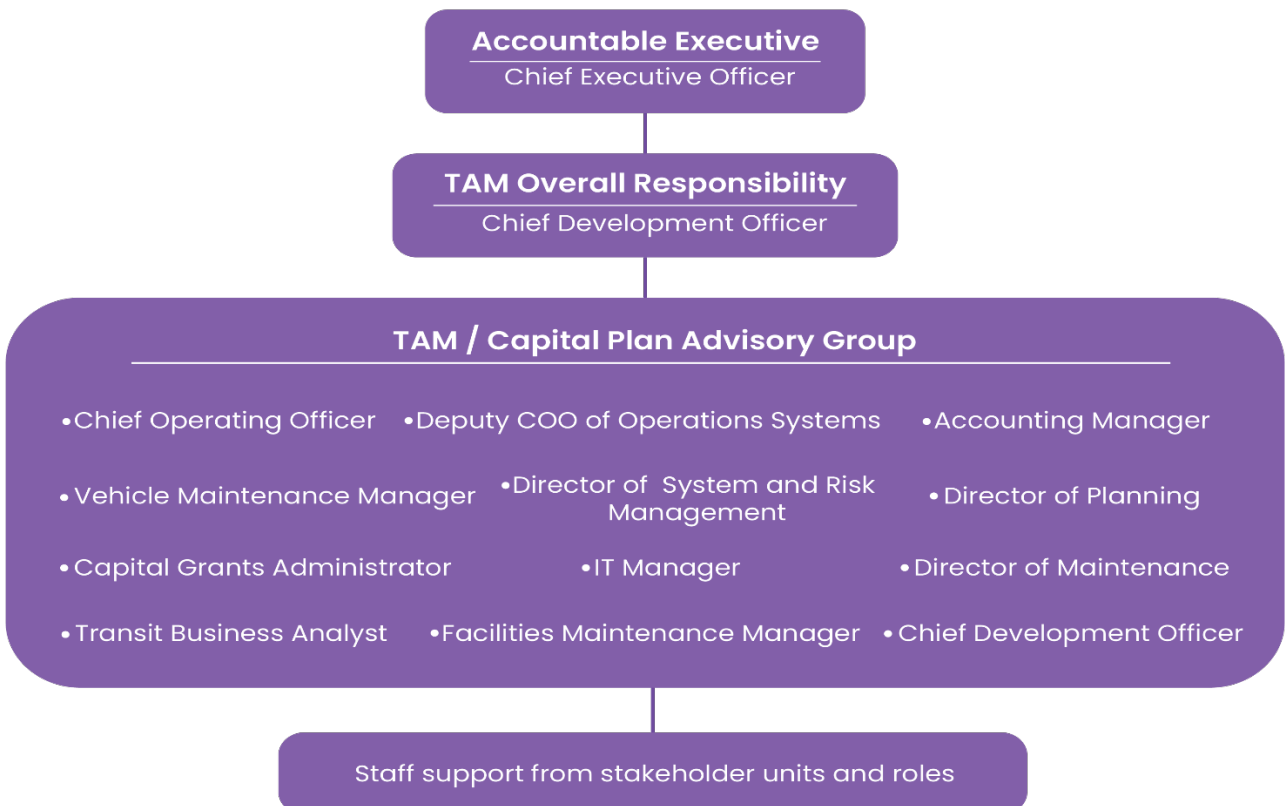
Enforcement Responsibility: Enforcement of the policy will be the responsibility of the Chief Executive Officer (CEO), the Accountable Executive for RTA.

Overall Responsibility: The Chief Development Officer (CDO) has overall responsibility for managing the Transit Asset Management program. The CDO oversees the development of the TAM plan and procedures in cooperation with the executive leadership team, and reports to the CEO on the status of asset management for the agency.

Agency TAM Coordinator: The Director of Planning and Grants will coordinate TAM activities with leaders of RTA's departments and offices as well as the external parties with whom coordination is required: GNRC and TDOT. The Director of Planning and Grants reports directly to the CDO.

TAM/Capital Plan Advisory Group: A group of key individuals, as shown in Figure 7 below, play a critical role in the implementation and monitoring of RTA's TAM program in concert with the development of RTA's annual Capital Plan.

Figure 7. RTA TAM Roles and Responsibilities





Chapter 2

SELF-ASSESSMENT: TAM PLAN IMPLEMENTATION 2018-2022

This chapter reviews the asset management targets and activities that were identified in the 2018 TAM Plan and provides a status update. This assessment includes both asset replacement/rehabilitation activities and programmatic action items. The focus here is on overall achievement relative to the goals set in 2018 for the 2018-2022 period. During this time frame, RTA was able to advance most of its planned capital program despite the challenges presented by the global COVID-19 pandemic. Only cab cars and gallery cars exceeded their target performance measure.

Table 8 summarizes the state of good repair metrics for RTA including the actual SGR metrics for 2018, the targets for 2022 established in the 2018 TAM Plan, and actual SGR metrics for 2022.

Table 8. Summary of SGR Performance and SGR Targets: 2018 and 2022

Asset	ULB/TERM Rating	Performance Measure	2018 Actual Performance	FY22 Target Identified in the 2018 TAM Plan	2022 Actual Performance
Rolling Stock - Buses	14	% exceeding ULB	0%	0%	0%
Rolling Stock – Locomotives	39 or Overhaul Year +10	% exceeding ULB	100%	0%	0%
Rolling Stock – Cab Cars	39 or Overhaul Year +10	% exceeding ULB	100%	0%	33%
Rolling Stock – Gallery Cars	39 or Overhaul Year +10	% exceeding ULB	100%	0%	14%
Rolling Stock – Vanpool Vans	8	% exceeding ULB	35%	70%	68%
Non-Revenue Automobiles	NA	% exceeding ULB	NA	NA	0%
Infrastructure (Tracks)	NA	% with Restriction	13.5%	13.5%	13.5%

Facilities	3.0 TERM Rating	% below 3.0 TERM Rating	0%	0%	0%
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2.1. ROLLING STOCK

Table 9 summarizes the status of rolling stock replacement projects included in the 2018 TAM Plan.

Table 9. Status of Rolling Stock Replacements/Overhauls Planned in the 2018 TAM Plan

Vehicle Type	Project	2022 Status
Buses	Procure new, RTA-owned buses to replace buses leased from Gray Line	Complete
Locomotives	Rebuild four locomotives	Complete
Passenger Cars	Procure eight rebuilt passenger cars	Complete
Vanpool Vans	RTA Planned to retire seven vanpool vehicles that exceeded a 100,000 mile threshold between 2018 and 2022.	Planned

2.2. EQUIPMENT

The status of rail infrastructure projects included in the 2018 TAM Plan is shown in Table 10.

Table 10. Status of Equipment Replacement/Improvement included in the 2018 TAM Plan

Location	Project	2022 Status
Service Vehicles	Acquire two (2) non-revenue vehicles (trucks) to be used for rail supervisory, on-call, and emergency response purposes for the Music City Star	Complete
Systemic	Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System Installation on buses operated by Gray Line	Complete
Systemic	Fare Collection System Installation for Star and bus operations	Complete
Systemic	Security Camera Purchase and Installation at Star stations and park & ride lots	In Progress

2.3. INFRASTRUCTURE

Annual SGR capital needs are identified by RJ Corman and validated by RTA thru a 3rd party engineering consultant. The status of rail infrastructure projects included in the 2018 TAM Plan is shown in Table 11. The line continues to have 13.5% of its segments subject to speed restrictions. The projects implemented since 2018 have not reduced the percentage of line segments subject to speed restrictions because the speed restrictions are not due to condition, but the geometry of the tracks and rail-highway crossings.

Table 11. Status of Rail Infrastructure Projects Included in the 2018 TAM Plan

Location	Project	2022 Status
Star Corridor	Replacement of approximately three miles of rail and plates along track. Replace ties and resurface track as required	Complete
Star Corridor	Convert the bridge over Barton's Creek to a ballast deck for ease of maintenance and a smoother ride	Complete
Star Corridor	Complete jointed rail replacement	Complete
Star Corridor	Routine track maintenance activities	Complete

2.4. FACILITIES

The status of facilities projects included in the 2018 TAM Plan is shown in Table 12.

Table 12. Status of Facility Projects Included in the 2018 TAM Plan

Location	Project	2022 Status
Riverfront	HVAC Replacement (\$30,000)	Planned
Riverfront	Plumbing	Planned
Donelson	Paving	Complete
Hermitage	Paving	Complete
Lebanon	Paving	Complete
Martha	Paving	Complete
Mt. Juliet	Parking Lot Improvement/Expansion	Complete

2.5. STATUS OF OTHER ACTION ITEMS IDENTIFIED IN THE 2018 TAMP

In addition to setting SGR targets for various asset classes, the 2018 TAM Plan provided an implementation roadmap that addressed a wide range of organizational activities that would support RTA's TAM program. These activities were tied to the nine policy areas and thirty-four related goals that have been identified through extensive engagement of internal stakeholders. The following pages of this document review the goals and policies laid out in the 2018 TAM Plan, the status of each goal and policy in 2018, and the 2022 status of each of the action items included in the roadmap.



Table 13. Status of 2018 TAM Plan Action Items Related to Policy

Policy: Provide agency-wide direction and leadership to increase RTA’s asset management practice maturity.			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Ensure the agency has well-defined vision, policies and goals, and these are reviewed as part of the continuous improvement plan. ■ Identify the factors that drive the TAM objectives (TAM enablers). ■ Integrate TAM with the agency’s business processes and link TAM Plan to other internal and external plans. 	<ul style="list-style-type: none"> ■ TAM vision, policies, and goals did not exist at RTA, but were developed as part of the 2018 TAM plan and adopted by the agency. ■ TAM drivers were identified as part of this TAM plan. ■ TAM plan was not part of the agency’s previous business processes 	<ul style="list-style-type: none"> ■ Develop and promote TAM vision, policies, and goals at all levels of the agency. 	<ul style="list-style-type: none"> ■ RTA developed the 2018 TAM Plan with input from a Committee that represented a wide range of stakeholders within the agency.
		<ul style="list-style-type: none"> ■ Self-certify the agency by the Accountable Executive and adopt the plan as an official agency plan as part of the business processes and the capital investment decision-making process. 	<ul style="list-style-type: none"> ■ RTA self-certified and has met all FTA-requirements for reporting and coordination. RTA began the practice of preparing a detailed, fiscally constrained, five-year capital plan annually.

Table 14. Status of 2018 TAM Plan Action Items Related to Organizational Efficiency and Effectiveness

Organizational Efficiency and Effectiveness: Improve organizational efficiency by employing effective asset management processes			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Build understanding and support for asset management at all levels of RTA, including executive level. ■ Improve and expand communications with RTA's departments and contractors regarding well- documented SGR needs and priorities. ■ Document and manage organizational knowledge and lessons-learned. 	<ul style="list-style-type: none"> ■ The executive suite at RTA recognized the importance of TAM for the agency, but this recognition did not flow down the organization. ■ There were no established lines of communication across RTA's departments and with contractors. Communications were based on individual relationships and not institutionalized. ■ Organizational knowledge and processes were not documented. Some departments (e.g. Procurement) had documented processes while others did not. 	<ul style="list-style-type: none"> ■ Promote the importance of TAM practices for the agency, and the role of staff in the successful implementation of the TAM plan, using internal campaigns. 	<ul style="list-style-type: none"> ■ While RTA has been actively engaged in implementing TAM practices, there have not been TAM-focused campaigns.
		<ul style="list-style-type: none"> ■ Establish and institutionalize a systematic communication protocol across RTA's departments and with contractors, as part of an enterprise-level management system 	<ul style="list-style-type: none"> ■ RTA has not yet acquired an enterprise-level asset management (EAM) system, but this is a high priority. A consultant will be hired in 2022 to develop the scope for a future RFP for the EAM system.
		<ul style="list-style-type: none"> ■ Document organizational knowledge and processes through development of Standard Operating Procedures (SOP) and keep them up-to-date. 	<ul style="list-style-type: none"> ■ SOPs have been developed. They vary in the degree to which they are current and the degree to which they are followed in actual practice.
		<ul style="list-style-type: none"> ■ Promote coordination between the TAMP, the Transit Agency Safety Plan, the CIP, and the MPO's TIP and MTP to build synergy and reduce duplication of efforts. 	<ul style="list-style-type: none"> ■ Coordination of the TAMP, PTASP, CIP, and TIP, occurs during the routine course of business.

Table 15. Status of 2018 TAM Plan Action Items Related to Fiscal Sustainability

Fiscal Sustainability: Foster financial sustainability by implementing asset management and promoting the TAM culture at the agency			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Adopt TAM processes and SGR needs as part of RTA’s annual budgeting process and Capital Improvement Program (CIP). ■ Promote preservation of existing assets while planning for addition of new assets and replacement of existing assets. ■ Utilize objective methods to prioritize capital projects 	<ul style="list-style-type: none"> ■ Capital planning was not based on TAM processes and SGR needs. Capital planning did not consider effects of budgeting scenarios on future asset performance. ■ The agency had a Preventative Maintenance (PM) plan for its vehicles and its facilities. Asset maintenance, especially for facilities, was reactive and mostly dealt with repairing existing conditions. ■ Capital projects were not prioritized to address improving existing asset conditions 	<ul style="list-style-type: none"> ■ Establish objective models to consider effects of budgeting scenarios on future performance of assets 	<ul style="list-style-type: none"> ■ Budgeting scenarios are taken into consideration when developing the five-year capital plan.
		<ul style="list-style-type: none"> ■ Utilize enterprise-level asset management system to make asset maintenance, especially for facilities, more proactive by leveraging preventive maintenance (PM) programs for facilities 	<ul style="list-style-type: none"> ■ RTA is moving forward with an EAM using Oracle Unifier for facilities. ■ Solicitation is underway for an EAM for vehicle asset management.
		<ul style="list-style-type: none"> ■ Expand the existing PM plan for vehicles with greater support from data systems so that the life cycle cost benefits of proposed maintenance and overhaul strategies can be documented. 	<ul style="list-style-type: none"> ■ RTA is currently updating the Preventive Maintenance Plan. ■ A solicitation is underway for an EAM for vehicle asset management The EAM will facilitate analysis of life cycle costs.
		<ul style="list-style-type: none"> ■ Establish more objective prioritization approach for capital projects as part of an enterprise-level asset management system 	<ul style="list-style-type: none"> ■ Though the enterprise-wide asset management system has not been procured, RTA has had SGR goals in mind when building the annual capital investment plan.

Table 16. Status of 2018 TAM Plan Action Items Related to Human Capital

Human Capital: Promote asset management culture at RTA and develop the human capital necessary for TAM implementation			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Promote TAM across all levels at RTA ■ Promote knowledge sharing within the agency, and with contractors ■ Recruit, develop and retain well-trained TAM workforce ■ Develop succession plan for key roles at the agency 	<ul style="list-style-type: none"> ■ There was not an agency-wide recognition of the need for structured TAM practices. ■ The agency had not established a practice to document institutional knowledge of the senior staff. Knowledge of the agency's assets, tools, and processes was not shared within the agency. ■ The agency had not institutionalized utilizing senior, experienced staff to mentor junior staff (apprenticeship). ■ The agency did not have a workforce that was trained for TAM procedures and tools. ■ The agency did not have succession plan for key, senior staff. 	<ul style="list-style-type: none"> ■ Establish a practice to document institutional knowledge of the senior staff, and their knowledge of the agency's assets, tools, and processes. 	<ul style="list-style-type: none"> ■ Documentation of institutional knowledge remains a current need.
		<ul style="list-style-type: none"> ■ Train workforce for TAM procedures and tools. 	<ul style="list-style-type: none"> ■ Some TAM practices have been integrated into routine workflows. The phrasing of this action item will be revised in 2022 as "establish clear protocols and routines for practices integral to TAM, such as in preventive maintenance."
		<ul style="list-style-type: none"> ■ Develop a plan for TAM education, which should include tracking FTA publications, webinars, and conferences, to provide RTA staff with ongoing training in TAM procedures. 	<ul style="list-style-type: none"> ■ RTA staff routinely participate in learning opportunities related to asset management, but there is not a need to identify this as an action item.
		<ul style="list-style-type: none"> ■ Develop succession plan for the key, senior staff, including job descriptions, required experience and training, and leverage the mentorship and training programs to prepare more junior staff for taking on new responsibilities 	<ul style="list-style-type: none"> ■ RTA is formalizing normal workflows and integrating them into the EAM system.

