



# REPORT TO THE CITY COUNCIL BY THE CITY INTERNAL AUDITOR

## AUDIT OF THE DEPARTMENT OF PUBLIC WORKS, SOLID WASTE DIVISION – COLLECTION PROCESS

### INTERNAL AUDIT REPORT (IAR) 100019-08

December 27, 2019

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<b>Report Highlights</b>	<b>Page(s)</b>
• The City's collection routes were created in the 1980s and are outdated	7
• Citations for Curbside and Bulk waste collections are not enforced	9, 11
• Collection employees do not wear Personal Protective Equipment at all times	15



The Council  
City of Shreveport

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December 27, 2019

Councilman Jerry Bowman, Jr.  
Chairman, Shreveport City Council

Dear Councilman Bowman, Jr.:

Subject: IAR 100019-08 – Audit of the Department of Public Works, Solid Waste Division –  
Collection Process

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

Sincerely,

Leanis L. Steward, CPA, CIA  
City Internal Auditor

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## EXECUTIVE SUMMARY

# AUDIT OF THE DEPARTMENT OF PUBLIC WORKS, SOLID WASTE DIVISION – COLLECTION PROCESS INTERNAL AUDIT REPORT (IAR) 100019-08

### Why We Did This Audit

We have completed an audit of the Solid Waste Division. 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 identify opportunities for improving the solid waste collection process, with a focus on curbside and bulk collection; and review the safety practices of collection employees, and determine if they are complying with policies and procedures.

### What We Recommended

To improve efficiency and effectiveness we recommend that Solid Waste:

- Update the garbage packers and the collection routes.
- Monitor the City Fuelman cards and document review.
- Enforce citations and maintain a record of citations issued.
- Educate citizens and collection employees regarding following the ordinance.
- Setting a limit as to how much is collected for bulk pickup.
- Replace the knuckle boom truck.
- Improve safety culture.

### Performance Audit: Public Works, Solid Waste Division-Collection Process

#### What We Found

Solid Waste workers collect trash for approximately 60,000 households throughout the City of Shreveport. The collection services include back door and curbside, yard waste, removal of small dead animals, industrial, hazardous or medical waste, and bulk waste collection weekly. Solid waste is the fifth most dangerous job in the United States.

We found that methods of collecting trash are adequate; however, the Solid Waste Division could improve its packers, routes, and collection procedures. Throughout the audit, we have identified the following:

- **Garbage Packers (trucks) and collection routes could be improved.**
- **Citations or fines are not enforced.**
- **Some citizens and collection employees are not following the ordinance regarding collection.**
- **There is no quantity limit for bulk collection pickup.**
- **Safety culture could be improved.**

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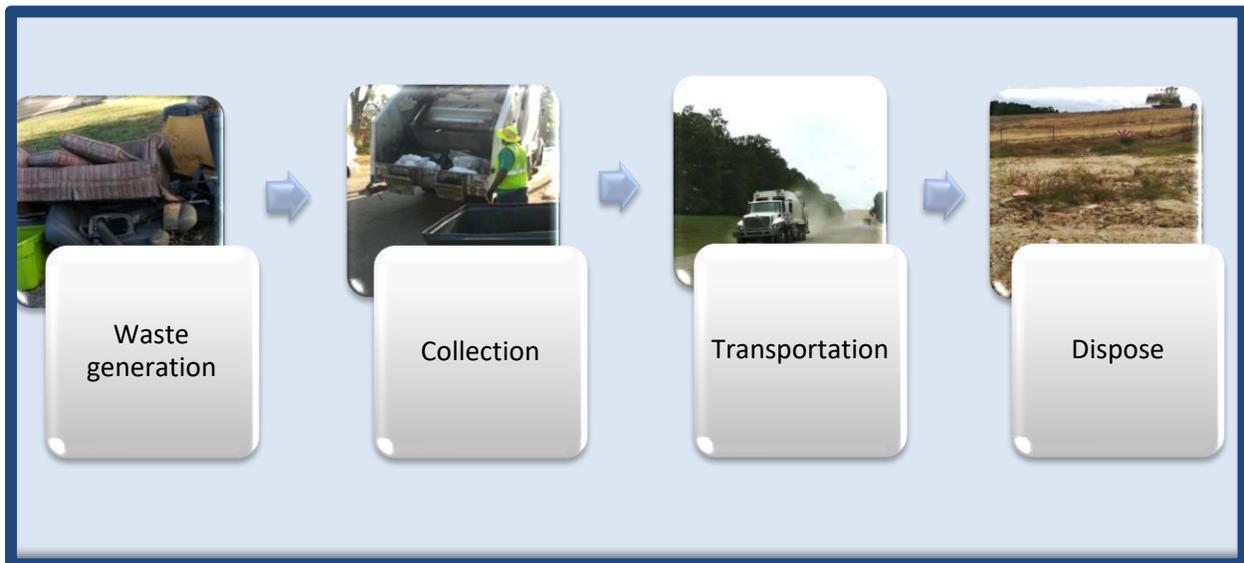


