



Transit Asset Management Plan



JUNE 2020

Transit Asset Management Plan (TAMP) Policy

Green Bay Metro "GBM" has developed this TAMP to aid in: (1) Assessment of the current condition of capital assets; (2) determine what condition and performance of its assets should be (if they are not currently in a State of Good Repair); (3) identify the unacceptable risks, including safety risks, in continuing to use an asset that is not in a State of Good Repair; and (4) deciding how to best balance and prioritize reasonably anticipated funds (revenues from all sources) towards improving asset condition and achieving a sufficient level of performance within those means.

Agency Overview

Green Bay Metro Transit is a public transit system owned and operated by the City of Green Bay since 1973. Partnering municipalities include the City of De Pere and the Villages of Allouez, Ashwaubenon, and Bellevue.

GBM provides both fixed route bus and paratransit services to approximately 1.3 million passengers annually to all partnering municipalities. GBM's inventory of revenue vehicles and capital assets, including the following:

- 36 Fixed route buses
- One facility that includes administration/operations/vehicle storage/refueling & maintenance.

Currently GBM contracts with a private provider for Paratransit services. The private provider owns and maintains all vehicles used for the service.

Introduction

In accordance with 49 CFR Parts 625 and 630 for Transit Asset Management (TAM), Green Bay Metro (GBM) is the TAM sponsor for the Section 5307 Formula Grant in the Green Bay Urbanized Area, 5339 Bus and Bus Facilities, 5310 Enhanced Mobility for Seniors and Individuals with Disabilities sub-recipients (Appendix 1-TAM Subrecipient List), or other federal grants received by GBM. This document presents Green Bay Metro's methodology for its performance target of capital assets.

GBM is currently operating as a FTA-defined *Tier II* transit operator in compliance with (49 CFR § 625.45 (b)(1)). Tier II transit providers are those transit agencies that do not operate rail fixed-guideway public transportation systems and have either 100 or fewer vehicles in fixed-route revenue service during peak regular service, or have 100 or fewer vehicles in general demand response service during peak regular service hours.

This TAMP provides an outlay of how GBM will assess, monitor, and report the physical condition of assets utilized in the operation of the public transportation system.

TAMP Elements

As a Tier II public transportation provider, GBM has developed and implemented a TAMP containing the following elements:

- (1) Asset Inventory Portfolio: An inventory of the number and type of capital assets to include: Rolling Stock, Facilities, and Equipment.

- (2) Asset Condition Assessment: A condition assessment of those inventoried assets for which GBM has direct ownership and capital responsibility.
- (3) Decision Support Tools & Management Approach: A description of the analytical processes and decision-support tools that GBM uses to estimate capital investment needs over time, and develop its investment prioritization.
- (4) Investment Prioritization: GBM's project-based prioritization of investments, developed in accordance with §625.33.

Definitions

Accountable Executive: Means 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: Means 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: Means 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: Means a register of capital assets, and information about those assets.

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

Decision Support Tool: Means 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: Means an entity that receives Federal financial assistance directly from the Federal Transit Administration.

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

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

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

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

Horizon Period: Means the fixed period of time within which a transit provider will evaluate the performance of its TAM plan. FTA standard horizon period is four years.

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

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

Investment Prioritization: Means 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.

Key Asset Management Activities: Means a list of activities that a transit provider determines are critical to achieving its TAM goals.

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

Participant: Means a tier II provider that participates in a group TAM plan.

Performance Measure: Means an expression based on a quantifiable indicator of performance or condition that is used to establish targets and to assess progress toward meeting the established targets (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: Means 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: Means the entirety of a transit provider's operations, including the services provided through contractors.

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

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

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

Service Vehicle: Means 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.

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

Subrecipient: Means an entity that receives Federal transit grant funds indirectly through a State or a direct recipient.

TERM Scale: Means 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 I Provider: Means a recipient that owns, operates, or manages either (1) one hundred and one (101) or more vehicles in revenue service during peak regular service across all fixed route modes or in any one non-fixed route mode, or (2) rail transit.

