MOBILITY DEPARTMENT
PAVEMENT MANAGEMENT PROGRAM
AUDIT 24-01
NOVEMBER 10, 2023

City of Tampa
Jane Castor, Mayor

Internal Audit Department
315 E. Kennedy Boulevard
Tampa, Florida 33602
Office (813) 274-7159

November 10, 2023

Honorable Jane Castor
Mayor, City of Tampa
1 City Hall Plaza
Tampa, Florida

RE: Mobility – Pavement Management, Audit 24-01

Dear Mayor Castor:

Attached is the Internal Audit Department's report on Mobility – Pavement Management. We thank the management and staff of the Mobility Department for their cooperation and assistance during this audit.

Sincerely,

/s/ Christine Glover

Christine Glover
Internal Audit Director

cc: John Bennett, Chief of Staff
Jean Duncan, Administrator of Infrastructure and Mobility
Dennis Rogero, Chief Financial Officer
Vik Bhide, Mobility Director
Bryan Rodger, Mobility Operations Manager
Carl Brody, Assistant City Attorney

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/s/ Echiemeze Ofili

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Senior Auditor

/s/ Vivian Walker

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Lead Senior Auditor

/s/ Christine Glover

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Audit Director

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BACKGROUND

Pavement Management plays a critical role in ensuring the safety, functionality, and overall quality of the City of Tampa (COT) roads and transportation infrastructure. The role encompasses a diverse range of activities and operations, all of which are instrumental in maintaining the city's road network and enhancing the quality of life for its residents.

STATEMENT OF OBJECTIVES

This audit was conducted in accordance with the Internal Audit Department's FY 2024 Audit Agenda. The objectives of this audit were to determine whether:

1. The system of internal controls related to pavement management is adequate.

2. Performance metrics are accurate and relevant.

STATEMENT OF SCOPE

The audit period covered Pavement Management activity that occurred from January 1, 2021, through June 30, 2023. Tests were conducted to determine whether Pavement Management personnel were fulfilling their stated duties and responsibilities in an effective manner. Original records as well as copies were used as evidence and verified through observation and physical examination.

STATEMENT OF METHODOLOGY

The following steps were performed to achieve the audit's objectives:

- Assessed implemented internal controls related to core activities.

- Discussed the processes for pavement management with appropriate personnel and created process flow.

- Reviewed workplace safety surveys records and inspections reports.

- Reviewed closed paving and resurfacing projects to determine compliance with COT's pavement and right of way restoration standard, and accessibility requirements.

- Reviewed maintenance records for vehicles and equipment.

The following steps were performed to determine the accuracy and relevance of metrics reported:

- Identified Cityworks as the source for pavement management related metrics reported.

- Performed data reliability testing for Cityworks to determine if data is reliable.

- Traced reported data to Cityworks to determine accuracy.

STATEMENT OF AUDITING STANDARDS

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT CONCLUSIONS

Based upon the test work performed, and the audit findings noted below, we conclude that:

1. The system of internal controls related to pavement management needs improvement.

2. Relevant performance metrics for pavement management related activities are not always reported accurately.

INTERNAL CONTROL

STATEMENT OF CONDITION: No formal standard operating procedures (SOP) manual for pavement management operations exits.

CRITERIA: A formal policies and procedures manual is essential for documentation of job duties, activities, and operations. It ensures specific or similar job types are conducted in a uniform manner. Further, COT Ordinance Chapter 2-46 requires that all departments establish and maintain policies and procedures.

CAUSE: The process for the formalization of the SOP started but was not finalized and approved.

EFFECT OF CONDITION: Operating without a formal policy and procedures manual is not consistent with, and noncompliant with the requirements of COT Ordinance Chapter 2-46. Without a clear and comprehensive policies and procedures manual in place, the standardization of job tasks and processes is hindered, leading to inefficiencies in training new employees. This lack of structure can result in confusion, mistakes, and slower onboarding. By implementing formal policies and procedures, the Operations Division (Division) will not only ensure consistency but also increase the effectiveness of employee training programs.

RECOMMENDATION 1: The Division should formalize their policy and procedures manual. The manual should document essential processes such as:

- condition and assessment, maintenance, and rehabilitation strategies
- documentation and records management, performance monitoring and reporting
- quality assurance and other controls that will help the Division achieve its goals.

MANAGEMENT RESPONSE: Management concurs with Internal Audit's recommendations for formalizing our policies and procedures for the Pavement Management Program. As discussed, the Mobility Department has just initiated the citywide Mobility Plan called Tampa MOVES. This plan spells out an equitable, data-driven approach to making our transportation system better. Having this plan available will help us develop the policies and procedures of the Pavement Management Program. We will use the Tampa MOVES plan to develop policies for pavement condition assessment, maintenance and rehabilitation strategies, documentation and records management, performance monitoring and reporting, quality assurance, and other controls. This will be an exhaustive effort for the department and therefore will take some time.

