

12/18/2024

FY2024 Charlotte Area Transit System (CATS)

CATS Specialized Maintenance Review

FINAL REPORT

CDI/DCI/DCI JOINT VENTURE

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Purpose of the Review/Scope of Work

FTA requested to conduct a Maintenance review with FTA, CATS, CORTAP Contractor (CDI/DCI/DCI), TSO-20 investigator and North Carolina Department of Transportation (NCDOT) staff. FTA requested a separate Financial Management Oversight (FMO) review and asked that Addendum 1 be added to the end of this report.

FTA Scope of work (SOW) requested a Kick-off meeting with FTA that was held on October 11, 2023, Periodic Program Meetings and Monthly Progress meetings. All of which have been held since the Kick-off meeting.

Background

The Federal Transit Administration (FTA) prioritizes the safety of our nation's public transportation systems and responsible stewardship of the taxpayer dollars that fund those systems. In light of concerns over safety and practices for managing federal funds at the Charlotte Area Transit System (CATS), FTA conducted financial management and specialized maintenance reviews of CATS.

Deferred maintenance on rail fleets and infrastructure can compromise safety and service reliability, as evidenced by reports of malfunctioning rail signals at at-grade crossings.

Addressing these issues promptly and effectively is crucial to ensure the safety and efficiency of public transit in the Charlotte area. It may require a collaborative effort between CATS, FTA, NCDOT, and other stakeholders to develop and implement a comprehensive maintenance plan that meets regulatory standards and prioritizes safety and reliability.

The concerns raised by the Federal Transit Administration (FTA) Region IV regarding the Charlotte Area Transit System (CATS) extend beyond its rail operations to its bus fleet as well. There are worries about whether CATS is meeting FTA's preventive maintenance requirements for its buses and if grant funding is being used appropriately to cover routine maintenance costs.

Deferred maintenance can lead to operational inefficiencies, safety hazards, and decreased reliability of bus services.

It's imperative for CATS to address these maintenance concerns promptly and transparently to ensure the safety and reliability of its bus operations. This may involve working closely with NC State Safety Oversight Agency (SSOA), FTA, and other relevant stakeholders to identify and rectify any deficiencies in maintenance practices and funding allocation.

In May 2022, CATS experienced a derailment that NCDOT later determined was caused by deferred maintenance on CATS' rail vehicles.

In FY2022, FTA conducted a Triennial Review (TR) of CATS. During the TR, the oversight review team requested the 2021 preventive maintenance records for three light rail vehicles (LRV) (103, 204, and 312) and three street cars (SC91, SC92, and SC93). CATS informed the

review team that the requested records for the three street cars were unavailable, and the street cars were out of service as they were in the process of being disposed of. In addition, LVR 103 was also out of service. CATS did provide records of one preventive maintenance inspection for LRVs 204 and 312, but it was not possible to determine the timeliness of inspections for these vehicles through the documentation provided. CATS did not provide complete preventive maintenance records for the two sampled in-service LRVs at the time of the Triennial Review Entrance Conference. CATS was, however, able to provide preventative maintenance records for the three streetcar vehicles prior to the Exit Conference.

Site Visit

After the virtual site visit, the city provided records of daily inspections on light rail vehicles 204 and 312. The city provided the 2021 preventative maintenance records for the sampled light rail vehicles 204 and 312. The review of the sampled preventative maintenance records identified compliance with the City's preventative maintenance procedure. Preventive maintenance was completed 100% on time, when 10% deviation in mileage reading was applied.

Further, NCDOT notified FTA that CATS did not perform the 600K mile overhaul maintenance on its light rail and that was a contributing factor to the May 2022 derailment. This has required CATS to run at 35 MPH throughout the rail system, affecting operations. A review of the sample set of records provided during the FY2022 TR was insufficient to assess if CATS has been conducting maintenance overhaul activity on its rail fleet. The two LRVs where maintenance records were provided did not surpass the 600K mileage mark in calendar year 2021.

Actions Taken during the Charlotte Area Transit System (CATS) Maintenance Review

Summary

The Federal Transit Administration (FTA) conducted a Maintenance Review of the Charlotte Area Transit System (CAT) Maintenance Program for its rail, bus, and facility operations. On behalf of FTA CDI/DCI Joint Venture (CDI/DCI) conducted this review to help FTA determine if CATS is meeting FTA's preventative maintenance requirements for its bus fleet, rail fleet, rail infrastructure and federally funded facilities.

The review examined CATS' rail, bus and facility maintenance process, policies, procedures, maintenance plans, maintenance records and interviewed selected members of the management staff involved in the maintenance program. CDI/DCI conducted a virtual review December 19 – 21, 2023 and an onsite review during January 8 – 11, 2024. CDI/DC reviewers examined select maintenance records, inspection of facilities and observed maintenance processes and procedures.

Records reviewed:

- Truck (rail truck) maintenance records from 2020 -2023
- Bus maintenance records from November 2022 – December 2023
- Facilities maintenance records November 2022 – December 2023

Request for Information

Phase I:

In the Request for Information (RIR) sent to CATS on October 20, 2023, the letter included all required information for CDI/DCI to begin the specialized review. CDI/DCI provided Dropbox access to CATS to upload required documents. The initial list of documentation requested in the RIR is listed below:

Rail Fleet & Infrastructure Maintenance

- Rail maintenance program plan and schedule
- Rail Vehicle and Infrastructure Maintenance Program Plans
- Rail Fleet Management Plan and Rail Fleet Inventory
- Most recent Transit Asset Management Plan
- Rail Fleet Manufacturer's Requirements (*requested in October 2023*) *The Siemens specs were not included originally when CATS provided this information.*
- Plan to Clear Rail Vehicle and Infrastructure Maintenance Backlog
- Preventive Maintenance Standard Operating Procedures
- Maintenance Standard Operating Procedures
- Maintenance Budget to Actual for the past three years
- Maintenance training records
- Monthly Quality Assurance Rail Inspection Reports referenced in CATS' TAM Plan
- State Safety Oversight reports related to deferred maintenance and incidents where the maintenance of assets was a root cause
- Preventive maintenance scheduled vs actual report for past year
- Procedures for purchasing of spare parts and large purchases for rail overhaul activities
- Current Fleet and peak requirements
- Reason for October 6-8, 2023, rail service suspension
- Deferred maintenance reports
- Status of rail signals at grade crossings and list of signal malfunctions within the past three years
- Status of 600K overhaul schedule
- Maintenance staff shortage report

Bus & Paratransit Fleet Maintenance Plans

- Bus & Paratransit Fleet Management/Maintenance Plan, Program and Schedule (Latest)
- Transit Asset Management Plan (Latest)
- Bus & Paratransit Preventive Maintenance Standard Operating Procedures
- Bus & Paratransit Maintenance Standard Operating Procedures
- Bus & Paratransit Fleet Manufacturer's requirements
- Bus & Paratransit Maintenance Budget to Actual for the past three year
- Bus & Paratransit Maintenance Training records for past three years
- Bus & Paratransit Preventive Maintenance scheduled vs actual report for past three years

