

TRANSIT ASSET MANAGEMENT PLAN FOR KENOSHA AREA TRANSIT



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MEMORANDUM REPORT
NUMBER 239

**TRANSIT ASSET MANAGEMENT PLAN
FOR KENOSHA AREA TRANSIT**

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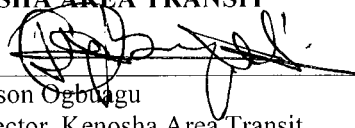
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APPROVAL OF TRANSIT ASSET MANAGEMENT PLAN: 2019-2022

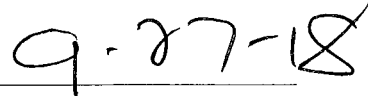
As the Accountable Executive for Kenosha Area Transit, I approve the Transit Asset Management Plan and confirm its compliance with 49 CFR part 625. I further agree to comply with the recordkeeping and annual reporting requirements for transit asset management set forth in Sections 625.53 and 625.55. Beginning in October 1, 2018, Kenosha Area Transit shall self-certify compliance with all aspects of the TAM rule in the Certifications and Assurances phase of a grant application and will verify compliance with the TAM rule during Triennial or State Management Reviews, beginning with the federal fiscal year 2019.

KENOSHA AREA TRANSIT

By _____


Nelson Ogburn
Director, Kenosha Area Transit

Date _____



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At the request of and in close coordination with Kenosha Area Transit (KAT), the Southeastern Wisconsin Regional Planning Commission (SEWRPC) has prepared this Tier I Transit Asset Management (TAM) Plan.

The KAT system is operated by the City of Kenosha Department of Transportation within the City of Kenosha and portions of the Town of Somers and Village of Pleasant Prairie, under the name of Kenosha Area Transit. As documented in this TAM Plan, KAT is committed to maintaining its vehicles, equipment, and facilities in the best condition possible in order to provide efficient, reliable, and uninterrupted public transit service and to achieve maximum useful life from all transit assets.

KAT operates 60 buses on seven fixed routes and supplemental school routes serving the City of Kenosha and portions of the Town of Somers and the Village of Pleasant Prairie. In addition, their fleet includes three trolleybuses utilized for revenue service. KAT also operates an electric streetcar line, consisting of seven Presidents' Conference Committee (PCC)-type electric heritage streetcars, originally built in 1972. In the 1990's, prior to being acquired by KAT in 2000, the streetcars were rebuilt, including a complete electrical, mechanical, and structural overhaul. The rebuilding of the streetcars is estimated to have extended their lives by 20 years. KAT's electric streetcar route traverses a 1.9-mile loop from the Metra Commuter Rail Station into Harbor Park. For purposes of this TAM Plan, KAT is a Tier I transit operator due to their operation of the Kenosha Streetcar system. All KAT transit assets are summarized in Table 1.1.

This TAM Plan covers a four year planning period from 2019 through 2022. As required in the TAM regulations set forth in 49 CFR part 625, this TAM Plan includes the following components:

- An inventory of assets, including the number and type of capital assets such as rolling stock, facilities, and equipment
- A condition assessment of inventoried assets for which KAT has direct ownership and capital responsibility
- A description of the processes and decision-support tools that KAT uses to estimate the capital investments needed over time, and develop their investment prioritization
- A prioritized list of projects or programs to manage and improve the state of repair of capital assets
- Transit asset management and state of good repair policy
- Implementation strategy that documents the operational actions that KAT will conduct in order to achieve their TAM goals and policies
- List of key annual activities that are needed to implement the TAM Plan
- Identification of resources, including staff time, technology requirements, and funding that KAT needs to carry out the TAM Plan
- Evaluation plan, including an outline of how KAT will monitor, update, and evaluate the TAM Plan and related business practices to ensure continuous improvement

1.1 FEDERAL AND STATE TRANSIT ASSET MANAGEMENT PLANNING REQUIREMENTS

The Moving Ahead for Progress in the 21st Century Act (MAP-21) established new TAM data reporting requirements. These rules require that each transit provider that receives funds under 49 U.S.C. Chapter

Table 1.1
Summary of Asset Inventory for Kenosha Area Transit

Asset Category	Total Number	Average Age (Years)	Average Mileage^a	Average Value (\$)
Revenue Vehicles				
Bus	60	12.7	352,028	210,633
Trolleybus	3	15.7	126,062	107,167
Streetcars	7	14.9	63,299	73,000
Equipment				
Non-Revenue/Service Automobile	11	12.0	48,043	33,055
Streetcar Tracks	1.9 miles	18.0	N/A	N/A ^b
Facilities				
Administration Buildings/Transit Centers	2	17.5	N/A	N/A ^b
Parking Lots	9	14.5	N/A	N/A ^b
Metra Station				
Elevator	1	12.0	N/A	N/A ^b
Stairwells	1	12.0	N/A	N/A ^b
Surface parking lot	1	12.0	N/A	N/A ^b

^a Average mileage is the odometer reading from June 2018

^b The replacement values/costs for equipment (other than non-revenue/service automobile), facilities, and the Metra Station components, for which Kenosha Area Transit has direct capital responsibility, are currently under review by KAT and will be updated as appropriate.

Source: Kenosha Area Transit and SEWRPC

53 as a recipient or subrecipient and either owns, operates, or manages capital assets used for public transportation is required to develop a TAM plan that provides a condition report of their infrastructure to anticipate and monitor the performance of assets in order to provide a basis for investment prioritization. The purpose of the rule is to aid transit providers in making more informed investment decisions that will ultimately improve the overall condition of each transit system's condition of capital assets.

