

Transit Asset Management (TAM) Plan

January 25th
2022

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Local Programs and Minibus Support



Today's Presentation

Transit Asset Management Background

TAM Plan Requirements

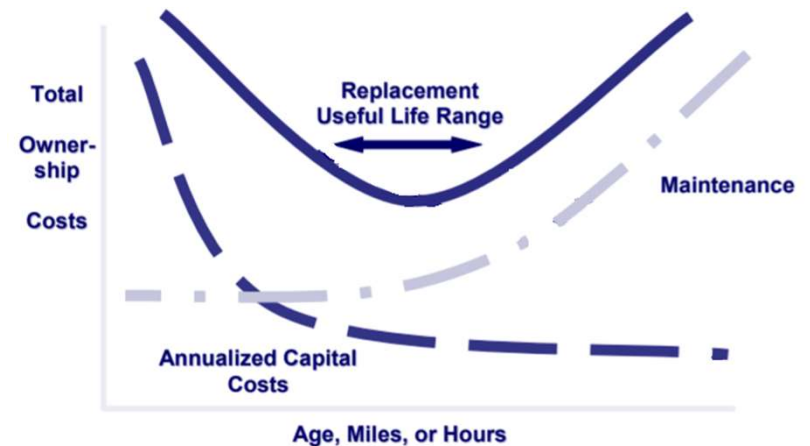
2022 Group Plan Development

Next Steps

Please Note: The information communicated during today's session is for the use of the NJ TRANSIT sub-recipients. All questions should be directed to NJ TRANSIT. Please note today's presentation is *not* on the behalf of the Department of Transportation or the Federal Transit Administration.

What is Transit Asset Management?

Transit asset management is a strategic and systematic process through which an organization procures, operates, maintains, rehabilitates, and replaces transit assets to manage their performance, risks, and costs over their lifecycle to provide safe, cost-effective, and reliable service.



Definition: FTA Asset Management Guide (2012); Graph: FTA Useful Life of Transit Buses and Vans (2007)

TAM and State of Good Repair

State of Good Repair is the condition in which a capital asset is able to operate at a full level of performance. This means the asset is able to perform its designed function and does not pose a known safety risk.

- Consequences of not being in a state of good repair include:
 - Safety risks
 - Decreased system reliability
 - Higher maintenance costs
 - Lower system performance

Definition: 49 CFR § 625.5

What is a Transit Asset Management Plan?

- A Transit Asset Management Plan sets forth a strategy for maintaining and replacing assets to achieve a state of good repair
- TAM Plans must, at a minimum, be updated on a 4-year cycle
- Tier II TAM Plans must include:

**Inventory of
Capital Assets**

**Condition
Assessment**

**Performance
Targets**

**Decision
Support Tools**

**Investment
Prioritization**

2022 New Jersey Tier II Group TAM Plan

- The draft Plan can be viewed by going to the S-RIDES Homepage:
<https://s-rides.njtransit.com/home/Documents/NJTierIIGroupTAMPlan2020.pdf>
- 62 public transit providers participated
- Plan addressed all required elements
 - Inventory of capital assets
 - Condition assessment
 - Performance targets
 - Decision support tools
 - Prioritized list of investments
 - Evidence of outreach to and approval from participating agencies
- Assets considered in the plan include: revenue vehicles, equipment, and facilities

This webinar will focus on revenue vehicles and equipment.

TAM Plan Table of Contents

1. Introduction

1. Plan Purpose
2. Plan Requirements
3. Participation Requirements
4. Roles and Responsibilities
5. Relationship to Other Plans

2. Asset Inventory and Condition Assessment

1. Condition Assessment Methodology
2. Asset Inventory

3. Decision Support Tools

1. Vehicle Decision Support Formula

2. Facilities Decision Support Tool

4. Investment Prioritization

1. Anticipated Funding
2. Additional Considerations
3. Investment Scenarios
4. Comparing the Results
5. Risks
6. Using the Results

5. Performance Targets

1. Performance Measures
2. Performance Targets

6. Next Steps

1. Updates and Amendments

1 Introduction

1.1 Plan Purpose

- Meet federal requirements including 49 CFR § 625
- Encourage the use of asset management principles to improve capital investment planning

1.2 Plan Requirements

- Inventory of capital assets
- Condition assessment
- Performance targets
- Decision support tools
- Prioritized list of investments
- Evidence of outreach to and approval from participating agencies

1 Introduction

1.3 Participation Requirements

Participants are included in the Group TAM Plan because they meet the following criteria:

- The organization provides public transportation
- The organization is a Tier II provider
- The organization is a Federal subrecipient

1.4 Roles and Responsibilities

NJ TRANSIT is the plan **Sponsor**.

