TRANSIT ASSET MANAGEMENT (TAM) PLAN

Jump Around Carson (JAC) Transit System
Federal Fiscal Year 2023 – 2026

Carson Area Metropolitan Planning Organization
C A M P O

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Revision History

Agency Name: CARSON AREA METROPOLITAN PLANNING ORGANIZATION,
FTA Recipient ID: 6825

Accountable Executive: _____
Mr. Chris Martinovich PE, Transportation Manager

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Last Modified By (Name):	Last Modified (Date):	Approval Action:
Alex Cruz Transit Coordinator	10/1/2022	Formal Adoption
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Definitions (derived from 49 C.F.R. 625.5)

Accountable Executive: A single, identifiable person who has ultimate responsibility for carrying out the safety management system of a public transportation agency; responsibility for carrying out transit asset management practices, and control or direction over the human and capital resources needed to develop and maintain both the agency's public transportation agency safety plan, in accordance with 49 U.S.C. 5329 (d), and the agency's transit asset management plan in accordance with 49 U.S.C. 5326.

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

Asset Class: A subgroup of capital assets within an asset category. For example, buses, trolleys, and cutaway vans are all asset classes within the rolling stock asset category.

Asset Inventory: A register or portfolio of capital assets and information about those assets.

Capital Asset: A unit of rolling stock, a facility, a unit of equipment, or an element of infrastructure used for providing public transportation.

Decision Support Tool: An analytic process or methodology: (1) To help prioritize projects to improve and maintain the state of good repair of capital assets within a public transportation system, based on available condition data and objective criteria; or (2) To assess financial needs for asset investments over time.

Direct Recipient: An entity that receives Federal financial assistance directly from the Federal Transit Administration (FTA).

Equipment: An article of nonexpendable, tangible property having a useful life of at least one year.

Exclusive-Use Maintenance Facility: A maintenance facility that is not commercial and either owned by a transit provider or used for servicing their vehicles.

Facility: A building or structure that is used in providing public transportation.

Full Level of Performance: The objective standard established by the FTA for determining whether a capital asset is in a state of good repair.

Horizon Period: The fixed period of time within which a transit provider will evaluate the performance of its Transit Asset Management (TAM) Plan.

Implementation strategy: A transit provider's approach to carrying out TAM practices, including establishing a schedule, accountabilities, tasks, dependencies, and roles and responsibilities.

Infrastructure: The underlying framework or structures that support a public transportation system.

Investment Prioritization: A transit provider's ranking of capital projects or programs to achieve or maintain a state of good repair. An investment prioritization is based on financial resources from all sources that a transit provider reasonably anticipates will be available over the TAM plan horizon period.

Life-Cycle Cost: The cost of managing an asset over its whole life.

Performance Measure: An expression based on a quantifiable indicator of performance or condition that is used to establish targets and to assess progress toward meeting the established targets (*e.g.,* a measure for on-time performance is the percent of trains that arrive on time, and a corresponding quantifiable indicator of performance or condition is an arithmetic difference between scheduled and actual arrival time for each train).

Performance Target: A quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a time period required by the Federal Transit Administration (FTA).

Public Transportation System: The entirety of a transit provider's operations, including the services provided through contractors.

Public Transportation Agency Safety Plan (PTASP): A transit provider's documented comprehensive agency safety plan that is required by 49 U.S.C. 5329

Recipient: An entity that receives Federal financial assistance under 49 U.S.C. Chapter 53, either directly from FTA or as a subrecipient.

Rolling Stock: A revenue vehicle used in providing public transportation, including vehicles used for carrying passengers on fare-free services.

Service Vehicle: A unit of equipment that is used primarily either to support maintenance and repair work for a public transportation system or for delivery of materials, equipment, or tools.

Sponsor: A State, designated recipient, or a direct recipient that develops a group TAM for at least one tier II provider.

State of Good Repair (SGR): The condition in which a capital asset is able to operate at a full level of performance.

Subrecipient: An entity that received Federal transit grant funds indirectly through a State or direct recipient.

TERM Scale: The five (5) category rating system used in the Federal Transit Administration's Transit Economic Requirements Model (TERM) to describe the condition of an asset: 5.0—Excellent; 4.0—Good; 3.0—Adequate; 2.0—Marginal; and 1.0—Poor.

Tier II Provider: A recipient that owns, operates, or manages (1) one hundred (100) or fewer vehicles in revenue service during peak regular service across all non-rail fixed route modes or in any one non-fixed route mode, (2) a subrecipient under the 5311 Rural Area Formula Program, (3) or any American Indian tribe.

Transit Asset Management (TAM): The strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles, for the purpose of providing safe, cost-effective, and reliable public transportation.

Transit Asset Management (TAM) Plan: A plan that includes an inventory of capital assets, a condition assessment of inventoried assets, a decision support tool, and a prioritization of investments.

Transit Asset Management (TAM) policy: A transit provider's documented commitment to achieving and maintaining a state of good repair for all of its capital assets. The TAM policy defines the transit

provider's TAM objectives and defines and assigns roles and responsibilities for meeting those objectives.

Transit Asset Management (TAM) Strategy: The approach a transit provider takes to carry out its policy for TAM, including its objectives and performance targets.

Transit Asset Management (TAM) System: A strategic and systematic process of operating, maintaining, and improving public transportation capital assets effectively, throughout the life cycles of those assets.

Transit Provider (provider): A recipient or subrecipient of Federal financial assistance under 49 U.S.C. Chapter 53 that owns, operates, or manages capital assets used in providing public transportation.

Useful life: Either the expected life cycle of a capital asset or the acceptable period of use in service determined by FTA.

Useful life benchmark (ULB): The expected life cycle or the acceptable period of use in service for a capital asset, as determined by a transit provider, or the default benchmark provided by FTA.