1.2 ROLE OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) was established in 1960 as the official areawide planning agency for the southeastern region of the State. SEWRPC serves the seven counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha. The Commission, as the Metropolitan Planning Organization for the five urbanized areas in the Region, including the Kenosha, Milwaukee, Racine, and West Bend urbanized areas and a portion of the Round Lake Beach urbanized area, prepares a long-range (20-35 year) transportation plan. SEWRPC Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation Plan*, July 2017, recommends a long-range vision for land use and transportation in the Region. It makes recommendations to local and State government to shape and guide land use development and transportation improvements, including public transit, to the year 2050. Specifically, VISION 2050 proposes a substantial improvement and expansion of transit service in Southeastern Wisconsin over the next 30 years.

In addition to the long-range plan, the Commission prepares the four-year transportation improvement program (TIP) for the seven-county Southeastern Wisconsin Region, and short-range (five-year) transit development plans for each of the Region's public transit systems. A transit system development plan for the KAT System was prepared in 1998 and provided recommendations that guided the implementation of several service changes enacted in the late 1990's and the early 2000's. This TAM Plan identifies transit asset priorities based on policies and critical needs, condition assessments, and estimated funding sources available to implement the proposed projects within the City of Kenosha's Capital Improvement Program, adopted budget, and the current TIP.

**Table 1.2
Transit Asset Management Targets for Southeastern Wisconsin**

Asset			Performance Measure	Target
Category	Class	Examples		
Rolling Stock	Buses, Other Passenger Vehicles, and Railcars	Bus, Cutaway, Van, Minivan, and Streetcars	Percent of revenue vehicles that have either met or exceeded their useful life benchmark	< 30%
Equipment	Non-revenue service vehicles and equipment over \$50,000	Route Supervisor Vehicles, Maintenance Trucks, Pool Vehicles, DPF Cleaning System, Bus Wash Systems, Fare Collection systems, Vehicle Lifts, etc.	Percent of vehicles and equipment that have either met or exceeded their useful life benchmark	< 30%
Facilities	Support	Maintenance and Administrative Facilities	Percent of facilities within an asset class, rated below 3 on condition reporting system	< 15%
	Passenger	Rail Terminals, Bus Transfer Stations	Percent of facilities within an asset class, rated below 3 on condition reporting system	0%
	Parking	Park-Ride Lots with Direct Capital Responsibility	Percent of facilities within an asset class, rated below 3 on condition reporting system	0%
Infrastructure	Fixed Guideway	Track Segments, Exclusive Bus Rights-of-Way, Catenary Segments, and Bridges	Percent of segments that have performance restrictions	0%

Source: SEWRPC

1.3 TRANSIT ASSET MANAGEMENT PERFORMANCE MEASURES

The Commission established the TAM Targets for Southeastern Wisconsin on June 30, 2017, in consultation with all of the Tier I and Tier II operators within the Region. The regional TAM targets, as shown in Table 1.2, rely heavily on the TAM targets established by the Milwaukee County Transit System (MCTS), which, as the largest transit operator in the Region, represents approximately 94 percent of the replacement value of the publicly owned transit fleets within the Milwaukee urbanized area. The Commission reviewed the MCTS targets by transit asset category and included those transit assets owned and operated by the Tier II transit operators within Southeastern Wisconsin. Commission staff modified the targets as necessary based on the additional transit assets and then transmitted a draft set of targets to all of the Tier I and Tier II operators within the Region for their review and comment.¹ No comments were received that necessitated revising the draft targets. The final TAM Targets for Southeastern Wisconsin were transmitted to the Wisconsin Department of Transportation (WisDOT) on July 10, 2017. The Commission subsequently amended the 2017-2020 Transportation Improvement Program (TIP) according to the MAP-21 performance-based provisions and requirements and will incorporate the TAM targets and priorities for Southeastern Wisconsin into future amendments and updates to VISION 2050. As future updates to the TIP and VISION 2050 occur, the Commission anticipates revising performance targets as appropriate.

¹ A Tier I Transit Provider operates rail or has greater than or equal to 101 vehicles across all fixed route modes, or greater than or equal to 101 vehicles in one non-fixed route mode. A Tier II Transit Provider is a subrecipient of 5311 funds, or an American Indian Tribe, or operates less than or equal to 100 vehicles across all fixed route modes, or less than or equal to 100 vehicles in one non-fixed route mode.

Kenosha Area Transit's (KAT) asset inventories for vehicles, equipment, and facilities are provided in Table 2.1, Table 2.2, and Table 2.3, respectively. The inventories include the four required categories of capital assets including facilities, equipment, rolling stock, and infrastructure.

The asset inventory provided in Table 2.1 includes the asset category, class, name (vehicle number), make, model, number of vehicles, the ID/Serial number, owner, acquisition year/last rebuild, mileage, and replacement value. The acquisition year for most vehicles reflects the year the vehicle was purchased by KAT. One bus underwent a rebuild in 2017, vehicle number 3500 (Model Year 2004, Gillig 35 foot bus). It is estimated that rebuilds have the potential to extend a vehicle's useful life by six to ten years. Therefore, the inventory identifies the last rebuild year as 2017 for vehicle number 3500. For purposes of the asset inventory, the "replacement cost" shown in Table 2.1 reflects the current prices found in procurement documents developed by the Wisconsin Department of Transportation including their Section 5310 Application Guidelines for Vehicle Capital, Appendix C: Anticipated Vehicle Description and Costs and the Heavy Duty Bus Price Sheet.

Table 2.2 includes the equipment that meets the reporting threshold of \$50,000 in acquisition value for one line item or a group of assets, as required in 49 CFR part 625. As required, all service vehicles were included in the equipment inventory, regardless of their cost.

Lastly, Table 2.3 list the transit facilities owned by KAT, or those facilities for which KAT has direct capital responsibility or was jointly procured.

