

SOLID WASTE VEHICLE MANAGEMENT

Exit Conference Date: October 6, 2023

Release Date: February 7, 2024

Report No. 24-01

City of Orlando Office of Audit Services and Management Support

George J. McGowan, CPA
Director

Co-source Partner
Carr Riggs & Ingram
CPAs and Advisors



MEMORANDUM OF TRANSMITTAL



To: Kevin Edmonds, Chief Administrative Officer
Chris McCullion, Chief Financial Officer

From: George J. McGowan, CPA
Director, Office of Audit Services and Management Support

Dates: Exit Conference: October 6, 2023
Release: February 7, 2024

Subject: Solid Waste Vehicle Management (Report No. 24-01)

The Office of Audit Services and Management Support, with major assistance from our co-source partner Carr Riggs & Ingram, performed a review of the management of the fleet of vehicles used by the Solid Waste Division. This review was requested by the Deputy Chief Administrative Manager and was included as a scheduled project on the annual Audit Plan of the Office of Audit Services and Management Support.

This review was performed in accordance with International Standards for the Professional Practice of Internal Auditing and other professional standards, as required. This report offers observations and associated recommendations for consideration and action by both the Solid Waste Management Division and the Fleet Management Division. It also includes extensive benchmarking information gathered independently from selected peer governments and private solid waste haulers.

Our observations and recommendations include continuing the ongoing modification of route structure and schedules to maximize vehicle reliability and safe operation; enhancing the inspections of vehicles prior to and following their use; optimizing the size of the vehicle fleet; increased coordination of preventative maintenance; and others. Each recommendation also includes the response from the affected division and a time frame for taking action.

We appreciate the cooperation and courtesies extended by the staff of the Public Works Department, Office of Business and Financial Services, Solid Waste Division and Fleet Management Division and others consulted during this review.

GJM

c:

The Honorable Buddy Dyer, Mayor
Jody Litchford, Deputy City Attorney
F.J. Flynn, Deputy Chief Administrative Officer
Michelle McCrimmon, Deputy Chief Financial Officer
Corey Knight, Public Works Director
Jeffrey Alan Morrison, Solid Waste Division Manager
Jonathan D. Ford, Fleet Management Division Manager
Marjorie Briones, Public Works Business Operations Manager



City of Orlando

Solid Waste Fleet Management

October 6, 2023



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October 6, 2023

Solid Waste Fleet Management

Mr. George McGowan
Director, Office of Audit Services and Management Support
400 South Orange Avenue
Orlando, FL 32801

Dear Mr. McGowan:

Pursuant to our engagement letter dated December 14, 2022, we hereby submit our recommendations for improvement of the Solid Waste Fleet Management function.

Our report is organized as follows:

Executive Summary	Summary of the project objectives and observations related to the Solid Waste Fleet Management function.
Background	Overview of the solid waste fleet management function.
Benchmarking	Description of our benchmarking process and a summary of data gathered as compared with practices at the City.
Objectives and Approach	Detailed review of the engagement objectives, focus and approach.
Observations Matrix	Observations, recommended actions, and management’s responses developed during the engagement.
Benchmarking Data	Data collected from peer organization and innovative approaches noted.

We would like to thank all those involved in assisting us in connection with our assessment of the Solid Waste Fleet Management function.

Respectfully Submitted,

CARR, RIGGS & INGRAM, LLC



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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Overview

The Solid Waste Division is the exclusive provider of residential municipal solid waste, recycling, bulk pick up, yard waste, and commercial dumpster services within the City of Orlando (City). Commercial recycling service and roll-off dumpster services are provided by the Solid Waste Division as well as private collectors.

The Solid Waste Division Manager oversees the collection of solid waste within the City including:

- Assigning Drivers and collectors to routes and balancing their scheduled hours and overtime
- Monitoring equipment availability
- Training Drivers
- Inspecting vehicles and communicating needed repairs

The Fleet Management Division owns or leases the solid waste collection vehicles used by the Solid Waste Division and is responsible for vehicle management including:

- Repairing and maintaining vehicles
- Acquiring and disposing of vehicles
- Maintaining property records
- Managing warranties and vendor relationships
- Training Heavy Equipment Technicians
- Communicating with the Solid Waste Division

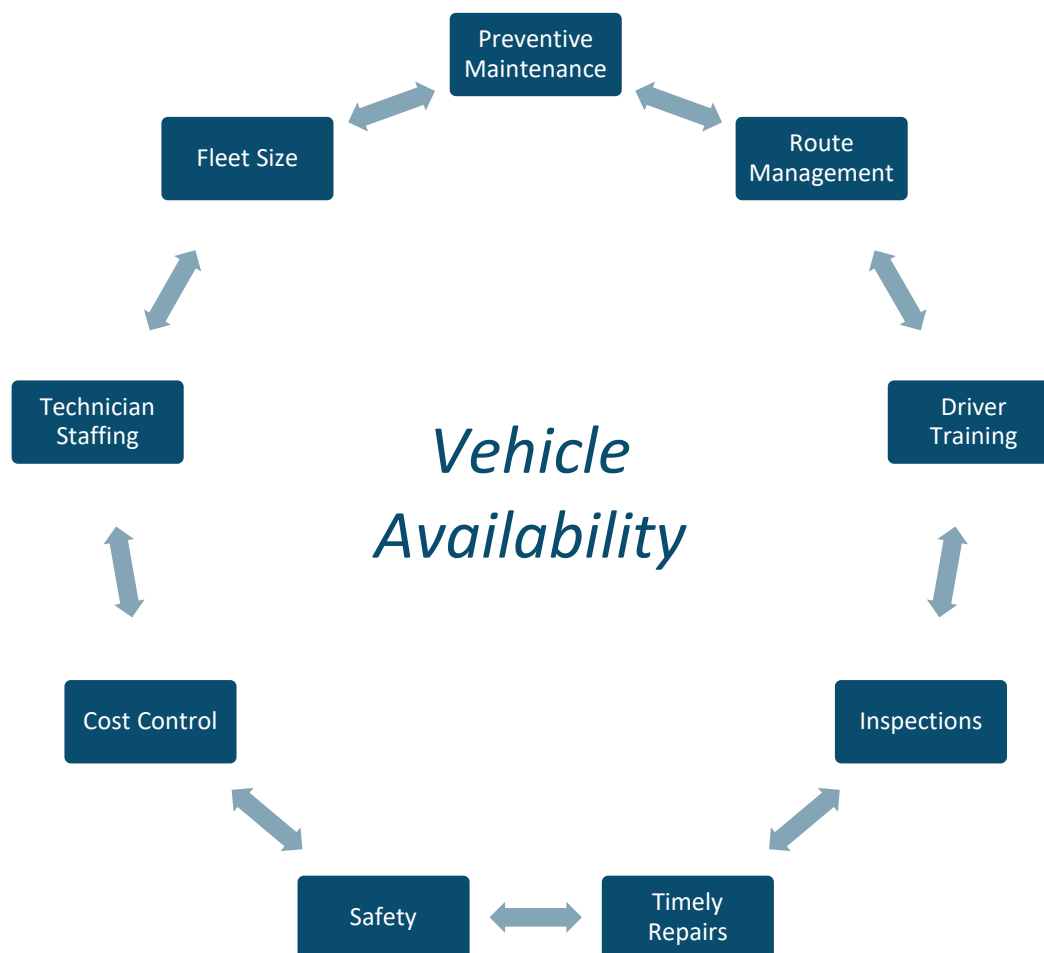
Objective

Our primary objective was to assess the City's Solid Waste Fleet Management function in order to develop and provide recommendations for improvement.

Observations

During our engagement, the availability of solid waste collection vehicles in good working order was identified by Solid Waste and Fleet Management Divisions management as the key area for improvement. Vehicle availability is critical to Solid Waste Division performance. If there are not enough vehicles in useable condition, then there are pervasive financial, operational, and safety consequences in solid waste collection. Vehicle availability results from the interplay of a number of factors at the Solid Waste Division, Fleet Management Division, and the City environment. In order to optimize vehicle availability each day, the City must facilitate synergy across these factors.

EXECUTIVE SUMMARY – CONTINUED



The management of the Solid Waste and Fleet Management Divisions have been working to address vehicle availability. Their ongoing efforts have been directed toward:

- Changing and rebalancing routes with a goal of route time less than 10 hours.
- Balancing Driver schedules with a goal of no more than 40 hours per week.
- Ensuring vehicles are maintained in a cleanly condition for ease of use and maintenance.
- Acquiring replacement vehicles with expected delivery in 2024 and 2025.
- Carrying sufficient parts inventory to support common repairs.
- Implementing a new fleet information management system to support reporting, decision-making, and data sharing between the Fleet Management and Solid Waste Divisions.
- Drafting a service level agreement (SLA) between the Divisions

We considered the City environment, the interaction between these elements, and management’s ongoing efforts to improve vehicle availability as we performed our engagement. As is common to many processes, there are competing priorities for resources in the Solid Waste Fleet Management function. In developing our observations and recommendations, we focused on opportunities which will complement existing management strategies, positively impact multiple elements, and improve outcomes overall.

BACKGROUND

BACKGROUND

Overview

City Code Chapter 28 specifies the requirements related to the collection and disposal of solid waste within the City.

Section 28.05 (1)

All solid waste accumulated in the City shall be collected, conveyed and disposed of by the City or its designated agents, licensees, franchises or contract representatives under the direction of the Division pursuant to the terms and provisions of this Chapter, and such rules and regulations as the Solid Waste Division Manager shall prescribe for the collection, conveyance and disposal of such solid waste.

The Solid Waste Division Manager establishes the rules for collection and disposal of solid waste.

Section 28.06 (1)

All solid waste accumulated in the City shall be collected, conveyed and disposed of under the supervision of the Solid Waste Division Manager. The Solid Waste Division Manager is hereby authorized to adopt and amend reasonable rules and regulations concerning the collection, conveyance, and disposal of solid waste as he shall deem necessary, including but not limited to, regulations concerning the days of collection, type and location of containers, and fees for special solid waste services.

The Solid Waste Division is the exclusive provider of residential municipal solid waste, recycling, bulk pick up, yard waste, and commercial dumpster services within the City. Commercial recycling service and roll-off dumpster services are provided by Solid Waste as well as private collectors. *Section 28.05 (2)*

Residential collection accounts are processed by the Orlando Utility Commission and listed on customers' monthly utility bill. The standard monthly residential fee for solid waste pick up is \$20.85.

The Solid Waste Division Manager oversees the collection of solid waste with the City including:

Establishing and managing collection routes

The Solid Waste Division Manager, Assistant Manager, and Operations Manager plan commercial and residential collection routes. Residential routes are collected Monday through Friday and Commercial routes are collected seven days per week.

Assigning Drivers and collectors to routes and balancing their scheduled hours and overtime

Division management assign Drivers and collectors to routes. Lengthy routes and overtime were common among Drivers on commercial routes. During spring 2023, routes were revised with a goal that each route should be no more than 10 hours including collections, travel, and disposal at a transfer station or landfill.

Monitoring equipment availability

Solid Waste Division management communicate frequently with the Fleet Management Division management to monitor the availability of solid waste collection vehicles to complete routes.

Training Drivers

The Solid Waste Division management conducts new employee training including City policies and procedures for collection, vehicle operation, vehicle maintenance, and safety.

BACKGROUND - CONTINUED

Inspecting vehicles and communicating needed repairs

Drivers perform pre-trip and post-trip inspections for each solid waste collection vehicle at the beginning and conclusion of a route. Any issues noted during the route or inspection are documented and submitted to the Service Writer.

The Fleet Management Division provides motor pool and vehicle maintenance for City Departments including heavy equipment maintenance for the Public Works Department, Family Parks and Recreation Department, and Orlando Fire Department. The Fleet Management Division owns or leases the solid waste collection vehicles used by the Division of Solid Waste and is responsible for vehicle management including:

Repairing and maintaining vehicles daily and over the long term

Maintenance and repairs are performed by Division Heavy Equipment Technicians and contractors. Fleet Management Division staff work with Procurement and Contracts Division to source parts and contractors which are utilized extensively to provide additional capacity and expertise for complex or specialized work.

Acquiring & Disposing of Vehicles

Division management initiates procurement of solid waste collection vehicles based on needs identified with the Solid Waste Division. The Fleet Management Division collaborates with the centralized Procurement and Contracts Division to competitively procure these vehicles. Fleet Management and Solid Waste Division management coordinate to determine when solid waste collection vehicles should be taken out of service.

Maintaining property records

Fleet Management Division tracks vehicles in the FASTER asset and heavy equipment management application. The Division collects comprehensive vehicle information including make, model, year, acquisition cost, replacement/consumable part types, warranties, and preventive maintenance schedule. Vehicle maintenance and repairs are recorded in FASTER as they occur.

Managing warranties and vendor relationships

Warranty status is tracked by the Fleet Management Division in FASTER. Repairs under warranty are arranged by Fleet Management Division staff. Fleet Management Division staff work with the centralized Procurement and Contracts Division to identify and engage contractors to maintain and repair solid waste collection vehicles as well as monitoring the progress of vehicle repairs.