- Write the Group TAM Plan
- Set performance targets
- Submit NTD reports
- Collect Plan approvals

Agencies are **Participants**.

- Select an Accountable Executive
- Provide the requested data to complete the Group TAM Plan
- Approve the Group TAM Plan

1 Introduction

1.5 Relationship to Other Plans

The Group TAM Plan should be aligned with other statewide plans including:

- Coordinated Human Services Transportation Plan (CHSTP)
- Statewide Transportation Improvement Plan (STIP)

2 Asset Inventory and Condition Assessment

2.2 Asset Inventory – Revenue Vehicles and Equipment

Asset Class		Total Number	Average Mileage	Average Age	Useful Life Benchmark	% at or Past ULB	Average Value
Revenue Vehicles	Automobile	36	65,470	9.1	8	61%	\$19,136
	Bus	98	116,678	8.4	14	15%	\$96,674
	Cutaway Bus	869	79,201	6.6	10	16%	\$75,254
	Minivan	87	52,099	6.3	8	29%	\$44,205
	Sport Utility Vehicle	14	9,908	4.0	8	14%	\$27,145
	Van	56	42,726	7.3	8	48%	\$40,536
	Total	1,160	77,147	6.8	-	20%	\$73,064
Equipment	Non-Revenue / Service Automobile	1	-	13.0	8	100%	\$20,221
	Trucks / Other Rubber Tire Vehicles	14	64,400	8.2	14	14%	\$51,176
	Total	15	61,875	8.5	-	20%	\$49,112

3 Decision Support Tools

3.1 Vehicle Decision Support Formula

- The formula should be objective and calculate replacement needs regardless of the size and resources available to each transit provider.
- The formula should be simple and transparent.
- The formula should consider both the age and mileage of a vehicle to better reflect the unique service conditions of each transit provider.
- The formula should encourage agencies to replace vehicles when they are at or near their Useful Life Benchmark and they have exceeded their minimum useful life mileage.
- The formula results in a **replacement score** which prioritizes the assets from replacement from 0 (new) to 100+ (requires replacement)

3 Decision Support Tools

3.1 Vehicle Decision Support Formula

Replacement Score

$$\left(70 \times \frac{\text{Age}}{\text{Useful Life Benchmark}} \right) + \left(45 \times \frac{\text{Average Annual Mileage}}{\text{Expected Annual Mileage}} \right)$$

Asset Class		Useful Life Benchmark	Expected Annual Mileage	Backlog	Replacement Score			
					2022	2023	2024	2025
Revenue Vehicles	Automobile	8	18,570	≥ 115	≥ 100	≥ 91	≥ 82	≥ 73
	Bus	14	21,428	≥ 115	≥ 100	≥ 95	≥ 90	≥ 85
	Cutaway Bus	10	22,500	≥ 115	≥ 100	≥ 93	≥ 86	≥ 79
	Minivan	8	18,570	≥ 115	≥ 100	≥ 91	≥ 82	≥ 73
	Sport Utility Vehicle	8	18,570	≥ 115	≥ 100	≥ 91	≥ 82	≥ 73
	Van	8	18,570	≥ 115	≥ 100	≥ 91	≥ 82	≥ 73
Equip.	Non-Revenue / Service Automobile	8	18,570	≥ 115	≥ 100	≥ 91	≥ 82	≥ 73
	Trucks / Other Rubber Tire Vehicles	14	21,428	≥ 115	≥ 100	≥ 95	≥ 90	≥ 85

3 Decision Support Tools

3.1 Vehicle Decision Support Formula

A sample cutaway bus purchased new in 2015 has traveled 120,000 miles.

$$\left(70 \times \frac{\textit{Age}}{\textit{Useful Life Benchmark}} \right) + \left(45 \times \frac{\textit{Average Annual Mileage}}{\textit{Expected Annual Mileage}} \right)$$