Tier II Provider: Means 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): Means 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: Means 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: Means 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: Means the approach a transit provider takes to carry out its policy for TAM, including its objectives and performance targets.

Transit Asset Management (TAM) System: Means 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): Means 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: Means either the expected life cycle of a capital asset or the acceptable period of use in service determined by FTA.

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Useful life benchmark (ULB): Means 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.

State of Good Repair (SGR) Standards Policy

The GBM SGR policy is as follows:

A capital asset is in a state of good repair (SGR) when each of the following objective standards are met:

- (1) If the asset is in a condition sufficient for the asset to operate at a full level of performance. 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;
- (2) The asset is able to perform its manufactured design function;
- (3) The use of the asset in its current condition does not pose an identified unacceptable safety risk and/or deny accessibility; and

- (4) The asset’s life-cycle investment needs have been met or recovered, including all scheduled maintenance, and rehabilitation.

The TAMP allows GBM to predict the impact of its policies and investment justification decisions on the condition of its assets throughout the asset’s life cycle, and enhances the ability to maintain a SGR by proactively investing in an asset before the asset’s condition deteriorates to an unacceptable level.

GBM shall establish annual TAM goals, which are separate from annual SGR performance goals, based upon tangible criteria related to asset performance. GBM has established the following baseline measures. TAM goals include monitoring the following criteria; the means of measuring and the goal as it compares to actuals.

CRITERIA	MEASURE	FY 2019		FY 2020
		GOAL	ACTUAL	GOAL
Safety Risks	Number of preventable accidents per 100,000 revenue miles – (FR)	.50	.75	.60
System Reliability	On time performance, by mode – (FR)	90%	92.7	90%
Maintenance Resources	Number of vehicles out of service for 30 or more days – (FR)	0	4	0
System Performance	Missed trips due to major breakdown - (FR)	<10	6	<10

It is the belief of GBM that TAMP implementation and monitoring provides a framework for maintaining a SGR by considering the condition of its assets in relation to the local operating environment. GBM has developed its SGR policies to account for the prevention, preservation, maintenance, inspection, rehabilitation, disposal, and replacement of capital assets. The goal of these policies is to allow GBM to determine and predict the cost to improve asset condition(s) at various stages of the asset life cycle, while balancing prioritization of capital, operating and expansion needs. The two foundational criteria of SGR performance measures are *Useful Life Benchmark* (ULB) and *Condition*.

Useful Life Benchmark:

The Useful Life Benchmark (ULB) is 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 criteria are user defined, whereas ULB takes into account, a provider’s unique operating environment (service frequency, weather, geography). When developing Useful Life Benchmarks (ULB), GBM recognized and took into account the local operating environment of its assets within the service area, historical maintenance records, manufacturer guidelines, and the default asset ULB derived from the FTA. In most cases, if an asset exceeds its ULB, then it is a strong indicator that it may not be in a state of good repair.

For the purposes of this TAMP, all assets (facilities, equipment, and fixed route rolling stock) were assessed by using FTA’s Useful Life Age Benchmark (ULB) set in 2017-2018 Asset Inventory Module Reporting Guide, pages 35 and 36. See below.

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	12
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

Methodology

GBM has reviewed the inventory of federally funded vehicles, equipment, and facilities and used age to ascertain a starting point for the 2020 TAM targets.

1. ASSET INVENTORY PORTFOLIO

The following capital asset items that GBM owns, operates and has a direct capital responsibility, included in the TAMP asset inventory, are comprised of: Rolling Stock, Equipment, and Facilities (see below). At the time of this writing, GBM does not operate passenger rail service. Therefore, GBM does not have any associated rail infrastructure in its asset portfolio.

Vehicles

GBM evaluated its inventory, including sub-recipient inventory of vehicle capital items and divided all vehicle types into three categories, heavy duty bus, medium duty bus (cutaway), and light duty vehicles (auto/minivan/van/SUV). GBM then used FTA's Useful Life Age Benchmark (ULB) set in 2017-2018 Asset Inventory Module Reporting Guide, pages 35 and 36.

