Capital Area Transportation Authority

AMENDMENT NO. 1 TO SOLICITATION
TRANSIT ASSET MANAGEMENT (TAM) PLAN UPDATE

1. AMENDMENT NO:	2. SOLICITATION NO:	3. SOLICITATION NAME:	4. AMENDMENT DATE:
1	RFP 2022-124	Transit Asset Management (TAM) Plan Update	February 16, 2022

5. ISSUED BY

Capital Area Transportation Authority
Purchasing and Contracts Department
4615 Tranter Street
Lansing, MI 48910

6. DESCRIPTION OF AMENDMENT:

The following documentation has been attached to this Amendment:

CATA is revising the number of "Proposals due" has been changed from "*Submit five (5) proposal copies and one (1) electronic ("PDF") copy on CD/DVD or flash drive"* as shown on the attached cover sheet to electronic submission. Please read below:

1. ELECTRONIC SUBMISSION OF THE PROPOSAL:

CATA understands the concern for Public Safety is high; and in light of this question, we will accept ELECTRONIC SUBMISSIONS for this Solicitation. Please read the directions below for how to electronically submit your proposal:

A. All bidders should submit their proposal via email to nwilson@cata.org, and the subject line must state:

i. PROPOSAL SUBMISSION – RFP 2022-124 – TRANSIT ASSET MANAGEMENT (TAM) PLAN UPDATE

PRIOR TO SUBMITTING, please ensure you have all the required documents attached in Word, Excel, or Adobe Acrobat format ONLY.

1. Failure to attach the required documents will cause your submission to be declared NON-RESPONSIVE.

2. BIDDERS are still required to complete and submit the proposal forms as specified in the solicitation.

ii. Do not copy any other CATA employee on the email of your Electronic Submission, as we want to ensure that the integrity of the process is maintained.

iii. Emails sent to other email addresses may be considered NON-RESPONSIVE and not considered during the proposal review.

a. All emails must be received by 2:00 P.M. Eastern Time on Wednesday, March 2, 2022. Emails received at 2:01 P.M. Eastern Time or later, will be considered late submissions and deemed NON-RESPONSIVE.

b. CATA email accepts up to 50MB, it is the vendor's responsibility to ensure that their proposal do not exceed 50MB.

c. Vendors will receive an email confirmation from CATA that their proposal has been received.

d. Please note, **this is NOT a permanent policy change** and electronic submissions will not be accepted unless expressly directed within the Specified Solicitation by CATA.

e. Ensure you have Up-To-Date Information Regarding this Solicitation; Please visit www.cata.org.

B. CATA's responses to vendor questions.

C. All other terms and conditions remain unchanged.

PLEASE NOTE: Contractor is required to sign this document and return it with the bid/proposal/quote.

NAME / TITLE OF OFFEROR (Type or Print)	COMPANY NAME
(Signature of person authorized to sign)	(Date Signed)

Capital Area Transportation Authority

TRANSIT ASSET MANAGEMENT (TAM) PLAN UPDATE

Request for Proposal – Project # 2022-124

SCHEDULE OF ACTIVITIES

RFP Released:	January 31, 2022
Written Questions Due to CATA:	February 8, 2022 @ 2:00 P.M. Eastern Time
CATA's Responses to Questions Released:	February 16, 2022
~~Number of Proposals~~ **Electronic Submission** *(See Amendment 1 for directions)* and Due Date:	~~Submit six (6) proposal copies and one (1) electronic ("PDF") copy on CD/DVD or flash drive~~ **Electronic Submission** by 2:00 P.M. Eastern Time on March 2, 2022
Anticipated Award Date:	April 2022

Released on: January 31, 2022

February 16, 2022

Capital Area Transportation Authority Request for Proposal 2022-124
Transit Asset Management (TAM) Plan Update
CATA Responses to Vendor Questions

VENDOR QUESTIONS AND CATA'S RESPONSES:

1. **Do you envision most of the work to take place remotely?**

   Most of the work can be done remotely; however, some key elements (i.e., condition assessments) will need to be conducted on-site.

2. **Will you consider non-engineering firms for this requirement?**

   Yes.

3. **Can you make CATA's current TAM plan available? Also its annual objectives sent to NTD?**

   The current TAM plan and NTD annual objectives provided to CATA's MPO in 2022 are being furnished as an attachment to this RFP.

4. **Why does the agency believe that substantial changes are needed?**

   CATA is not anticipating substantial changes will be needed. CATA has prepared the scope of work based off FTA guidance to fully revisit the TAM planning process to create a new TAM plan for the 2022 horizon period.

5. **What is your current thinking on Tier 1 versus Tier 2 plans?**

   By FTA standards, CATA is currently a Tier II agency; however, we are near the threshold for a Tier I agency. CATA reserves the right to proceed with either a Tier I or Tier II update.

6. **Due to COVID, can the proposal be submitted electronically?**

   CATA understands the concern for Public Safety is high; and in light of this question, we will accept ELECTRONIC SUBMISSIONS for this Solicitation. Please read the directions below for how to electronically submit your proposal:

A. All bidders should submit their proposal via email to nwilson@cata.org, and the subject line must state:

i. PROPOSAL SUBMISSION – RFP 2022-124 – TRANSIT ASSET MANAGEMENT (TAM) PLAN UPDATE

PRIOR TO SUBMITTING, please ensure you have all the required documents attached in Word, Excel, or Adobe Acrobat format ONLY.

1. Failure to attach the required documents will cause your submission to be declared NON-RESPONSIVE.

2. BIDDERS are still required to complete and submit the proposal forms as specified in the solicitation.

ii. Do not copy any other CATA employee on the email of your Electronic Submission, as we want to ensure that the integrity of the process is maintained.

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c. Vendors will receive an email confirmation from CATA that their proposal has been received.

d. Please note, this is NOT a permanent policy change and electronic submissions will not be accepted unless expressly directed within the Specified Solicitation by CATA.

e. Ensure you have Up-To-Date Information Regarding this Solicitation; please visit www.cata.org.

7. Is the DBE goal a race-conscious goal?

CATA's DBE goal is race-neutral.

8. Can you please provide a budget range for this contract?

CATA will not be providing a budget range. Vendors are requested to provide their bids according to their organizational costs.

9. **Given the scope of the RFP, and the subsequent deadline for all TAM Plans, does CATA at this current time, envision the forthcoming 2022 TAM Plan submission to be a review and update of the current TAM Plan to ensure the 2022 deadline is achievable, or a major rework and rewrite?**

   CATA is not anticipating substantial changes will be needed; however, we will allow Vendors to make suggestions as they deem appropriate.

10. **Can you please provide a copy of CATA's 2018 TAM Plan.**

    The current TAM plan and NTD annual objectives provided to CATA's MPO in 2022 are being furnished as an attachment to this RFP.

11. **For the proposal, will CATA accept the official authorized to bind the respondent to the proposal e-sign the proposal?**

    Yes.

12. **Can you please indicate the name of the tool used for CATA's centralized TAM system and tools that tracks the age and condition of assets to be updated and what access requirements are needed to access the systems?**

    CATA utilizes a combination of different software to track assets. These currently include Trapeze EAM and Excel databases.

13. **Can you please confirm that the completed 2022 TAM Plan is due July 29, 2022 and that this project has an anticipated NTP of April 2022, giving a total of three (3) months to complete the TAM Plan?**

    Yes, the TAM plan is requested by July 29, 2022.

14. **Can you please provide an anticipated due date and itemized list of all remaining items that are not required to be submitted with the 2022 TAM Plan by the July 29, 2022 deadline.**

    The Asset Management Plan Guide, Transit Asset Management System Guide, and other Consultant-developed training manuals can be submitted after the TAM plan has been finalized. Any Consultant-developed training of CATA staff associated with the guides or manuals can be conducted after the TAM plan has been finalized.

15. **Should CATA decide to execute the option of updating the current Tier II TAM Plan update to a full Tier I TAM Plan is this to be completed by the July 29 deadline for 2022 TAM Plan submission to the MPO or can this be completed post the 2022 deadline?**

    Yes, either TAM plan option is requested by July 29, 2022.

16. **For Task 4 Baseline Assessment – are you looking for the consulting team to provide input into a condition assessment methodology for Fleets and Facilities or are you expecting the consulting team to perform the actual assessments?**

    Section 4.2 describes the task as providing a methodology for performing the baseline assessments and deliverable 9 and 10 talks to the methodology being performed.

    CATA is looking for the Vendor to update the methodologies as needed and perform the assessment.

17. **Given the short turnaround for the TAM Plan, from April 2022 NTP to July 2022 (3 months), would CATA consider changing the due date of the final plan to be by the end of September 2022 to allow for all other tasks, that also need to be completed in conjunction to be able to flow into the final deliverable?**

    The final TAM plan is requested by July 29, 2022.

18. **Are there any activities currently or foreseeable that will impede the consulting team achieve the July 29, 2022 deadline?**

    No, there are no foreseeable impediments that would prohibit the Vendor from achieving the July 29, 2022, deadline.

19. **If there are delays outside of the control of the consulting team does this trigger the liquidated damages clause in the contract?**

    Section 22: Liquated Damages-Not applicable.

20. **Task 2.1 objective states "the update must fully revisit every element of the TAM Plan and create a new plan" as the 2018 plan is a Tier I Plan can CATA please clarify if this pertains to only the Tier II Plan elements within the 2018 plan as it conflicts with the A.1 Objective for Tier I Agency Option statement.**

    Vendors electing to submit only a Tier II proposal would need to only update the Tier II elements of the TAM plan. Vendors electing to submit a Tier I proposal would need to update the Tier I elements of the TAM plan.

21. **Given the current pandemic and rise of multiple variants across the US, are the initial meetings that are to be held as part of the scope of work to be in person or virtual? Also, can you please share your on-site policy concerning consultants and vaccinations.**

    Virtual meetings are preferred when the task allows for the information to be shared virtually. CATA currently does not have a vaccination mandate for employees or visitors. CATA's current COVID-19 protocols are in line with FTA, CDC, and county recommendations, which includes an on-site daily health screening.

22. Can you please clarify which databases the consulting team will have access to update? Or is the consultant team to provide the data in a formatted template ready for upload into the database by CATA IT Administrator?

The Contractor will have access to all necessary databases; however, physical updates will be carried out by CATA staff. Contractors will be allowed to propose their best solution, which may include proposing a new database.

23. With regards to the current data in the EAM database, can you please provide a sample of the data so that we may ascertain the current quality of the data?

Sample data to ascertain the quality of the data will not be provided; however, Task 3.3, Sample Asset Inventory and Fleet Data, can provide an example of the data currently maintained.

24. Are the databases remotely accessible (via VPN), or do we need to be physically located onsite to access the systems?

Yes, databases are available via VPN.

25. Please provide an estimated annual number of meetings where consulting team personnel will be required to be onsite?

On-site meeting frequency will be determined by Vendor's response.

26. Can you please provide an estimated number of days or hours expected by the consultant on each Task (1 through 7).

Expected days and hours for each task will be determined by Vendor's response.

27. Can a MS word version of the sample contract for the purpose of adding modifications and submitting a red-lined contract version with the?

This question was submitted to us incomplete. We do not understand your question to provide a response.

28. Section 22 of Appendix A regards the obligation for liquidated damages in case of delay in the delivery of goods, but there is no amount specified. Would CATA agree waiving the liquidated damages requirement? Alternatively, would CATA confirm whether that provision will apply to delivery of services under the contract and the amount of the liquidated damages?

Section 22: Liquated Damages-Not applicable.

29. With regards to payments performed within 30 days, it is not clear whether invoices are to be submitted monthly or upon completion of certain work? Please clarify.

Invoices will be submitted upon completion of tasks and deliverables.

Please reference the RFP, Section I-S Pricing and Payment, Invoices will be paid within 30-days from receipt of a proper invoice.

FY 2022
Annual Targets & Measures and Condition Assessment Report
Transit Asset Management (TAM) Plan

In accordance with FTA's Final Rule on State of Good Repair issued October 1, 2016, CATA has documented annual performance measures and targets and a State of Good Repair Policy.

CATA's State of Good Repair Policy:

CATA will manage its portfolio of capital assets in a sustainable and effective manner by adopting an integrated lifecycle approach to ensure the safety, quality, cost-effectiveness, and reliability of its transit services. To achieve this policy, CATA will do the following:

- Maintain an up-to-date inventory of all its capital assets used in the delivery of public transportation
- Conduct timely assessments of asset condition to support a state of good repair
- Invest and maintain assets with consideration of their cost, performance, and impact on service and customers over the course of their entire lifecycle
- Implement relevant systems and technologies and support their effective application to enhance the benefits of CATA's assets to make better and informed investment decisions in relation to those assets
- Measure asset performance to comply with federal regulations and to strengthen customer confidence in system safety and reliability
- Promote asset management culture within the agency and across all organizational levels

CATA's performance measures for equipment and rolling stock include Useful Life Benchmarks (ULB) and average age of vehicles. CATA's facilities will be measured according to the FTA TERM scale; updated measures are listed in the table below.

ASSET CLASS	2021 CONDITION	2022 TARGET
Rolling Stock – Fixed Route	105 active fleet vehicles 24.8% (26 veh.) =/+ ULB (12 yrs) 6.9 yrs. avg. age	Replace 9 vehicles (7 @ 40 foot, 2 @ 60 foot) to achieve 18.1% (19 veh) =/+ULB (12 yrs) 6.7 yrs. avg. age
Rolling Stock – Demand Response	108 active fleet vehicles 19.4% (21 veh.) =/+ ULB (7 yrs) for cutaways =/+ ULB (4 yrs) for minivans 3.5 yrs. avg. age	Replace 28 vehicles to achieve 8.3% (9 veh.) =/+ULB 2.75 yrs. avg. age est.
Service Vehicles	35 vehicles 40% (14 veh.) =/+ ULB (4) 5.7 yrs. avg. age	Increase by 6 vehicles to achieve 70.7% (29 veh.) =/+ ULB 5.9 yrs. avg. age est.
Facilities – all Classes	3 Passenger Facilities 1 Administrative/ Maintenance 0% below 3.0 on FTA TERM scale 3.4 Average FTA TERM score	Maintain facilities to achieve 0% below 3.0 on FTA TERM scale thru FY22

ULB- Useful Life Benchmark

Last Edited: 1/24/2022

CAPITAL AREA TRANSPORTATION AUTHORITY

TRANSIT ASSET MANAGEMENT PLAN

March 1, 2019

AECOM Imagine it. Delivered.

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Prepared for:

Capital Area Transportation Authority
4615 Tranter Street
Lansing, MI 48910

Prepared by:

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
CATA	Capital Area Transportation Authority
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CTC	CATA Transportation Center
EAM	Enterprise Asset Management
ERP	Enterprise Resource Planning
FTA	Federal Transit Administration
FTA TAM Rule	49 CFR 625
FY	Fiscal Year
HVAC	Heating, Ventilation, and Air-Conditioning
IT	Information Technology
MSU	Michigan State University
NTD	National Transit Database
TAM	Transit Asset Management
TERM	Transit Economic Requirements Model
SGR	State of Good Repair
ULB	Useful Life Benchmark
YOE	Year of Expenditure

EXECUTIVE SUMMARY

The Transit Asset Management (TAM) Rule is a set of federal regulations (49 Code of Federal Regulations [CFR] part 25) that sets out minimum asset management practices to guide transit providers on how to manage capital assets and prioritize funding to improve or maintain assets in a state of good repair (SGR). Requiring agencies to develop TAM plans and set performance targets will lower long-term maintenance costs for each individual transit agency and ultimately decrease the national budget dedicated to repair or replacement of public transportation assets.

A TAM Plan tracks system performance and condition to develop strategies for efficiently managing assets for SGR in addition to maintaining funding eligibility. As outlined in the TAM Final Rule, each fiscal year (FY) that a transit agency receives or provides federal assistance to any public transportation operator, the agency is required to report information on the condition of its public transportation assets as provided in Federal Transit Administration (FTA) regulations, “Transit Asset Management; National Transit Database”, 49 CFR parts 625 and 630.

CATA is considered a Tier II agency since it operates less than 100 revenue vehicles during peak regular service across all non-rail fixed route modes. CATA is therefore required to develop a TAM Plan, which includes the following four elements:

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

CATA provides a range of services to the Greater Lansing area and has worked diligently to develop a TAM Plan that supports the agency’s strategic goals and dedication to the community. CATA also understands the role of asset management in supporting its vision of enhancing regional mobility through closer collaboration and coordination with neighbouring transit agencies. By keeping its assets in a SGR, CATA can contribute to this vision by providing safe and high-quality transit service.

The TAM Plan provides a comprehensive picture of CATA’s current capital assets and a detailed plan of asset management activities. This Executive Summary highlights the CATA TAM Plan covering the period between October 2018 to October 2022.

TAM AND SGR POLICY

CATA will manage its portfolio of capital assets in a sustainable and effective manner by adopting an integrated lifecycle approach to ensure the safety, quality, cost-effectiveness and reliability of its transit services.

To achieve this policy, CATA will do the following:

- Maintain an up-to-date inventory of all its capital assets used in the delivery of public transportation
- Conduct timely assessments of asset condition to support a state of good repair
- Invest and maintain assets with consideration of their cost, performance, and impact on service and customers over the course of their entire lifecycle
- Implement relevant systems and technologies and support their effective application to enhance the benefits of CATA’s assets to make better and informed investment decisions in relation to those assets
- Measure asset performance to comply with federal regulations and to strengthen customer confidence in system safety and reliability
- Promote asset management culture within the agency and across all organizational levels

Asset Inventory and Condition

The CATA Asset Inventory consists of 354-line items comprising vehicle, station and facility assets. Facility and station assets are broken down into subcomponents consistent with the management of those elements. The 354-line items have a total replacement value of $121.3 million, which consists of $80.5 million in vehicle assets, $34.1 million in facility assets and $6.8 million in station assets (2018 dollars). The average percent of useful life remaining based on replacement value is 40.3%. This means that on average, CATA's assets are more than halfway through their useful lives.

Currently, CATA has an SGR backlog of $35.9 million in 2018 dollars; vehicles are the asset class with the greatest backlog at $29.1 million (81.0%). On average, an annual capital investment of $9.9 million in 2018 dollars is required over the next 20 years to maintain all assets a condition of SGR.

Implementation Strategy Planned and Activities

The TAM Plan implementation will be led by the CATA Asset Management Team, a task force composed of senior managers with direct or supporting responsibilities in asset management. The Chief Executive Officer (CEO) is the Accountable Executive, who is ultimately responsible for the development and implemntation of the TAM Plan. The designated Chair of the Asset Management Team is the System Planner, who oversees and coordinates the development and implementation of the TAM Plan. The other Asset Management Team members will lead the asset management activities in their respective functional areas. CATA will provide continuous training to its employees so that its employees stay current with evolving technologies.

The CATA TAM Plan projects that the four-year total capital need for vehicles will be $48.6 million in 2018 dollars for the period between 2019 and 2022. Facilities and station assets rated below 3.0 on the FTA TERM scale and that require immediate investment total approximatley $2 million and $0.4 million respectively. CATA will need to identify and secure capital funding to meet the projected backlog and future investment needs.

Evaluation Plan

CATA will evaluate the implementation of its TAM Plan on an annual basis and update the plan every four years per FTA regulations. The annual TAM Plan evaluation process has two components: (1) performance target setting and reporting, as required by the TAM Rule, and (2) measuring the progress of planned asset management activities. The TAM Plan update process involves a more thorough evaluation of the plan that covers all aspects including TAM and SGR policy, asset inventory and condition, and investment prioritization in addition to the scope of the annual evaluation.

1 INTRODUCTION

1.1 BACKGROUND AND PURPOSE

In accordance with the 2012 Moving Ahead for Progress in the 21st Century (MAP-21) Act, the Federal Transit Administration (FTA) published the Final Rule that established a National Transit Asset Management (TAM) System on July 26, 2016. The Final Rule, codified in 49 Code of Federal Regulations (CFR) 625, requires all agencies that receive federal funds under 49 U.S.C. Chapter 53 and own, operate, or manage public transportation capital assets to develop and implement transit asset management plans. The FTA defines TAM as *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 to provide safe, cost-effective, and reliable public transportation*. A key tenet of TAM is the use of asset condition to manage capital assets and prioritize funding to maintain or improve a state of good repair (SGR).

A TAM Plan is a tool that will aide transit providers in:

- Assessing the current condition of its capital assets;
- Determining what the condition and performance of its assets should be (if they are not already in a state of good repair);
- Identifying the unacceptable risks, including safety risks, in continuing to use an asset that is not in a state of good repair; and
- 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.

Transit Asset Management is 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 to provide safe, cost-effective, and reliable public transportation.

The TAM Plan must cover a horizon period of at least four years and must be updated at least once every four years. According to the Final Rule, an agency's TAM Plan update must coincide with the planning cycle for the relevant Transportation Improvement Program (TIP) or Statewide Transportation Improvement Program (STIP). An agency may also amend its TAM Plan at any time during the TAM Plan horizon period. An amendment is required whenever there is a significant change to the asset inventory, condition assessments, or investment prioritization that the provider did not anticipate during the development of the plan.

As a Tier II transit provider, the Capital Area Transportation Authority (CATA) developed this TAM Plan to fulfill the requirements of the FTA TAM Rule, 49 CFR 625. The rule requires agency TAM Plans to include the following elements:

- Inventory of (Capital) Assets
- Condition Assessment
- Decision Support Tool(s) (approaches to decision-making)
- Investment Prioritization (Prioritized list of projects)

The CATA Transit Asset Management (TAM) plan is a living document developed to guide CATA's asset management activities to enhance safety, reduce maintenance costs, increase reliability, and improve system performance. The plan will also provide CATA with knowledge of existing asset condition, asset performance, and a target level of service, which will in turn provide the ability to effectively manage the asset lifecycle, confidently provide sustained performance, and justify funding requirements to deliver the required levels of service.

1.2 OVERVIEW OF CATA

Since 1972, CATA has provided public transportation services to the Greater Lansing area in Michigan, which includes Ingham County, portions of Eaton County, and Clinton County. CATA also provides services on the campus of Michigan State University (MSU). CATA seeks to provide quality transportation services that are safe, timely and cost-efficient, responding creatively to the diverse mobility needs of the region, and delivering this service by dedicated employees in a professional manner. The agency's mission is to meet the mobility needs of the region by providing innovative solutions in partnership with the communities they serve.

CATA's system is comprised of 33 routes in total, which produced nearly 10 million rides in Fiscal Year (FY) 2018. Services are provided through both fixed route (directly operated) and demand response (directly operated and contracted) operations to the communities within its jurisdiction. In FY2018, contracted (purchased transportation) services accounted for nearly 500,000 rides, about half of CATA's demand-response services.

A brief description of available services is provided below:

Fixed Route Service (Directly Operated)

- **Lansing Area Routes:** Lansing Area Routes cover the Greater Lansing Area by providing fixed route service to and from the CATA Transportation Center (CTC) located in downtown Lansing.
- **East Side Routes:** East Side Routes consist of six routes that serve East Lansing, Okemos, Haslett and southeast Lansing. These routes also serve the MSU campus.
- **MSU Campus Routes:** MSU campus routes are serviced by CATA during the fall and spring semesters.
- **Limiteds:** Limiteds provide direct service from Mason, Williamston and Webberville to downtown Lansing during the weekday morning and afternoon rush hours, making limited stops for a faster commute.
- **Entertainment Express:** Entertainment Express provides trolley service to the entertainment venues along Michigan and Grand River Avenues. The trolley travels between downtown Lansing and downtown East Lansing.
- **Community Event Routes:** Community Event Routes provide service during Greater Lansing's annual events and festivals.

CATA's Mission:
"To meet the mobility needs of our region by providing innovative solutions in partnership with the communities we serve."

CATA's Vision:
"CATA will ensure public trust by re-thinking regional mobility challenges and how we better engage those we serve."

Demand Response Service (Directly Operated)

- **Delhi/Meridian Redi-Ride:** Redi-Ride is an advance-reservation, curb-to-curb service that operates Monday through Saturday.
- **Lot Link:** Lot Link provides curb-to-curb transportation on MSU's campus seven days a week during the academic year. Lot Link operates in the evenings and on weekends to provide connections between some MSU parking lots and other campus locations.
- **Night Owl:** Night Owl provides late night/early morning campus service when other CATA services are not running. Service is restricted to campus boundaries.
- **Shopping Bus:** Shopping Bus provides service through regularly scheduled weekday trips from select senior housing complexes to grocery stores and shopping centers.
- **Spec-Tran Directly Operated:** Spec-Tran is CATA's Americans with Disabilities Act (ADA) complementary paratransit service for people unable to use CATA's fixed-route system. This is an advance reservation, curb-to-curb service that uses small lift-equipped buses and vans to transport customers.

Purchased Transportation Service (Contracted)

- **CATA Rural Service:** CATA rural service is a demand-response service that connects residents in Ingham County's outlying areas with other CATA services. Generally, residents in the southern half of rural Ingham County are transported to the Meijer in Mason to connect with other CATA services while residents in the northern half of the county's rural area travel on Rural Service to the Meridian Mall in Okemos where they make connections to other services. Some exceptions apply.
- **Mason Redi-Ride:** Redi-Ride is an advance-reservation, curb-to-curb service that operates Monday through Saturday.
- **Mason Connector:** The Connector offers regularly scheduled service (no reservation necessary) between the Mason Meijer and the South Pennsylvania Meijer. In Mason, buses also stop at the 55th District Court. Requests for service deviating up to one mile from the established route may be made if the trip is arranged in advance.
- **Williamston Connector:** The Connector offers regularly scheduled service (no reservation necessary) along Grand River Avenue between Webberville and the Meridian Mall. Buses serve the same stops as Route 48 and travel to the Okemos Meijer. Requests for service deviating within the city limits of Williamston may be made if the trip is arranged in advance. Trips must originate or conclude along the Connector route and be arranged at least 30 minutes in advance.
- **Spec-Tran Purchased:** Spec-Tran is CATA's Americans with Disabilities Act (ADA) complementary paratransit service for people unable to use CATA's fixed-route system. This is an advance reservation, curb-to-curb service that uses small lift-equipped buses and vans to transport customers. This service is contracted to a third party.