- Bus & Paratransit Repairs (number, type, trends, by vehicle type)
- Road calls (number, miles between, etc.) for past three years
- List of service disruptions due to lack of available buses and paratransit vehicles for past three years
- Monthly Quality Assurance Bus Inspection Reports referenced in Section 1.1.1.6.1 CATS
- Fleet Maintenance Audits of the TAM Plan
- Organization and Management of maintenance activities for bus and paratransit
- Procedures for purchasing of spare parts and large purchases for bus overhaul activities
- Current Bus and Paratransit Fleet Rosters by type and status (active, peak, spares, awaiting disposition)
- CATS Assessment Report to improve its efficiency and effectiveness December 2022
- Bus and Paratransit Fleets Maintenance Targets and Achievements for the past three years
- Bus and Paratransit Fleet Inventory (Latest)

FTA Funded Facilities

- Facility Maintenance Program Plan and Schedule
- Most recent Asset Management Plan
- FTA funded facility inventory
- Facility Structural Inspection Program Plan and Schedule
- Additional documentation was requested on December 4, 2023, in a request via email asking for additional documentation, bus, rail, and facilities interview list, and a list of CATS facilities to be inspected during the onsite review.

Summary of CATS Virtual Interviews December 19 – 21, 2023

CDI/DCI provided CATS with an Agenda Package ahead of a virtual interview, outlining the structure and focus of the interview sessions. The agenda was designed to cover various topic areas related to CATS operations, specifically facilities, bus, and rail.

Day 1 (Tuesday, December 19, 2023) was allocated for introductions and an overview of CATS facilities. This included discussions on maintenance, management, and any relevant updates or challenges concerning CATS facilities. Those in attendance that were interviewed were the head of facilities maintenance, the manager responsible for maintaining track, signals and grade crossing equipment and building maintenance supervisors.

Day 2 (Wednesday, December 20, 2023) was designated for interview questions regarding CATS bus and paratransit operations. This session delved into topics such as fleet management, maintenance practices, service delivery, and accessibility for paratransit users. Those in attendance that were interviewed were the following: GM of Bus & Maintenance Services (RATP Dev USA), Director of Contracted Maintenance (RATP Dev USA), Training/Quality Manager

Day 3 (Thursday, December 21, 2023) was scheduled for conducting the interview focusing on CATS rail operations. This segment covered aspects such as rail fleet management,

maintenance protocols, safety measures, and any recent developments or issues related to CATS' rail services. Those in attendance that were interviewed were the following: General Manager Rail Operations, RCM Manager, MOW Managers, support personnel.

By organizing the interview process in this structured manner, CDI/DCI ensured that each aspect of CATS' operations received dedicated attention, allowing for a comprehensive assessment. This approach facilitated a thorough understanding of CATS' practices, challenges, and areas for improvement across its various operational domains.

CATS Facilities Inspect

Schedule/Timeline

Date	Topic
October 26, 2023	Kickoff Meeting
December 6, 2023	CATS Joint FMO/Maintenance Review updates
December 19, 2023	Facilities Virtual Interview
December 20, 2023	Bus/Paratransit Virtual Interview
December 21, 2023	Rail Virtual Interview
January 8, 2024	On-Site Review
January 9, 2024	On-Site Review
January 10, 2024	On-Site Review
January 11, 2024	On-Site Review

Documentation Review/Rail Assets

Rail Program Plan

The initial plan was written in December 2003 and has been revised 11 times with the most recent revision in August 2021. The maintenance plan reviewed included specific details on how CATS conducted maintenance tasks, however we determined that some additional procedures should be added.

1. Detailed Procedures for Maintenance Tasks

For each type of maintenance task mentioned in the plan (such as Scheduled Maintenance, PM cycles, circuit board repair, hydraulic equipment repair), you'll need to develop detailed procedures.

These procedures should include:

- **Step-by-step Instructions:** Outline the exact steps required to perform the maintenance task. This should be specific and clear, leaving no room for ambiguity.
- **Tools and Equipment:** List all tools and equipment needed for each task. Ensure these are readily available and specify any special tools required.
- **Safety Precautions:** Detail any safety precautions that need to be taken during the maintenance task. This is crucial for ensuring the well-being of maintenance personnel.
- **Environmental Considerations:** Note any environmental factors that could affect the maintenance task, such as working outdoors or in specific temperature conditions.
- **Quality Standards:** Specify any quality standards or benchmarks that maintenance must adhere to during the task.

2. Integration with Existing Plan are also some recommendations to incorporate into the relevant sections of the existing maintenance plan.

This should include:

- **Service Description:** Add subsections detailing how each type of service (LRV and streetcar vehicles) will be maintained according to the procedures.
- **Staffing and Scheduling:** Explain how the new procedures impact staffing and shift scheduling. For example, if certain tasks are best performed during off-peak hours, specify this in relation to the detailed procedures.
- **Fleet Management:** Update sections related to fleet size, peak requirements, and spare ratios to reflect how the detailed maintenance procedures will optimize vehicle performance and longevity.

Once approved, update all relevant documentation with the new procedures. Additionally, plan for training sessions to ensure that maintenance personnel understand and can effectively implement the procedures.

Example Implementation for instance, if you're adding in-house capabilities for printed circuit board repair, your detailed procedures might include:

- Step-by-step instructions on diagnosing circuit board issues.
- Requirements for soldering equipment and techniques.
- Safety precautions for handling electronic components.
- Quality checks to ensure repaired boards meet operational standards.

Each task should be similarly detailed, ensuring that the entire maintenance plan is comprehensive and actionable for your team.

Records Reviewed:

CDI reviewed Rail vehicle preventative maintenance records that are listed in the tables below for CATS Light Rail Vehicles Series I, II, and III. CATS did meet the FTA requirements for on-time performance in all areas with the exception of 300K, 600K and 900K mile truck overhauls. These records appear to have been developed from the general manufacturer's requirements. Continuous Improvement: Incorporate periodic reviews of maintenance intervals and procedures to optimize effectiveness and efficiency. This includes feedback loops from maintenance personnel and continuous improvement initiatives.

LRV Records Review Verification

Vehicle #	Year	Mfg.	CATS Light Rail Vehicles (Series I, II, III)											600K Truck Overhaul	900K Mid-Life Overhaul	
			PM Milestones (Miles)													
			5K	15K	30K	45K	50K	60K	125K	180K	480K	600K	900K	Monthly Inspection % (5K)		
106106		Siemens	94	19	7	8	4	4	1	2	1			100%	0	0
106306			47	9	3	4	2	1	1	1				100%	0	0
313313			19	3	3	2	1	1	1					100%	0	0
315316			47	9	3	4	2	1	1					98.6%	0	0

Streetcar Records Review Verification

Vehicle #	Year	Mfg.	Cats S-70 Streetcars (Series IV)													
			PM Milestones (Miles/Months)													
			2K/1K	6K/3K	12K/6K	24K/12K	24K	60K	300K	400K	750K	800K	994K	1250K	2500K	Monthly Inspection % (5K)
401401		Siemens	22	5	3	1	1									100%
402402			21	5	3	1	1									100%

Documentation Review/Bus Asset Program Plans

CATS has a well-structured approach to managing and maintaining its bus and paratransit fleet, along with overseeing its contractors. Here's an overview based on the information provided:

- The plan was last revised in 2023 to reflect changes in the vehicle composition, ensuring that it remains current and aligned with the latest operational needs and technological advancements.
- The "Bus & Paratransit Fleet Mgt Plan" outlined CATS' overall strategy and objectives for managing its bus and paratransit fleet. These included goals related to fleet size, composition, service levels, and budgeting.
- It also included various service parameters such as road calls (emergency responses), accidents (incident management), and likely other key performance indicators (KPIs) related to fleet reliability and customer service.