## Introduction

The Public Works Solid Waste Division is responsible for weekly waste collection from residences and some businesses within the City limits of Shreveport for more than 60,000 citizens. The collection employees (operators and refuse collectors) are responsible for collecting and disposing of waste. Pursuant to the city ordinance, the services Solid Waste provides are residential and commercial collection, which falls in the following categories:

- Back door and curbside
- Yard waste
- Small dead animals
- Industrial, hazardous or medical waste
- Bulk waste collection (e.g., furniture, appliances)

Waste is disposed at the City owned Woolworth Road Landfill, which is operated by a private contractor, Republic Services. Below is a general overview of the process:



The objectives of this audit were to:

- Identify opportunities for improving the Solid Waste Collection process with a focus on curbside and bulk collection
- Review the safety practices of collection employees and determine if they are complying with policies and procedures



**Recommendation Evaluation Risk Criteria**

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

Risk Levels	Recommendations
<p style="text-align: center;"><b>High Risk</b></p> <p>Represents a <b>significant</b> level of risk exposure to city assets, public safety, or achievement of objectives or mission. Corrective action should have the highest priority.</p>	<ul style="list-style-type: none"> <li>➤ Monitor the fuel cards and document review. <i>A detailed controls review for fuel cards is scheduled.</i> <b>(Improvements of Garbage Packers [trucks] and Routes)</b></li> </ul>
<p style="text-align: center;"><b>Medium Risk</b></p> <p>Represents a <b>moderate</b> level of risk exposure to the city from extensive operating inefficiencies or high-level non-compliance issues. Corrective action should occur expeditiously.</p>	<ul style="list-style-type: none"> <li>➤ Track the fleet to determine if operating cost exceeds the purchase cost of the packer and implement a readily available report. If cost surpasses purchase cost of equipment, management should purchase packers if budget permits. Include GPS tracking and monitoring software on the garbage packers and update the collection routes. <b>(Improvements of Garbage Packers [trucks] and Routes)</b></li> <li>➤ Wear Personal Protective Equipment (PPE). Update the policy to reflect current appearance standards. Include in the policy citizens should never dispose of waste into a packer; and clearly define safety training. Also, review safety assessments and data. <b>(Finding: Collection Employees Safety and Training)</b></li> </ul>
<p style="text-align: center;"><b>Low Risk</b></p> <p>Represents a <b>minimal</b> level of risk exposure to the city from inefficiencies or low-level non-compliance issues. Corrective action should occur as appropriate.</p>	<ul style="list-style-type: none"> <li>➤ Specify in the ordinance who is responsible for issuing citations and how citations or fines will be applied; and keep a record of citations issued. <b>(Finding: Curbside and Bulk Collection)</b></li> <li>➤ Revise the ordinance to include a limit as to how much is collected and issue citations for bulk pickup. Research and replace the knuckle boom truck with a more efficient truck for bulk pickup collections. <b>(Finding: Curbside and Bulk Collection)</b></li> </ul>



### **Scope and Methodology**

The scope of this audit was limited to the Solid Waste Division's Collection Process. The period reviewed was January 2017 – September 2019. To answer our objectives, we reviewed relevant internal controls and developed audit procedures that included, but were not limited to, the following:

- Interviewing Solid Waste Division staff to enhance understanding of the process
- Observing collection process regarding compliance with established policies and procedures
- Reviewing City Ordinances and regulations
- Reviewing safety assessments provided by City Risk Specialist

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 Department, Solid Waste Division for their cooperation and assistance provided during the audit.***





# **FINDINGS AND RECOMMENDATIONS**



**Objective: Identify opportunities for improving the solid waste collection process.**

### Improvements of Garbage Packers (trucks) and Collection Routes

The garbage packers used by Solid Waste to collect trash are rear loaders. Solid Waste currently has forty-seven trucks in operation. Fourteen of the forty-seven (30% of the fleet) packers were purchased in 2016 (less than 5yrs old). The remaining thirty-three packers (70% of fleet) were purchased more than five years ago. One of the goals of Solid Waste is to replace its fleet every 5 to 6 years to keep repairs from exceeding the value of the packers. An aging fleet could result in increased repair cost, preventive maintenance cost, and could cause delays in operations; however, the repair/maintenance cost is not tracked by management. The division lacks funding to replace garbage packers.



*Rear Loader*

Waste collection occurs weekly with 27 routes each collection day. Routes were created in the 1980s with no updates since creation. With changes throughout the city such as annexation, routes require updates to help with collection precision. Solid Waste cannot monitor the location for its rear loader packers because there is no GPS tracking and monitoring software of routes. Installing GPS and monitoring software could help handle customer disputes such as missed pickups, ensure the driver's location and accountability, increase safe driving habits, real-time route performance, and help with collection precision.

### Fuel Cards

During the course of the audit, two suspects were arrested for purchasing fuel with stolen City fuelman cards issued in the Solid Waste Division. Inadequate controls (e.g., monitoring, documenting review) put the division at risk of fraud, waste, and abuse. The abuse of fuel transactions are under investigation by law enforcement and audit staff is assisting. A detailed controls review for fuel cards is scheduled.

To improve Solid Waste collection process, we recommend:

**Recommendation 1: (1a)** Management should track the fleet to determine if operating cost exceeds the purchase cost of a packer; and have a readily available report despite a lack of funding to purchase packers. If determined that maintenance and repair costs exceeds the purchase cost of equipment, management should purchase packers if budget permits. **(1b)** We also recommend including GPS tracking and monitoring software on the garbage packers and updating the collection routes. **(1c)** In addition, we recommend monitoring the fuel cards and documenting review.



**Management Response:**

**Recommendation 1:**

1. Management agrees with the findings in recommendation #1. A large percentage of our packer fleet is past the recommended replacement age and in need of constant repair. The cost of repairs for the entire packer fleet runs between \$300,000 and \$330,000 annually. Some of the trucks are in worse mechanical shape than others and the need to start a replacement program is critical. We will monitor the repair cost to insure cost of repairs does not exceed the cost of replacement. 70% of our packer fleet is 8 years or older. At a cost of close to \$200,000 per truck this is a very expensive endeavor with 32 trucks needing to be replaced over the next few years.
2. Our routes have had no substantial changes since the 1980's. Information Technology is specifically working on ways we can gain data and tracking on household positions to evaluate the effectiveness of changing the routes. Any change in schedule or routing will not be easily accepted by the citizens. We will have to weigh out the cost / benefit of these type of changes.
3. Substantial changes have already been put in place to minimize the opportunity for theft from our Fuelman system. Specific instructions have been provided to all departments to allow fleet to monitor and document the review and acceptance of ongoing fleet report. We will continue to implement these changes and incorporate any other recommendations that come from the Fuelman audit.

**Due Date:**





## Curbside and Bulk Collection

### Curbside Collection

“All commercial customers and residential customers shall set their properly **contained waste** at the curbside or street side not to exceed ten feet from the edge of the curb or street.”<sup>1</sup> We observed collections on two occasions and found that not all waste was properly contained; see images below:



According to the ordinance, “It shall be the responsibility of the owner, occupant, tenant, or lessee to collect any spillage from a container. Failure to collect such spillage will be a violation of this chapter.”<sup>2</sup> Before citations are issued, a sticker should be placed on the item that is not in compliance and the citizen then have the opportunity to correct the issue; and if it is not corrected, then a citation and penalty may be issued.<sup>3</sup> If a citizen failed to abide, they should be guilty of a misdemeanor, and, upon conviction, a sum not exceeding \$500 shall be fined.<sup>4</sup> However, from our review, no stickers or citations have been issued or recorded. The ordinance does not specify who is responsible for issuing out citations or fines. Applying citations can help minimize spillage and improve the collection process.