Furthermore, CATA expanded its service on the Michigan State University (MSU) campus resulting in a ridership increase of about 30%. However, this was associated with a net ridership decrease of about 6% on the routes around the MSU campus. Despite these service expansions, CATA's revenue vehicle fleet has not been significantly expanded to meet the existing need or future planned expansions.

1.3 TAM AND SGR POLICY

The TAM and SGR policy describes CATA's long-term approach to managing its assets. CATA's TAM and SGR policy is as follows:

> CATA will manage its portfolio of capital assets in a sustainable and effective manner by adopting an integrated lifecycle approach to ensure the safety, quality, cost-effectiveness and reliability of its transit services.

To achieve the policy, CATA will:

- Maintain an up-to-date inventory of all its capital assets used in the delivery of public transportation.
- Conduct timely assessments of asset condition to support a state of good repair
- Invest in and maintain assets with consideration of their cost, performance, and impact on service and customers over the course of their entire lifecycle
- Implement relevant systems and technologies and support their effective application to enhance the benefits of CATA's assets to make better and informed investment decisions in relation to those assets
- Measure asset performance to comply with federal regulations and to strengthen customer confidence in system safety and reliability
- Promote asset management culture within the agency and across all organizational levels

This policy is consistent with agency-wide strategic goals, organizational policies, and the transit asset management plan. CATA will ensure the successful implementation of this policy by providing a supportive environment with regard to organizational structure, management culture, funding, and technological capability.

1.4 Plan Organization

The TAM Plan provides a comprehensive picture of the CATA's capital assets and a detailed plan of asset management activities within the TAM Plan Horizon. The TAM Plan is organized under the following sections:

- **Section 2 Inventory of Capital Assets:** This section documents the CATA asset inventory, which includes all capital assets that CATA owns or has direct capital responsibility.
- **Section 3 Assessment of Asset Condition and Performance:** This section describes the process for assessing the condition of assets in the CATA inventory and summarizes the results of the analysis.
- **Section 4 Decision Support Tool:** This section describes the application of the decision support tool, an analytical process applied to examine asset renewal requirements and to support the prioritization of assets.
- **Section 5 Investment Prioritization:** This section summarizes the application of the decision support tool and identification of projects to be funded in the near term in CATA's capital program.
- **Section 6 Implementation Strategy:** This section lays out CATA's strategy to implement the TAM Plan.
- **Section 7 List of Key Annual Activities:** This section describes the key annual activities needed to implement the TAM Plan.
- **Section 8 Identification of Resources:** This section is a summary of the human and financial resources needed to implement this TAM Plan.
- **Section 9 Evaluation Plan:** This section describes how CATA will monitor, evaluate, and update the TAM Plan and related business practices.

2 INVENTORY OF CAPITAL ASSETS

2.1 INTRODUCTION

The Inventory of Capital Assets for the CATA TAM Plan comprises a listing of all rolling stock, equipment, and facility assets owned, operated, and/or maintained by the agency to support the provision of public transportation. Federal law defines public transportation as “regular, continuing shared-ride surface transportation services that are open to the general public or open to a segment of the general public defined by age, disability, or low-income; and does not include the following:

- Intercity passenger rail transportation;
- Intercity bus service;
- Charter bus service;
- School bus service;
- Sightseeing service;
- Courtesy shuttle service for patrons of one or more specific establishment; or
- Intra-terminal or intra-facility shuttle services” (49 U.S.C. §5302 (14)).

The asset inventory is maintained as a database table in the decision support tool, which will be described later in ***Section 4*** *Decision Support Tool*. The sections that follow describe the data assembly process for the asset inventory and summarize the various assets by category.

2.1.1 Summary of Data Assembly

Data assembly included the following activities:

Assessed data readily available: Established information from the existing maintenance and finance databases as a baseline and identified data available in other formats to evaluate conformity to the desired asset classification needs. Information reviewed included recent asset condition reports, existing rolling stock and equipment inventories, fixed asset inventories and capital asset lists.

Interviewed CATA staff: This included a discussion of previous studies and inventories undertaken. Key staff interviews were used to capture personal knowledge of assets and technical study information. Key personnel including the Executive Director, Maintenance Manager, Facilities Manager and the Director of Finance, were also interviewed to help identify the status of CATA assets, day-to-day issues, and problem areas.

Identified missing and/or outdated information: Identified inventory and condition information that needed to be updated in the existing inventories.

Conducted field data collection: Once the existing data was collected and missing data identified, additional information requests to CATA staff were initiated to collect the required information.

The following base level of detail was applied in identifying components of the asset inventory:

- Asset ID
- Mode Code
- Description
- Asset Type Code
- Category
- Sub-Category
- Element
- Sub-Element
- Quantity
- Units

- Date Built
- Rehab Status
- Rehab Date
- Cost Year
- Agency Soft Cost
- Unit Replacement Cost
- Current Dollars Total
- Total Replacement Cost
- Priority Status
- Condition Rating
- Data Date
- Data Source
- Agency Useful Life
- VIN
- Mileage
- License Number
- Lifecycle Status
- Fuel Type
- Fixed Asset System (FAS)
- Original Cost
- Vehicle Length
- Seating Capacity
- Notes
- Existing/Expansion
- Agency Asset ID
- Make/Model
- Address
- Department Asset Owner

Special attention was given to determine the date built (i.e., service year), mode code (demand response or motor bus), lifecycle status (contingency, active, or inactive), and unit replacement cost. Informed assumptions were made as to the service year if the information was not readily available from existing records

2.2 Summary of Asset Inventory

This section provides a summary of the asset inventory utilized in the SGR analysis. There are 354-line items in the CATA Asset Inventory consisting of vehicle, station and facility assets. For the purposes of this analysis, facility and station assets are broken down into subcomponent elements consistent with the management of those assets. Additionally, the inventory has the following characteristics:

- **Total Replacement Value:** The combined assets in the inventory have a total replacement value of $121.3M. This consists of $80.5M in vehicles, $34.1M in facility assets (i.e., maintenance and administrative), and $6.8M in station assets.
- **Overall Average Age:** The overall weighted average age of assets is 11.2 years when weighted by replacement value. The average age is used for descriptive purposes only as CATA assets vary widely in age.
- **Average Percentage of Useful Life Remaining:** The average percentage useful life remaining is 40.3%, meaning that on average, CATA assets are just over halfway through their useful lives and may require some mid-life investments to meet their entire suggested useful lives.

Table 2-1 provides a snapshot of the asset inventory as applied in the analysis.

Table 2-1: CATA Asset Inventory Snapshot

Measure	Value
Number of asset line items	354
Total replacement cost (2018$)	$121.3M
Average age of assets (by replacement value)	11.2 years
Average percentage of useful life remaining (by replacement value)	40.3%

Figure 2-1 shows the breakdown of replacement value by asset category: vehicles (revenue and non-revenue), facilities (administrative/maintenance) and stations (passenger facilities). Further details of each asset category are provided in Table 2-2.

Figure 2-1: Replacement Value by Asset Category (Millions of 2018$)

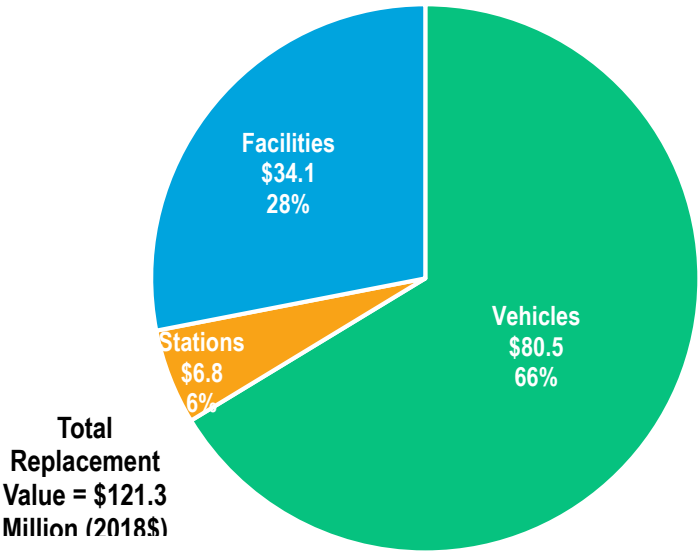


Table 2-2 provides a breakdown of the three asset categories (replacement costs rounded to the nearest million). For the vehicle category, buses, trolleybuses, vans, and cutaways make up the revenue vehicle fleet used to provide both fixed route and demand respond service. CATA's revenue vehicle fleet does not include any autos; however, the asset hierarchy adopted for the inventory includes autos in the asset type name. The non-revenue vehicles in the inventory are used to support CATA's various services.

Station assets include access (walkways/parking lots), building components (e.g., roof, HVAC, lighting, etc.), and signage and graphics. Facility assets also include building components as well as maintenance equipment. Further details of the asset categories are provided in the subsequent sections.

Table 2-2: Asset Replacement Value by Asset Type

Asset Type	Replacement Cost (Millions of 2018$)
Vehicles Total	**$80.5**
Buses	$71.2
Trolleybuses	$0.9
Vans, Cutaways and Autos	$7.2
Non-revenue vehicles	$1.3
Stations	**$6.8**
Access	$1.3
Building Components	$5.4
Signage & Graphics	$0.0
Facilities	**34.1**
Building Components	$28.6
Maintenance Equipment	$5.5
Total	**$121.3**

2.2.1 Vehicles

This category of assets consists of revenue and non-revenue (service/equipment) vehicles. There are 248 vehicles in the inventory, including 178 directly operated and 70 contracted vehicles. CATA owns all 248 vehicles. Of this number, 212 are used in revenue service and 36 in non-revenue service. Table 2-3 summarizes the quantities and replacement costs for CATA's vehicles type, mode and operator.

Table 2-3: CATA Vehicles Summarized by Operator and Mode

Operator / Mode	Asset Type	Quantity	Average Mileage	Total Replacement Cost ($000s)
Directly Operated (DO)				
Motor Bus (MB)	Articulated Bus (60 ft)	7	362,760	$5,281
	Articulated Bus (60 ft) - Hybrid	5	288,893	$5,713
	Bus (40 ft) - Diesel	36	577,974	$17,393
	Bus (40 ft) - Hybrid	55	246,181	$42,214
	Trolleybus	2	108,812	$867
	Subtotal	**105**	**367,128**	**$71,468**
Demand Response (DR)	Bus (<30 ft) - Hybrid	2	74,833	$458
	Bus (30 ft)	1	152,635	$128
	Medium-Duty Van	34	179,575	$3,384
	Subtotal	**37**	**173,185**	**$3,971**
Non-Revenue Vehicles	Car	26	30,152	$695
	Truck	10	52,957	$567
	Subtotal	**36**	**36,486**	**$1,261**
	DO Total	**178**	**260,483**	**$76,914**
Purchased Transportation (PT)				
Demand Response (DR)	Medium-Duty Van	17	193,568	$1,623
	Minivan	53	130,992	$2,176
	PT Total	**70**	**146,189**	**$3,799**
	Grand Total	**248**	**227,835**	**$80,506**

2.2.2 Stations/Passenger Facilities

CATA owns and operates three passenger facilities: two transit stations and a passenger terminal. The CATA Transportation Center (CTC), located in downtown Lansing, is the central boarding hub and transfer point for 16 CATA routes, and Greyhound and Indian Trails intercity bus services. The station contains a customer information center, on-site security, and a coffee shop. CATA's second station, the Capital Area Multimodal Gateway is operated by CATA and is the authority's newest facility. The Gateway offers access to rail, city, regional and national bus lines, and local taxi services. The Gateway is served by three CATA fixed-routes. The third passenger facility, MSU-CTC, is located on the Michigan State University (MSU) campus adjacent to one of several campus parking ramps, which serves as the main boarding center for CATA routes serving MSU. Table 2-4 summarizes the replacement costs for CATA's stations/passenger facilities.

Table 2-4: Summary of CATA Stations/ Passenger Facilities (Address and Replacement Cost)

Address	Year Built	Element	Total Replacement Cost ($000s)
CATA Transportation Center (CTC) 420 South Grand Ave., Lansing, MI 48933	1998	Building Components	$3,086
		Site	$196
		Subtotal	**$3,282**
Capital Area Multimodal Gateway[1] 1240 S. Harrison Road, East Lansing 48823	2015	Building Components	$1,794
		Signage & Graphics	$54
		Parking (Access)	1,335
		Subtotal	**$3,183**
MSU-CTC (Shaw Parking Ramp)[2] MSU Campus, East Lansing, MI 48823	2000	Concrete Pavement	$40
		Interiors (furniture)	$323
		Subtotal	**$363**
		Total	**$6,828**

2.2.3 Facilities

CATA's headquarters serves both administrative and maintenance purposes. The facility is home to the executive office, all administrative departments, and a bus storage facility, which houses CATA's directly operated fleet, maintenance and operations. Table 2-5 the replacement cost for CATA's facility.

Table 2-5: Summary of CATA Facilities (Address and Replacement Cost)

Asset Type	Address	Year Built	Total Replacement Cost ($000s)
CATA Headquarters (Administrative and Maintenance)	4615 Tranter Street, Lansing, MI 48910	1978	$34,055
Building Components	-	-	$28,559
Maintenance Equipment	-	-	$5,496
Total	**-**	**-**	**$34,055**

[1] CATA owns the Multimodal Gateway building but does not own the land on which it is built.
[2] CATA does not own the land at the MSU-CTC but is responsible for maintain the parking ramp and waiting area.

3 ASSESSMENT OF ASSET CONDITION AND PERFORMANCE

3.1 INTRODUCTION

The FTA Final Rule 49 USC 625 requires that all TAM Plans include a condition assessment of all assets for which an agency has direct capital responsibility. The Final Rule also establishes state of good repair (SGR) performance measures for capital assets and requires agencies to set performance targets for each of these measures. These performance measures are to help agencies determine the extent to which an asset is in a state of good repair. The Final Rule defines an asset in a state of good repair as one that meets the following standards:

- "The asset is able to perform its desired function;
- The use of the asset in its current condition does not pose an identified unacceptable safety risk; and
- The life-cycle investment needs of the asset have been met or recovered, including all scheduled maintenance, rehabilitation, and replacements."

Assets not in a state of good repair increase safety risks, decrease system reliability, increase maintenance costs and lower overall system performance.

This TAM Plan includes both an assessment of ***asset condition*** and ***calculation of asset performance*** required for annual National Transit Database (NTD) reporting. Asset condition is evaluated using the Transit Economic Requirements Model (TERM) Lite scale. Asset performance is calculated using the FTA established performance measures for the three applicable asset categories.

The sections that follow summarize the condition and performance of CATA's assets.

3.2 ASSET CONDITION

3.2.1 Previous Work

In February 2018, CATA employed the services of an independent contractor to perform a fleet condition audit and evaluate its maintenance practices. The primary purpose of the assessment was to identify and report safety needs, to investigate reported problems with parts availability, to identify any staffing shortfalls, and to determine if maintenance best practices were being used by the agency. The results of the inspections provided a baseline for improving vehicle maintenance and service quality. Overall, 128 vehicles were inspected and maintenance records for the associated vehicles were reviewed. The vehicles inspected comprised cutaways, 40 ft buses (hybrid and diesel), 60ft articulated hybrid buses, and 28ft trolleys.

The field inspectors assessed the physical conditions of the vehicles, drew fluid samples, and conducted limited test drives. The results of the fleet audit were shared with the CATA management and maintenance staff. The contractor also provided recommendations and other general observations. Since then, CATA's maintenance team has continued to work towards improving the overall vehicle condition.

3.2.2 Condition Assessment Methodology

For this TAM Plan, condition was assessed for all assets owned by CATA including those for which CATA has direct capital responsibility. The FTA TAM/NTD crosswalk shown in Table 3-1 served as a guide for selecting asset categories required in the TAM Plan. The condition assessment methodology for vehicles differed from that for stations and facilities. However, all assets were rated on the 1-5 FTA TERM Lite scale shown in Table 3-2.

Table 3-1: TAM/NTD Crosswalk

Assets	TAM Plan Inventory	TAM Plan Condition Assessment	NTD Inventory & Condition Submittal	SGR Targets
Revenue Vehicles				
Owned	**Yes**	**Yes**	**Yes**	**Yes**
Direct Capital Responsibility	**Yes**	**Yes**	**Yes**	**Yes**
3rd Party Owned (Direct Capital Responsibility)	**Yes**	**Yes**	**Yes**	**Yes**
3rd Party Owned (No Direct Capital Responsibility)	**Yes**	No	**Yes***	No
Equipment: Non-Revenue Vehicles				
Owned	**Yes**	**Yes**	**Yes**	**Yes**
Direct Capital Responsibility	**Yes**	**Yes**	**Yes**	**Yes**
3rd Party Owned	No	No	No	No
Equipment over $50,000 in Acquisition Value				
Owned	**Yes**	**Yes**	No	No
Direct Capital Responsibility	**Yes**	**Yes**	No	No
3rd Party Owned	No	No	No	No
Equipment				
Under $50,000 in Acquisition Value	No	No	No	No
Facilities				
Owned	**Yes**	**Yes**	**Yes**	**Yes**
Direct Capital Responsibility	**Yes**	**Yes**	**Yes**	**Yes**
3rd Party Owned (Direct Capital Responsibility)	**Yes**	**Yes**	**Yes**	**Yes**
3rd Party Owned (No Direct Capital Responsibility)	**Yes**	No	**Yes****	No

Source: Frequently Asked questions: TAM/NTD Crosswalk. Available at <www.transit.dot.gov>

*Representative vehicles

**Yes, only for passenger facilities

Table 3-2: FTA TERM Rating Scale

TERM Rating	Condition	Description
Excellent	5	No visible defects, near-new condition
Good	4	Some slightly defective or deteriorated components
Adequate	3	Moderately defective or deteriorated components
Marginal	2	Defective or deteriorated components in need of replacement
Poor	1	Seriously damaged components in need of immediate repair

As stated previously, the condition rating methodology for vehicles differed from those for facility and station assets. Vehicle condition was estimated using the TERM Lite asset decay functions, which are a function of vehicle type, useful life, and age.

Condition ratings for facility and station assets were developed by field evaluations in accordance with the FTA TAM Facility Performance Measure Reporting Guidebook. In October 2018, onsite evaluations were conducted for each facility and station asset listed in the asset inventory. Interviews with the CATA Facilities Manager were also conducted for input regarding day-to-day issues, problem areas, and access to facility records. As-built plans for assets were also reviewed to finalize asset identification and augment the data collected. This included information on renewals/ongoing maintenance to identify any recent replacements and upgrades of facility subcomponents. Field evaluations involved

hands-on inspections of assets and engineering judgement to identify whether further evaluation or investigations were needed.

The condition assessments addressed the following subcategories and elements:

- **Facilities:**
    - *Access and Parking*: Site (asphalt and concrete)
    - *Building Components:* Access and parking, boilers, electrical systems, elevators and conveying systems, exterior, fire alarms, generators, HVAC, interiors, plumbing, roof, and other components
    - *Maintenance Equipment:* Air compressors, brake lathe, bus washers, hoists, lifts and miscellaneous bus equipment
- **Stations:**
    - *Access*: Parking lot
    - *Building Components*: Electrical, exterior, fire alarms, HVAC interiors, lighting, plumbing, roof, attendant booth, furniture
    - *Signage and graphics*: Electronic signage

Results of the condition assessments were documented in field data collection sheets and photographs, which identified the locations of deficiencies; the sheets also summarized the condition of the inspected CATA assets.

Each CATA facility and station was therefore rated at the subcomponent level using the TERM Rating Scale. Sub-component ratings were subsequently aggregated to calculate an overall condition rating for each facility using a weighted average method. Final condition station ratings were calculated in the following manner:

$$Facility\ Rating = \frac{\Sigma(\text{Subcomponent TERM Score} \times Subcomponent\ Replacement\ Costs)}{\Sigma(Subcomponent\ Replacement\ Costs)}$$

3.2.3 Summary of Results

Table 3-3 summarizes the distribution of asset value by condition rating for the different types of CATA assets. The results show that the majority (64%) of CATA's asset value is concentrated on assets rated at a 3.0 or higher, which means that more than half of CATA's capital assets are in adequate, good or excellent condition. Conversely, 35% of the total asset value is concentrated on assets with condition ratings of less than 3.0 and therefore in marginal or poor condition.

It is worth noting that, by default, the TERM Lite decay curves used in the condition calculation for vehicles are set to reach the useful life of an asset at a rating of 2.5. Therefore, some assets rated as being in marginal condition may not yet have reached their useful life.

Table 3-3: Distribution of CATA Assets by Condition Rating and Replacement Cost* ($000s)

Asset Type	5.0	4.9 - 4.0	3.9 – 3.0	2.9 – 2.0	1.9 – 1.0	Total
Facilities	$0	$15,059	$16,220	$2,777	$0	$34,055
Stations	$0	$5,615	$806	$347	$0	$6,768
Revenue Vehicles	$0	$5,424	$34,678	$16,145	$22,998	$79,244
Non-Revenue Vehicles	$23	$369	$114	$186	$570	$1,261
Total	$23	$26,466	$51,817	$19,454	$23,568	$121,329
Percent of Total	**0.0%**	**21.8%**	**42.7%**	**16.0%**	**19.4%**	**100.0%**

*All costs are in 2018 dollars

Table 3-4 provides a further breakdown of vehicle condition rating and replacement cost for revenue and non-revenue vehicles. Vehicle ULBs are reached at a TERM condition rating of 2.5. Thus, vehicles with a rating at or less than 2.5 automatically enter the SGR backlog. Approximately 50% of CATA's vehicle assets are in adequate condition or better based on the TERM scale.

Table 3-4 Distribution of Vehicles by Condition Rating and Replacement Cost ($000s)

Vehicle Type	5.0	4.9 - 4.0	3.9 – 3.0	2.9 – 2.0	1.9 – 1.0	Total
Bus	$0	$4,957	$33,694	$9,863	$22,674	$71,187
Trolleybus	$0	$0	$0	$867	$0	$867
Vans, Cutaways and Autos	$0	$467	$984	$5,414	$324	$7,190
Car	$23	$369	$0	$51	$252	$695
Truck	$0	$0	$114	$135	$318	$567
Total	$23	$5,792	$34,792	$16,331	$23,568	$80,506
Percent of Total	**0.0%**	**7.2%**	**43.2%**	**20.3%**	**29.3%**	**100.0%**

*All costs are in 2018 dollars

Table 3-5 provides further details for vehicle condition showing a summary of vehicle counts by condition rating and replacement cost for revenue and non-revenue vehicles. Vehicle ULBs are reached at a TERM condition rating of 2.5.

Table 3-5 Distribution of Vehicle Counts by Condition Rating and Replacement Cost ($000s)

Vehicle Type	5.0	4.9 - 4.0	3.9 – 3.0	2.9 – 2.0	1.9 – 1.0	Total
Bus	0	7	44	12	43	106
Trolleybus	0	0	0	2	0	2
Vans, Cutaways and Autos	0	12	11	78	3	104
Car	1	15	0	2	8	26
Truck	0	0	2	4	4	10
Total	1	34	57	98	58	248
Percent of Total	**0.4%**	**13.7%**	**23.0%**	**39.5%**	**23.4%**	**100.0%**

*All costs are in 2018 dollars

3.3 Asset Performance and Targets

The Final Rule establishes state of good repair (SGR) performance measures for capital assets to be used by agencies in target setting. Asset performance for CATA assets was therefore calculated using the FTA established performance measures for the three applicable asset categories:

- ***Rolling Stock****:* The performance measure for rolling stock is the percentage of revenue vehicles within a particular asset class that have either met or exceeded their ULB. The NTD lists 23 types of rolling stock with targets set for each mode an agency has in its inventory.
- ***Equipment***: (non-revenue) service vehicles. The performance measure for non-revenue vehicles (including support and maintenance vehicles) is the percentage of those vehicles that have either met or exceeded their ULB. The FTA only requires three classes of non-revenue service vehicles to be reported for target setting: (1) *automobiles*, (2) *other rubber tire vehicles*, and (3) *other steel wheel vehicles*.
- ***Facilities***: The performance measure for facilities is the percentage of facilities within an asset class, rated below condition 3 on the TERM scale. Four types of facilities are reported to NTD, but only two groups are used for target setting: (1) *administrative and maintenance*, and (2) *passenger and parking*.

The Useful Life Benchmark or ULB is the expected useful life or the acceptable period of use in service for a capital asset, as determined by a transit provider based on an analysis of their data. The FTA also provides default ULBs, which represent the maximum useful life, based on the TERM model and may be used by agencies in calculating asset performance. Table 3-4 summarizes the current asset performance for CATA assets and establishes the FY19 performance targets for NTD reporting.

As shown, the average age for CATA vehicles either is close to the ULB or has already exceeded the stated ULB (as in the case of equipment vehicles). In general, maintaining vehicles at an average age that is half the average ULB ensures that vehicles are replaced on time with minimal impact on service. For example, a vehicle fleet with a 12-year ULB can be kept at average fleet age of six years. CATA's demand response fleet is generally younger than its motor bus fleet due to the shorter ULBs.