Regarding Bus & Paratransit Maintenance Standard Operating Procedures these SOPs detail the specific maintenance procedures for CATS' bus and paratransit fleet. They cover various aspects such as routine maintenance, inspections, repairs, and service intervals.

- Integration of Latest Vehicle Composition: SOPs were updated in 2023 to accommodate changes in the fleet composition. This ensures that maintenance procedures are tailored to the specific requirements of each vehicle type in the fleet.

Program Components:

- Regular monthly reports from the Bus Operating Division (BOD) provide CATS management with updates on operational performance and compliance with service standards.
- Regular inspections and audits are conducted to assess the contractor's preventive maintenance activities, repairs, and overall service quality.

Recommendations for Further Improvement:

- Ensure that all documents and procedures are regularly reviewed and updated to reflect evolving fleet needs, technological advancements, and regulatory changes.
- Consider integrating maintenance data and performance metrics into a unified system to streamline reporting and decision-making processes.
- Training and Development: Invest in ongoing training and development for maintenance personnel and contractor staff to enhance skills and maintain high standards of service delivery.

By leveraging these documents and programs effectively, CATS can optimize the reliability, safety, and efficiency of its bus and paratransit operations while maintaining robust oversight of contractor activities.

Records Reviewed

- Bus & Paratransit Preventive Maintenance Scheduled vs Actual reports
- Monthly Quality Assurance Bus Inspection Reports
- Bus\Vehicle Mile Records 6 Buses Time Less Than 100%
- A review of requested bus maintenance records found the following:
- Bus PMs - 95% on time
- STS (paratransit) - 97% on time

Documentation Review/Facilities and Infrastructure Assets Program Plans

CATS has several documents that address the overall maintenance of its facilities and equipment examples of these documents include:

- FMP preventative maintenance schedule
- CATS Facilities Management Plan
- Bridge Maintenance Plan 20131011.pdf"
- Facility Structural Inspection Program Plan and Schedule
- Facilities Documents\05.04
- CATS Monthly Asset Management Status Report - Bridge and Wall.pdf
- Grade Crossing\Maintenance Schedule

CATS is undergoing significant organizational changes regarding the maintenance of its transit assets. Here's a breakdown based on the information provided:

Current Situation

- **Distributed Maintenance Plans and Procedures:** CATS currently has maintenance plans and procedures that cover all its transit assets. These are likely dispersed across different departments or divisions within the organization.
- **MOUs with City of Charlotte:** Historically, CATS has entered into Memorandums of Understanding (MOUs) with the City of Charlotte to maintain certain transit assets. This arrangement likely segmented responsibilities and processes between CATS and the city.

Transition and Organizational Change

Termination of MOUs: CATS is in the process of terminating these MOUs with the City of Charlotte. This decision aims to centralize all maintenance activities for its facilities and equipment under CATS' direct control and oversight.

Expected Outcomes

- **Improved Maintenance Program:** The transition is expected to result in a more efficient and effective maintenance program. This includes optimized resource utilization, improved response times, and enhanced service reliability for CATS' transit assets.
- **Enhanced Accountability:** With direct responsibility, CATS can more effectively monitor and evaluate maintenance activities, ensuring compliance with internal standards and regulatory requirements.

By effectively managing this transition, CATS can strengthen its maintenance capabilities, optimize resources, and ultimately improve the overall reliability and performance of its transit services.

Records Reviewed

We obtained for our review the preventive maintenance records for the following assets:

- Charlotte Transportation Center
- North Davidson Bus Maintenance Facility
- South Tryon Bus Maintenance Facility
- Bus Park & Ride Parking Garage – (I-485 South Boulevard)
- 900 N. Davidson/Bus Maintenance
- 901 N. Davidson/Administration
- N. Davidson/Parking Deck
- Generator Maintenance/Various Facilities
- Rosa Parks Transit Center Facility-Inspection
- South Blvd. Light Rail Facility Facility-Inspection
- South Tryon Admin Facility-Inspection
- South Tryon Maintenance Facility-Inspection

- South Tryon Paint and Body Facility-Inspection
- South Tryon Service Lane Facility-Inspection
- CATS-Blue-Line-Station-Inspections
- CATS-Gold-Line-Stop-Inspections
- UCB Parking Deck Facility-Inspection
- Albemarle Road Park and Ride Facility-Inspection
- Cornelius Park and Ride Facility-Inspection
- CTC Facility-Inspection
- Eastland Transit Center Facility-Inspection
- Huntersville Gateway Park and Ride Facility-Inspection
- Huntersville Northcross Park and Ride Facility-Inspection
- I-485 Parking Deck Facility-Inspection
- JW Clay Parking Deck Facility-Inspection
- Mallard Creek Park and Ride Facility-Inspection
- Matthews Park and Ride Facility-Inspection
- N. Davidson Admin Facility-Inspection
- N. Davidson Maintenance Facility-Inspection
- N. Davidson Service Lane Facility-Inspection
- NBLRF Facility-Inspection

In general we found that CATS performs the maintenance of its facilities and equipment on time according to its schedule.

There is an issue with the timing on the inspection of CATS bridge structures and embankments that are late due to delays in obtaining access from the railroads that is needed to inspect the structures.

Findings

Deficiencies/Observations/Recommendations

- **Observations** – While onsite, the reviewers were able to review the written process, procedures, and actions.
- **Recommendations** – The actions recommended by the reviewers to improve procedures.
- **Deficiencies** – Procedures that the reviewers have determined are deficient with respect to Federal requirements.

Rail Fleet

Rail Fleet Observations

- CATS is operating at reduced speed per directive from NCDOT with no truck failures
- CATS is monitoring truck axle temperature daily with no incidence of overheated or failed bearings

- CATS is testing a vibration analyzer which is a new process
- CATS PMs were completed on schedule except for the 600K truck overhaul.
- CATS provided a revised truck overhaul schedule showing completion in August 2025

Rail Fleet Recommendations

There were no additional recommendations given to CATS regarding Rail Fleet.

