



Everything Asset Management

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Everything Asset Management Agenda

- What is Asset Management & Why is it important
- State of Good Repair
- ADOT's role in your asset management
- Subrecipient Asset Management responsibilities
- Vehicle Maintenance Plans
- Common Deficiencies
- Questions

What is Asset Management?

- It is a strategic process that helps transit agencies prioritize funding and resources based on the condition and performance of their assets, like vehicles, equipment and when applicable facilities to maintain a state of good repair
- ADOT requires subrecipients have Vehicle Maintenance Plans and when applicable facility maintenance plan to document their State of Good Repair process

Why is asset management important

- FTA's primary goal is that ADOT ensure that federally funded assets are kept in a State of Good Repair (SGR)
 - ADOT provides oversight to ensure subrecipients are compliant.



What is “State of Good Repair?”

In general, “State of Good Repair” is the ability to maintain assets in a well-performed condition to provide efficient, reliable and safe service.

FTA requires that ADOT ensures it’s subrecipients are maintaining federally funded assets in a state of good repair.



ADOT's role in your asset management process



Transit Asset Management Plan (TAM)

- Inventory of Capital Assets
 - 5311 and 5310 Open to the public
- Condition Assessment
 - Condition Rating
- Decision Support Tool
 - Identify if asset should be replaced
- Investment Prioritization
 - Identify funding levels needed by year

Benefits of TAM

- Improved transparency and accountability
- Optimized capital investment and maintenance decisions
- More data-driven maintenance decisions
- Potential safety benefits

Useful Life Benchmark (ULB)

ADOT Transit's Useful Life Benchmark (ULB)

Revenue Vehicles

Asset Category/Class	Total Number	Average Age	Average Mileage	ADOT Useful Life Benchmark	ADOT Useful Life Benchmark
Revenue Vehicles 2022	477	5.99	140,720	Years	Mileage
AO - Automobile 2022	23	3.22	35,113	8	100,000
BR - Over-the-road-Bus 2022	0	0	0	14	500,000
BU - Bus 2022	12	6.17	136,710	14	500,000
CU - Cutaway Bus 2022	255	5.72	126,951	10	400,000
FB - Ferryboat	0	0-	0-		
MV - Minivan 2022	114	6.63	217,460	8	100,000
SV - Sport Utility Vehicle 2022	10	6	109,070	8	100,000
Trucks and other Rubber Tire Vehicles 2022	1	9	150,148	8	100,000
TB- Trolleybus	0	0	0	7	200,000
VN - Van 2022	62	6.94	101,157	8	100,000

ADOT is utilizing Useful Life Benchmarks for vehicles based upon years or mileage whichever occurs first.

Vehicle Performance Measures

Asset Category - Performance Measure	Asset Class	2022 Target	2023 Target	2024 Target	2025 Target	2026 Target
REVENUE VEHICLES						
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	<i>AB - Articulated Bus</i>					
	<i>AO - Automobile</i>	26%	26%	25%	25%	25%
	<i>BR - Over-the-road Bus</i>	26%	26%	25%	25%	25%
	<i>BU - Bus</i>	26%	26%	25%	25%	25%
	<i>CU - Cutaway Bus</i>	26%	26%	25%	25%	25%
	<i>FB - Ferryboat</i>					
	<i>MV - Minivan</i>	26%	26%	25%	25%	25%
	<i>RT - Rubber-tire Vintage Trolley</i>	26%	26%	25%	25%	25%
	<i>SB - School Bus</i>					
	<i>SV - Sport Utility Vehicle</i>	26%	26%	25%	25%	25%
	<i>TB - Trolleybus</i>	26%	26%	25%	25%	25%
	<i>VN - Van</i>	26%	26%	25%	25%	25%