Training Heavy Equipment Technicians

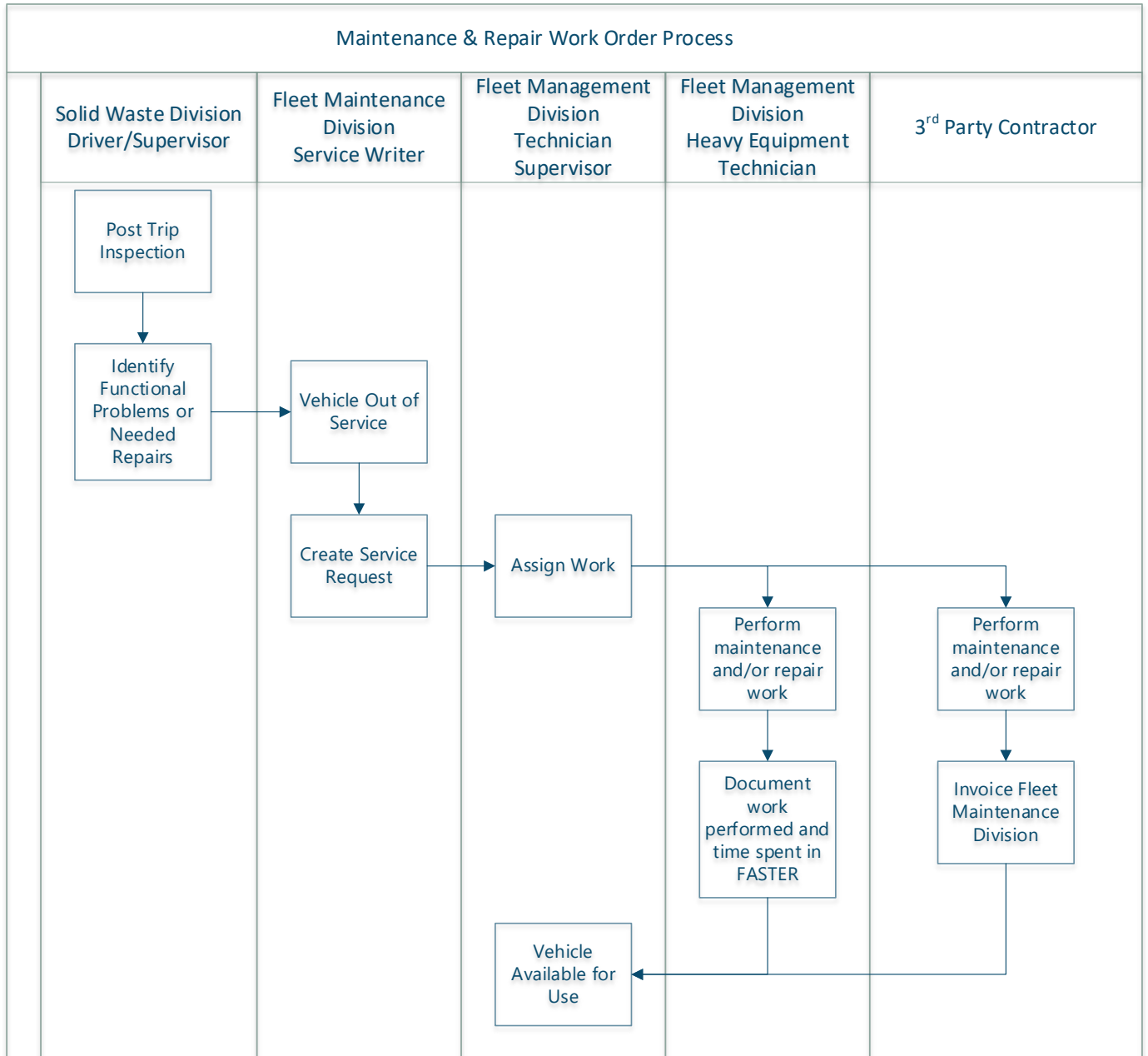
Solid waste collection vehicles are complex and sophisticated machines. Technicians receive on-going training on solid waste collection vehicle maintenance and repair.

Communicating with the Solid Waste Division

Fleet Management Division notifies the Solid Waste Division when vehicles require preventive maintenance, the status of on-going repairs, and which vehicles are available for use.

BACKGROUND - CONTINUED

Maintenance Work Order Process

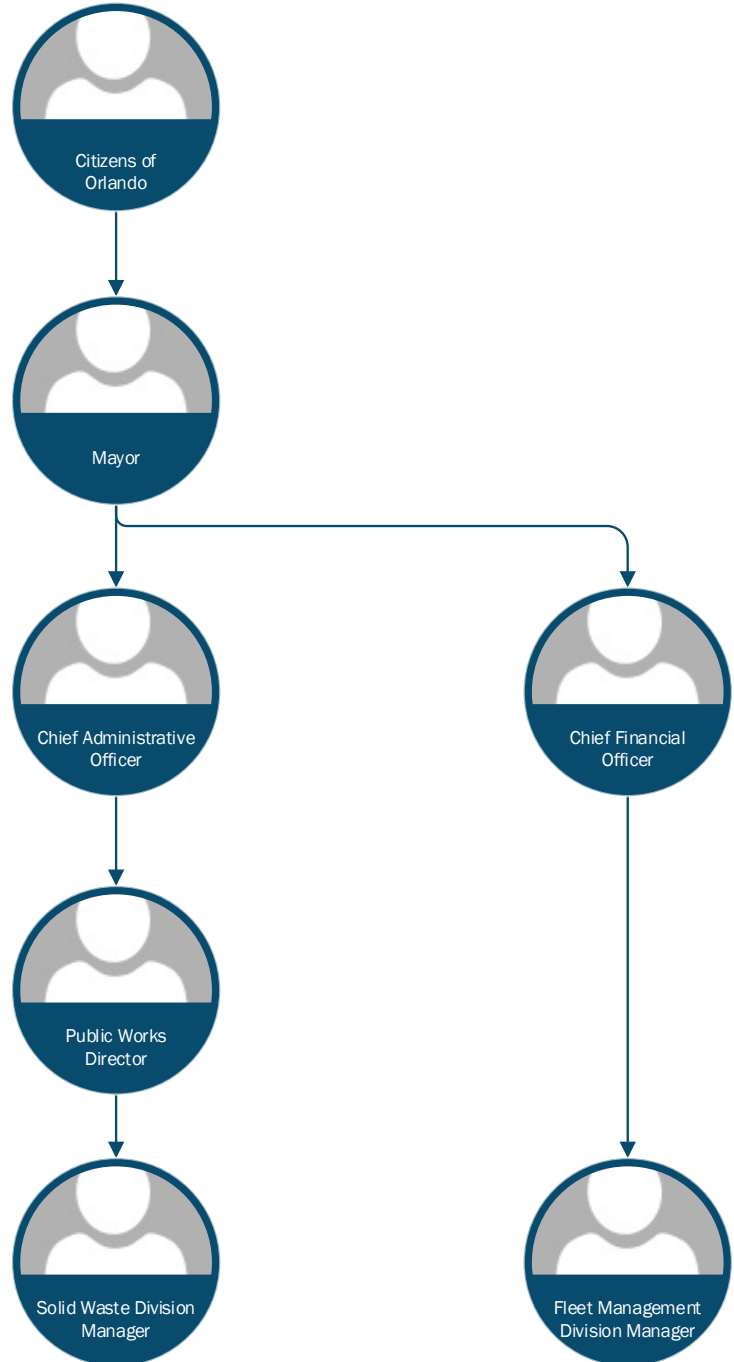


BACKGROUND - CONTINUED

Staffing

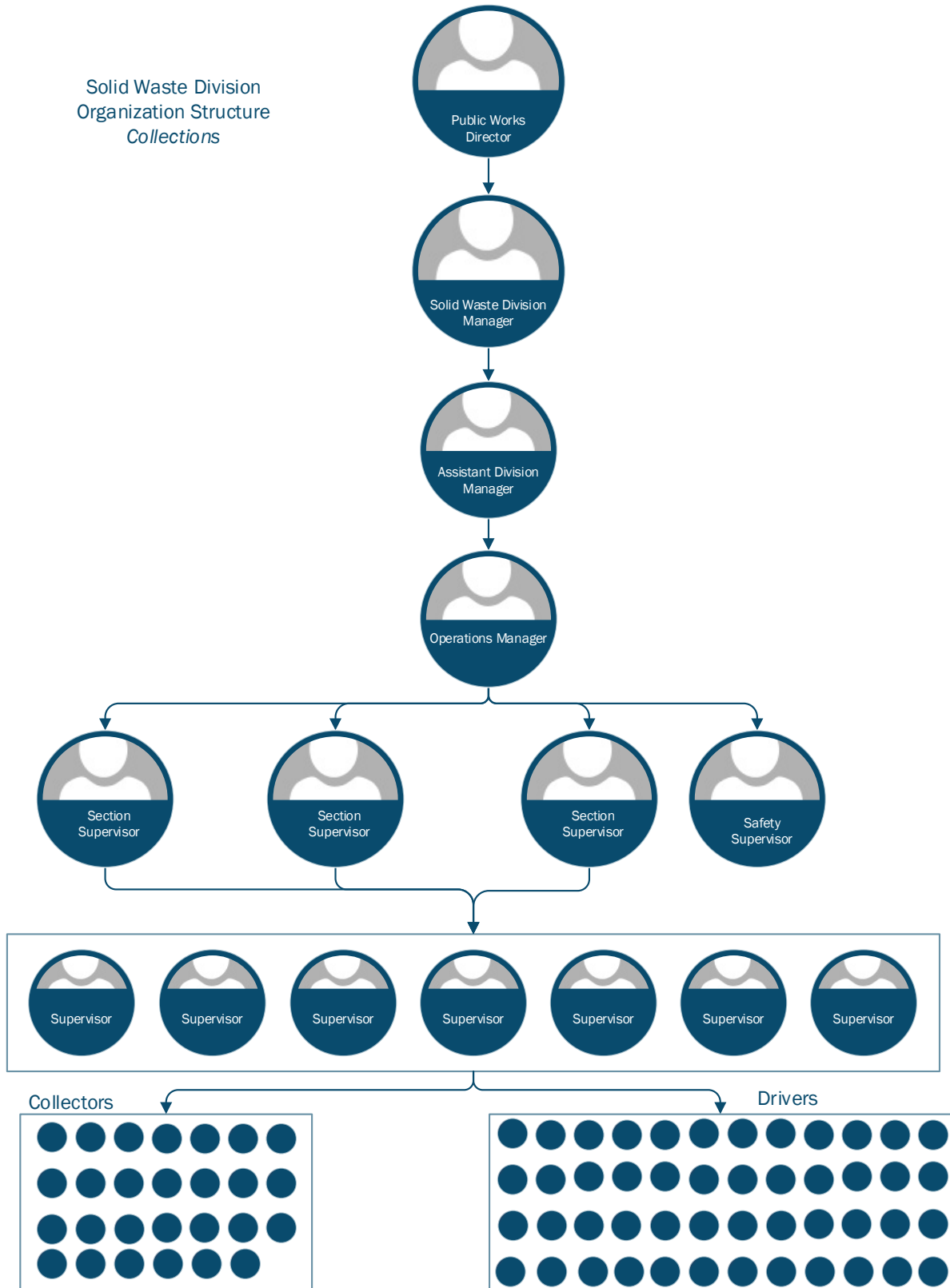
The Solid Waste Division is organized under the Public Works Department which reports to the Chief Administrative Officer. The Fleet Management Division reports to the Chief Financial Officer.