Rail Fleet Deficiencies

Review Area	Finding	Corrective Action
Rail Fleet Maintenance	<p>CATS deferred the required 600K overhaul of it’s rail fleet trucks which resulted to a derailment and in-service failure</p> <p><u>FTA Circular 5010.1E, Ch. IV Management of the Award, Section 4. Equipment and Supplies (Including Rolling Stock)</u></p> <p>n. Management of Federally-Assisted Property (4) Maintenance and Warranty</p> <p>(a) Recipients must maintain federally-assisted property in good operating order and in compliance with any applicable Federal regulations that may be issued and follow applicable guidance that may be issued, except to the extent that FTA determines otherwise in writing.</p>	<p>CATS must provide a financial plan and schedule to accomplish the truck overhauls</p>
Rail Fleet Maintenance	<p>CATS rail fleet maintenance plan does not include the detailed requirements from the OEM Siemens at certain defined intervals.</p> <p><u>FTA Circular 9030.1E, Ch. VI Program Management and Administrative Requirements, Section I Certifications Required by 49 U.S.C. 5307 a 1.(5) Maintenance.</u> According to 49 U.S.C. 5307(d)(1)(C), a recipient must certify that it will maintain its federally-assisted facilities and equipment.</p> <p>Every recipient of Section 5307 program funds must have in its files a maintenance plan. The maintenance plan should identify the goals and objectives of a maintenance program, which may include, for example, vehicle life, frequency of road calls, and maintenance costs compared to total operating costs. The maintenance plan should establish the means by which the grantee will meet such goals and objectives.</p>	<p>CATS must update their rail fleet maintenance plan to include the requirements from the OEM Siemens</p>

Bus and Paratransit Fleet

Bus and Paratransit Fleet Observations

- A review of the submitted bus maintenance information confirms that CATS is completing its PMs for buses and paratransit vehicles on time.
- General observations confirm that the bus fleet appears to be in good shape with clean and well-maintained vehicles.
- In the past, FTA had been informed that CATS had a significant number of inactive buses. Site observations and CATS information confirm that current management has significantly reduced the number of inactive buses and vehicles not available for service.

Bus and Paratransit Fleet Recommendations

There were no additional recommendations given to CATS regarding Bus and Paratransit Fleet.

Bus and Paratransit Fleet Deficiencies

Deficiency	Finding	Corrective Action
Bus and Paratransit Fleet Maintenance	CATS has not met its miles between road calls goal of $\geq 15,000$ miles for the last three years. Between 2020 and 2023, the miles between road calls was 10,424 FY2021 -	CATS needs to submit the list of activities needed and schedule to increase the current mileage between road calls to meet its goal.
Bus and Paratransit Fleet Maintenance	Site visit observations found that CATS staff could not confirm the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.	CATS staff needs to submit information that confirms the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.

FTA Funded Facilities

FTA Funded Facilities Observations

- CATS has significantly improved and expanded the organization for facility maintenance. First, it created and staffed a separate Facilities Maintenance department with dedicated full-time staff. Next, CATS is ending MOUs with the city and taking over responsibility for all facility maintenance. Third, the facilities management department is requesting 12 additional positions in FY 2025 to implement its expanded program.
- We noted that progress is being made with the coordination between the Maintenance and Safety Departments on their inspections. Although further improvements are needed, we did observe coordination efforts to eliminate “silo” management approaches for these two departments.

FTA Funded Facilities Recommendations

Maintenance: CATS needs to submit a schedule for the next round of bridge inspections.

Reviewer Comment: Since the site visit, CATS has completed the required inspections every two years on four light rail bridges and two pedestrian bridges. These inspections were delayed due

to lack of access being granted onto freight railroad tracks. The last time these assets were inspected was in 2018.

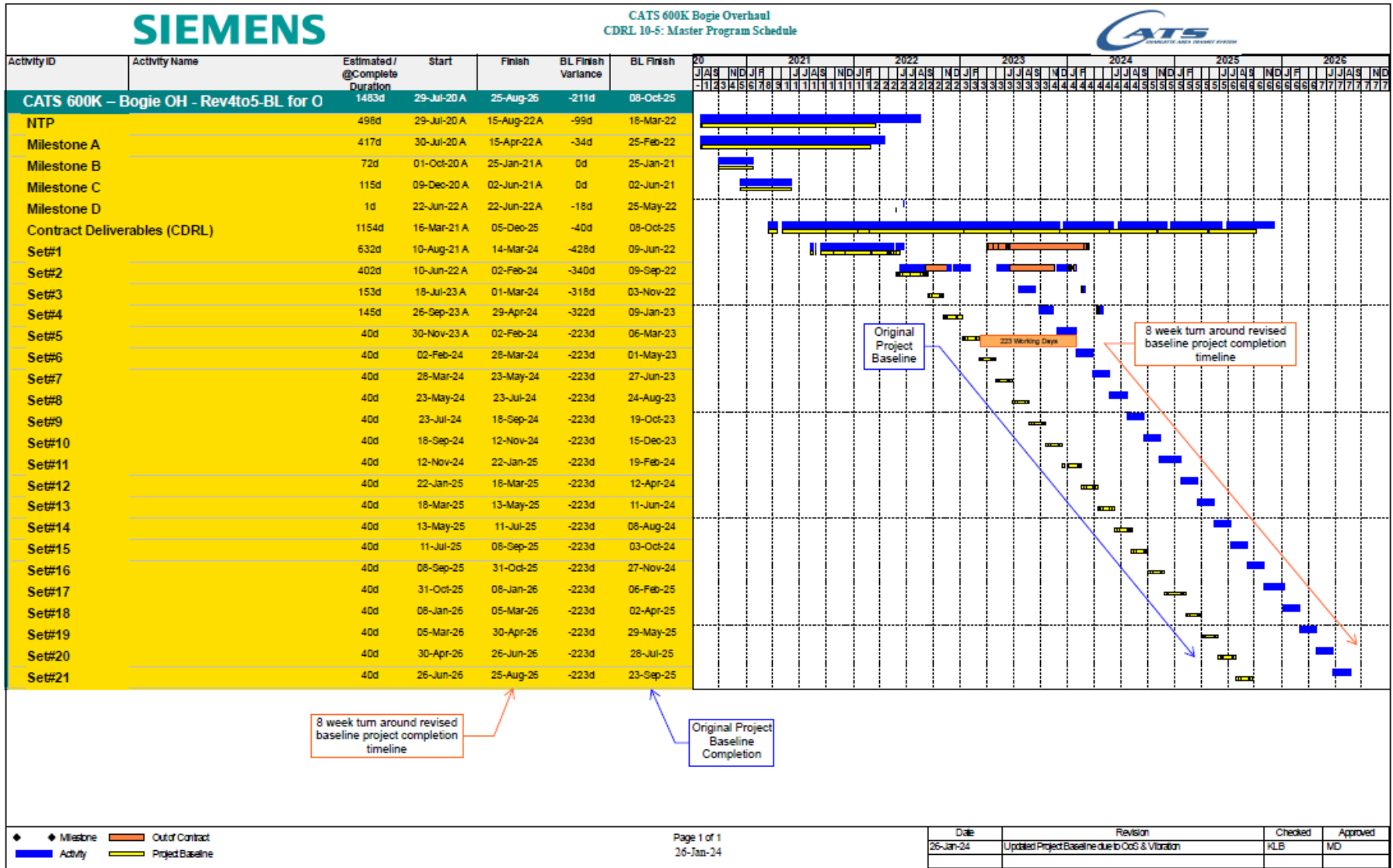
Satisfactory Continuing Control: CATS needs to report to FTA quarterly on the actions it has taken to resolve this issue including legal action seeking compensation from the contractor.

Reviewer Comment: CATS Davidson Parking Garage - Due to structure failure, the upper decks of this structure were recently closed in March 2023 and will remain closed until resolved.