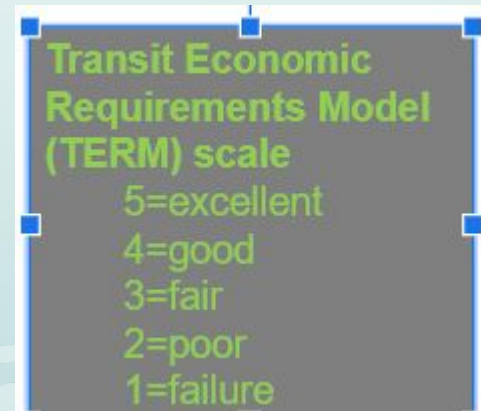
Equipment & Facilities Performance Measures

Asset Category - Performance Measure	Asset Class	2022 Target	2023 Target	2024 Target	2025 Target	2026 Target
EQUIPMENT						
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	<i>Non Revenue/Service Automobile</i>	50%	50%	50%	50%	50%
	<i>Steel Wheel Vehicles</i>					
	<i>Trucks and other Rubber Tire Vehicles</i>	50%	50%	50%	50%	50%
FACILITIES						
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	<i>Administration</i>	20%	20%	20%	20%	20%
	<i>Maintenance</i>	20%	20%	20%	20%	20%
	<i>Parking Structures</i>	20%	20%	20%	20%	20%
	<i>Passenger Facilities</i>	20%	20%	20%	20%	20%

Summary of TAM Rolling Stock

Asset Condition Summary

Asset Category/Class	Count	Average Age	Average Mileage	Average TERM Condition	Average Value	% At or Past ULB
Revenue Vehicles 2022	477	5.99	140,720	3.44	\$81,914.78	23.06%
AO - Automobile 2022	23	3.22	35,113	4.30	\$18,438.00	13.04%
BU – Bus 2022	12	6.17	136,710	2.17	\$280,148.00	0.00%
CU - Cutaway Bus 2022	255	5.72	126,951	3.40	\$111,519.00	17.25%
DB - Double Decker Bus	0	-	-	N/A	-	-
FB - Ferryboat	0	-	-	N/A	-	-
MV – Minivan 2022	114	6.63	217,460	3.25	\$36,839.00	28.95%
SV - Sport Utility Vehicle 2022	10	6	109,070	3.80	\$31,838.00	20.00%
Trucks and other Rubber Tire Vehicles 2022	1	9	150,148	3.00	\$5,121.00	100%
VN - Van 2022	62	6.94	101,157	3.73	\$37,533.00	43.55%



Subrecipient's role in the asset management process



Subrecipient Responsibilities

- Establish clear policies and procedures for all federally funded assets.
 - Develop Vehicle Maintenance plan and if applicable Facility Maintenance plan
- Ensure employees understand their responsibilities and how to comply
- Ensure internal compliance with Condition Rating
- Decision Support Tool-Identify if asset should be replaced
- Investment Prioritization -Identify funding levels needed by year

What is a Vehicle Maintenance Plan?

- A written plan that systematically aids in identifying methods used specifically to preserve and extend the functionality and serviceability of a vehicle.



Identify How Maintenance is Managed

- Be specific on who maintains your vehicles
 - Is it done in-house?
 - Outside vendor via contract?
 - Intergovernmental Agreement?
- Identify how the type of vehicle maintenance is handled
 - Minimum manufacturer specific preventive maintenance
 - Wheelchair lift repairs
 - Major mechanical repair
- Identify the process for how maintenance is authorized and tracked, including repairs under warranty

Vehicle Maintenance Plans

- Maintenance Plans should include:
 - Asset Inventory
 - At least the manufacturer's recommended maintenance schedule
 - Each vehicle type's intervals listed specifically
 - Maintenance schedule for accessibility equipment
- Maintenance Plans must be included in application

Vehicle Maintenance Schedule

- Sub-recipients with ADOT awarded vehicles must abide by the vehicle maintenance schedule for as long as the vehicle is in use
- Sub-recipient agencies are required to maintain the accessible features of the vehicle to ensure they remain accessible and usable for individuals with disabilities at all times
 - Accessibility features must be repaired promptly if they are damaged or out of order