Table 17. Status of 2018 TAM Plan Action Items Related to Safety

Safety: Maintain RTA assets in State of Good Repair (SGR) to support a safe operating environment			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Maintain vehicles, equipment, infrastructure systems and facilities in SGR. ■ Promote a safety culture at the agency, and align asset and safety management practices ■ Proactively review and communicate safety-related issues with the staff. ■ Use asset data and subject matter expertise to identify and avoid or minimize road calls and failures and move toward a proactive management of assets ■ Identify recurring asset issues and failures and provide a plan to address the root of the issue. 	<ul style="list-style-type: none"> ■ RTA did not have SGR policies and targets that supported a safe operating environment, even though the agency at large has adopted a safety culture. ■ Asset performance data and subject matter expertise were not used to identify issues or failures that can be avoided through a proactive management of assets. ■ Many recurring issues were reported while the root causes were not addressed. 	<ul style="list-style-type: none"> ■ Establish SGR policies and targets that support safe operating environment by linking the agency's Safety Plan and TAM Plan (in compliance with 49 CFR Part 673, Public Transportation Agency Safety Plan). 	<ul style="list-style-type: none"> ■ Several of the activities prescribed in the PTASP are also supportive of asset management: monitoring adherence to PM schedules, effectiveness of corrective maintenance, frequency of maintenance-related road calls, and safety defect reporting.
		<ul style="list-style-type: none"> ■ Through establishing an objective, proactive approach and by utilizing an enterprise-level asset mgmt. system, use asset performance data and subject matter expertise to identify recurring issues or failures (e.g. road calls) that can be avoided. 	<ul style="list-style-type: none"> ■ RTA is moving forward with an EAM using Oracle Unifier ■ RTA has not yet acquired an enterprise-level asset management (EAM) system for vehicles, but this is a high priority. A consultant will be hired in 2022 to develop the scope for a future RFP for the EAM system.

Table 18. Status of 2018 TAM Plan Action Items Related to SGR Investments

State of Good Repair (SGR) Investments: Invest in RTA assets and SGR and promote the culture of “Asset Stewardship” at all levels of the agency			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Maintain vehicles, equipment, infrastructure systems and facilities in SGR. ■ Develop TAM plan and policies in compliance FTA TAM Rule (49 CFR § 625). ■ Develop and implement preventive and proactive capital asset maintenance, replacement, and rehabilitation plans. 	<ul style="list-style-type: none"> ■ RTA does not have SGR policies and targets that support their capital investment decisions. ■ The agency does not have a TAM plan in compliance with FTA TAM Rule. ■ The agency does not proactive, preventive maintenance of their assets, except for their vehicles. 	<ul style="list-style-type: none"> ■ Develop and adopt a TAM plan in compliance with FTA TAM Rule 	<ul style="list-style-type: none"> ■ The TAM Plan was adopted in 2018 in advance of the FTA deadline.
		<ul style="list-style-type: none"> ■ Establish SGR policies and targets that support capital investment decisions. 	<ul style="list-style-type: none"> ■ The 2018 TAM Plan included policies and targets that supported capital investment decisions.
		<ul style="list-style-type: none"> ■ Update the target on an annual basis and submit them to NTD along with a narrative report 	<ul style="list-style-type: none"> ■ RTA submitted SGR targets to NTD on an annual basis. Targets did not change during the four-year period.
		<ul style="list-style-type: none"> ■ Establish proactive, preventive maintenance for assets, especially facilities. Maintain and update the preventive maintenance plan for vehicles. 	<ul style="list-style-type: none"> ■ RTA has a Preventive Maintenance (PM) Plan. An update is needed to align prescribed maintenance programs and current practice as well as ensure that OEM PM schedules are followed.
		<ul style="list-style-type: none"> ■ Establish a Fleet Management Plan for prioritizing replacement or retiring of service vehicles based on SGR targets 	<ul style="list-style-type: none"> ■ RTA has a detailed Fleet Management Plan for revenue service vehicles.

Table 19. Status of 2018 TAM Plan Action Items Related to Tools

Tools: Provide infrastructure and tools to support data-driven decision-making for asset management			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Assess and implement tools to support data driven asset management decisions across stakeholder agencies. ■ Utilize historical data and trends to inform future decisions. ■ Ensure investment decisions are based on the assessment of business benefits, are transparent, and are clearly communicated. 	<ul style="list-style-type: none"> ■ The tools and systems that are utilized by RTA’s departments do not support data driven decision making, and in many cases do not provide the stakeholder with the knowledge they need to make decisions. ■ There are multiple “legacy” systems that collect data (in many cases data for the same asset or performance, e.g. condition) in different databases, and these legacy systems are not connected and do not communicate, leading to “silo-ed” organization. ■ Historical data and trends are not documented and not used for decision making. ■ Business benefits of capital cases, which include effects of budget allocations and funding scenarios on future asset performance through performance and lifecycle modeling. investments are not studied in many cases. 	<ul style="list-style-type: none"> ■ Explore solutions for the enterprise-level management system through a Request for Information (RFI) or inviting the vendors to the “Vendor Day”. ■ Implement an enterprise-level transit asset management system that supports multiple departments at RTA, by processing historic and current data and trends to inform the decision-making process. This enterprise system should encompass tools to support: <ul style="list-style-type: none"> ○ life-cycle cost (LCC) analysis and planning for all asset classes, ○ preventive maintenance planning for facilities and vehicles, ○ capital investment prioritization and optimization based on SGR targets and capital budgets, and forecasting asset performance for different capital investment scenarios, among other features. ○ 	<ul style="list-style-type: none"> ■ RTA is moving forward with an EAM using Oracle Unifier. ■ RTA has not yet acquired an enterprise-level asset management (EAM) system for vehicles, but this is a high priority. A consultant will be hired in 2022 to develop the scope for a future RFP for the EAM system. ■ RTA is moving forward with an EAM using Oracle Unifier. ■ Solicitation is underway for an EAM for vehicle asset management. Once the EAM is implemented it will be possible for RTA to analyze lifecycle costs

Table 20. Status of 2018 TAM Plan Action Items Related to Data

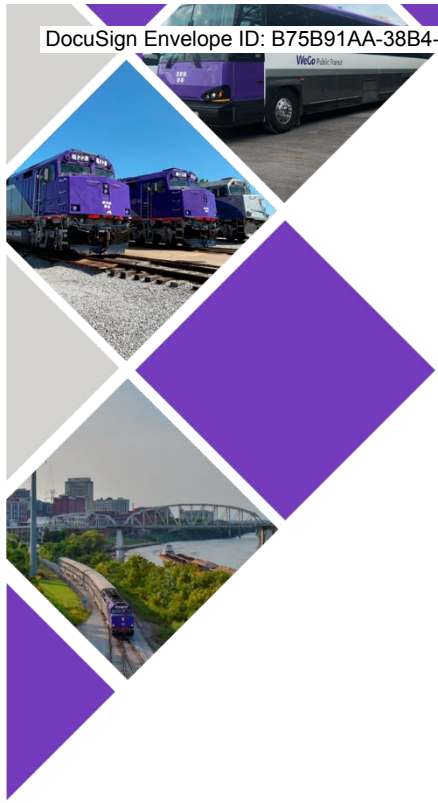
Data: Collect relevant, timely, and accurate data that can support the decision- making process and TAM processes			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Highlight the need for collecting the right data, one time, at the right time, in the right format. ■ Develop data management protocols to ensure the data collection effort supports multiple agency needs. ■ Improve data sharing across stakeholder agencies so multiple departments benefit from data collection (data collected once, used by many). 	<ul style="list-style-type: none"> ■ The data collected by the RTA's departments do not follow a universal data management plan, and in many cases the data is not collected at the right time, or in the right format. ■ In some cases, the same data is collected by multiple departments in different formats for different purposes, while the data can be collected once and used many times by multiple departments. 	<ul style="list-style-type: none"> ■ Develop and adopt a universal data management plan, to support the enterprise transit asset management systems and to promote collection of data at the right time, and in the right format. 	<ul style="list-style-type: none"> ■ RTA has not yet developed a data management plan.
		<ul style="list-style-type: none"> ■ Leverage the data management plan to ensure the same data is not collected by multiple departments in different formats for different purposes. This plan should ensure the data can be collected once and used many times by multiple departments, to the extent possible. This may be done concurrently with enterprise TAM system implementation, and the data management plan requirements can be incorporated in the requirements for the TAM system implementation. 	<ul style="list-style-type: none"> ■ RTA has not yet developed a data management plan.
		<ul style="list-style-type: none"> ■ Establish a program to collect accurate, timely data about the performance of the vanpool fleet (including mileage, age, condition, and maintenance records) 	<ul style="list-style-type: none"> ■ Data for the vanpool fleet (make, model, mileage, age) was collected in connection with the 2022 TAM Plan Update.

Table 21. Status of 2018 TAM Plan Action Items Related to Continuous Improvement

Continuous Improvement: Meet all FTA requirements at each deadline, and continue to develop the processes, tools, and data for an optimum return on investment			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> ■ Continue meetings of the TAM Steering Committee to identify issues and coordinate solutions. ■ Evaluate the ongoing TAM processes, implementation costs, and benefits. ■ Monitor TAM programs at other agencies to evaluate best practices. 	<ul style="list-style-type: none"> ■ A TAM steering committee was formed as part of the TAM plan development effort, and the committee monitors ongoing TAM processes, implementation costs, and benefits. The committee is meeting monthly during the development phase. ■ The steering committee should continue meeting regularly to evaluate ongoing TAM processes, implementation costs, and benefits. ■ RTA has only recently started monitoring TAM programs at other peer agencies to inform their TAM practices and evaluate best practices. ■ The Steering Committee monitors both RTA and MTA TAM plan development and will serve as an advisory board for both agencies' TAM programs. 	<ul style="list-style-type: none"> ■ The steering committee is to continue meeting regularly to evaluate ongoing TAM processes, implementation costs, and benefits. 	<ul style="list-style-type: none"> ■ RTA determined that it was not necessary for the Steering Committee that guided the development of the 2018 TAM Plan to continue meeting through the four-year period. A team of executive staff meets annually to develop the detailed Capital Investment Plan and update the Fleet Management Plan.
		<ul style="list-style-type: none"> ■ Develop contacts with a set of peer agencies known for best practices for their TAM programs. The steering committee to continue to monitor TAM programs at other peer agencies to inform TAM practices at RTA and evaluate best practices. 	<ul style="list-style-type: none"> ■ The Steering Committee has not been active. There has not been outreach to peer agencies to evaluate their TAM programs.
		<ul style="list-style-type: none"> ■ The steering committee is to conduct agency TAM self-assessment on an annual basis by engaging appropriate staff, monitor progress toward TAM policies and goals and SGR targets, and revise the implementation roadmap or policies, if necessary. 	<ul style="list-style-type: none"> ■ The Steering Committee has not been active. Staff have independently monitored progress toward SGR goals.

Table 22. Status of 2018 TAM Plan Action Items Related to Annual Submissions

Annual Submissions: Comply with annual submissions to FTA and MPO			
2018 TAM Goals	Status in 2018	2018 Action Items	Status in 2022
<ul style="list-style-type: none"> Comply with required activities of 49 CFR § 625. 	<ul style="list-style-type: none"> NA 	<ul style="list-style-type: none"> Complete NTD asset inventory module (AIM) report annually. Develop an inventory of assets and report the data and other information required to the NTD asset inventory module report. Additional data required by NTD includes information used to calculate the TAM metrics. 	<ul style="list-style-type: none"> RTA submitted AIMs to NTD on time annually.
		<ul style="list-style-type: none"> Conduct and report facility condition assessments. Assess the condition of all the capital assets in TAM plan and report the condition assessments for facility category assets to the NTD. (Every year a portion of the facility capital assets can be submitted until all facility capital assets have been reported to the NTD in a four-year cycle). 	<ul style="list-style-type: none"> Facility condition assessments were conducted for the 2018 TAM Plan and have been updated for the 2022 TAM Plan Update.
		<ul style="list-style-type: none"> Set Performance Targets. Set SGR targets annually for the performance of assets and submit those targets to the NTD as part of annual data submission. 	<ul style="list-style-type: none"> RTA submitted SGR targets to NTD on time annually.
		<ul style="list-style-type: none"> Submit narrative report to the NTD that provides a description of any change in the condition of the transit system from the previous year and describes the progress made during the year to meet the performance targets set in the previous reporting year. 	<ul style="list-style-type: none"> RTA submitted narrative reports to NTD on time annually.
		<ul style="list-style-type: none"> Update the TAM plan in its entirety every four years. 	<ul style="list-style-type: none"> This 2022 TAM Plan Update satisfies the requirement to update the TAM plan every four years.
		<ul style="list-style-type: none"> Share the updated TAM plan with planning partners and coordinate with the MPO's development of their TIP and MTP. 	<ul style="list-style-type: none"> The 2022 TAM Plan Update has been shared with planning partners.



Chapter 3

ASSET INVENTORY AND CONDITION ASSESSMENT

The Final Rule requires that RTA's TAM Plan include an inventory of assets that support the delivery of public transportation services as well as information on the condition of those assets. Covered assets must be reported in the TAM plans regardless of whether or not they were purchased with FTA funds or are still under lien. TAM plans must include:

- Rolling stock (vehicles used in providing revenue service)
- Facilities (including all passenger facilities except for bus stops)
- Infrastructure (track)
- Equipment with an acquisition value of \$50,000 or greater
 - Service vehicles (vehicles supporting the agency but not used for revenue service)
 - Other equipment

Individual bus stops and shelters are typically excluded from a TAM plan. However, they may be included in the inventory for the sake of providing a more thorough and complete inventory of capital assets.

3.1. ROLLING STOCK

The rolling stock of a transit agency refers to the vehicles used to perform revenue service. RTA's rolling stock includes locomotives, passenger cars, buses, and vanpool vans. For rolling stock, condition is evaluated in relation to a Useful Life Benchmark (ULB), defined as "the expected lifecycle of a capital

asset for a particular transit provider’s operating environment, or the acceptable period of use in service for a particular transit provider’s operating environment.” ULB is not the same as the term “useful life” that FTA uses with regard to the minimum life of federally funded assets. Transit agencies may set their own ULBs or use default values that FTA has provided for different types of assets. The FTA’s default ULB values are listed in Appendix B. A full listing of RTA’s rolling stock is provided in Appendix C.

3.1.1. Locomotives

RTA’s locomotives were originally built in 1985 and purchased by the RTA when the Music City Star entered service. Lubricant consumption had increased radically in 2017-2018 and, without overhaul, the reliability of the units would have degraded, compromising revenue service. RTA undertook a life-extending overhaul of the 4 locomotives from 2019 to 2021. The project involved project engineering and oversight as well as the lease of substitute locomotive(s) during the rehabilitation process. The rebuild is estimated to have added 15 years to the locomotives’ useful life.

Table 23. Rail Locomotive Inventory

Car Type	Unit	Make	Model	Year Built	Year Rebuilt	Additional ULB (Rebuild)	# > ULB+
Locomotive	120	General Motors	EMD F40PH-2	1985	2021	10	0
Locomotive	121	General Motors	EMD F40PH-2	1985	2021	10	0
Locomotive	122	General Motors	EMD F40PH-2	1985	2019	10	0
Locomotive	381	General Motors	EMD F40PH-2	1985	2020	10	0
Percent Exceeding ULB:							0%



3.1.2. Passenger Cars

Since 2018 RTA has replaced six passenger cars and two cab cars, all of which have been refurbished. One of the older cab cars and one of the older coach/trailer cars remain in use as spares. Table 24 summarizes RTA's passenger car fleet.