To improve curbside collection we recommend:

**Recommendation 2:** Altering the ordinance to specify who is responsible for issuing citations and how citations or fines will be enforced. We also recommend maintaining a record of citations issued.

<sup>1</sup> Source: City Ordinance Chapter 74 Article II, Sec. 74-29.- Curbside Collection

<sup>2</sup> Source: City Ordinance Chapter 74 Article II, Sec. 74-27. - Containers

<sup>3</sup> Source: City Ordinance Chapter 74 Article II, Sec. 74-33. - Enforcement

<sup>4</sup> Source: City Ordinance Chapter 74 Article II, Sec. 74-57. - Penalty



**Management Response:**

**Recommendation 2:** Management agrees with the findings and recommendations on citations and enforcement. We recommend that the new environmental court being developed for Property Standards will be the appropriate avenue for enforcement. This would allow us to use the Shreveport Police Department for the issuance of citations and the Environmental Court for the enforcement. We do have a need to re-write the ordinance governing solid waste activities but re-writing this prior to the implementation of the environmental court would be premature.

**Due Date:**





## Bulk Collection

Per City Ordinance, section 74-1, “bulk waste means materials that include tree and shrubbery trimmings, household furniture, appliances, tires, and other items as defined by the director.” Bulk waste collection occurs weekly and citizens can call to schedule an appointment for bulk pickup on Wednesday and Saturday. “Except for tree and shrubbery trimmings, bulk items may be set out up to 24 hours in advance of the appointment and must be set out prior to 7:00 a.m. on the day of the appointment. Tree and shrubbery trimmings may be placed up to seven days in advance of the appointment.” During our observation of the collection routes, some citizens and collection employees were not following the ordinance section 74-32:

- Bulk items were not at least five feet away from garbage carts or mailboxes
- Bulk items were under low hanging tree limbs
- Loose trash was not containerized

In addition, items based on the ordinance that should be scheduled were not, which resulted in collection workers not following the ordinance. See pictures below taken during our observation of items not scheduled for bulk pickup that was collected by collection workers:



*Sofa*



*Mattress*

Collection workers should not collect multiple trash items that are not containerized. Collection workers are to notify their supervisor and the supervisor will notify the bulk pickup operator. Below are pictures of trash the collection workers did not collect, which resulted in the supervisor being dispatched.

