



Performance Audit of Public Works Streets and Drainage Sidewalk Operations Audit No. 22-06 December 30, 2022

Report Highlights

Page(s)

- The city absorbed the cost of repairing sidewalks and is not in compliance with the Ordinance that assigns the responsibility of sidewalk maintenance to citizens 5
- There is no sidewalk maintenance program 8
- The actual square yards of sidewalk repairs completed, is unknown 12



The Council
City of Shreveport

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December 30, 2022

Councilman James Green
Chairman, Shreveport City Council

Dear Councilman Green:

Subject: Audit No. 22-06 – Performance Audit of Public Works Streets and Drainage Sidewalk Operations

Attached please find the report mentioned above. Management comments are included in the report.

Sincerely,

A handwritten signature in blue ink that reads "Leanis L. Steward".

Leanis L. Steward, CPA, CIA
City Internal Auditor

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EXECUTIVE SUMMARY

Performance Audit of Public Works Streets and Drainage Sidewalk Operations

Why We Did This Audit

We have completed an audit of Public Works Streets and Drainage Sidewalk Operations. This audit was conducted as one of our regularly scheduled audits included in the Annual Audit Plan developed by the City Internal Auditor. Our objectives were to determine if processes are in accordance with City Ordinances and any other relevant policies and procedures, laws, and regulations; adequate controls and monitoring procedures are in place for sidewalk repair operations; and materials and equipment utilized in sidewalk operations adequately are accounted for and properly safeguarded from theft.

What We Recommended:

- Develop an operational manual for the entire sidewalk repair process and utilize software to automate inventory and record and track all data related to the sidewalk repair process.
- Implement a preventive maintenance program.
- Inspect contractors' work, document results in a consistent manner, and develop a warranty expiration schedule.
- Establish appropriate goals and performance measures.
- Complete work order forms in their entirety.
- Enhance safeguards over material inventory.
- Provide the Job No. to the inventory supervisor.
- Segregate duties over inventory management.
- Revise the RFP or contract to reflect practices.

What We Found

Public Works Streets and Drainage Division is responsible for maintaining approximately 820 miles of sidewalks and inspecting sidewalks based on request.

Streets and Drainage does a good job in documenting the council district for each needed sidewalk repair. However, internal controls can be strengthened.

For years, the city has absorbed the entire cost of sidewalk repair and is not in compliance with the Ordinance that assigns the responsibility of sidewalk maintenance to citizens and the terms of their repair contracts with vendors. Not all sidewalks comply with the Americans with Disabilities Act, which requires sidewalks that are accessible to the disabled. Inventory controls are lax and there is no segregation of duties. The physical location of materials increases the risk of loss or theft.

Streets and Drainage should develop a written policy and procedure manual that includes:

- Compliance with Ordinances and other regulations
- Recording the date of request, location and size of the damaged sidewalk, condition rating criteria, the entity performing the work, performance deadline, materials used, and repair status on all work orders
- Storing work orders, inventory request receipts, and inventory lists in an electronic format
- A sidewalk preventive maintenance schedule
- Documented before and after inspections and photographs in an electronic format
- A contractor warranty expiration schedule

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Introduction

Public Works Streets and Drainage (S&D) Division’s primary responsibilities are to repair and/or maintain dedicated city streets, alleys, underground drainage structures, roadside ditches, drainage canals, mowing, litter control of city street rights-of-way, and contracted state rights-of-way within the city limits. This includes inspecting and repairing approximately 820 miles of city sidewalks. Sidewalks help people to safely traverse city blocks. Streets and Drainage help to maintain that safety by inspecting and, when necessary, overseeing the repair of sidewalks in response to calls or online submissions from citizens. If the area to be repaired is over 100 square feet, the work is contracted; otherwise, the division crews make the repair. Contracts were issued through the 2019 *Request for Proposal Annual Contract for Sidewalk and Street Panel*. Below is an illustration of the sidewalk repair process.



For this audit, we focused on Streets and Drainage Sidewalk Operations. This report contains five findings with nine recommendations. Appendix A contains the risk descriptions for the recommendation risk levels throughout the report.

The objectives of this audit were to determine:

- Are processes in accordance with City Ordinances and any other relevant policies and procedures, laws, and regulations?
- Are adequate controls and monitoring procedures in place for sidewalk repair operations?
- Are materials and equipment utilized in sidewalk operations adequately accounted for and properly safeguarded from theft?