FTA Funded Facilities Deficiencies

Deficiency	Finding	Corrective Action
Facilities Satisfactory Continuing Control	CATS could not provide FTA with a full assessment of all its system facilities and equipment.	CATS needs to develop a plan and schedule for completing an assessment of its system facilities and equipment
Facilities Satisfactory Continuing Control	Currently, each CATS department has a separate asset list with no central coordination. CATS do not have a systemwide Transit Asset Management system.	CATS needs to develop an Asset Management System that identifies all its assets and CATS needs to develop a reporting process of the conditions of the assets in order for CATS senior leadership to prioritize funding to replace assets. We recommend that one department, preferably Finance, be responsible for all agency assets. Note that CATS has hired a consultant to develop a systemwide asset management system and is currently standing up an Asset Management Office.
Facilities Maintenance	CATS do not report overall maintenance compliance to either senior management or the MTC	CATS needs to develop reporting systems to senior management and the MTC of its maintenance activities. Such summary reporting would help top management ensure that the required maintenance activities are completed on time.
Facilities Safety	CATS Safety Department does conduct audits/reviews of the maintenance of CATS assets. However, these efforts are not fully documented.	CATS Safety Department should develop enhanced procedures to exchange data and communicate activities with the Maintenance Department. CATS Safety Department must develop a procedure to fully document its inspections, audits/reviews of the maintenance of CATS assets.

CATS Overhaul Schedule



Summary of Findings

Review Area	Finding	Corrective Action(s)	Response Due Date(s)	Date Closed
Rail Fleet Maintenance	<p>CATS deferred the required 600K overhaul of it's rail fleet trucks which resulted to a derailment and in-service failure</p> <p><u>FTA Circular 5010.1E, Ch. IV Management of the Award, Section 4. Equipment and Supplies (Including Rolling Stock)</u></p> <p>n. Management of Federally Assisted Property</p> <p>(4) Maintenance and Warranty</p> <p>(a) Recipients must maintain federally assisted property in good operating order and in compliance with any applicable Federal regulations that may be issued and follow applicable guidance that may be issued, except to the extent that FTA determines otherwise in writing.</p>	CATS must provide a financial plan and schedule to accomplish the truck overhauls	90 days from Final Report	

Review Area	Finding	Corrective Action(s)	Response Due Date(s)	Date Closed
Rail Fleet Maintenance	<p>CATS rail fleet maintenance plan does not include the detailed requirements from the OEM Siemens to include all de defined intervals.</p> <p><u>FTA Circular 9030.1E, Ch. VI Program Management and Administrative Requirements, Section I Certifications Required by 49 U.S.C. 5307</u></p> <p>a 1. (5) Maintenance. According to 49 U.S.C. 5307(d)(1)(C), a recipient must certify that it will maintain its federally assisted facilities and equipment.</p> <p>Every recipient of Section 5307 program funds must have in its files a maintenance plan. The maintenance plan should identify the goals and objectives of a maintenance program, which may include, for example, vehicle life, frequency of road calls, and maintenance costs compared to total operating costs. The maintenance plan should establish how the grantee will meet such goals and objectives.</p>	CATS must update their rail fleet maintenance plan to include the requirements from the OEM Siemens	30 days from Final Report	

Review Area	Finding	Corrective Action(s)	Response Due Date(s)	Date Closed
Bus and Paratransit Fleet Maintenance	<p>CATS has not met its miles between road call's goal of $\geq 15,000$ miles for the last three years.</p> <p>Between 2020 and 2023, the miles between road calls were 10,424.</p>	<p>CATS needs to submit the list of activities needed and schedule to increase the current mileage between road calls to meet its goal.</p>	<p>90 days from Final Report</p>	
Bus and Paratransit Fleet Maintenance	<p>Site visit observations found that CATS staff could not confirm the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.</p>	<p>CATS staff needs to submit information that confirms the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.</p>	<p>Recipient responded to draft report</p>	<p>11/14/24</p>
Facilities Satisfactory Continuing Control	<p>CATS could not provide FTA with a full assessment of all its system facilities and equipment.</p>	<p>CATS needs to develop a plan and schedule for completing an assessment of its system facilities and equipment</p>	<p>90 days from Final Report</p>	
Facilities Satisfactory Continuing Control	<p>Currently, each CATS department has a separate asset list with no central coordination.</p> <p>CATS does not have a systemwide Transit Asset Management system.</p>	<p>CATS needs to develop an Asset Management System that identifies all its assets and CATS needs to develop a reporting process of the conditions of the assets in order for CATS senior leadership to prioritize funding to replace assets. We recommend that one department, preferably Finance, be responsible for all agency assets. Note that CATS has hired a consultant to develop a systemwide asset management system and is currently standing up an Asset Management Office.</p>	<p>90 days from Final Report</p>	

Review Area	Finding	Corrective Action(s)	Response Due Date(s)	Date Closed
Facilities Maintenance	CATS did not report overall maintenance compliance to either senior management or the MTC	CATS needs to develop reporting systems to senior management and the MTC of its maintenance activities. Such summary reporting would help top management ensure that the required maintenance activities are completed on time.	90 days from Final Report	
Facilities Safety	CATS Safety Department does conduct audits/reviews of the maintenance of CATS assets. However, these efforts are not fully documented.	CATS Safety department must develop a procedure to fully document its audits/reviews of the maintenance of CATS assets.	90 days from Final Report	

Attendees

Name	Title	Phone Number	E-mail Address
CATS			
Brent Cagle	Interim CEO	704-534-4360	Brent.cagle@charlottenc.gov
Chad Howell	Deputy Director/CFO	704-564-0481	Chad.howell@charlottenc.gov
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Jerrad Jones	System Safety & Security Consultant	262-308-2006	jones@adssafety.com
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Addendum 1



Charlotte Area Transit System

Special Assignment: Preventive Maintenance and Fixed Asset Review

Review Period: November 2022 – December 2023

Preventive Maintenance Testing

Our testing was performed/based on a sample of 29 vehicles selected by the maintenance specialists from CDI/DCI. All of the selected items were Bus or Rail vehicles that were subject to required preventive maintenance (PM).

We tested each of the selected sample items for their timeliness in the PM process. In addition, we validated the existence of the assets through examination of varying levels of source documentation.

Results: The primary purpose of this testing was to check for timeliness of all selected samples in receiving PM.

For Bus testing, some of the selected buses were required to have PM performed every 6,000 miles while the others had 5,000-mile requirements. We obtained a listing of the assets' mileage readings for each of their PM checks during our review period. We calculated a mileage interval between each of the visits to be able to compare how close the actual mileage reading was to the sample's respective mileage requirement (6,000 or 5,000). The determination for being on time for a PM check includes a buffer window of +/- 10% around the mileage requirement. For 6,000-mile vehicles, they must meet their PM check within 600 miles on either side of their requirement (5,400-6,600). For 5,000-mile vehicles, they must meet their PM check within 500 miles on either side of their requirement (4,500-5,500). We checked each of the assets' mileage intervals during our review period to determine if they consistently landed within their acceptable range. We tested 128 total PM checks for the 21 Buses selected and came across 4 mileage inspections that occurred outside their acceptable range, for an on-time performance rate of 97%. All 4 of these out of range exceptions were performed earlier than their required mileage interval.