In terms of current performance, CATAs motor bus fleet (i.e., fixed route) has a rating of 48% beyond useful life. This means that nearly half of CATA's motor bus fleet have either reached or exceeded their designated useful lives. On the other hand, the demand response fleet has relatively younger vehicles making the current performance rating 26% beyond useful life. The vehicle equipment (non-revenue vehicles) assets have a 50% beyond useful life performance rating, with the oldest vehicles being assets classified as trucks and other rubber tire vehicles (this includes pick-up trucks, sports utility vehicles, vans, and minivans). Finally, none of CATA's whole facilities are rated below a 3.0 on the FTA TERM Scale, therefore, the current performance is 0% for all whole facilities, meaning that all of CATA's three facilities are in a state of good repair.

Based on the investment prioritization and subsequent planned asset investments, the FY19 targets presented in Table 3-6 were calculated.

Table 3-6: FTA TAM Performance Measures and FY19 Targets for CATA

Category	Asset Class	Quantity	Average ULB (Yrs.)	Average Age (Yrs.)	Total Exceeding ULB	Current Performance	FY19 Performance Targets
Rolling Stock	**Motor Bus**	**105**	**12.0**	**10.0**	**50**	**48%**	**26%**
	Articulated Bus (AB)	12	12.0	12.5	7	58%	25%
	Bus (BU)	91	12.0	9.6	43	47%	26%
	Trolleybus (TB)	2	12.0	9.0	0	0%	0%
	Demand Response	**107**	**5.6**	**4.5**	**28**	**26%**	**0%**
	Bus (BU)	3	10.7*	8.7	0	0%	0%
	Cutaway (CU)	51	7.0	6.0	18	35%	0%
	Minivan (MV)	53	4.0	2.8	10	19%	0%
	Rolling Stock Total	**212**	**8.8**	**7.2**	**78**	**37%**	**12%**
Equipment	Automobiles	26	4.0	4.1	10	38%	15%
	Trucks and Other Rubber Tire Vehicles	10	5.0	7.0	8	80%	80%
	Equipment Total	**36**	**4.3**	**4.9**	**18**	**50%**	**33%**
Category	**Asset Class**	**Quantity**	**Average TERM Rating (1-5)**	**Average Age (Yrs.)**	**Facilities Below 3.0 TERM Rating**	**Current Performance**	**FY19 Performance Targets**
Facilities	Passenger / Parking	3	3.8	11.1	0	0%	0%
	Administrative / Maintenance	1	3.4	15.1	0	0%	0%
	Facilities Total* **	4	3.4	14.0	0	0%	**0%**
	Grand Total	**252**	**-**	**11.2****	**96**	**38%**	**15%**

* ULB for DR Buses differs by vehicle length (i.e., 7 yrs. and 12 yrs.)

** Average age for all assets is weighted by replacement value

*** Condition rating represents whole facilities below 3.0, not facility subcomponents

4 DECISION SUPPORT TOOL

4.1 INTRODUCTION

This section describes the decision support process for the allocation of CATA's capital investments. It includes a discussion of the agency's needs with regard to allocating limited resources and prioritizing capital investment projects to achieve CATA's objectives. Therefore, this section discusses recommendations for the selection and implementation of a decision support tool.

Additionally, an initial decision support tool used in facilitating the submission of the TAM Plan is presented and described. The process for performing a state of good repair analysis, and the overall tool's methodology are described in ***Section 4.3*** *SGR Analysis Process and Methodology*.

4.2 DECISION SUPPORT TOOL NEEDS ASSESSMENT

The purpose of the decision support tool is to optimize the allocation of limited resources and prioritize capital investments. CATA's perspective on achieving this objective was not limited to software, but also, a clear methodology and business processes that support the achievement of CATA's TAM objectives. A needs assessment was conducted to help develop a framework for such a tool.

CATA explicitly identified its needs and expressed interest in a decision support tool and process that could address the following:

- Optimize the prioritization of proposed capital projects and allocation of limited resources, at both the agency level and for individual departments
- Already be fully functioning at one or more existing business entities, preferably a transportation service provider
- Representative of the prevailing technology available on the market today
- Incorporate both quantitative and qualitative information
- Allow for collaboration by multiple stakeholders throughout the CATA organization
- Aid in improving evaluation criteria/weights for prioritizing goals, objectives, and capital projects, in line with existing legislation
- Model multi-year resource allocation scenarios
- Fully compatible with CATA's existing technology infrastructure
- Allow CATA staff to independently operate the tool following appropriate training
- User friendly in both its implementation and ongoing operation
- Support decision making at different levels of the organization

Further discussions with CATA revealed details on specific needs for their asset management system. These include:

- Long-term fleet planning
- Bus mileage and servicing data collection
- Bus parking mapping
- Fleet data access improvements

Following this, specific recommendations and strategies were identified to address CATA's asset management system needs, including specifications for a decision support tool. This is detailed under *Asset Management System Improvements* in ***Section 6*** *Implementation Strategy*.

4.3 SGR Analysis Process and Methodology

An SGR analysis was conducted to evaluate the capital investment needs for CATA assets and to prioritize the identified needs based on the previously defined criteria. The Transit Economic Requirements Model (TERM Lite) was selected to carry out this analysis and to meet all federal requirements for the TAM Plan.

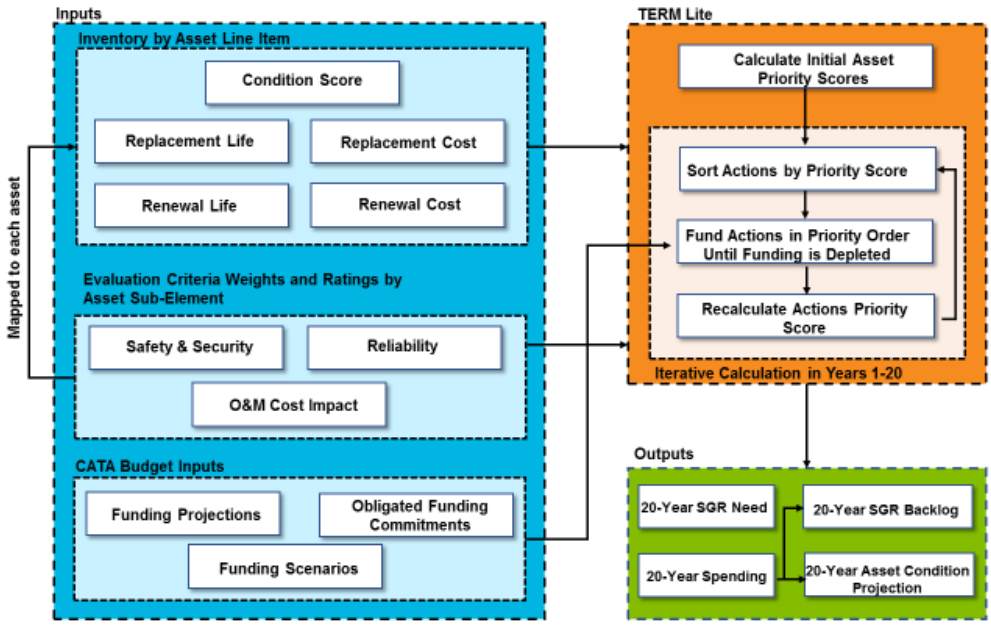
The TERM Lite tool runs on a Microsoft Access platform and allows users to evaluate and prioritize the lifecycle costs for transit assets. Table 4-1 compares CATA's stated decision support tool needs and TERM Lite capabilities.

Table 4-1 Decision Support Tool for CATA Needs and TERM Lite Capabilities

CATA Need	Capability	Notes
Optimize the prioritization of proposed capital projects and allocation of limited resources, at both the agency level and for individual departments / Support decision making at different levels of the organization	✓	Provided appropriate attribute information is included to asset line items
Already be fully function at one or more existing business entities; preferably a transportation service provider	✓	Developed by the FTA
Representative of the prevailing technology available on the market today	✓	Other technology available with broader transit asset management capabilities
Incorporate both quantitative and qualitative information	-	Analyses can only be conducted on quantitative data
Allow for collaboration by multiple stakeholders throughout the CATA operation	-	Access database platform used only allows single user
Aid in improving evaluation criteria/weights for prioritizing goals, objectives and capital projects, in line with existing legislation	✓	Uses fixed set of criteria and allows one user-defined criterion
Model multi-year resource allocation scenarios	✓	Can model 20-year and 30-year scenarios only
Fully compatible with CATA existing technology infrastructure	✓	Potential to use exports from existing CATA EAM system, although some post processing may be required
Allow CATA staff to independently operate the tool following appropriate training	✓	Staff can be trained
User friendly in both its implementation and ongoing operation	✓	User friendly and requires minimal knowledge of Microsoft Access

Figure 4-1 summarizes the SGR analysis process used in TERM Lite. The sections that follow provide a general description of the analysis process.

Figure 4-1 State of Good Repair Analysis Process



4.3.1 TERM Lite Inputs

TERM Lite required the following three primary inputs to run the SGR analysis:

- Asset inventory and asset type data
- Evaluation criteria
- Budget constraints

4.3.1.1 Asset Inventory and Asset Type Data

The asset inventory included the following data fields for each line item, based on field observations, professional judgment, and industry standards:

- **Replacement life:** Determined using CATA standards and TERM Lite recommended values.
- **Condition rating:** A combination of field observations and professional judgment was used to determine the asset condition ratings. The condition assessment process is described in *Section 3 Assessment of Asset Condition and Performance*.
- **Replacement cost:** CATA and industry standards were applied to assign weighted replacement costs to all assets.
- **Renewal cost:** For applicable assets, these costs were assigned to asset types as a percentage of asset replacement costs. These percentages were linked to each asset based on asset type.
- **Renewal life:** For applicable assets, these costs were assigned to asset types as a percentage of assets replacement life. These percentages were linked to each asset based on asset type.

Each of the CATA asset line items included in the inventory was categorized into one of the 600 asset sub-elements applied in TERM Lite. These sub-elements were arranged in a hierarchy summarized below:

- **Asset category:** The five asset categories in TERM Lite are facilities, guideway elements, stations, systems, and vehicles. Of these, three were applicable to CATA's assets: facilities, stations, and vehicles.
- **Asset subcategory:** The five asset categories were further broken out into 32 subcategories.

- **Asset element:** The 32 subcategories were further broken out into a total of 152 elements.
- **Asset sub-element:** The 152 elements were further broken out into a total of 600 sub-elements.

Note that the CATA asset inventory does not include assets in every one of the 600 asset sub-elements. (The asset classification in TERM Lite was created to be comprehensive for all transit agencies nationwide, including modes not operated by CATA).

4.3.1.2 Evaluation Criteria

TERM Lite is capable of prioritizing asset investments using the following criteria:

- **Asset Condition:** Based on age. Declining condition yields higher prioritization score
- **Reliability:** Reduced risk of service failures/disruptions
- **Safety/Security:** Reduced risk of injuries, fatalities, and property damage
- **O&M Costs:** Impact on operating and maintenance costs
- **User Defined:** Defined based on impact of reinvestment by asset type

Detailed descriptions of the evaluation criteria weights and ratings are provided under the priority score calculation description in ***Section 4.3.2*** *TERM Lite Analysis.*

4.3.1.3 Annual Budget Constraints

SGR analyses in TERM Lite can be run under financially constrained and financially unconstrained scenarios. Results of the unconstrained and constrained analyses ran on CATA assets are described in ***Section 5*** *Investment Prioritization*. Useful scenarios that can also be applied in TERM Lite are shown in Table 4-2.

Table 4-2 Useful TERM Lite Analysis Scenarios

Scenario	Purpose/Value
Maintain Current Spending	SGR backlog and prioritization impact of reinvesting at the current (historical) rate
Maintain Backlog	Level of investment that will maintain current size of backlog (either in dollar terms or as a percent of all asset holdings)
SGR in 20 Years	Level of annual reinvestment required to eliminate SGR backlog in 20 years
Unconstrained	Average annual reinvestment if there was no backlog
“Planned” or “Budgeted”	Impact of planned year by year funding amounts on future SGR backlog

4.3.2 TERM Lite Analysis

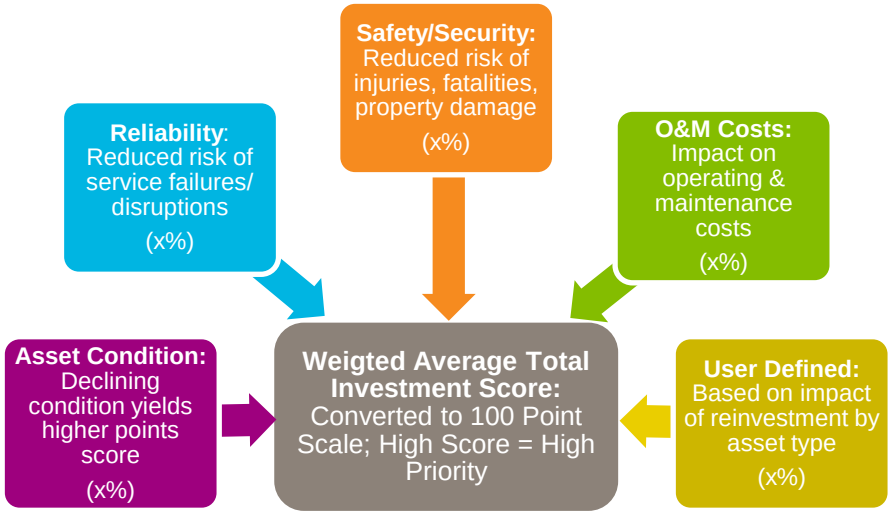
This section describes the TERM Lite analysis process which includes the calculation and sorting of priority scores, funding actions, and finally, aging assets and recalculating priority scores. The section describes the tool’s analysis capabilities and options available for defining different analysis scenarios. The specific options selected for analyzing investment options for CATA’s assets are described in ***Section 5*** *Investment Prioritization.*

4.3.2.1 Step 1: Calculate Priority Scores

TERM Lite first assigns a set of ratings to each asset class on a scale from five (most impact) to one (least impact). As shown in Figure 4-2, the model applies these ratings to the weights described below to calculate an initial set of asset priority scores on a scale of 100 (highest priority) to zero (lowest priority), (including fractional values). The priority

scores are used to sort all asset line items by priority to identify the assets in most need of investment in a budget-constrained scenario.

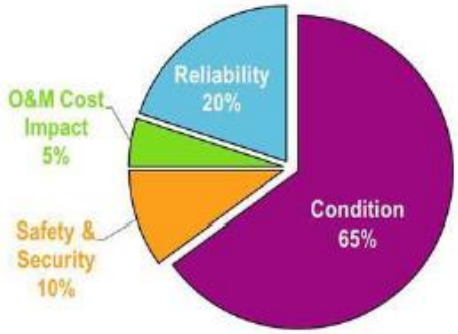
Figure 4-2 Multi-Criteria Decision Analysis Capability in TERM Lite



The four standard evaluation criteria used to calculate asset priorities are then weighted using either the default weights in TERM Lite or CATA-specific weights. A user-defined criterion may also be defined in TERM Lite based on CATA's experience or priorities. In that case, all five weights used should add up to 100%. For this TAM Plan, TERM Lite was set to apply 100% of the weights to asset condition.

Figure 4-3 summarizes TERM Lite's default weights. The subsequent sections describe the evaluation factors used in TERM Lite for the SGR analysis.

Figure 4-3 Asset Evaluation Factors and Weights



Asset Condition

As applied in TERM Lite, asset condition is a function of age and asset type and differs from the condition ratings observed through field observations (conducted prior to the SGR analysis). The asset decay curves used in calculating asset condition ratings for all assets vary by an asset's useful life. New assets are assigned ratings of 5.0 and decay to a rating of 1.0, based on useful life. These curves are calibrated to trigger asset renewal at a rating of 2.5 (i.e., the end of an asset's useful life). In the case of CATA's assets, initial useful life values for facility and station subcomponents were adjusted until the resulting ratings were within ten percent of the observed field conditions. The condition priority score calculation is as follows:

$$Asset\ Condition\ Priority\ Score = 6 - Condition\ Rating$$

For example, a new asset with a condition rating of 5.0 would have a condition priority score of 1.0, while a highly deteriorated asset with a condition rating of 2 would have a high condition priority score of 4. Table 4-3 is a summary of the relationship between an asset's condition rating and its condition priority score.

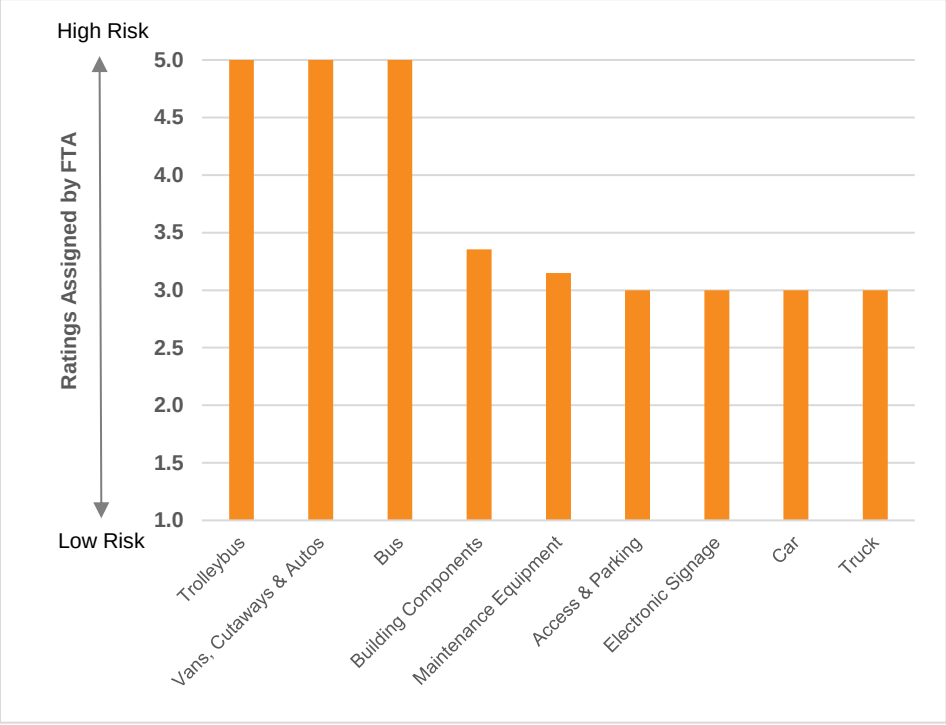
Table 4-3 Summary of Condition Ratings and Condition Priority Scores

Description	Condition Rating	Condition Priority Score
Excellent	5	1
Good	4	2
Adequate	3	3
Marginal	2	4
Poor	1	5

Safety and Security

The default weight for the safety and security risk rating is 10 percent of an asset's total priority score. Figure 4-4 summarizes the safety and security risk ratings of the nine element types included in the CATA inventory. Each of the 600-asset category/ subcategory/element/sub-element types included in TERM Lite has a default safety and security risk rating that is a whole number between 1 and 5. In Figure 4-4, these ratings were calculated into an average rating.

Figure 4-4 Safety and Security Risk Ratings by Asset Type



The priority score for safety and security is:

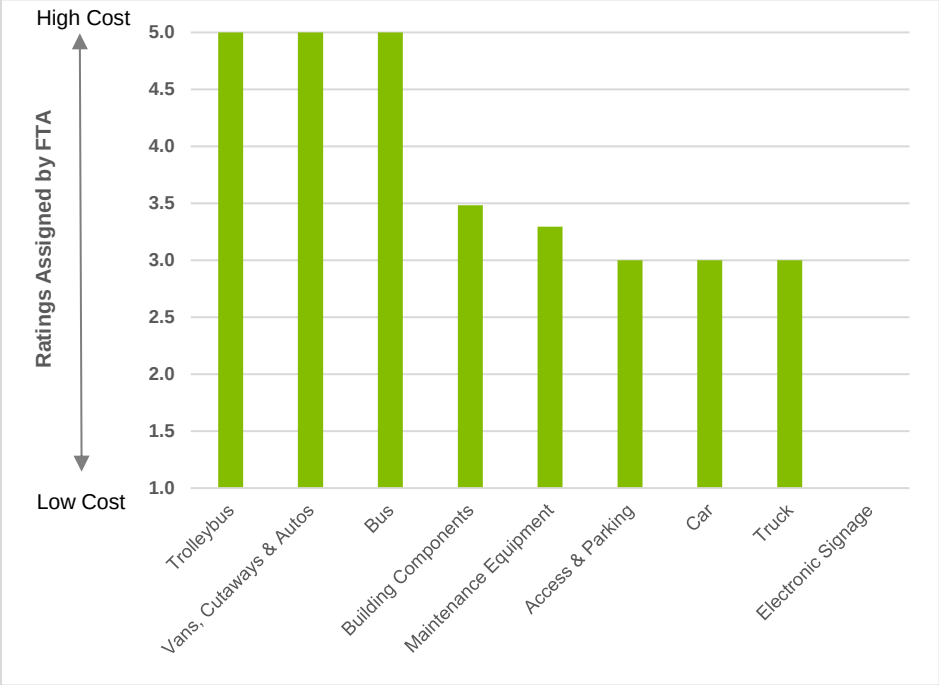
$$Safety\ and\ Security\ Priority\ Score = \frac{Safety\ and\ Security\ Risk\ Rating \times Asset\ Condition\ Score}{5}$$

The safety and security priority score incorporates asset condition because safety risk is not static over the life of an asset. As an asset deteriorates, the safety risks increase.

O&M Cost

The default weight for the O&M cost impact rating is 5 percent of an asset's total priority score. Figure 4-5 summarizes the O&M cost impact ratings of the nine element types included in the CATA inventory. All 600-asset category/subcategory/element/sub-element types included in TERM Lite have an assigned O&M cost impact rating that is a whole number between 1 to 5. In Figure 4-5, these ratings were calculated into an average rating. The O&M cost impact priority score does not change over the life of an asset.

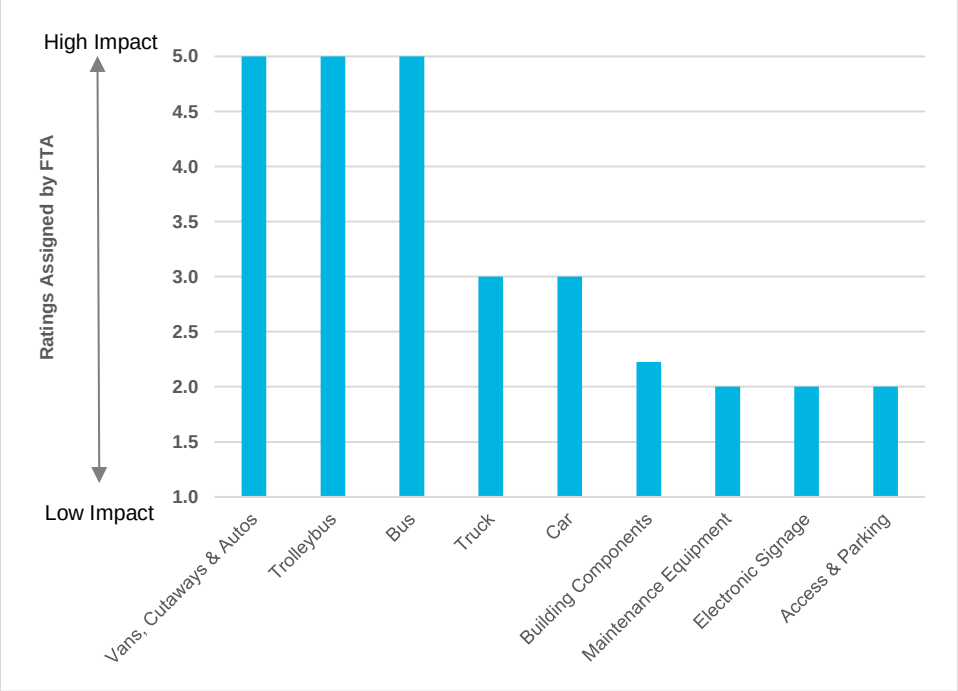
Figure 4-5 O&M Cost Impact Ratings by Asset Element



Reliability

The default weight for the reliability rating is 20 percent of an asset's total priority score. Figure 4-6 summarizes the reliability ratings of the element types included in the CATA inventory. Note that all 600-asset category/subcategory/element/sub-element types included in TERM Lite have an assigned reliability rating that is a whole number between 1 to 5. In Figure 4-6, these ratings were calculated into an average rating.

Figure 4-6 Reliability Ratings by Asset Element



The priority score for reliability is:

$$Reliability\ Priority\ Score = \frac{Reliability\ Rating \times Asset\ Condition\ Score}{5}$$

The reliability priority score incorporates the asset's condition because asset reliability is not static over the life of an asset. As an asset deteriorates, its reliability decreases.

Consolidated Asset Priority Score Calculation

The consolidated priority score calculation for an asset in a given year is:

$$Priority\ Score = \frac{(Cond.Score \times 65) + (Safety/Security\ Score \times 10) + (O\&M\ Score\ \times 5) + (Reliability\ Score \times 20)}{5}$$

4.3.2.2 Step 2: Sort Action by Priority Score

Once the priority scores for all assets in the asset inventory are calculated in each analysis year, TERM Lite sorts the line items in descending order, from highest priority score to lowest priority score.

4.3.2.3 Step 3: Fund Actions

After the asset line items are sorted by priority score, TERM Lite applies a budget constraint (based on recent CATA capital plans) to fund actions in descending order of priority. In each analysis year, TERM Lite begins at the top of the list, allocating funds to replacement, renewal, and capital maintenance actions until funding runs out.

4.3.2.4 Step 4: Age Assets and Recalculate Priority Scores

Once all funding in each year is exhausted, TERM Lite ages the assets by 1 year. Assets that did not receive investments in the previous year will have a high-priority score due to their worsened condition. The model repeats Steps 1 through 3 in each year of the SGR analysis period.