SECTION 1: INTRODUCTION & APPLICABILITY

Background: The Transit Asset Management Plan

A Transit Asset Management (TAM) Plan is a federally required document that provides a system for monitoring and managing public transportation assets in the delivery of service to improve safety and increase reliability and performance, and to establish performance measures. The regulations are set forth in 49 C.F.R. 625 and apply to all transit providers that are recipients or subrecipients of Federal financial assistance under 49 U.S.C. Chapter 53 and that own, operate, or manage transit capital assets used in the provision of public transportation. The purpose of the requirement is to help achieve and maintain a state of good repair (SGR) for the nation's public transportation assets, and to help clear the nation's current transit SGR backlog. Potential consequences of failing to achieve SGR include safety risks, decreased system reliability and performance, and higher maintenance costs. A TAM Plan sets out the whole life plan for asset maintenance, overhaul, and renewal strategies by specifying capital asset inventories, condition assessments, decision support tools, and investment prioritization. Finally, it improves transparency and accountability in terms of safety, maintenance, asset use, and funding investments.

Federal Regulations

Each transit provider must designate an Accountable Executive to ensure that the necessary resources are available to carry out the TAM Plan. All assets used in the provision of public transit shall be included in the TAM Plan asset inventory. This includes assets that are owned by a third party (i.e., contract operator), or jointly procured, shared resources. The inventory must include all revenue and non-revenue service vehicles, and any other owned equipment assets over $50,000 in acquisition value. Agencies only need to include a condition assessment for assets for which they have direct capital responsibility.

A full update to the TAM Plan is required every four years (beginning on October 1, 2018,); however, the FTA has established an annual requirement for performance targets to be submitted by the end of October. Transit providers must measure performance of their assets by asset class for each of the four asset categories: (1) equipment, (2) rolling stock, (3) facilities, and (4) infrastructure. Performance targets should be set by each transit provider for each applicable asset class for the coming fiscal year. Initial performance targets were established and submitted to the FTA in January 2017 (off-cycle) and then every fiscal year thereafter before October 31. Information about reporting requirements can be found in Section 8. The full set of TAM Plan requirements can be found in 49 C.F.R. 625 and 49 U.S.C. 5326.

Agency Overview

The Carson Area Metropolitan Planning Organization (CAMPO) is the agency, designated by the Governor of Nevada, responsible for metropolitan transportation planning in the Carson City urbanized area, which consists of Carson City, northern Douglas County, and western Lyon County. CAMPO is responsible for compliance with FTA regulations as they relate to funding and transit operations. CAMPO is a direct recipient of FTA funds and provides funding for transit service through an interlocal agreement with the Carson City Regional Transportation Commission (RTC). The RTC oversees, operates, and owns the assets of the Jump Around Carson (JAC) transit system, which is administered by employees of the Consolidated Municipality of Carson City (hereinafter referred to as "Carson City") and housed within the Public Works Department as part of the Transportation Division. The JAC transit system includes fixed route and paratransit services within the CAMPO area. JAC's facilities are shared, including maintenance and wash bays within the Public Works Corporate Yard, Transportation Division staff housed within the Public Works main office, and the nearby JAC

administrative and operations office and bus yard. Only the maintenance and operations facilities received federal investment.

Transit Asset Management Plan Application by JAC

Carson City's Transportation Manager has been designated as the Accountable Executive responsible for ensuring the development and implementation of the Plan in accordance with federal requirements. The Accountable Executive shall approve the TAM Plan, its updates, and annual asset performance targets. Required approvals relating to TAM shall be self-certified by the Accountable Executive via the annual FTA Certifications and Assurances which are submitted in the Transit Award Management System (TrAMS) program. This document covers a horizon period of four years, effective October 2022. This is the second TAM plan approved by CAMPO. This TAM Plan shall be amended during the four-year horizon period when there is a significant change to staff, assets, and/or operations. Consistent with requirements of a Tier II public transit provider, JAC has developed and implemented a TAM Plan containing the elements listed below, the information for which is current as of August 31, 2024:

- Inventory of Capital Assets
- Condition Assessment
- Decision Support Tools & Management Approach
- Investment Prioritization

State of Good Repair (SRG) Standards Policy

An individual capital asset may operate at a full level of performance regardless of whether or not other capital assets within a public transportation system are in a SGR. An asset is considered to be in a SGR when each of the following conditions is met:

- The capital asset is able to perform its manufactured design function
- The use of the asset in its current condition does not pose an identified unacceptable safety risk
- The lifecycle investment needs of the asset have been met or recovered, including all scheduled maintenance, rehabilitation and replacements

The TAM Plan allows JAC to predict the impact of its policies and to help justify investment decisions regarding the condition of its assets throughout their lifecycles. It enhances the ability to maintain assets in a SGR by proactively investing in an asset before the asset's condition deteriorates to an unacceptable level.

Creation of State of Good Repair Performance Measures & Targets

The FTA's default performance measures are directly related to asset lifecycle and condition. The Useful Life Benchmark (ULB) for buses, for example, can be set using several types of indicators such as years in revenue service, mileage, and remaining useful life. They may take into account a provider's unique operating environment (service frequency, passenger loads, weather, geography, past experience, etc.) and do not have to mirror the FTA's established default ULBs, which are available for each revenue service vehicle type. When developing ULBs, JAC staff recognized and accounted for these and other factors and determined the FTA's default ULBs were appropriate for the initial TAM Plan and for this next iteration of their TAM Plan. FTA's required SGR performance measures are set by asset category. For each asset category, the performance measure is a characterization of the percentage of the number of assets that are not in a state of good repair. For equipment and rolling stock, the performance measure is the percentage of vehicles that have met or

exceeded their ULB. For facilities, the performance measure is the percentage of facilities within an asset class rated below condition 3.0 on the Transit Economic Requirements Model (TERM) scale. JAC, in coordination with CAMPO, establishes annual targets based on a realistic projection of asset condition for the fiscal year to come. Per the FTA, the best targets are quantifiable and supported by the most recent condition data and reasonable projections of the expected revenue, as well as other external factors that may adversely impact the ability to meet stated targets (e.g., population growth in an area).

SECTION 2: ASSET INVENTORY

The asset inventory is a listing or database of assets—rolling stock, equipment, and facilities—used in the delivery of public transit services and that are owned, operated, and/or maintained by the transit provider. Staff utilizes internal spreadsheets and fleet and facility management software programs to maintain inventory, schedule maintenance, and track the condition of assets. Although there is no set requirement for what level of information should be included in the asset inventory, it should contain sufficient data on the numbers and types of assets in the inventory to inform future decisions.