Table 2.1
Kenosha Area Transit Revenue Vehicle Inventory

Asset Number	Make	Count	ID/Serial No.	Acquisition Year/Last Rebuild	Vehicle Mileage	Replacement Cost (\$)
30-Foot Buses						
3012	GILLIG	1	15GGE291641090917	2004	364,094	272,900
3013	GILLIG	1	15GGE291841090918	2004	397,602	273,000
3014	GILLIG	1	15GGE291X41090919	2004	371,578	273,000
3015	GILLIG	1	15GGE291641090920	2004	342,355	273,000
3016	GILLIG	1	15GGE291841090921	2004	341,815	273,000
3017	GILLIG	1	15GGE291X41090922	2004	368,966	273,000
3018	GILLIG	1	15GGE291141090923	2004	411,146	273,000
3019	GILLIG	1	15GGE291341090924	2004	355,179	273,000
3501	GILLIG	1	15GGB291X41074129	2004	342,700	283,200
35-Foot Buses						
3502	GILLIG	1	15GGB291641074130	2004	367,641	238,200
3503	GILLIG	1	15GGB291841074131	2004	369,369	238,200
3504	GILLIG	1	15GGB291X41074132	2004	392,707	238,200
3505	GILLIG	1	15GGB291551074900	2005	402,780	238,200
3506	GILLIG	1	15GGB291751074901	2005	301,664	238,200
3507	GILLIG	1	15GGB291951074902	2005	387,093	238,200
3508	GILLIG	1	15GGB291051074903	2005	373,242	238,200
3509	GILLIG	1	15GGB291251074904	2005	303,449	238,200
3510	GILLIG	1	15GGB291451074905	2005	408,187	238,200
3511	GILLIG	1	15GGB291651074906	2005	464,230	238,200
3512	GILLIG	1	15GGB291851074907	2005	472,856	238,200
3513	GILLIG	1	15GGB291X51074908	2005	480,404	238,200
3524	GILLIG	1	15GGB2716A1178535	2010	226,885	373,700
3525	GILLIG	1	15GGB2718A1178536	2010	270,201	373,700
3526	GILLIG	1	15GGB271XA1178537	2010	246,296	373,700
3527	GILLIG	1	15GGB2713A1178538	2010	263,079	373,700
3528	GILLIG	1	15GGB2713A1178539	2010	226,835	373,700
3500	GILLIG	1	15GGB291441072859	2017	452,984	2,000
40-Foot Buses						
4023	GILLIG	1	15GGD271991177000	2009	250,569	346,800
4024	GILLIG	1	15GGD271091177001	2009	261,103	346,800
4025	GILLIG	1	15GGD271291177002	2009	229,365	346,800
4026	GILLIG	1	15GGD271491177003	2009	234,420	346,800
4041	GILLIG	1	15GGD2714C1179308	2012	159,611	383,500
4042	GILLIG	1	15GGD2716C1179309	2012	202,745	383,500
4043	GILLIG	1	15GGD2712C1179310	2012	201,295	383,500
4044	GILLIG	1	15GGD2715D1181862	2013	183,910	409,400
4045	GILLIG	1	15GGD2717D1181863	2013	160,352	409,400
4046	GILLIG	1	15GGD2719D1181864	2013	202,791	409,400
4047	GILLIG	1	15GGD2710D1181865	2013	182,533	409,400
4048	GILLIG	1	15GGD2712D1181866	2013	188,013	409,400
4049	GILLIG	1	15GGD2714D1181867	2013	169,266	409,400
4050	GILLIG	1	15GGD2716D1181868	2013	198,824	409,400
4027	NewFlyer	1	2FYD2LL05SU016197	1996	609,391	2,000
4032	NewFlyer	1	1FYD2LL0XVU017081	1997	555,244	2,000
4034	NewFlyer	1	1FYD2LL0XVU017086	1997	549,608	2,000
4037	NewFlyer	1	5FYD2LP11VU017403	1997	329,522	2,000
4038	NewFlyer	1	5FYD2LP15VU017405	1997	324,578	2,000
4039	NewFlyer	1	5FYD2LP17VU017406	1997	317,991	2,000
4040	NewFlyer	1	5FYD2LP19VU017407	1997	315,788	2,000
4004	NewFlyer	1	1FYD2LP091U022429	2001	530,807	1,500
4005	NewFlyer	1	5FYD2LP071U022378	2001	404,465	3,200
4006	NewFlyer	1	5FYD2LP051U022377	2001	416,391	3,200
4007	NewFlyer	1	5FYD2LP011U022389	2001	425,489	1,400

Table continued on next page.

Table 2.1 (Continued)

Asset Number	Make	Count	ID/Serial No.	Acquisition Year/Last Rebuild	Vehicle Mileage	Replacement Cost (\$)
40-Foot Buses (Continued)						
4008	NewFlyer	1	5FYD2LP091U022379	2001	410,469	1,400
4009	NewFlyer	1	5FYD2LP081U022437	2001	512,730	1,500
4010	NewFlyer	1	5FYD2LP062U023734	2001	533,117	1,500
4011	NewFlyer	1	5FYD2LP0X2U023736	2002	587,694	1,500
4012	NewFlyer	1	5FYD2LP042U023750	2002	540,095	1,500
4070	NewFlyer	1	5FYD2LPOX1U022388	2002	429,768	2,600
4071	NewFlyer	1	5FYD2LU072U023777	2002	404,513	2,600
4072	NewFlyer	1	5FYD2LU002U023779	2002	393,902	2,600
Trolley Buses						
2439	Dupont	1	2D9S21307W1070528	1998	38,217	238,500
3415	Hometown	1	4UZAB9DTXACAT2704	2010	167,092	79,000
3369	Dupont	1	2D9P22326X1070535	1999	172,876	4,000
Streetcars/Canadian Cars						
2185	PCC streetcar	1	A-46PCC2185	2011	45,644	73,000
4606	PCC streetcar	1	A-15PCC4606	2000	62,967	73,000
4609	PCC streetcar	1	A-15PCC4609	2000	71,099	73,000
4610	PCC streetcar	1	A-15PCC4610	2000	86,532	73,000
4615	PCC streetcar	1	A-15PCC4615	2000	54,266	73,000
4616	PCC streetcar	1	A-15PCC4616	2000	67,063	73,000
4617	PCC streetcar	1	A-15PCC4617	2011	55,523	73,000