For Rail testing, some of the selected light rail vehicles (LRVs) were required to have PM performed every 5,000 miles while the newer LRVs were performed on a date-based PM schedule. We obtained a listing of our assets' mileage readings for each of their PM checks during our review

period. We calculated a mileage interval/date interval between each of the visits to be able to compare how close the actual mileage reading/date was to the sample’s respective mileage/date requirement (5,000/monthly). The determination for being on time for a PM check included a buffer window around the mileage/date requirement. For 5,000-mile vehicles, they must meet their PM check within 500 miles on either side of their requirement (4,500-5,500). For time-based LRVs, they must be within 5 days early and 30 days late of their scheduled PM date. We checked each of the assets’ mileage/date intervals during our review period to determine if they consistently landed within their acceptable range. We tested 89 total PM checks for the 8 LRVs selected and came across 5 mileage/date intervals that occurred outside their acceptable range, for an on-time performance rate of 94%. All 4 of these intervals were performed earlier than their required mileage/date.

Budget Testing

Results: The primary purpose of this testing was to determine if CATS budgeted for truck overhauls and if funds earmarked for truck overhauls were indeed used as intended.

CATS Maintenance team shared a memo which contained CATS’ response to several hazardous conditions highlighted by the North Carolina Department of Transportation (NCDOT). It was bullet item #1 which caused the most concern for CATS Maintenance team. In that item, CATS addressed why it could not implement and carry out its truck overhaul and mid-life overhaul even though in 2020 there were CARES Act funds set aside for that purpose. Apparently, funding for the truck overhaul was moved from the Capital Budget to the Operating Budget during that time. In addition, CATS claimed there were supply chain issues, staffing challenges, and other exigent circumstances which delayed the start of the truck overhaul until FY 2023. CATS Maintenance team asked if we could review the budget vs actual differences for CATS expenditures during that period to see what activity took place and whether there were any unusual movements/usage of money.

We reviewed CATS Operating 6100 Expenditure budget vs. actual activity and noted that CATS Rail Operations were significantly under budget during each year between FY 2020 through FY 2022.

Fiscal Year	Division Name	Sum of Budget Amt	Sum of Actual Amt	Dollar Variance	Percentage Variance
2020	CATS Rail Operations	\$ 30,194,543.31	\$ 24,872,990.84	\$5,321,552.47	17.62%
2021	CATS Rail Operations	\$ 35,178,593.83	\$ 29,679,233.42	\$5,499,360.41	15.63%
2022	CATS Rail Operations	\$ 37,635,949.97	\$ 30,259,096.04	\$7,376,853.93	19.60%

We followed up with CATS to obtain explanations for these variances. The primary subcategories which contributed to the overall variances were “Salaries & Wages – Regular” and “Equipment Maintenance”. Regarding “Salaries and Wages – Regular”, CATS replied that the under-budget variances were staffing shortages due to difficulty retaining talent, as well changes in staffing levels. Regarding “Equipment Maintenance”, CATS replied that the variance was due to lack of resources. CATS had funding approved for the midlife overhaul and truck overhaul based on projections. However, the department did not have the specification, contracts, or resources in place to utilize the funding; thus, contributing to the variances.

We also reviewed the contract for FTA Federal Award “NC-2020-031-03” which allocated approximately \$57 million in CARES Act funds to CATS. The original award was \$10.5 million in FY 2020 with the remaining \$46.5 million federal funds to be awarded in future grants or amendments. The initial award of \$10.5 million did not cover Preventive Maintenance costs; however, the award did allow for future revisions to include those costs. FTA added a third amendment to the award in January 2022 which provided funding for “Preventive Maintenance – Bus and Rail, Operating Assistance, and Miscellaneous Support Equipment”.

In addition, CATS received two additional grants that provided COVID-19 funding.

Grant NC-2022-008 awarded under the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA) provided a total of \$51.1 million, including \$11.1 million for rail mid-life overhaul and \$40 million for preliminary engineering for the LYNX Silver Line project. As of December 2023, \$27.1 million had been drawn down to date.

Grant NC-2022-010 awarded under the American Rescue Plan (ARP) provided a total of \$82.7 million, including \$38.9 million for overhaul of rail vehicles, \$14.2 million for rail preventive maintenance, \$23.8 million for bus preventive maintenance, and \$5.8 million for operating assistance. As of December 2023, \$10.0 million had been drawn down to date.

We spoke with CATS Chief Financial Officer Chad Howell who said that money was available for the truck overhaul; however, in FY 2020, the focus at the time was more about what would an actual truck overhaul plan look like. According to Chad, given staffing issues and resource constraints, there was a greater emphasis on “planning than on doing” at the time.

After reviewing all the support provided and speaking with CATS, we are not under the impression that money earmarked for the truck overhaul or preventive maintenance has been misappropriated or used for other purposes. There was money available for CATS to perform its truck overhaul; it was just a matter of having the resources in place to implement the plan.

Spare Parts Testing

Results: The primary purpose of the spare parts testing was to verify that items recorded in the inventory records did exist and contained proper supporting documentation.

We tested a sample selection of 25 Bus spare parts and a sample selection of 25 Rail spare parts to determine if items recorded in inventory contained proper supporting documentation.

For the Bus Spare Parts testing, we noted that 5 of the 25 samples selected for testing agreed to the supporting documentation in terms of dollar amount per sample item as well as item description (including the part number) without issue. Supporting documentation for 9 of the 25 samples selected for testing agreed to the sample selection in terms of dollar amount per unit; however, the part number on the invoice did not agree to the sample selection. We followed up with CATS about the part number discrepancies to which they replied some of the samples have part numbers that have been superseded by the vendor. CATS provided support which evidenced the superseded part numbers for eight of the nine samples in question. For one (“Rack, Bike All Buses” (part

number 4089316)) of the nine samples we noted that inventory records did not contain the old part number. CATS did not provide any explanation for that discrepancy; an exception was noted.

Supporting documentation for 11 of the 25 samples selected for testing agreed to the sample selection in terms of item description (including part number); however, the cost per unit for each sample per the support did not agree to the sample selection. According to CATS, their inventory records system (SPEAR) uses an average price when calculating the value of stocked items. For that reason, the average price of a given unit may not agree to invoice support for said unit. For 4 of the 11 samples, we noted the part number on the invoice did not agree to the sample selection. CATS provided support for three of the four samples which evidenced that the vendor superseded the part number. One (“Injector, 2010 ISL Reman Engine” (part number 5295603NX)) of the four samples in question contained an improper description in the inventory records. CATS did not provide an explanation for that discrepancy; an exception was noted.

For the Rail Spare Parts testing, we noted that 6 of the 25 samples selected for testing agreed to the supporting documentation in terms of dollar amount per sample item as well as item description without issue. For 9 of the 25 samples selected for testing, per CATS, they were either unable to provide supporting documentation or they were unable to locate the item detail on a given invoice. These were noted as exceptions.