All assets used by JAC in the provision of transit service have been funded, at least in part, with FTA grant funds. Tables 2.1 – 2.4 show the breakdown of JAC transit assets by asset category:

- Rolling Stock – Revenue service (used primarily to transport passengers) vehicles by service mode
    - Table 2.1 – Fixed Route
    - Table 2.2 – Paratransit
- Equipment – Non-revenue service vehicles (regardless of value) and non-vehicle equipment with an acquisition value of over $50,000 (tracked either as a single item or a line item as part of a group). Non-vehicle equipment assets with an acquisition value under $50,000 may be included in the TAM asset inventory. However, staff has elected to exclude such equipment. As permitted by the TAM Final Rule, staff does not include IT hardware or software in its TAM asset inventory.
    - Table 2.3 – Non-revenue service vehicle
    - No table – Non-vehicle equipment with an acquisition value over $50,000 (none)
- Facilities – While facilities are defined as any building or structure used in providing public transportation, it excludes bus structures and stand-alone structures under 100 square feet.
    - Table 2.4 – Facilities

Table 2.1: Transit Asset Inventory – Rolling Stock (Revenue Vehicle) Asset Category/Fixed Route Fleet (Table Revised)

Rolling Stock - Revenue Vehicle Fixed Route Fleet Inventory: 2024										
Asset Category	Asset Class	Asset Desc.	Make	Model	ID Number	Asset Owner	Acquisition Year	Age (Years)	Vehicle Mileage	Replacement Cost/Value
Rolling Stock	BU - Bus	35-ft GMC C5500	Arboc	Spirit of Liberty Low Floor	4243	Carson City/RTC	2016	8	161,158	$500,000
Rolling Stock	BU - Bus	35-ft GMC C5500	Arboc	Spirit of Liberty Low Floor	4244	Carson City/RTC	2016	8	208,482	$500,000
Rolling Stock	BU - Bus	35-ft GMC C5500	Arboc	Spirit of Liberty Low Floor	4245	Carson City/RTC	2017	7	174,900	$500,000
Rolling Stock	BU - Bus	34-ft Freightliner	Arboc	SOL34	4249	Carson City/RTC	2019	5	129,684	$500,000
Rolling Stock	BU - Bus	34-ft Freightliner	Arboc	SOL34	4250	Carson City/RTC	2019	5	126,764	$500,000
Rolling Stock	CU - Cutaway Bus	24-ft Chevy Express 4500	Arboc	Spirit of Mobility	4251	Carson City/RTC	2020	4	61,796	$210,000
Rolling Stock	CU - Cutaway Bus	24-ft Chevy Express 4500	Arboc	Spirit of Mobility	4252	Carson City/RTC	2020	4	41,787	$210,000
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	Arboc	Spirit of Mobility Low Floor	4254	Carson City/RTC	2022	2	52,199	$225,000
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	Arboc	Spirit of Mobility Low Floor	4255	Carson City/RTC	2022	2	45,578	$225,000
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	Arboc	Spirit of Mobility Low Floor	4256	Carson City/RTC	2022	2	53,086	$225,000
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	Arboc	Spirit of Mobility Low Floor	4257	Carson City/RTC	2022	2	44,936	$225,000
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	Arboc	Spirit of Mobility Low Floor	4258	Carson City/RTC	2022	2	29,039	$225,000

Table 2.2: Transit Asset Inventory – Rolling Stock (Revenue Vehicle) Asset Category/Paratransit Fleet (Table Revised)

Rolling Stock - Revenue Vehicle Paratransit Fleet Inventory: 2024										
Asset Category	Asset Class	Asset Desc.	Make	Model	ID Number	Asset Owner	Acquisition Year	Age (Years)	Vehicle Mileage	Replacement Cost/Value
Rolling Stock	CU - Cutaway Bus	21-ft Chevy G3500	Arboc	Spirit of Mobility	4238	Carson City/RTC	2012	12	213,293	$200,000
Rolling Stock	CU - Cutaway Bus	21-ft Chevy G3500	Arboc	Spirit of Mobility	4239	Carson City/RTC	2012	12	218,389	$200,000
Rolling Stock	CU - Cutaway Bus	24-ft Chevy G3500	Arboc	Spirit of Mobility	4241	Carson City/RTC	2015	9	103,125	$210,000
Rolling Stock	CU - Cutaway Bus	24-ft Chevy G3501	Arboc	Spirit of Mobility	4242	Carson City/RTC	2015	9	122,794	$210,000
Rolling Stock	MV-Minivan	19-ft Minivan	Ram	Promaster	4253	Carson City/RTC	2022	2	32,456	$120,000

Table 2.3: Transit Asset Inventory – Equipment (Non-Revenue Vehicle) Asset Category/Admin Vehicles (Table Revised)

Equipment - Non-Revenue Vehicle Fleet Inventory: 2024										
Asset Category	Asset Class	Asset Desc.	Make	Model	ID Number	Asset Owner	Acquisition Year	Age (Years)	Vehicle Mileage	Replacement Cost/Value
Equipment	AO - Automobile	CCPW / JAC admin truck	Chevy	Truck, 1500 Double Cab	5354	Carson City/RTC	2023	1	4,175	$45,000

Table 2.4: Transit Asset Inventory – Facilities Asset Category (Table Revised)

Facilities Inventory: 2024									
Asset Category	Asset Class	Asset Desc.	Make	Model	ID Number	Asset Owner	Acquisition Year	Age (Years)	Replacement Cost/Value
Facilities	Maintenance	Fleet Facility Expansion: Maintenance and Wash Bays	Geney / Gassiot	Construction	Contract # 1415-019	Carson City/RTC	2015	9	$2,000,000
Facilities	Administration	Admin, ops, and bus yard	Carson City Public Works	Building repurpose/site grading	3770 Butti Way	Carson City/RTC	2018	6	$500,000