City of Orlando
Organization Structure
Solid Waste & Fleet Management
Divisions



BACKGROUND - CONTINUED

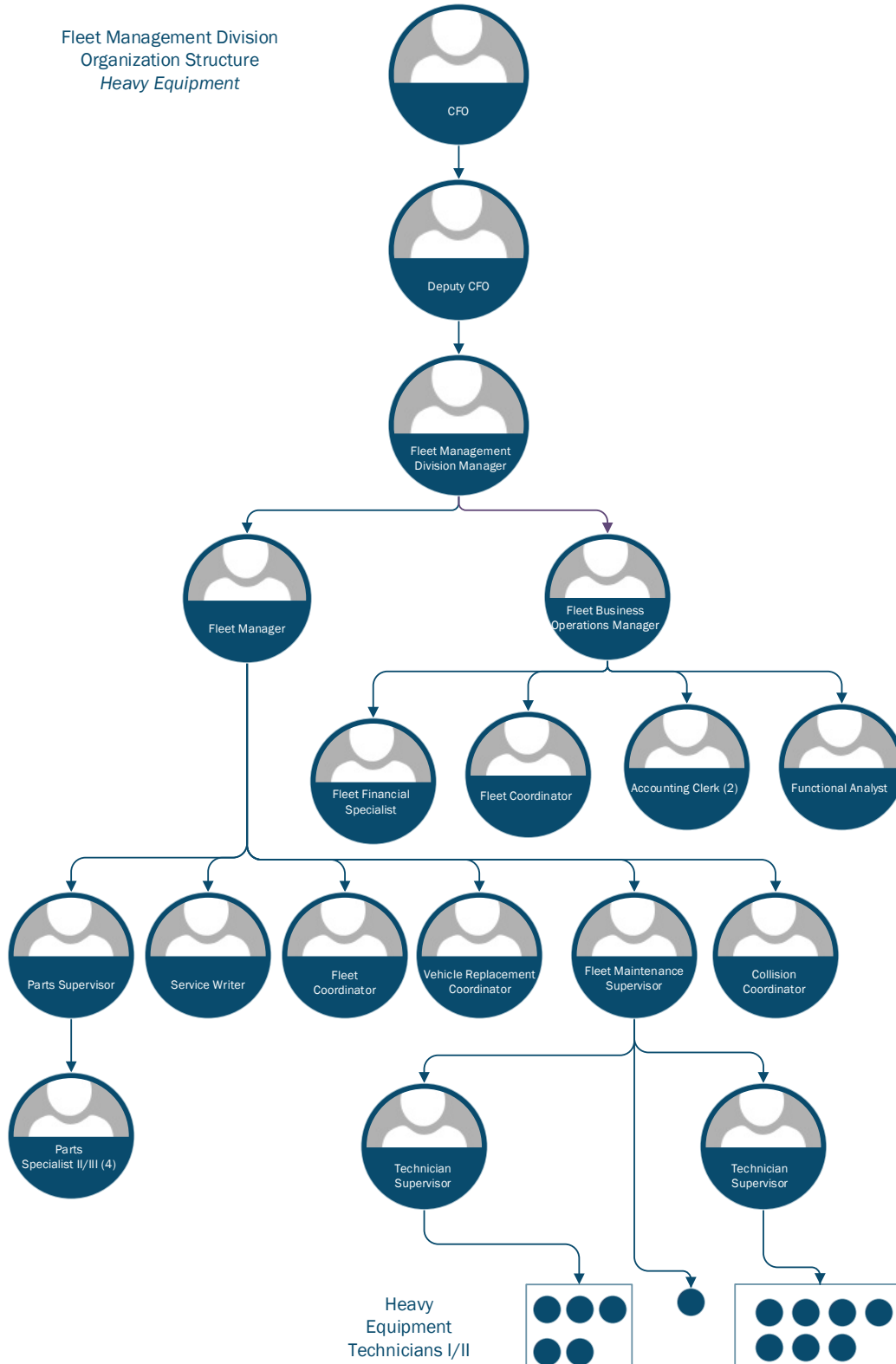
The Solid Waste Division reports to the Public Works Director and is composed of over 100 full-time employees – 75 of whom are either Drivers or Collectors. The Solid Waste Division Manager oversees the collection process in collaboration with the Assistant Division Manager, Operations Manager, and Supervisors.



BACKGROUND - CONTINUED

The Fleet Management Division reports to the CFO and is composed of 48 full-time employees. The Fleet Management Division Manager oversees the Division as a whole. The Fleet Manager and Fleet Management Supervisor provide the day to day supervision and management of solid waste collection vehicle maintenance and repair. Fleet Management Division has 12 heavy equipment technicians. There are an additional four heavy equipment technician Positions allocated to the Division. Division management stated these positions have been vacant for more than seven years.

Fleet Management Division
Organization Structure
Heavy Equipment



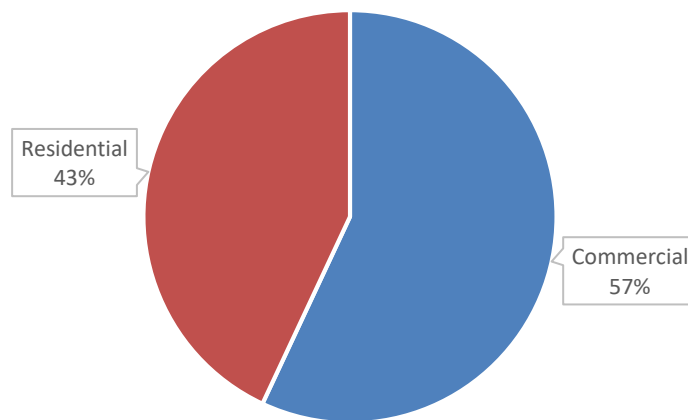
BACKGROUND - CONTINUED

Selected Statistics

Based on Solid Waste Division, Public Works Department, and FASTER application data. Not audited. We also included financial information from the City's audited Annual Comprehensive Financial Reports (ACFR) for fiscal year (FY) 2019 through 2022.

During FY 2022 the Solid Waste Division had 9,000 commercial customers and 43,000 residential customers. Commercial service accounted for 57% of the 185,000 tons collected.

FY 2022 Solid Waste Collections
(tonnage)



Source: Solid Waste Division

As of March 2023, the City had 28 commercial solid waste collection vehicles and 59 residential solid waste collection vehicles.

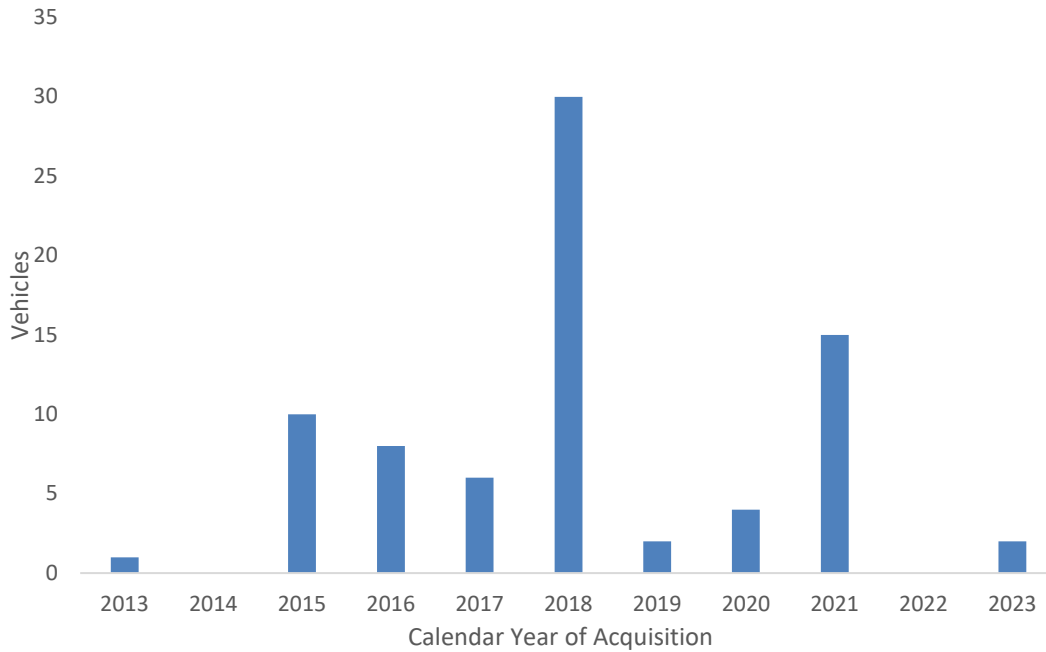
Truck Type	Service Type	Number of Trucks
Front Load	Commercial container	24
Roll Off	Commercial roll-off	4
Automated Side Loader	Residential cart	32
Rear Load	Residential cart	21
Claw	Residential bulk items & yard waste	6
	Total	87

Source: Solid Waste Division

BACKGROUND - CONTINUED

Seventy-eight of these solid waste collection vehicles were owned by the City and had a total acquisition cost of \$26.6 million. Solid waste collection vehicles were acquired between calendar year 2013 and 2023 with a median acquisition date of 2018.

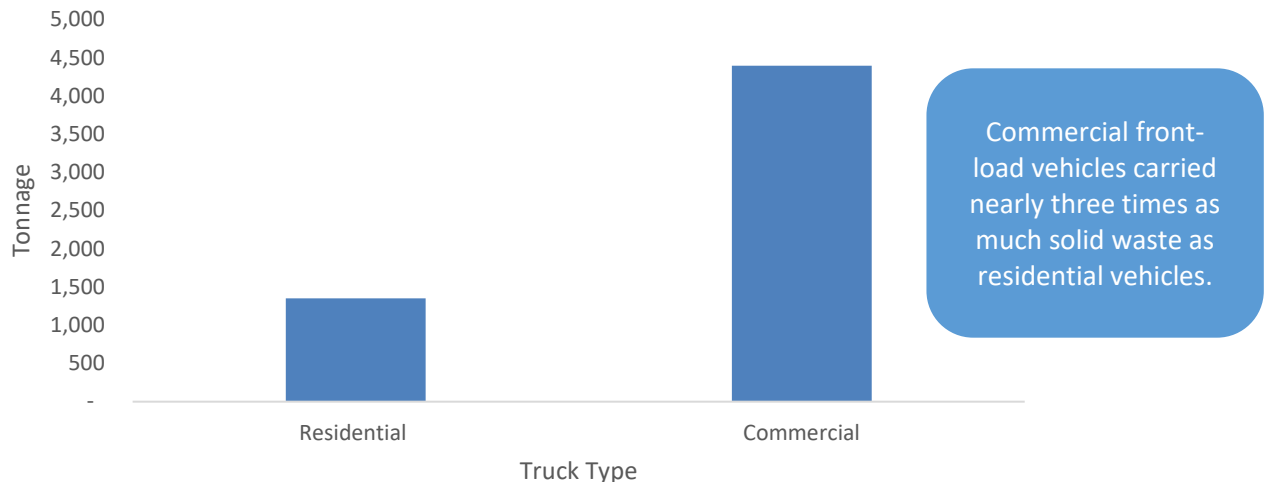
Solid Waste Collection Vehicle Acquisition Year



Source: FASTER application

During FY 2022, commercial solid waste accounted for 32% of collection vehicles and 57% of collections. Commercial solid waste collected per commercial solid waste collection vehicle totaled 4,395 tons annually.

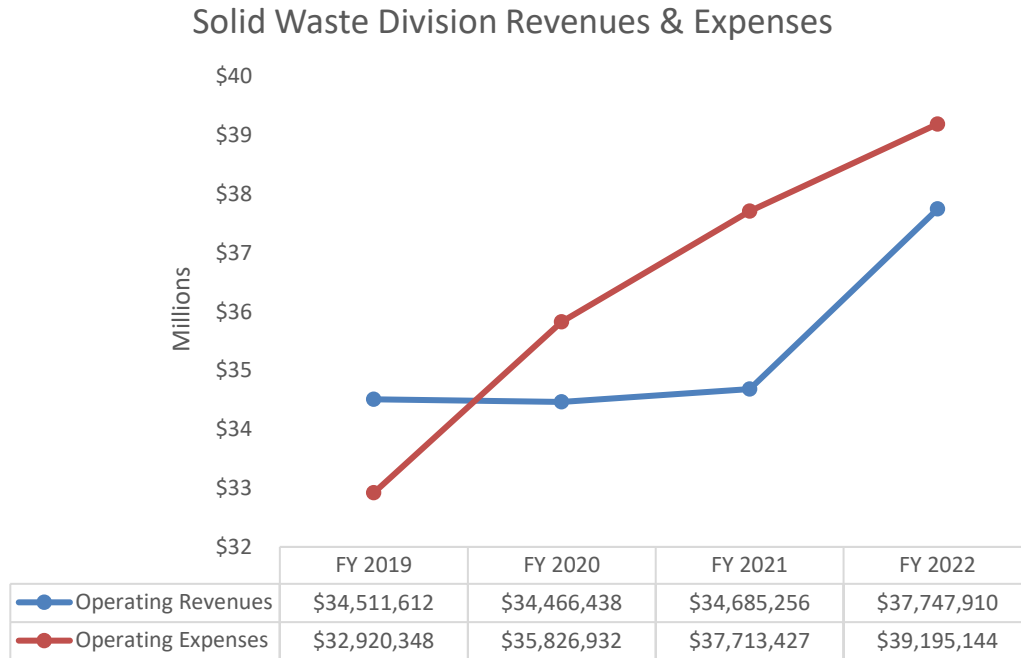
FY 2022 Solid Waste Collection



Source: Solid Waste Division

BACKGROUND - CONTINUED

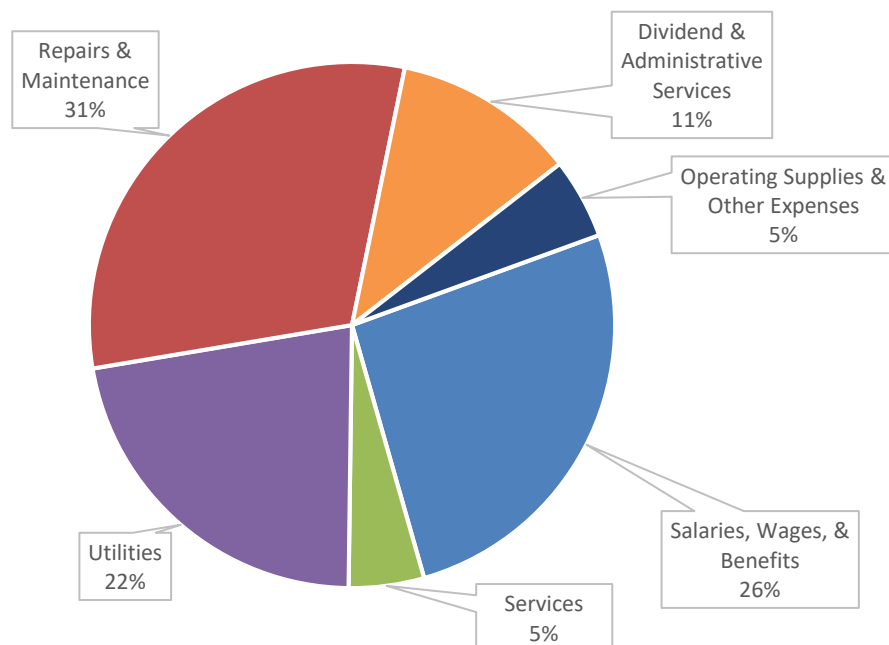
During FY 2022, the Solid Waste Division had operating revenues of \$37.7 million and operating expenses of \$39.1 million resulting in an operating loss of \$1.4 million. From FY 2019 to FY 2022 operating revenues increased 9% and operating expenses increased 19%.