Note: Vehicle mileage as of June 2018

Source: Kenosha Area Transit, FTA, and SEWRPC

**Table 2.2
Kenosha Area Transit Equipment Inventory**

Asset Class ^a	Asset Number	Make	Model	Count	ID/Serial No.	Acquisition Year	Vehicle Mileage	Replacement Cost (\$)
(NR)	3302	Ford	N/A	1	1FMCU9GX5FUC06131	2015	17,471	22,600
(NR)	1667	GMC	Van	1	2GTEG25H7G452366B	1986	95,093	0
(NR)	2297	GMC	Van	1	1GJGG35K0TF503706	1996	101,443	22,200
(NR)	2402	GMC	Truck	1	1GTGK29RXWE528775	1998	120,893	27,500
(NR)	3077	Chevy	Impala	1	2G1WD5EM7A1230995	2010	99,955	0
(NR)	3065	BOBCAT	N/A	1	AOW114782	2009	N/A	58,800
(NR)	3071	Ford	F350 plow truck	1	1FDWF3HR7AEB37854	2010	12,080	56,200
(NR)	3110	BOBCAT	N/A	1	AOW116492	2010	N/A	60,600
(NR)	3111	Ford	F350	1	1FDRF3HT5BEB59958	2011	10,561	56,700
(NR)	2841	GMC C-AWAY	N/A	1	1GDJG31U661134142	2006	46,448	36,400
(ST)	Streetcar track	N/A	N/A	1	N/A	2000	N/A	N/A ^b

Note: Vehicle mileage as of June 2018

^a Asset Class is defined as:

(NR) – Non Revenue/Service Automobile

(ST) – Streetcar Tracks

^b The replacement costs for the streetcar tracks are currently under review by KAT and will be updated as appropriate.

Source: Kenosha Area Transit, FTA, and SEWRPC

Table 2.3
Kenosha Area Transit Facilities Inventory

Asset Class	Asset Name	Count	Acquisition Year
Administration	Kenosha Area Transit Administration and Bus Garage	1	2001
Administration	Joseph McCarthy Transit Center	1	2000
Metra Station	Metra Station Elevator	1	2006
Metra Station	Metra Station Staircase	1	2006
Parking Lots	Lot #23 - 54th Street & 13th Avenue, Metra Station	1	2006
Parking Lots	Nine surface lots	9	2001

Source: Kenosha Area Transit, FTA, and SEWRPC

Table 3.1
Minimum and Maximum Useful Life Benchmarks

Vehicle Type	Length	Age (Years)	
		FTA Circular 5010.1E ULB (Minimum) ^a	TAM Plan ULB (Maximum) ^b
Buses			
Large, heavy-duty transit buses including over-the-road buses (approx. 35' or larger including articulated buses)	35 feet or larger and articulated buses	12	14
Small size, heavy-duty transit buses	30 feet	10	14
Medium-size, medium duty transit buses	25 feet to 35 feet	7	10
Medium-size, light-duty transit buses	25 feet to 35 feet	5	14
Trolleys			
A fixed guideway steel-wheeled "trolley" (streetcar or other light rail vehicle)	N/A	25	31
A fixed guideway electric trolley-bus with rubber tires obtaining power from overhead catenary	N/A	15	13
Simulated trolleys, with rubber tires and internal combustion engine (often termed "trolley-replica buses").	N/A	15	13
Light Duty Vehicles			
Other light-duty vehicles used as equipment and to transport passengers (revenue service), such as cutaways, regular and specialized vans, sedans, and light-duty buses including all bus models exempt from testing in the current 40 CFR part 665	16 feet to 28 feet	4	8

^a Minimum useful life as identified in FTA Circular 5010.1E, March 21, 2017, updated July 16, 2018. Minimum useful life is determined by years of service or accumulation of miles, whichever comes first, by asset type.

^b Maximum useful life benchmarks set by FTA in the Default Useful Life Benchmark Cheat Sheet and the 2017 Asset Inventory Module Reporting Manual, page 35. The maximum ULBs are provided for years of service only.

Source: Federal Transit Administration and SEWRPC

Recipients of Federal assistance, such as Kenosha Area Transit (KAT), are familiar with the useful life benchmarks for years and mileage that must be met in order to qualify for new vehicles as identified in FTA's Grant Administration Circular 5010.1E. In comparison, the useful life benchmark (ULB) for TAM planning evaluates an agency's assets based on the maximum number of years that a vehicle can operate at a full level of performance. Table 3.1 shows the difference between the minimum and maximum useful life benchmarks.

For the purposes of this TAM Plan, KAT utilized the maximum ULBs provided by the FTA in the *National Transit Database Asset Inventory Module for 2017-2018*. The ULBs allow KAT to track the performance of revenue vehicles (rolling stock) and service vehicles (equipment) and set their performance TAM measure targets. The ULBs provide an estimate of how many years each vehicle type can be in service and still be in a state of good repair. In addition, the ULB considers how long it is cost effective to operate an asset before ongoing maintenance costs outweigh replacement costs. When assessing conditions and useful life, KAT considers the historical maintenance records, manufacturer guidelines, and local operating environment. Specifically, transit vehicles in Southeastern Wisconsin operate in a climate that requires the use of road salt in the winter, resulting in greater impacts to the fleet such as corrosion. In addition, poor road conditions increase wear on vehicles, resulting in a reduction of vehicles operating in a state of good repair.