Scope and Methodology

The scope of this audit was limited to Public Works Streets and Drainage Sidewalk Operations. The period reviewed was January 2018 to May 2022. To answer our objectives, we reviewed relevant internal controls and developed audit procedures that included, but were not limited to, the following:

- Interviewed staff to enhance the understanding of the process,
- Reviewed City Ordinances pertaining to Streets and Drainage Sidewalk Operations,
- Reviewed applicable documentation and performed test work on data,
- Selected a sample of 30 out of 673 inspected sidewalks based on commonly used statistical sampling techniques to review the work orders and compare the materials required to complete the sidewalk to the inventory request receipt.
- Randomly selected 30 contractors' invoices from the city financial system to compare the square footage listed on invoices to square footage repair goals identified in the departmental budget.
- Considered all five internal control components (control environment, risk, monitoring, information and communication, control activities) of the Standards for Internal Control in the Federal Government. Internal controls are a process used by management to help an entity achieve its objectives.

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, conclusions, and recommendations based on our audit objectives.

The Internal Audit Office expresses appreciation to the management and personnel of the Public Works Streets and Drainage Division for their cooperation and assistance provided during the audit.



Objective: Are processes in accordance with City Ordinances and any other relevant policies and procedures, laws, and regulations?

Finding: Non-compliance with City Ordinance and No Operating Policies and Procedures

Ordinance

Section 78-136 et seq. of the City Ordinances stipulates that the property owner is responsible for repairing or replacing the adjacent sidewalk within 30 days of the date of the repair demand notice issued by the Department of Public Works. If the city repairs or rebuilds the sidewalk, the property owners shall reimburse the city; and the city “shall have a special lien and privilege on such property to secure the reimbursement of the amount paid....”

During the period under review, January 2018 - May 2022, the Ordinance was not enforced, and the city absorbed the cost of repairing sidewalks. Due to management not tracking expenses, we could not determine the total amount spent on labor and materials for repairing sidewalks. This total would have included the cost of materials purchased by the city and payroll for the labor of city crews as well as payments to contractors for their work. We did, however, identify approximately \$1.4M that includes sidewalk and street panel repair, we could not isolate the sidewalk repair from the street panel repair because management did not track expenses.

There are no guidelines that establish how the City Ordinance will be implemented, nor has there been any research and/or analyses performed to determine if it is in the public's best interest for the City of Shreveport to continue to assume the responsibility of all sidewalk maintenance and repairs within the city limits. If it is concluded that the property owners will be responsible for sidewalk maintenance, factors that need to be considered are:

1. What will initiate the repair (inspection by the city or at the citizen's determination)?
2. How will Streets and Drainage determine that the repair complies with City Engineer's Standards?
3. Will a contractor have to obtain a permit before starting repair work?
4. What will be the follow-up process for inspecting completed work?
5. What will be the process for monitoring and repairing sidewalks adjacent to abandoned/adjudicated properties?



ENFORCING CITY SIDEWALK ORDINANCE



Operating Policies and Procedures

Policies and procedures set performance standards and establish consistent practices for the department and employees. We noted that there is no standard operational policy for the sidewalk operations nor the department.

Policies and procedures should contain all aspects of the department. Sidewalk policies and procedures should include:

- Sidewalk repair process
- Sidewalk condition rating criteria (*good, passible, poor, urgent, trip hazards...*)
- Timeframe required to repair the sidewalk based on condition rating and/or amount of work required (*e.g., repair "poor" sidewalk within 5 business days if weather permits*)
- Documentation requirements (*e.g., before and after photographs*)



AUDIT NO. 22-06
October 25, 2022

A prior report “**Audit of The Public Works Department, Streets and Drainage (S&D) Division**” recommended the following:

“S&D management should have current procedures and work-related manuals. Those documents should be available for all S&D employees. The documents should reside in electronic format in a common area accessible to employees with computer access. Employees without computer access should have a current hardcopy document available.”

Recommendation 1: Track the cost details of repairing sidewalks. In addition, create an operation manual outlining who will be responsible for repairing sidewalks, how the process will be monitored and managed, and coordinate with the City Council to amend the ordinance to align with the operational procedures. Also, implement the recommendation from the prior audit report related to policies and procedures.

Risk: High

Management Response:

Recommendation 1: The department will maintain a spreadsheet to track the costs of street panels and sidewalks. The cost will be separated to show the amount of funding spent on sidewalks and panel replacement. The department will work with council to determine who will be responsible for the replacement and maintenance of sidewalks based on City Ordinances.