For the remaining 10 of the 25 samples selected for testing, we noted the invoice support for each sample did not cover the total dollar amount of our sample selection. We followed up with CATS about the noted issues to which they replied that for 1 (GRAPHICS AND DECALS INSTL, EXTERIOR) of the 10 samples selected for testing, the dollar amount for the item was entered incorrectly into EAMS. The true cost of the item(s) is approximately \$14.6K which is 40 units at approximately \$364 each. The original entry into EAMS incorrectly noted the amount as \$553,097 which is 40 units x total price of \$14.6K. Per CATS, the invoice support for 1 (EVENT RECORDER) of the 10 samples selected for testing did not agree to the sample selection because CATS has 5 total units of that item at various prices, and we received support for only 1 of the units. For the remaining 8 of the 10 samples selected for testing, we did not receive any additional supporting documentation. These 10 samples were noted as exceptions.

Addendum 2

Charlotte Area Transit Response to FTA Specialized Maintenance Review



November 14, 2024

Yvette G. Taylor, Ph.D.
Regional Administrator, Region IV
Federal Transit Administration
230 Peachtree Street, NW, Suite 1400
Atlanta, Georgia 30303

Re: Charlotte Area Transit Response to FTA Specialized Maintenance Review

Dear Dr. Taylor:

As requested in your letter received on October 25, 2024, attached for your review and comment please find a copy of the Charlotte Area Transit System's (CATS) response to the draft report resulting from the Specialized Maintenance Review conducted by CDI/DCI. We believe our responses address each of the review's findings.

I would also like to thank you for the assistance you and your staff regularly provide to CATS' leadership and staff.

If you require any additional information or have any questions regarding CATS' response to CDI/DCI's findings, please contact Chad Howell, CATS CFO at 704-564-0481.

Best Regards,

Brent Cagle
Interim Chief Executive Officer
City of Charlotte Deputy City Manager

cc: Dudley Whyte, Deputy Regional Administrator, FTA Region IV
Rhonda King, Program Analyst FTA Region IV
Kathleen Beck, CDI/DCI
Chad Howell, Chief Financial Officer



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Finding # 1:

CATS deferred the required 600K overhaul of its rail fleet trucks which resulted to a derailment and in-service failure

Corrective Action:

CATS must provide a financial plan and schedule to accomplish the truck overhauls.

Recipient Response:

CATS accepts the deferred maintenance of the rail fleet trucks, which was identified as contributing to the derailment and subsequent service disruptions. We understand the significance of these issues and assure our stakeholders that we are committed to addressing them and improving the quality of our services moving forward. Below is a project recap, a project summary, and our financial plan for completing the truck overhaul and maintenance project.

Project Summary:

The objective of the Siemens S-70 Light Rail Vehicle (LRV) Maintenance project is to ensure the Vehicles (LRVs) are maintained and serviced to reach their 30-year useful life. The CATS fleet has multiple platforms of the Siemens S70 LRVs. These are classified as CATS I (100 series) placed in service 2007, CATS II (series 200) 2010 and CATS III (series 300) 2015. The Original Equipment Manufacturer (OEM) recommends that the Siemens trucks, equipment, and braking systems be serviced at five years or 300,000-mile intervals, with the next interval being ten years or 600,000-mile intervals. The performance of the required maintenance will ensure the S70 vehicles can reach their designed 30-year useful life.

Truck Overhaul:

The current S70 Truck Overhaul project started with the CATS I & II fleet 600K Truck Overhaul under contract 20200001235 with Siemens in 2020. Series 100 and 200 vehicles are currently undergoing Truck overhaul project.

Truck Maintenance:

CATS has completed a contract amendment of the CATS III S70 300K Truck Maintenance project to cover addition elements. The three main components of the contract amendment are:

- CATS III 300K truck maintenance,
- Expedited journal-bearing replacement, and
- CATS issued a new contract number 2024001442 for the amended contract.

Truck Overhaul and Maintenance Timeline and Schedule of Funding:

Below please find an updated timeline provided by Siemens and a schedule of funding from project inception to completion. The project at completion is estimated to cost approximately \$59.3 million.

Finding # 2:

CATS rail fleet maintenance plan does not include the detailed requirements from the OEM Siemens to include all defined intervals.

Corrective Action:

CATS must update their rail fleet maintenance plan to include the requirements from the OEM Siemens.

Recipient Response:

CATS Rail Maintenance has implemented the following corrective action to address the issue of not including all the maintenance interval requirements from the OEM, Siemens. Appendix D has been added to the Light Rail Fleet Management Plan (LRFMP), which provides the inspection details that occur at various intervals for CATS I, II, III (S70) and Streetcar (S700) vehicles as recommended by the Original Equipment Manufacturer (OEM). This information is referenced in sections 9.12 and 9.13 of the LRFMP.

Revision 12 of this plan is currently in draft and will be finalized in December 2024. A copy of the final plan will be provided at that time.

BUS AND PARATRANSIT FLEET MAINTENANCE

Finding # 3:

CATS has not met its miles between road call's goal of > 15,000 miles for the last three years.

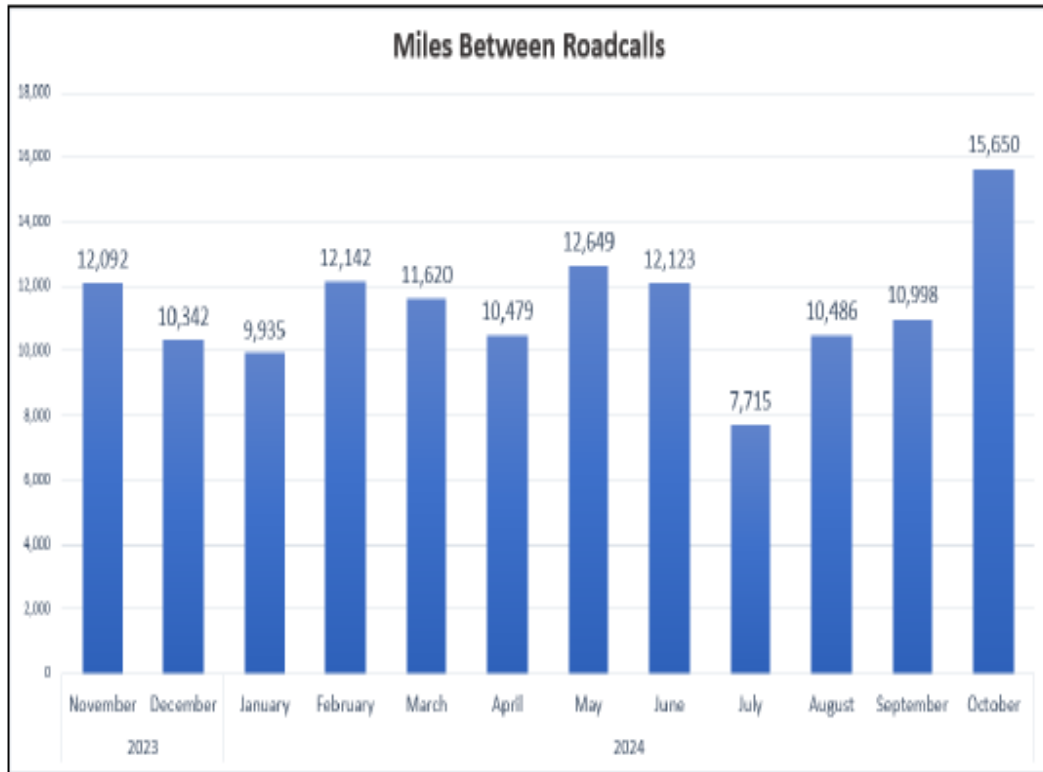
Corrective Action:

CATS needs to submit the list of activities needed and schedule to increase the current mileage between road calls to meet its goal.