4.3.3 TERM Lite Outputs

TERM Lite produces four primary outputs for the SGR analysis:

- **20-Year Annual SGR Needs**: This includes the total annual SGR needs, annual SGR needs by category, and annual SGR needs by subcategory. Note that a calculation of 20-year SGR need is not a direct output of TERM Lite. Therefore, an unconstrained scenario (i.e., a scenario with an effectively unlimited budget) is required. Because unconstrained spending equals total need, a spending output report, which is a direct output of the model, is used in place of a needs report.
- **20-Year Annual SGR Spending:** This includes the total annual SGR spending and annual SGR spending by asset type. Note that, unlike the 20-year SGR needs calculation, a 20-year spending report is a direct output of TERM Lite.
- **20-Year Annual SGR Backlog**: This includes the total initial SGR backlog, initial SGR backlog by asset type, change in SGR backlog over the analysis time frame, and change in SGR backlog by asset type.
- **20-Year Annual Asset Condition:** This includes the overall change in asset condition over the analysis period and the change in asset condition by asset type and location.

The results of the SGR analysis are described in ***Section 5*** *Investment Prioritization*.

5 INVESTMENT PRIORITIZATION

5.1 INTRODUCTION

According the FTA Final Rule, a TAM Plan must include an investment prioritization that identifies a provider's programs and projects (over the TAM Plan horizon period) intended to improve or manage the state of good repair of capital assets for which the provider has direct capital responsibility. The following must also apply for the investment prioritization:

- A provider must rank projects to improve or manage the state of good repair of capital assets in order of priority and anticipated project year.
- A provider's project rankings must be consistent with its TAM policy and strategies.
- When developing an investment prioritization, a provider must give due consideration to those state of good repair projects that pose an identified unacceptable safety risk when developing its investment prioritization.
- When developing an investment prioritization, a provider must take into consideration its estimation of funding levels from all available sources that it reasonably expects will be available in each fiscal year during the TAM Plan horizon period.
- When developing its investment prioritization, a provider must take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.

The subsequent sections of this chapter outline CATA's investment prioritization process for its capital assets.

Table of investment prioritization by asset class by year can be found in Appendix B.

5.2 PRIORITIZATION PROCESS

The investment prioritization process followed the SGR analysis methodology described in ***Section 4.3*** *SGR Analysis Process and Methodology.* TERM Lite was used to develop four funding scenarios, which provided analysis outputs for the SGR backlog for all assets as well as the 20-year expenditure needs for replacements and renewals.

Once the backlog and projected capital needs were estimated, potential constraints to meeting the needs were considered. The two potential constraints analyzed for CATA were funding and administrative constraints. These two were selected to ensure that the needed capital investments could be reasonably accommodated by CATA. Subsequently, list of prioritized projects needed to maintain a state of good repair was developed. These projects are summarized in ***Section 5.5*** *Summary of Proposed Projects*. The detailed project lists can be found in **Appendix B**.

5.3 SGR BACKLOG

The total SGR backlog comprises the following two components:

- The total replacement value of assets that are beyond their useful lives
- The total renewal value of asset renewals that are past due

The total current SGR backlog is $35.9M (2018$) made up of 119 vehicle, facility and station assets. The asset category with the largest backlog is vehicles with a total of $29.1M[3] in the backlog. This comprises approximately 81.0% of the current backlog. The total backlog for facilities is $5.7M (15.8%) and the backlog for stations is $1.1M (3.2%) (Figure 5-1).

[3] Existing backlog was calculated based on the assumption that 40 ft and 60 ft articulated hybrid buses would be replaced with diesel vehicles.

Figure 5-1 Current SGR Backlog by Asset Category (Millions of 2018$)

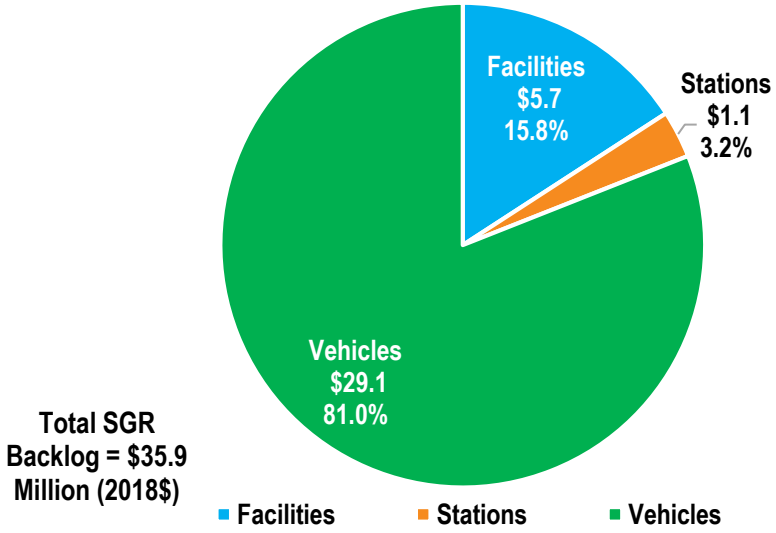


Table 5-3 shows a breakout of the current SGR backlog by detailed asset type. As stated previously, buses have the highest SGR backlog at $26.0M. This is followed by maintenance equipment at $3.0M and various facility subcomponents at $2.7 M.

Table 5-1 Current SGR Backlog by Detailed Asset Type

Asset Type	Replacement Cost (Millions of 2018$)
Vehicles Total	**$29.1**
Buses	$26.0
Trolley Bus	-
Vans, Cutaways and Autos	$2.3
Non-revenue vehicles	$0.8
Stations	**$1.1**
Access	--
Building Components	$1.1
Signage & Graphics	-
Facilities	**$5.7**
Building Components	$2.7
Maintenance Equipment	$3.0
Total	**$35.9**

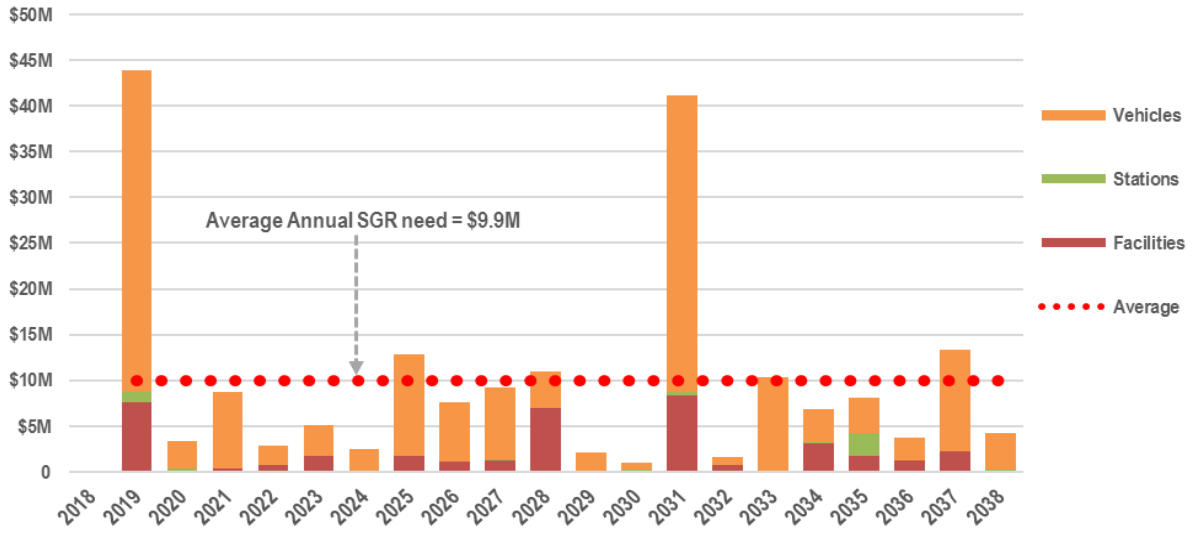
5.4 SGR NEEDS

Figure 5-2 shows the estimated annual SGR need by asset category for vehicles, stations and facilities, which comprises both capital replacements and renewals. The results show a total 20-year need of approximately $198.9M[4]

[4] Total SGR need is estimated by running an unconstrained analysis scenario. It is assumed that funding is unlimited in any given year.

(2018$) at an average annual need of $9.9M. The chart shows two large capital investments needed in 2019 ($43.9M) and 2031 ($41.1M). Of the $43.9M needed in 2019, asset backlog accounts for $35.9M (81.9%).

Figure 5-2 20-Year SGR Need - Unconstrained Scenario (Thousands of 2018$)



As stated in the **Section 5.3**, vehicle backlog makes up $29.1M (81.0%) of the total backlog with majority of the cost arising from vehicles purchased between 2001 and 2005 (accounts for $22.7M). As a result, the scheduled replacements for backlog vehicles with a 12-year ULB[5] causes another peak in 2031 SGR needs.

The unconstrained scenarios show immediate elimination of all backlogs. Although this may be unrealistic because of funding, project delivery, or other change constraints, it is a useful reference as it shows an ideal investment scenario.

Table 5-2 provides a summary of the estimated SGR need (replacements and renewals) by asset category for the TAM Plan horizon period. Over the four-year period, the greatest need is in the vehicle category followed by facilities and stations.

Table 5-2 Estimated SGR Needs by Category for 2019 to 2022 (Thousands of 2018$)

Category/Element	2019	2020	2021	2022	Total
Facilities	**$7,539**	**$27**	**$368**	**$692**	**$8,627**
Building Components	$4,477	$-	$368	$487	**$5,332**
Maintenance Equipment	$3,062	$27	$-	$205	**$3,295**
Stations	**$1,136**	**$363**	**$-**	**$-**	**$1,499**
Building Components	$1,136	$363	$-	$-	**$1,499**
Signage and Graphics	$-	$-	$-	$-	**$-**
Access	$-	$-	$-	$-	**$-**
Vehicles	**$35,208**	**$2,902**	**$8,325**	**$2,172**	**$48,607**
Bus	$30,266	$1,349	$6,052	$1,620	**$39,288**
Car	$303	$-	$369	$23	**$695**
Heavy-Duty Van[6]	$-	$-	$867	$-	**$867**
Truck	$453	$-	$114	$-	**$567**
Vans, Cutaways and Autos	$4,185	$1,553	$922	$529	**$7,190**
Total	**$43,883**	**$3,292**	**$8,693**	**$2,865**	**$58,732**

[5] Useful Life Benchmark
[6] Future Trolleybus replacements will be heavy-duty vans.

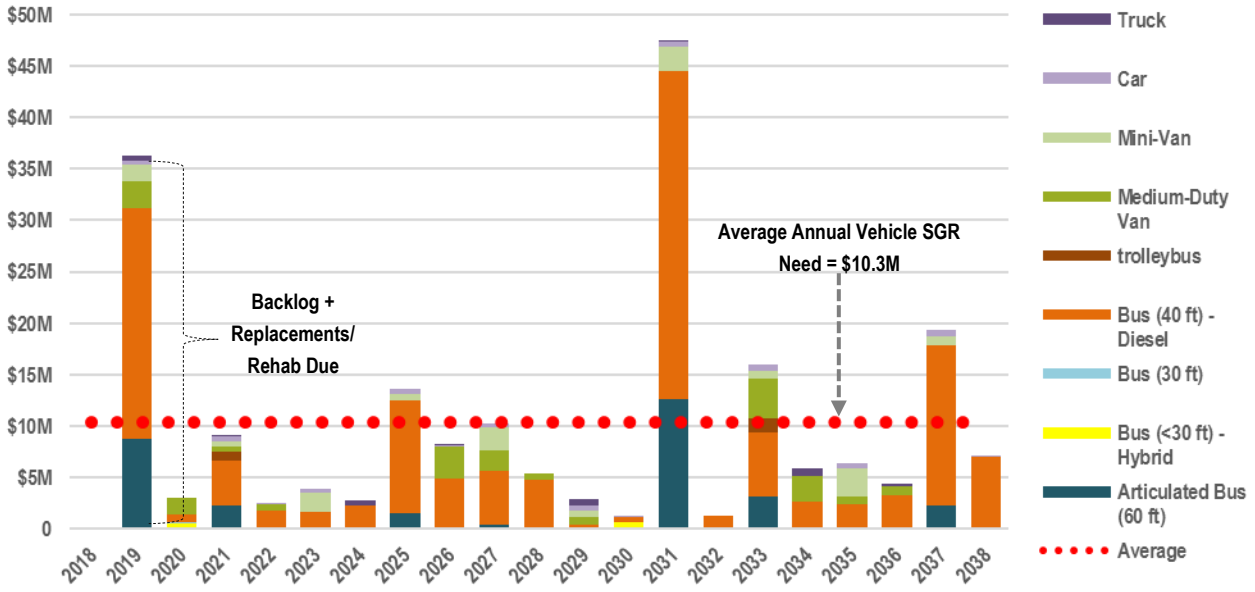
All subsequent detailed costs shown for the different categories are provided in year of expenditure dollars inflated at a 3% inflation rate.

5.5 Summary of Proposed Projects

5.5.1 Vehicle Projects

A detailed look at the 20-year SGR need for vehicles only (Figure 5-3) shows a similar trend to Figure 5-2. With an average annual vehicle need of $10.3M YOE$ ($9.9M in 2018$), CATA is set to experience two major peaks in 2019 and 2031. Replacement costs are shown in year of expenditure dollars, hence costs in 2031 and other years are inflated at 3% using 2018 as a base year.

Figure 5-3 20-Year SGR Need for Vehicles (Unconstrained Scenario in YOE$)[7]



After evaluating the 20-year projected SGR needs, constrained investment prioritization analyses were conducted to evaluate the impact of four different capital investment scenarios. The four scenarios were analyzed by comparing the associated annual spending, annual backlog and annual limits on replacement vehicle intake. Of the four scenarios, the spending pattern in Figure 5-4 was selected as the recommended spending pattern from 2019 to 2038.

Figure 5-4 shows the total annual dollar values for vehicle replacements and rehabilitations expressed in year of expenditure dollars. It is worth noting that the spending projection excludes future hybrid purchases as CATA plans to replace the existing hybrid fleet with diesel vehicles.

[7] Costs shown in YOE dollars at a 3% inflation rate

Figure 5-4 20-Year Projected Vehicle Investments (2019-2038)

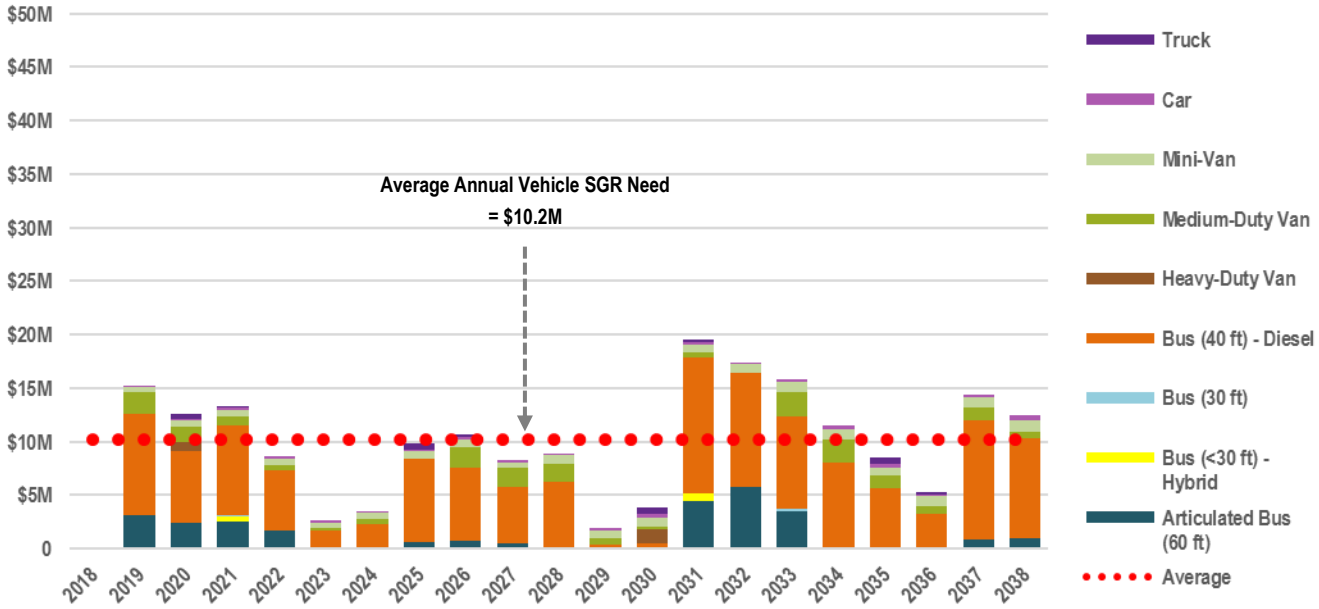
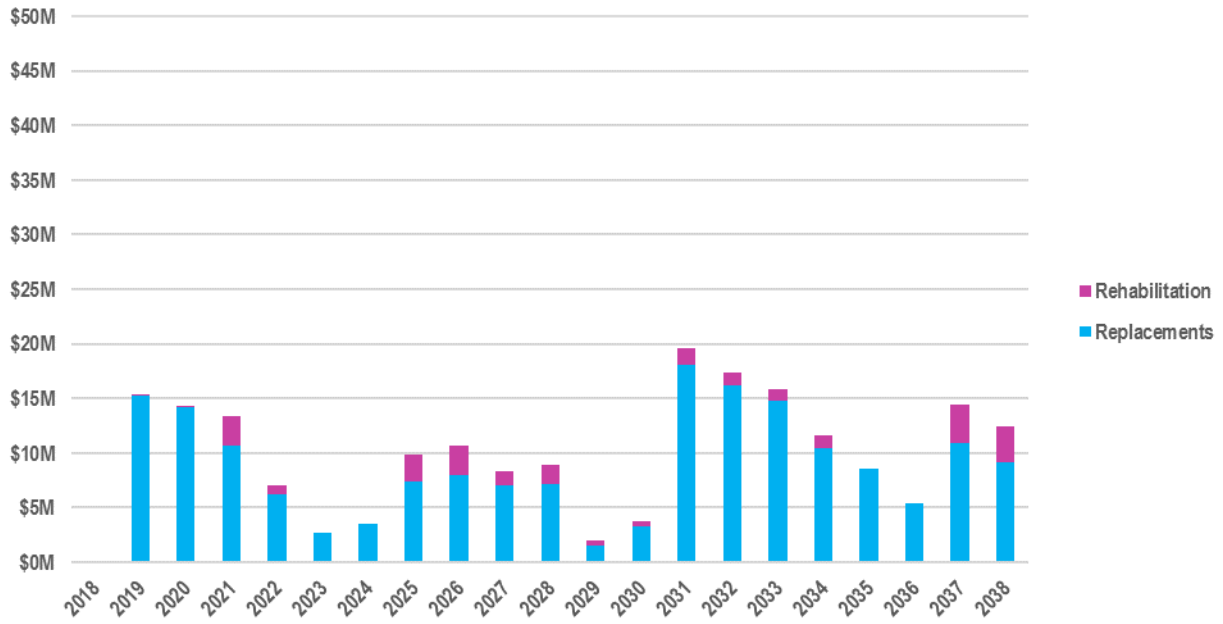


Figure 5-5 Projected vehicle Expenditure Showing Rehabilitations and Replacements (2019-2038)



The selected spending projection for 2019 to 2038 results in a clearance of the existing vehicle backlog by the end of 2020 as shown in Figure 5-6. Furthermore, with this spending projection, the backlog remains at zero from 2021 to 2038 thereby maintaining the vehicles in a state of good repair.

Figure 5-6 Vehicle Backlog Associated with Projected Vehicle Investments

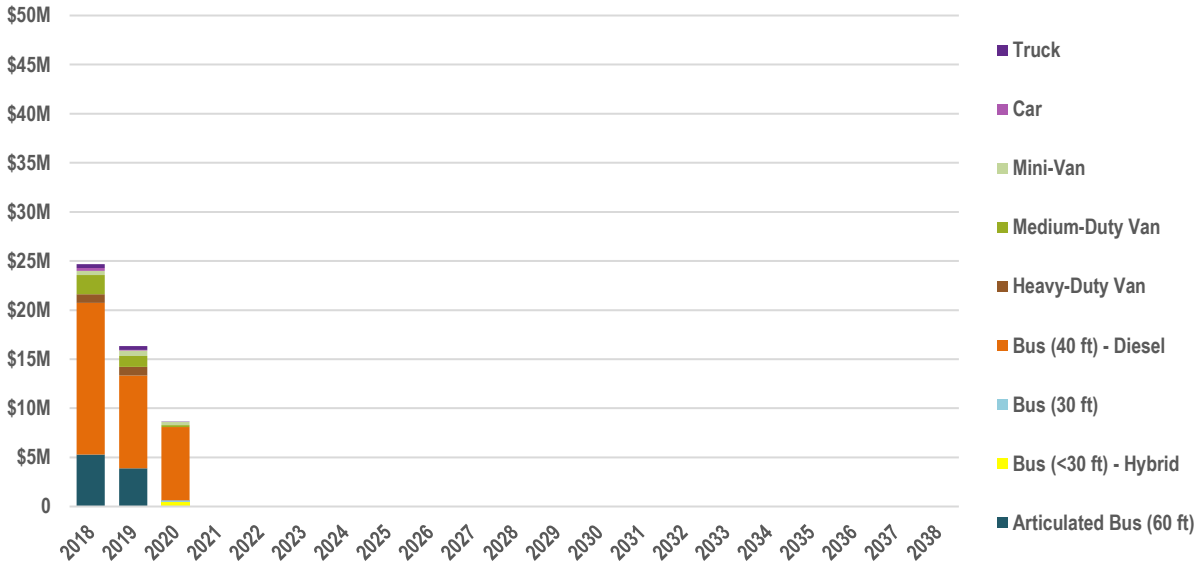


Table 5-5 provides details on the counts and costs for projected vehicle replacements for the TAM Plan horizon period. The table values do not include the cost for rehabilitations. CATA is projected to spend an average of $11.6M (YOE$) from 2019 to 2022 in vehicle replacements.

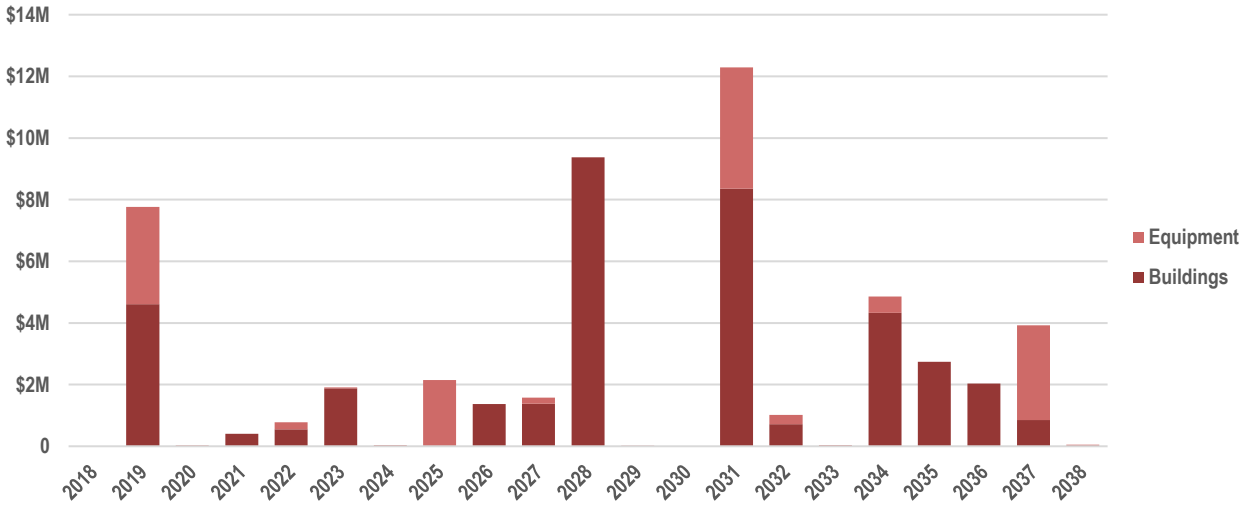
Table 5-3 Total Vehicle Replacement Counts and Costs (2019 to 2022)

Vehicle Type	Total Vehicle Replacements					Total Costs ($000s YOE)				
	2019	2020	2021	2022	Total	2019	2020	2021	2022	Total
Articulated Bus (60ft)	4	3	3	2	**12**	3,108	2,401	2,473	1,698	**9,681**
Bus (<30 ft) - Hybrid			2		**2**	-	-	501	-	**501**
Bus (30 ft)			1		**1**	-	-	140	-	**140**
Bus (40 ft) - Diesel	19	13	11	9	**52**	9,455	6,663	5,807	4,894	**26,819**
Medium-Duty Van	19	14	8	4	**45**	2,050	1,442	824	419	**4,735**
Mini-Van	10	14	14	15	**53**	439	614	633	665	**2,351**
Heavy-Duty Van		2			**2**	-	920	-	-	**920**
Non-Revenue Vehicles	6	11	9	9	**35**	206	552	324	249	**1,331**
Total	**58**	**57**	**48**	**39**	**202**	**15,259**	**12,593**	**10,701**	**7,926**	**46,479**

5.5.2 Facility Projects

Figure 5-7 shows the 20-year SGR need for the facilities category. This was calculated by running an unconstrained funding scenario with replacements based on the estimated useful lives of the various facility components. This category is made up entirely of CATA's headquarters which is a combined administrative and maintenance facility.

Figure 5-7 20-Year SGR Need for Facilities - Unconstrained Scenario (YOE$)



Due to high cost of projected needs and the higher constraints on capital funding for facilities, projects were prioritized with many considerations. For example, some projects were divided into multi-year projects. In addition, certain projects were annualized to provide investments over the entire lifecycle of that asset. Figure 5-8 shows the projects 20-year spending. The approximate maximum and minimum spending levels are $2.2M in 2023 and $0.3M in 2035 respectively (YOE). This is an average of $1.2M per year (YOE) over the 20-year period. Overall, CATA will need to invest a total of $19.9M in 2018 dollars over the 20-year period.