Table 24. RTA's Passenger Car Inventory

Car Type	Unit	Make	Construction Type	Year Built	Year Rebuilt	Additional Useful Life from Rebuild	#>ULB
Cab Car	401	Pullman	Smooth-Side Carbon Steel	1968	2000 (revenue service date 2006)	10	1
Coach/Trailer	504	Pullman	Smooth-Side Carbon Steel	1968	2000 (revenue service date 2006)	10	1
Cab Car	790	Budd	Stainless Steel	1965	2014 (revenue service date 2020)	10	0
Cab Car	795	Budd	Stainless Steel	1965	2020 (revenue service date 2020)	10	0
Coach/Trailer	701	Budd	Stainless Steel	1950	2014 (revenue service date 2020)	10	0
Coach/Trailer	708	Budd	Stainless Steel	1950	2014 (revenue service date 2020)	10	0
Coach/Trailer	712	Budd	Stainless Steel	1950	2014 (revenue service date 2020)	10	0
Coach/Trailer	719	Budd	Stainless Steel	1950	2014 (revenue service date 2020)	10	0
Coach/Trailer	723	Budd	Stainless Steel	1950	2014 (revenue service date 2020)	10	0
Coach/Trailer	733	Budd	Stainless Steel	1953	2014 (revenue service date 2020)	10	0
Percent Exceeding ULB:							20%

3.1.3. Buses

Since the 2018 TAM Plan, RTA has gotten rid of all their previous buses and purchased 20 MCI commuter (over-the-road) buses. The ten 2022 buses are owned by RTA but operated by MTA (doing business as WeGo Public Transit) in RTA commuter bus service. The ten 2019 buses are owned by RTA but operated by Gray Line, RTA's contractor. This offers two key advantages over using Gray Line-owned buses: (1) a reduction in long-term operating cost due to the elimination of the bus leasing portion of the Gray Line contract; and (2) the ability to acquire vehicles in the RTA "brand" paint scheme for enhanced visibility and marketing opportunities.

Table 25. Bus Inventory and Condition

Make	Year	Number	Mileage	ULB	Age > ULB
MCI	2019	10	86,922	14	0
MCI	2022	10	7,810	14	0
Percent Exceeding ULB:					0%

3.1.4. Vanpool Vans

VanStar is RTA's vanpool provider and manager of the van fleet. At the time of this report (August 2022), RTA owned 40 vanpool vans. This van fleet has an average age of 10.3 years and an average mileage of 97,911. RTA has adopted a ULB of 8 years for its vans which matches the FTA default ULB, and accordingly 68% of its vans (total of 27) have met or exceeded the ULB. Since a mileage threshold of 100,000 miles is used by RTA in evaluating the need for replacement of vanpool vehicles, a depiction of each vehicle make/model/year exceeding the 100,000-mile threshold is provided in Table 26. RTA Leadership is in discussions with TMA, the operator of the vanpool fleet, about replacement of these vehicles.



Table 26. RTA Vanpool Vehicles Operated by TMA Group

Make	Model	Year	Number	Average Mileage	ULB	# > Age-Based ULB	Number with Mileage > 100,000
FORD	E150	2011	1	100,500	8	1	1
FORD	E350	2005	1	82,886	8	1	0
FORD	E350	2008	4	87,000	8	4	1
FORD	E350	2009	6	94,032	8	6	2
FORD	E350	2010	4	106,520	8	4	4
FORD	E350	2011	7	106,619	8	7	6
FORD	E350	2013	4	106,051	8	4	2
FORD	E350	2015	2	116,478	8	0	2
FORD	T150	2015	3	94,799	8	0	1
FORD	T350	2015	4	109,764	8	0	3
FORD	T350	2016	4	66,959	8	0	0
Total			40			27	22
Percent Exceeding Age-Based ULB:							68%

3.2. FACILITIES

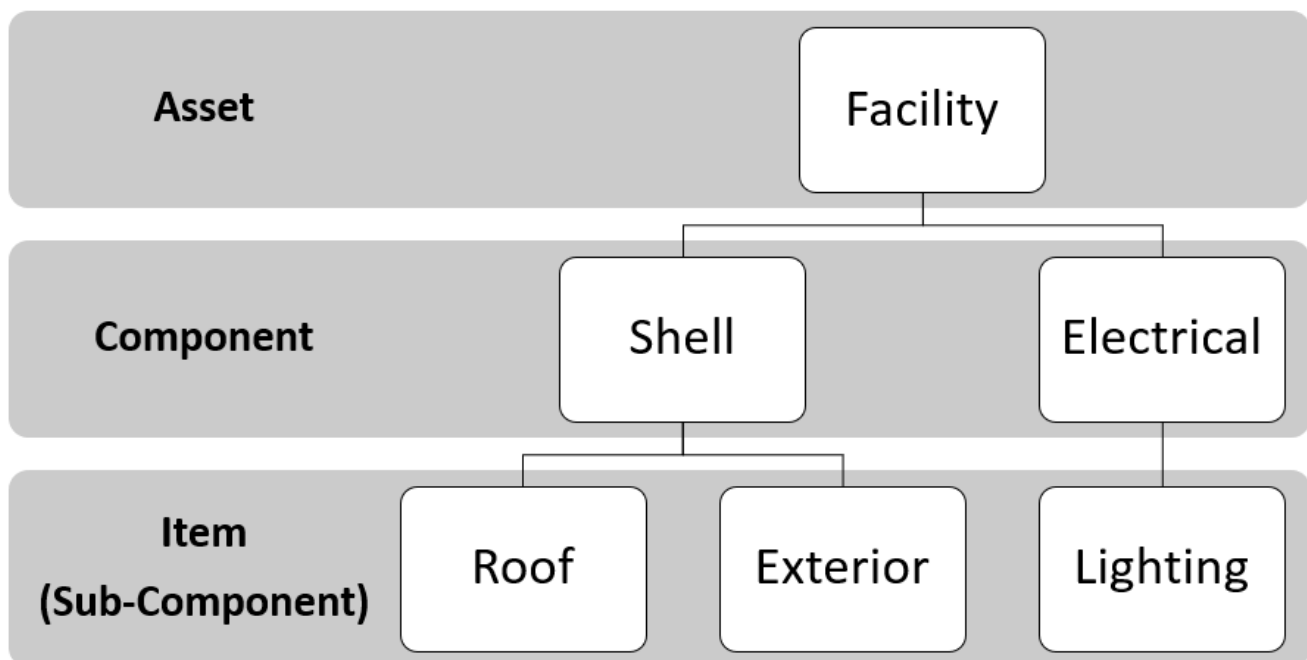
The condition of transit facilities is evaluated using the Transit Economic Requirements Model (TERM) scale. Facility condition data must be fully updated at least every four years. The TERM scale assigns numerical ratings based on guidelines summarized in Table 27.

Table 27. TERM Scale Facility Condition Ratings

TERM 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 have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components; but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

FTA's Facility Condition Assessment Guidebook treats the overall facility as a hierarchy of assets, breaking down the facility into components, and each component into sub-components. Condition assessment is conducted at the sub-component level, which then rolls up to the condition of components, and condition of components rolls up to the condition of the facility overall. This is illustrated in Figure 8. Appendix E details the hierarchy of assets used in condition assessments.

Figure 8. Asset Hierarchy – Facility, Components, and Items



The TAM Final Rule requires that TAM plans include facilities (except bus stops and facilities over which RTA does not have direct capital responsibility) without regard to their acquisition cost. CDM Smith and WIN Engineering, along with RTA, inspected these facilities in June and July of 2022 based on FTA's guidelines. Table 28 provides the TERM ratings for the components of RTA facilities and their overall condition. Most of these facilities are relatively simple with limited components, offering a park and ride lot and ticket vending equipment. It should be noted that RTA shares the Riverfront charging station with MTA, but it will be included in this RTA TAM Plan. It is referenced in the MTA TAM Plan but was excluded from the calculation of MTA's performance metric for facilities overall.

Table 28. RTA's Facility Ratings on the TERM Scale

Facility Name	Type	Substructure	Shell	Interiors	Conveyance	Plumping	HVAC	Fire Protection	Electrical	Equipment	Site	Facility Rating
Riverfront Station ¹²	Passenger Station	4.5	3.8	3.7	-	4.3	3.8	-	4.7	5.0	3.2	4
Donelson Station	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.0	5
Hermitage Station	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.6	5
Mt. Juliet Station	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.0	5
Martha Station	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.3	5
Lebanon Station	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.3	5
Hamilton Springs Station ¹³	Passenger Station	-	-	-	-	-	-	-	-	5.0	4.8	5
Greensboro Park and Ride	Park & Ride	-	-	-	-	-	-	-	-	-	3.9	4
Percentage of Facilities Rates less than 3.0 on the TERM Scale:												0%

Based on the 2022 condition assessments, RTA did not have any facilities rated less than 3.0 on the TERM scale. FTA's performance measure for facilities is the percentage of facilities rated 3.0 or less on the TERM scale, without regard to size, value, or the level of responsibility for the asset. The average facility rating for RTA is 4.5.

3.3. INFRASTRUCTURE - FIXED GUIDEWAY TRACKS

RTA operates the WeGo Star commuter rail service on a total of 31.58 miles of fixed guideway tracks belonging to the Nashville & Eastern Railroad Authority. Tracks, signals and bridges were upgraded and replaced, and various grade crossings have been improved since the start of service in 2006, and RTA contributed to the capital improvement of the tracks. According to 49 CFR § 625, RTA is including these fixed guideway tracks because of the shared capital responsibility.

Performance of the fixed guideway infrastructure is based on the percentage of track segments with performance restrictions (49 CFR § 625). Of the 31.58 miles of track on which RTA operates, a total of 0.5 miles has speed restrictions, which, based on FTA guidelines, indicates that 1.6% of RTA's fixed guideway tracks are considered not to be in a state of good repair. Table 29 identifies the track mileposts between which speed restrictions exist.

Table 29. Music City Star Track Segments Subject to Speed Restrictions by Milepost

Description	From	To	DRM	Design Speed (MPH)	Cause of Performance Restriction	Speed Restriction (MPH)
Main Line- Old Hickory Blvd.	11.1	11.2	0.10	45	Track Geometry	25
Old Horns Spring Rd.	26.2	26.5	0.30	45	Track Geometry	35
Old Horns Spring Rd.	26.8	26.9	0.10	40	Track Geometry	25
Miles Subject to Speed Restriction			0.50			
Percentage of Track Subject to Speed Restrictions:						1.6%

3.4. EQUIPMENT

3.4.1. Non-Revenue Service Vehicles

In 2019 RTA acquired two trucks for use by TSG staff for supervision, on-call, and emergency response purposes associated with operating the Music City Star. These were replacement vehicles for trucks originally supplied under the startup contract for the Music City Star that had exceeded their useful life. RTA has adopted a ULB of 8 years for its non-revenue service vehicles (including pickup trucks and utility vans). There are no non-revenue vehicles still in the fleet from the previous TAM Plan.

Table 30. Non-Revenue Service Vehicles

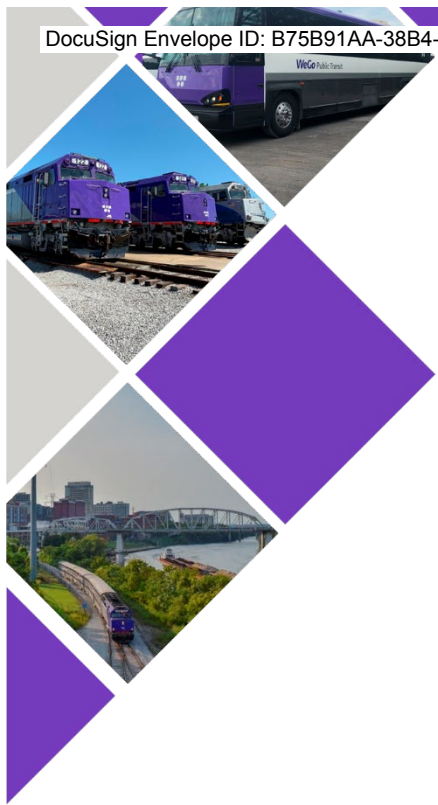
Make	Year	Odometer	License Plate
Chevrolet	2019	90,460	5780-GF
Chevrolet	2019	65,069	5781-GF
Percent Exceeding ULB:			0%

3.4.2. Other Equipment and Assets

The TAM Final Rule requires inclusion of non-vehicle equipment (fixed assets) with an acquisition value (original cost) more than \$50,000. The value of RTA assets in this category is presented in Table 31. Appendix D provides a full inventory of equipment.

Table 31. RTA's Non-Vehicular Assets with Acquisition Value More Than \$50,000

Item	Total Acquisition Value
Land	\$3,382,052
Greensboro Park & Ride	\$978,429
Stations	\$18,295,412
Fare Collection Equipment	\$1,492,118



Chapter 4

STATE OF GOOD REPAIR AND PERFORMANCE TARGETS

A robust system-wide State of Good Repair (SGR) that will preserve transit capital assets and support quality customer service is the goal of RTA. The capital expenditures that are necessary to maintain an SGR include preventative maintenance, repair of faulty components, rehabilitation or overhaul, and replacement. Defining the SGR for RTA's assets enables the agency to set appropriate targets, use the targets as benchmarks to track progress, and provide direction and guidance in the prioritization of capital improvements and maintenance. The SGR policy is closely aligned with RTA's mission and goals.

4.1. DEFINING STATE OF GOOD REPAIR (SGR)

SGR is defined by FTA as "the condition in which a capital asset is able to operate at a full level of performance" (TAM Final Rule 49 USC 625, §625.5). The SGR is met for a particular asset when the asset:

- Is performing its designed function.
- Is operable and reliable (not imposing the risk of stranding passengers in unsafe or unhealthy situations).
- Has met or recovered the lifecycle investments.

This SGR definition, originally adopted as part of the 2018 TAM plan, remains relevant because it relates to the appropriate targets and progress measures relative to a set benchmark. The objective of maintaining a state of good repair, therefore, is to provide direction and guidance for the entire TAM plan process of systematic and data-driven asset management.

The FTA’s TAM Final Rule established the following four performance measures for capital asset categories. These performance measures provide a framework for transit providers to establish their current asset performance state, as well as monitor the performance of their assets over time to evaluate the outcomes of capital investment decisions. These performance measures are listed in Table 32.

Table 32. Performance Measures for Transit Asset Categories

Asset Category	FTA established Performance Measure
Rolling Stock	% of revenue vehicles exceeding ULB
Equipment	% of non-revenue service vehicles and other equipment exceeding ULB
Facilities	% of facilities rated under 3.0 on the TERM** scale
Infrastructure	% of track segments under performance restriction

It should be noted that the performance measures are expressed as the percentage of assets that are not in a state of good repair (SGR). In other words, lower performance measures indicate better SGR.

4.2. ULB AND TARGET SETTING

FTA has established an expected Useful Life Benchmark (ULB) for various asset categories based on national experience (Table 33. Useful Life Benchmarks). The ULB rating sets the expected years of service a vehicle (or asset) can provide before the costs to maintain, rehabilitate, or otherwise attempt to keep the asset in a state of good repair begin to outweigh the asset’s benefits. Transit agencies may, at their discretion, adjust their target ULBs based on their specific operating environment and direct experience with their assets. Defining ULBs is the first step in tracking RTA’s performance towards achieving a state of good repair. RTA’s 2018 TAM Plan adopted FTA’s ULB’s and after a staff review, RTA will continue to utilize FTA’s ULBs for this TAM update.

The second step in monitoring RTA’s SGR requires the setting of targets that identify the percentage of assets that should be held in a favorable state of repair relative to the adopted ULBs. Keeping assets in a positive SGR improves the operating efficiency and overall reliability of the transit agency as discussed in Chapter 1. The adoption of performance targets is in the section to follow.

Table 33. Useful Life Benchmarks for RTA Assets

Asset Category	ULB/TERM Rating
Rolling Stock - Buses	14 years
Rolling Stock – Vanpool Vans	8 years
Rolling Stock – Commuter Rail Passenger Coach	39 years
Rolling Stock – Commuter Rail Locomotive	39 years
Equipment - Non-Revenue Vehicles	8 years
Equipment - Other Rubber-Tired Equipment	14 year
Facilities	3.0 TERM Rating

4.3. PERFORMANCE TARGETS

RTA has reviewed and updated the performance target for each asset class based on the current condition of assets, future budget outlook, and the ability to replace vehicles given ongoing supply chain challenges. These targets meet the requirements of FTA final rulemaking on transit asset management and performance reporting, and are achievable and reasonable for RTA, given its fiscal constraints. Table 34 provides a summary of both past and current performance measures for RTA's asset categories, and its targets for FY2022, and actual FY2022 metrics.