TARGET IMPLEMENTATION DATE: The timeline for creating these policies and procedures will be completed no later than March 31, 2024.

WORKSITE SAFETY

STATEMENT OF CONDITION: Our review of the Mobility pavement crew workplace safety surveys conducted by Risk Management revealed the following deficiencies:

- Safety rules for vehicles and heavy equipment use are not strictly being followed and enforced. For example, vehicle inspection reports are not being consistently completed for tandem dump trucks. Additionally, while vehicle inspection reports are completed on the rubber tire roller, steel wheel roller, and paving machine, they are not being kept in the vehicles as required.

- Worksite safety rules for material handling, traffic maintenance, and personal protective equipment are not consistently followed.

- Multiple trucks have expired accident kits in them.

CRITERIA: Pursuant to the COT Safety Program Policy, "The COT operations are highly diversified with a wide range of exposure to injuries and loss. In order to provide safe and cost-effective services to our citizens in a responsive manner, it is imperative that all departments and employees understand the risks associated with the work they do and are actively engaged in applying controls and work practices to protect themselves and others."

CAUSE: COT Safety Program Policy, worksite safety rules, procedures, and guidelines are not being strictly enforced.

EFFECT OF CONDITION: Irregular safety inspections of vehicles and heavy equipment can lead to increased risk of accidents and injuries, noncompliance with legal requirements and regulations related to workplace safety, and lack of data for improvement. Safety inspection reports provide valuable data that can be used to identify trends and patterns for proper maintenance of equipment and workplace safety. Without this data, the Division lacks insight into potential risks and ways to enhance safety measures.

RECOMMENDATION 2: The Division should regularly conduct vehicle and heavy equipment inspections, and maintain vehicle inspection reports, and current accident kits in the vehicles, as required. Also, the Division should strictly enforce all worksite safety rules, procedures, and guidelines for material handling, traffic maintenance, and personal protective equipment for worksite safety. Enforcement and communications can empower crew members to recognize and mitigate risks on their own and foster a culture of safety within the division.

MANAGEMENT RESPONSE: The Division concurs with Internal Audit's assessment and recommendation. With regards to the accident kits, we recently purchased new kits for the entire Division and distributed them to all supervisors. As far as enforcing all work site safety rules, the Division will schedule and record an internal training course with all supervisors to reinforce the policies and procedures that pertain to work site safety. At that point, we will have the supervisors conduct and record their own training sessions with their teams. They will also confirm that every vehicle has their accident kits and inspection forms. With the assistance

of Risk Management, the Division will monitor the progress of the safety programs and take the necessary action should staff not adhere to the program.

TARGET IMPLEMENTATION DATE: December 31, 2023.

ACCESSIBILITY FEATURES

STATEMENT OF CONDITION: Our review of the Mobility in-house paving and resurfacing performed during the audit period shows that improvement is needed in maintaining accessibility features as required by the Americans with Disabilities Act (ADA). We noted that in-house paving and resurfacing activities performed during the audit period were not timely upgrading curb ramps accessibility features as required by ADA.

CRITERIA: Paving and resurfacing projects must comply with ADA which requires municipalities to provide and or upgrade out of compliance curb ramps when streets, roads, or highways are altered through resurfacing.

CAUSE: Mobility Operations does not have a concrete team and the funds to attend to these upgrades at the time of paving/resurfacing.

EFFECT OF CONDITION: Not maintaining or upgrading accessibility facilities, such as curb ramps can be a significant noncompliance issue. Inadequate curb ramps can pose a safety risk for all pedestrians, not just those with disabilities. Uneven or poorly designed curb ramps can lead to tripping hazards and accidents, potentially increasing the city's liability for injuries and accidents.

RECOMMENDATION 3: Mobility Operations should continuously assess the curb ramps during resurfacing to see if they meet ADA accessibility requirements and explore appropriate measures to ensure compliance with the law.

MANAGEMENT RESPONSE: Management concurs with the inquiry recommendation. However, in lieu of Operations managing this process through the pavement management program, the department will instead be taking this task on as it develops its ADA Transition Plan for the City. This task will include an assessment of all Mobility assets to determine scope and potential cost. Then the department will work towards the development of a plan to fund and implement corrections

TARGET IMPLEMETATION DATE: N/A

PAVING VEHICLES AND EQUIPMENT

STATEMENT OF CONDITION: Our review of the status of Mobility paving and resurfacing equipment management shows that improvement is needed in replacement of uneconomic vehicles and equipment as required by the COT's Fleet Management Division Policies and Procedures. We noted a total of seven (7) vehicles and pieces of equipment that were deemed uneconomic repairs, taken out of service, and not replaced. Uneconomic repairs are vehicles and equipment that are beyond repair due to mechanical damage.

CRITERIA: Per COT vehicle replacement policy, "The best Fleet industry standards will be applied in all cases. The maintenance cost is compared to the overall cost of the vehicle, with 10 points reached when maintenance/repair costs equal the original purchase price of the vehicle."