SECTION 3: ASSET CONDITION ASSESSMENT

The condition assessment can be defined as a systematic process of inspecting and evaluating the condition of assets. It can be done using visual and/or measured indicators. Condition assessment data is used to support asset management decision-making activities, including capital programming, performance modeling, and day-to-day maintenance. While the FTA does not prescribe a specific methodology or approach for conducting condition assessments, it does require every condition assessment and resultant rating to be sufficiently detailed to monitor performance and plan capital investments. The physical condition of an asset is used as a state of good repair performance measure because it is a direct reflection of its ability to perform its intended function. As part of the TAM Plan SGR Standards, staff conducts an annual physical condition assessment of transit assets. The condition assessments use the FTA Transit Economic Requirements Model (TERM) five-point scale to rate the physical state of each asset (5.0=Excellent; 4.0=Good; 3.0=Adequate; 2.0=Marginal; and 1.0=Poor). Rolling stock and vehicle equipment assets with a rating of 2.5 or higher, and non-vehicle equipment and facilities assets with a 3.0 or higher are considered to be in a SGR. The inspection process and documentation forms utilized to assess vehicle, equipment, and facility assets are detailed in the Appendix section. The overall condition rating score factors into the decision support tool to create an overall asset rating. A discussion of the decision support tool is provided in Section 5. Tables 3.1 – 3.4 show the breakdown of JAC transit assets by asset category:

- Rolling Stock – Overall average of component and subcomponent ratings (see Appendix A for more detail)
    - Table 3.1 – Fixed Route
    - Table 3.2 – Paratransit
- Equipment – Overall average of component and subcomponent ratings for non-revenue service vehicles and non-vehicle equipment (see Appendix A for more detail)
    - Table 3.3 – Non-revenue service vehicle
    - No table – Non-vehicle equipment with an acquisition value over $50,000 (none)
- Facilities – Overall average of component and subcomponent ratings (facility equipment assets that have an acquisition vale of $50,000 or greater shall be included in the facility condition assessment inspection, but reported as part of the equipment inventory and condition assessment sections; no such assets/equipment qualify for inclusion in this plan). See Appendix B for more detail
    - Table 3.4 – Facilities

Table 3.1: Rolling Stock (Revenue Vehicle) Asset Category/Fixed Route Fleet (Table Revised)

Asset Category	Asset Class	Asset Desc.	ID Number	Acquisition Year	Age (Years)	Vehicle Mileage	ULB (Years)	ULB Met	Condition Rating
Rolling Stock	BU - Bus	35-ft GMC C5500	4243	2016	8	161,158	14	N	2.78
Rolling Stock	BU - Bus	35-ft GMC C5500	4244	2016	8	208,482	14	N	2.51
Rolling Stock	BU - Bus	35-ft GMC C5500	4245	2017	7	174,900	14	N	2.58
Rolling Stock	BU - Bus	34-ft Freightliner	4249	2019	5	129,684	14	N	2.93
Rolling Stock	BU - Bus	34-ft Freightliner	4250	2019	5	126,764	14	N	3.04
Rolling Stock	CU - Cutaway Bus	24-ft Chevy Express 4500	4251	2020	4	61,796	10	N	3.05
Rolling Stock	CU - Cutaway Bus	24-ft Chevy Express 4500	4252	2020	4	41,787	10	N	3.56
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	4254	2022	2	52,199	10	N	3.51
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	4255	2022	2	45,578	10	N	3.63
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	4256	2022	2	53,086	10	N	3.30
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	4257	2022	2	44,936	10	N	3.51
Rolling Stock	CU - Cutaway Bus	28-ft Chevy Express 4500	4258	2022	2	29,039	10	N	3.92

Table 3.2: Rolling Stock (Revenue Vehicle) Asset Category/Paratransit Fleet (Table Revised)

Rolling Stock - Revenue Vehicle Paratransit Fleet Condition Assessment: 2024									
Asset Category	**Asset Class**	**Asset Desc.**	**ID Number**	**Acquisition Year**	**Age (Years)**	**Vehicle Mileage**	**ULB (Years)**	**ULB Met**	**Condition Rating**
Rolling Stock	CU - Cutaway Bus	21-ft Chevy G3500	4238	2012	12	213,293	10	Y	2.76
Rolling Stock	CU - Cutaway Bus	21-ft Chevy G3500	4239	2012	12	218,389	10	Y	2.66
Rolling Stock	CU - Cutaway Bus	24-ft Chevy G3500	4241	2015	9	103,125	10	N	2.73
Rolling Stock	CU - Cutaway Bus	24-ft Chevy G3501	4242	2015	9	122,794	10	N	2.78
Rolling Stock	MV-Minivan	19-ft Minivan	4253	2022	2	32,456	8	N	4.08

Table 3.3: Equipment (Non-Revenue Vehicle) Asset Category/Admin Vehicles (Table Revised)

Equipment - Non-Revenue Vehicle Fleet Condition Assessment: 2024									
Asset Category	**Asset Class**	**Asset Desc.**	**ID Number**	**Acquisition Year**	**Age (Years)**	**Vehicle Mileage**	**ULB (Years)**	**ULB Met**	**Condition Rating**
Equipment	AO - Automobile	CCPW / JAC admin truck	5354	2023	1	4,175	8	N	4.08

Table 3.4: Facilities Asset Category

Facilities Condition Assessment: 2022						
Asset Category	**Asset Class**	**Asset Desc.**	**ID Number**	**Acquisition Year**	**Age (Years)**	**Condition Rating**
Facilities	Maintenance	Fleet Facility Expansion: Maintenance and Wash Bays	Contract #1415-019	2015	7	5.00
Facilities	Administration	Admin, ops, and bus yard	3770 Butti Way	2018	4	4.84

SECTION 4: MANAGEMENT APPROACH

Analysis of individual assets throughout their various lifecycle stages provides a snapshot of each asset's progress toward achieving a state of good repair. JAC's asset management approach determines what actions shall be taken at each lifecycle stage, and can be broken down into five different categories or strategies:

- Risk Management – identifies any risks faced by individual assets or the organization as a whole (particularly safety-related risks) and describes the mitigation strategies for each one.
- Maintenance – only regularly scheduled maintenance activities (e.g., inspections, routine preventive maintenance activities, etc.) used to proactively extend the lifecycle of an asset.
- Overhaul – how and when assets get overhauled in lieu of full replacement (overhaul activities may include retrofit, mid-life, or major overhaul).
- Disposal – strategy for disposing of assets that are being renewed or replaced. Includes approval processes and other details, including the procedures for physically removing the asset from the property.
- Acquisition and Renewal – determination of when to initiate acquisition activities for assets. Includes descriptions of long-term replacement strategies and how long-term renewal and improvement activities are assessed based on the asset's lifecycle.