The chart below shows the results of GBM's June 2020 findings:

Vehicle Type	Vehicle Count	Useful Life Age Benchmark (ULB)	Percent of Fleet Beyond ULB
Heavy Duty Bus	36	14	2.8%
Medium-Duty Bus (Cutaways)	10	10	0.0%
Light-Duty Vehicles (Revenue Vehicles)	4	8	0.0%
Total	50		

Target for Vehicle

GBM, and its sub-recipients, set the TAM performance target to only allow for 25 percent of the vehicles to pass beyond useful life.

GBM, and sub-recipients owned vehicles were also divided into the NTD categories that made up the A-90 form. While GBM typically uses the categories above in TrAMS to enter application information, the NTD A-90 form uses alternative categories:

Vehicle Type	Percent of Fleet Beyond ULB
BU	2.8%
CUT	0.0%
MINIVAN	0%
VAN	0%
Grand Total	2.0%

Equipment

Equipment evaluated per FTA requirements in this TAMP, is all non-revenue service vehicles regardless of value, and any GBM-owned equipment with a cost of over \$50,000 in acquisition value. Equipment includes non-revenue service vehicles that are primarily used to support maintenance and repair work for a public transportation system, supervisory work, or for the delivery of materials, equipment, or tools. GBM does not utilize or operate any third-party non-revenue service vehicle equipment assets. All non-revenue service vehicle equipment assets are owned and operated by GBM.

GBM evaluated the inventory of its most significant equipment (items with a replacement cost of \$50,000 or more). These items are listed below and are all located at the GBM facility. The guidance used was from the FTA and from various reports that discuss useful life for these types of equipment to determine if these pieces of equipment were beyond their useful life.

Equipment Type / Useful Life	Years of Remaining Useful Life	Age	Years Equipment Acquired
Vacuum Equipment	(4)	19	2001
Lift	(4)	19	2001
Lift	(4)	19	2001
Lift	(4)	19	2001
Lift	(4)	19	2001
Bus Wash	8	7	2013
Driveway Expansion	13	2	2018
GFI Odyssey Farebox System	0	10	2010
Fuel System	(4)	19	2001
Radio System	2	8	2012
Baycom Camera Surveillance System	2	3	2017
Baycom Camera Surveillance System (add'l)	3	2	2018
Double Map AVL/GPS System	3	2	2018
Parallelogram Lift	5	10	2010
Tennant Floor Scrubber	3	7	2013
Bobcat Toolcat w/ Broom & Blower	6	4	2016
Mitsubishi Forklift	(27)	34	1986
Dually 4WD Truck	(11)	18	2002
F-350 Service Vehicle w/ Spreader & Plow	2	5	2015
Ford Explorer – Service Vehicle	5	2	2018
Ford Edge – Service Vehicle	5	2	2018
Ford Edge – Service Vehicle	5	2	2018
Averages	0.0	10.55	2009

Target for Equipment

GBM currently has eight (8) pieces of equipment that are beyond its useful life. The 2020 TAMP will examine the condition of this equipment in greater detail; if the condition of this equipment is deemed beyond its “state of good repair” in the TAMP, then steps will be taken to get replacement equipment programmed in the Transportation Improvement Program (TIP). Items are forecasted in the current TIP.

Facilities

GBM evaluated the condition of the facilities in its sponsored TAM plan using the TERM Condition Rating (as shown below). GBM will use the FTA minimum useful life standard for facilities of 40 years, as stated in FTA Circular 5010.1E, page IV-26. The chart below shows the results of our findings:

Facility Type	Condition	Years of Remaining Useful Life	Age	Completion Year	Condition
Transit Facility (all)	4.0	21.0	19.0	2001	Good
Averages		21.0	19.0		

TERM Rating	Condition	Description
Excellent	4.8–5.0	No visible defects, near-new condition.
Good	4.0–4.7	Some slightly defective or deteriorated components.
Adequate	3.0–3.9	Moderately defective or deteriorated components.
Marginal	2.0–2.9	Defective or deteriorated components in need of replacement.
Poor	1.0–1.9	Seriously damaged components in need of immediate repair.