Source: Audited ACFRs

Repairs & Maintenance and personnel costs represented 57% of FY 2022 operating expenses.

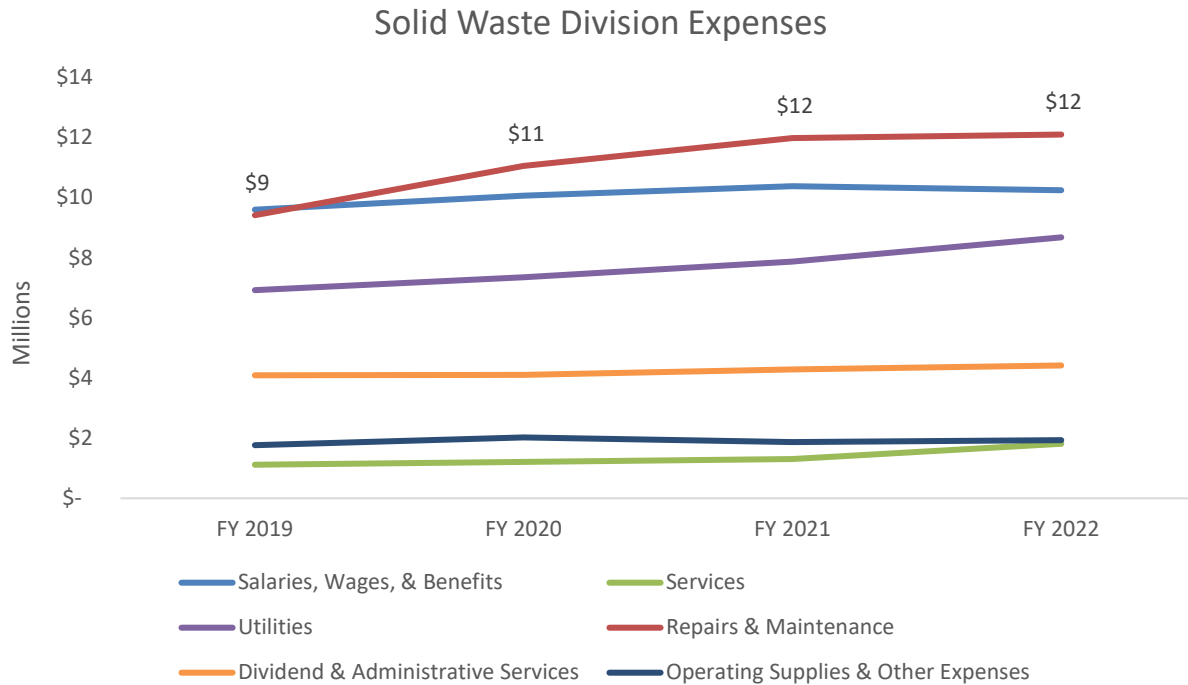
FY 2022 Solid Waste Division Operating Expenses



Source: Public Works Department

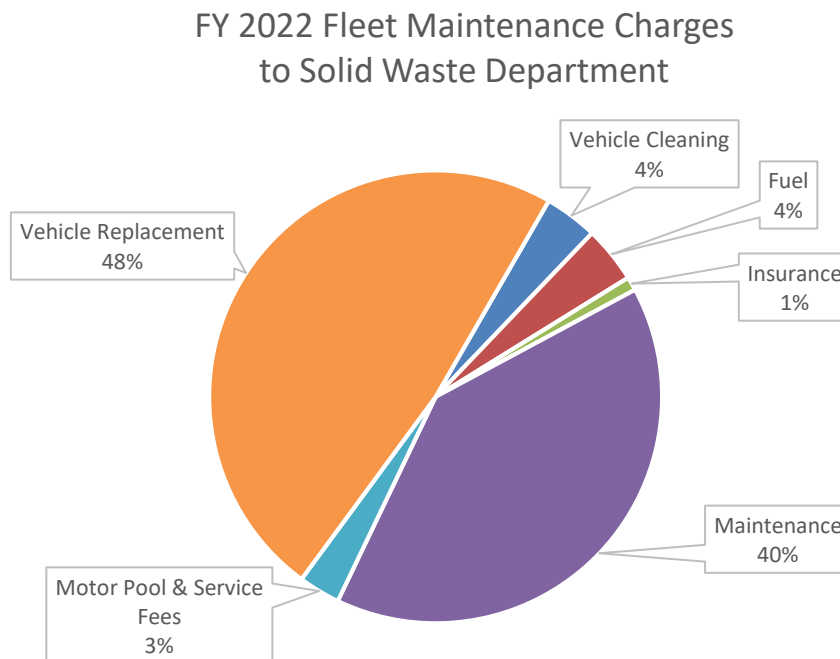
BACKGROUND - CONTINUED

From FY 2019 to FY 2022 Repairs & Maintenance expense increased 28%. Personnel costs increased 7% in the same period.



Source: Public Works Department

During FY 2022, the Fleet Management Division charged the Solid Waste Division for solid waste collection vehicle replacement, maintenance, insurance, fuel, and cleaning. Vehicle replacement and maintenance accounted for 48% and 40% of charges, respectively.

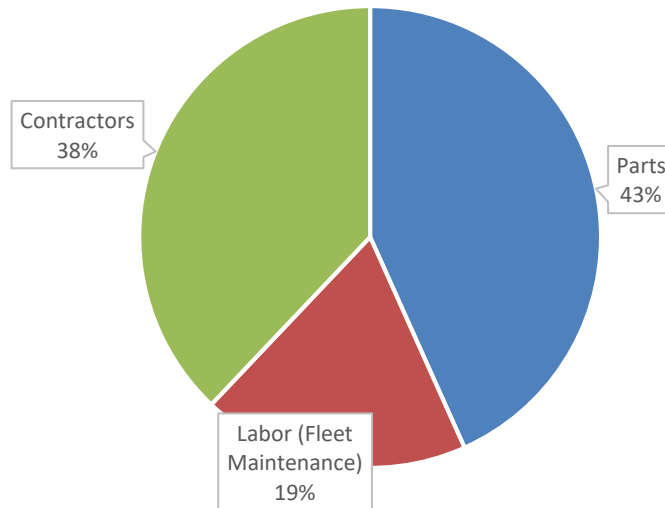


Source: FASTER application

BACKGROUND - CONTINUED

Fleet Management Division utilizes City Heavy Equipment Technicians and external contractors to perform solid waste collection vehicle maintenance and repairs. During FY 2022, external contractors accounted for 38% of maintenance and repair charges.

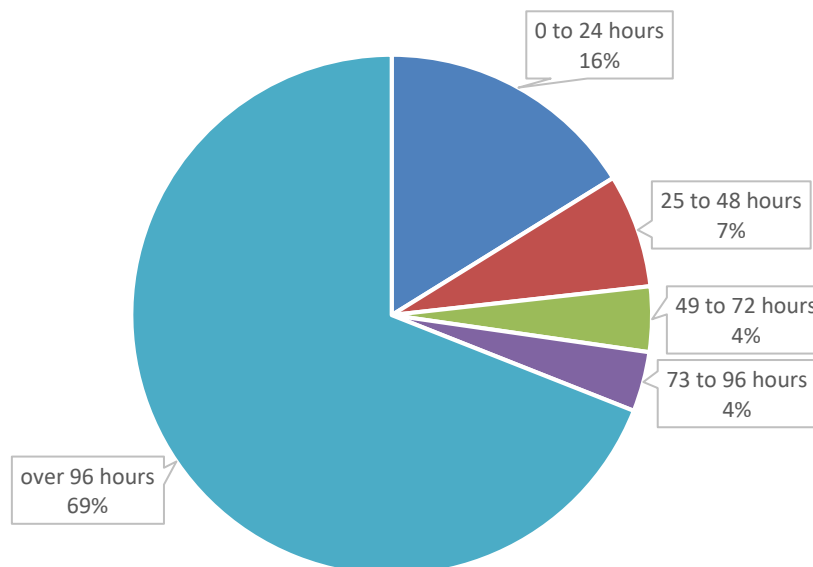
FY 2022 Solid Waste Collection Vehicle
Maintenance & Repair Charge



Source: FASTER application

FASTER tracks work orders by time to completion. During FY 2022, 69% of solid waste collection vehicle work orders were open for more than 96 hours which is consistent with the overall complexity and slower turnaround for repairs and maintenance on these vehicles.

FY 2022 Work Orders by Hours Open

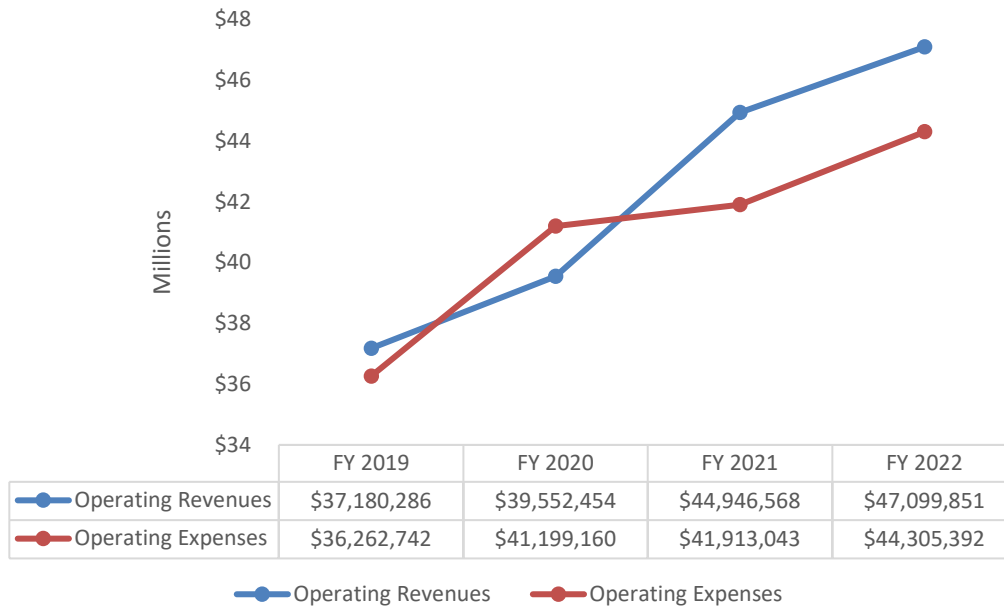


Source: FASTER application

BACKGROUND - CONTINUED

During FY 2022, the Fleet Management Division had operating revenues of \$47 million and operating expenses of \$44.3 million resulting in an operating income of \$2.8 million. From FY 2019 to FY 2022 operating revenues increased 27% and operating expenses increased 22%.