Due Date: 6 to 12 Months



Objective: Are adequate controls and monitoring procedures in place for sidewalk repair operations?

Finding: Preventive Maintenance

Although the City Ordinance requires citizens to upkeep and/or repair sidewalks, the city has taken on the responsibility. If the city is going to keep the responsibility, a preventive maintenance schedule should be implemented.

According to the Federal Highway Administration, the initial building of sidewalks necessitates a significant investment, and implementing a maintenance program can protect that investment. Sidewalks require routine repair to extend the life of the sidewalk, reduce the costs of prolonged deterioration caused by weather and use, and enhance user safety.

Without a preventive maintenance program, Streets and Drainage takes a reactive instead of a proactive approach to sidewalk repair. We could not determine how many sidewalks need repair because there has not been a complete survey of all sidewalks within the city limits.

Recommendation 2: Develop and implement a preventive maintenance schedule to extend the life of sidewalks. **Risk: High**

Management Response

Recommendation 2: The Public Works will need to define what is meant by preventative maintenance of sidewalks and establish the responsibility of this maintenance. Public Works will work to make changes to the city code to establish a clear expectation of responsibilities.

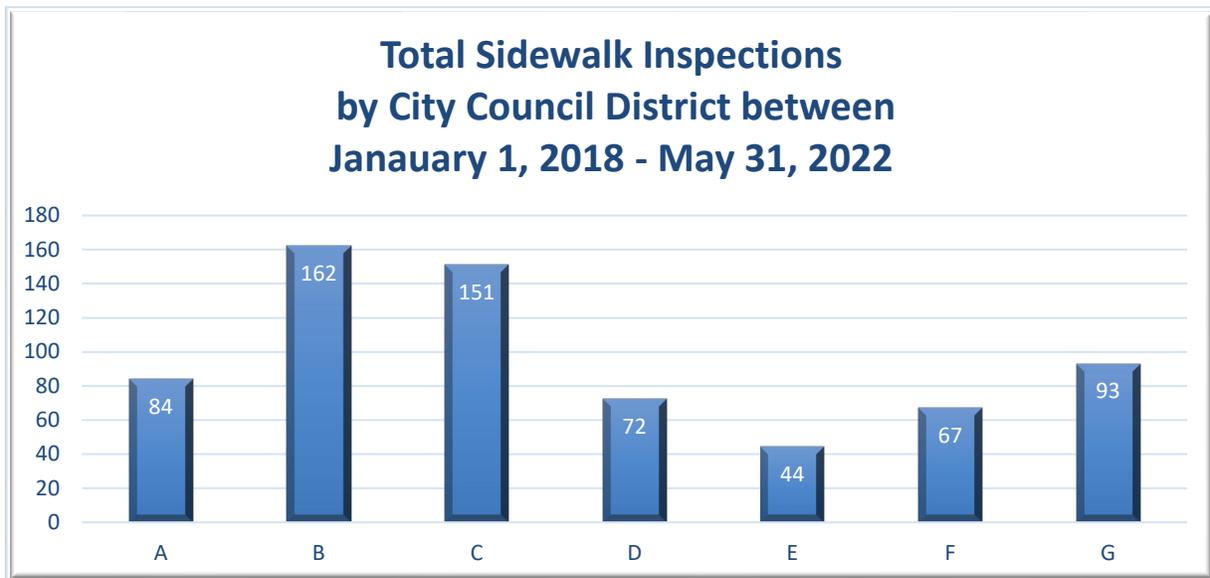
Due Date: 6 to 12 Months



Finding: Inspections

Sidewalk maintenance should be driven by sidewalk inspections and supported by documentation and operational policies.

In response to phone requests and online submissions, between January 2018 and May 2022, Streets and Drainage inspected 673 sidewalks.



Source: Streets and Drainage spreadsheet

The administrative staff manually enters sidewalk data obtained from citizens and work order forms into a spreadsheet. The data entered in the spreadsheet includes the date, work order number, description, address, council district, requestor, and complete. The "complete" column within the spreadsheet is ambiguous in that it could indicate that the supervisor inspected the sidewalk but made no repairs or it could indicate repair work was completed. Management could improve the spreadsheet by adding the following data to columns:

- Priority rating (e.g., priority rating 3 has 1-7 days response)
- Repair cost
- Square yards of sidewalk repair
- Who performed the repair (city crews or contractor), and
- Instead of "complete" a sidewalk status column (open, closed with repair, closed without repair)

Implementing these columns can help with process management until Streets and Drainage can implement software. Maintaining complete and accurate information also provides the added benefit of being able to perform the type of analysis that is useful in making operational decisions such as whether the benefit of a process exceeds the cost.