Recipient Response:

CATS recognizes it hasn't met its goal of > 15,000 miles between road calls for the last three years. The fleet age of the CATS fixed route bus fleet has significantly impacted our ability to meet this goal. Over the last year, CATS has made significant headway in improving the fleet age:

- Over 50 of our oldest buses were retired, reducing our overall fleet to 242 buses.
- CATS has taken delivery and put into service of 27 new buses with 47 additional new buses arriving in early 2025. These buses will replace 74 of the oldest buses in the fleet of 242 buses. The 27 new buses started going into service in August 2024 with the impact of the new vehicles on our miles between roadcalls shown in the graph below.



CATS is working on placing an order for additional new buses for delivery in FY 2026 and hopes to get to a consistent replacement schedule of roughly 1/12th of the fleet on an annual basis to better manage the fleet age.

CATS also recognizes that fleet age is not the only factor relating to miles between roadcalls. We are also working on improving maintenance practices and better utilizing data to establish predictive maintenance schedules.

Utilizing data, CATS has identified our most common road failures and prioritizing them through maintenance campaigns.

CATS believes through our fleet replacement schedule and our more focused approach to maintenance that we will be able to maintain the goal of > 15,000 miles between road calls as demonstrated in October 2024.

Finding # 4:

Site visit observations found that CATS staff could not confirm the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.

Corrective Action:

CATS staff needs to submit information that confirms the status and plans for the buses located in Lanes 15-17 at the South Tryon bus maintenance facility.

Recipient Response:

CATS has retired/auctioned the vehicles that were stored in Lanes 15 -17 when the review team

was on-site. The picture below shows the buses currently in Lanes 15-17 and they are the CATS Command Center Buses as well as buses that have recently been decommissioned and are ready for auction.



FACILITIES SATISFACTORY CONTINUING CONTROL

Finding # 5:

CATS could not provide FTA with a full assessment of all its system facilities and equipment.

Corrective Action:

CATS needs to develop a plan and schedule for completing an assessment of its system facilities and equipment.

Recipient Response:

CATS is currently updating our Facility Management Plan (FMP), including the frequency of the Facility Condition Assessments. This is also incorporated by reference in the Transit Asset Management Plan (TAMP) which will also need to be updated. CATS' FMP will be synced with FTA's 4-year frequency for facility condition assessments. CATS is in the process of engaging a consultant to complete the Condition Assessments that are due.

CATS recently hired a new Transit Asset Management Program Manager to oversee our TAMP and coordinate the implementation of our new Enterprise Asset Management System. He starts work in January 2025 and will work closely with Facilities and the other Operating Divisions to incorporate their assets in a master database for their scheduled tracking and assessment.

CATS can provide a copy of the updated Facilities Management Plan and a schedule of the Facilities Assessments once the consultant has been selected and the schedule finalized.

Finding # 6:

Currently, each CATS department has a separate asset list with no central coordination. CATS doesn't have a systemwide Transit Asset Management system.

Corrective Action:

CATS needs to develop an Asset Management System that identifies all its assets and CATS needs to develop a reporting process of the conditions of the assets for CATS senior leadership to prioritize funding to replace assets. We recommend that one department, preferably Finance, be responsible for all agency assets. Note that CATS has hired a consultant to develop a systemwide asset management system and is currently standing up an Asset Management Office.

Recipient Response:

CATS has selected the Trapeze Group to provide an Enterprise Asset Management System that will address this finding. The contract is being finalized and will go to Council for action on December 9, 2024. The system being contracted for is a comprehensive asset, work, and materials management software for Rail, Bus, and Facilities. It will also include Safety Management Software, Yard Management Software, and a Fluids Management Software as part of the Enterprise Asset Management software system. The Enterprise Asset Management System includes several modules for the tracking and management of CATS assets, including State of Good Repair/Capital Planning Module, KPI/Dashboard Module, Reporting Modules as well as several other modules. A Project kick-off meeting with Trapeze is scheduled January 2025.

CATS has also contracted with TYLin to begin documentation of current business processes and identification of new processes needed to modernize workflows. This will lead to identification of updates to CATS procedures and policies that will ultimately form the structure of a fully integrated Asset Management System, including location of the database within the organization and how it is maintained and utilized by the various CATS divisions for their individual purposes.

The total project implementation schedule is anticipated to be 18 to 24 months, and a detailed project schedule is due after the kick-off meeting in January 2025. CATS can share the detailed schedule with FTA and can provide key milestone updates throughout the implementation of the project.

FACILITIES MAINTENANCE

Finding # 7:

CATS did not report overall maintenance compliance to either senior management or the MTC

Corrective Action:

CATS needs to develop reporting systems to senior management and the MTC of its maintenance activities. Such summary reporting would help top management ensure that the required maintenance activities are completed on time.

Recipient Response:

CATS Facilities is working towards developing key performance indicators (KPIs) for its facilities, rail and bus assets that align with FTA guidance as well as best industry practices. Those facilities would include buildings, rail platforms, bus stops, transit centers, etc. Quarterly reports will be provided to CATS senior leadership as well as the MTC. Those reports will include the KPI metrics for facilities and status reports for any capital projects underway.

CATS senior leadership team is in the early stages of this review but has identified several facility performance measures. CATS Facilities is reviewing these measures and ensuring the information is readily available.

The timeline for these tasks is as follows:

- Determine the measures to be reported to CATS leadership by January 2025
- Identify the data sources and methods to collect information for metrics by March 2025
- Begin reporting selected performance metrics to CATS leadership by June 2025

The longer-term plan is to incorporate inspections, work orders, repair/overhaul, life cycle capital planning, KPI reporting and state of good repair information into the Trapeze enterprise asset management (EAM) modules. Since the EAM will take 18-24 months to fully implement, Facilities will be working within the framework of existing city IT systems such as CityWorks and SPEAR to codify the processes and procedures. This work will assist CATS Facilities with the transition to the EAM system.

Finding # 8:

CATS Safety Department does conduct audits/reviews of the maintenance of CATS assets. However, these efforts are not fully documented.

Corrective Action:

CATS Safety department must develop a procedure to fully document its audits/reviews of the maintenance of CATS assets.

Recipient Response:

CATS believes Section 3.3 of our adopted Agency Safety Plan (ASP) addresses our maintenance and inspection program. As outlined in the ASP, quarterly safety inspection of transit facilities and light rail facilities are documented and shared with Facilities. We believe copies of these reports were provided but can be resubmitted if requested. Based on conversations held during the interview, CATS Safety Department acknowledges the need to better document all inspections, audits, safety related activities and is working on developing a process and documentation to record and track all those activities.