Asset Class	Useful Life Benchmark	Expected Annual Mileage	Replacement Score				
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Cutaway Bus	10	22,500	≥ 115	≥ 100	≥ 93	≥ 86	≥ 79

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A sample cutaway bus purchased new in 2015 has traveled 120,000 miles.

$$\left(70 \times \frac{\text{Age}}{\text{Useful Life Benchmark}} \right) + \left(45 \times \frac{\text{Average Annual Mileage}}{\text{Expected Annual Mileage}} \right)$$

$$\left(70 \times \frac{7}{10} \right)$$

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$$\left(70 \times \frac{7}{10} \right) + \left(45 \times \frac{120,000 \div 7}{22,500} \right)$$

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$$\left(70 \times \frac{7}{10}\right) + \left(45 \times \frac{120,000 \div 7}{22,500}\right) = 49 + 34$$

Asset Class	Useful Life Benchmark	Expected Annual Mileage	Replacement Score				
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Cutaway Bus	10	22,500	≥ 115	≥ 100	≥ 93	≥ 86	≥ 79

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A sample cutaway bus purchased new in 2015 has traveled 120,000 miles.

$$\left(70 \times \frac{\text{Age}}{\text{Useful Life Benchmark}}\right) + \left(45 \times \frac{\text{Average Annual Mileage}}{\text{Expected Annual Mileage}}\right)$$

$$\left(70 \times \frac{7}{10}\right) + \left(45 \times \frac{120,000 \div 7}{22,500}\right) = 49 + 34 = 83$$

A replacement score of 83 means that asset should be replaced in 2025.

Asset Class	Useful Life Benchmark	Expected Annual Mileage	Backlog	Replacement Score			
				2022	2023	2024	2025
Cutaway Bus	10	22,500	≥ 115	≥ 100	≥ 93	≥ 86	≥ 79

3 Decision Support Tools

3.1 Vehicle Decision Support Formula

Criteria	Cutaway Vehicles						
	V-1	V-2	V-3	V-4	V-5	V-6	V-7
Purchased	2012	2021	2017	2020	2017	2015	2010
Age (Years)	10	1	5	2	5	7	12
Mileage	12,000	300,000	150,000	24,000	60,000	120,000	45,000
Score for Age	70	7	35	14	35	49	84
Score for Mileage	2	600	60	24	24	34	8
Replacement Score	72	607	95	38	59	83	92
Action	Replace 2025	Replace 2022	Replace 2022			Replace 2024	Replace 2023
Priority	5	1	2			4	3
Age at Replacement	13	1	6			9	13
Mileage at Replacement	15,600	300,000	180,000			154,286	48,750

4 Investment Prioritization

4.1 Anticipated Funding

- Participants self-reported anticipated capital funding
- Federal pass-through programs
 - Enhanced Mobility of Seniors and Individuals with Disabilities Program (Section 5310)
 - Rural and Small Urban Areas Program (Section 5311)
 - Senior Citizen and Disabled Resident Transportation Assistance Program (SCDRTAP)
 - Small Urban Areas Program (Section 5307)
 - Congestion Mitigation and Air Quality Program (CMAQ)
- 2022 TAM Plan assumes **\$8,422,550** per year for vehicle replacements

4.2 Additional Considerations

- The investment prioritization is a recommendation and each agency is ultimately responsible for their own capital investments