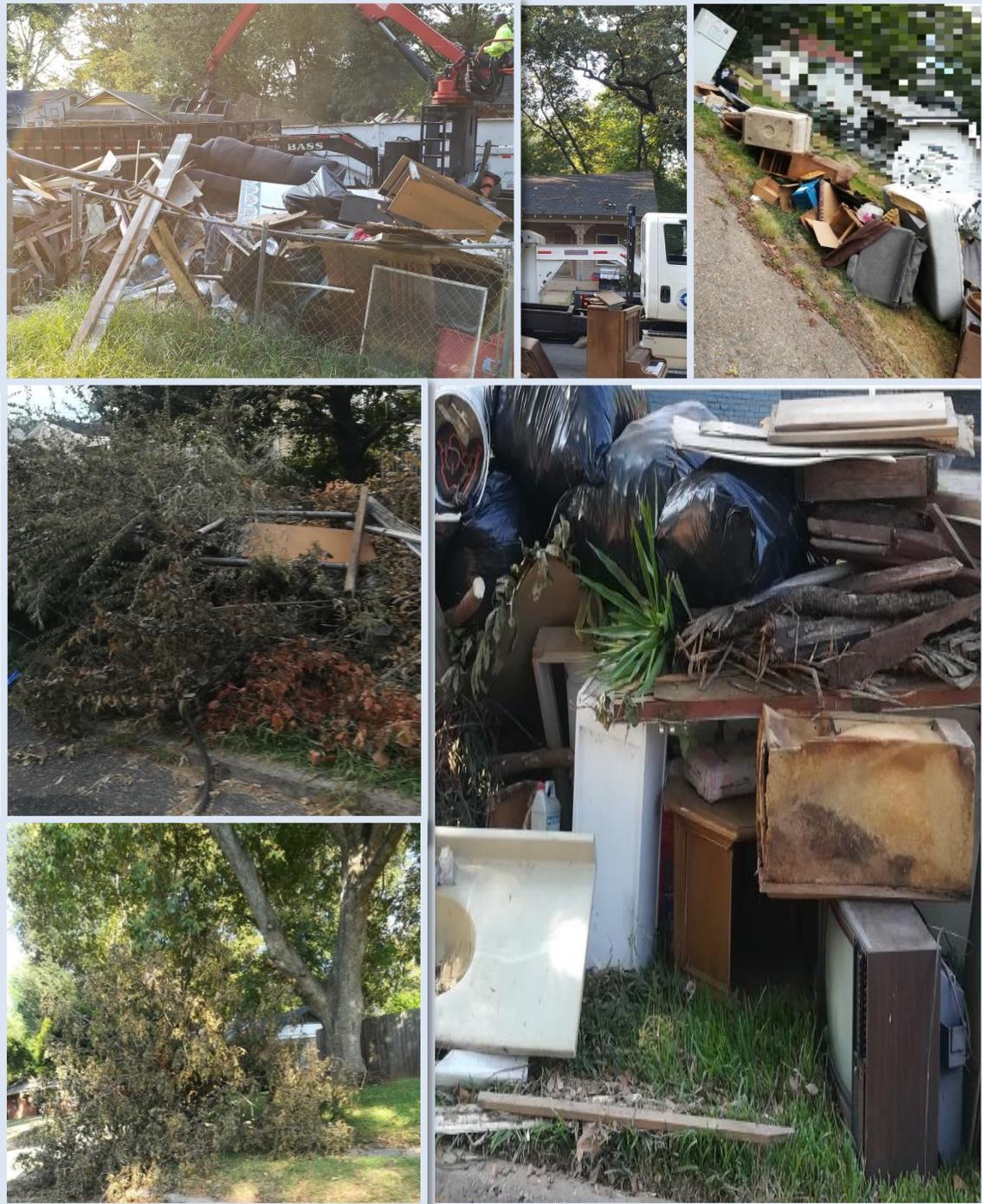


*Note: the collection worker emptied the trashcan*



**IAR 100019-08**  
**November 3, 2019**

The City Solid Waste Ordinance lists items that should not be collected for bulk pickup (e.g., piano, countertops, tree stumps).<sup>5</sup> However, the ordinance does not specify a limit as to how much should be collected or set out by citizens. Currently, citizens can set out an unlimited amount of bulky waste and brush on the streets. Also, citations or fines have not been issued for bulk pickup; see images below of bulk collection pile:



<sup>5</sup> <Auditor's note> Some items listed in the picture above should not have been collected according to the Solid Waste Ordinance such, as the countertop or piano. The tree limbs was above 6 feet in height.

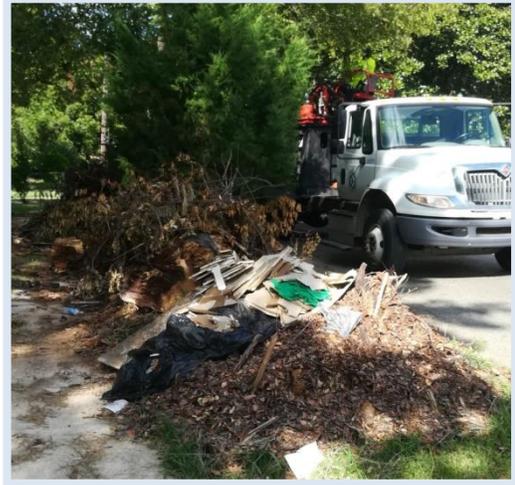
Trucks with knuckle boom cranes are used for bulk pickup. The knuckle boom crane is mounted on the back of the truck behind the cab and the trailer is attached to the truck. During our observation, we identified that the knuckle boom created view obstructions because of the design of the crane. In addition, the disposal of items collected by the knuckle boom truck was a time-consuming process, as the truck does not travel to the landfill. Once at capacity, the knuckle boom operator must wait on a pull-truck, items are then transferred to the pull-truck's trailer where it is then routed to the landfill for disposal. If the items collected are only limbs and trees, the knuckle boom operator can transfer it to a local mulching company.