Know your Manufacturer guidelines

Ford Transit Connect

Interval	Associated service
7,500	Standard vehicle inspection ¹
10,000	Extended vehicle inspection ²
	Engine oil and filter service
25,000	Fuel filter service
50,000	Transaxle fluid and filter service
100,000	Tune up
	Spark plug service
150,000	Cooling system service

- Identify the Manufacturer minimum service intervals by vehicle model
- Maintenance should never go later than the Manufacturer guidelines, but can be done earlier
- Maintain communication with your mechanic!!!

Maintenance Audit

- Audits that the transit provider may consider to improve maintenance and maintenance conditions include:
- Facility design audit
- Safety and security audit – daily, weekly, monthly, annually
- Crash review
- Vehicle condition spot-check

Record Keeping

A good maintenance program should include a comprehensive maintenance record or file for each vehicle or asset in the transit system.

- Electronic record keeping is acceptable
- A complete history of each vehicle or asset
- Documentation of all repairs
- Details on all maintenance activities
- Record of inspections

Maintenance and Inspection Forms

- Your maintenance plan should include standardized forms
 - Driver Pre-Trip Inspection Checklist
 - Driver Post-Trip Inspection Checklist
 - Preventive Maintenance Checklist
 - Annual Inspection forms,
 - Bus shelter Checklist, etc.

Pre & Post Trip Inspection Form



42-0102 Rev/25 azdot.gov

VEHICLE INSPECTION FORM

SEE PAGE 2 FOR INSTRUCTIONS
Ok = Satisfactory NR = Needs Repair

Clear

Agency Name (Vehicle Owner)		Mileage	Inspector Initials For Mileage	Inspection Date
Bus No.:		License Plate #:		
Complete Inspection and Check Pass or Fail.				
PASS <input type="checkbox"/> FAIL <input type="checkbox"/>				
Inspection Company:		VIN:		
Inspector Name:		Manufacturer:		
Inspector Signature:		Model:		
		Year:		
		Lift / Ramp <input type="checkbox"/> Yes <input type="checkbox"/> No		

BRAKES	OK	NR
ADJUSTMENT		
MECHANICAL COMPONENT		
DRUM / ROTOR		
HOSE / TUBING		
LINING		
PARKING BRAKES		
OTHER		

FUEL SYSTEM	OK	NR
TANK(S)		
LINES		
OTHER		

STEERING	OK	NR
ADJUSTMENT		
COLUMN / GEAR		
AXLE		
LINKAGE		
POWER STEERING		
OTHER		

SUSPENSION	OK	NR
SPRINGS		
ATTACHMENTS		
SLIDERS		
OTHER		

ENGINE COMPARTMENT	OK	NR
OIL LEVEL		
RADIATOR		
BATTERIES		

INTERIOR	OK	NR
WINDOWS/OPERATION		
MIRRORS		
FRONT DOOR OPERATION		
PASSENGER SEATS		
INTERLOCKS		
GRAB RAILS / STANTIONS		
SIDE/FRONT/REAR/CEILING PANELS		
FLOOR COVERING		
STEPWELL		
EMERGENCY EXITS		
SUN VISOR		

CAB / BODY	OK	NR
ACCESS		
EQPT / LOAD SECURE		
TIE-DOWNS		
HEADERBOARD		
MOTORCOACH SEATS		
OTHER		

LIGHTING	OK	NR
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Vehicle Maintenance Schedule- Inspection Forms

644 MAINTENANCE SCHEDULES

Maintenance Chart

Refer to the Maintenance Schedules on the following pages for the required maintenance intervals.