Figure 5-8 20-Year Projected Facility Investments (2019-2038)

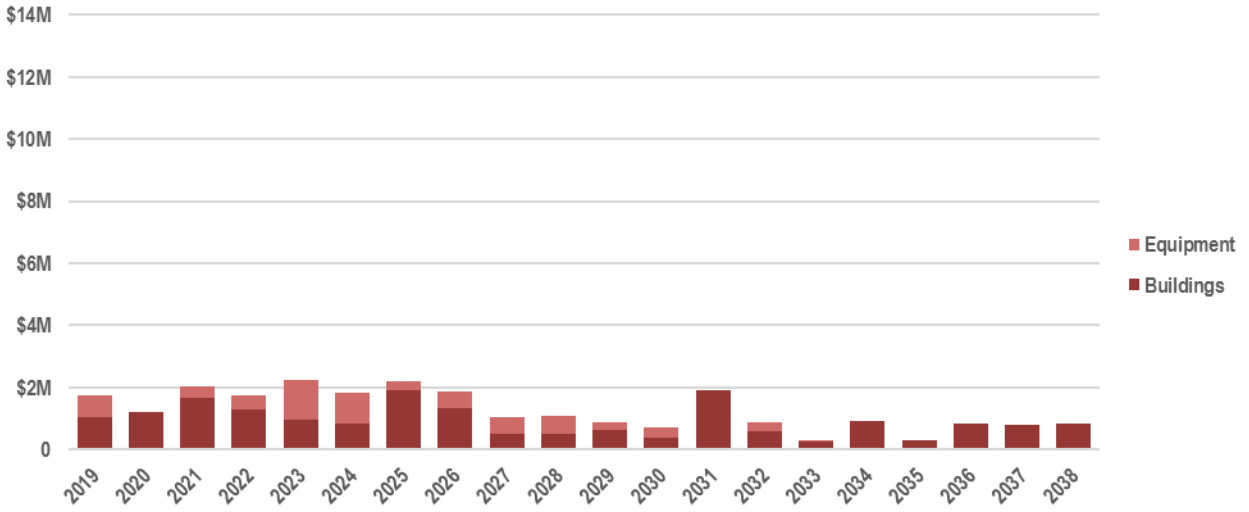


Table 5-4 shows the facility projects within the TAM Plan horizon with a condition rating of below 3.0 on the TERM scale. Costs shown are inflated at the 3.0% rate from 2018 as the base year.

A detailed project list for all facility sub components can be found in Appendix B.

Table 5-4 Facility Projects with a TERM Rating Below 3.0 (2019-2022)[8]

				Total Costs ($000s YOE)				
Description	Sub Component	ULB	Year Built	2019	2020	2021	2022	Total
Maintenance - Site-Concrete	Buildings	20	1978	-	364	375	-	739
Maintenance – Mobile Lifts - Wired	Equipment	12	2004	153	-	-	-	153
Maintenance - Roof Membrane - Stg. Area Middle	Buildings	15	2001	-	-	545	561	1,106
Total				**153**	**364**	**920**	**561**	**1,997**

5.5.3 Station Projects

Station projects comprise station sub-components from the CATA Transportation Center (CTC), the Michigan State University (MSU) – Shaw Parking Ramp, and the Multimodal Gateway. Figure 5-9 shows the 20-year SGR need for station assets assuming unlimited spending. The charts are shown by station to provide better details on the individual station needs.

Figure 5-9 20-Year SGR Need for Stations by Location - Unconstrained Funding Scenario (YOE$)

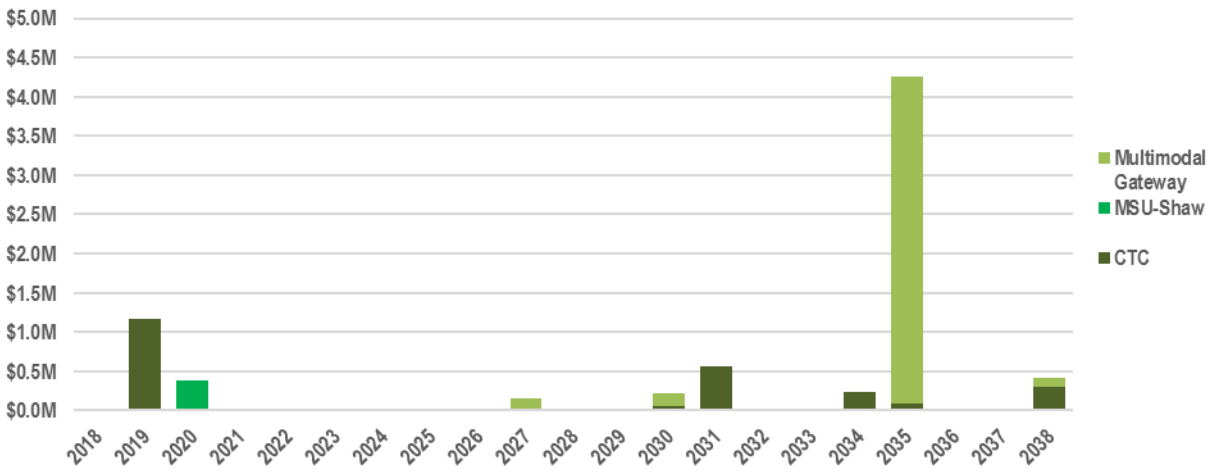
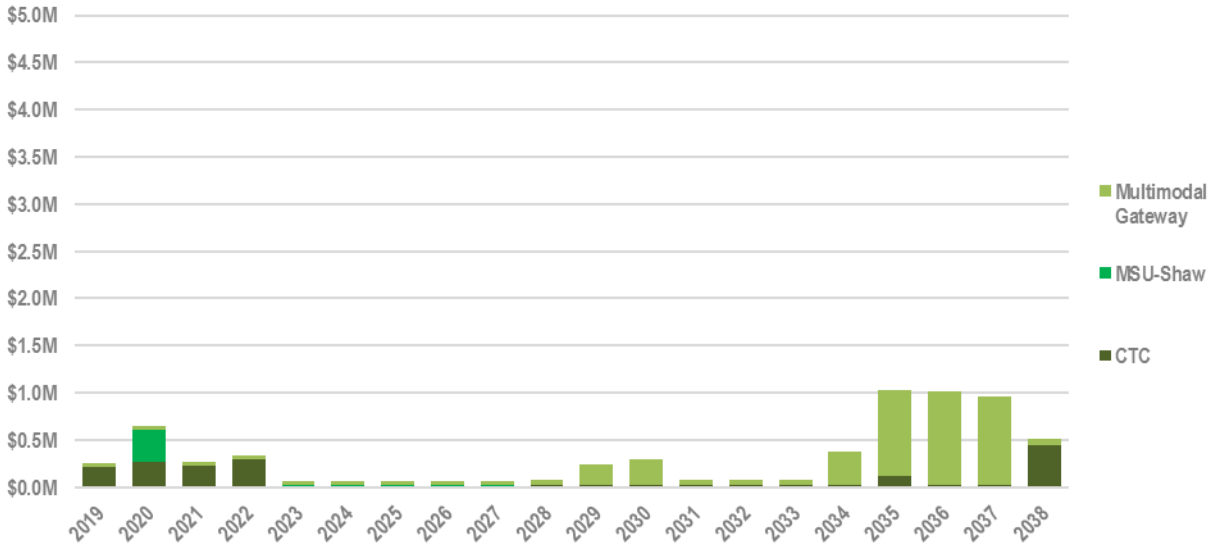


Figure 5-10 shows the projected station investments by location for CATA's three passenger stations. Overall, the three stations will require a total of $4.2M in 2018 dollars ($6.6M YOE) over the 20-year period, averaging about $0.3M per year. It is worth noting that major costs for the Multimodal Gateway have been annualized over the entire asset lifecycle. Additionally, the MSU-Shaw parking ramp will require an investment in 2020 for the concrete pavement.

[8] YOE dollars at a 3% inflation rate

Figure 5-10 20-Year Projected Station Investments by Location (2019-2038)



Of the three stations, the only sub-components rated below 3.0 on the TERM scale were located at the CTC. Table 5-5 shows the two projects that are critical and require immediate investment.

Table 5-5 Station Projects with a TERM Rating Below 3.0 (2019-2022)

				Total Costs ($000s YOE)				
Description	Sub Component	ULB	Year Built	2019	2020	2021	2022	Total
CTC Roof - Membrane	Buildings	20	1998	-	161	-	-	161
CTC Site	Buildings	20	1998	202	-	-	-	202
Total				**202**	**161**	**-**	**-**	**362**

6 IMPLEMENTATION STRATEGY

This section describes CATA's strategy for implementing the TAM Plan and achieving its TAM and SGR policy. It outlines the various roles and responsibilities, key changes in assets, and required resource needs.

6.1 ACCOUNTABILITY: ROLES AND RESPONSIBILITIES

In accordance with 49 CFR 625.25, responsibility for ensuring that a TAM Plan is developed and carried out rests with the Accountable Executive, the Chief Executive Officer (CEO). The Accountable Executive is also responsible to implementing the TAM and SGR.

The CEO delegated responsibility for overseeing the implementation, evaluation, and update of this TAM Plan to the System Planner. The System Planner also serves as the Chair of the Asset Management Team, which is made up of other managers with direct or supporting responsibilities in asset management. The role of the Chair is critical to the success of the program as this person serves as a liaison between departments and external stakeholders.

The Asset Management Team consists of the following:

- Chief Executive Officer (Accountable Executive)
- System Planner (Asset Management Team Chair)
- Deputy Chief Executive Officer
- Senior Analyst
- Director of Finance
- Grants Administrator
- Facilities Manager
- Director of Maintenance
- Director of Operations
- Director of IT Services

The agency-wide management team also interfaces with the Asset Management Team as it sets organizational policies and goals based on information provided by the Asset Management Team members. The group is responsible for conducting the trade-off analyses for their individual assets and presenting the results to the organizational management team.

Finally, there are external asset management advisors who may influence the recommendations provided by the Asset Management Team. These could be outside stakeholders, maintenance and operations personnel, or others with an interest in one or more agency assets.

Over time, the role and composition of the Asset Management Team will change as the program evolves. Initially, the team will be focused on strategy development and implementation. The second stage is generally plan development and implementation (data collection, level of service review, and plan development). The last stage is operation and ongoing plan review. At this last stage, the team evaluates and monitors outputs.

Figure 6-1 shows CATA's organizational chart highlighting the Accountable Executive and the Asset Management Team. Table 6-1 outlines the roles and responsibilities associated with each Asset Management Team member.

Figure 6-1 CATA Organizational Chart with Asset Management Team Indicated

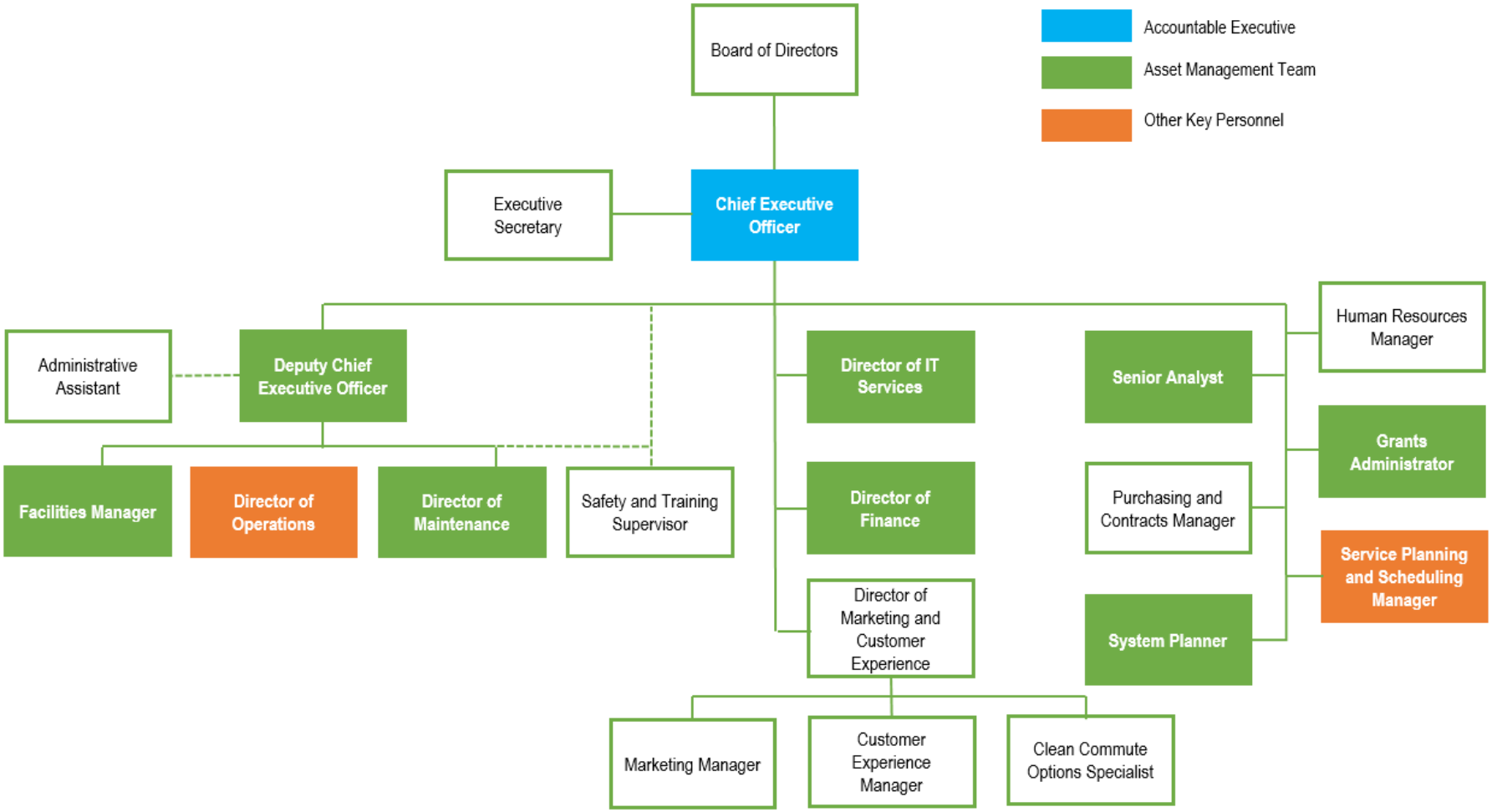


Table 6-1 Asset Management Team Roles and Responsibilities

Role	Responsibility
Chief Executive Officer (Accountable Executive)	• Approves the TAM Plan and performance targets • Determines the agency's TAM and SGR policy
Deputy Chief Executive Officer	• Supports the development of TAM Plan and performance targets • Supports the development of the TAM and SGR policy • Supports the development of the prioritized project list
System Planner (Asset Management Team Chair)	• Serves as a liaison between departments and outside stakeholders • Coordinates the TAM Plan development and develops an overall corporate TAM strategy • Prioritizes asset replacements and key activities with input from maintenance, facilities, and finance • Leads the identification of resources to support asset management implementation • Leads the development of the asset management implementation strategy • Carries out evaluation of the plan to determine success of asset management system
Director of Finance and Grants Administrator	• Ensures that finance inventory is aligned with TAM inventory • Provides input for the development of the prioritized list of projects
Facilities Manager	• Updates facility inventory and ensures alignment with finance inventory • Performs facility condition assessments • Conducts key annual activities related to facility assets • Develops facility project list to ensure SGR
Director of Maintenance	• Maintains vehicle asset inventory • Performs condition assessments • Conducts key annual activities related to vehicle assets • Provides input for the development of the prioritized vehicle project list
Director of IT	• Supports maintenance, facilities, and finance by ensuring alignment and interoperability of inventories

6.2 Key Changes in Assets

In the period from March 2019 to October 2022, CATA plans to implement the following major capital projects:

- **Purchase of Electric Buses:** Pursue plans to acquire two electric buses to expand the existing fleet. Vehicles projected to arrive between 2021 and 2022
- **Replacement of Hybrid Fleet:** Starting in 2019, CATA plans to begin replacing its existing hybrid 40ft and articulated buses with diesel buses.
- **Replacement of Trolleys:** In 2020, CATA plans to replace its two trolleybuses with vehicles similar to heavy-duty vans.

With a less definite schedule, CATA is also contemplating increased coordination with neighboring transit systems. Specifically, substantial economies and effectiveness may be achieved through collaboration in using transit assets and technology. Changes in the use of critical CATA assets or providing additional assets for joint use my make material changes in the asset inventory and plan.

6.3 Asset Information Strategy

6.3.1 Existing Conditions

CATA currently has various information systems in place for asset management and is planning for upgrades and new system improvements in the future. The existing asset information systems are described below.

- **Microsoft Dynamics SL:** This is an enterprise resource planning (ERP) tool used for project and financial management. CATA uses this system to manage purchases and requisitions. The agency is exploring alternatives for replacement within the coming year.
- **Trapeze EAM:** This is an EAM system used by CATA for fleet management. Purchased in 2010, the agency has mainly used this system for work order management.
- **Microsoft Excel:** This is spreadsheet software used for data analysis and data visualization. CATA previously used Asset Works for facility management, but currently uses Excel as the main tool for managing facility assets and programming facility projects.

CATA has identified several asset management system improvements. Many of the improvements do not involve purchasing new systems but rather, enhancing the capabilities of existing systems.

6.3.2 Asset Management System Improvements

The asset management system improvements described in this section mostly lean toward fleet management, however, other assets are discussed. The fleet management improvements involve managing the fleet inventory, condition, mileage, ULB, and remaining useful life data. As stated previously, CATA uses Trapeze EAM for fleet management. This system is used by about 100 other transit agencies comparable to CATA (i.e., bus-only systems). A few other multimodal systems also use EAM.

The asset management system improvements are described below:

- **SGR Module in EAM:** The State of Good Repair planning module is a new module in the Trapeze EAM that provides high-level solutions for managing transit assets. Although this system has many of the functionalities described in subsequent paragraphs, its full functionality better serves larger multimodal agencies with dedicated asset managers. This solution may not be optimal for a bus-only agency such as CATA.
- **Re-Training and Optimization:** CATA can engage the professional services of Trapeze to re-train staff on the functions and capabilities of its EAM due to turnover at the agency. Generally, many EAM system functions are turned off by default and require a user to activate them based on their needs. A re-training session will provide CATA with better knowledge about their existing system and how all the EAM capabilities can be used to enhance their asset management system. For example, queries for NTD reports and basic exports for TERM Lite (the decision support tool used in this TAM Plan).

  Training and optimization sessions are also an opportunity for Trapeze to understand CATA's information needs and build-in any management reports, based on their existing system. The optimization sessions focus on optimizing existing EAM capabilities without necessarily upgrading licenses. The sessions typically *map out* the *workflow* and understand how different staff uses the system. The existing EAM license at CATA *supports different user groups*, e.g., grants, maintenance, etc. The workflow mapping session therefore provides guidance for adjusting the system and providing the appropriate training.

  Such a training session has not been hosted since the EAM was purchased in 2010. Trapeze provides such re-retraining services to clients across the country to agencies to optimize their existing EAM capabilities.
- **EAM System Updates:** Trapeze can also review the existing system to ensure that the agency has all the current updates available for CATA's existing module. For example, EAM has the capability of providing exports into TERM Lite for analyses, which CATA could use for future investment prioritization. CATA's existing license comes with annual maintenance that provides unlimited access to customer service. This customer service team is also in charge of performing free system updates annually.

- **Integration of Fleet Planning:** Trapeze has two options for fleet planning in EAM. The first option is called the state of good repair (SGR) module and is a new module for EAM. This version includes supports TAM efforts by having capabilities to generate asset condition scores and user-defined priorities. These priorities, in addition to condition, are used as indicators for asset replacement. The SOGR module also has a capital planning capability. Candidate projects can be prioritized and voted on based on a particular capital budget.

  The second option is the EAM system's traditional fleet replacement module, present in CATA's existing system and license. The asset replacement analysis focuses on a particular model of vehicles and ranks them by age and mileage, from highest to lowest. The output is a list of assets ordered by replacement priority. This module does not project replacement over multiple life cycles.

- **Automatic Vehicle Mileage and Service Data Collection:** CATA currently uses a manual system to collect and record data on vehicle mileage, fuel, and other fluids. To achieve automatic data collections, CATA can purchase such a tool from a number of different vendors. Trapeze also has an off-the shelf fuel system that could serve the purpose. However, Trapeze is capable of building an interface in CATA's EAM to import mileage and other data if an alternative solution that does not have a native EAM interface is selected.

- **Bus Parking Mapping:** CATA currently uses a manual system to map out bus locations in the garage. Automating the processes of vehicle assignments and vehicle location, can save time and ensure shifts are started on time. Trapeze has two potential options for bus mapping. The first is the Yard Walker part of the OPS tool that uses a tablet to collect data on vehicle locations. The second option is an RFID-based tool. The RFID-tool requires more implementation effort as it comes as a whole other enterprise tool.

- **Facility Management:** The Trapeze EAM has a facility management capability present in CATA's existing system, although a license may be required. The benefit to this approach is having all vehicle and facility assets in one system to aid planning and investment decisions. An EAM solution also supports tracking work performed on facilities in detail. This is beneficial for both an audit purposes and day-to-day facility management purposes. Managing facilities in spreadsheets creates a difficulty in mining data and tracking materials and labor. Once configured, the existing EAM can also produce custom reports. The system also includes a mobile piece (i.e., tablets) for facilities that could enhance tracking work performed.

7 LIST OF KEY ANNUAL ACTIVITIES

This section describes the key annual activities needed to implement the TAM Plan. The two groups of key activities are described below.

7.1 SCHEDULED AND PREVENTATIVE MAINTENANCE

Execute scheduled and preventative maintenance programs for all assets, including correcting defects identified during scheduled inspections and conducting necessary capital rehabilitation projects.

For vehicles:

- Conduct preventative maintenance for all directly operated and contracted vehicles
- Conduct mid-life rehabilitation investments for 40ft and articulated buses
- Replace vehicles that have reached the end of their Useful Life Benchmark

For stations and facilities:

- Conduct scheduled and preventative maintenance for all facility and station subcomponents
- Provide annual capital investments required to spread asset replacement cost over its entire lifecycle
- Undertake rehabilitation projects required for assets and subcomponents to meet their Useful Life Benchmark
- Undertake capital renewal projects to replace assets at the end of their Useful Life Benchmark

7.2 TAM PLAN ACTIVITIES

Every year, CATA will:

- Update the respective asset inventories in the asset management system
- Maintain ongoing condition assessment information
- Update costs associated with operation and maintenance of assets from the previous years' expenses
- Evaluate priorities among investment needs
- Conduct annual budgeting and updating of the Capital Improvement Plan
- Establish and report annual SGR targets to NTD
- Evaluate TAM Plan progress
- Evaluate the TAM Plan to identify necessary changes for the next formal update

Every four years, CATA will update the TAM Plan.

8 IDENTIFICATION OF RESOURCES

8.1 HUMAN RESOURCE NEEDS

Asset management initiatives are interdepartmental initiatives and therefore require commitment and effort from management and staff throughout the organization. Implementation of this TAM Plan also requires a qualified workforce experienced in various functions related to asset management. CATA has identified an Asset Management Team, listed in ***Section 6:*** *Implementation Strategy*, which consists of senior managers who oversee key asset management functions such as fleet maintenance, facility maintenance, finance, planning and IT. The Asset Management Team members lead the middle management and frontline employees who carry out the day-to-day asset management activities.

Although CATA has a qualified and experienced workforce, staff training is an ongoing commitment in workforce development and asset management. Part of CATA's mission is to meet mobility needs through innovative solutions, of which technology plays an important role. In line with this, CATA constantly seeks opportunities to adopt technologies, which improve service quality, operating efficiency and effectiveness, and aid the sustainable progress of the agency.

Section 6.1 identifies the members of the Asset Management Team and their associated roles and responsibilities. To ensure the success of the TAM Plan implementation as CATA's asset management system evolves, it is necessary to meet the following needs within the Asset Management Team:

- **EAM System Maintenance:** Although the various asset managers are responsible for keeping their asset inventories up-to-date, the Chair, or another designated member of the Asset Management Team must be trained on using the agency's EAM system to maintain the asset inventories. This individual must keep track of active, inactive, contingency, and disposed vehicles. The Individual must also ensure consistency between the finance, maintenance and facility inventories.
- **Analytical Capability:** There is a need for the analytical capability to assess maintenance costs in attempts to minimize life-cycle costs. Reviewing operating and maintenance costs, as well as any capital costs invested, provides the information necessary for making better informed decisions about the total lifecycle costs
- **Capital Programming and Maintenance Planning Integration**: The issue of separated capital programming and maintenance planning is caused by having separate sources of funding for the two programs and has been reinforced by the separate inventories. The Asset Management Team can serve as an intermediary group for finding the requisite skills and resources for addressing this issue. For example, the facilities capital program can be better integrated with its maintenance program to support proper lifecycle planning.

8.2 FINANCIAL RESOURCE NEEDS

CATA receives most of its capital funding from federal formula grants. Table 8-1 shows CATA's historical capital spending on rehabilitation, reconstruction and replacement for existing service as reported to the National Transit Database (NTD). At an annual average of about $5.4M, the summary shows a gradual increase to a peak in 2012 and a sharp decline in such investments afterwards.