Table 3.2
Kenosha Area Transit Revenue Vehicles Condition Summary

Revenue Vehicles	Count	Average Age (Years)	Average Mileage	Average Value (\$)	Past Useful Life Benchmark	
					Number	Percent
Bus	60	12.7	352,028	210,633	31	51.7
Trolleybus	3	15.7	126,062	107,167	2	66.7
Streetcar Heritage Trolley Cars	7	14.9	63,299	73,000	--	--
All Revenue Vehicles	70	13.0	313,471	192,436	33	47.1

Source: Kenosha Area Transit and SEWRPC

The condition summary of Kenosha Area Transit’s revenue vehicles is provided in Table 3.2. Overall, approximately 47 percent of the revenue vehicles are past their useful life benchmarks, with 52 percent of buses and 67 percent of trolleybuses past their useful life. The seven heritage streetcars are within their useful life benchmarks. KAT has established streetcar maintenance procedures to ensure safety and reliability of the transit system. The streetcar tracks are in good condition and have not required speed restrictions to be placed on any segment of the 1.9-mile loop. The high percentage of revenue vehicles past the useful life benchmark is partially the result of KAT’s purchase of previously owned buses to operate the supplemental school bus routes. The robust maintenance schedule, as further described in Chapter 4, Kenosha Area Transit’s Maintenance Decision Support Tool, helps ensure the assets remain in a state of good repair with a standardized preventative maintenance schedule and software to track vehicle condition. Tables 3.3 through 3.5 include the condition assessments for all of Kenosha Area Transit’s revenue vehicles, equipment and facilities and utilized the FTA Transit Economic Requirements Model (TERM) scale as provided in the *TAM Facility Performance Measure Reporting Guidebook: Condition Assessment Calculation*.

Table 3.3
Kenosha Area Transit Revenue Vehicles Condition Assessment

Asset Number	Count	ID/Serial No.	Age (Years)	Vehicle Mileage	Replacement Cost (\$) ^a	Useful Life Benchmark (Years)	Past Useful Life Benchmark
Buses							
3500	1	15GGB291441072859	1	452,984	2,000	14	No
4004	1	1FYD2LP091U022429	17	530,807	1,500	14	Yes
4005	1	5FYD2LP071U022378	17	404,465	3,200	14	Yes
4006	1	5FYD2LP051U022377	17	416,391	3,200	14	Yes
4007	1	5FYD2LP011U022389	17	425,489	1,400	14	Yes
4008	1	5FYD2LP091U022379	17	410,469	1,400	14	Yes
4009	1	5FYD2LP081U022437	17	512,730	1,500	14	Yes
4010	1	5FYD2LP062U023734	17	533,117	1,500	14	Yes
4011	1	5FYD2LP0X2U023736	16	587,694	1,500	14	Yes
4012	1	5FYD2LP042U023750	16	540,095	1,500	14	Yes
4032	1	1FYD2LLOXVU017081	21	555,244	2,000	14	Yes
4034	1	1FYD2LLOXVU017086	21	549,608	2,000	14	Yes
4050	1	15GGD2716D1181868	5	198,824	409,400	14	No
4070	1	5FYD2LPOX1U022388	16	429,768	2,600	14	Yes
4071	1	5FYD2LU072U023777	16	404,513	2,600	14	Yes
4072	1	5FYD2LU002U023779	16	393,902	2,600	14	Yes
3012	1	15GGE291641090917	14	364,094	272,900	14	Yes
3013	1	15GGE291841090918	14	397,602	273,000	14	Yes
3014	1	15GGE291X41090919	14	371,578	273,000	14	Yes
3015	1	15GGE291641090920	14	342,355	273,000	14	Yes
3016	1	15GGE291841090921	14	341,815	273,000	14	Yes
3017	1	15GGE291X41090922	14	368,966	273,000	14	Yes
3018	1	15GGE291141090923	14	411,146	273,000	14	Yes
3019	1	15GGE291341090924	14	355,179	273,000	14	Yes
3501	1	15GGB291X41074129	14	342,700	283,200	14	Yes
3502	1	15GGB291641074130	14	367,641	238,200	14	Yes
3503	1	15GGB291841074131	14	369,369	238,200	14	Yes
3504	1	15GGB291X41074132	14	392,707	238,200	14	Yes
3505	1	15GGB291551074900	13	402,780	238,200	14	No
3506	1	15GGB291751074901	13	301,664	238,200	14	No
3507	1	15GGB291951074902	13	387,093	238,200	14	No
3508	1	15GGB291051074903	13	373,242	238,200	14	No
3509	1	15GGB291251074904	13	303,449	238,200	14	No
3510	1	15GGB291451074905	13	408,187	238,200	14	No
3511	1	15GGB291651074906	13	464,230	238,200	14	No
3512	1	15GGB291851074907	13	472,856	238,200	14	No
3513	1	15GGB291X51074908	13	480,404	238,200	14	No
3524	1	15GGB2716A1178535	8	226,885	373,700	14	No
3525	1	15GGB2718A1178536	8	270,201	373,700	14	No
3526	1	15GGB271XA1178537	8	246,296	373,700	14	No
3527	1	15GGB2713A1178538	8	263,079	373,700	14	No
3528	1	15GGB2713A1178539	8	226,835	373,700	14	No
4023	1	15GGD271991177000	9	250,569	346,800	14	No
4024	1	15GGD271091177001	9	261,103	346,800	14	No
4025	1	15GGD271291177002	9	229,365	346,800	14	No
4026	1	15GGD271491177003	9	234,420	346,800	14	No
4027	1	2FYD2LLO5SU016197	22	609,391	2,000	14	Yes
4037	1	5FYD2LP11VU017403	21	329,522	2,000	14	Yes
4038	1	5FYD2LP15VU017405	21	324,578	2,000	14	Yes
4039	1	5FYD2LP17VU017406	21	317,991	2,000	14	Yes
4040	1	5FYD2LP19VU017407	21	315,788	2,000	14	Yes
4041	1	15GGD2714C1179308	6	159,611	383,500	14	No
4042	1	15GGD2716C1179309	6	202,745	383,500	14	No
4043	1	15GGD2712C1179310	6	201,295	383,500	14	No

Table continued on next page.