Mileage or time passed (whichever comes first)	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000	110,000	120,000	130,000	140,000	150,000
Or Years:	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Or Kilometers:	32,000	48,000	64,000	80,000	96,000	112,000	128,000	144,000	160,000	176,000	192,000	208,000	224,000	240,000
Additional Inspections														
Inspect the CV joints.		X			X			X			X			X
Inspect front suspension, tie rod ends, boot seals, and replace if necessary.	X		X		X		X		X		X		X	
Inspect the brake linings, parking brake function.	X		X		X		X		X		X		X	

Vehicle Maintenance Schedule-Continued

Required Maintenance Intervals.

Refer to the maintenance schedules on the following page for the required maintenance intervals.

At Every Oil Change Interval As Indicated By Oil Change Indicator System:

- Change oil and filter.
- Rotate the tires. Rotate at the first sign of irregular wear, even if it occurs before the oil indicator system turns on.
- Inspect battery and clean and tighten terminals as required.

At Every Oil Change Interval As Indicated By Oil Change Indicator System:

- Inspect automatic transmission fluid if equipped with dipstick.
- Inspect brake pads, shoes, rotors, drums, hoses and park brake.
- Inspect engine cooling system protection and hoses.
- Inspect exhaust system.
- Inspect engine air cleaner if using in dusty or off-road conditions.

Track Service and Intervals

Date	Mileage	Interval mileage
Bus 9		
3/22/2017	211,470	3,018
2/22/2017	208,452	3,161
1/23/2017	205,291	2,858
12/29/2016	202,433	2,824
4/20/2016	199,609	3,088
3/22/2016	196,521	

Date	Mileage	Interval mileage
Bus 18		
12/21/2016	334,727	5,341
11/1/2016	329,386	5,216
9/8/2016	324,170	5,055
6/9/2016	319,115	5,284
2/1/2016	313,831	11,033
2/20/2016	302,798	
2/1/2016		

Date	Mileage	Interval mileage
Bus 26		
2/25/2017	52,759	6,195
12/12/2016	46,564	5,353
10/3/2016	41,211	5,036
7/13/2016	36,175	3,076
6/22/2016	33,099	4,842
5/16/2016	28,257	5,156
4/8/2016	23,101	5,691
2/26/2016	17,410	4,512
1/25/2016	12,898	4,853

Unscheduled Repairs

- Procedures for unscheduled repairs
- information on who to contact if the vehicle needs an immediate repair while in service.
- This may vary according to whether or not a vehicle is under warranty.
- All safety-critical repairs must be performed before allowing the vehicle to re-enter passenger service.

Cleanliness

- Cleanliness is kept to transit vehicle safety
- Agencies should include cleaning procedures in maintenance plans
- Define when and how often to clean vehicle interiors, exteriors and if applicable bus shelters or facilities

Facility Checklist

Red Line - City Square to Boat Dock	Shelter	Bench	Trash Can	Signage	Powder Coat	Notes
Palma Way						
Safeway - northbound						
Rancho Colorado Blvd / Hwy 95						
Seventh St / Hwy 95						
Home Depot / Sam's Club						
Boat Dock						
Sixth St / Long Ave						
First St / Long Ave						
Safeway - southbound						
Palma Way						
Palma Road / Hancock Circle						
Orange Line - City Square to Target	Shelter	Bench	Trash Can	Signage	Powder Coat	Notes
Miracle Mile / Riverview						
Walmart at Mohave Dr						
Palo Verde Medical/Easy St						
Target at Ash Ave / Long Ave						
MCC						
Miracle Mile/Riverview Dr						
Blue Line - West Bound	Shelter	Bench	Trash Can	Signage	Powder Coat	Notes
Smiths on Lakeside						
Commercial Way						
Marina / Colorado						
Palma Way						
City Hall						
Green Line - East	Shelter	Bench	Trash Can	Signage	Powder Coat	Notes
Arriba / Rio Vista						
Gold Rush / Ramar						
Gold Rush Business Center						
WARMC						
Canyon Walk Apartments						
Joshua Springs						
Walmart						