Table 8-1 Historical Spending on Rehabilitation, Reconstruction and Replacement for Existing Service (2006-2016)[9]

Year	Total
2006	$6,574,054
2007	$7,009,636
2008	$2,040,234
2009	-
2010	$10,115,684
2011	$8,789,943
2012	$12,060,883
2013	$1,245,816
2014	$1,903,890
2015	$1,165,062
2016	$3,155,120
Average	**$5,406,032**

Table 8-2 also shows a summary of the funding requests for vehicle replacements only for FY19 to FY23. On average, about $7.0M of the total funding request amount is budgeted for vehicle replacements annually. Over the five-year period, a total of $35.2M in funding requests has been budgeted for vehicle replacements.

Table 8-2 Planned/Budgeted Vehicle Funding Requests FY19 to FY23

Year	5307	5339	CMAQ	5310	Total
2019	$ 5,211,518	$ 1,097,301	$ 439,898	$ 187,686	$ 6,936,403
2020	$ 5,503,383	$ 1,139,959	$ -	$ 193,317	$ 6,836,659
2021	$ 5,549,946	$ 1,174,159	$ -	$ 199,116	$ 6,923,221
2022	$ 5,713,444	$ 1,209,383	$ -	$ 205,090	$ 7,127,917
2023	$ 5,881,847	$ 1,245,665	$ -	$ 211,242	$ 7,338,754
Average	**$ 5,572,028**	**$ 1,173,293**	**$ 87,980**	**$ 199,290**	**$ 7,032,591**

Although, the budgeted annual vehicle funding requests are much lower than the projects identified in ***Section 5.5***, CATA will still be able to fund those asset replacements and rehabilitations due to the low historical spending as shown in Table 8-1. CATA will be able to use the balance of unspent funds on the TAM Plan SGR projects.

For facilities and stations, CATA will need to identify and secure additional funding to meet its SGR needs. The total cost of the SGR projects listed exceeds the historical funding amounts. CATA will likely pursue grant funding to meet the funding shortfall.

[9] NTD Form F20 – Rehabilitation/Reconstruction/Replacement/Improvement for Existing Service

9 EVALUATION PLAN

This section describes how CATA will monitor, evaluate and update the TAM Plan and related business practices.

9.1 TAM PLAN MONITORING AND EVALUATION

The annual TAM Plan evaluation process includes two components: (1) performance target setting and reporting, as required by the TAM Rule, and (2) evaluating progress of planned asset management activities.

9.1.1 Performance Target Setting and Reporting

The annual evaluation process will include setting targets with the approval of the Accountable Executive for each asset class in the CATA NTD inventory of assets, using the following FTA-required performance measures:

- Percent of assets past their ULB (rolling stock and non-revenue vehicles)
- Percent of facilities below a rating of 3.0 on the TERM facility condition rating scale

The process will also include an annual narrative report to the National Transit Database that provides a description of any change in the condition of the CATA transit system from the previous year. The annual report will also describe progress made during the year to meet the performance targets set in the previous year (49 CFR 525.55(a)(2)).

9.1.2 Progress of Planned Asset Management Activities

CATA will monitor and evaluate the completion or progress of the following planned asset management activities:

- Short-Term
    - Monitor and evaluate the completion of scheduled preventative maintenance
    - Monitor and evaluate linkage to performance
- Long-Term
    - Monitor and evaluate progress on major capital renewal and expansion projects identified in this document
    - Monitor and evaluate progress on on-site condition assessments
    - Monitor and evaluate progress on the implementation of the asset information strategy (i.e., asset management system improvements)
- Periodic
    - Monitor and evaluate asset management performance
    - Monitor and evaluate internal and external changes which affect CATA's asset management activities including changes in the Asset Management Team, organizational structure, staffing, accountability, and the decision-making process

9.2 TAM PLAN UPDATE

The TAM Rule, 49 CFR 625.29 provides specifications on the TAM Plan horizon period, amendments and updates. According to the Rule, the horizon period for the TAM Plan should be no shorter than four years and an update performed at least once every four years. Additionally, the TAM Plan must be updated when any significant changes occur. In accordance to the Rule, CATA will update the TAM Plan every four years.

9.2.1 Alignment of TAM and SGR Policy with Agency-Wide Strategic Plan

The CATA TAM Plan will be updated with any significant changes if those changes occur before an update is due. This includes alignment with changes made in any key agency-wide policies. This will ensure that the TAM and SGR policy remains consistent with CATA's overall vision, mission, and strategic goals.

9.2.2 Updates on Implementation Strategy

In subsequent updates to the TAM Plan, CATA will identify changes in the asset management implementation strategy and update the plan accordingly. CATA will examine the organizational structure of the Asset Management Team and make updates as necessary. The asset information strategy will also be updated to reflect the latest technological improvements and needs related to asset management.

CATA will identify and document any anticipated challenges in implementing the update TAM Plan as well as the mitigation strategies to be adopted.

APPENDIX A. ASSET INVENTORY

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
1	MB	CATA Admin - Electrical	Facilities	Buildings	Building Components	Electrical	1	LS	2007	2018	0.35	575,397.68	4	50										CATA
2	MB	CATA Admin - Electrical - Exterior Lighting	Facilities	Buildings	Building Components	Electrical	1	LS	2007	2018	0.35	74,250.00	3	20										CATA
3	MB	CATA Admin - Electrical - Interior Lighting	Facilities	Buildings	Building Components	Electrical	1	LS	2007	2018	0.35	291,992.85	3	15										CATA
4	MB	CATA Maint - Electrical - Exterior Lighting	Facilities	Buildings	Building Components	Electrical	1	LS	2015	2018	0.35	33,750.00	3	20										CATA
5	MB	CATA Maint - Electrical - Interior Lighting	Facilities	Buildings	Building Components	Electrical	1	LS	1998	2018	0.35	100,406.25	3	15										CATA
6	MB	CATA Maint - Electrical- Maint. N	Facilities	Buildings	Building Components	Electrical	1	LS	2004	2018	0.35	168,318.00	4	50										CATA
7	MB	CATA Maint - Electrical- SA Maint. N	Facilities	Buildings	Building Components	Electrical	1	LS	2011	2018	0.35	444,582.00	4	50										CATA
8	MB	CATA Maint - Electrical- SA Maint. Shop	Facilities	Buildings	Building Components	Electrical	1	LS	1978	2018	0.35	551,367.00	4	50										CATA
9	MB	CATA Admin - Fire Protection	Facilities	Buildings	Building Components	Fire Alarm	1	LS	2007	2018	0.35	171,760.50	4	15										CATA
10	MB	CATA Maint - Fire Protection	Facilities	Buildings	Building Components	Fire Alarm	1	LS	2004	2018	0.35	494,125.38	3	15										CATA
11	MB	CATA Admin - Plumbing - First Floor	Facilities	Buildings	Building Components	Plumbing	1	LS	1978	2018	0.35	89,268.48	4	40										CATA
12	MB	CATA Admin - Plumbing - Fixtures - Second Floor	Facilities	Buildings	Building Components	Plumbing	1	LS	2007	2018	0.35	23,422.50	4	15										CATA
13	MB	CATA Admin - Plumbing - Fixtures -First Floor	Facilities	Buildings	Building Components	Plumbing	1	LS	1978	2018	0.35	66,487.50	4	15										CATA
14	MB	CATA Admin - Plumbing - Second Floor	Facilities	Buildings	Building Components	Plumbing	1	LS	2007	2018	0.35	15,717.24	4	40										CATA
15	MB	CATA Maint - Plumbing - Fixtures	Facilities	Buildings	Building Components	Plumbing	1	LS	2004	2018	0.35	28,147.50	3	15										CATA
16	MB	CATA Maint - Plumbing - Maint N	Facilities	Buildings	Building Components	Plumbing	1	LS	2004	2018	0.35	233,405.55	4	40										CATA
17	MB	CATA Maint - Plumbing - Maint Shop	Facilities	Buildings	Building Components	Plumbing	1	LS	1978	2018	0.35	11,486.81	3	40										CATA
18	MB	CATA Maint - Plumbing - SA Middle	Facilities	Buildings	Building Components	Plumbing	1	LS	1978	2018	0.35	249,237.00	3	40										CATA
19	MB	CATA Maint - Plumbing - SA N	Facilities	Buildings	Building Components	Plumbing	1	LS	2011	2018	0.35	166,718.25	4	40										CATA
20	MB	CATA Maint - Plumbing - SA S	Facilities	Buildings	Building Components	Plumbing	1	LS	2011	2018	0.35	120,799.35	4	40										CATA
21	MB	CATA Admin - HVAC	Facilities	Buildings	Building Components	HVAC	1	LS	2007	2018	0.35	721,394.10	4	12										CATA
22	MB	CATA Maint - HVAC - SA Middle	Facilities	Buildings	Building Components	HVAC	1	LS	2011	2018	0.35	1,038,487.50	3	12										CATA
23	MB	CATA Maint - HVAC - SA N	Facilities	Buildings	Building Components	HVAC	1	LS	2011	2018	0.35	389,009.25	3	12										CATA
24	MB	CATA Maint - HVAC - SA S	Facilities	Buildings	Building Components	HVAC	1	LS	2011	2018	0.35	155,313.45	3	12										CATA
25	MB	CATA Admin - Building Boiler - First Floor	Facilities	Buildings	Building Components	Boiler	1	LS	2011	2018	0.35	39,622.50	4	12										CATA
26	MB	CATA Admin - Building Boiler - Second Floor	Facilities	Buildings	Building Components	Boiler	1	LS	2007	2018	0.35	21,768.75	3	12										CATA
27	MB	CATA Admin - Roof - Membrane-First Floor	Facilities	Buildings	Building Components	Roof	15744	SF	2012	2018	0.35	382,579.20	4	20										CATA
28	MB	CATA Admin - Roof - Membrane-Second Floor	Facilities	Buildings	Building Components	Roof	9702	SF	2006	2018	0.35	248,856.30	4	20										CATA
29	MB	CATA Maint - Roof - Membrane - Maint. Shop N	Facilities	Buildings	Building Components	Roof	15585	SF	2004	2018	0.35	378,715.50	3	15										CATA
30	MB	CATA Maint - Roof Membrane - Maint. Shop	Facilities	Buildings	Building Components	Roof	34035	SF	2016	2018	0.35	827,050.50	4	20										CATA
31	MB	CATA Maint - Roof Membrane - Stg. Area Middle	Facilities	Buildings	Building Components	Roof	61540	SF	2001	2018	0.35	1,495,422.00	2	15										CATA
32	MB	CATA Maint - Roof Membrane - Stg. Area N	Facilities	Buildings	Building Components	Roof	41165	SF	2011	2018	0.35	1,000,309.50	4	20										CATA
33	MB	CATA Maint - Roof Membrane - Stg. Area S	Facilities	Buildings	Building Components	Roof	25566	SF	2011	2018	0.35	621,253.80	4	15										CATA
34	MB	CATA Maint - Roof Membrane - Stg. Area SE	Facilities	Buildings	Building Components	Roof	2450	SF	2012	2018	0.35	59,535.00	4	15										CATA
35	MB	CATA Admin - Shell- First Floor	Facilities	Buildings	Building Components	Exterior	15744	SF	1978	2018	0.35	1,254,009.60	4	50										CATA
36	MB	CATA Admin - Shell- Second Floor	Facilities	Buildings	Building Components	Exterior	9702	SF	2007	2018	0.35	484,664.67	4	50										CATA
37	MB	CATA Maint - Overhead Doors	Facilities	Buildings	Building Components	Exterior	10	Each	2004	2018	0.35	134,244.00	4	15										CATA
38	MB	CATA Maint - Overhead Doors	Facilities	Buildings	Building Components	Exterior	11	Each	2011	2018	0.35	208,494.00	4	15										CATA
39	MB	CATA Maint - Shell - Maint Shop	Facilities	Buildings	Building Components	Exterior	34035	SF	1978	2018	0.35	2,435,204.25	4	50										CATA
40	MB	CATA Maint - Shell - Maint Shop N	Facilities	Buildings	Building Components	Exterior	16194	SF	2004	2018	0.35	721,442.70	4	50										CATA
41	MB	CATA Maint - Shell - SA	Facilities	Buildings	Building Components	Exterior	35752	SF	2011	2018	0.35	1,496,221.20	4	50										CATA
42	MB	CATA Admin - Site	Facilities	Buildings	Building Components	Access and Parking	25446	SF	2007	2018	0.35	446,577.30	2	20										CATA
43	MB	CATA Maint - Site - Asphalt	Facilities	Buildings	Building Components	Access and Parking	121749	SF	2011	2018	0.35	1,479,250.35	3	20										CATA
44	MB	CATA Maint - Site-Concrete	Facilities	Buildings	Building Components	Access and Parking	50815	SF	1978	2018	0.35	686,002.50	2	20										CATA
45	MB	CATA Admin - Conveyance	Facilities	Buildings	Building Components	Elevators and Conveying Systems	1	Each	2007	2018	0.35	87,750.00	4	25										CATA

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
46	MB	CATA Maint - Building Generators-1	Facilities	Buildings	Building Components	Generators	1	Each	2006	2018	0.35	368,145.00	3	15										CATA
47	MB	CATA Maint - Building Generators-2	Facilities	Buildings	Building Components	Generators	1	Each	2013	2018	0.35	123,255.00	4	15										CATA
48	MB	CATA Admin - Interiors	Facilities	Buildings	Building Components	Interior	25446	SF	2007	2018	0.35	480,929.40	4	20										CATA
49	MB	CATA Maint - Interiors	Facilities	Buildings	Building Components	Interior	130721	SF	2011	2018	0.35	2,470,626.90	3	20										CATA
50	MB	CATA Admin - Substructure	Facilities	Buildings	Building Components	Other	25446	SF	1978	2018	0.35	549,633.60	4	50										CATA
51	MB	CATA Maint - Substructure - Maint Shop	Facilities	Buildings	Building Components	Other	34035	SF	1978	2018	0.35	735,156.00	3	50										CATA
52	MB	CATA Maint - Substructure - Maint Shop N	Facilities	Buildings	Building Components	Other	15585	SF	2004	2018	0.35	336,636.00	3	50										CATA
53	MB	CATA Maint - Substructure - SA Middle	Facilities	Buildings	Building Components	Other	61540	SF	1978	2018	0.35	1,329,264.00	3	50										CATA
54	MB	CATA Maint - Substructure - SA N	Facilities	Buildings	Building Components	Other	41165	SF	2011	2018	0.35	889,164.00	3	50										CATA
55	MB	CATA Maint - Substructure - SA S	Facilities	Buildings	Building Components	Other	25566	SF	2011	2018	0.35	552,225.60	3	50										CATA
56	MB	CATA Maint - Wireless Portable Fareboxes	Facilities	Equipment	Maintenance	Misc Equip	10	Each	2007	2018	0.35	67,567.50	4	12										CATA
57	MB	CATA Maint - Bulk Fluid Tanks	Facilities	Equipment	Maintenance	Bus	1	Each	2007	2018	0.35	202,500.00	3	25										CATA
58	MB	CATA Maint - Central Vacuum	Facilities	Equipment	Maintenance	Bus	1	Each	2002	2018	0.35	101,250.00	3	15										CATA
59	MB	CATA Maint - Dies./DEF Refilling Station	Facilities	Equipment	Maintenance	Bus	1	Each	2002	2018	0.35	70,200.00	3	12										CATA
60	MB	CATA Maint - Fall Protection	Facilities	Equipment	Maintenance	Bus	1	Each	2013	2018	0.35	27,000.00	4	20										CATA
61	MB	CATA Maint - Fluid Management System	Facilities	Equipment	Maintenance	Bus	1	Each	2004	2018	0.35	47,250.00	3	12										CATA
62	MB	CATA Maint - Gasoline Refilling Station Tank & Pump	Facilities	Equipment	Maintenance	Bus	1	Each	2002	2018	0.35	139,455.00	3	12										CATA
63	MB	CATA Maint - Stanley Stack	Facilities	Equipment	Maintenance	Bus	1	Each	2004	2018	0.35	32,400.00	4	20										CATA
64	MB	CATA Maint - Stanley Stack	Facilities	Equipment	Maintenance	Bus	1	Each	2000	2018	0.35	27,000.00	4	20										CATA
65	MB	CATA Maint - Bus Washer	Facilities	Equipment	Maintenance	Bus Washer	2	Each	2003	2018	0.35	1,620,000.00	3	12										CATA
66	MB	CATA Maint - Mohawk 16,000 lbs Above Ground	Facilities	Equipment	Maintenance	Lifts - Fixed	1	Each	2014	2018	0.35	16,200.00	4	15										CATA
67	MB	CATA Maint - Brake Lathe	Facilities	Equipment	Maintenance	Brake Lathe	2	Each	2003	2008	0.35	226,969.67	3	15										CATA
68	MB	CATA Maint - Brake Lathe	Facilities	Equipment	Maintenance	Brake Lathe	2	Each	2008	2018	0.35	27,000.00	3	15										CATA
69	MB	CATA Maint - Articulated Lifts - Fixed: In Floor	Facilities	Equipment	Maintenance	Lifts - Fixed: In Floor	2	Each	2004	2018	0.35	580,500.00	3	12										CATA
70	MB	CATA Maint - Lifts - Fixed: In Floor	Facilities	Equipment	Maintenance	Lifts - Fixed: In Floor	7	Each	2013	2018	0.35	1,512,000.00	3	12										CATA
71	MB	CATA Maint - Lifts - Fixed: Parallelogram	Facilities	Equipment	Maintenance	Lifts - Fixed: Parallelogram	1	Each	2002	2018	0.35	205,200.00	3	20										CATA
72	MB	CATA Maint - Air Compressor	Facilities	Equipment	Maintenance	Air Compressor	1	Each	1987	2018	0.35	30,375.00	3	20										CATA
73	MB	CATA Maint - Air Compressor	Facilities	Equipment	Maintenance	Air Compressor	1	Each	1996	2018	0.35	30,375.00	3	20										CATA
74	MB	CATA Maint - Lifts - Mobile - Wired	Facilities	Equipment	Maintenance	Hoist	1	Each	2004	2018	0.35	148,500.00	2	12										CATA
75	MB	CATA Maint - Lifts - Mobile - Wireless	Facilities	Equipment	Maintenance	Hoist	1	Each	2015	2018	0.35	148,500.00	4	12										CATA
76	MB	CATA Maint - Propane Refueling Station	Facilities	Equipment	Maintenance	Misc Equip	1	Each	2013	2018	0.35	236,250.00	4	12										CATA
77	MB	CTC Electrical - Exterior Lighting	Stations	Building	Building Components	Lighting	1	Each	2015	2018	0.35	56,133.00	4	20										CATA
78	MB	CTC Electrical - Interior Lighting	Stations	Building	Building Components	Lighting	1	Each	1998	2018	0.35	185,982.74	4	50										CATA
79	MB	Multi. Modal Gateway - Exterior Lighting	Stations	Building	Building Components	Lighting	1	Each	2015	2018	0.35	57,753.00	4	20										CATA
80	MB	Multi. Modal Gateway Lighting	Stations	Building	Building Components	Lighting	1	Each	2015	2018	0.35	84,223.13	4	15										CATA
81	MB	CTC Station Attendant Booth	Stations	Building	Building Components	Station Attendant Booth	1	Each	1998	2018	0.35	151,200.00	4	50										CATA
82	MB	CTC Interiors	Stations	Building	Building Components	Interior	14022	SF	1998	2018	0.35	265,015.80	3	20										CATA
83	MB	Multi. Modal Gateway Interiors	Stations	Building	Building Components	Interior	7130	SF	2015	2018	0.35	115,506.00	4	20										CATA
84	MB	CTC Electrical	Stations	Building	Building Components	Building Electrical	1	Each	1998	2018	0.35	208,226.70	4	50										CATA
85	MB	Multi. Modal. Gateway Electrical	Stations	Building	Building Components	Building Electrical	1	Each	2015	2018	0.35	173,259.00	4	50										CATA
86	MB	CTC Fire Protection	Stations	Building	Building Components	Fire Alarm	1	LS	1998	2018	0.35	85,183.65	4	15										CATA
87	MB	CTC Plumbing	Stations	Building	Building Components	Plumbing	14022	LS	1998	2018	0.35	#REF!	4	40										CATA
88	MB	CTC Plumbing - Fixtures	Stations	Building	Building Components	Plumbing	1	LS	1998	2018	0.35	59,602.50	4	15										CATA
89	MB	Multi. Modal Gateway Fire Protection	Stations	Building	Building Components	Fire Alarm	1	LS	2015	2018	0.35	40,908.38	4	15										CATA
90	MB	Multi. Modal Gateway Plumbing	Stations	Building	Building Components	Plumbing	1	LS	2015	2018	0.35	15,882.08	4	40										CATA

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
91	MB	Multi. Modal Gateway Plumbing - Fixtures	Stations	Building	Building Components	Plumbing	1	LS	2015	2018	0.35	27,877.50	4	15										CATA
92	MB	CTC HVAC	Stations	Building	Building Components	HVAC	1	LS	2006	2018	0.35	378,594.00	3	12										CATA
93	MB	Multi. Modal Gateway HVAC	Stations	Building	Building Components	HVAC	1	LS	2015	2018	0.35	120,318.75	4	12										CATA
94	MB	CTC Roof - Membrane	Stations	Building	Building Components	Roof	14022	SF	1998	2018	0.35	151,437.60	2	20										CATA
95	MB	CTC Roof - Metal	Stations	Building	Building Components	Roof	5000	SF	1998	2018	0.35	162,000.00	3	40										CATA
96	MB	Multi. Modal Roof	Stations	Building	Building Components	Roof	11487	SF	2015	2018	0.35	279,134.10	4	20										CATA
97	MB	CTC Shell	Stations	Building	Building Components	Exterior	14022	SF	1998	2018	0.35	1,003,274.10	4	50										CATA
98	MB	Multi. Modal Gateway Shell	Stations	Building	Building Components	Exterior	7130	SF	2015	2018	0.35	673,785.00	4	20										CATA
99	MB	CTC Site	Stations	Building	Building Components	Other	14022	SF	1998	2017	0.35	195,789.33	2	20										CATA
100	MB	CTC Substructure	Stations	Building	Building Components	Other	14022	SF	1998	2018	0.35	302,875.20	4	50										CATA
101	MB	MSU Interiors - Furniture	Stations	Building	Building Components	Other	84	LS	2000	2018	0.35	39,803.40	4	20										CATA
102	MB	MSU Site - Concrete pavement	Stations	Building	Building Components	Other	23164	Each	2000	2017	0.35	323,439.16	4	20										CATA
103	MB	Multi. Modal Gateway Substructure	Stations	Building	Building Components	Other	7130	Each	2015	2018	0.35	154,008.00	4	50										CATA
104	MB	Multi. Modal. Gateway Site - Asphalt	Stations	Access	Parking	Lot	77926	Each	2015	2017	0.35	979,273.37	4	20										CATA
105	MB	Multi. Modal. Gateway Site - Concrete	Stations	Access	Parking	Lot	25454	Each	2015	2017	0.35	355,414.46	4	20										CATA
106	MB	Multi. Modal Gateway Electronic Signage & Graphics	Stations	Signage & Graphics	Electronic	-	1	Each	2015	2018	0.35	54,000.00	4	20										CATA
2	SY	FORD TAURUS SE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2018	2018	11.5%	22,891.21		4	FORD TAURUS SE	2	Gasoline			Active	1FAHP2D86JG126825	660	106X804	CATA
229	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2009	2009	11%	105,645.75		7	CHA E450	229	Diesel Fuel	25	5	Active	1FDFE45P79DA14147	306,272	106X773	CATA
261	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2008	2008	11%	107,423.90		7	CHA E450	261	Diesel Fuel	25	15	Active	1FD4E45P18DA35436	129,957	012X281	CATA
263	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2008	2008	12%	108,969.26		7	CHA E450	263	Diesel Fuel	25	15	Active	1FD4E45P68DB59282	176,371	012X036	CATA
264	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2009	2009	12%	108,455.16		7	CHA E450	264	Diesel Fuel	25	5	Contingency	1FDFE4FP0ADA24215	225,971	066X869	CATA
265	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2009	2009	12%	110,145.69		7	CHA E450	265	Diesel Fuel	25	5	Active	1FDFE4FP1ADA24224	156,683	066X870	CATA
266	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	12%	105,349.94		7	CHA E450	266	Diesel Fuel	25	5	Active	1FDFE4FP3ADA41140	233,317	012X040	CATA
267	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	12%	105,349.94		7	CHA E450	267	Diesel Fuel	25	5	Active	1FDFE4FP5ADA41141	203,003	012X218	CATA
268	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	11%	107,950.95		7	CHA E450	268	Diesel Fuel	27	21	Active	1FDFE4FP6ADA41133	136,770	012X184	CATA
269	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	11%	106,984.41		7	CHA E450	269	Diesel Fuel	27	21	Active	1FDFE4FPXADA41765	141,842	012X041	CATA
270	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	11%	105,349.94		7	CHA E450	270	Diesel Fuel	25	5	Active	1FDFE4FP3ADA23172	247,591	012X185	CATA
271	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	11%	106,984.41		7	CHA E450	271	Diesel Fuel	27	21	Active	1FDFE4FP4ADA41762	149,518	012X181	CATA
272	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	11%	105,349.94		7	CHA E450	272	Diesel Fuel	25	5	Active	1FDFE4FP3ADA41137	243,426	012X182	CATA
273	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	273	Gasoline	25	5	Active	1FDFE4FS1CDA47106	265,054	012X289	CATA
274	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	274	Gasoline	25	5	Active	1FDFE4FS3CDA47107	245,393	012X166	CATA
275	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	275	Gasoline	25	5	Active	1FDFE4FS5CDA47108	244,693	012X164	CATA
276	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	276	Gasoline	25	5	Active	1FDFE4FS7CDA47465	204,839	012X051	CATA
277	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	277	Gasoline	25	5	Active	1FDFE4FS9CDA47466	250,991	012X050	CATA
279	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2012	2012	11%	97,275.58		7	CHA E450	279	Gasoline	25	5	Active	1FDFE4FS2CDA47468	226,866	012X053	CATA
280	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	11%	94,049.95		7	CHA E450	280	Gasoline	25	11	Active	1FDFE4FS1CDB33595	141,423	012X194	CATA
281	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	98,518.26		7	CHA E450	281	Gasoline	25	15	Active	1FDFE4FSXCDB33594	129,916	012X163	CATA
282	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	98,518.26		7	CHA E450	282	Gasoline	25	15	Active	1FDFE4FS8CDB33593	133,100	012X177	CATA
283	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	98,518.26		7	CHA E450	283	Gasoline	25	15	Active	1FDFE4FS6CDB33592	130,484	012X160	CATA
284	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	97,683.78		7	CHA E450	284	Gasoline	25	15	Active	1FDFE4FS4CDB33591	201,311	012X178	CATA
285	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	94,381.37		7	CHA E450	285	Gasoline	25	5	Active	1FDFE4FS2CDB33590	201,192	012X196	CATA
286	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	94,381.37		7	CHA E450	286	Gasoline	25	5	Active	1FDFE4FS6CDB33589	224,701	012X290	CATA
287	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	94,381.37		7	CHA E450	287	Gasoline	25	5	Active	1FDFE4FS5DDA20492	208,541	100X355	CATA
288	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	94,381.37		7	CHA E450	288	Gasoline	25	5	Active	1FDFE4FS7DDA20493	153,236	100X348	CATA