AUDIT NO. 22-06
October 25, 2022

There is no automated system such as a mobile GIS application that synchronizes with a sidewalk database that captures the information as inspections occur. Inspectors document information using manual work order forms. If a computerized system existed, it would reduce data entry from administration staff and the information can come directly from inspectors. Streets and Drainage could collect data in real-time to aid in tracking, managing, and monitoring sidewalk activities. Management informed us they were looking to implement CityWorks for sidewalk and inventory operations if funding permits. CityWorks is a maintenance management and permitting software that can manage work orders, materials costs, labor, inventory, etc.

We requested 30 sidewalk work orders for review (twenty-eight successfully reviewed and two unavailable). Upon review, we found that Streets and Drainage staff did not complete order forms in totality, for instance:

- The cost to repair the sidewalk was not listed
- The priority rating or response time was not listed
- The cause of the delay was not specified
- Workorder forms recorded closed with no detailed explanation of the resolution

We also found that work order forms lacked supporting statements/evidence that a contractor constructed/repaired a sidewalk per City Engineering Standards.

While not required, photos could assist in providing evidence that city crews and contractors constructed sidewalk repairs according to Engineering Standards. Of the twenty-eight work orders reviewed, no photos depicting successful repairs were provided. Of the twenty-eight work orders, only six files had before-repair photos. We drove to and successfully viewed five of these locations to assess whether repairs were performed. One location could not be identified based on the provided photograph. Below are before and after photos of sidewalk repairs.



Source: Auditor's photos after repair



We determined that Streets and Drainage had 5 out of the 6 sidewalks repaired in the photos:

- Picture 1 is not repaired according to Americans with Disabilities Act standards (ADA), which require that sidewalks are accessible to the disabled.
- Per management, picture 5 was not repaired because it is not a trip hazard.

Per the “Contract for Sidewalk and Street Panel” contractors warranty their work for two years, but there is no warranty schedule or any documentation that Streets and Drainage reinspect the sidewalks before the warranties expire.

Recommendation 3: Ensure contractors construct sidewalks per standards and document inspection results and include before and after photos. Also, to ensure the city receives the maximum benefit of sidewalk warranties, develop a tracking schedule of warrantied sidewalks, and inspect the sidewalk within a reasonable time before warranty expiration. **Risk: High**

Recommendation 4: When funds permit, install software to assist in the inspection process. Add columns to the spreadsheet to facilitate data analysis. Additionally, ensure that staff complete the work order forms consistently. **Risk: Medium**

Management Response

Recommendation 3: Although our Engineering Manual contains specifications on sidewalk construction Streets and Drainage is working with our Engineering Division to develop a cut sheet to hand out to contractors doing sidewalk repair. Public Works is in favor of adding the necessary staff to provide inspection before the warranty is finished. Funding will have to be provided for the additional positions.

Due Date: 6 to 12 Months

Recommendation 4: Streets and Drainage will have project management programs in place soon. We are working with other departments to provide resources to the systems they are using.

Due Date: 6 to 12 Months



Finding: Performance Measures

Performance measures can help management determine the success of operations and serve as a tool for monitoring and evaluating the division's effectiveness and efficiency relative to the organization's objectives. According to the City of Shreveport Annual Operating Budget, Streets and Drainage performance measures for square yards of sidewalk replacement were:

Performance Measures	2020 Actual	2020 Goal	2019 Actual	2019 Goal	2018 Actual	2018 Goal
Square yards of sidewalk replacement	1,500	3,500	1,500	1,900	1,500	1,700

The square yards replaced/repared were reported as the same from 2018-2020

We could not determine if goals were met because management did not have documentation of the actual square yards of repairs completed available. However, we learned that the square yards goals are based solely on the contractor's sidewalk repairs, excluding sidewalk repairs the city staff completed. We randomly selected 30 of the two contractors' invoices for sidewalk repair, and 10 out of 30 (33%) of the invoices reviewed did not include the square yards of sidewalk repaired. We also noted that the contractors did not have the work order/job number on any of the invoices, which makes it challenging to match invoices to work orders.