Table 34. Summary of 2018 TAM Performance Measures and Targets

Asset Category	Performance Metric	FY18 Actual	FY22 Target	FY22 Actual
Rolling Stock: Rail Cars	% exceeding ULB	100%	0%	20%
Rolling Stock: Locomotives	% exceeding ULB	100%	0%	0%
Rolling Stock: Buses	% exceeding ULB	0%	0%	0%
Rolling Stock: Vanpool Vans	% exceeding ULB	35%	70%	68%
Infrastructure: Track	% of Segments w/ Restriction	13.5%	13.5%	1.6%
Facilities	% below 3.0 TERM Rating	0%	0%	0%

Table 35 provides a summary of the performance measures RTA has adopted for FY23 through FY27.

Table 35: Summary of Performance Targets: FY23-FY27

Asset	FY22 Actual	FY23 Target	FY24 Target	FY25 Target	FY26 Target	FY27 Target
Rolling Stock: Rail Cars	20%	0%	0%	0%	0%	0%
Rolling Stock: Locomotives	0%	0%	0%	0%	0%	0%
Rolling Stock: Buses	0%	0%	0%	0%	0%	0%
Rolling Stock: Vanpool Vans	68%	75%	100%	100%	100%	100%
Infrastructure: Track	1.6%	1.6	1.6	1.6	1.6	1.6
Facilities	0%	0%	0%	0%	0%	0%

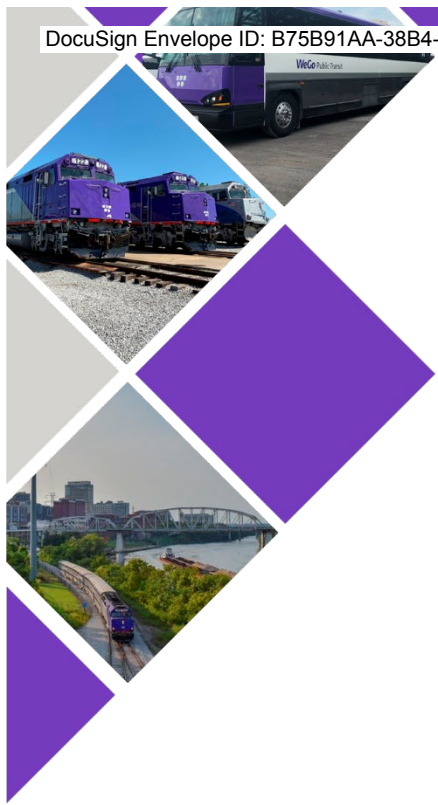
4.4. SGR POLICY AND MAINTENANCE PLAN

The purpose of the SGR policy is to keep the assets in a state of good repair through optimizing the capital investment plan to achieve these targets. Failure to achieve or maintain a state of good repair leads to safety risks for the users of public transit, decreased system reliability, more road calls, shorter distances between failures, higher maintenance costs, lower system performance, and eventually lower customer satisfaction.

RTA contracts with various entities for operation of its services, including maintenance duties associated with operations, as outlined in Table 36. While performance of maintenance may be contracted out to other parties, the ultimate responsibility for state of good repair and satisfactory continuing control (per FTA requirements) remains with RTA.

Table 36. Entities with Contractual Responsibility for Maintenance of RTA Assets

Asset Type	Entity Performing Maintenance	Description
Rail Rolling Stock	Transit Solutions Group (subsidiary of R.J. Corman)	TSG is responsible for performing preventative maintenance on rail rolling stock. They maintain rolling stock in accordance with their Passenger Equipment Inspection, Testing, and Maintenance Plan and Federal Railroad Administration (FRA) requirements. RTA audits TSG's performance of maintenance of rolling stock and track annually.
Rail Infrastructure	R.J. Corman Railroad	R.J. Corman is responsible for performing maintenance on rail infrastructure. RTA contracts with a third party to review recommendations and work performed annually.
Over-the-Road Buses Operated by MTA	WeGo Public Transit (MTA)	WeGo (MTA) maintains the ten over-the-road buses owned by RTA that MTA operates.
Over-the-Road Buses Operated by Gray Line	Gray Line	Gray Line maintains the ten over-the-road buses owned by RTA that Gray Line operates.
Vanpool Vans	TMA Group	The TMA Group maintains the vanpool van fleet. These vans received routine maintenance at the manufacturer dealership location based on the manufacturer's recommended preventative maintenance schedule.
Greensboro Park & Ride	City of Gallatin	RTA has an agreement with the City of Gallatin to maintain the Greensboro Park & Ride facility.
Lebanon Station	WeGo Public Transit/ City of Lebanon	WeGo and the City of Lebanon share responsibility for maintenance.
Martha	WeGo Public Transit/ City of Lebanon	WeGo and the City of Lebanon share responsibility for maintenance.
My. Juliet	WeGo Public Transit/ City of Mt. Juliet	WeGo and the City of Mt. Juliet share responsibility for maintenance.
Hamilton Springs	WeGo Public Transit/ City of Lebanon	WeGo and the City of Lebanon share responsibility for maintenance.
Other Facilities	WeGo Public Transit (MTA)	WeGo (MTA) maintains all other RTA facilities (stations, park & ride lots).



Chapter 5

ASSET PRIORITIZATION AND DECISION SUPPORT TOOL

FTA requires that TAM plans provide a decision support tool for prioritizing capital investments. FTA's website defines "decision support tool" as "an analytic process or tool that (1) assists in capital asset investment prioritization and/or (2) estimates capital needs over time (does not necessarily mean software)." This chapter documents the decision support tools that are currently in use by RTA.

RTA's overarching policy for capital investment reflects the agency's commitment to three objectives:

- to maintain assets in a state of good repair;
- to provide improvements to existing service for current riders; and
- to reflect and advance the initiatives adopted under the nMotion Strategy to expand the use of mass transit in Middle Tennessee.

Given RTA's objectives, projects are implemented in the following order of priority:

- **Safety / Regulatory Projects:** Completing projects required for safety or by law/regulation is at the top of RTA's priority list.
- **Rail Service Capital Cost of Contracting:** RTA transfers Federal 5307 capital dollars for the cost of contracting rail services. The amount transferred annually is reviewed to balance the needs of system maintenance and system capital projects. This has historically been funded at under \$2.2 million. For FY2023, this amount is projected to increase to \$2.8 million to address the current operating budget.

- **State of Good Repair (SGR):** Maintaining the existing transit system in a State of Good Repair (SGR) is also one of RTA's highest priorities. Having well maintained, reliable transit assets will help ensure safe, dependable, efficient, and accessible services. Capital projects to maintain SGR for bus and rail include routine vehicle repair, rehabilitation, and replacement; infrastructure rehabilitation, replacement and repair; rail station park-and-ride lot maintenance; and routine replacement of information technology assets.
- **Business Improvements:** In order to increase staff efficiency and improve business processes, RTA will continue to review and upgrade or implement strategic improvements that streamline business efforts and increase effective use of existing resources.
- **nMotion Service Expansion/Improvements.** In order to provide increasingly meaningful service to Middle Tennessee residents, RTA will improve its existing service making it easier to use, more convenient, more comfortable, more efficient, and more accessible. nMotion recommendations for service improvements include:
 - Improvements to the WeGo Star Rail Infrastructure to support the future expansion of service to increase the number of daily trips;
 - Development of Purpose-Built Park-and-Ride Facilities;
 - Planning and Project Development Support for emerging nMotion initiatives.

5.1. VEHICLE REPLACEMENT PRIORITIZATION

5.1.1. Buses

Since RTA's bus fleet consists entirely of 2019 and 2022 vehicles, there are not any bus replacements planned between FY2023 and FY2026. However, the following is provided to document RTA's methodology for planning bus replacements. RTA's current process for prioritizing vehicle replacements is straightforward: first-in, first-out by sub-fleets (i.e., groups of buses/vans of a given make/model/year). The process of disposing of older sub-fleets and replacing with new vehicles is, when necessary, fine-tuned through a review of data on individual vehicles, including Miles Between Road Calls and fuel/fluid consumption. At times RTA may opt to dispose of one or more vehicles in a given sub-fleet prior to the entirety of that sub-fleet due to vehicle-specific performance or condition. In general, however, RTA aims to replace an entire sub-fleet at once, providing that funding is available, to promote efficiency in vehicle maintenance.

In order to improve efficiency, RTA's bus fleet is managed in conjunction with WeGo/MTA's vehicle management system. To plan for bus replacements, a 12-Year Fleet Projection Spreadsheet is maintained as illustrated in Figure 9. The spreadsheet is maintained by the Vehicle Maintenance Manager and continually updated to reflect planned sub-fleet disposals and the onboarding of replacement sub-fleets. The spreadsheet tracks disposals and replacements on a quarterly basis and provides summary statistics for the fleet overall including the total number of vehicles, the average age of vehicles in each asset class, and the spare ratio for each asset class.

5.1.1. Vanpool Vehicles

As will be discussed in Chapter 6, vanpool vehicle replacements are not currently planned between FY2023 and FY2027, pending discussion about the future of the vanpool program. If RTA does elect to replace vanpool vehicles, a mileage threshold of 100,000 miles will be the primary criterion for replacement, though input from the TMA Group regarding vehicle-specific information will play into the prioritization process as well.

Figure 9. 12-Year Vehicle Replacement Planning Tool - Detail View of the Bus Spreadsheet

		Fiscal Year	FY22	FY22	FY23	FY23	FY23	FY23	FY24	FY24
		Calendar Year	2022	2022	2022	2022	2023	2023	2023	2023
		Quarter	1	2	3	4	1	2	3	4
Vehicle Type	Model Year	Original Quantity								
MCI	2009	3	1	0	0	0	0	0	0	0
MCI	2010	2	2	0	0	0	0	0	0	0
MCI	2019	10	10	10	10	10	10	10	10	10
MCI	2022	10	0	10	10	10	10	10	10	10

5.2. FACILITY PROJECT PRIORITIZATION APPROACH

As with vehicles, all assets decline with age and/or use and require upkeep and investment. Multiple models have been developed to represent the general decline of an asset's condition over time. RTA continues to utilize a condition-based assessment derived from FTA's Transit Economic Requirements Model (TERM). This type of model requires that a 'condition state' be defined as well as the probabilities of transition from one state to another (lower state) over time. In addition, costs of improving the condition from a lower to a higher state must be considered. The current assessment of RTA facilities can be found in Chapter 3.

RTA is responsible for maintaining multiple and varied aging facilities and equipment, including track infrastructure, park & ride lots, and WeGo Star stations. As needs arise at facilities, projects to address those needs are programmed based in the ranked priorities listed at the outset of this chapter.



Chapter 6

CAPITAL BUDGET AND INVESTMENT PRIORITIZATION

This chapter addresses the capital budget for RTA, budget breakdown and descriptions, and also the outcomes of the capital investment prioritization.

6.1. RTA CAPITAL INVESTMENT PLAN

The Board of Directors of the Regional Transportation Authority of Middle Tennessee (RTA) recognizes the need to develop a broad funding policy for the Five-Year Capital Investment Plan (CIP), developed annually. The goals of CIP are to:

- Maintain assets in a state of good repair;
- Provide improvements to existing service for current riders; and
- Reflect and advance the initiatives adopted under the *nMotion Strategic Plan* for Middle Tennessee to expand the use of mass transit in the region.

The capital plan generally identifies sources and amounts of projected capital funding available to RTA as well as a framework for categorizing and prioritizing projects for funding decisions. It also provides descriptions of proposed capital projects as well as potential funding resources for those projects.

The CIP generally identifies sources and amounts of projected capital funding as well as a framework for categorizing and prioritizing projects for funding decisions. Projects listed in the CIP for FY2023 and prior years generally (1) have been thoroughly scoped, and (2) have identified funding sources associated with them. Once approved in the Capital Plan, RTA Board Members can next expect to see them reported out in a “project delivery” phase, such as design or procurement. Projects listed for FY2024 and beyond are more

conceptual in nature and will most likely require more detailed scoping and the identification of specific funding sources. They are listed to facilitate discussion of RTA's priorities among Board members and will likely be presented in next year's CIP.

Table 37 lists the federal and state sources of funding included in the CIP and Table 38 the estimated level of funding from each source over the five-year period. The fund types that are included in RTA's CIP sources are described in the subsequent sections.

Table 37. Federal and State Funding Sources

Funding Program	Source	Type
5307 – Urbanized Area Formula Grant	FTA	Formula
5337 – State of Good Repair – Fixed Guideway	FTA	Discretionary
Congestion Mitigation and Air Quality (CMAQ)	FHWA/Allocated by TDOT	Discretionary
Surface Transportation Block Grant Program (STBG)	FHWA/Allocated by MPO	Discretionary
Carbon Reduction Program (New in IIJA)	FHWA	Discretionary
Safe Streets and Roads for All (New in IIJA)	FHWA	Discretionary
5309 - Small Starts	FTA	Discretionary
5309 - New Starts	FTA	Discretionary
State Matching Funds	TDOT	Formula
IMPROVE Act Funds	TDOT	Discretionary

Table 38. Estimated State, Federal and Local Funding Amounts: FY2023-FY2027

	FY2023	FY2024	FY2025	FY2026	FY2027
Prior Year Carryover	\$ 19,898,557	\$ 24,720,841	\$ 27,269,953	\$ 20,191,817	\$ 21,125,194)
Section 5303 - TDOT Planning Award					
Section 5307 - Urbanized Area Formula	\$ 1,920,200	\$ 1,977,806	\$ 2,037,140	\$ 2,098,254	\$ 2,161,202
Section 5337 - State of Good Repair for Fixed Guideway	\$ 4,125,627	\$ 4,249,396	\$ 4,376,878	\$ 4,508,184	\$ 4,643,430
Congestion Mitigation/Air Quality	\$ 1,280,000	\$ 2,160,000	\$-	\$-	\$-
Surface Transportation Block Grant	\$-	\$-	\$-	\$-	\$-
Improve Act	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000
Metro Local (100%)	\$-	\$-	\$-	\$-	\$-
State Match	\$ 755,728	\$ 778,400	\$ 801,752	\$ 825,805	\$ 850,579
Metro Match	\$ 1,825,728	\$ 2,068,400	\$ 1,551,752	\$ 1,575,805	\$ 1,600,579
Total	\$ 32,805,841	\$ 38,954,843	\$ 39,037,475	\$ 32,199,865	\$ (8,869,404)
Less Funds Committed to Ongoing Projects	\$ 8,085,000	\$ 11,684,890	\$ 18,845,659	\$ 53,325,058	\$ 58,626,634
Funds Available for Ensuing Year	\$ 24,720,841	\$ 27,269,953	\$ 20,191,817	\$(21,125,194)	\$(67,496,038)

6.1.1. Federal 5307 – Urbanized Area Formula Grants

The 5307 federal formula funding is provided to the region based on reported and audited ridership data. Through annual agreements with regional partners at the MPO level, funding is split between RTA, MTA, and Franklin Transit Authority. These funds can also be “flexed” over to the operational budget to be used for capital cost of contracting for rail service, as allowed by FTA regulation. These are typically “80%” funds, meaning that 80% of the funding shown is federal money while 10% of the money comes from the state and 10% comes from local sources. Funding under this program may be allocated to either bus or rail projects, at the RTA’s discretion.

Population of an urbanized area is among the variables that factor into the calculation of 5307 apportionments (as well as other federal formula grant). Population is based on the most recently completed census. Once the 2020 census urbanized area boundaries are released, two specific possibilities may have a negative impact on the funding available to RTA:

- The Nashville-Davidson Urbanized Area could exceed 1 million for the first time. This will place RTA in a different funding tier, among the largest metropolitan areas of the nation, and could have a negative impact on federal funding if Congress does not increase the allocation of total funding to this program and our specific population tier; and
- The City of Murfreesboro may be included in the Nashville-Davidson Urbanized area for the first time, adding their transit system – Murfreesboro Rover to the regional mix of transit operators – MTA, RTA, Franklin Transit, Rover, and MCHRA – sharing these funds.