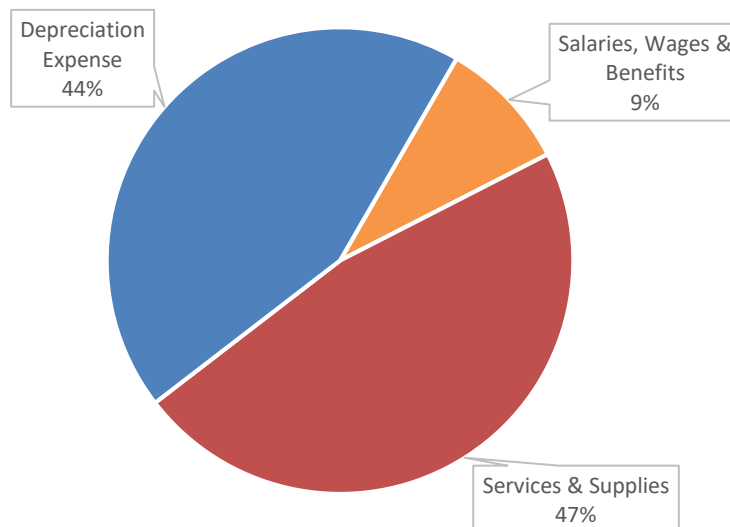
Fleet Management Division Revenues & Expenses



Source: Audited ACFRs

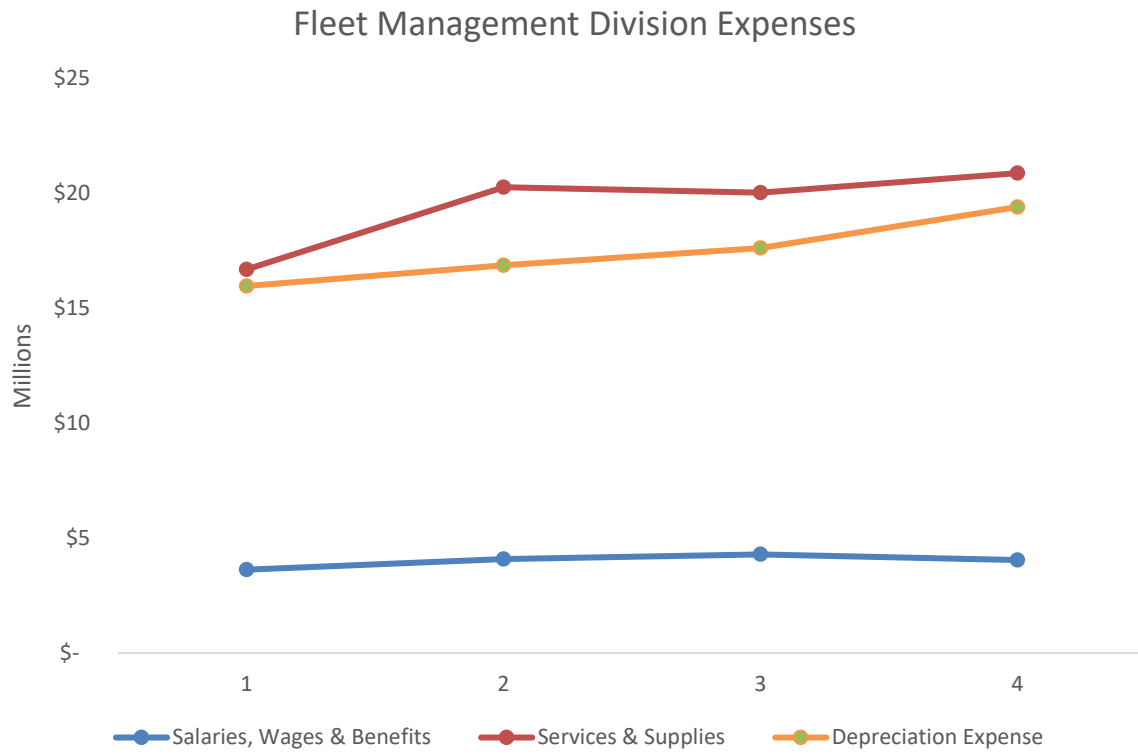
Services and supplies represented 47% of FY 2022 operating expenses. Personnel costs accounted for 9% of operating expenses.

FY 2022 Fleet Management Division Operating Expenses



Source: Audited ACFRs

From FY 2019 to FY 2022 Services & Supplies expense increased 24% while personnel costs increased 12%.



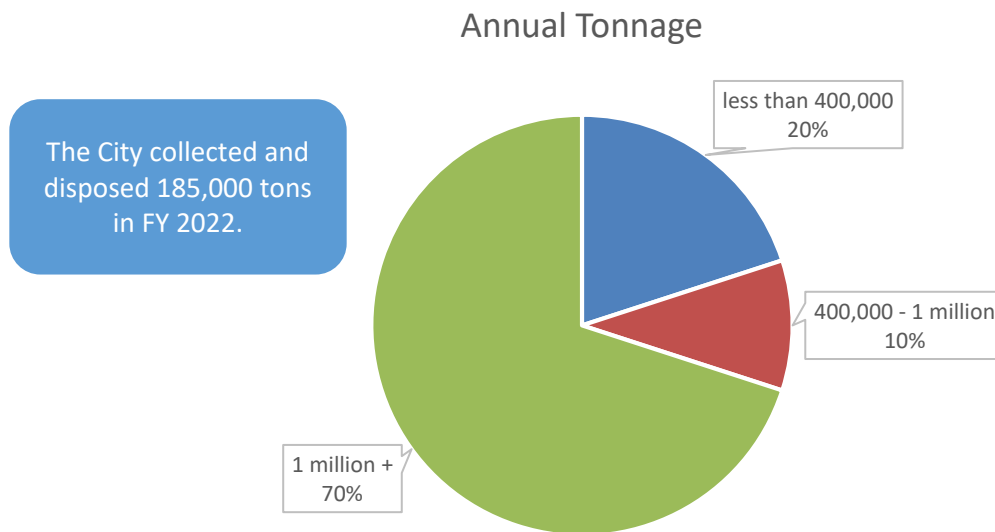
Source: Audited ACFR

BENCHMARKING

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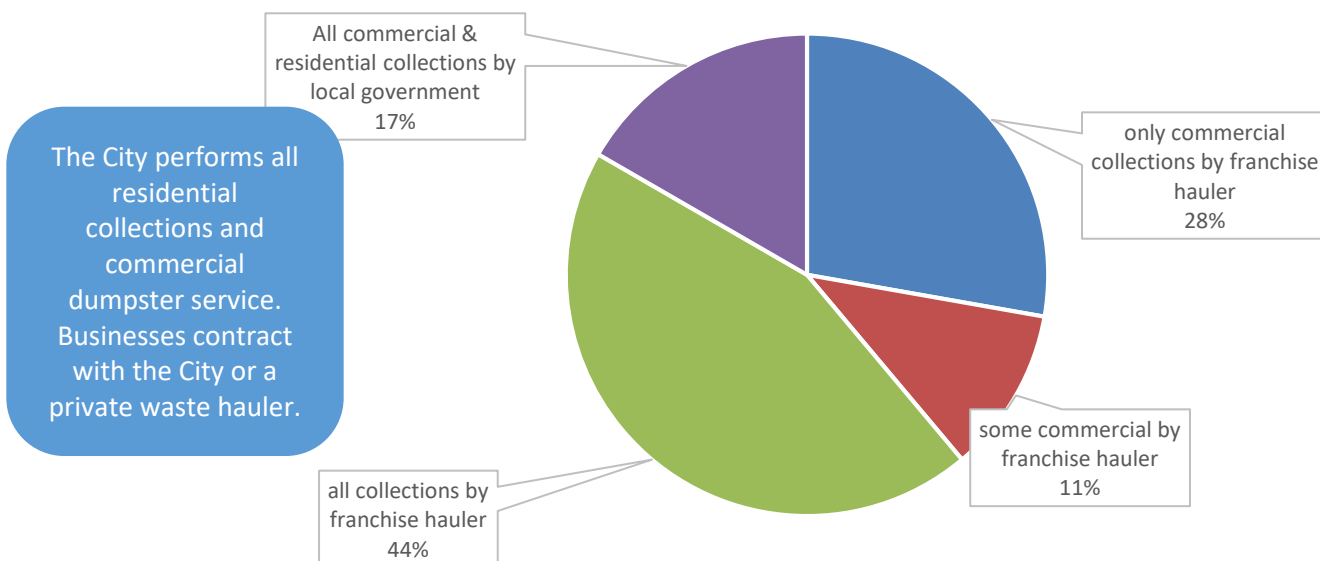
We identified key performance indicators and best practices by reviewing public information and/or interviewing management at 17 Florida Cities and Counties as well as two for-profit solid waste collection organizations. We incorporated best practices and innovative approaches noted among benchmarked organizations in the development of observations and planned actions. Refer to the Benchmarking Results & Data for more detail gathered during benchmarking.

Sixty-five percent of the local governments benchmarked had populations exceeding 250,000. The City of Orlando has a population of approximately 300,000. Local governments handled tonnage ranging from 175,000 tons to 3.1 million tons annually.



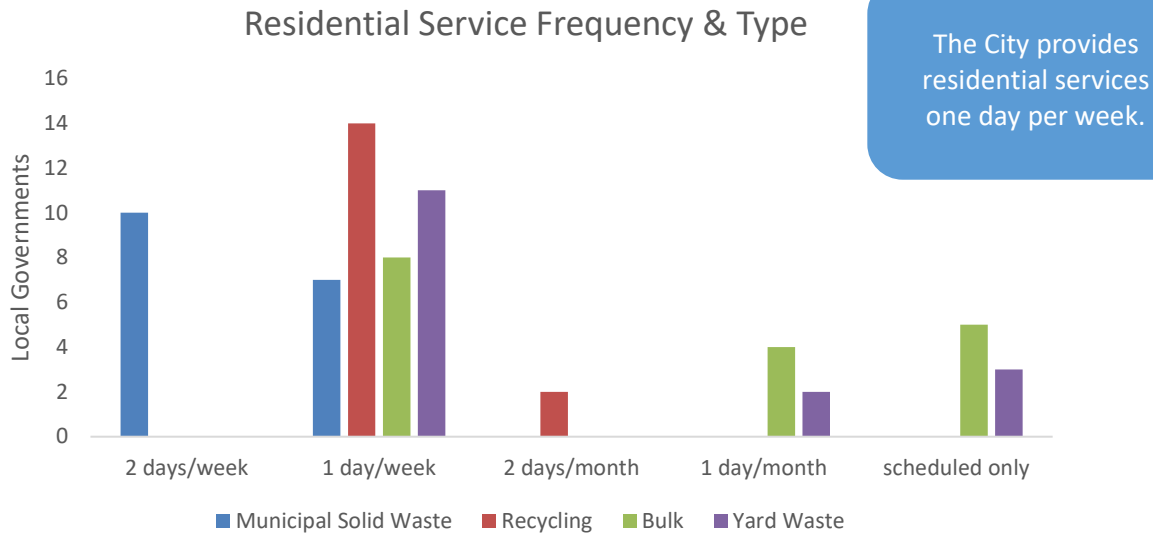
Many local governments contract private for-profit waste haulers to do residential and/or commercial solid waste collections and disposal or have an open market for commercial solid waste. For the local governments we benchmarked, 44% used a contracted hauler for all collection and disposal.

Use of Contracted Haulers for Collections



BENCHMARKING - CONTINUED

Local governments (and their contracted haulers) provided solid waste collection services at different frequencies. Fifty-eight percent provided residential municipal solid waste collection twice a week. There was more variation in other services with some local governments providing bulk or yard waste collection only when scheduled by the resident.



Fees for residential solid waste collection and disposal varied significantly ranging from \$152/year to \$550/year. The City's annual fees were in the lower range.



OBJECTIVES AND APPROACH

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Objective

Our primary objective was to assess the City's Solid Waste Fleet Management function in order to develop and provide recommendations for improvement.

Approach

Our approach consisted of three phases:

Phase One –Assessment and Understanding

During this phase, we gained a high-level understanding of the solid waste collection function including: vehicle utilization, vehicle maintenance, workforce management and utilization, and related workplace safety to develop a detailed work plan.

Major work steps included:

- Holding an entrance conference to discuss the potential objectives, scope and work logistics.
- Conducting an initial facilitated session with key Public Works Department (Solid Waste Division) management.
- Developing and submitting the work plan to the Director of Internal Audit for review and approval.

Phase Two – As-Is Analysis/Documentation

During this phase, we interviewed Solid Waste Division and Fleet Management Division management, analyzed and documented the solid waste vehicle management process as it is currently designed and performed by the Solid Waste and Fleet Management Divisions based on the work plan developed in Phase One.

Major Work Steps included:

- Obtaining and reviewing City policies and procedures, City ordinances, and Florida Statutes.
- Obtaining and reviewing relevant department policies and procedures, Solid Waste Division operational plan(s), safety and maintenance checklists, guidelines, flowcharts, etc. related to the Public Works Department (Solid Waste Division), Fleet Management Division, and Procurement Services including relevant vendor contracts.
- Performing site visits and walkthroughs at the Public Works Department and Fleet Management Division.
- Interviewing key Public Works Department, Fleet Management Division, and Procurement and Contracts Division management/staff.
- Performing inquiry and walkthroughs related to the repairs and maintenance process for various solid waste collection vehicles/equipment for specific work orders from submission to Fleet Management Division to return for use to the Solid Waste Division.
- Documenting the process and any control/process design and/or operational deficiencies and/or inefficiencies in the solid waste collection vehicle maintenance process.
- Performing data analytics on key solid waste collection and vehicle maintenance data to identify improvement opportunities/best practices.

OBJECTIVES AND APPROACH - CONTINUED

Phase Three – Benchmarking

During this phase, we benchmarked the results of Phases One and Two with other Florida Cities, Counties and private sector providers using key performance indicators in line with the scope described in Phase One to facilitate the development of recommended actions in Phase Four.