Recommendation 5: (a) Set more relevant goals and establish performance measures to evaluate performance and productivity, such as sidewalk repair response time and percentage of repairs completed in a period. (b) Ensure contractors include work order numbers and square yards on invoices. (c) Accurately record performance measures within the budget book, maintain data to support performance, and have data readily available. Risk: Low

Management Response

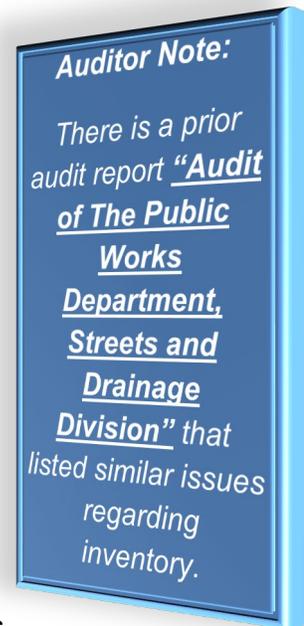
Recommendation 5: The department agrees to the audit terms and plans to address all actions immediately.

Due Date: 6 to 12 Months



We also identified the following issues:

1. Periodic reconciliations of materials and supplies listed on service work orders to inventory receipts are not conducted.
2. Inventory movement is manually tracked. Upon notification of material requests, the supervisor manually updates an unsecured spreadsheet. Because the process is manual and the spreadsheet is not locked for editing, it is more susceptible to human error.
3. The physical location of certain materials is accessible without the knowledge of the inventory supervisor. This creates an increased risk of loss or theft.
4. There is no segregation of duties. Implementing segregation of duties serves as a deterrent to theft or error. The employee who maintains physical custody of inventory should not be responsible for periodic inventory counts and should not be able to make changes to inventory records. This would minimize the ability to alter records to conceal theft or error. Management could utilize staff from other areas to compensate for the inability to separate duties.
5. Neither Streets and Drainage nor the contractors are complying with the contract. Streets and Drainage provides sidewalk construction materials to contractors to reduce costs. However, the RFP (Request for Proposal) issued for the sidewalk construction requires the contractor to provide all materials to complete the work; and the requirements of the RFP are referenced in the signed contract.



Recommendation 6: (a) Incorporate an inventory policy within the policy and procedure manual. (b) Protect the spreadsheet with a password. (c) Relocate the Supervisor's Inventory Office or explore opportunities to enhance safeguards for external material. **Risk: Low**

Recommendation 7: When the division staff or contractor requests inventory, they provide the Job No. to the inventory supervisor or clerk before the release of inventory. **Risk: Low**

Recommendation 8: Segregate duties to minimize errors and potential fraud and/or implement an unannounced external review by someone else within the Streets and Drainage Department to conduct periodic examinations to compare equipment requested and supplies listed on service work orders to inventory receipts and document review. **Risk: Low**

Recommendation 9: Contact the City Attorney's Office to update the language within the RFP and the contract to reflect current practices. **Risk: Low**



Management Response

Recommendation 6: We will attach all work order numbers to each work order for inventory that was used on projects. If material is issued it will require a work order number.

Due Date: 6 to 12 Months

Recommendation 7: On most concrete projects the same materials are used so some will not require inventory requests. We will work with the warehouse manager to have a process for updating work orders with projects that use the same materials.

Due Date: 6 to 12 Months

Recommendation 8: The department agrees and make necessary changes.

Due Date: 6 to 12 Months

Recommendation 9: With a limited budget, the department provides what is needed to cut back on all costs. The department will work with the City's Attorney's Office to update the contract to department standards.

Due Date: Less Than 6 Months

Prepared by:

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Approved by:

Leanis L. Steward

Leanis L. Steward, CPA, CIA
City Internal Auditor

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- c: City Council
- Clerk of Council
- Mayor
- Chief Administrative Officer
- Carr Riggs and Ingram
- City Attorney
- Public Works



Appendix A: Findings Risk Ranking Criteria

The chart below summarizes our evaluation of risk for the recommendations outlined in the report. Each recommendation was assessed at a high, medium, or low risk level based on a qualitative assessment of exposure and/or corrective action priority.

Risk Levels	Risk Description
High Risk	Represents a significant level of risk exposure to city assets, public safety, or achievement of objectives or mission. Corrective action should have the highest priority.
Medium Risk	Represents a moderate level of risk exposure to the city from extensive operating inefficiencies or high-level non-compliance issues. Corrective action should occur expeditiously.
Low Risk	Represents a minimal level of risk exposure to the city from inefficiencies or low-level non-compliance issues. Corrective action should occur as appropriate.