Risk Management

While information about the risks and mitigation strategies concerning JAC's assets do not factor directly into the required SGR targets or the scoring used to determine the investment priority of each asset, it is important to understand the implications of each. Table 4.1 shows identified risks and mitigation strategies for maintaining assets should these risks arise.

Table 4.1: Asset Management Approach: Risk Management Strategy

Risk	Mitigation Strategy
Loss of significant amounts of federal funds	Decrease dependence on federal funds for capital assets and projects. Cut back on superfluous maintenance and service activities or such activities that cause the budget to become unbalanced. Seek out additional state and local funding sources and/or extend asset ULB thresholds, if possible.
Loss of significant amounts of state/local funding	Decrease dependence on state/local funds for capital assets and projects. Cut back on superfluous maintenance and service activities or such activities that cause the budget to become unbalanced. Seek out additional funding sources and/or extend asset ULB thresholds, if possible.
Parts supply chain disruption	Partner with regional transit agencies and OEMs to retain parts supply chain.
Catastrophic loss of assets due to natural or man-made disasters and hazards	Enact Safety, Security and Emergency Preparedness Plan (SSEPP) and/or Urgent Events policies. Create contacts with regional/partner transit agencies/vendors for provision of reserve facilities and vehicles.
Mission critical component or subcomponent deemed unusable or inoperable	Automatic prioritization of subcomponent, component, or asset to receive rehabilitation or replacement, particularly those identified as having unacceptable safety risk. Funding shall be alloacted as soon as practicable toward this end. Use of backup assets as applicable.

Maintenance

The JAC Bus Maintenance Plan details the procedures used by the Fleet Services Division to ensure the highest level of performance of all Carson City buses, equipment and facilities through a high standard of preventive maintenance. Table 4.2 provides a summary of preventive maintenance activities contained within the JAC Bus Maintenance Plan. Per the plan, all vehicles in the fleet are serviced at regular intervals, each service type with a different set of preventive maintenance activities. The bus operators perform daily pre-trip inspections on vehicles that may be placed into service for the day. Staff maintains a bus service intervals master list that specifies inspection intervals for specific vehicle components and subcomponents. There are also various levels of facilities maintenance that include regular walk-throughs and inspections, which are scheduled at less frequent intervals. In addition to these activities, instances of minor unscheduled maintenance needs are addressed prior to escalation to one of the other categories. Any identified conditions that render an asset unsafe or inaccessible shall be addressed with the appropriate level of investment following guidelines of other parts of this section.

Table 4.2: Asset Management Approach and Maintenance Strategy (Table Revised)

Asset Category	Asset Class	Maintenance Activity	Frequency	Average Duration	Cost
Rolling Stock	BU - Bus	General/operations inspection: to include tire and wheel, engine compartment, vehicle glass, vehicle lighting, vehicle interior environment, interior, brake, steering and suspension, safety items, and wheelchair lift/ramp inspections	Daily (pre-trip)	15 minutes	N/A
Rolling Stock	BU - Bus	Maintenance inspection/service (PM service level "A"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	5,000 mi/60-day	4 hours	Varies
Rolling Stock	BU - Bus	Maintenance inspection/service (PM service level "B"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	15,000 mi/180-day	6 hours	Varies
Rolling Stock	CU - Cutaway	General/operations inspection: to include tire and wheel, engine compartment, vehicle glass, vehicle lighting, vehicle interior environment, interior, brake, steering and suspension, safety items, and wheelchair lift/ramp inspections	Daily (pre-trip)	15 minutes	N/A
Rolling Stock	CU - Cutaway	Maintenance inspection/service (PM service level "A"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	5,000 mi/60-day	2 hours	Varies
Rolling Stock	CU - Cutaway	Maintenance inspection/service (PM service level "B"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	15,000 mi/180-day	5 hours	Varies
Rolling Stock	MV - Minivan	General/operations inspection: to include tire and wheel, engine compartment, vehicle glass, vehicle lighting, vehicle interior environment, interior, brake, steering and suspension, safety items, and wheelchair lift/ramp inspections	Daily (pre-trip)	15 minutes	N/A
Rolling Stock	MV - Minivan	Maintenance inspection/service (PM service level "A"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	5,000 mi/60-day	1 hour	Varies
Rolling Stock	MV - Minivan	Maintenance inspection/service (PM service level "B"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	15,000 mi/180-day	2 hours	Varies
Rolling Stock	BU - Bus	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of vehicle components and sub-components	Annually	6 hours	N/A

Table 4.2 (continued): Asset Management Approach and Maintenance Strategy

Asset Category	Asset Class	Maintenance Activity	Frequency	Average Duration	Cost
Rolling Stock	CU - Cutaway	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of vehicle components and sub-components	Annually	5 hours	N/A
Rolling Stock	MV - Minivan	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of vehicle components and sub-components	Annually	2 hours	N/A
Equipment	AO - Automobile	General/operations inspection: to include tire and wheel, engine compartment, vehicle glass, vehicle lighting, vehicle interior environment, interior, brake, steering and suspension, safety items, and wheelchair lift/ramp inspections	Daily (pre-trip)	15 minutes	N/A
Equipment	AO - Automobile	Maintenance inspection/service (PM service level "A"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	5,000 mi/90-day	1 hour	Varies
Equipment	AO - Automobile	Maintenance inspection/service (PM service level "B"): includes activities to be performed while vehicle is in transit (to maintenance bay), while vehicle is in maintenance bay, bicycle rack inspection, electrical, under hood, under bus, chassis/body, and road test	15,000 mi/180-day	2 hours	Varies
Equipment	AO - Automobile	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of vehicle components and sub-components	Annually	2 hours	N/A
Facilities	Administration	Facility Inspection: Walk-through	Daily	15 minutes	N/A
Facilities	Administration	Facility Inspection: Mission Critical	Annually	2 hours	N/A
Facilities	Administration	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of facility components and sub-components	Annually	4 hours	N/A
Facilities	Maintenance	Facility Inspection: Walk-through	Daily	15 minutes	N/A
Facilities	Maintenance	Facility Inspection: Mission Critical	Monthly	2 hours	N/A
Facilities	Maintenance	State of Good Repair (SGR)/Transit Asset Management (TAM) inspection: to include inspection and documented rating of facility components and sub-components	Annually	4 hours	N/A