4 Investment Prioritization

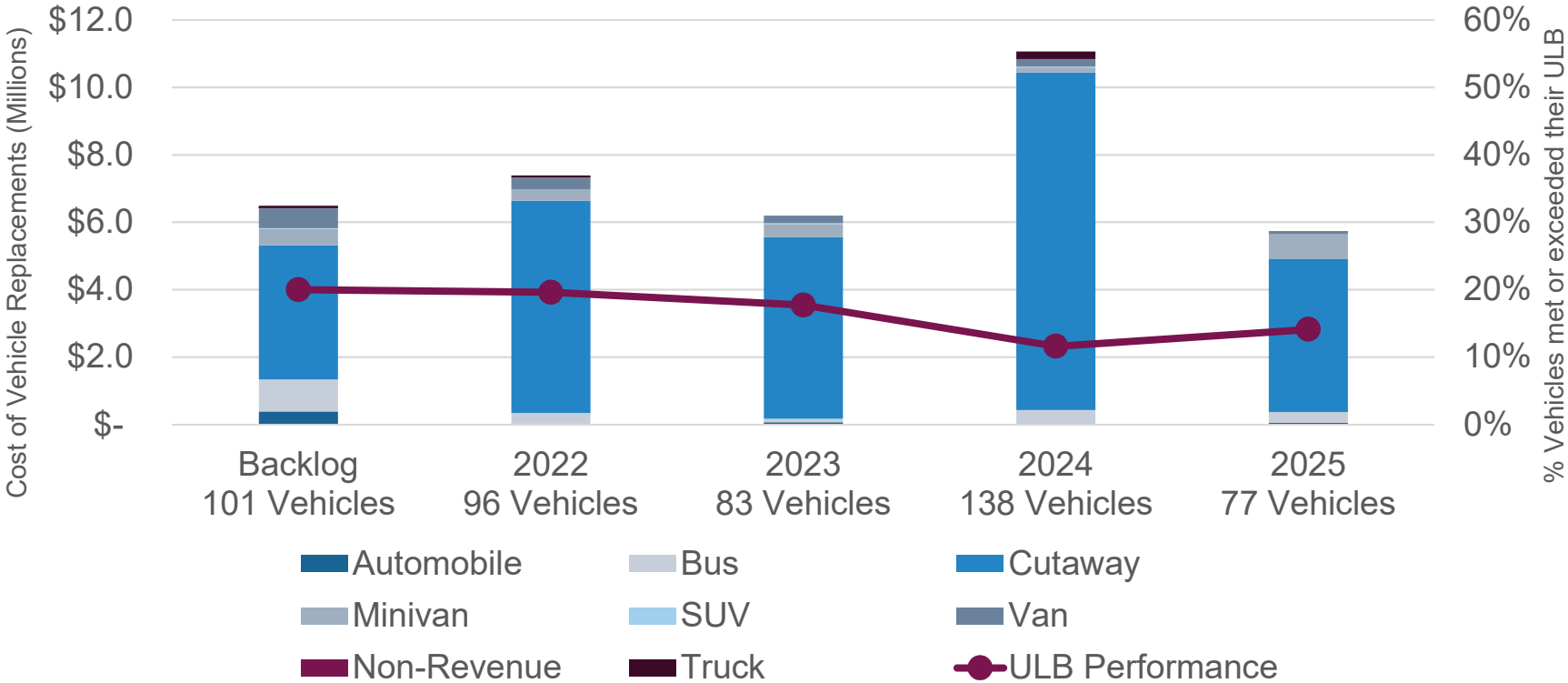
4.3 Investment Scenarios

- The plan includes three investment scenarios that illustrate the effect of investing in vehicle replacements on performance
 - An **unconstrained** investment scenario programs vehicle replacements without a budget and is used to identify vehicles that require replacement
 - A **do nothing** investment scenario assumes that no vehicle replacement are programmed and is used to shows how performance would be affected
 - A **constrained** investment scenario programs vehicle replacements with a set budget and is used to develop a realistic program for vehicle replacements
- For each scenario, the plan includes the number of vehicles programmed for replacement, the cost of vehicles programmed for replacement, and the estimated performance of the fleet
- The full results of the **unconstrained** investment scenario are included in the Appendix and shows the recommended replacement year for each vehicle in the fleet