Phase Four – Reporting and Recommendations

During this phase, we developed our report based on the results of the procedures performed in Phases One through Three above. As part of this phase, we collaborated with Public Works Department and the Fleet Management Division to develop a practicable and cost effective process improvement plan for the City's Solid Waste Fleet Management function. The recommendations together with the management responses constitute the resulting proposed improvement plan. Finally, we held an exit conference with the Director of Audit Services and Management Support to discuss the results.

OBSERVATIONS

1. Extended Driver Shifts

Observation

Lack of vehicle availability can cause solid waste collection employees to work lengthy shifts. Per Solid Waste Division management, overtime is normal and expected for commercial collection Drivers. Work schedules routinely exceed 50 hours per week and some Drivers volunteer to work in excess of 70 hours per week. However, long work hours increase the risk of injuries and accidents and contribute to poor health and worker fatigue.

The Occupational Safety and Health Administration (OSHA) Extended/Unusual Work Shifts Guide includes the following guidance for employers:

*The Occupational Safety and Health Act (OSH Act) requires employers to comply with hazard-specific safety and health standards. In addition, pursuant to Section 5(a)(1) of the OSH Act, **employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.***

*A **normal work shift** is generally considered to be a work period of no more than **eight consecutive hours during the day, five days a week with at least an eight-hour rest.** Any shift that incorporates more continuous hours, requires more consecutive days of work, or requires work during the evening should be considered extended or unusual.*

*Currently, there is not a specific OSHA Standard for extended or unusual work shifts...Extended or unusual work shifts may be more stressful physically, mentally, and emotionally. **Non-traditional shifts and extended work hours may disrupt the body's regular schedule, leading to increased fatigue, stress, and lack of concentration. These effects lead to an increased risk of operator error, injuries and/or accidents.***

***When there is a choice, managers should limit the use of extended shifts.** Working shifts longer than 8 hours will generally result in reduced productivity and alertness. Additional break periods and meals should be provided when shifts are extended past normal work periods. Tasks that require heavy physical labor or intense concentration should be performed at the beginning of the shift if possible.*

*Make efforts, whenever feasible, to ensure that unavoidable extended work shifts and shift changes allow affected employees time for adequate rest and recovery. **Extended shifts should not be maintained for more than a few days, especially if they require heavy physical or mental exertion.***

The Federal Motor Carrier Safety Regulations "Green Book" section 395.3 (a) (2) includes the following standard for drivers of property carrying vehicles:

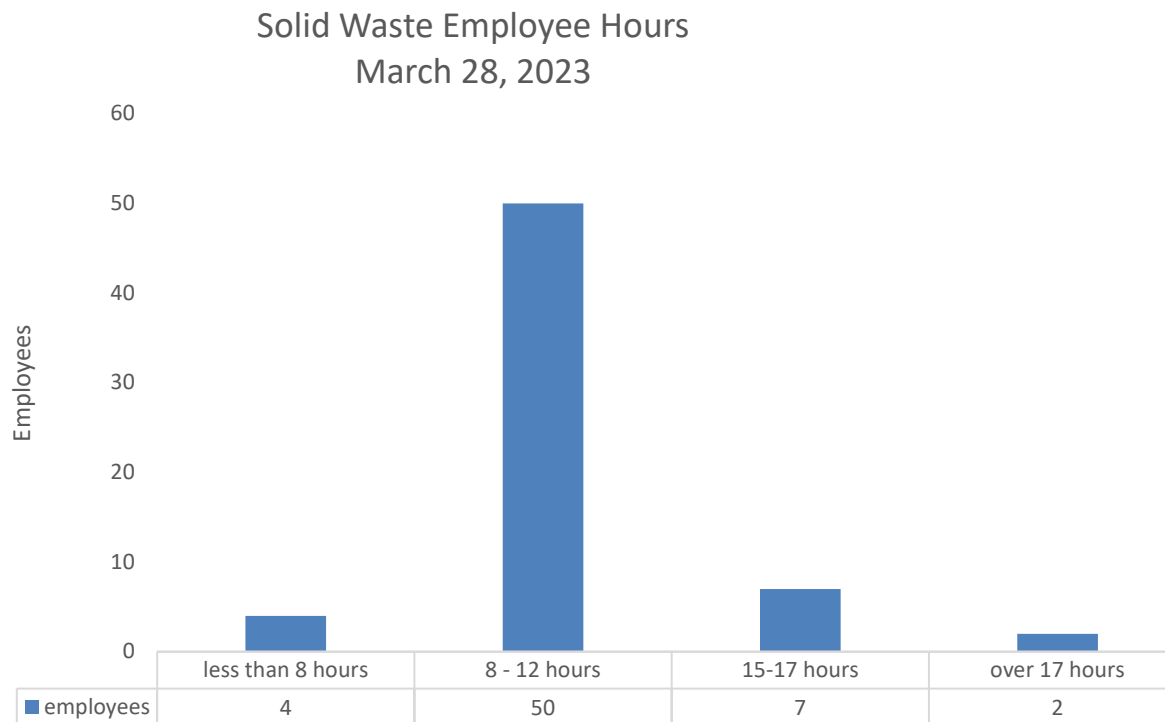
***A driver may drive only during a period of 14 consecutive hours after coming on duty following 10 consecutive hours off duty.** The driver may not drive after the end of the 14-consecutive-hour period without first taking 10 consecutive hours off duty.*

OBSERVATIONS – CONTINUED

1. *Extended Driver Shifts - continued*

Per Solid Waste Division management, the City’s solid waste collection function does not come under the purview of the Federal Motor Carrier Safety Regulations. However, this is a useful best practice for operational comparison.

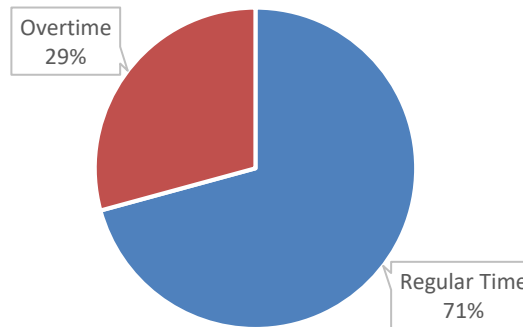
During our site visit on March 28, 2023, we noted that 59 of 63 employees worked more than eight hours that day and nine of those employees worked more than 15 hours that day. Management stated this was not unusual and Drivers may work long shifts several days in a row. Per Solid Waste Division management, the overtime was caused by vehicles not ready to go out in the morning or vehicles breaking down on their routes. As a result, the Drivers waited for the vehicle to be ready or repaired and then began or continued routes after the delay or interruption. Other Drivers also pitched in to complete routes after their assigned work was done which extended their shifts. We also noted four employees that worked less than 8 hours on this date.



1. Extended Driver Shifts - continued

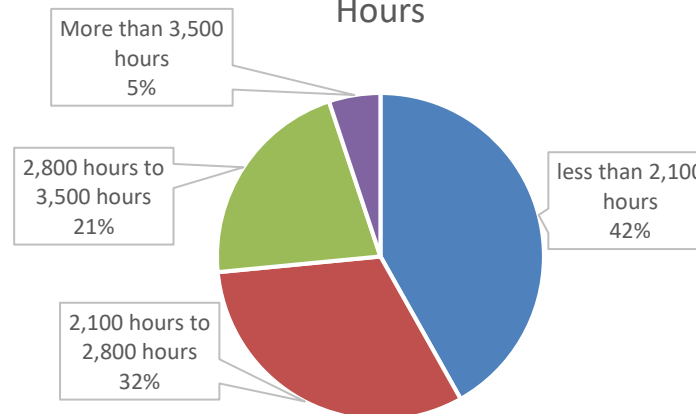
We reviewed FY 2022 timekeeping data for Solid Waste Division Drivers, Collectors, and Supervisors noting overtime was 29% of total hours worked.

FY 2022 Solid Waste Employee Time



Fifty-eight percent of Solid Waste Division Drivers, Collectors, and Supervisors worked overtime during FY 2022.

FY 2022 Solid Waste Collection Employee Hours

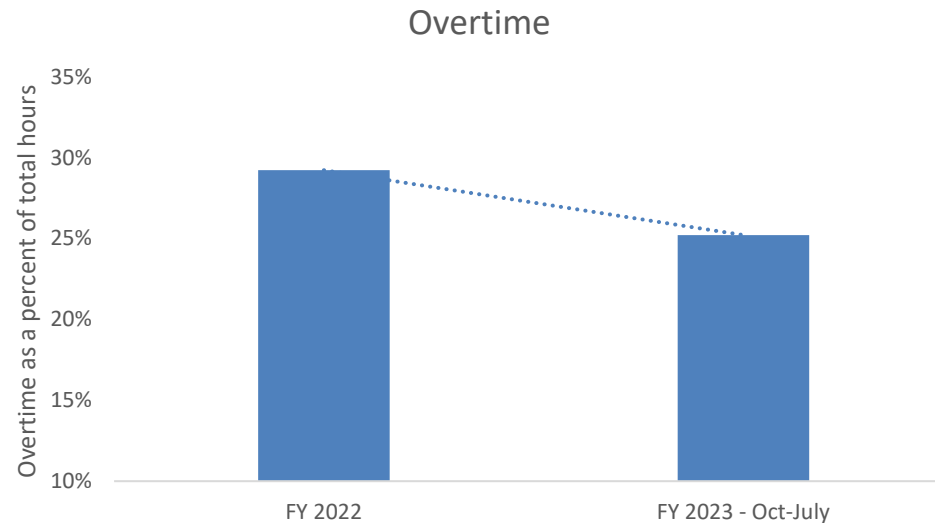


A full-time schedule is 2,096 hours per year.

OBSERVATIONS – CONTINUED

1. *Extended Driver Shifts - continued*

We compared FY 2022 and FY 2023 (October 2022-August 2023) employee hours noting the proportion of overtime, while still significant, had reduced to 25% of total hours.



Fatigued or stressed Drivers may be less efficient, effective, and conscientious on their routes which may result in errors and accidents. Extended shifts increase the City's legal liability and reputational risk in the case of an accident.

Recommended Action

Solid Waste Division management should continue efforts to manage route length and distribute workloads equitably among employees. Management should focus on:

- Limiting shifts to no more than 10 hours
- Actively managing routes based on daily conditions
- Mandating breaks or rest time for Drivers between shifts

OBSERVATIONS – CONTINUED

1. *Extended Driver Shifts - continued*

Management Response

Public Works Department

The Solid Waste Division has modified their route structure to limit shifts to 10 to 12 hours. At full implementation, shifts will be no more than 10 hours.

Estimated Completion Date: Implemented prior to report issuance

OBSERVATIONS - CONTINUED

2. *Pre/Post Trip Vehicle Inspections*

Observation

Solid Waste Division Drivers complete general vehicle pre-trip and post-trip inspection forms to be submitted at the conclusion of their shift. Per Solid Waste Division management, Drivers receive limited training and perform the inspection alone.

Solid Waste and Fleet Management Division management reported problems with the current vehicle inspection process, including, but not limited to:

- Completion of forms was a cursory process without attention to detail.
 - Drivers are eager to end a long shift and may not take the time to inspect, identify, and write up maintenance issues. Minor repairs are less likely to be reported and addressed early.
 - Drivers may not be aware of vehicle functionality or performance expectations.
- Vehicles are not emptied. Vehicles have been returned at the end of a shift with solid waste in the container.
 - Solid waste is corrosive and damaging to the vehicle and also attracts pests which can nest in the vehicle creating additional problems.
 - Maintenance and repairs are harder with garbage in the container. Technicians must have the vehicle dumped before beginning maintenance or repair work.
- Vehicles are not clean.
 - Debris and stray solid waste trapped between parts or around the engine compartment can damage vehicles and is a fire hazard.
 - It is easier to identify and remove debris at the end of the shift when you have daylight than at the beginning of the route in the morning.
- Vehicles are not attached to compressed natural gas fuel lines and are therefore not fueled for the next shift.

Pre-trip and Post-trip vehicle inspections are essential for identifying needed repairs and timely maintaining vehicles. A pre-trip inspection prevents a Driver from driving an unsafe vehicle or one that will breakdown mid-route. Post-trip inspections prevent expensive delays and damage to vehicles by bringing emergent vehicle needs to the attention of Supervisors and Technicians quickly. Benchmarked organizations cited robust, daily vehicle inspection as critical for vehicle availability and cost control.

Florida City #1 (benchmarking data) reported past vehicle availability and maintenance and repair difficulties similar to the City's experience. Florida City #1 implemented a daily end-of-shift safety lane inspection process for all solid waste collection vehicles. The inspection is performed by the Driver, overseen by the Route Supervisor, and reviewed by a heavy equipment technician before the Driver leaves for the day. This has contributed to more timely maintenance and repairs, a more reliable and available fleet, and more than halved lifetime maintenance and repair expense for solid waste vehicles.