FTA provides 5307 funding to public transit systems in Urbanized Areas (UZA) for public transportation capital projects, planning, job access and reverse commute projects, as well as operating expenses in certain circumstances. Eligible activities 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 of buses, overhaul of buses, 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.
- Preventive maintenance (treated as a capital cost)

At this time, RTA estimates that it will receive approximately \$1.9M in 5307 funds in FY2023. In addition to traditional capital projects, RTA spends a portion of its 5307 funds on the capital cost of contracting rail service. Additionally, through prior agreement of the RTA Board, some Section 5307 funds are used for preventive maintenance for the Dickson County commuter service, due to the ineligibility of this service for ongoing CMAQ support.

6.1.2. Federal 5337 –Fixed Guideway Capital Investment Grants

The 5337 federal formula funding is provided to the region based on reported and audited rail ridership data. RTA is the only regional provider eligible for 5337 funds. As with 5307 funding, these are typically “80%” funds, meaning that 80% of the funding shown is federal money while 10% of the money comes from the state and 10% comes from local sources. Funding under this program may only be allocated to projects for the WeGo Star. Bus projects are not eligible.

At this time, RTA estimates it will receive approximately \$4.1M total for capital needs in 5337 funds in FY2023. FTA provides 5337 funding to states and transit agencies through a statutory formula to maintain a fixed guideway or a high intensity motorbus system in a state of good repair. These activities include projects to replace and rehabilitate:

- Rolling stock
- Tracks and ties
- Line equipment and structures
- Signals and communications
- Passenger stations and terminals
- Security equipment and systems
- Maintenance facilities and equipment
- Operational support equipment, including computer hardware and software

6.1.3. Federal Congestion Mitigation and Air Quality (CMAQ) Grants

Congestion Mitigation and Air Quality (CMAQ) funds are made available to the TDOT by FHWA. TDOT is responsible for managing a competitive selection process for projects based on proposed projects’ ability to meet the emissions reduction goals of the CMAQ program. These funds typically are 80% federal and require a state or local match. RTA can apply to TDOT for capital funding for bus acquisition, park and ride lots, and other projects that would result in a reduction of vehicle congestion and an associated improvement of local or regional air quality.

CMAQ funds support the operation of commuter bus service in the Williamson, Rutherford, Sumner, Robertson, and Montgomery County corridors. This is an anomaly, as CMAQ funding to support service operation is generally limited to no more than three years. Due to specific language in the FAST Act, service initiated with Federal Fiscal Year 2012 funds may renew their CMAQ eligibility continually. TDOT renewed the most recent reauthorization of operating funds in 2018 and RTA intends to apply for funding as part of future calls for projects. WeGo Star service and the Dickson County corridor are not eligible for this funding.

The timing and nature of TDOT’s calls for projects are difficult to predict, and CMAQ funds cannot be relied upon as an ongoing and stable funding source. However, RTA does review “shovel-ready” projects in its capital budget to submit CMAQ applications each year as eligible. The expansion of purpose-built park and ride facilities in the RTA service area would be a good example of the type of project to prioritize for CMAQ funding.

6.1.4. Federal Surface Transportation Block Grant Program (STBG)

These are funds that are managed and allocated by the MPO. Although these are Federal Highway Administration funds, RTA can apply for these funds for use on capital projects, engineering, planning studies, and similar activities. These funds are typically 80% federal and require a state or local match and are allocated through the MPO's Regional Transportation Plan development process.

RTA does not have a current strategy for requesting these funds and cannot reasonably include this as an ongoing and stable funding source. Like CMAQ, as the Board approves each subsequent capital plan, staff will work with TDOT and regional leadership at the MPO to evaluate the best candidate projects for STBG funding. Previous examples of RTA projects utilizing these funds in the past include Greensboro North Park and Ride in Gallatin and the WeGo Star Hamilton Springs Station in Lebanon.

6.1.5. Residual Federal Pandemic Relief Act Funding

Through the Federal CARES Act and American Rescue Plan Act, the RTA was allocated a total of \$14,786,259. The stated priority for these funds is to sustain operations through the course of the pandemic and its aftermath in a manner that minimizes disruptions in service, or forces reductions in force. However, funds are eligible to be used for other purposes (within the guidelines of the Acts) if the priority need is met. In the case of the RTA (where a much larger allocation of CARES Act dollars was driven by the STAR and its impact on driving Federal Formula funds for Fixed Guideway State of Good Repair), we anticipate sufficient funding to advance several projects in the Capital Plan upon Board concurrence. These funds are noteworthy beyond their magnitude and flexibility insofar as they do not require State or Local matching funds.

6.1.6. State IMPROVE Act Funds

These are state funds that are allocated by TDOT through a competitive grant process. These funds require a local match. RTA can apply to TDOT for funding for a broad range of transit capital projects.

RTA reviews "shovel ready" projects in its capital budget to submit as IMPROVE Act applications each year. Recent requests focused on rehabilitation of rail cars for the WeGo Star commuter rail and regional commuter bus replacement. IMPROVE Act funds began to become available following passage of this funding bill in 2017. Since that time, funding has increased incrementally, reaching a peak of \$21 million statewide in FY2021 available for competitive capital projects. Although the FY2022 budget adopted by the state reduced this funding source to \$6 million, the State subsequently restored full funding for the program and recently reduced the local match amount required for projects.

6.1.7. State Matching Funds for Federal Grants

RTA relies on state funding to provide matching funds for federal grants, typically in the amount of 10% of total project cost.

6.1.8. Local Capital Funding and Local Match Funds for Federal Grants

RTA relies on funding from regional partners to provide matching funds for federal grants. Historically, Metro Nashville has provided most of the match for federal formula funding and IMPROVE Act. During the history of the RTA, only Metro Nashville has provided general local match for capital projects, although other local entities have provided funding for specific projects within their jurisdictional boundaries. As an example, the City of Lebanon provided local funding to support the construction of the Hamilton Springs Station. Identifying sources of local matching funds will be critical for future project development.

6.1.9. Other

When projects deemed to be an RTA priority cannot be funded through traditional formula sources, a dialogue is initiated with potential outside funding partners (i.e.: TDOT, GNRC, etc.) to identify other potential sources of funds. Other sources include grants from other federal, state, or local entities. RTA continuously reviews opportunities to apply for grants to support capital projects.

Additional funding will be available to the region through the IJIA. The Carbon Reduction Program (CRP), a formula program, provides funds for projects designed to reduce transportation emissions, defined as carbon dioxide (CO₂) emissions from on-road highway sources. RTA is also eligible to pursue discretionary RAISE grant funds and discretionary funds made available by FTA.



6.2. RTA CAPITAL INVESTMENT LOOK-AHEAD

Figure 10 illustrates the anticipated sources and amounts of funds available to RTA for capital projects in FY2023, and Figure 11 illustrates the proposed project breakdown for this period.

Figure 10. Funding Sources for RTA's FY2023 Budget

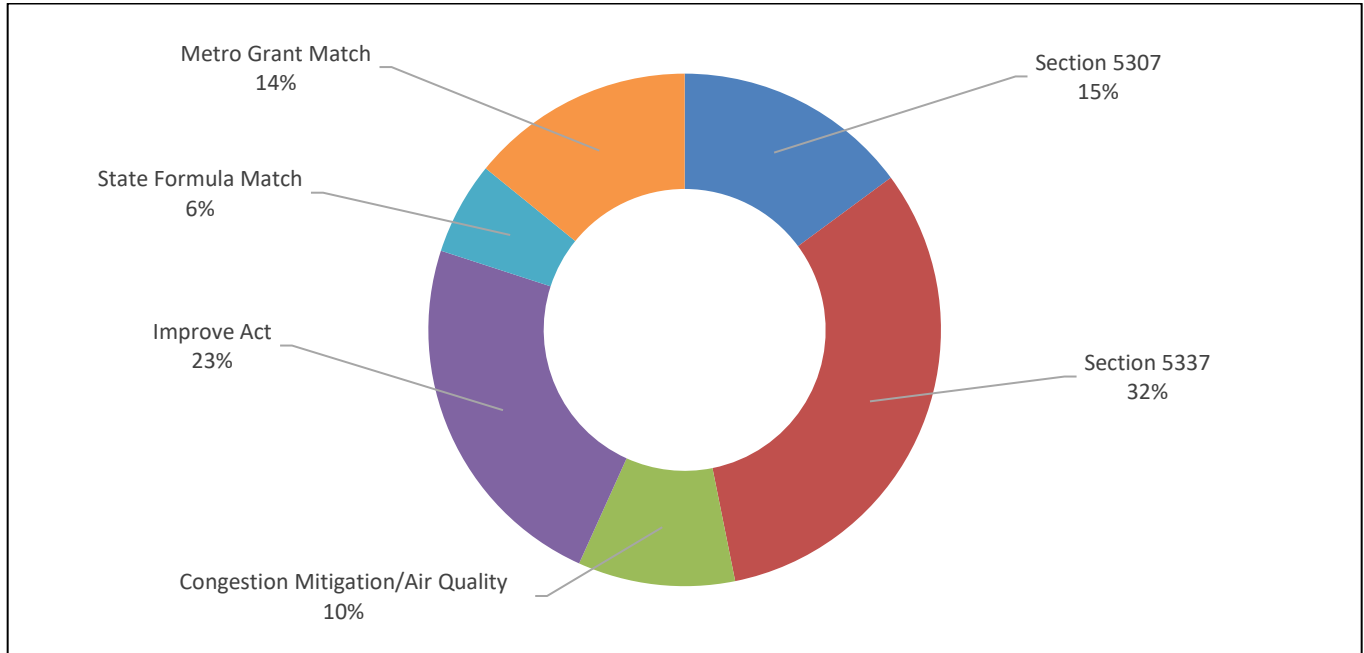


Figure 11. Capital Projects in RTA's FY2023 Budget

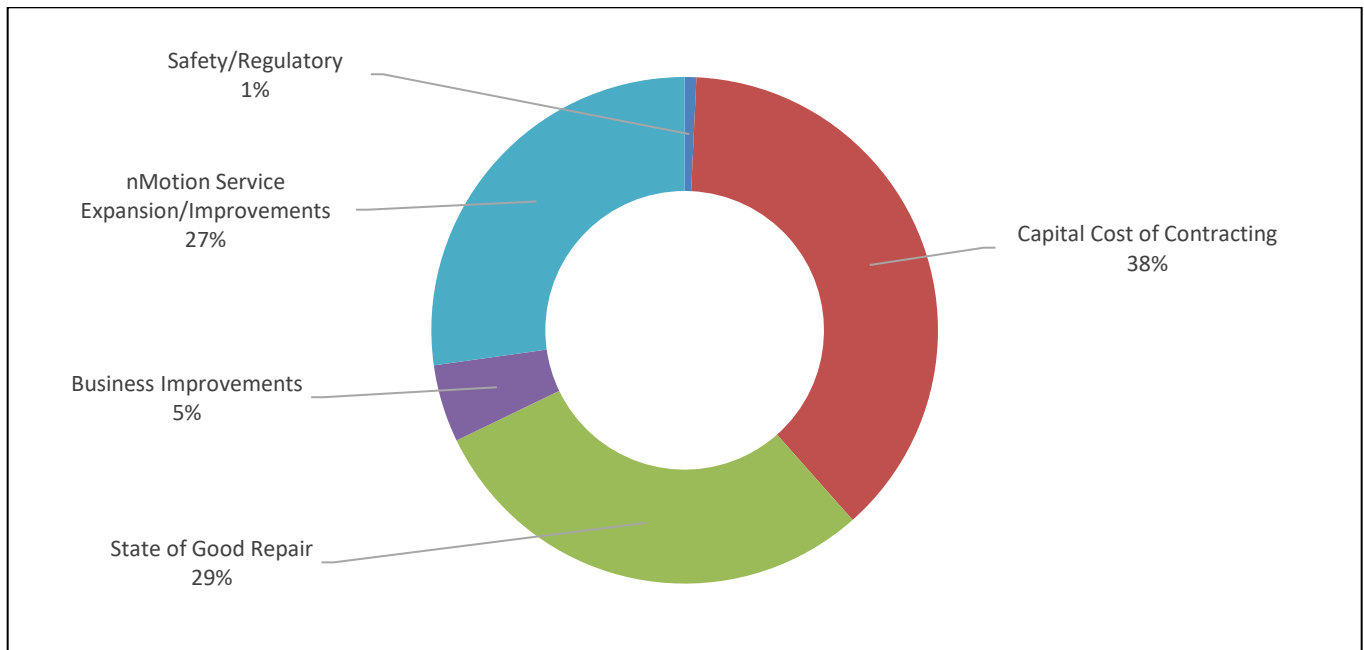


Table 39 outlines the details of RTA's 5-year capital budget plan. The FY2023 capital budget was adopted by the Board of Directors in September 2022. The FY2024 through FY2027 budgets are provided for planning purposes. These will be updated and presented to the Board in the coming years.

Table 39. RTA's 5-Year Capital Plan Breakdown

	FY2023	FY2024	FY2025	FY2026	FY2027
1 - Safety and Regulatory Projects	\$60,000	\$61,800	\$63,654	\$65,564	\$67,531
A. Annual FRA Track Audit	\$60,000	\$61,800	\$63,654	\$65,564	\$67,531
2 - Capital Cost of Contracting	\$3,050,000	\$3,198,090	\$3,355,605	\$3,518,495	\$3,689,103
A. Annual Rail Capital Cost of Contracting	\$2,809,800	\$2,950,290	\$3,097,805	\$3,252,695	\$3,415,329
B. Bus Service Capital Cost of Contracting (Dickson)	\$240,200	\$247,800	\$257,800	\$265,800	\$273,774
3 - State of Good Repair Projects	\$2,375,000	\$1,525,000	\$2,000,000	\$1,341,000	\$6,470,000
<u>Rolling Stock (Revenue)</u>					
A. 45' Over the Road Coach Replacement	\$-	\$-	\$-	\$-	\$6,270,000
B. Cab Control Car	\$750,000	\$-	\$-	\$-	\$-
C. Spare Parts for Passenger Rail Cars	\$100,000	\$-	\$100,000	\$-	\$-
<u>Equipment</u>					
D. IT/Hardware Replacement	\$25,000	\$25,000	\$-	\$-	\$-
<u>Facilities</u>					
E. WeGo Star Rail Track Infrastructure	\$1,000,000	\$1,000,000	\$1,000,000	\$441,000	\$100,000
F. WeGo Star Stations Capital Maintenance/Upgrade	\$500,000	\$500,000	\$900,000	\$900,000	\$100,000
4 - Business Improvements	\$400,000	\$-	\$-	\$-	\$-
A. Hermitage Station- Staff Facilities	\$400,000	\$-	\$-	\$-	\$-
5 - nMotion Service Expansion/Improvements	\$2,200,000	\$6,900,000	\$13,426,400	\$48,400,000	\$48,400,000
A. <u>WeGo Star Service Enhancement Program</u>					
1. Realtime Tracking and Customer Information	\$-	\$1,200,000	\$2,100,000	\$-	\$-
2. Planning, Engineering and Environmental		\$1,500,000	\$-	\$-	\$-
3. Track Infrastructure/Crossing Improvements	\$-	\$-	\$2,500,000	\$10,500,000	\$10,000,000
4. Downtown Storage	\$-	\$-	\$4,626,400	\$9,373,600	\$-
5. Positive Train Control	\$-	\$-	\$-	\$3,000,000	\$27,000,000
6. Station Improvement/Infill Station Development	\$-	\$-	\$-	\$21,326,400	\$-
7. Park-and-Ride Development/Expansion	\$-	\$-	\$-	\$-	\$7,200,000
B. Park and Ride Development - Regional Bus	\$2,200,000	\$4,200,000	\$4,200,000	\$4,200,000	\$4,200,000
Total Project Budget Requirements	\$8,085,000	\$11,684,890	\$18,845,659	\$53,325,058	\$58,626,634

6.3. PRIORITIZED ROLLING STOCK PROJECTS

6.3.1. Locomotives

Having overhauled all four of its locomotives since the last TAM Plan was completed in 2018, the locomotive fleet is in excellent condition. The overhauls extended the expected useful life of the locomotives by 10 years, so they will remain in a state of good repair through the planning horizon of this TAM Plan. Routine preventive maintenance will continue over the next five years, but no major capital projects are planned.