Table 3.3 (Continued)

Asset Number	Count	ID/Serial No.	Age (Years)	Vehicle Mileage	Replacement Cost (\$) ^a	Useful Life Benchmark (Years)	Past Useful Life Benchmark
Buses (Continued)							
4044	1	15GGD2715D1181862	5	183,910	409,400	14	No
4046	1	15GGD2719D1181864	5	202,791	409,400	14	No
4047	1	15GGD2710D1181865	5	182,533	409,400	14	No
4048	1	15GGD2712D1181866	5	188,013	409,400	14	No
4049	1	15GGD2714D1181867	5	169,266	409,400	14	No
Streetcars							
Streetcar	1	A-46PCC2185	7	45,644	73,000	31	No
Streetcar	1	A-15PCC4606	18	62,967	73,000	31	No
Streetcar	1	A-15PCC4609	18	71,099	73,000	31	No
Streetcar	1	A-15PCC4610	18	86,532	73,000	31	No
Streetcar	1	A-15PCC4615	18	54,266	73,000	31	No
Streetcar	1	A-15PCC4616	18	67,063	73,000	31	No
Streetcar	1	A-15PCC4617	7	55,523	73,000	31	No
Trolley Buses							
2439	1	2D9S21307W1070528	20	38,217	238,500	13	Yes
3369	1	2D9P22326X1070535	19	172,876	4,000	13	Yes
3415	1	4UZAB9DXTXACAT2704	8	167,092	79,000	13	No

Note: Vehicle mileage as of June 2018

^a Replacement cost represents the current cost to purchase the vehicle based on transit procurement documents amounts from the Wisconsin Department of Transportation.

Source: Kenosha Area Transit, FTA, and SEWRPC

**Table 3.4
Kenosha Area Transit Equipment Condition Assessment**

Asset Class ^a	Asset Name/ Number	Count	ID/Serial No.	Age (Years)	Vehicle Mileage	Replacement Cost(\$)	Useful Life Benchmark (Years)	Past Useful Life Benchmark
(NR)	Chevy Impala, 3077	1	2G1WD5EM7A1230995	8	99,955	1,000	7	Yes
(NR)	Ford, 3301	1	1FMCU9GX5FUC06130	3	24,534	22,600	7	No
(NR)	Ford, 3302	1	1FMCU9GX5FUC06131	3	17,471	22,600	7	No
(NR)	GMC Van, 1667	1	2GTEG25H7G452366B	32	95,093	1,000	7	Yes
(NR)	GMC Van, 2297	1	1GJGG35K0TF503706	22	101,443	22,200	7	Yes
(NR)	GMC Truck, 2402	1	1GTGK29RXWE528775	20	120,893	27,500	7	Yes
(NR)	CMC C-Away, 2841	1	1GDJG31U661134142	12	46,448	36,400	7	Yes
(NR)	Bobcat, 3065	1	AOW114782	9		58,800	7	Yes
(NR)	F350 Plow Truck, 3071	1	1FDWF3HR7AEB37854	8	12,080	56,200	7	Yes
(NR)	Bobcat, 3110	1	AOW116492	8		60,600	7	Yes
(NR)	Ford F350, 3111	1	1FDRF3HT5BEB59958	7	10,561	56,700	7	Yes
(ST)	Streetcar track	1	N/A	18	N/A	N/A ^b	N/A	No

^a Asset Class is defined as:
(NR) – Non Revenue/Service Automobile
(ST) – Streetcar tracks

^b The replacement values/costs for the streetcar track is currently under review by KAT and will be updated as appropriate.

Source: Kenosha Area Transit, FTA, and SEWRPC

Table 3.5
Kenosha Area Transit Facilities Condition Assessment

Asset Class	Asset Name	Count	Age (Years)	TERM Scale Condition
Administration	Joseph McCarthy Transit Center	1	18	4
Administration	Kenosha Area Transit Administration and Bus Garage	1	17	4
Metra Station	Metra Station Elevator	1	12	4
Metra Station	Metra Station Staircase	1	12	4
Parking Lots	Lot #23 - 54th Street & 13th Avenue, Metra Station	1	12	4
Parking Lots	Nine surface lots	9	8	4

Source: Kenosha Area Transit, FTA, and SEWRPC

Table 4.1
Kenosha Area Transit Service Schedule and Checklist

Service	Interval when Service Occurs (Miles)	Preventive Maintenance Activities
Service A	6,000	Oil change with filter New coolant filter New air filter on any 2010+ bus
Service B	18,000	Oil change with filter New coolant filter New air filter Power steering reservoir flush and new filter
Service C	36,000	Oil change with filter New coolant filter New air filter Power steering reservoir flush and new filter Transmission flush with new filters Check engine coolant condition

Note: The services are performed in the order AABAAC (A=6,000 miles, A=12,000 miles, B=18,000 miles, A = 24,000 miles, A=30,000 miles, C=36,000 miles)

Source: Kenosha Area Transit

Kenosha Area Transit (KAT) has established *Standard Operating Procedures for Maintenance* that identifies the guidelines and procedures for equipment maintenance, operation, and management for all Kenosha Area Transit facilities. It also includes staff responsibilities and training expectations for employees. The following discussion summarizes the standard operating procedures for transit vehicles and equipment, streetcar assets, and transit facilities.

As part of their maintenance protocol, KAT uses the Transfleet software to monitor their vehicle maintenance and inventory. Specifically, the program tracks the vehicle maintenance history and information for each vehicle in the fleet, ensuring that the scheduled preventative maintenance occurs in a timely manner, and that any unscheduled repairs are documented and appropriately assigned.

4.1 TRANSIT VEHICLE AND EQUIPMENT STANDARD OPERATING PROCEDURES

KAT has a program of scheduled preventative maintenance and inspections for various elements of the transit assets. These programs are based on time, distance, or reliability trends to ensure that maintenance is performed on a regular basis. The cycle of preventative maintenance is consistent with equipment manuals, specifications and actual experience in Kenosha. Preventative maintenance and inspections are performed to keep all transit assets in a state of good repair and to identify any potential failures.