2. *Pre/Post Trip Vehicle Inspections - continued*

A useful post-trip inspection should be:

- Based on a detailed and specialized checklist including all the major vehicle systems specific to solid waste collection vehicles.
- Performed by trained Drivers who have a thorough understanding of the inspection process and management's expectations.
- Validated by Solid Waste Division Supervisors, and Heavy Equipment Technicians. Direct, real-time communication between the Driver, Solid Waste Supervisor, and Technician makes it easier to identify and focus on problems. Working as a team they will be more effective and efficient in identifying mechanical or safety problems.
- Reported to the Solid Waste Division Manager and the Service Writer promptly.

Recommended Action

We recommend the Solid Waste Division management coordinate with the Fleet Management Division management to develop or enhance existing provisions for:

- Comprehensive solid waste collection vehicle inspection checklists.
- Training for Drivers on the inspection process with examples of failing vehicle systems and periodically providing refresher sessions to Drivers.
- Process for Drivers, Supervisors, and Heavy Equipment Technicians to complete and review pre-trip and post-trip inspections as a team.
- Reporting process to ensure identified issues are prioritized and addressed timely.

Management Response

Public Works Department

The Solid Waste Division in coordination with the Fleet Management Division will implement a vehicle inspection lane post trip where all necessary inspections are done on every vehicle at the end of every route date.

Estimated Completion Date: FY 2024

3. Fleet Size Optimization

Observation

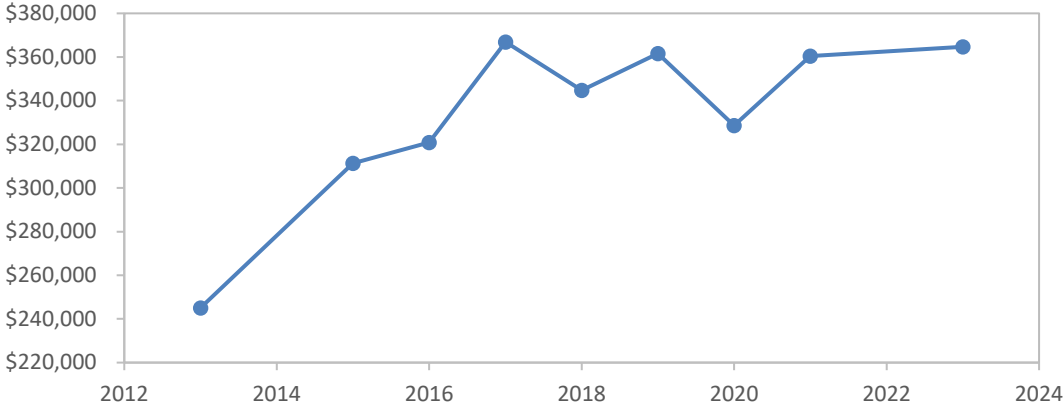
The City has significant spare solid waste collection vehicles because many vehicles are not consistently in operable condition. Vehicle availability has been an on-going issue.

Vehicle Type	Daily Routes	Trucks Owned/Leased	Spare Ratio	Benchmarked ratio
Front Load Commercial	12-15	24	38%-50%	Private 10% Public 20%-30%
Roll Off Commercial	3	4	25%	
Automated Side Loader Residential	16-19	32	40%-50%	
Rear Load Residential	10	21	52%	
Claw Truck Residential	4	6	25%	

Public and private sector benchmarked organizations emphasized the need to optimize fleet size for vehicle availability, cost savings, and Fleet Management Division workload. A leaner and more dependable fleet will provide more vehicle availability and reliability at a lower cost.

- Solid waste collection vehicles are expensive. The most recent vehicles purchased by the City were \$365,000 each. Having a larger fleet requires significant investment from the City.

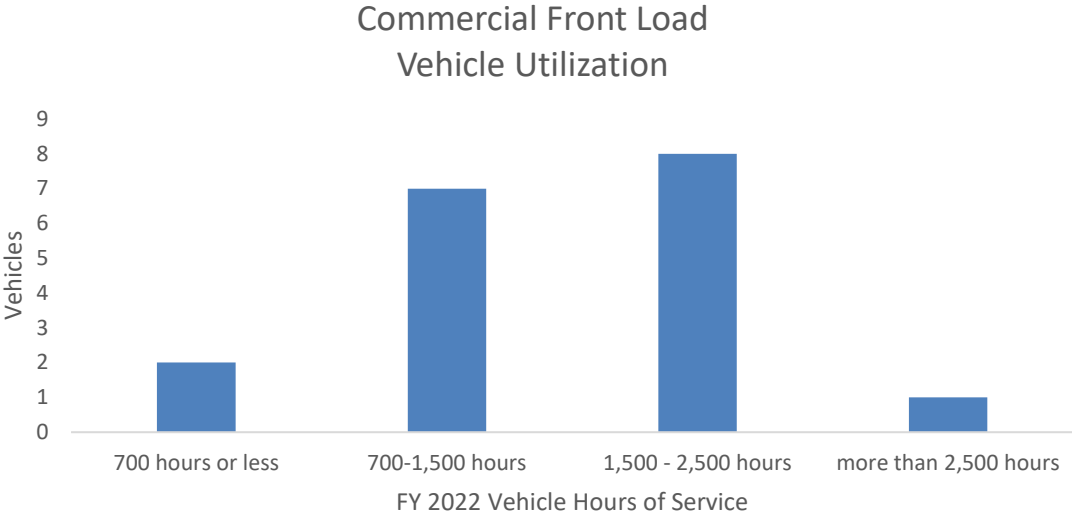
Vehicle Acquisition Cost per Vehicle



3. Fleet Size Optimization - continued

- In addition to initial capital outlay, there is administrative and operational burden for each vehicle in the fleet. These vehicles are managed, tracked, maintained, inspected, safeguarded, cleaned, and fueled regularly even if they are being used minimally. Performing regular preventative maintenance and making repairs on extra vehicles increases the workload for the Fleet Management Division which is operating with four unfilled Heavy Equipment Technician positions and utilizing contractors for added capacity. When the Fleet Management Division staff and resources are spread more thinly amongst the vehicles, the timeliness of repairs and maintenance may suffer and overall vehicle availability may not be increased even with a larger fleet.
- Spares are often older, less preferred, less comfortable, and/or less reliable and the Drivers avoid using the spare vehicles if possible which further reduces the value of the spare in the fleet. Benchmarked organizations monitored vehicle utilization to identify vehicles that are not being used enough to justify the expense and effort of managing and maintaining the vehicle. Tracking maintenance and repair costs per hour of service is a useful metric for evaluating vehicle cost benefit.

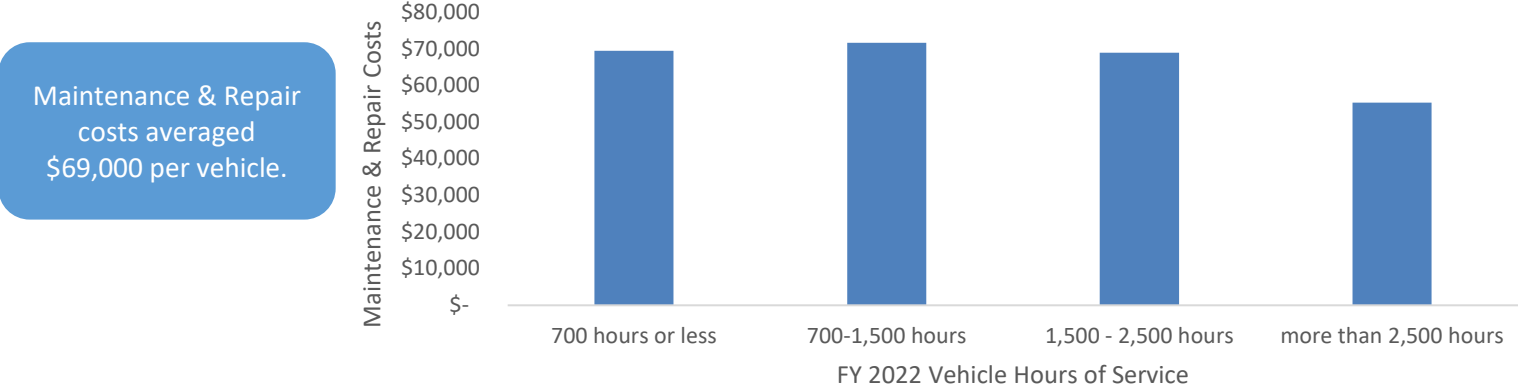
We analyzed commercial front load solid waste collection vehicle data from FASTER noting that two vehicles had annual utilization of less than 700 hours while the rest of the fleet averaged 1,600 hours and some vehicles had hours as high as 2,900 per year.



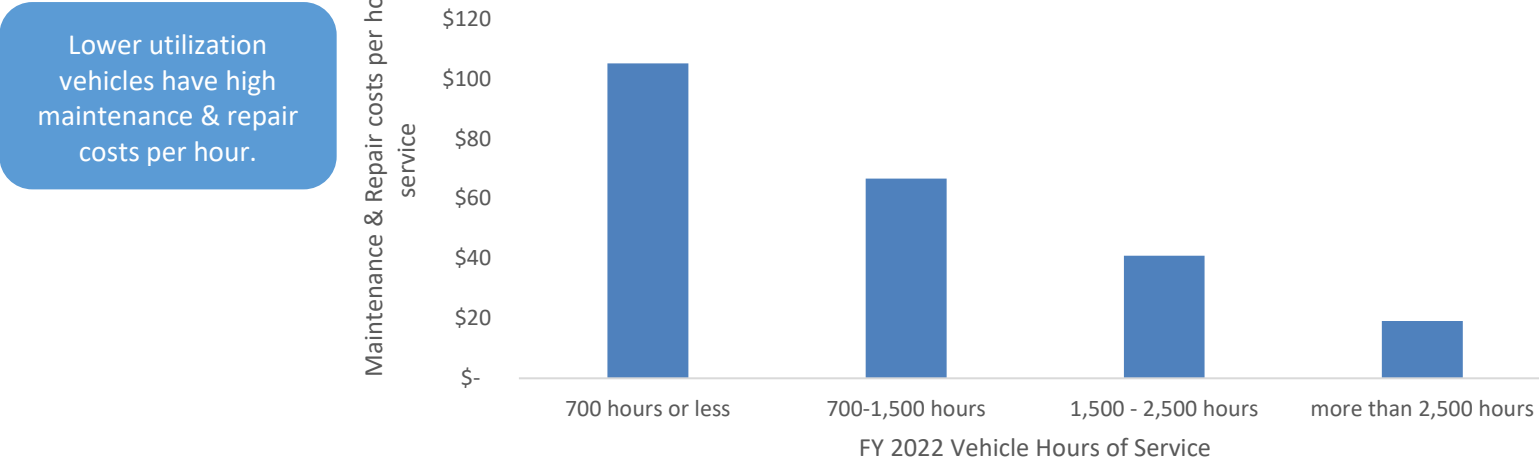
We reviewed maintenance and repair costs noting that they these costs were largely consistent across all vehicles. The City incurred maintenance and repair costs of \$59,000 to \$69,000 per vehicle whether the vehicle was used less than 700 hours or more than 2,500 hours during the year which resulted in high per hour maintenance and repair costs for lower utilized vehicles.

3. Fleet Size Optimization - continued

Maintenance & Repair Costs per Front Load Commercial Vehicle



Maintenance & Repair Costs per hour of Front Load Commercial Vehicle Service



OBSERVATIONS - CONTINUED

3. Fleet Size Optimization – continued

Recommended Action

Fleet Management Division and Solid Waste Division management should coordinate to begin identifying optimal fleet size. This will be an iterative process that develops over time and requires periodic adjustment in response to changing conditions. As part of this process:

- Utilization data should be used to identify under-utilized vehicles. Maintenance and repair data can be used to quantify the costs of operating vehicles. This information can be used to consolidate the fleet and achieve cost savings and operational efficiency.
- Procedures for vehicle utilization developed or enhanced to ensure vehicles are rotated regularly to balance wear and tear and provide scheduled downtime for more involved maintenance procedures.

Management Response

Public Works Department
This plan implementation is scheduled for 4th quarter of FY 2024 following the delivery of new fleet assets previously ordered in FY 2023. Both Solid Waste and Fleet Management Divisions are coordinating the best plan based on current and new assets.

Fleet Management Division
As an ongoing measure, Fleet Management reviews the estimated cost of repairs needed in relation to the age, mileage, and overall maintenance cost as a measurable action towards rightsizing and vehicle life cycles. Fleet Management and Solid Waste Division Managers will continue to collaborate on these efforts and the efforts mentioned in the statement above relative to deploying and decommissioning new/old units.