6.3.2. Passenger Cars

As is the case for the locomotives, RTA's passenger cars are in excellent condition. In the last four years RTA acquired six refurbished gallery cars and two cab cars, leaving only one unimproved cab car and one unimproved gallery car in the fleet. WeGo intends to retire the aging gallery car when a replacement is procured in FY2023.

6.3.3. We Go Star Cab Control Car Acquisition

RTA intends to acquire an additional cab car during FY2023. The initial purchase of passenger cars for the WeGo Star in 2019 included a third cab car. However, the seller reduced that to two in their best and final offer submission. This project proposes the procurement of an additional Cab Control Car operationally configured to operate with the WeGo Star existing fleet.

6.3.3.1. Spare Parts for Passenger Rail Cars

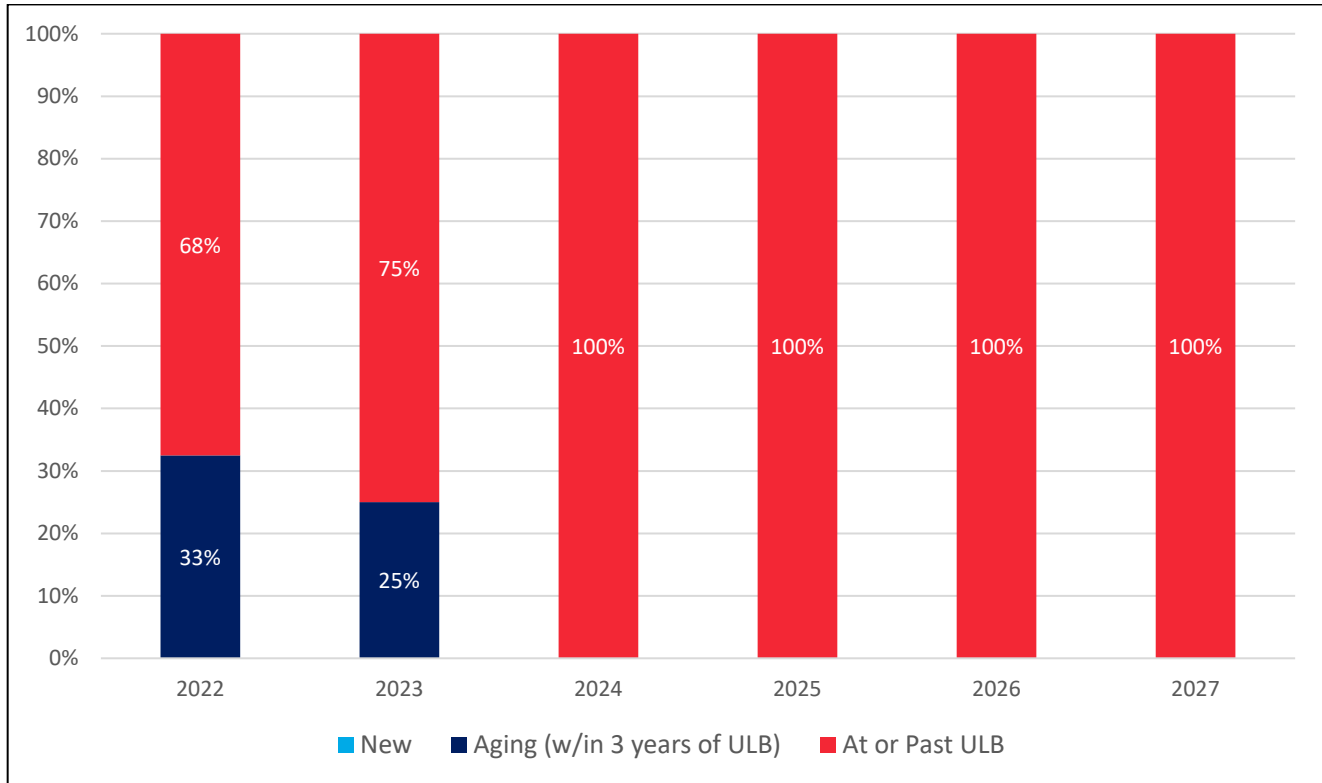
This project entails building up an inventory of spare parts for the WeGo Star Budd passenger cars. Building a spare part inventory is essential for maintaining the service operating properly, reduce potential costs, and avoid extensive delays in case of equipment breakdowns.

6.3.4. Buses

RTA will not replace any of the buses it owns during the period covered by this TAM Plan. RTA's CIP calls for acquisition of 10 buses in FY2027, an expansion of the current fleet of 20 RTA-owned over-the-road buses. A total of \$6.3M is budgeted for this project in FY2027. These will replace buses currently owned and operated by Gray Line under contract with RTA.

6.3.5. Vanpool Vans

The TMA Group operates RTA's 40 vanpool vans under contract. Twenty-four of the 40 vanpool vehicles are being retired in October 2022. Given post-pandemic commuting patterns, the decision about whether to replace the vanpool vans has been deferred to the FY2024 CIP development process to allow time for discussion of the viability of the vanpool program. Figure 12 shows the percentage of the vanpool fleet that would exceed its ULB from FY2022 to FY2027 if RTA does not replace the retired vehicles. Note that FY2022 data reflects the fleet of 40 vehicles owned by RTA at that time, while the FY2023-FY2027 data reflects the reduced fleet size of 16 vehicles. If no replacement vehicles are procured, RTA's entire vanpool fleet will be at or past ULB by FY2024.

Figure 12. ULB Metric for Vanpool Fleet - FY22-FY27

6.4. PRIORITIZED FACILITY PROJECTS

6.4.1. WeGo Star Stations Capital Maintenance and Upgrades

Overall, RTA's facilities are in very good condition, but the CIP does include \$2.9M over the five-year period for maintenance and upgrades at the WeGo Star stations. Projects could include power and lighting, shelters, glass, parking lot/asphalt sealing, irrigation, storm sewer, plumbing, sidewalks, fencing, vandalism repair, painting, locksmith, hazardous waste services, etc. Station work will also support the RTA's new fare collection system and ticket vending machines in addition to general station capital maintenance.

6.4.2. Hermitage Station Staff Facilities

While it is not an SGR projects, the CIP includes \$400K to add restroom facilities for drivers that are working on routes that serve this station.

6.4.3. Regional Bus Park-and-Ride Development

The CIP includes funds for the development of purpose-built and conveniently located park-and-ride (PnR) facilities. While development of these facilities would not be SGR projects but rather an expansion of WeGo's facility portfolio, they are mentioned here for planning purposes.

6.5. PRIORITIZED INFRASTRUCTURE PROJECTS

The CIP includes \$3.5 million over five years for track maintenance and improvements. project is to ensure the safety and ride quality of the WeGo Star operating service in compliance with Federal Railroad Administration requirements for commuter rail operations. The annual request is consistent with the annual rail audit and the Tri-Party Agreement that includes annual maintenance and rehabilitation of the STAR corridor. Labor and materials routinely include track, ties, ballast, switches, bridges and overall upkeep of the at-grade crossings.



6.6. PRIORITIZED EQUIPMENT PROJECTS

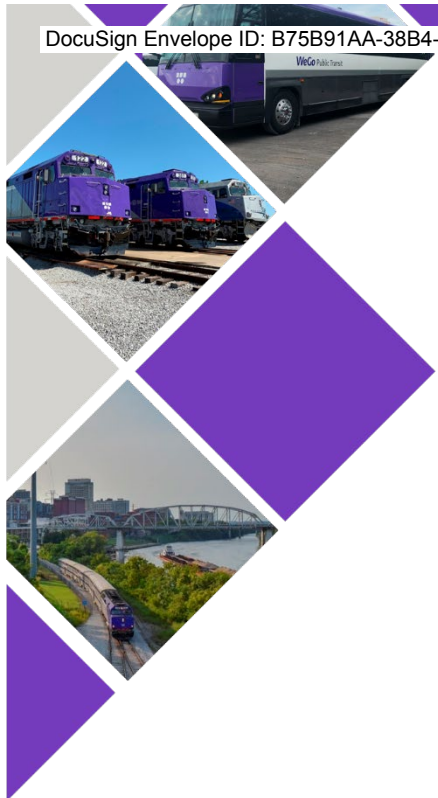
6.6.1. Non-Revenue Service Vehicles

RTA maintains two non-revenue, support vehicles that were acquired in 2019. Mileage on these vehicles is low, with minimal wear and tear. Accordingly, no non-revenue service vehicle replacements are planned between FY2023 and FY2027.

6.6.2. Non-Vehicular Equipment

This \$3.3M project will support on-board and on-street hardware and software related to fare collection system, video surveillance, 800Mhz voice, Ultra High Frequency data, on-board routers, automated passenger counters, Computer-Aided Dispatch/Automatic Vehicle Locator, Wi-Fi hardware, station hardware includes video surveillance and network equipment. Customer facing station equipment includes Ticket Vending Machines and fare collection QuickTicket readers.





Chapter 7

TAM IMPLEMENTATION STRATEGY AND KEY ACTIVITIES

TAM is a series of processes and an organizational stewardship culture tailored to preserving the public transit assets through their lifecycle at an optimized cost. A successful, mature TAM practice continuously improves itself through documentation of the gaps and reevaluation of its progress toward the desired maturity level on an ongoing basis. RTA has developed an implementation roadmap that is aligned with its TAM vision and policies. The roadmap includes certain activities for each policy focus, as well as a timeline and the level of resources for each activity. The roadmap was developed through a collaborative effort with the Transit Asset Management Working Group and reflects their plan for advancing the TAM practice at the agency.

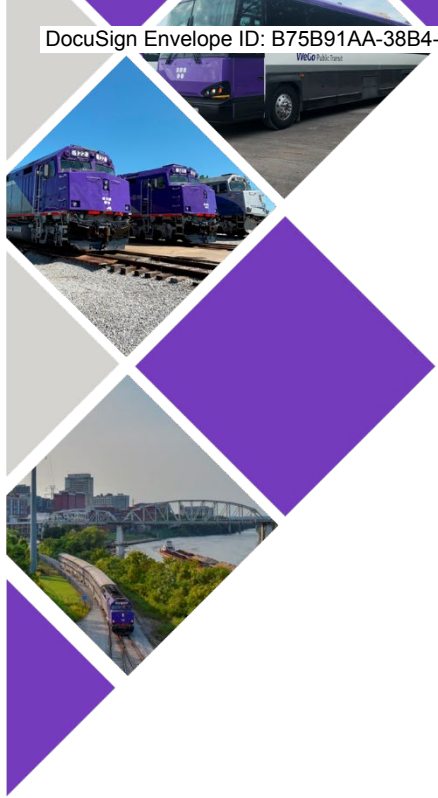


Table 40. TAM Implementation Roadmap: Policies, Goals, and Key Activities

Policy Area	Goals	Key Activities
Planning		
<p>Provide agency-wide direction, fulfill all FTA requirements, and strive for continuous improvement in asset management practices.</p>	<ul style="list-style-type: none"> ■ Fulfill all FTA planning and reporting requirements per 49 CFR § 625 ■ Ensure that the agency has well-defined vision, policies and goals, and that these are reviewed as part of the continuous improvement plan ■ Align asset management and safety management practices 	<ul style="list-style-type: none"> ■ Report annually to FTA’s National Transit Database (NTD) ■ Review TAM Plan annually and revise if necessary. ■ Communicate SGR targets to TDOT and GNRC ■ Plan to revise the TAM Plan again in FY26. ■ Continue coordination with the Public Transit Agency Safety Plan (PTASP).
Efficiency and Safety		
<p>Proactively manage assets to improve operational efficiency and safety.</p>	<ul style="list-style-type: none"> ■ Maintain vehicles, equipment, systems, and facilities in a state of good repair ■ Develop and implement asset replacement and rehabilitation plans. ■ Develop and implement programs of preventive maintenance for capital assets ■ Use asset data and subject matter expertise to identify recurring issues, reduce road calls, and move toward a proactive management of assets 	<ul style="list-style-type: none"> ■ Execute the Capital Improvement Program to keep assets in a state of good repair. ■ Use information obtained during the 2022 facility assessments to generate projects for inclusion in the work program. ■ Monitor supply chain conditions impacting production and delivery of rolling stock. Plan procurements sufficiently far in advance so that delivery can occur within the target time frame.
Fiscal Sustainability		
<p>Foster financial sustainability by implementing asset management and promoting the TAM culture at the agency</p>	<ul style="list-style-type: none"> ■ Preserve current assets while planning for replacement and additions ■ Develop RTA’s annual budgeting process and Capital Improvement Program (CIP) in alignment with SGR targets in this TAM Plan ■ Utilize objective methods to prioritize capital projects ■ Ensure investment decisions are transparent and clearly communicated 	<ul style="list-style-type: none"> ■ Continue preparing the Five-Year Capital Investment Plan annually in conjunction with the annual budgeting process. ■ Maintain the 12-Year Vehicle Replacement spreadsheet to keep data current. ■ Monitor the impacts of inflation on future purchasing power.

Policy Area	Goals	Key Activities
Human Capital		
Promote asset management culture at RTA and develop the human capital necessary for TAM implementation	<ul style="list-style-type: none"> ■ Document and manage organizational knowledge and lessons-learned ■ Recruit, develop, and retain well-trained TAM workforce ■ Develop a succession plan for key roles at the agency 	<ul style="list-style-type: none"> ■ Continue documentation of all standard operating procedures (SOPs) ■ Incorporate sufficient training in the implementation plan for using the enterprise asset management (EAM) system
Data and Tools		
Support data-driven decision-making through the use of analytical tools and reliable data.	<ul style="list-style-type: none"> ■ Collect relevant, timely, and accurate data to support decision-making ■ Develop data management protocols to reduce redundancy while following information security standards ■ Assess and implement tools to support data driven asset management decisions ■ Utilize historical data to identify recurring issues and failures 	<ul style="list-style-type: none"> ■ Complete development of the facility asset management system in Oracle Unifier. ■ After the preliminary study of EAM needs is complete, procure an EAM solution for vehicle asset management. ■ In conjunction with Operations and the EAM implementation, explore transitioning to a tablet-based system of tracking maintenance routines.





Chapter 8

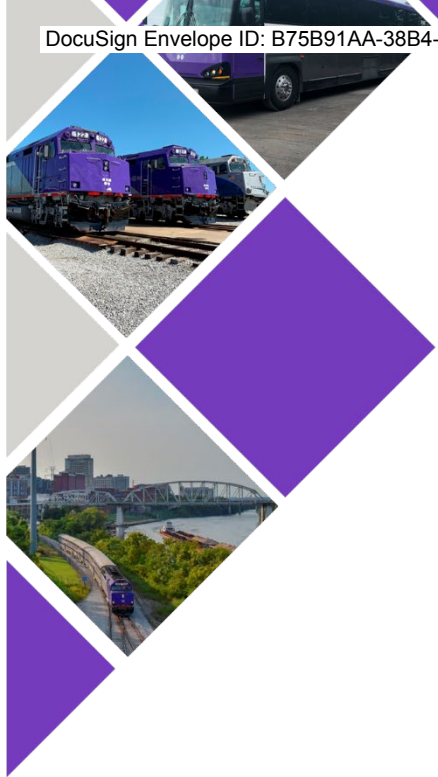
MONITORING AND CONTINUOUS IMPROVEMENT PLAN

RTA's Capital Planning Advisory Group will take the lead in monitoring ongoing TAM activities to ensure the TAM plan is being implemented and that the agency is making progress toward its TAM and SGR targets. As discussed in more depth in Chapter One, this group include the following stakeholders:

- Chief Development Officer
- Chief Operating Officer
- Deputy COO of Operations Systems
- Director of Planning
- Director of Maintenance
- Vehicle Maintenance Manager
- Director of System & Risk Management
- Facilities Maintenance Manager
- Accounting Manager
- Capital Grants Administrator
- IT Manager
- Transit Business Analyst

The Capital Planning Advisory Group will meet every six-months to evaluate ongoing TAM processes, implementation costs, and benefits. The Group will discuss the progress of the implementation plan and any potential barriers in achieving the planned timelines and goals. In addition, in collaboration with the various functional units at RTA, the Group will ensure that sufficient resources are assigned to each activity. The Group may decide to revise the implementation plan or reallocate resources among several activities based on the feedback from the agency staff.