The preventative maintenance schedule is shown in Table 4.1. The schedule and checklist for each service is based on the manufacturer's recommendations and was further developed by Kenosha Area Transit. The vehicle mileage is recorded by the driver each shift, and by the service attendants when they add fuel to a vehicle. The mileage entries are uploaded to the maintenance software daily Monday through Friday. The service due list is generated by the maintenance software and it is posted weekly. Services are performed within 600 miles before or after when the service is due.

Drivers are required to report any damage or wear to dispatch, who passes the information to the maintenance staff. The Lead Mechanic or supervisor will make note of the faults in the daily log, place the bus out of service if needed, and assign the repair to a mechanic for further evaluation and repair. Unscheduled repairs are assigned according to mechanic availability, parts available, time needed to complete the repair, and the priority of the workload for each day.

4.2 STREETCAR MAINTENANCE STANDARD OPERATING PROCEDURES

Maintenance procedures are in place for the Kenosha Transit Electric Streetcar to reflect both unscheduled and scheduled maintenance requirements. These procedures address and support the safety and reliability of the system. The procedures are based on the maintenance process established by the original operator of the PCC cars and modified to reflect service requirements in Kenosha. These procedures are further

supported by those developed by the Southeastern Pennsylvania Transportation Authority (SEPTA) and other PCC operators.

Kenosha Area Transit has established maintenance standards that incorporate preventative and corrective action measures for the system. The purpose of the streetcar maintenance procedures is to provide the maintenance and support necessary to provide a safe, reliable, and cost effective rail service to the City of Kenosha and the Harbor Park development. The maintenance procedures ensure a progressive maintenance plan for routine maintenance activities as the system evolves. The streetcar maintenance procedures are carried out by the Rail Maintenance Section. The Streetcar Maintenance standard operating procedures include the following activities:

- Inspection or Preventative Maintenance – Those activities to be performed on a schedule to ensure operations and prolonging the useful life of the equipment and facilities
- Corrective or Unscheduled Maintenance – Demand responsive actions that impact operations or safety, including in-service failures or required repairs that were not scheduled
- Testing – Often accomplished with contracted services due to special test equipment requirements
- Programmed maintenance – Includes overhauls and major rehabilitation
- General Maintenance – Includes servicing and cleaning

The streetcar maintenance plan provides a program of scheduled preventative maintenance and inspections for system elements, including: rolling stock, overhead contact wire, substations, and power distribution; the 1.9 mile loop consisting of ballasted track, embedded track, and special track work or switches; communications, fare collection equipment, platforms and shelters, and the shop building and office. The preventative maintenance programs are based on time, distance, or reliability trends to ensure that maintenance is performed on a regular routine basis. The cycle of preventative maintenance is consistent with the equipment manuals, specifications, and actual experience of KAT staff. Preventative maintenance and inspections are performed to keep all system elements in a state of good repair and to identify any failures.

Since the streetcar vehicles are no longer manufactured, a spare parts supply and re-supply is an important part of maintaining a state of good repair. In response to this need, KAT has established an inventory control program. This program includes the purchase and inventory of streetcars, used trucks, spare parts, and equipment. KAT has also established a computer network with other PCC operators and museums to exchange information on spare parts. When feasible, KAT will jointly purchase parts. KAT also has a library of maintenance manuals that are used to ensure that the remanufacture or rebuild of parts and components meet or exceed specifications.

4.3 FACILITY MAINTENANCE STANDARD OPERATING PROCEDURES

The buildings included in the Transit Asset inventory (Operations and Maintenance Facility and the McCarthy Transit Center) are inspected quarterly by service personnel in an effort to keep them well maintained. The inspections provide documentation of any mechanical or cosmetic fault. The inspection includes facility security equipment including video and alarm systems. The Maintenance Supervisor schedules outside contractors to conduct yearly inspections of bus lifts, HVAC systems, backup generator, alarm systems, fuel storage systems, and fire extinguishers. The buildings' mechanical items are repaired as soon as is practicable.

On an annual basis, Kenosha Area Transit (KAT) will perform an investment prioritization analysis to determine which transit assets are needed, the quantity of each asset type required, and in what order to maintain and improve the state of repair. For the most recent year, KAT has incorporated a list of project requests within the City of Kenosha's 2018 – 2022 Capital Improvement Plan, which was adopted December 6, 2017. The current Capital Improvement Plan requests ten new buses over the next four years, which includes six buses in 2019 and four buses in 2020. As funding becomes available, KAT maintenance staff will assess the current condition of each vehicle, and based on their judgment and in consultation with the Accountable Executive, will determine which buses will be replaced in order to improve the state of good repair of the transit assets.

The following projects are included in the adopted 2018-2022 Capital Improvement Plan:

- Project TR-93-010: Requested funding to replace new buses, used buses, and rubber wheeled trolleys; including \$1,350,000 in 2018 for bus replacement. The CIP states that the justification is "the normal replacement cycle for buses is usually 12 years or 500,000 miles of use. At the present time, we will have numerous buses exceeding this life cycle."
- Project TR-96-001: Replacement of old truck #2402 (1996 GMC truck) with passenger van, \$35,000 in 2018 requested
- Project TR-96-001: Replace old van #2297 (1996 GMC van) with pick-up truck, \$35,000 in 2018 requested
- Project TR-96-001: Replace old van #1667 (1986 GMC van) with pick-up truck, \$35,000 in 2018 requested

Kenosha Area Transit's (KAT) State of Good Repair (SGR) Policy adheres to the following standards for measuring the condition of capital assets, pursuant to CFR 625.41.

A capital asset is in a state of good repair 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, rehabilitation, and replacement (useful life benchmarks).

The TAM policy and the maintenance protocols described within this TAM Plan allow KAT to anticipate and plan for capital needs. This policy supports the TAM strategy and actions that support its implementation, including the maintenance procedures outlines in KAT's *Standard Operating Procedures for Maintenance* documentation described in detail in Chapter 4, Kenosha Area Transit's Maintenance Decision Support Tool.