4 Investment Prioritization

4.3 Investment Scenarios – Unconstrained Scenario

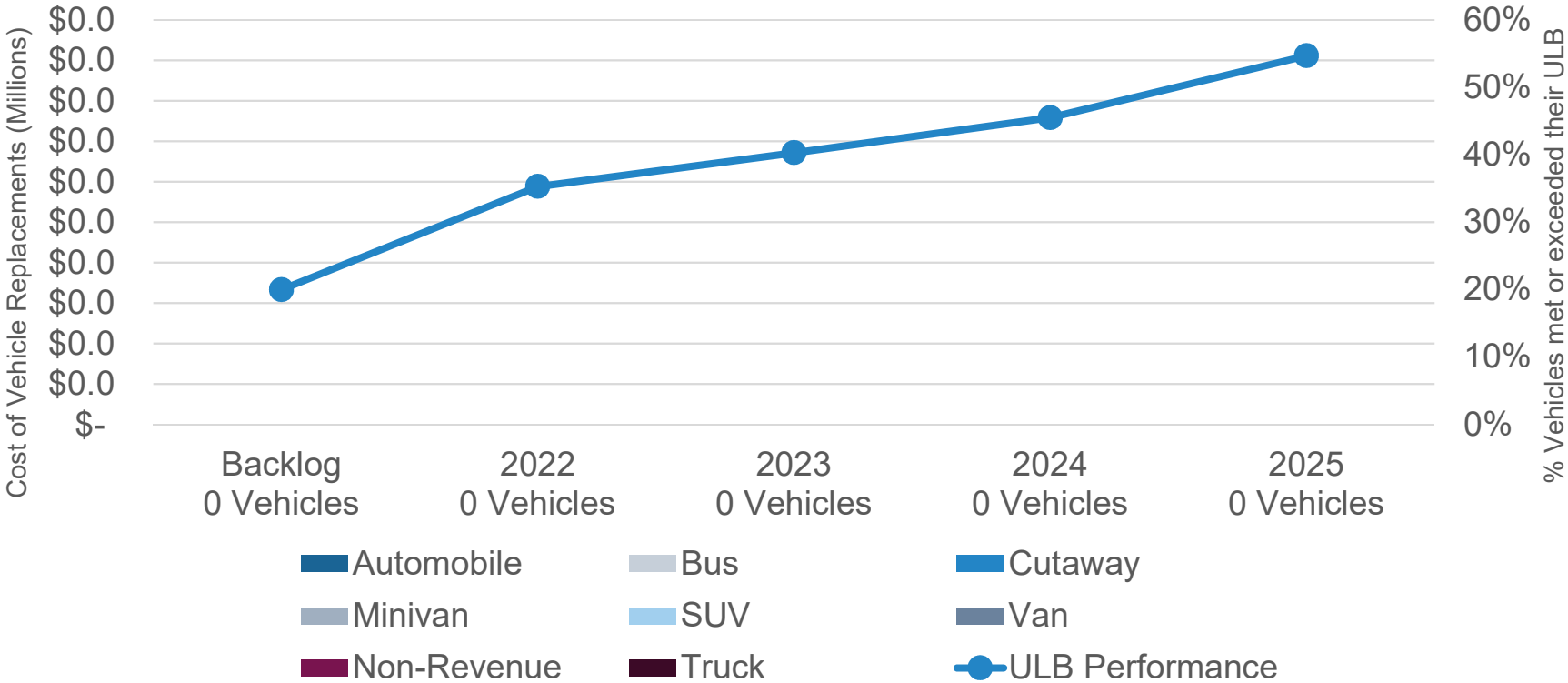
Budget: Unlimited



4 Investment Prioritization

4.3 Investment Scenarios – Do Nothing Scenario

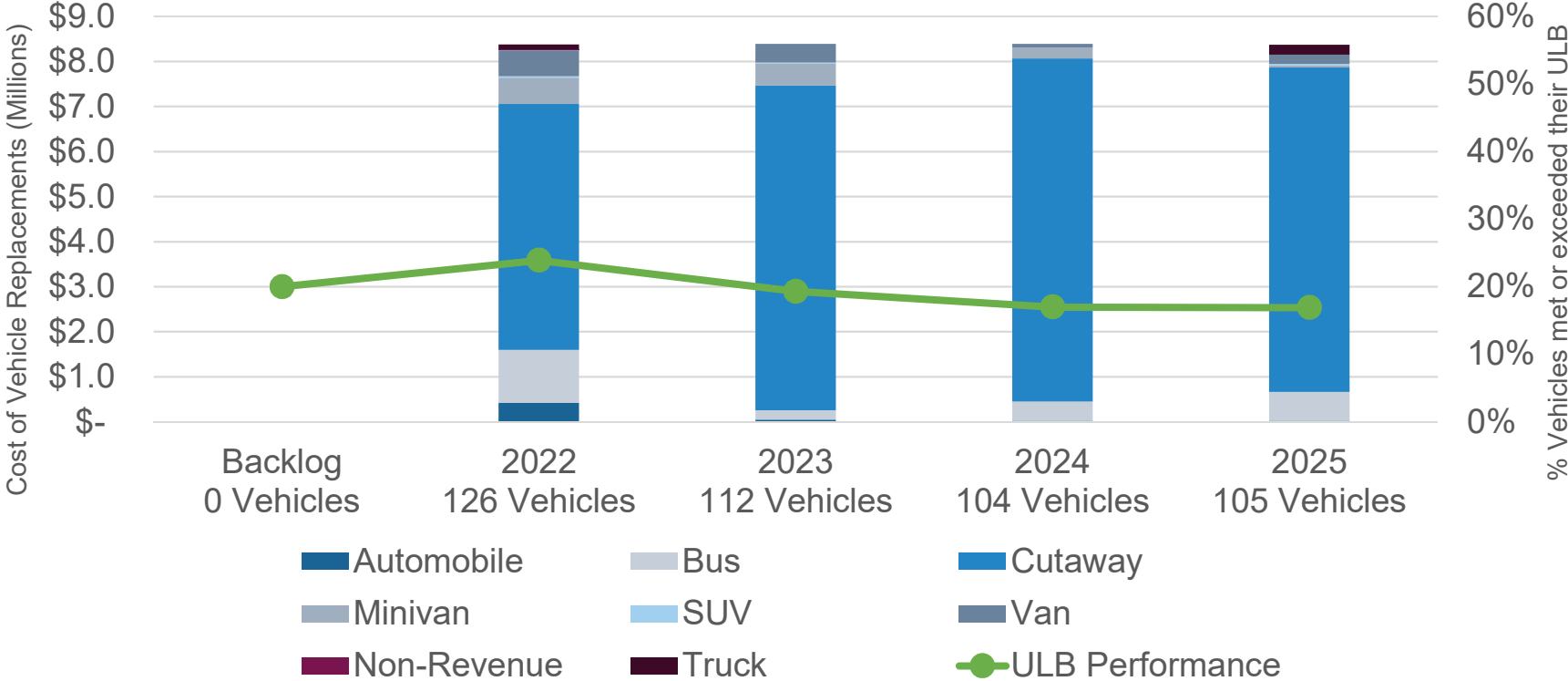
Budget: \$0



4 Investment Prioritization

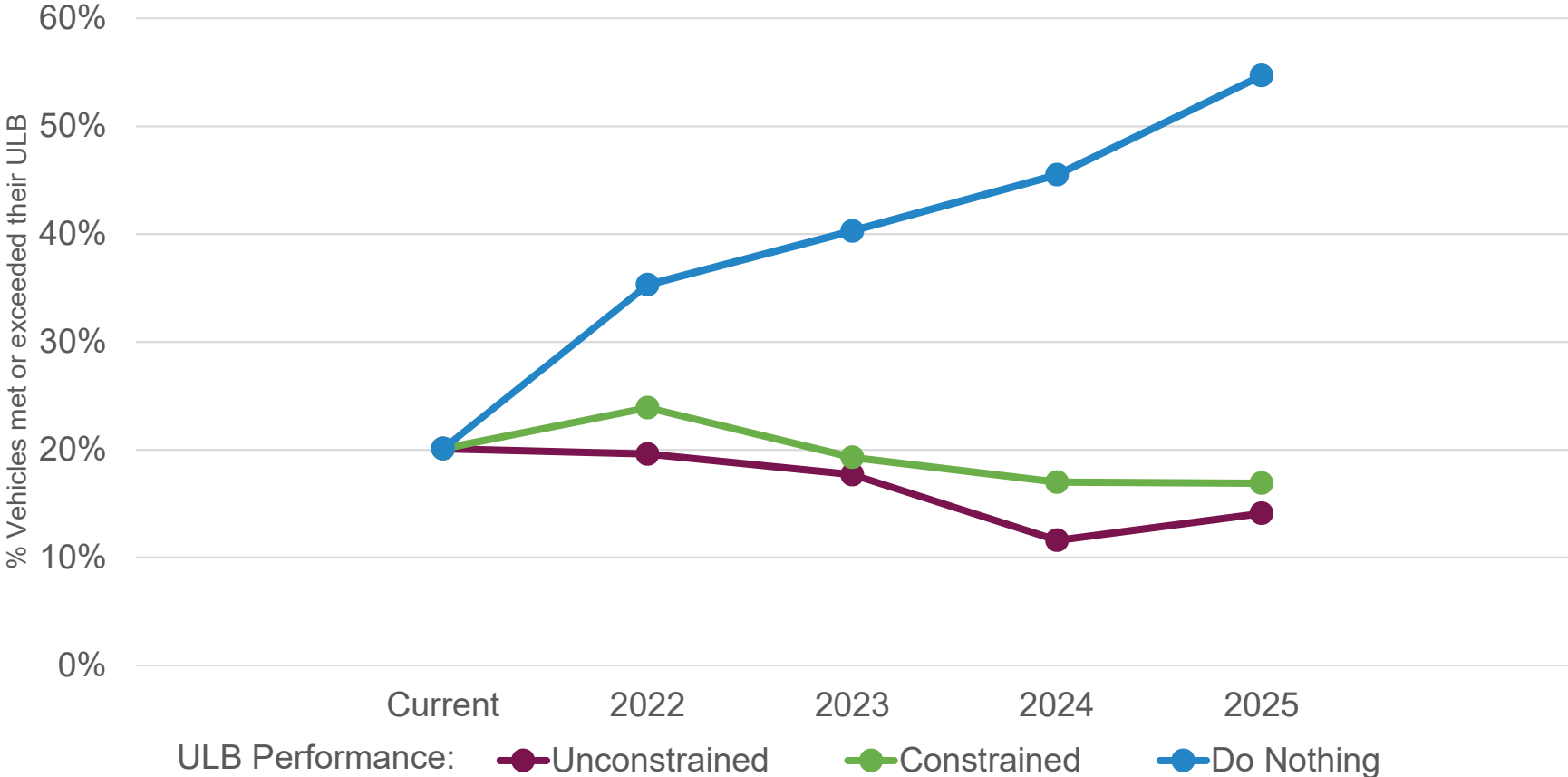
4.3 Investment Scenarios – Constrained Scenario

Budget: \$8,422,550



4 Investment Prioritization

4.4 Comparing the Results



4 Investment Prioritization

4.5 Risks

Risks may impact the ability of Participants to meet the performance targets, such as:

- The availability of funding and the distribution of that funding
- Changes in operating conditions that impact the average annual mileage
- Participants choosing to expand or lessen the size of their fleets
- Participants being added to or removed from the Group TAM Plan

4.6 Using the Results

The investment scenarios presented are used to understand the future state of the fleet, including:

- How assets will deteriorate over time without investment
- How investments could positively impact performance
- How investments could be prioritized to maximize the performance of the fleet