Facility Targets

GBM's transit facility is in good condition. GBM, set the TAM performance target based on the TERM rating scale above. The TERM rating of the facility shall not be rated less than 3.0.

2. ASSET CONDITION ASSESSMENT

GBM assesses the condition of its assets on an annual basis by utilizing the FTA TERM (Transit Economic Requirements Model) condition rating assessment scale (see above). This rating scale assigned a numerical value or rank based on the physical condition(s) presented by each individual asset throughout its life cycle. The rating scale is based on numbers 1 to 5, with five being new and one being poor. Assets with a rating of 2.5 or higher are considered to be in a SGR. All completed asset inspection forms are documented and ratings are recorded on the GBM Fixed Asset List.

The inspection process and documentation forms utilized to assess facility and vehicle assets are detailed in the following TAMP companion documents:

- GBM Maintenance Policy and Procedure Manual
 - Facility/Building/Equipment Inspection Procedures & Inspection Assessment Standards

- GBM Maintenance Policy and Procedure Manual
 - GBM Revenue & Non-Revenue Vehicle Inspection Procedures & Inspection Assessment Standards
- GBM Bus Replacement Schedule

3. DECISION SUPPORT TOOLS & MANAGEMENT APPROACH

Management Approach

The primary management approach utilized to maintain an SGR is risk mitigation. This management philosophy applies risk mitigation strategies (policies and procedures) throughout the assets life cycle, both from a maintenance perspective (breakdowns) and a safety & accessibility perspective (accidents/ADA requirements).

Decision Support Tools

The following tools are used in making investment decisions:

Process/Tool	Brief Description
Inspection Reports	Individual inspection reports documenting the condition of the asset.
Rolling Stock Report	Inventory report that is used to track all rolling stock inventories, including age, cost and mileage. This assists in decisions by providing the ability to compare details about the various rolling stock vehicles.
Fixed Asset Inventory Report	Inventory report that shows rolling stock and all other equipment. Able to utilize this report to see what is surpassing its useful life, the condition rating and the other investment opportunities GBM has.

4. INVESTMENT PRIORITIZATION

Maintenance Manager uses best judgment and experience to prioritize needs and submits a request of priorities to the Transit Director. Projects are then ranked based on need. Consideration is given to estimation of funding levels from all sources that are reasonably expected.

The ranking of programs and projects will be expressed as: *High Priority, Medium Priority, or Low Priority*. Each investment prioritization program or project ranked shall contain a year and/or date in which the GBM intends to carry out the program or project.

Plan Review

GBM shall maintain all supporting TAMP records and documents. GBM shall make TAMP records available to Federal (FTA), State (WisDOT) and MPO (Brown County Planning) entities that provide(s) funding to GBM and to aid in the planning process. The TAMP can be considered a "living document" that shall be reviewed on at

least a quarterly basis, updated, and incorporated into GBM's capital and budget planning, and reporting processes. Beginning in 2018, TAMP data served as a "baseline" measure of asset performance management. As more data is collected, additional monitoring categories and goals may be included to support condition and reliability-based decision-making.

NTD Reporting

TAM Targets are reported to NTD annually as required; effective 2018.

Conclusion

The Green Bay Transit Commission, management team, staff, and employees of Green Bay Metro firmly believe that by implementing this *Transit Asset Management Program* (TAMP), that it will allow the transportation system to meet its mission and offer safe, efficient, reliable, and accessible public transportation options to the general public of Green Bay metropolitan area.

In addition, GBM believes that by implementing this TAMP, the following *State of Good Repair* (SGR) indicators will be either maintained or improved upon:

- Limit safety risks;
- Justify investments;
- Increase system reliability & accessibility;
- Lower maintenance costs; and/or
- Increase system performance.

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Adoption and Revision History

Adopted and approved by the Green Bay Transit Commission on July 18, 2018.

Revised and updated by the Green Bay Transit Commission on August 21, 2019.

Revised and updated by the Green Bay Transit Commission on June 17, 2020

Appendix 1

5310 Subrecipient List:

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