*Pull-truck*



*Knuckle boom*



*Items collected with knuckle boom*



*Damaged tree branch is hazardous for operator working below*



*Tree branches are hazardous for the operator working*



**Recommendation 3:** Enforcing the ordinance and revising the ordinance to include a limit as to how much is collected and/or set out by citizens (*e.g., five items per pickup, or a limit between one to 10 cubic yards*), and issuing citations for bulk pickup. We also recommend researching and replacing the knuckle boom truck with a truck that is more effective for collecting bulk pickup to save time and resources and increase safety and efficiency.

**Management Response:**

**Recommendation 3:** Management agrees that there is a more effective equipment on the market to allow us to be more efficient with pick-ups. As with our packers this equipment is very expensive so funding would have to be made available to purchase. The cost of these bulk trucks is approximately \$160,000 each. These trucks only require 1 operator/collector verses 2 in the existing trucks.

With the support of the City Council ordinances can be established to limit the size and amount of the bulk that can be picked up. The other issue that will take both the commitment of City Council and the Administration when we don't pick up bulk that is in violation. Neighbors and the violator will start to apply political pressure to get us to pick up the bulk in violation and if we do that it will undermine the enforcement of the regulation. Without the enforcement component discussed in the previous response it will not work. We are aggressively going after building contractors as well as tree and landscaping businesses that are leaving their waste on the curb for Solid Waste to pick up. Establishing additional restriction on residents placing bulk on the curb will have to be carefully evaluated to establish regulations that will work. Again enforcement is the key.

**Due Date:** 1 Year or More





**Objective: To review the safety practices of collection employees and to determine if they are complying with policies and procedures.**

### Collection Employees Safety and Training

Solid waste is the fifth most dangerous job in the United States. We found that Solid Waste collection employees are not following the policies and procedures based on our review of safety assessments for 2018-2019 provided by the City Risk Specialist and auditor's observations. Regarding the safety assessment, some concerns were:

- Personal Protective Equipment (PPE) not worn at all times<sup>6</sup>
- Backing up without assistance or refuse worker remained on the steps while the operator was backing up
- Employee riding on the rear steps when the truck speed exceeded ten mph

Within the Solid Waste's policy, it states, "*safety glasses should be worn and all uniforms and caps must be worn while on duty.*" During our observation, we noticed that some collection workers did not wear safety glasses, hats, or gloves while collecting trash. The policy also states, "black belts should be worn while working and shall be worn on outside shirt, it must be visible;" however, no black belt was visible. Protective safety gear helps reduce safety incidents such as bodily injuries.

The policy also states to be aware of your surroundings. Citizens should not be involved in disposing the trash into a garbage packer. We observed a citizen helping collection workers throw the trash into a packer. Safety training requirements are not clearly specified in the policy for new and existing employees.

To improve Solid Waste safety culture, we recommend:

**Recommendation 4:** Collection workers should wear proper PPE equipment at all times. Update the policy to reflect current appearance standards (for example, black belts are no longer required, but optional). Include in the policy citizens should never be engaged in the disposal of waste into the packer; and clearly define safety training for employees. In addition, review safety assessments and data to determine common issues, injuries' frequency and severity, and seek ways to prevent them.

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<sup>6</sup> Personal Protective Equipment (PPE) is clothing or equipment intended to safeguard employees from physical risks while at work (e.g., ANSI 107 high visibility vest, safety glasses, safety gloves)



**Management Response:**

**Recommendation 4:** Management agrees with the finding and will continue to train our employees to insure a safe working environment for both the employees and the general public.

**Due Date:** Less Than 6 Months

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Approved by:

  
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nd:dw

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