5 Performance Targets

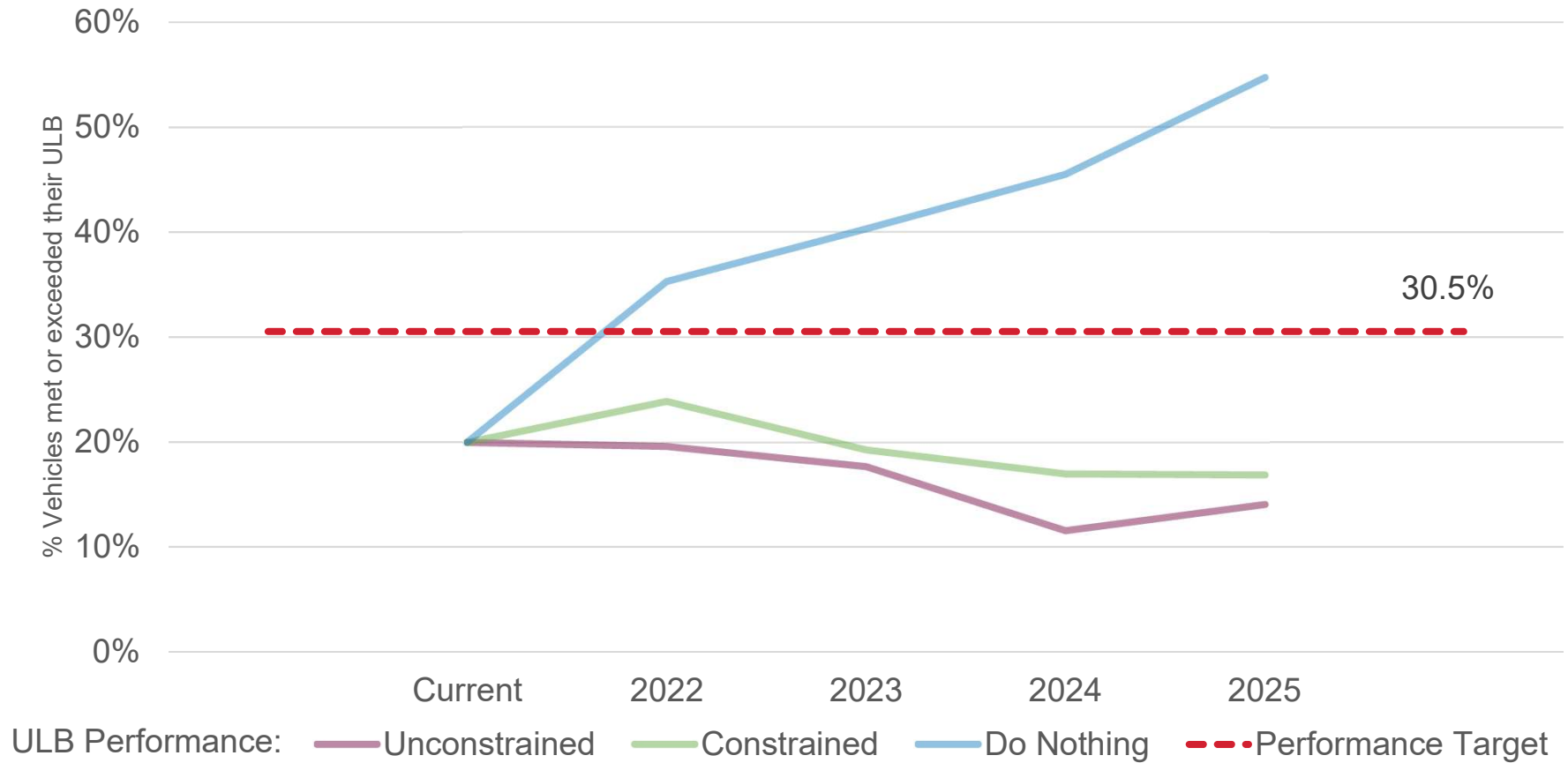
5.1 Performance Measures

5.2 Performance Targets

Asset Category / Performance Measure		Asset Class	FY 2021 Target	FY 2022 Target	FY 2023 Target	FY 2024 Target	FY 2025 Target
Revenue Vehicles	Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Automobile	55% ●	55%	55%	55%	55%
		Bus	34% ●	34%	34%	34%	34%
		Cutaway Bus	15% ●	15%	15%	15%	15%
		Minivan	29% ●	29%	29%	29%	29%
		Sport Utility Vehicle	45% ●	45%	45%	45%	45%
		Van	39% ●	39%	39%	39%	39%
Equipment	Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non-Revenue / Service Automobile	55% ●	100%	100%	100%	100%
		Trucks and Other Rubber Tire Vehicles	30% ●	0%	0%	0%	0%

5 Performance Targets

5.2 Performance Targets



6 Next Steps

- The draft Plan can be viewed by going to the S-RIDES Homepage: <https://s-rides.njtransit.com/home/Documents/NJTierIIGroupTAMPlan2020.pdf>
- Review the Appendices to ensure that all agency information contained in the Plan is accurate.
- All Accountable Executives must review the plan and provide any comments/suggestions to lsheridan@njtransit.com by this Friday, January 28th, 2022.

Comments must be received by **January 28th, 2022**. The deadline to approve the Group TAM Plan is **February 25th, 2022**.

6 Next Steps

- Based on the feedback we receive, we will post the final draft of the TAM Plan on the S-RIDES homepage next week.
- The final TAM Plan must be approved by all Accountable Executives to be compliant.
- The Group Plan Sponsor will send an approval letter template which should be placed on the participating agency letterhead and sent to smack@njtransit.com.

Comments must be received by **January 28th, 2022**. The deadline to approve the Group TAM Plan is **February 25th, 2022**.