Overhaul

JAC's damaged or non-operational assets and components assets are repaired on an "as needed basis" only. JAC does not overhaul or rehabilitate its assets as a matter of policy, unless additional specific funding is obtained from state or federal sources and a replacement asset item is made available during the time period the disabled asset is unavailable. Such activities may be undertaken if deemed cost or time effective. Otherwise, replacement is sought for assets that have met their ULB or are deemed unsuitable for continued investment. In the event a facility needs to be overhauled or major components need to be replaced, the project is added to the Carson City capital improvement program. If the repair is required for a mission critical item or is needed to keep the building safe and/or operable, a request will be made of the Internal Finance Committee for additional funding, if the scope of the repair is outside of the annual Facilities Maintenance budget.

Disposal

Once an asset has been scheduled for disposal, staff shall ensure that the procedures followed are compliant with local and federal requirements. The disposal options used vary between vehicle and non-vehicle assets, as described below.

VEHICLES
Vehicles at the end of their useful lives are retired per one of three options as described below:

1) Auction
   i) Approval from FTA to initiate disposal procedures;
   ii) Fleet Maintenance staff inspects vehicles and Transit Coordinator or Fleet Maintenance Supervisor completes Vehicles/Equipment Surplus Property form;
   iii) Vehicles are sent to auction and noticed on City website;
   iv) Vehicles are sold to highest bidder and Finance Department transfers revenue to Transit Fund;
   v) Vehicles with a fair market value of more than $10,000 (2 CFR 200.313) at the time of disposal are subject to reimbursement to the FTA. A share proportionate to the FTA's participation in the purchase of the asset shall be reimbursed to the FTA, which is typically done through retention of the full sale proceeds of the asset (acquired with grant funds) and using those proceeds to reduce the gross project cost of a future grant. Reimbursement to FTA shall be an amount calculated by multiplying the total aggregate fair market value at the time of disposition, or the net sale proceeds, by the percentage of FTA's participation in the original award, per Circular 5010-1e;
   vi) Vehicles are marked as disposed in the vehicle inventory and removed from TAM Plan tracking.

2) Donation:
   i) Approval from FTA to initiate disposal procedures;
   ii) Approval from RTC Board to make vehicles available for donation;
   iii) Fleet Maintenance staff inspects and prepares vehicles for donation;
   iv) Vehicles noticed as available on City website and in local newspaper, with available application period;
   v) Presentation of applications to RTC Board for consideration and award/adoption of authorizing resolution;
   vi) Written conditions of acceptance provided to winning agency (i.e., removal of vehicle from property, removal of JAC logos, etc.);
   vii) See step v) from option 1) above;
   viii) Vehicles are marked as disposed in the vehicle inventory and removed from TAM Plan tracking.

3) Placed out to bid:
    i) Approval from FTA to initiate disposal procedures;
    ii) Fleet Maintenance staff inspects vehicles and Transit Coordinator or Fleet Maintenance Supervisor completes Vehicles/Equipment Surplus Property form;
    iii) Vehicles noticed as available on City website, local newspaper, and third-party sites as applicable (i.e., eBay), with available response period;
    iv) Vehicles sold to highest bidder and Finance Department transfers revenue to Transit Fund;
    v) See step v) from option 1) above;
    vi) Vehicles are marked as disposed in the vehicle inventory and removed from TAM Plan tracking.

FACILITIES
Facilities at the end of their useful lives may be repurposed for transfer to another City department or may be demolished to make room for new buildings and/or uses of the property. In either case, the FTA is notified prior to initiation of disposal procedures. Other disposal procedures as required by Circular 5010-1e shall also be followed.

Acquisition and Renewal

The acquisition options used vary between vehicle and non-vehicle assets, as described below. Staff shall ensure the procedures followed are compliant with local and federal requirements.

VEHICLES
When a vehicle is approaching the end of its useful life, it will be evaluated for condition, operability, and financial constraints to determine the timeline for replacement. Vehicles with a “high” priority on the investment prioritization list (see Section 6) or that pose an unacceptable safety risk will be prioritized. The current strategy for fixed route bus replacements is to move away from longer vehicles (currently 35-ft long), towards slightly shorter vehicles that are more maneuverable in urban environments. Paratransit vehicle replacement strategies are to maintain a fleet of smaller cutaway buses (21-ft long) and vans that can easily access tight parking areas, and to transition to low or no-emission alternative fuel vehicles, when feasible. A portion of JAC’s fleet can serve as dual-purpose vehicles for both fixed route service and paratransit service (24-ft or 28-ft long buses). The long-term approach for both fixed route and paratransit vehicle types is to ensure flexibility in the fleet by periodically reevaluating and responding to capacity needs, operational needs, emission standards, and fuel sources as well as the demands of the ridership and the community. Overall, the strategy is to maintain vehicles at a high standard to maximize lifespan and exceed the useful life benchmark. The goal for vehicle replacement will be to replace, one to two paratransit vehicles every year and one fixed route vehicle every other year with additional replacements occurring based on funding availability. Vehicle replacement at this rate will ensure the fleet is meeting performance targets.

FACILITIES
Facilities approaching the end of their useful lives will be evaluated for condition, operability, and financial constraints to determine the timeline for replacement. The long-term strategy is to maintain existing facilities at a high standard to maximize lifespan and exceed the useful life benchmark. Upgrades to JAC facilities are planned to meet changing security, maintenance, and infrastructure needs of JAC. When a facility needs to be updated, expanded, or relocated, the project is added to the Carson City capital improvement program, and placed out to bid (if selected) using proper procurement methods.