The Kenosha Area Transit's (KAT) TAM strategy is to continue implementing the maintenance standard operating procedures for all transit assets as established in the *Standard Operating Procedures for Maintenance*. KAT has a goal to replace two buses each year for a budgeted cost of \$900,000 annually and is on a schedule to replace the streetcar "trucks" after 14 years of service.

Over time, KAT may consider reducing their total fleet size in response to funding constraints and the age of the fleet. This would result in retiring the oldest vehicles that are past their useful life. The retirement strategy along with the goal of replacing two buses per year will help KAT maintain and improve their state of repair.

KAT will consider purchasing electric buses in the future. The initial capital cost of electric buses is \$887,000 on average according to a Transit Research Cooperative Report, *Battery Electric Buses State of the Practice*, which is greater than the average cost of a new bus purchased by KAT (approximately \$450,000).² However, capital costs will continue to drop over time as the technology evolves and orders for the buses increase creating economies of scale. In addition, experience nationally has shown that electric vehicles result in lower overall operation and maintenance costs.

² Transportation Cooperative Research Program, Synthesis 130, *Battery Electric Buses State of the Practice: A Synthesis of Transit Practice*, March 2018.

LIST OF KEY ANNUAL ACTIVITIES

8

Kenosha Area Transit (KAT) will continue to maintain all supporting TAM Plan records and documents, providing them to FTA, WisDOT, and SEWRPC as requested. This includes carrying out the activities and report keeping identified in the Standard Operating Procedures for Maintenance. KAT will also continue tracking and maintaining their current transit assets to maintain and improve their current state of repair.

In addition, KAT will report, on an annual basis, to the FTA's National Transit Database the following information:

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

There are a number of key Kenosha Area Transit (KAT) staff in charge of developing and carrying out the transit asset management plan. The key transit asset management staff includes the Director of Transit and Parking who serves as the Accountable Executive and the maintenance staff that is led by one mechanic supervisor who reports directly to the Director. The bus repair section is assigned five full time mechanics classified as Mechanic II, one part-time mechanic classified as Mechanic II, three full-time Service Technicians, and one part-time bus driver conducting ground maintenance. The rail vehicle section has one streetcar mechanic and receives assistance from utility workers. Due to the tight labor market for qualified mechanics, KAT has experienced challenges in maintaining vehicles in a state of good repair when they are beyond their useful life. Kenosha Area Transit may consider options to enhance recruitment and retention of staff in order to carry out the TAM Plan.

The following staff will carry out the activities required in their commitment to maintain the vehicles, facilities, and equipment in the best condition possible.

Director:

- Directly responsible for the maintenance of all KAT property equipment
- Ensures Out of Service equipment is either back in service within 72 hours or have corrective actions (e.g., parts requested or equipment sent out to a contracted facility for repair) to ensure equipment can be returned to service at the earliest possible date
- Is prepared to brief the Mayor, City Administrator, Common Council, and Transit Commission, at all times on the status of maintenance within the property
- Ensures mechanic supervisor position is filled and the person is properly trained
- Ensures that the mechanic supervisor provides a brief of the maintenance status to the director daily
- Ensures the property maintenance policy is established, reviewed and approved by the director

Mechanic Supervisor:

- Monitors the maintenance and equipment status within the property
- Monitors the disposal of all hazardous waste and materials
- Intensely manages all out of service equipment repair
- Aggressively monitors all equipment sent to any outside contracted shop for repair
- Monitors any oil analysis performed
- Monitors the repair parts stock, locations, and the parts funds for maintenance
- Provides technical and administrative assistance on equipment maintenance
- Keeps the Director informed on all maintenance issues and out of service equipment
- Ensures that safe maintenance operations are conducted
- Develops and implements a quality control program to ensure safety and reliability of all equipment.

Operations Supervisor:

- Supervises operations and work flow
- Oversees safety and security

Senior Mechanic on Duty:

- The Senior Mechanic on shift at each property location is to assume this position
- Assumes the duties of the mechanic supervisor in their absence
- Monitors quality control procedures for all maintenance repairs
- Supervises shop operations and ensure that all repairs are performed safely and correctly by all shop personnel

Mechanic:

- Completes repair and service of equipment, as assigned, within manufacturers' guidelines
- Maintains the areas of responsibilities assigned within the shop
- Ensures quality control procedures are followed
- Ensures all equipment is used safely, within the guidelines of the manufacturer and with all appropriate safety equipment (e.g. jack stands, hearing protection, eye protection)
- Assumes the role of Senior Mechanic on Duty when required

Dispatcher:

- Ensures vehicles assigned to drivers are not coded out of service
- Reports road calls to maintenance shop, to include: location, direction, reported fault, vehicle number, replacement vehicle number, and any other pertinent information
- Ensures drivers properly fill out Operators Report
- Provides completed Operators Report to the maintenance section in a timely manner
- Inspects buses for damage when they return to the building. Immediately reports any new damage to maintenance.

Route Supervisor:

- Ensures all drivers are properly licensed and trained on the equipment they are assigned to operate
- Establishes and implements a pre-trip inspection policy, and a policy to properly report all vehicle deficiencies
- Monitors drivers performance to ensure training is adequate and polices are followed, and safety awards are noted and presented
- Responds to accidents. Completes accident documentation and facilitate driver drug testing where applicable and in accordance with KAT insurance requirements

Driver:

- Conducts pre-trip inspection of vehicle
- Reports potential out of service deficiencies to dispatch prior to beginning route, and does not begin route with out of service vehicle

- Ensures all required equipment is present and in usable condition on the vehicle prior to trip
- Properly completes and submits the Operator Report to dispatch.

Service Technician:

- Ensures all vehicles are regularly checked after use to ensure: fuel and all fluids checked, filled as needed, and the vehicle is cleaned as needed.
- Ensures facilities and grounds are checked for cleanliness and serviceability.
- Performs facility cleaning and repair as needed. Reports any need for repair or cleaning that cannot be immediately performed to management.