The Capital Planning Advisory Group will conduct a TAM self-assessment on an annual basis by engaging appropriate staff. The self-assessment will involve checking progress toward TAM goals, reviewing SGR targets, and revising policies or the implementation plan if necessary. The results of these annual assessments can provide valuable insight into the effectiveness of the TAM Plan implementation and can inform the decisions regarding priorities and allocation of resources.



Appendix A

COMPLIANCE WITH FTA FINAL RULE (49 CFR 625)



FEDERAL TRANSIT ADMINISTRATION

Am I in Compliance with the TAM Final Rule?

The following checklist is for recipients and subrecipients of federal financial assistance that own, operate, or manage capital assets in the provision of public transportation. To determine which of these provisions apply to your agency, use the [Am I a Tier I or Tier II agency?](#), [Group Plan Sponsor](#), and [Group Plan Participant](#) checklists. For questions about applicability and requirements of the TAM rule not addressed in this checklist, please see the [TAM FAQs](#).

Tier I and Tier II recipients and Group Plan Sponsors

Complete?

1. Do I have a TAM plan that covers a four year period?
2. Was the TAM plan updated within the last four years?
3. Do I have a TAM plan that includes all of the required elements? (Tier I providers and group plan sponsors, see applicable sections.)
 - a. An asset inventory for all assets used in the provision of public transportation, including those owned by third parties?
 - b. A condition assessment of all assets in my asset inventory for which I have direct capital responsibility.
 - c. An investment prioritization that:
 - Ranks projects to improve or manage the state of good repair over the horizon period,
 - Includes all capital assets for which I have direct capital responsibility, and
 - Is at the asset class level
 - d. Did I document the analytical processes and decision support tools used in developing my TAM plan?
4. Do I have documentation that I calculated performance for:
 - Equipment (non-revenue service vehicles): the percentage of those vehicles that have either met or exceeded their ULB for all assets for which I have direct capital responsibility.
 - Rolling Stock (revenue vehicles): the percentage of revenue vehicles by vehicle type that have either met or exceeded their ULB for all assets for which I have direct capital responsibility.
 - Infrastructure (rail fixed-guideway, track, signals, and systems): the percentage of track segments with performance restrictions for all assets for which I have direct capital responsibility.
 - Facilities: the percentage of facilities within an asset group rated below condition 3 on the TERM scale for all assets for which I have direct capital responsibility. Condition assessments have been conducted within the last four years.

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FEDERAL TRANSIT ADMINISTRATION

Complete?

5. Do I have documentation that I set performance targets annually to project the following fiscal year for:
- Equipment
 - Rolling Stock
 - Infrastructure
 - Facilities
6. Did my Accountable Executive approve the performance targets?
7. Did I make my TAM plan, any supporting records or documents, performance targets, investment strategies, and the annual condition assessment report available to the State and/or MPO that provides my funding?



Group Plan Sponsors

The below questions relate to all assets in a group plan inventory which include all participants' assets.

8. Did I create a group plan for participants that meets the associated requirements?
- a. Does the group plan include a list of participants?
 - b. Have I ensured that each participant is included in only one group plan?
 - c. Have I received and maintained documentation of opt-outs?
 - d. Have I ensured that each of my subrecipients is either participating in a group plan or has developed its own plan?
 - e. Have I received all necessary and relevant information from participants?
 - f. Have I coordinated the TAM plan development process with all participants' Accountable Executives?
 - g. Have I made the plan available in an easily accessible format to participants?
 - h. Do I have documentation that I set unified performance targets annually to project the following fiscal year that covers all assets in the group plan inventory?
 - i. Did I make my sponsored Group TAM documents available to the State and/or MPO that provides funding to any of my group plan participants?

NOT APPLICABLE TO RTA

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FEDERAL TRANSIT ADMINISTRATION

Tier I Recipients

Complete?

For questions related to group plan sponsors see the previous section, even if you are a tier I operator as well as a group plan sponsor. The below questions apply to the individual tier I plan assets.

9. Do I have a tier I TAM plan that includes all of the required elements?
- a. Documentation of a TAM and SGR policy?
 - b. An implementation strategy that outlines a plan to achieve its asset management goals?
 - c. A written description of the key annual activities needed to implement the TAM plan for each year of the plan's horizon?
 - d. A summary or list of the resources, including personnel, that the recipient needs to develop and carry out the TAM plan?
 - e. An evaluation plan that outlines how I will monitor, update, and evaluate, as needed, its TAM plan and related business practices, to ensure the continuous improvement of its TAM practices?

Once you can answer yes to the above questions, your agency should be in compliance with the transit asset management final rule.

Resources

Checklists:

- [Am I Tier I or a Tier II agency?](#)
- [Am I required to be a Group TAM Plan sponsor?](#)
- [Am I going to be a participant in a Group TAM Plan?](#)

Performance measures:

- [TAM Infrastructure Performance Measure Reporting Guidebook](#)
- [TAM Facility Performance Measure Reporting Guidebook](#)
- [Transit Asset Management Guide](#)
- [TAM Performance Measures Fact Sheet](#)

Reporting to NTD:

- [TAM NPRM and NTD Guidance Crosswalk](#)
- [NTD Policy Manuals](#)
- [NTD Annual Reporting User Guide](#)

Definitions:

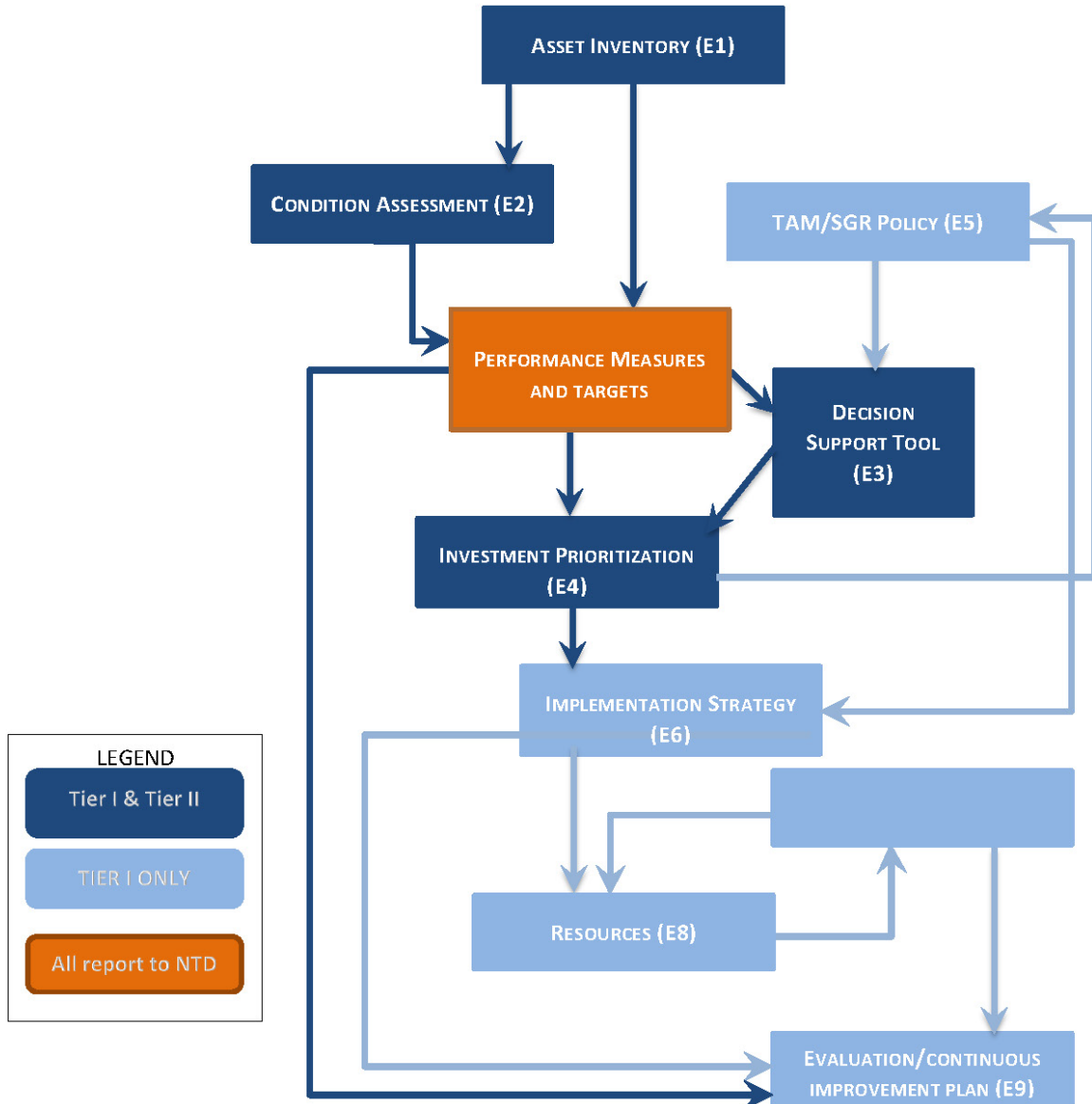
Public Transportation is defined by law as "regular, continuing shared-ride surface transportation services that are open to the general public or open to a segment of the general public defined by age, disability, or low income." 49 U.S.C. § 5302(14).

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Relation between TAM Plan Elements

The graphic below shows the logical relationship between TAM plan elements for tier I and tier II agencies. While this graphic does not indicate relationships required by the rule, following the flow of the graphic will encourage consistency between plan elements and plan that meets all requirements.





FEDERAL TRANSIT ADMINISTRATION

Applicable TAM Rule Language:

§ 625.25 Transit Asset Management Plan Requirements.

(a) General.

- (1) Each tier I provider must develop and carry out a TAM plan that includes each element under subsection (b) of this section.
- (2) Each tier II provider must develop its own TAM plan or participate in a group TAM plan. A tier II provider's TAM plan and a group TAM plan only must include elements (1)-(4) under subsection (b) of this section.
- (3) A provider's Accountable Executive is ultimately responsible for ensuring that a TAM plan is developed and carried out in accordance with this part.

(b) Transit asset management plan elements. Except as provided in subsection (a)(3) of this section, a TAM plan must include the following elements:

- (1) An inventory of the number and type of capital assets. The inventory must include all capital assets that a provider owns, except equipment with an acquisition value under \$50,000 that is not a service vehicle. An inventory also must include third-party owned or jointly procured exclusive-use maintenance facilities, passenger station facilities, administrative facilities, rolling stock, and guideway infrastructure used by a provider in the provision of public transportation. The asset inventory must be organized at a level of detail commensurate with the level of detail in the provider's program of capital projects;
- (2) A condition assessment of those inventoried assets for which a provider has direct capital responsibility. A condition assessment must generate information in a level of detail sufficient to monitor and predict the performance of the assets and to inform the investment prioritization;
- (3) A description of analytical processes or decision-support tools that a provider uses to estimate capital investment needs over time and develop its investment prioritization;
- (4) A provider's project-based prioritization of investments, developed in accordance with section 625.33 of this part;
- (5) A provider's TAM and SGR policy;
- (6) A provider's TAM plan implementation strategy;
- (7) A description of key TAM activities that a provider intends to engage in over the TAM plan horizon period;
- (8) A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM plan; and

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(9) An outline of how a provider will monitor, update, and evaluate, as needed, its TAM plan and related business practices, to ensure the continuous improvement of its TAM practices.

§ 625.29 Transit asset management plan: horizon period, amendments, and updates.

(a) Horizon period. A TAM plan must cover a horizon period of at least four (4) years.

(b) Amendments. A provider may update its TAM plan at any time during the TAM plan horizon period. A provider should amend its TAM plan whenever there is a significant change to the asset inventory, condition assessments, or investment prioritization that the provider did not reasonably anticipate during the development of the TAM plan.

(c) Updates. A provider must update its entire TAM plan at least once every four (4) years. A provider's TAM plan update should coincide with the planning cycle for the relevant Transportation Improvement Program or Statewide Transportation Improvement Program.

§ 625.31 Implementation deadline.

(a) A provider's initial TAM plan must be completed no later than two years after the effective date of this part.

(b) A provider may submit in writing to FTA a request to extend the implementation deadline. FTA must receive an extension request before the implementation deadline and will consider all requests on a case-by-case basis.

§ 625.33 Investment prioritization

(f) When developing its investment prioritization, a provider must take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.

§ 625.45 Setting performance targets for capital assets.

(a) General.

(1) A provider must set one or more performance targets for each applicable performance measure.

(2) A provider must set a performance target based on realistic expectations, and both the most recent data available and the financial resources from all sources that the provider reasonably expects will be available during the TAM plan horizon period.

(b) Timeline for target setting.

(1) Within three months after the effective date of this part, a provider must set performance targets for the following fiscal year for each asset class included in its TAM plan.

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(2) At least once every fiscal year after initial targets are set, a provider must set performance targets for the following fiscal year.

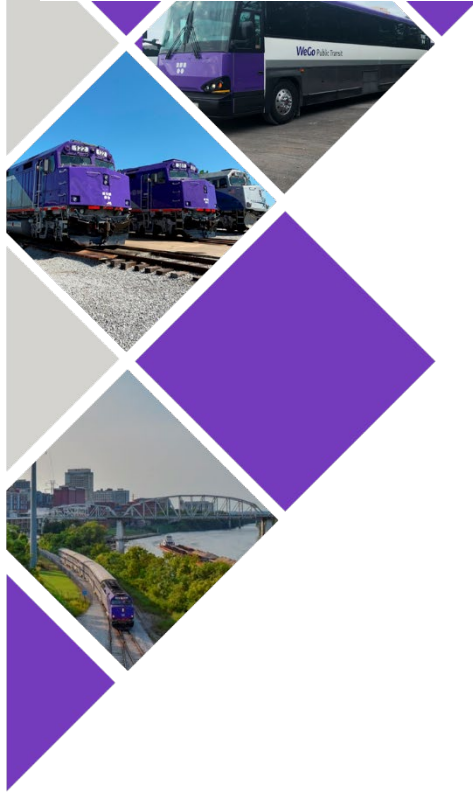
(c) Role of the accountable executive. A provider's Accountable Executive must approve each annual performance target.

(d) Setting performance targets for group plan participants.

(1) A Sponsor must set one or more unified performance targets for each asset class reflected in the group TAM plan in accordance with subsections (a)(2) and (b) of this section.

(2) To the extent practicable, a Sponsor must coordinate its unified performance targets with each participant's Accountable Executive.

(e) Coordination with metropolitan, statewide and non-metropolitan planning processes. To the maximum extent practicable, a provider and Sponsor must coordinate with States and Metropolitan Planning Organizations in the selection of State and Metropolitan Planning Organization performance targets.



Appendix B

FTA USEFUL LIFE BENCHMARKS



FEDERAL TRANSIT ADMINISTRATION

Default Useful Life Benchmark (ULB) Cheat Sheet

Source: 2017 Asset Inventory Module Reporting Manual, Page 53

Transit Agencies will report the age of all vehicles to the National Transit Database. FTA will track the performance of revenue vehicles (Rolling Stock) and service vehicles (Equipment), by asset class, by calculating the percentage of vehicles that have met or exceeded the useful life benchmark (ULB).

FTA has set a default ULB as the expected service years for each vehicle class in the table below. ULB is the average age-based equivalent of a 2.5 rating on the FTA Transit Economic Requirements Model (TERM) scale. Transit agencies can adjust their Useful Life Benchmarks with approval from FTA.