SECTION 5: DECISION SUPPORT

JAC staff uses several factors in the asset investment decision-making process. Staff has developed separate decision support tools for vehicles and facilities (Figures 5.1 and 5.2), each based on different data sets that are tracked for each asset type. The final score for each asset and each asset type is a single number to allow for comparisons across all asset categories and classes. Beyond this overall asset score, project investment decisions may include consideration of additional factors as appropriate:

- Funding availability (from all sources reasonably expected to be available during the horizon period)
- Concurrency with SGR performance targets
- Identified unacceptable safety risk
- Projects or programs that take into consideration ADA requirements

The analytical process put into place to support investment decision-making for asset investment uses key factors that are weighted together to create an overall asset score. Each of the factors carries a different weight. The final score, which uses a scale from one to five, is used to create an investment priority list. Information for these factors is pulled from Carson City's asset management system and physical condition assessments performed by Fleet and Facilities Maintenance staff. Figures 5.1 and 5.2 show the composition of the scoring factors and their weight on the final asset score. The lower the final score the more the asset is in need of replacement. Assets are then assigned an overall investment priority ranking in reverse order of their final scores (the lowest final score receives the highest investment priority ranking, the second lowest final score receives the second highest investment priority ranking, and so on). Additional factors, as described above, are considered as appropriate to assign a tier (high, medium, or low priority) to show projects targeted for investment.

Figure 5.1: Vehicle Decision Support Tool: Asset Scoring Factor Weight Relative to Overall Asset Score

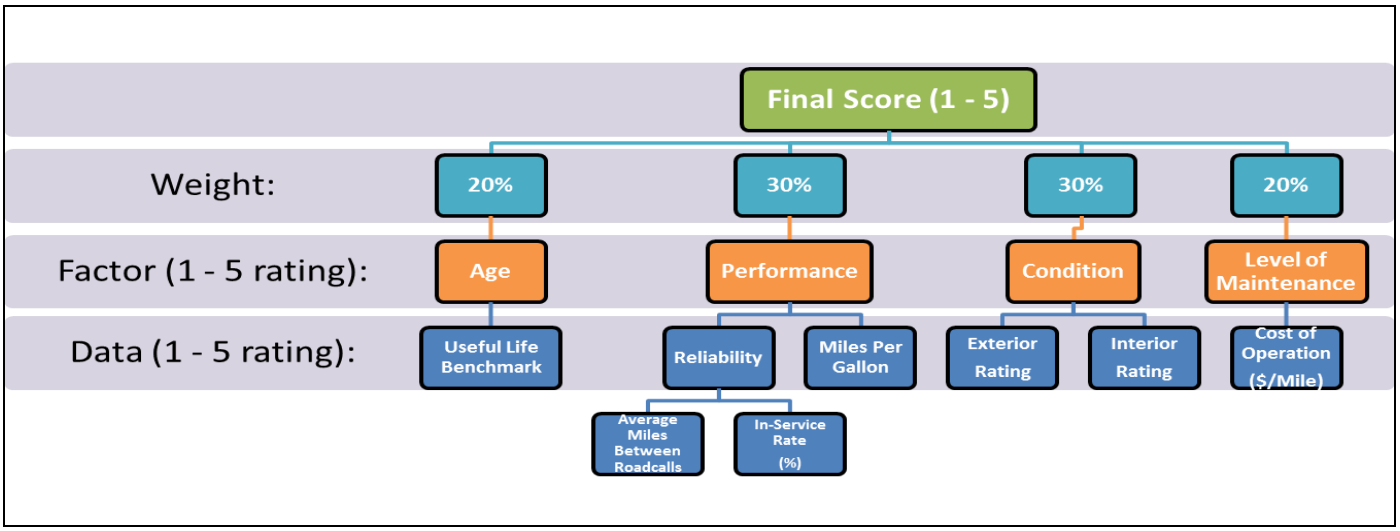
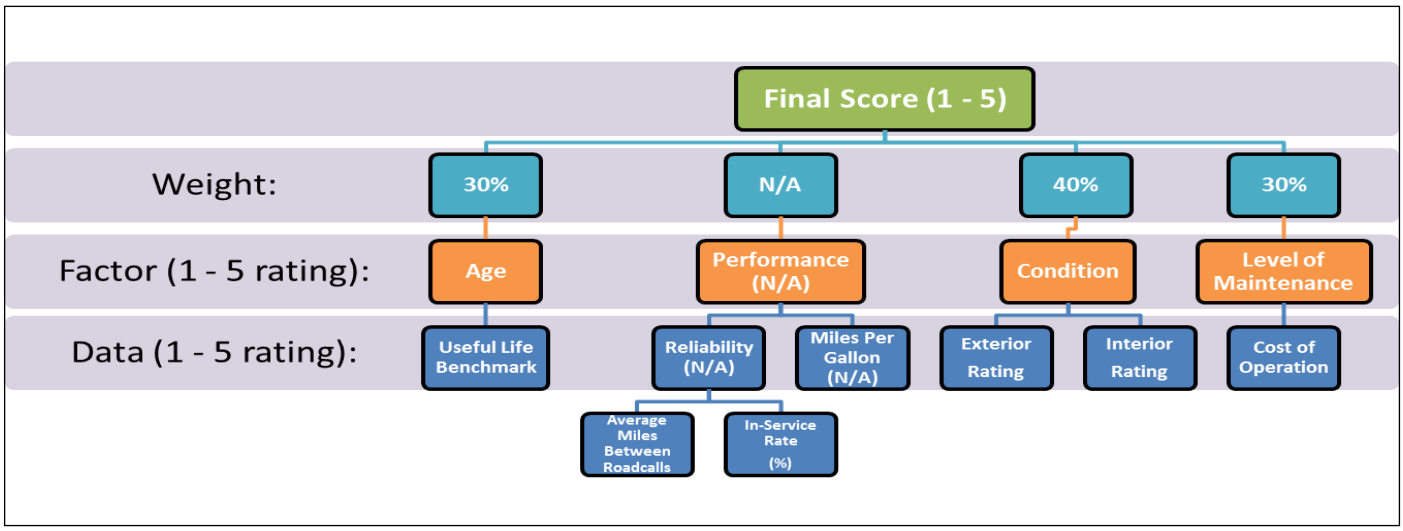


Figure 5.2: Facilities Decision Support Tool: Asset Scoring Factor Weight Relative to Overall



SECTION 6: PRIORITIZED LIST of INVESTMENTS

The TAM Plan's data and analyses culminate in a prioritized list of investments. This list determines which capital investments are needed and helps determine the timeframe for which they are needed in order to maintain assets in a state of good repair. The investment prioritization list contains work plans and schedules of proposed projects and programs that are believed would achieve SGR performance targets, and a ranking of projects and programs based on implementation priority over the TAM Plan horizon period. Each project on the list includes an overall rank, as well as a priority tier expressed as a High, Medium, or Low priority. JAC's prioritized list of investments for the current horizon period (FFY 2023 – 2026) is shown in Table 6.1.