CAUSE: Mobility Operations attributed their inability to replace equipment, deemed uneconomic to repair and taken out of service, to budget allocation and funding.

EFFECT OF CONDITION: Insufficient budget allocation and funding for the replacement of uneconomic vehicles and equipment can lead to operational inefficiencies.

RECOMMENDATION 4: The Division should regularly evaluate their vehicles and equipment, considering factors such as maintenance, usage, manufacturer recommendations, budget constraints, safety, and technological advancements. They should make decisions according to their established policy for replacement.

MANAGEMENT RESPONSE: Management concurs with this inquiry's recommendation and will continue to evaluate our vehicles regularly. We will also continue to work with Fleet Management, according to their processes and procedures, to replace vehicles as funding becomes available.

TARGET IMPLEMETATION DATE: Ongoing for every budget preparation period.

PERFORMANCE METRICS

STATEMENT OF CONDITION: Mobility Operations reports several performance metrics using data generated from its Cityworks software. Due to the volume of work orders generated for activities related to pavement management since July 2022, only the months of December 2022 and June 2023 were selected for data review. Based on the 100% review of applicable works orders in the selected months, the numbers reported on Tampa.Gov and/or the Mobility Department's Intranet page for the following metrics could not be verified:

- fix it fast potholes average time to repair.
- fix it fast edge of pavement average time to repair.
- fix it fast edge of pavement number of repairs.
- fix it fast asphalt delamination average time to repair.
- fix it fast asphalt delamination number of repairs.
- street miles resurfaced.
- transportation cut outs.

The average time to repair metric is based on the time from initiation of a service request to the completion of the work order. This required identifying both the date and time the request was received and when the work order was closed. Several work orders did not have one or more of these required fields completed or incorrect information was entered (for example a completion date that preceded the initiation date), which resulted in the inability to recalculate the average time. Additionally, the support for street miles resurfaced is not being retained to define the exact segments being reported for a specific month.

It was also noted that the metric for fix-it fast number of repairs for any category, transportation cut outs, and street miles resurfaced do not have established targets that would enable Mobility management to measure performance.

Mobility management indicated that there is a weekly process that requires the Team Leads to evaluate the data for any outliers that may indicate a problem before the metric is reported in OpenGov.

CRITERIA: Mobility Operations has established an average time of 72 hours as a target for the fix-it fast metrics of potholes, asphalt delamination, and edge of pavement work orders.

CAUSE: The quality control review process only reviews an accomplishments report generated by Cityworks. This level of review does not consider the source (work order) to ensure the report is accurate. Additionally, based on the comparison of the accomplishments, the work performed based on the work order details often disagreed with the type of work documented on the service request.

EFFECT OF CONDITION**:** Inaccurate performance data can result in Mobility management decisions based on flawed data. Additionally, for the metrics being reported with a target, Mobility management is unable to effectively evaluate performance of those tasks.

RECOMMENDATION 5**:** Mobility Management should extend the quality control review process to include the source work orders. There should also be consideration given to making sure that if a work order purpose is changed after intake, the final purpose should be included on the service request so that all information agrees.

Also, in order to be an effective measure of performance, where appropriate, targets should be established for those metrics being reported without one.

MANAGEMENT RESPONSE**:** Before addressing the audit recommendation above, we wanted to share that we will be looking into the data discrepancies described above and make any adjustments to our processes as needed. We will be reaching out to T&I so that they can check on the code connection between Cityworks and Opengov.

- Quality Control Review
  Management agrees that an additional step needs to be included in the QC review workflow. Therefore, the department will draft a new workflow allowing for this additional step and it will also assign responsibility to ensure that there is no confusion. This workflow will also include steps to review whether the service request purpose needs to be changed or not.

- Establishment of Targets

  Resurfacing Operations: With regards to establishing targets for resurfacing operations, the department has given consideration to this and feels that setting targets is circumstantial. For example, setting a monthly target for resurfacing operations could misrepresent the work being conducted. Resurfacing operations are sporadic and have schedule gaps between projects so having a monthly target wouldn't represent the nature of the operation.

  That being said, we agree that we can establish a target for each individual project that is planned and executed based on the parameters of the project. In order to show the progress on a particular project in Opengov, we may need to develop a different type of chart to represent that. The department will work with T&I on the best way to achieve the desired result.

- Utility Cutouts

  Targets for utility cutouts won't work for this operation. This metric is a function of another department's work activities. For example, the cutouts we perform are for Stormwater and Wastewater operations and these operations vary based on the amount of cave-ins and repairs that are conducted. More recently, Mobility is only restoring Stormwater cave-ins and Wastewater is contracting them out.

TARGET IMPLEMENTATION DATE: Quality Control Review: The department will endeavor to complete the new workflow by December 31, 2023.

- Establishment of Targets:
  The department will begin the process of working with T&I on a new type of chart for Opengov beginning in October 2023. Depending on what can be done, the department is setting a target date of March 31, 2024, for having the new chart in Opengov.