SUPERVISOR: _____

DATE: _____

Condition Key	
Failing	1
Poor	2
Fair	3

Useful Life of a Vehicle - Minimum

Vehicle Minimum Useful Life Guidelines

Vehicle Type	Minimum Years	and / or	Minimum Miles
Minivan With Ramp	6 years	and / or	100,000 mi.
Minivan No Ramp	6 years	and / or	100,000 mi.
Maxivan With Lift	6 years	and / or	100,000 mi.
Maxivan No Lift	6 years	and / or	100,000 mi.
Cutaway with Lift	7 years	and / or	200,000 mi.
Sport Utility Vehicle (SUV)	7 years	and / or	150,000 mi.
Crew Cab Trucks	7 years	and / or	150,000 mi.
Buses over 30 ft	7 years	and / or	300,000 mi.
Heavy duty buses 35+ ft	10 years	and / or	350,000 mi.
Trolleys	14 years	and / or	500,000 mi.
Automobile	4 years	and / or	100,000 mi.

5310 Program Guidebook link:
https://azdot.gov/sites/default/files/2023-12/FFY-2024-5311-Program-Guidebook_0.pdf



Coordinated Mobility Program

Section 5310

Enhanced Mobility of Seniors and Individuals with Disabilities

Grant Guidebook

FY 2025

Arizona Department of Transportation
Multimodal Planning Division
206 South 17th Avenue, Mail Drop 340B
Phoenix, AZ 85007

**This version supersedes all previous versions of this guide.*

Useful Life of a Vehicle - Minimum continued

Vehicle Minimum Useful Life Guidelines

Vehicle Type	Minimum Years	and / or	Minimum Miles
Minivan With Ramp	6 years	and / or	100,000 mi.
Minivan No Ramp	6 years	and / or	100,000 mi.
Maxivan With Lift	6 years	and / or	100,000 mi.
Maxivan No Lift	6 years	and / or	100,000 mi.
Cutaway with Lift	7 years	and / or	200,000 mi.
Sport Utility Vehicle (SUV)	7 years	and / or	150,000 mi.
Crew Cab Trucks	7 years	and / or	150,000 mi.
Buses over 30 ft	7 years	and / or	300,000 mi.
Heavy duty buses 35+ ft	10 years	and / or	350,000 mi.
Trolleys	14 years	and / or	500,000 mi.
Automobile	4 years	and / or	100,000 mi.

ARIZONA DEPARTMENT OF TRANSPORTATION

Section 5311 Guidebook
Grant Guidelines

Rural Public Transit Program
FFY2024 Funding Cycle
Reimbursement Period Beginning October 2024

ADOT | Arizona Department
of Transportation

December 2023

5311 Program Guidebook link:

https://azdot.gov/sites/default/files/2023-12/FFY-2024-5311-Program-Guidebook_0.pdf

Common Deficiencies

- Policies, procedures and tracking mechanisms required to document vehicle preventive maintenance
- ADA requirement wheelchair lifts must be cycled on a daily basis during pre-trip inspection
- Lifts must be maintained and repaired by certified lift mechanics

Recap-State of Good Repair

- Transit Asset Management Practices must preserve and expand transit investments
- Well Maintained and reliable infrastructure are required
- All the parts that were there originally are still there and in working order



Resources

Resource Document Website Link

Transit Program Website

<https://azdot.gov/planning/transit-programs-and-grants/program-handbooks-applications-and-awards>

Sample Vehicle maintenance Plan 1

<https://azdot.gov/sites/default/files/2019/08/sample-vehicle-maintenance-plan-1.docx>

Sample Vehicle maintenance plan 2

<https://azdot.gov/sites/default/files/2019/08/sample-vehicle-maintenance-plan-2.docx>

Questions?

THANK YOU!

Asset Management questions can be directed to:

Your Assigned ADOT Program Manager