Table 6.1: JAC FFY 2023-2026 Prioritized List of Investments (Table revised)

Investment Priority Tier	Asset Category	Asset Class	Project Description	ID Number	Investment Justification	Eligible for FTA Investment?	Est. Cost	Anticipated Project Year	Condition Rating
High	Rolling Stock	CU - Cutaway	Paratransit Bus Replacement	4238	ULB Met/Exceeded; Poor Condition Rating	Yes	$210,000	FY 2025	2.76
High	Rolling Stock	CU - Cutaway	Paratransit Bus Replacement	4239	ULB Met/Exceeded; Poor Condition Rating	Yes	$210,000	FY 2025	2.66
High	Rolling Stock	BU - Bus	Fixed Route Bus Replacement	4243	ULB Met/Exceeded; Poor Condition Rating	Yes	$500,000	FY 2025	2.78
High	Rolling Stock	BU - Bus	Fixed Route Bus Replacement	4244	ULB Met/Exceeded; Poor Condition Rating	Yes	$500,000	FY 2025	2.51
Medium	Rolling Stock	CU - Cutaway	Paratransit Bus Replacement	4241	ULB Met/Exceeded; Poor Condition Rating	Yes	$225,000	FY 2026	2.73
Medium	Rolling Stock	CU - Cutaway	Paratransit Bus Replacement	4242	ULB Met/Exceeded; Poor Condition Rating	Yes	$225,000	FY 2026	2.78
Medium	Rolling Stock	BU - Bus	Fixed Route Bus Replacement	4245	Anticipated to exceed FTA ULB / Poor Condition	Yes	$500,000	FY 2027	2.58

SECTION 7: ANNUAL PERFORMANCE TARGETS & MEASURES

As introduced in Section 1, JAC, in coordination with CAMPO, shall establish annual performance targets for each applicable asset class' performance measure in compliance with TAM regulations. A new set of performance targets shall be developed for each fiscal year and approved by the Accountable Executive and CAMPO. This shall be done within four months of the end of the federal fiscal year.

Performance targets are expressed as a percentage of assets within an asset class that are expected to have met or exceeded its ULB by the end of the fiscal year. As an example, from JAC's SGR performance targets for FFY 2019 (shown in Table 7.1), no more than 29% of the Cutaway Rolling Stock fleet (two of the seven vehicles) should have exceeded their default ULB by the end of the fiscal year.

Table 7.1: Example JAC Performance Targets for Transit Assets – FFY 2019

JAC FFY 2019 Performance Targets					
Asset Category	**Asset Class**	**ULB/TERM Default Rating**	**Number of Assets in Asset Class**	**# Assets Exceeding ULB/TERM**	**Performance Target***
Rolling Stock	BU - Bus	14	7	0	0%
	CU - Cutaway	10	7	2	29%
	MV- Minivan	8	1	1	100%
Equipment	SV - Sport Utility Vehicle	8	1	1	100%
Facilities	Administration	3.0	1	0	0%
Facilities	Maintenance	3.0	1	0	0%
* For Rolling Stock and Equipment, the Performance Target is percentage of vehicles that have met or exceed ULB; for Facilities, the Performance Target is percentage of assets with a condition rating below 3.0 on the FTA TERM scale.					

SECTION 8: RECORDKEEPING & NTD REPORTING

JAC shall maintain all supporting TAM Plan records and documents. JAC shall make TAM Plan records available to the FTA or other entities that may provide funding for JAC. It shall also report, on an annual basis, to the FTA's National Transit Database (NTD):

- Inventory of assets;
- SGR performance targets for the next fiscal year;
- Condition inspection assessments and performance measures of capital assets; and
- An annual narrative that provides a description of any change in the condition of JAC's transit system or operations from the previous year, and a description of the progress made during the reporting year to meet the performance targets set in the previous reporting year.

Per NTD requirements, because JAC's fiscal year ends on June 30th, annual TAM data reporting to NTD shall be completed by the last business day of October of each calendar year. If a NTD filing extension is required for any reason, an extension letter must be filed with NTD by October 31st.

SECTION 9: UPDATES & CONTINUOUS IMPROVEMENT

The TAM Plan is considered a “living document” that shall be reviewed on an annual basis, updated, and incorporated into JAC’s capital and budget planning and reporting processes, as required. A review and update will also be initiated whenever there is a significant change to JAC staff, assets, maintenance plans, and/or operations. Beginning in 2018, TAM Plan data shall serve as a “baseline” measure of asset performance management. As more data is collected, additional monitoring categories and goals may be added during each four-year update to support condition and reliability-based decision-making. This document shall cover a horizon period of 10/1/2022 to 9/30/2026, commencing with completion of the updated TAM Plan at the start of FFY 2023, and ending four years later with the conclusion of FFY 2026.

SECTION 10: CONCLUSION

Carson City, CAMPO, and JAC, firmly believe that implementing this TAM Plan will allow the transit system to meet its goal of providing safe, efficient, reliable, and accessible public transit to the Carson City area and its residents. Additional system achievements can be expected through diligent use of and adherence to this document, including minimization of safety risks, justification of capital investments, increased system reliability and accessibility, reduction of maintenance costs, and/or increased system performance. In complying with federal requirements and in customizing transit asset management to meet the needs of the transit system, JAC’s overarching goals and objectives shall be upheld.

A formal asset management plan for JAC vehicles, equipment, and facilities is an important step toward ensuring the most efficient utilization of federal and local funds and toward meeting and exceeding agency goals and objectives. Along with this, CAMPO will use this TAM plan as an opportunity to consider new agency goals and objectives such as creating a sustainable transit system for Carson City with reduced emissions where feasible.