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
289	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	5%	98,349.00		7	CHA E450	289	Gasoline	25	15	Active	1FDFE4FS6DDA20498	141,080	100X362	CATA
290	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2014	2014	5%	95,087.77		7	CHA E450	290	Gasoline	25	19	Active	1FDFE4FS2EDB17229	123,327	012X064	CATA
291	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2014	2014	4%	90,024.90		7	CHA E450	291	Gasoline	25	19	Active	1FDFE4FS9EDB17230	113,528	106X691	CATA
293	DR	25FT CHAMP BUS	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2014	2014	4%	90,024.90		7	CHA E450	293	Gasoline	25	19	Active	1FDFE4FS2EDB17232	98,817	012X258	CATA
400	DR	27FT IC HYBRID	Vehicles	Revenue Vehicles	Bus	Bus (<30 ft) - Hybrid	1	Each	2010	2010	4%	229,209.47		10	IC IC	400	Hybrid Diesel	27	21	Active	4DRASAAM3AH232421	68,478	066X867	CATA
401	DR	27FT IC HYBRID	Vehicles	Revenue Vehicles	Bus	Bus (<30 ft) - Hybrid	1	Each	2010	2010	4%	229,209.47		10	IC IC	401	Hybrid Diesel	27	21	Active	4DRASSAM8AH259372	81,187	066X868	CATA
512	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	512	Diesel Fuel	40	37	Active	5FYD2LL001U022177	671,311	012X083	CATA
515	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4.5%	483,134.00		12	NF D40LF	515	Diesel Fuel	40	37	Active	5FYD2LL001U022180	584,247	012X086	CATA
518	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	518	Diesel Fuel	40	37	Active	5FYD2LL061U022183	740,509	012X089	CATA
520	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	520	Diesel Fuel	40	37	Active	5FYD2LL0X1U022185	663,967	012X091	CATA
522	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	522	Diesel Fuel	40	37	Active	5FYD2LL031U022187	616,340	012X093	CATA
523	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	523	Diesel Fuel	40	37	Active	5FYD2LL051U022188	622,561	012X094	CATA
526	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	526	Diesel Fuel	40	37	Active	5FYD2LL051U022191	695,436	012X097	CATA
530	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	530	Diesel Fuel	40	37	Active	5FYD2LL021U022195	759,061	012X101	CATA
531	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	531	Diesel Fuel	40	37	Active	5FYD2LL041U022196	697,861	012X102	CATA
538	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	538	Diesel Fuel	40	37	Active	5FYD2LL081U022203	658,630	012X109	CATA
544	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	544	Diesel Fuel	40	37	Active	5FYD2LL091U022209	655,918	012X115	CATA
546	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	546	Diesel Fuel	40	37	Active	5FYD2LL071U022211	666,013	012X117	CATA
549	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	549	Diesel Fuel	40	37	Active	5FYD2LL021U022214	718,479	012X120	CATA
550	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	550	Diesel Fuel	40	37	Active	5FYD2LL041U022215	688,877	012X121	CATA
551	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	551	Diesel Fuel	40	37	Active	5FYD2LL061U022216	704,461	012X122	CATA
553	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	553	Diesel Fuel	40	37	Active	5FYD2LL0X1U022218	564,889	012X124	CATA
554	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2001	2018	4%	483,134.00		12	NF D40LF	554	Diesel Fuel	40	37	Active	5FYD2LL011U022219	643,213	012X125	CATA
559	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	559	Diesel Fuel	40	37	Active	5FYD2LN093U025031	598,039	012X129	CATA
561	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	561	Diesel Fuel	40	37	Active	5FYD2LN023U025033	579,736	012X131	CATA
562	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	562	Diesel Fuel	40	37	Active	5FYD2LN043U025034	562,104	012X132	CATA
563	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	563	Diesel Fuel	40	37	Active	5FYD2LN063U025035	609,303	012X133	CATA
564	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	564	Diesel Fuel	40	37	Active	5FYD2LN083U025036	524,978	012X134	CATA
565	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	565	Diesel Fuel	40	37	Active	5FYD2LN0X3U025037	594,256	012X135	CATA
566	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2003	2018	4%	483,134.00		12	NF D40LF	566	Diesel Fuel	40	37	Active	5FYD2LN013U025038	611,509	012X136	CATA
567	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	4%	483,134.00		12	NF D40LF	567	Diesel Fuel	40	37	Contingency	5FYD4FV065C028859	351,123	012X141	CATA
568	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	4%	483,134.00		12	NF D40LF	568	Diesel Fuel	40	37	Active	5FYD4FV025C028860	526,310	012X142	CATA
569	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	4%	483,134.00		12	NF D40LF	569	Diesel Fuel	40	37	Active	5FYD4FV045C028861	558,793	012X143	CATA
570	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	4%	483,134.00		12	NF D40LF	570	Diesel Fuel	40	37	Active	5FYD4FV065C028862	501,991	012X144	CATA
571	MB	40FT LF BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	4%	483,134.00		12	NF D40LF	571	Diesel Fuel	40	37	Active	5FYD4FV085C028863	494,849	012X145	CATA
572	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	829,226.89		12	NF DE40LFR	572	Hybrid Diesel	40	37	Active	5FYH5FV026C030169	451,355	012X149	CATA
573	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	829,226.89		12	NF DE40LFR	573	Hybrid Diesel	40	37	Active	5FYH5FV096C030170	471,481	012X150	CATA
574	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	829,226.89		12	NF DE40LFR	574	Hybrid Diesel	40	37	Active	5FYH5FV006C030171	422,743	012X151	CATA
575	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	849,357.52		12	NF DE40LFR	575	Hybrid Diesel	40	37	Active	5FYH5FV016C030986	449,300	012X152	CATA
576	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	849,357.52		12	NF DE40LFR	576	Hybrid Diesel	40	37	Active	5FYH5FV036CO30987	478,311	012X153	CATA
577	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	849,357.52		12	NF DE40LFR	577	Hybrid Diesel	40	37	Active	5FYH5FV056C030988	448,194	012X154	CATA
578	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2006	2006	4%	849,357.52		12	NF DE40LFR	578	Hybrid Diesel	40	37	Active	5FYH5FV076C030989	446,056	012X155	CATA
579	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	4%	823,283.52		12	NF DE40LFR	579	Hybrid Diesel	40	37	Active	5FYH5FV0X9B036358	375,195	066X861	CATA
580	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	4%	823,283.52		12	NF DE40LFR	580	Hybrid Diesel	40	37	Active	5FYH5FV019B036359	398,136	066X856	CATA
581	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	4%	823,283.52		12	NF DE40LFR	581	Hybrid Diesel	40	37	Active	5FYH5FV089B036360	389,609	066X854	CATA
582	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	1%	823,283.52		12	NF DE40LFR	582	Hybrid Diesel	40	37	Active	5FYH5FV0X9B036361	351,463	066X853	CATA
583	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	1%	823,283.52		12	NF DE40LFR	583	Hybrid Diesel	40	37	Active	5FYH5FV019B036362	372,099	066X864	CATA
584	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	1%	823,283.52		12	NF DE40LFR	584	Hybrid Diesel	40	37	Active	5FYH5FV019B036363	372,183	066X863	CATA
585	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2009	2009	12%	823,283.52		12	NF DE40LFR	585	Hybrid Diesel	40	37	Active	5FYH5FV059B036364	376,973	066X862	CATA

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
586	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2010	2010	12%	807,157.34		12	NF DE40LFR	586	Hybrid Diesel	40	37	Active	5FYH5FU03AB038118	290,373	066X871	CATA
587	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2010	2010	12%	807,157.34		12	NF DE40LFR	587	Hybrid Diesel	40	37	Active	5FYH5FU05AB038119	330,715	066X872	CATA
588	MB	40FT EXCELSIOR HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2011	2011	11%	788,136.56		12	NF XDE40	588	Hybrid Diesel	40	37	Active	5FYH8FU00BC039309	281,192	012X044	CATA
589	MB	40FT EXCELSIOR HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2011	2011	11%	788,136.56		12	NF XDE40	589	Hybrid Diesel	40	37	Active	5FYH8FU07BC039310	296,163	012X179	CATA
590	MB	40FT EXCELSIOR HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2011	2011	11%	788,136.56		12	NF XDE40	590	Hybrid Diesel	40	37	Active	5FYH8FU09BC039311	262,686	012X037	CATA
591	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2012	2012	11%	769,304.52		12	NF XDE40	591	Hybrid Diesel	40	37	Active	5FYH8FU03CB040493	260,851	012X161	CATA
592	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2012	2012	11%	769,304.52		12	NF XDE40	592	Hybrid Diesel	40	37	Active	5FYH8FU08CB040490	266,774	012X165	CATA
593	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2012	2012	11%	769,304.52		12	NF XDE40	593	Hybrid Diesel	40	37	Active	5FYH8FU0XCB040491	258,962	012X157	CATA
594	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2012	2012	11%	769,304.52		12	NF XDE40	594	Hybrid Diesel	40	37	Active	5FYH8FU01CB040492	215,538	012X158	CATA
595	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	595	Hybrid Diesel	40	37	Active	5FYH8FU03CC041489	245,916	100X367	CATA
596	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	596	Hybrid Diesel	40	37	Active	5FYH8FU0XCC41490	220,198	100X368	CATA
597	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	597	Hybrid Diesel	40	37	Active	5FYH8FU01CC041491	222,781	100X369	CATA
598	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	598	Hybrid Diesel	40	37	Active	5FYH8FU03CC041492	233,502	100X370	CATA
599	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	599	Hybrid Diesel	40	37	Active	5FYH8FU05CC041493	235,708	100X371	CATA
600	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	600	Hybrid Diesel	40	37	Active	5FYHBFU07CC041494	232,289	100X372	CATA
601	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	601	Hybrid Diesel	40	37	Active	5FYH8FU90CC041495	226,846	100X347	CATA
602	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	602	Hybrid Diesel	40	37	Active	5FYH8FU00CC041496	251,446	100X351	CATA
603	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	603	Hybrid Diesel	40	37	Active	5FYH8FU02CC041497	227,088	100X350	CATA
604	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2013	2013	11%	761,013.12		12	NF XDE40	604	Hybrid Diesel	40	37	Active	5FYH8FU04CC041498	240,712	100X349	CATA
605	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	605	Hybrid Diesel	40	37	Active	5FYH8FU00EB044374	175,835	100X354	CATA
606	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	606	Hybrid Diesel	40	37	Active	5FYH8FU02EB044375	180,953	100X353	CATA
607	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	607	Hybrid Diesel	40	37	Active	5FYH8FU04EB044376	180,757	100X352	CATA
608	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	608	Hybrid Diesel	40	37	Active	5FYH8FU06EB044377	190,218	100X366	CATA
609	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	609	Hybrid Diesel	40	37	Active	5FYH8FU08EB044378	163,293	100X365	CATA
610	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	737,489.10		12	NF XDE40	610	Hybrid Diesel	40	37	Active	5FYH8FU0XEB044379	175,972	100X364	CATA
611	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	743,396.50		12	NF XDE40	611	Hybrid Diesel	40	37	Active	5FYH8FU06FB046342	126,252	012X256	CATA
612	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2014	2014	11%	743,396.50		12	NF XDE40	612	Hybrid Diesel	40	37	Active	5FYHH8FU08FB046343	131,775	012X060	CATA
613	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	11%	718,745.66		12	NF XDE40	613	Hybrid Diesel	40	37	Active	5FYH8FU0XFB46344	162,893	012X063	CATA
614	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	11%	718,745.66		12	NF XDE40	614	Hybrid Diesel	40	37	Active	5FYH8FU01FB046345	158,945	012X059	CATA
615	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	11%	718,745.66		12	NF XDE40	615	Hybrid Diesel	40	37	Active	5FYH8FU03FB046346	156,631	012X054	CATA
616	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	1%	718,745.66		12	NF XDE40	616	Hybrid Diesel	40	37	Active	5FYH8FU05FB046347	156,868	012X252	CATA
617	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	1%	718,745.66		12	NF XDE40	617	Hybrid Diesel	40	37	Active	5FYH8FU07FB046348	159,084	012X216	CATA
618	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	6%	718,745.66		12	NF XDE40	618	Hybrid Diesel	40	37	Active	5FYH8FU09FB046349	104,149	012X197	CATA
619	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2015	2015	6%	718,745.66		12	NF XDE40	619	Hybrid Diesel	40	37	Active	5FYH8FU05FB046350	153,146	012X202	CATA
620	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	620	Hybrid Diesel	40	37	Active	5FYH8FU07GC050346	78,589	106X745	CATA
621	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	621	Hybrid Diesel	40	37	Active	5FYH8FU09GC050347	81,334	106X746	CATA
622	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	622	Hybrid Diesel	40	37	Active	5FYH8FU00GC050348	84,631	106X747	CATA
624	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	624	Hybrid Diesel	40	37	Active	5FYH8FU09GC050350	78,041	106X749	CATA
625	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	625	Hybrid Diesel	40	37	Active	5FYH8FU00GC050351	84,484	106X750	CATA
626	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	626	Hybrid Diesel	40	37	Active	5FYH8FU02GC050352	80,914	106X751	CATA
627	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	6%	483,134.00		12	NF D40LF	627	Diesel Fuel	40	37	Active	5FYD4FV025B028928	408,085	106X730	CATA
628	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	6%	483,134.00		12	NF D40LF	628	Diesel Fuel	40	37	Active	5FYD4FV075B028925	430,207	106X712	CATA
629	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	6%	483,134.00		12	NF D40LF	629	Diesel Fuel	40	37	Active	5FYD4FV055B028924	372,443	106X713	CATA
630	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	6%	483,134.00		12	NF D40LF	630	Diesel Fuel	40	37	Active	5FYD4FV095B028926	447,703	106X992	CATA
631	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2005	2018	6%	483,134.00		12	NF D40LF	631	Diesel Fuel	40	37	Active	5FYD4FV005B028927	399,754	106X697	CATA
632	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2004	2018	6%	483,134.00		12	NF D40LF	632	Diesel Fuel	40	37	Contingency	5FYD2LVO14U027275	440,615	113X387	CATA
633	MB	NF D40LF (formerly COTA bus)	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Diesel	1	Each	2004	2018	6%	483,134.00		12	NF D40LF	633	Diesel Fuel	40	37	Contingency	5FYD2LVO34U027276	443,479	113X388	CATA
634	MB	40FT LF HYBRID BUS	Vehicles	Revenue Vehicles	Bus	Bus (40 ft) - Hybrid	1	Each	2016	2016	6%	708,085.14		12	NF XDE40	634	Hybrid Diesel	40	37	Active	5FYH8FU02GC050349	72,348	106X748	CATA
1053	DR	09 Ford Champion E450 190'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2009	2009	6%	105,645.75		7	Champion E450	1053	Diesel Fuel	25	15	Active	1FDFE45P29DA13844	263,016	012X240	TRANSDEV

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
1054	DR	08 Ford Champion E450 190'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2008	2008	6%	107,981.52		7	Champion E450	1054	Diesel Fuel	25	15	Active	1FD4E45P48DB59281	230,277	012X238	TRANSDEV
1055	DR	10 Ford Champion E450 23'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	6%	96,841.01		7	Champion E450	1055	Diesel Fuel	25	15	Active	1FDFE4FP0ADA41144	199,142	012X189	TRANSDEV
1056	DR	10 Ford Champion E450 23'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	6%	96,841.01		7	Champion E450	1056	Diesel Fuel	25	15	Active	1FDFE4FP8ADA24219	159,963	012X190	TRANSDEV
1057	DR	10 Ford Champion E450 23'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2010	2010	6%	96,841.01		7	Champion E450	1057	Diesel Fuel	25	15	Active	1FDFE4FPXADA24223	184,052	012X191	TRANSDEV
1058	DR	11 Ford Champion E450 190'	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2011	2011	6%	105,210.84		7	Champion E450	1058	Diesel Fuel	25	15	Inactive	1FDFE4FP7ADA41142	144,104		CATA
1059	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1059	Gasoline	12	6	Active	1FDFE4FS4DDA20497	200,897	012X245	TRANSDEV
1060	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1060	Gasoline	12	6	Active	1FDFE4FS2DDA20496	268,013	012X244	TRANSDEV
1061	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1061	Gasoline	12	6	Active	1FDFE4FS0DDA20500	259,210	012X246	TRANSDEV
1062	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1062	Gasoline	12	6	Active	1FDFE4FS0DDA20495	251,819	012X248	TRANSDEV
1063	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1063	Gasoline	12	6	Active	1FDFE4FS8DDA20499	240,476	012X243	TRANSDEV
1064	DR	13 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2013	2013	6%	98,349.00		7	Champion E450	1064	Gasoline	12	6	Active	1FDFE4FS9DDA20494	196,572	012X209	TRANSDEV
1067	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	6%	88,174.93		7	Champion E450	1067	Gasoline	25	15	Active	1FDFE4FS1FDA09895	136,280	012X043	TRANSDEV
1068	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	5%	88,174.93		7	Champion E450	1068	Gasoline	25	15	Active	1FDFE4FS3FDA09896	153,145	012X222	TRANSDEV
1069	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	5%	88,174.93		7	Champion E450	1069	Gasoline	25	15	Active	1FDFE4FS7FDA09898	137,927	012X208	TRANSDEV
1070	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	5%	88,174.93		7	Champion E450	1070	Gasoline	25	15	Active	1FDFE4FS5FDA09897	130,295	012X220	TRANSDEV
1071	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	5%	88,174.93		7	Champion E450	1071	Gasoline	25	15	Active	1FDFE4FS3FDA09901	159,167	012X249	TRANSDEV
1072	DR	15 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2015	2015	5%	88,174.93		7	Champion E450	1072	Gasoline	25	15	Active	1FDFE4FS1FDA09900	120,402	066X243	TRANSDEV
1223	DR	13 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2013	2013	5%	43,682.92		4	Eldorado LF Vans	1223	Gasoline	12	7	Active	2C7WDGBG2DR651047	168,360	100X358	TRANSDEV
1225	DR	13 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2013	2013	5%	43,682.92		4	Eldorado LF Vans	1225	Gasoline	12	7	Active	2C7WDGBG6DR651049	191,387	100X360	TRANSDEV
1226	DR	13 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2013	2013	5%	43,682.92		4	Eldorado LF Vans	1226	Gasoline	12	7	Active	2C7WDGBG2DR651050	121,222	100X361	TRANSDEV
1227	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1227	Gasoline	12	7	Active	12C7WDGBGXER335154	176,454	012X253	TRANSDEV
1228	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1228	Gasoline	12	7	Active	12C7WDGBG3ER335156	172,229	012X056	TRANSDEV
1229	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1229	Gasoline	12	7	Active	12C7WDGBG5ER335157	175,041	012X236	TRANSDEV
1230	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1230	Gasoline	12	7	Active	12C7WDGBG7ER335158	168,204	066X848	TRANSDEV
1231	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1231	Gasoline	12	7	Active	12C7WDGBG9ER335159	230,798	012X156	TRANSDEV
1232	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	5%	42,234.40		4	Eldorado LF Vans	1232	Gasoline	12	7	Active	12C7WDGBG5ER335160	161,923	012X232	TRANSDEV
1233	DR	14 Dodge Eldorado LF van	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2014	2014	4%	42,234.40		4	Eldorado LF Vans	1233	Gasoline	12	7	Active	12C7WDGBG1ER335155	176,108	012X257	TRANSDEV
1234	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1234	Gasoline	12	6	Active	2C7WDGBG2FR599423	132,071	012X071	TRANSDEV
1235	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1235	Gasoline	12	6	Active	2C7WDGBGXFR599413	130,351	012X080	TRANSDEV
1236	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1236	Gasoline	12	6	Active	2C7WDGBG1FR599414	97,326	012X061	TRANSDEV
1237	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1237	Gasoline	12	6	Active	2C7WDGBG5FR599416	145,704	012X051	TRANSDEV
1238	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1238	Gasoline	12	6	Active	2C7WDGBG9FR599418	141,428	012X055	TRANSDEV
1239	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1239	Gasoline	12	6	Active	2C7WDGBG7FR599420	142,018	012X066	TRANSDEV
1240	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1240	Gasoline	12	6	Active	2C7WDGBG0FR599422	130,791	012X096	TRANSDEV
1241	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1241	Gasoline	12	6	Active	2C7WDGBG4FR599424	133,223	012X210	TRANSDEV
1242	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1242	Gasoline	12	6	Active	2C7WDGBG9FR599421	157,440	120X61	TRANSDEV
1243	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1243	Gasoline	12	6	Active	2C7WDGBG6FR599425	152,615	012X065	TRANSDEV
1244	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1244	Gasoline	12	6	Active	2C7WDGBG5FR599433	134,504	012X288	TRANSDEV
1245	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1245	Gasoline	12	6	Active	2C7WDGBG1FR599431	116,848	012X186	TRANSDEV
1247	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1247	Gasoline	12	6	Active	2C7WDGBG9FR614130	120,760	012X224	TRANSDEV
1248	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1248	Gasoline	12	6	Active	2C7WDGBG2FR614129	135,516	012X225	TRANSDEV
1249	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1249	Gasoline	12	6	Active	2C7WDGBG6FR605403	135,573	012X229	TRANSDEV
1250	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1250	Gasoline	12	6	Active	2C7WDGBG0FR614131	167,880	012X079	TRANSDEV
1251	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1251	Gasoline	12	6	Active	2C7WDGBG6FR614134	155,419	012X123	TRANSDEV
1252	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1252	Gasoline	12	6	Active	2C7WDGBG8FR614135	157,537	012X122	TRANSDEV
1253	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1253	Gasoline	12	6	Active	2C7WDGBG2FR614132	154,720	012X203	TRANSDEV
1254	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1254	Gasoline	12	6	Active	2C7WDGBG4FR614133	139,900	012X207	TRANSDEV
1255	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1255	Gasoline	12	6	Active	2C7WDGBG1FR614140	163,645	012X172	TRANSDEV
1256	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	3%	41,348.42		4	Braun LF Entervans	1256	Gasoline	12	6	Active	2C7WDGBG3FR614138	189,565	012X103	TRANSDEV