Vehicle Type	Default ULB (in years)
AB Articulated bus	14
AG Automated guideway vehicle	31
AO Automobile	8
BR Over-the-road bus	14
BU Bus	14
CC Cable car	112
CU Cutaway bus	10
DB Double decked bus	14
FB Ferryboat	42
HR Heavy rail passenger car	31
IP Inclined plane vehicle	56
LR Light rail vehicle	31
MB Minibus	10
MO Monorail vehicle	31
MV Minivan	8
Other rubber tire vehicles	14
RL Commuter rail locomotive	39
RP Commuter rail passenger coach	39
RS Commuter rail self-propelled passenger car	39
RT Rubber-tired vintage trolley	14
SB School bus	14
Steel wheel vehicles	25
SR Streetcar	31
SV Sport utility vehicle	8
TB Trolleybus	13
TR Aerial tramway	12
VN Van	8
VT Vintage trolley	58



FEDERAL TRANSIT ADMINISTRATION



Appendix C

ROLLING STOCK INVENTORY

RTA's Locomotive Inventory as of June 2022***Rail Locomotive Inventory***

Type	Unit	Make	Model	Year Built	Year Rebuilt
Locomotive	120	General Motors	EMD F40PH-2	1985	2021
Locomotive	121	General Motors	EMD F40PH-2	1985	2021
Locomotive	122	General Motors	EMD F40PH-2	1985	2019
Locomotive	381	General Motors	EMD F40PH-2	1985	2020

RTA's Passenger Car Inventory as of June 2022

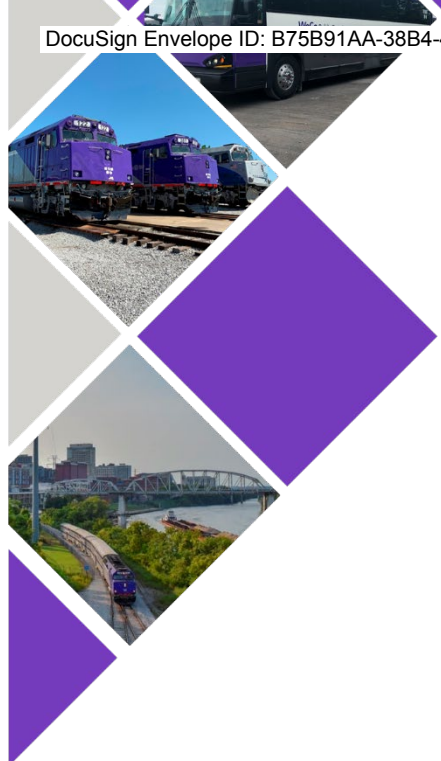
Car Type	Unit	Make	Construction Type	Year Built	Year Rebuilt
Cab Car	401	Pullman	Smooth-Side Carbon Steel	1968	2000 (revenue service date 2006)
Coach/Trailer	504	Pullman	Smooth-Side Carbon Steel	1968	2000 (revenue service date 2006)
Cab Car	790	Budd	Stainless Steel	1965	2014 (revenue service date 2020)
Cab Car	795	Budd	Stainless Steel	1965	2020 (revenue service date 2020)
Coach/Trailer	701	Budd	Stainless Steel	1950	2014 (revenue service date 2020)
Coach/Trailer	708	Budd	Stainless Steel	1950	2014 (revenue service date 2020)
Coach/Trailer	712	Budd	Stainless Steel	1950	2014 (revenue service date 2020)
Coach/Trailer	719	Budd	Stainless Steel	1950	2014 (revenue service date 2020)
Coach/Trailer	723	Budd	Stainless Steel	1950	2014 (revenue service date 2020)
Coach/Trailer	733	Budd	Stainless Steel	1953	2014 (revenue service date 2020)

RTA's Over-the-Road Bus Inventory as of June 2022

ID	Make	VIN Number	Odometer	License Plate	Year
2713	MCI	1M8PDMBA1KPO15456	107,968.1	7651-GF	2019
2714	MCI	1M8PDMBA3KPO15457	67,280.4	7667-GF	2019
2715	MCI	1M8PDMBA5KPO15458	90,496.7	7252-GF	2019
2717	MCI	1M8PDMBA7KPO15459	77,190.4	7653-GF	2019
2718	MCI	1M8PDMBA3KPO15460	65,189.1	7654-GF	2019
2719	MCI	1M8PDMBA3KPO15461	101,274.0	7655-GF	2019
2720	MCI	1M8PDMBA3KPO15462	103,379.7	7656-GF	2019
2721	MCI	1M8PDMBA3KPO15463	76,664.0	7657-GF	2019
2722	MCI	1M8PDMBA3KPO15464	97,731.1	7658-GF	2019
2723	MCI	1M8PDMBA3KPO15465	82,045.9	7659-GF	2019
2140	MCI	1M8D2W913NP103777	7,176.8	1192-GH	2022
2141	MCI	1M8D2W915NP103778	8,904.4	1193-GH	2022
2142	MCI	1M8D2W917NP103779	5,790.4	1280-GH	2022
2143	MCI	1M8D2W913NP103780	11,119.2	1194-GH	2022
2144	MCI	1M8D2W915NP103781	10,398.8	1279-GH	2022
2145	MCI	1M8D2W917NP103782	9,740.9	1197-GH	2022
2146	MCI	1M8D2W919NP103783	9,245.6	1196-GH	2022
2147	MCI	1M8D2W919NP104691	7,021.9	1286-GH	2022
2148	MCI	1M8D2W910NP104692	3,446.7	1287-GH	2022
2149	MCI	1M8D2W912NP104693	5,252.6	1288-GH	2022

RTA's Vanpool Van Inventory as of June 2022

Unit	Vehicle ID	VIN	Year	Make	Model	Mileage
1	A502	1FBSS3BL9ADA03022	2010	FORD	E350	112,941
2	A510	1FBSS3BL9BDA09484	2011	FORD	E150	100,500
3	A601	1FBSS3BL5ADA18150	2010	FORD	E350	106,788
4	A603	1FBSS3BL4ADA18155	2010	FORD	E350	101,717
5	A604	1FBSS3BL0ADA18153	2010	FORD	E350	104,634
6	A607	1FBSS3BL6BDA09488	2011	FORD	E350	106,873
7	A608	1FBSS3BL2BDB11239	2011	FORD	E350	86,862
8	A609	1FBSS3BL9BDB11240	2011	FORD	E350	108,975
9	A610	1FBSS3BL3BDB11234	2011	FORD	E350	114,363
10	A613	1FBNE3BL2BDB31415	2011	FORD	E350	120,243
11	A614	1FBNE3BL6BDB31417	2011	FORD	E350	103,080
12	A615	1FBNE3BL8BDB31418	2011	FORD	E350	105,938
13	R301	1FBSS3BL1DDA77488	2013	FORD	E350	106,845
14	R302	1FBSS3BL3DDA77489	2013	FORD	E350	99,144
15	R304	1FBSS3BL1DDA77491	2013	FORD	E350	121,445
16	R305	1FBSS3BL3DDA77492	2013	FORD	E350	96,768
17	R306	1FBZX2YM9FKA59555	2015	FORD	T350	123,254
18	R307	1FBZX2YM2FKA59557	2015	FORD	E350	129,595
19	R308	1FBZX2YM4FKA59558	2015	FORD	T350	138,538
20	R309	1FBZX2YM6FKA59559	2015	FORD	T350	74,798
21	R310	1FBZX2YM2FKA59560	2015	FORD	E350	103,361
22	R312	1FBZX2YM0FKA59556	2015	FORD	T350	102,464
23	R313	1FMZK1YM3FKA59552	2015	FORD	T150	77,832
24	R314	1FMZK1YM5FKA59553	2015	FORD	T150	95,932
25	R315	1FMZK1YM7FKA59554	2015	FORD	T150	110,633
26	R316	1FBZX2YM0GKB52563	2016	FORD	T350	60,756
27	R317	1FBZX2YM2GKB52564	2016	FORD	T350	74,355
28	R318	1FBZX2YM9GKB52559	2016	FORD	T350	55,320
29	R319	1FBZX2YM4GKB52565	2016	FORD	T350	77,406
30	R401	1FBNE31L55HB29818	2005	FORD	E350	82,886
31	T132	1FBNE31L88DB39139	2008	FORD	E350	103,511
32	T134	1FBNE31L68DB39138	2008	FORD	E350	69,928
33	T137	1FBSS31L38DB43837	2008	FORD	E350	83,704
34	T141	1FBNE31L18DB43842	2008	FORD	E350	90,855
35	T144	1FBNE31L79DA00413	2009	FORD	E350	94,730
36	T149	1FBSS31L49DA00400	2009	FORD	E350	101,003
37	T151	1FBSS31L59DA00423	2009	FORD	E350	94,494
38	T152	1FBSS31L19DA00404	2009	FORD	E350	82,672
39	T154	1FBSS31L99DA00425	2009	FORD	E350	104,708
40	T156	1FBNE31L29DA00416	2009	FORD	E350	86,585

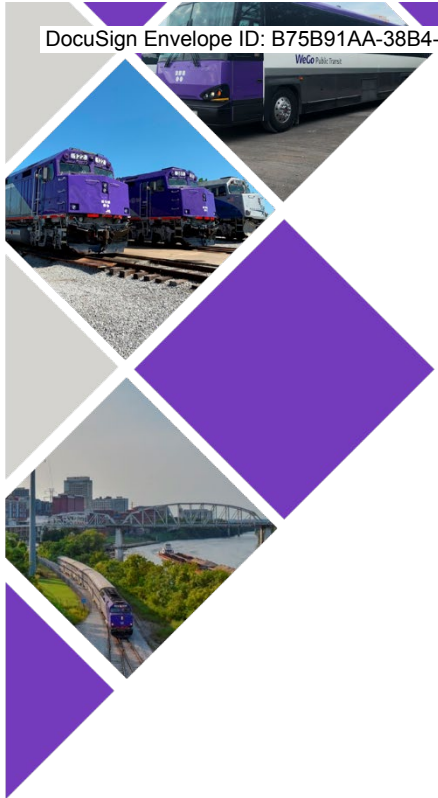


Appendix D

EQUIPMENT INVENTORY

Other Assets with an Acquisition Cost More than \$50,000

Asset Type	Acquisition Cost	Acquisition Date	Asset ID	Description
Park & Ride	\$978,429	09/30/15	4P1001	GREENSBORO NORTH PARK & RIDE (GALLATIN RD.)
FARE	\$63,214	12/31/08	F9002.2	(10) SMART CARD READERS FOR GRAYLINE BUSES
FARE	\$67,700	03/01/12	F9005	[10] CARDQUEST GENFARE FAREBOXES
FARE	\$521,458	09/15/14	F9006	[12] VENSTAR E-CASHLESS TICKET VENDING MACHINES (TVMs)
FARE	\$61,308	02/15/22	F9010	FULL SERVICE TICKET VENDING MACHINE (CASH & CREDIT CARD)
FARE	\$778,439	03/31/22	F9019	NGFS - NEXT GENERATION FARE COLLECTION SYSTEM (BY INIT)
LAND	\$2,695,149	09/18/06	L4001	LAND ACQUIRED FOR COMMUTER RAIL STATION
LAND	\$108,580	06/30/08	L4002	ADD'L LAND IN MT JULIET
LAND	\$164,614	02/02/11	L4003	SETTLEMENT OF TRAIN STATION LAND DISPUTE FOR MT JULIET STATION
LAND	\$413,709	04/25/17	L4004	1000 GASTON PARK DR, LAND FOR HAMILTON SPRINGS STATION
MISC	\$53,298	10/01/18	M6002	[22] ANTENNAS & [22] ROUTERS FOR WIFI ON BUSES
MISC	\$206,982	01/01/20	M6006	TRANSIT ASSET MANAGEMENT PLAN
STATIONS	\$2,960,789	09/18/06	S3001	RIVERFRONT COMMUTER RAIL STATION (108 1st Ave S)
STATIONS	\$1,645,994	09/18/06	S3002	DONELSON COMMUTER RAIL STATION (2705 Lebanon Pk)
STATIONS	\$1,897,897	09/18/06	S3003	HERMITAGE COMMUTER RAIL STATION (4121 Andrew Jackson Pkwy)
STATIONS	\$1,337,828	09/18/06	S3004	MT. JULIET COMMUTER RAIL STATION (22 E Division St)
STATIONS	\$211,823	09/18/06	S3005	MARTHA COMMUTER RAIL STATION (65 Martha Circle)
STATIONS	\$1,604,004	09/18/06	S3006	LEBANON COMMUTER RAIL STATION (334 W Baddour Pkwy)
STATIONS	\$1,610,925	04/30/11	S3007	MARTHA STATION PERMANENT PLATFORM
STATIONS	\$63,005	10/26/17	S3011	SHELTERS AT STATIONS FOR TVMs
STATIONS	\$4,369,813	10/31/18	S3013	HAMILTON SPRINGS TRAIN STATION (1000 Gaston Park Dr)
STATIONS	\$2,593,335	08/01/21	S3014	MT JULIET P&R PARKING EXPANSION PROJECT



Appendix E

ASSET HIERARCHY

Asset Hierarchy Used in the TERM Rating System

Substructure	Fire Protection	Shell Appurtenances
Foundations Walls Columns Pilings Exposed Foundation Elements Basement Insulation Slab	Sprinklers Standpipes Fire Extinguishers Hydrants and other fire protection specialties Fire Detection System Fire Suppression Systems	Stairs Walkways/Sidewalk Fire Escapes Means of Egress Vertical Openings Cat Walk Inspection Pit
Shell and Stationary Equipment	Interiors	Facility Equipment
Superstructure Structural Frame: columns, pillars, walls Fire Resistive Construction Integrity Roof Roof Structural Systems Deck Waterproofing Roof Penetration Flashing Systems Gutters Chimney, Skylights, Eaves Surroundings Roof Drainage Systems Inspection Features Roof Hatches Roof Ladders Exterior Building Envelope - Masonry/Concrete Walls Building Envelope – Cladding Building Envelope - Windows and Glazing Building Envelope - Doors, Glazing, Door Hardware Building Envelope - Garage Doors Bird Proofing System Exterior Finishes	Partitions Interior Walls Interior Windows and Glazing Interior Doors, Glazing, Door Hardware Stairs Seating Finishes Flooring System Flooring Spaces Ceiling System Wall Finishes Fittings Interior Amenities Signage Built-In Furnishings Appliances Adequate Office Space Break Area Provided Male/Female Lockers and Showers ADA Compliance	Service Vehicles Fork Lifts Loaders Scissor Lifts Boom Lifts Man Lifts Snowplow

Platforms	Plumbing	Site
Structure Slab Joints Railing Bridge Plate Base Substructure Under-Platform Fence Track Access Steps Platform Drain Utility Pole Communication Device Signage Seating Recycling / Trash Canopy Roof (gutters and leaders) Frame Water Proofing Bird Proofing System Lighting Shelter Ramp Stairs	Domestic Water Distribution Water Heaters Water Treatment Systems Backflow Prevention Sanitary System Pumps (sump, well, domestic) Bathroom Fixtures Other Plumbing Items (Piping, Insulation, etc.) Other Plumbing Fixtures	Roads Parking Lots Curbs Access Road Parking Lots Sidewalk Walkway Pavement Marking Security Fences Gates Barrier Arm Site Security Lighting Camera/Surveillance System Guard Shack
Utilities	Fare Collection Equipment	
Water Back Flow Preventer Murdock Metering Cabinets Exterior Fire Protection Landscape Irrigation System	Turnstiles Ticket Machines Other fare collection items	

Heating Ventilation & Air Conditioning	Electrical & Communications	Conveyance
Energy Recovery Units Heat Pumps Heat & Ventilation Units Make-Up Units Air Handling Unit Boilers Burners Furnaces Unit Heaters Radiant Heaters Finned Tube Radiation and Convertors Air Conditioning Unit Splits and Mini-Splits Cooling Towers Condensers (Air-Cooled, Evaporative) Chillers HVAC Air Terminals Fans (Centrifugal, Axial, Roof-Mounted, Propeller) Coils Heat Exchangers Reciprocating Compressors Air Curtains Water Treatment System Pumps Other HVAC Components	Electrical Service/Distribution Power Distribution/Switchgear Service Panel Generator and Transfer Switch Transformer(s) (non-utility owned only) Disconnect Switch DC Power Substation/Traction Power Substation AC Power Substation Backup Power Uninterruptible Power Supply (UPS) Lighting Automatic Transfer Switch Interior Lighting Exterior Lighting (Building and Site) Communications (Data) System Phone System Emergency Lighting/Exit Signs Other Electrical Components (Conduits, etc.)	Elevators Brakes Car Door Equipment Hydraulic System Cable System Jack Assembly Motor Car Sling/Platform Controller/Power Supply Pits Safety Equipment / Signage Fire Service Elevator Recall Escalators Brakes Carriage Step and Guide Assemblies (Comb Plate, etc.) Handrails Drive Train & Motor Controller/Power Supply Safety Equipment Lifts Cranes and Monorails Vehicle Lifts Hoists Davits