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
1257	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	3%	41,348.42		4	Braun LF Entervans	1257	Gasoline	12	6	Active	2C7WDGBG5FR614139	174,773	012X180	TRANSDEV
1258	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	3%	41,348.42		4	Braun LF Entervans	1258	Gasoline	12	6	Active	2C7WDGBGXFR614136	181,459	012X068	TRANSDEV
1259	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1259	Gasoline	12	6	Active	2C7WDGBG3FR599432	155,213	012X090	TRANSDEV
1260	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	3%	41,348.42		4	Braun LF Entervans	1260	Gasoline	12	6	Active	2C7WDGBG7FR599417	190,331	012X087	TRANSDEV
1261	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	3%	41,348.42		4	Braun LF Entervans	1261	Gasoline	12	6	Active	2C7WDGBG0FR599419	154,691	012X110	TRANSDEV
1262	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1262	Gasoline	12	6	Active	2C7WDGBG8FR599409	155,536	012X187	TRANSDEV
1263	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1263	Gasoline	12	6	Active	2C7WDGBG3FR599415	140,525	012X162	TRANSDEV
1264	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1264	Gasoline	12	6	Active	2C7WDGBG6FR599408	146,682	012X039	TRANSDEV
1265	DR	15 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2015	2015	4%	41,348.42		4	Braun LF Entervans	1265	Gasoline	12	6	Active	2C7WDGBG6FR599411	180,501	012X188	TRANSDEV
1266	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1266	Gasoline	12	6	Active	2C7WDGBG8HR784059	43,988	106X744	TRANSDEV
1267	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1267	Gasoline	12	6	Active	2C7WDGBG9HR784085	48,432	012X233	TRANSDEV
1268	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1268	Gasoline	12	6	Active	2C7WDGBG9HR767500	42,672	100X356	TRANSDEV
1269	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1269	Gasoline	12	6	Active	2C7WDGBG9HR781185	51,231	012X176	TRANSDEV
1270	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1270	Gasoline	12	6	Active	2C7WDGBG9HR802231	54,107	012X173	TRANSDEV
1271	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1271	Gasoline	12	6	Active	2C7WDGBG8HR802303	49,988	012X235	TRANSDEV
1272	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1272	Gasoline	12	6	Active	2C7WDGBG6HR784092	52,699	012X175	TRANSDEV
1273	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1273	Gasoline	12	6	Active	2C7WDGBG5HR793107	51,715	106X798	TRANSDEV
1274	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1274	Gasoline	12	6	Active	2C7WDGBGXHR802254	43,834	100X359	TRANSDEV
1275	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1275	Gasoline	12	6	Active	2C7WDGBG9HR784071	52,824	012X167	TRANSDEV
1276	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1276	Gasoline	12	6	Active	2C7WDGBG2HR802264	50,436	012X195	TRANSDEV
1277	DR	2017 Dodge Braun entervans	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Mini-Van	1	Each	2017	2017	4%	38,923.70		4	Braun LF Entervans	1277	Gasoline	12	6	Active	2C7WDGBG7HR793111	44,374	012X204	TRANSDEV
1916	MB	28FT TROLLEY	Vehicles	Revenue Vehicles	Trolleybus	Trolleybus	1	Each	2009	2009	4%	433,698.74		10	NABI AH-28	1916	Diesel Fuel	28	28	Active	1N90182829A140198	111,087	066X855	CATA
1917	MB	28FT TROLLEY	Vehicles	Revenue Vehicles	Trolleybus	Trolleybus	1	Each	2009	2009	4%	433,698.74		10	NABI AH-28	1917	Diesel Fuel	28	28	Active	1N90182849A140199	106,537	066X865	CATA
6000	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2003	2018	4%	754,419.00		12	NF D60LF	6000	Diesel Fuel	60	49	Active	5FYD2UM073U025049	378,519	012X137	CATA
6001	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2003	2018	4%	754,419.00		12	NF D60LF	6001	Diesel Fuel	60	49	Active	5FYD2UM033U025050	349,219	012X138	CATA
6002	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2003	2018	4%	754,419.00		12	NF D60LF	6002	Diesel Fuel	60	49	Active	5FYD2UM053U025051	396,836	012X139	CATA
6003	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2003	2018	4%	754,419.00		12	NF D60LF	6003	Diesel Fuel	60	49	Active	5FYD2UM073U025052	408,696	012X140	CATA
6004	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2005	2018	4%	754,419.00		12	NF D60LF	6004	Diesel Fuel	60	49	Active	5FYD4YW095C028879	335,185	012X146	CATA
6005	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2005	2018	4%	754,419.00		12	NF D60LF	6005	Diesel Fuel	60	49	Active	5FDY4YW055C028880	324,012	012X147	CATA
6006	MB	60FT LF BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft)	1	Each	2005	2018	6%	754,419.00		12	NF D60LF	6006	Diesel Fuel	60	49	Active	5FYD4YW075C028881	346,851	012X148	CATA
6007	MB	60FT LF HYBRID ARTIC BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft) - Hybrid	1	Each	2007	2007	6%	1,173,132.83		12	NF DE60LFR	6007	Hybrid Diesel	60	49	Active	5FYH5YW047D032159	288,686	012X255	CATA
6008	MB	60FT LF HYBRID ARTIC BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft) - Hybrid	1	Each	2007	2007	6%	1,173,132.83		12	NF DE60LFR	6008	Hybrid Diesel	60	49	Active	5FYH5YW007C032160	319,719	012X259	CATA
6009	MB	60FT LF HYBRID ARTIC BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft) - Hybrid	1	Each	2007	2007	6%	1,173,132.83		12	NF DE60LFR	6009	Hybrid Diesel	60	49	Active	5FYH5YW027C032161	324,252	012X260	CATA
6010	MB	60FT LF HYBRID ARTIC BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft) - Hybrid	1	Each	2009	2009	6%	1,096,621.18		12	NF DE60LFR	6010	Hybrid Diesel	60	49	Active	1FYH5YU059B036314	250,361	066X851	CATA
6011	MB	60FT LF HYBRID ARTIC BUS	Vehicles	Revenue Vehicles	Bus	Articulated Bus (60 ft) - Hybrid	1	Each	2009	2009	6%	1,096,621.18		12	NF DE60LFR	6011	Hybrid Diesel	60	49	Active	5FYH5YU079B036315	261,446	066X852	CATA
9502	DR	08 Eldorado E-Z Rider II 30-foot bus	Vehicles	Revenue Vehicles	Bus	Bus (30 ft)	1	Each	2008	2008	6%	128,321.93		12	Eldorado E-Z Rider II	9502	Diesel Fuel	30		Active	1N9MLAC658C0844101	152,635	106X738	CATA
292	DR	14 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2014	2014	4%	90,024.90		7	Champion E450	292	Gasoline	25	19	Active	1FDFE4FS0EDB17231	103,250	106X876	CATA
294	DR	14 Ford Champion E450 190' gas	Vehicles	Revenue Vehicles	Vans, Cutaways and Autos	Medium-Duty Van	1	Each	2014	2014	2%	90,024.90		7	Champion E450	294	Gasoline	25	19	Active	1FDFE4FS4EDB17233	68,973	106X875	CATA
T11	SY	4WD PU SALT/PLOW	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2009	2009	0.5%	53,408.73		5	GMC 3500 HD	T11	Gasoline			Active	1GTHK74K79F124035	10,485	113X390	CATA
T20	SY	4WD UTILITY BODY (Maint. Service Truck)	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2003	2003	0.2%	155,408.28		5	FORD F550	T20	Gasoline			Active	1FDAF57P43ED34280	38,787	012X169	CATA
T23	SY	2WD UTILITY BODY	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2006	2006	0.7%	45,126.28		5	FORD F450	T23	Gasoline			Active	1FDXF46P16EA94924	113,291	012X171	CATA
T26	SY	4WD UTILITY BOX/PLOW	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2008	2008	0.4%	64,063.97		5	FORD F-350 4X4	T26	Gasoline			Active	1FDWF37Y58EB94685	16,004	012X271	CATA
T28	SY	2WD TRAILBLAZER	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2007	2007	1.1%	26,953.24		4	CHEV TRAILBLAZER	T28	Gasoline			Active	1GNDS13S272260761	85,337	012X283	CATA
T29	SY	2WD TRAILBLAZER	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2007	2007	1.1%	26,953.24		4	CHEV TRAILBLAZER	T29	Gasoline			Active	1GNDS13S272281948	77,381	012X284	CATA
T30	SY	4WD TRAILBLAZER	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2007	2007	1.0%	29,923.90		4	CHEV TRAILBLAZER	T30	Gasoline			Active	1GNDT13S772240132	113,289	012X285	CATA
T31	SY	4WD TRAILBLAZER	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2007	2007	1.0%	29,923.90		4	CHEV TRAILBLAZER	T31	Gasoline			Active	1GNDT13S372264458	77,474	012X286	CATA
T32	SY	4WD CHEVY TAHOE	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2013	2013	0.7%	34,921.18		5	CHEV K1500	T32	Gasoline			Active	1GNSK2E00DR230380	93,034	012X070	CATA
T33	SY	4WD CHEVY TAHOE	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2013	2013	0.7%	34,921.18		5	CHEV K1500	T33	Gasoline			Active	1GNSK2E0DR227689	77,770	012X227	CATA
T34	SY	4WD CHEVY TAHOE	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2013	2013	0.7%	34,921.18		5	CHEV K1500	T34	Gasoline			Active	1GNSK2E0XDR227728	65,184	012X228	CATA

ID	Mode	Description	Category	Sub-Category	Element	Sub-Element	Qnty	Unit	Date Built	Cost Yr	Soft Cost	Total Replacement Cost	Cdtn Rtg	ULB	Make Model	Agency ID	Fuel Type	Vehicle Length	Seating	Lifecycle Status	VIN	Mileage	License Number	Operator
T35	SY	SIERRA 4WD PU	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2013	2013	0.8%	29,937.15		5	GMC 1500	T35	Gasoline			Active	1GTR2TE74DZ382625	56,386	106 X 758	CATA
T36	SY	4WD UTILITY BOX/PLOW	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2016	2016	0.4%	56,911.78		5	FORD F-350 4X4	T36	Gasoline			Active	1FDRF3F65GEA99751	28,035	012X206	CATA
T37	SY	4WD UTILITY BOX/PLOW	Vehicles	Non-Revenue Vehicles	Truck	-	1	Each	2016	2016	0.4%	56,911.78		5	FORD F-350 4X4	T37	Gasoline			Active	1FDRF3F63GEA99750	30,593	012X199	CATA
T65	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T65	Gasoline			Active	1GNKRFED5HJ297566	20,955	106X754	CATA
T66	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T66	Gasoline			Active	1GNKRFED2HJ299548	21,561	106X755	CATA
T67	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T67	Gasoline			Active	1GNKRFED4HJ300666	20,819	106X756	CATA
T68	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T68	Gasoline			Active	1GNKRFED2HJ301914	22,500	106X757	CATA
T69	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T69	Gasoline			Active	1GNKRFED0HJ307694	21,700	106X762	CATA
T70	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T70	Gasoline			Active	1GNKRFED5HJ309375	21,297	106X761	CATA
T71	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T71	Gasoline			Active	1GNKRFED3HJ305972	21,051	106X760	CATA
T72	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T72	Gasoline			Active	1GNKRFED0HJ308604	21,402	106X759	CATA
T73	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T73	Gasoline			Active	1GNKRFED1HJ308353	2,422	CB 57695	CATA
T74	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T74	Gasoline			Active	1GNKRFED0HJ302401	19,472	106X763	CATA
T75	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T75	Gasoline			Active	1GNKRFED5HJ302801	11,580	106X764	CATA
T76	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T76	Gasoline			Active	1GNKRFED6HJ297091	4,796	106X765	CATA
T77	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T77	Gasoline			Active	1GNKRFED6HJ303908	7,997	106X766	CATA
T78	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T78	Gasoline			Active	1GNKRFEDXHJ302843	6,439	106X767	CATA
T79	SY	CHEVROLET TRAVERSE	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2017	2017	0.8%	24,581.80		4	CHEV TRAVERSE	T79	Gasoline			Active	1GNKRFED7HJ307921	4,986	106X768	CATA
V02	SY	VAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2004	2004	0.6%	60,730.16		4	DODG 2500 SPRINTER	V02	Diesel Fuel			Active	WD2PD644245677724	33,156	012X167	CATA
V60	SY	DODGE CARAVAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2010	2010	1.0%	25,882.38		4	DODG CARAVAN	V60	Gasoline			Active	2D4RN4DE2AR462639	20,233	012X159	CATA
V61	SY	DODGE CARAVAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2010	2010	1.0%	25,882.38		4	DODG CARAVAN	V61	Gasoline			Active	2D4RN4DE9AR462637	41,348	012X192	CATA
V62	SY	DODGE CARAVAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2010	2010	1.0%	25,882.38		4	DODG CARAVAN	V62	Gasoline			Active	2D4RN4DE0AR462638	36,020	012X038	CATA
V63	SY	DODGE CARAVAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2013	2013	0.9%	25,574.12		4	DODG CARAVAN	V63	Gasoline			Active	2C4RDGBG5DR617596	31,595	012X048	CATA
V64	SY	DODGE CARAVAN	Vehicles	Non-Revenue Vehicles	Car	-	1	Each	2013	2013	0.9%	25,574.12		4	DODG CARAVAN	V64	Gasoline			Active	2C4RDGBG7DR617597	38,473	012X046	CATA

APPENDIX B. INVESTMENT PROJECT LISTS

B.1 DETAILED VEHICLE PROJECT LIST

Table B- 1 Project List for All Vehicles - Rehabilitations and Replacements - $000s of YOE (2019-2038)

Vehicle Type	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Articulated Bus (60 ft)	3,108	2,401	2,473	1,698	-	-	557	717	443	-	-	-	4,432	5,706	3,526	-	-	-	794	1,022
Bus (<30 ft) - Hybrid	-	-	501	-	-	-	-	-	-	-	-	-	673	-	-	-	-	-	-	-
Bus (30 ft)	-	-	140	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-
Bus (40 ft) - Diesel	9,466	6,670	8,429	5,655	1,680	2,307	7,843	6,854	5,295	6,233	401	551	12,771	10,669	8,581	8,063	5,590	3,290	11,182	9,249
Medium-Duty Van	2,050	1,442	824	419	204	421	-	1,887	1,773	1,687	516	251	518	-	2,320	2,180	1,246	634	1,188	637
Mini-Van	439	614	633	665	495	691	712	749	557	778	801	843	627	876	902	949	705	986	1,015	1,068
Heavy-Duty Van	-	920	-	-	-	-	-	-	-	-	-	1,237	-	-	-	-	-	-	-	-
Non-Revenue Vehicles	206	552	324	249	259	123	695	469	261	169	204	911	513	156	265	355	1,022	428	259	441
Total Cost for Rehab/Replace	15,270	12,599	13,323	8,687	2,638	3,543	9,807	10,675	8,329	8,867	1,923	3,793	19,533	17,406	15,794	11,547	8,563	5,338	14,438	12,417

Table B-2 Project List for All Vehicles – Vehicle Counts for Replacements Only (2019-2038)

Vehicle Type	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Articulated Bus (60 ft)	4	3	3	2	-	-	-	-	-	-	-	-	4	5	3	-	-	-	-	-
Bus (<30 ft) - Hybrid	-	-	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Bus (30 ft)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Bus (40 ft) - Diesel	19	13	11	9	3	4	10	8	7	7	-	-	16	13	10	9	7	4	10	8
Medium-Duty Van	19	14	8	4	2	4		14	14	13	4	2	4		14	14	8	4	7	4
Mini-Van	10	14	14	15	10	14	14	15	10	14	14	15	10	14	14	15	10	14	14	15
Heavy-Duty Van	-	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Non-Revenue Vehicles	6	11	9	9	7	4	13	12	6	5	6	16	9	4	7	9	13	7	6	10
Total Replacements	**58**	**57**	**48**	**39**	**22**	**26**	**37**	**49**	**37**	**39**	**24**	**35**	**45**	**36**	**49**	**47**	**38**	**29**	**37**	**37**

Table B- 3 Project List for All Vehicles - Replacements Only - $000s of YOE (2019-2038)

Vehicle Type	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Articulated Bus (60 ft)	3,108	2,401	2,473	1,698	-	-	-	-	-	-	-	-	4,432	5,706	3,526	-	-	-	-	-
Bus (<30 ft) - Hybrid	-	-	501	-	-	-	-	-	-	-	-	-	673	-	-	-	-	-	-	-
Bus (30 ft)	-	-	140	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-
Bus (40 ft) - Diesel	9,455	6,663	5,807	4,894	1,680	2,307	5,942	4,896	4,413	4,545	-	-	11,352	9,500	7,527	6,977	5,590	3,290	8,472	6,981
Medium-Duty Van	2,050	1,442	824	419	204	421	-	1,887	1,773	1,687	516	251	518	-	2,320	2,180	1,246	634	1,188	637
Mini-Van	439	614	633	665	495	691	712	749	557	778	801	843	627	876	902	949	705	986	1,015	1,068
Heavy-Duty Van	-	920	-	-	-	-	-	-	-	-	-	1,237	-	-	-	-	-	-	-	-
Non-Revenue Vehicles	206	552	324	249	259	123	695	469	261	169	204	911	513	156	265	355	1,022	428	259	441
Total Cost for Rehab/Replace	15,259	12,593	10,701	7,926	2,638	3,543	7,349	8,000	7,004	7,179	1,521	3,242	18,114	16,237	14,741	10,461	8,563	5,338	10,933	9,126

Table B- 4 Project List for All Vehicles - Rehabilitations Only - $000s of YOE (2019-2038)

Vehicle Type	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Articulated Bus (60 ft)	-	-	-	-	-	-	557	717	443	-	-	-	-	-	-	-	-	-	794	1,022
Bus (<30 ft) - Hybrid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bus (30 ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bus (40 ft) - Diesel	11	7	2,621	761	-	-	1,901	1,958	883	1,688	401	551	1,419	1,169	1,054	1,085	-	-	2,711	2,269
Medium-Duty Van	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Van	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy-Duty Van	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Revenue Vehicles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cost for Rehab/Replace	**11**	**7**	**2,621**	**761**	**-**	**-**	**2,458**	**2,675**	**1,325**	**1,688**	**401**	**551**	**1,419**	**1,169**	**1,054**	**1,085**	**-**	**-**	**3,505**	**3,291**

B.2 Detailed Facility Project List

Table B- 5 Project List for Admin./Maint. Facility - $000s of YOE (2019-2038)

Description	ULB	Original Date Built	Replacement Due	Condition	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
CATA Admin - Plumbing - Fixtures -First Floor	15	1978	2019	4	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Site-Concrete	20	1978	2019	2	0	364	375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Air Compressor	20	1987	2019	3	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Electrical - Interior Lighting	15	1998	2019	3	21	21	22	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Dies./DEF Refilling Station	12	2002	2019	3	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Gasoline Refilling Station Tank & Pump	12	2002	2019	3	0	0	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Bus Washer	20	2003	2023	3	0	0	0	0	939	967	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Lifts - Mobile - Wired	12	2004	2019	2	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Fluid Management System	12	2004	2019	3	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Articulated Lifts - Fixed: In Floor	12	2004	2019	3	0	0	317	0	336	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Roof Membrane - Stg. Area Middle	15	2001	2019	2	0	0	545	561	578	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Air Compressor	20	1996	2019	3	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Central Vacuum	15	2002	2019	3	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Plumbing - Maint Shop	40	1978	2019	3	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Plumbing - SA Middle	40	1978	2019	3	0	0	136	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Brake Lathe	15	2003	2019	3	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Plumbing - First Floor	40	1978	2019	4	0	0	0	0	0	0	0	0	116	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Fire Protection	15	2004	2019	3	0	524	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Plumbing - Fixtures	15	2004	2019	3	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Roof -Membrane -Maint. Shop N	15	2004	2019	3	0	0	0	0	0	0	466	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Overhead Doors	15	2004	2019	4	69	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Building Boiler - Second Floor	12	2007	2019	3	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - HVAC	12	2007	2019	4	743	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Wireless Portable Fareboxes	12	2007	2019	4	0	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Stanley Stack	20	2000	2020	4	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Lifts - Fixed: Parallelogram	20	2002	2022	3	0	0	0	231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Building Generators-1	15	2006	2021	3	0	0	402	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Substructure - Maint Shop	50	1978	2028	3	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Substructure - SA Middle	50	1978	2028	3	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Electrical- SA Maint. Shop	50	1978	2028	4	0	0	0	0	0	0	0	0	0	148	153	157	162	167	0	0	0	0	0	0
CATA Admin - Shell- First Floor	50	1978	2028	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Shell - Maint Shop	50	1978	2028	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Substructure	50	1978	2028	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Electrical - Interior Lighting	15	2007	2022	3	0	0	0	164	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Plumbing - Fixtures - Second Floor	15	2007	2022	4	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Fire Protection	15	2007	2022	4	0	0	0	193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Stanley Stack	20	2004	2024	4	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Brake Lathe	15	2008	2023	3	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Roof - Membrane-Second Floor	20	2006	2026	4	0	0	0	0	0	0	0	315	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - HVAC - SA S	12	2011	2023	3	0	0	0	0	0	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Description	ULB	Original Date Built	Replacement Due	Condition	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
CATA Maint - HVAC - SA Middle	12	2011	2023	3	0	0	0	0	0	0	1277	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - HVAC - SA N	12	2011	2023	3	0	0	0	0	0	464	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Building Boiler - First Floor	12	2011	2023	4	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Electrical - Exterior Lighting	20	2007	2027	3	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
CATA Admin - Site	20	2007	2027	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Interiors	20	2007	2027	4	25	26	26	27	28	29	30	30	31	32	33	34	35	36	37	39	40	41	42	43
CATA Maint - Roof Membrane - Stg. Area S	15	2011	2026	4	0	0	0	0	0	0	0	787	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Overhead Doors	15	2011	2026	4	0	0	0	0	0	0	0	0	99	76	105	0	0	0	0	0	0	0	0	0
CATA Maint - Bulk Fluid Tanks	25	2007	2032	3	0	0	0	0	0	0	0	0	0	0	0	0	0	306	0	0	0	0	0	0
CATA Admin - Conveyance	25	2007	2032	4	0	0	0	0	0	0	0	0	0	0	0	0	0	133	0	0	0	0	0	0
CATA Maint - Lifts - Fixed: In Floor	12	2013	2025	3	0	0	0	0	0	0	266	547	564	581	0	0	0	0	0	0	0	0	0	0
CATA Maint - Propane Refueling Station	15	2013	2028	4	0	0	0	0	0	0	0	0	0	0	0	337	0	0	0	0	0	0	0	0
CATA Maint - Roof Membrane - Stg. Area SE	15	2012	2027	4	0	0	0	0	0	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Site - Asphalt	20	2011	2031	3	0	0	0	0	0	0	0	0	0	0	0	0	43	45	46	47	49	50	52	53
CATA Maint - Interiors	20	2011	2031	3	127	131	135	139	143	148	152	156	161	166	171	176	181	187	192	198	204	210	217	223
CATA Maint - Plumbing - Maint N	40	2004	2044	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Roof Membrane - Stg. Area N	20	2011	2031	4	0	0	0	0	0	0	0	0	0	0	0	0	1469	0	0	0	0	0	0	0
CATA Maint - Building Generators-2	15	2013	2028	4	0	0	0	0	0	0	0	0	0	0	171	0	0	0	0	0	0	0	0	0
CATA Admin - Roof - Membrane-First Floor	20	2012	2032	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	614	0	0	0	0
CATA Maint - Substructure - Maint Shop N	50	2004	2054	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Electrical- Maint. N	50	2004	2054	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Shell - Maint Shop N	50	2004	2054	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Plumbing - Second Floor	40	2007	2047	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Mohawk 16,000 lbs Above Ground	15	2014	2029	4	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0
CATA Maint - Fall Protection	20	2013	2033	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0
CATA Maint - Lifts - Mobile - Wireless	12	2015	2027	4	0	0	0	0	0	0	0	0	0	0	206	0	0	0	0	0	0	0	0	0
CATA Admin - Electrical	50	2007	2057	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Admin - Shell- Second Floor	50	2007	2057	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Plumbing - SA N	40	2011	2051	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Plumbing - SA S	40	2011	2051	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Electrical - Exterior Lighting	20	2015	2035	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0	0
CATA Maint - Substructure - SA N	50	2011	2061	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Substructure - SA S	50	2011	2061	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Electrical- SA Maint. N	50	2011	2061	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Shell - SA	50	2011	2061	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATA Maint - Roof Membrane - Maint. Shop	20	2016	2036	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	469	483	498
Total					**1724**	**1220**	**2032**	**1724**	**2248**	**1832**	**2190**	**1887**	**1049**	**1103**	**860**	**704**	**1891**	**874**	**318**	**898**	**293**	**828**	**794**	**818**

B.3 Detailed Station Project List

Table B- 6 Project List for CTC - $000s of YOE (2019-2038)

Description	ULB	Original Date Built	Replacement Due	Condition	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
CTC Roof - Membrane	20	1998	2019	2	0	161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTC Site	20	1998	2019	2	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTC Interiors	20	1998	2019	3	14	14	14	15	15	16	16	17	17	18	18	19	19	20	21	21	22	23	23	24
CTC HVAC	12	2006	2019	3	0	0	207	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTC Roof - Metal	40	1998	2038	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
CTC Plumbing	40	1998	2038	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123
CTC Fire Protection	15	1998	2019	4	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTC Plumbing - Fixtures	15	1998	2019	4	0	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CTC Electrical - Exterior Lighting	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	0	0	0
Total					**215**	**265**	**221**	**295**	**15**	**16**	**16**	**17**	**17**	**18**	**18**	**19**	**19**	**20**	**21**	**21**	**115**	**23**	**23**	**440**

Table B- 7 Project List for MSU-Shaw Parking Ramp - $000s of YOE (2019-2038)

Description	ULB	Original Date Built	Replacement Due	Condition	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MSU Interiors - Furniture	20	2000	2020	4	0	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	4
MSU Site - Concrete pavement	20	2000	2020	4	0	343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total					**0**	**345**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**4**

Table B- 8 Project List for Multimodal Gateway - $000s of YOE (2019-2038)

Description	ULB	Original Date Built	Replacement Due	Condition	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Multi. Modal Gateway HVAC	12	2015	2027	4	0	0	0	0	0	0	0	0	0	0	167	0	0	0	0	0	0	0	0	0
Multi. Modal Gateway Lighting	15	2015	2030	4	0	0	0	0	0	0	0	0	0	0	0	120	0	0	0	0	0	0	0	0
Multi. Modal Gateway Plumbing - Fixtures	15	2015	2030	4	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0
Multi. Modal Gateway - Exterior Lighting	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	0	0	0
Multi. Modal Gateway Interiors[10]	20	2015	2035	4	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	10	10	10	10
Multi. Modal Roof	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	461	0	0	0
Multi. Modal Gateway Shell[11]	20	2015	2035	4	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	22	22	23	24	24
Multi. Modal. Gateway Site - Asphalt	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	834	859	0
Multi. Modal. Gateway Site - Concrete	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285	294	0	0
Multi. Modal Gateway Electronic Signage & Graphics	20	2015	2035	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	0	0
Multi. Modal Gateway Plumbing	40	2015	2055	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi. Modal. Gateway Electrical	50	2015	2065	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi. Modal Gateway Substructure	50	2015	2065	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi. Modal Gateway Fire Protection	15	2015	2030	4	0	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0
Total					**20**	**20**	**21**	**22**	**22**	**23**	**24**	**24**	**25**	**26**	**193**	**246**	**28**	**29**	**30**	**316**	**882**	**958**	**892**	**35**

[10] All costs for interiors are annualized lifecycle cost
[11] 2% Annual capital maintenance

CAPITAL AREA TRANSPORTATION AUTHORITY

4615 Tranter Street, Lansing, Michigan 48910