Estimated Completion Date: 4th quarter of FY 2024

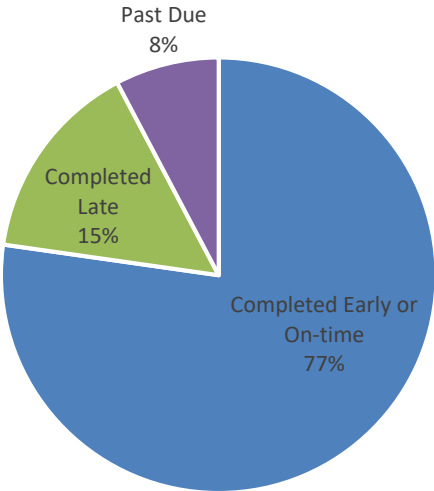
4. Vehicle Preventative Maintenance

Observation

Vehicle preventative maintenance (routine maintenance such as inspections, lubricants, fluids, and filter changes, etc.) schedules and requirements are entered into FASTER when a vehicle is acquired and performed by Heavy Equipment Technicians and contractors. We analyzed FASTER vehicle data and noted the following:

- Twenty-three percent of identified preventative maintenance tasks were completed late or past due.

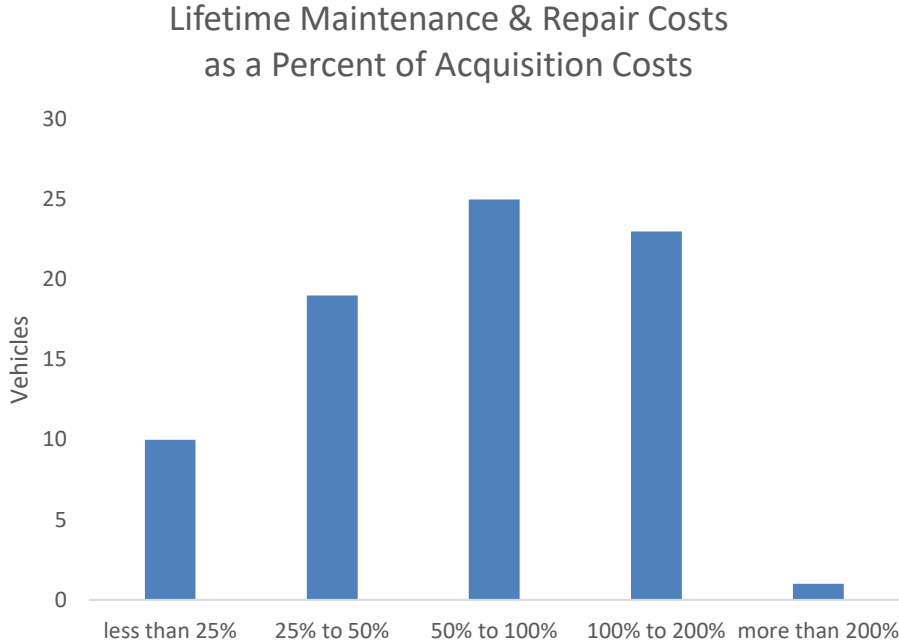
Preventative Maintenance Task Timeliness
as of March 29, 2023



Effective and timely preventative maintenance improves vehicle safety and reliability, extends vehicle life, minimizes breakdowns, and reduces lost employee productivity from vehicle downtime. Benchmarked organizations emphasized that prioritizing preventive maintenance in the short-term provides long-term benefits in the reliability of vehicles, minimizes and postpones significant repairs, extends the life of vehicles, and reduces lifetime maintenance and repair expenses.

4. *Vehicle Preventative Maintenance - continued*

- Lifetime investments in maintenance and repairs exceeded the vehicle acquisition price for 30% of the commercial front-load fleet.



A number of factors can impact lifetime maintenance and repair costs as a proportion of acquisition price – organizational strategy and vehicle replacement life cycle, vehicle types, fuel used, and other entity-specific operational considerations. However, multiple benchmarked organizations indicated it would be unusual for maintenance and repairs to routinely exceed 50% of vehicle acquisition cost as is the case with the City.

4. Vehicle Preventative Maintenance - continued

Recommended Action

Fleet Management Division management should enhance the process to prioritize on-time completion of preventive maintenance procedures.

Fleet Management Division and Solid Waste Division management should coordinate their efforts to:

- Analyze maintenance and repair costs to for trends, types of repairs, and to identify parts or mechanical systems frequently failing as this may be an indication that the City should do more Driver training, Technician training, or make operational changes to the solid waste collection process.
- Analyze maintenance and repair costs and compare with vehicle acquisition cost, replacement cost, and strategic plans to actively manage the fleet.

Management Response

Fleet Management Division

Fleet Management Division respectfully accepts this recommendation and will continue to work with the Solid Waste Division to strategically schedule necessary repairs to include preventive maintenance. Currently, preventive maintenance services are most often completed in conjunction of demand repairs due to the limited number of units permissible to be out of service at one time as the Solid Waste Division requires a specified quantity of trucks daily to ensure daily routes are covered. Additionally, Fleet Management Division has analyzed the most common failures and doubled parts inventory levels as an added measure to streamline the repair process. As an ongoing measure, Fleet Management Division continuously reviews the estimated cost of repairs needed in relation to the age, mileage, and overall maintenance cost as a measurable action towards rightsizing and vehicle lifecycles.

Estimated Completion Date: June 30, 2024

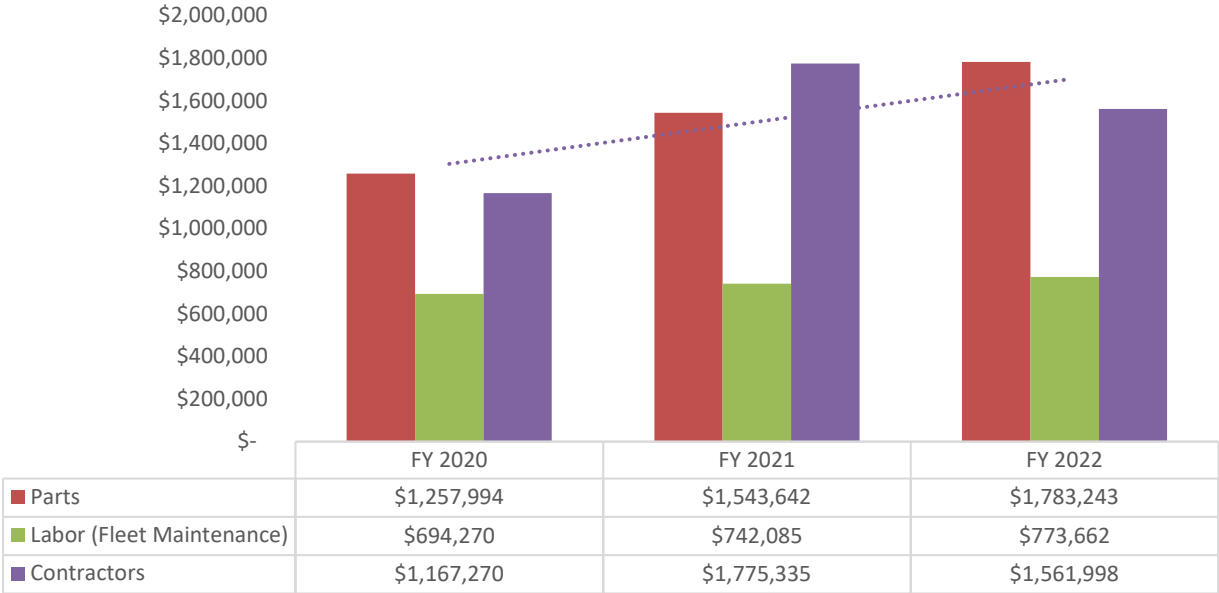
5. Vehicle Maintenance & Repairs Resources

Observation

Solid waste collection vehicles are complex and require frequent maintenance and repair to be useable. Technicians are critical to the reliability and availability of these vehicles. Per inquiry of Fleet Management Division management, the Division has difficulty recruiting and retaining Heavy Equipment Technicians. There are four open Heavy Equipment Technician positions at this time and the Fleet Management Director stated positions have remained unfilled for over seven years. Uncompetitive wages pose a significant challenge for the City to recruit Technicians in a competitive environment.

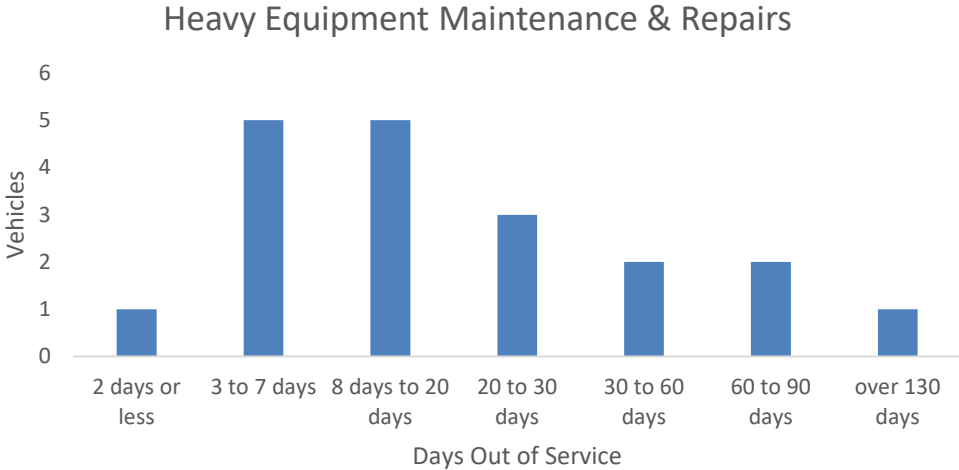
This unfilled staffing is expensive for the City as it contributes to vehicle down time, Driver over time, and extensive use of contractors to provide additional capacity. During FY 2022, Fleet Management Division billed the Solid Waste Division \$1.6 million for external contractors which represented a 34% increase since FY 2020.

Solid Waste Collection Vehicle Maintenance



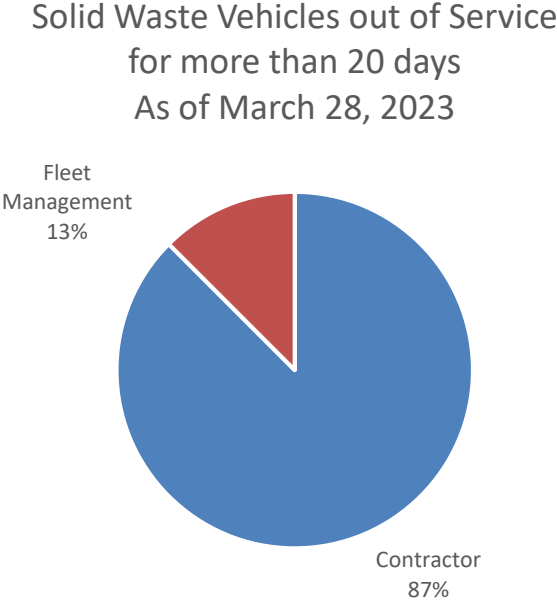
5. Vehicle Maintenance & Repairs Resources - continued

Contractors are also slower to return vehicles to the City decreasing vehicle availability. Vehicles are often sent to contractors when they require more complex, sophisticated, or specialized work so it is expected that these repairs require more time. We reviewed the Heavy Equipment Turnover sheet maintained by the Fleet Management Division staff for tracking the status of heavy equipment maintenance and repairs. As of March 28, 2023 there were 19 solid waste collection vehicles being serviced. Days out of service were significant with one vehicle out of service for over 130 days and two vehicles out of service between two and three months.



5. Vehicle Maintenance & Repairs Resources - continued

Most vehicles out of service for lengthy periods of time were located at contractors.



Recommended Action

Fleet Management Division should

- Work with the Human Resources Department to develop recruiting strategies, including competitive total compensation, for Heavy Equipment Technicians.
- Assess in-house expertise and capacity to perform more repairs and reduce reliance on contractors.

5. Vehicle Maintenance & Repairs Resources - continued

Management Response

Fleet Management Division

Fleet Management Division is in agreement with this recommendation and has contacted the Human Resources Department to redefine recruiting strategies as well as staffing levels. A formal request was submitted to the Human Resources Department to reclassify the compensation structure for Heavy Equipment Technicians to increase the level of experience, quantity and quality of new/existing candidates; however, that request was denied. The Fleet Management Division simultaneously submitted an additional request to increase staff positions and was approved four additional Heavy Equipment Technician positions and one additional Service Writer position. Additionally, the Fleet Management Division/Human Resources Department have partnered in finalizing/approvals of job descriptions for two Heavy Equipment Shop Foreman’s/Trainers.

Estimated Completion Date: June 30, 2024

OBSERVATIONS – CONTINUED

6. *Scheduling*

Observation

Fleet Management Division Heavy Equipment Technicians work two shifts with coverage from 6 am – 10:30 pm on weekdays. Commercial solid waste collection vehicles are often not returned to the Fleet Management Division before 5 pm which limits time for maintenance and repairs. As a result, vehicles are removed from service on the following day to perform maintenance and resolve emergent issues identified during routes and post-trip inspections.

Similar to the City, public and private sector benchmarked organizations utilized multiple shifts of Heavy Equipment Technicians to increase the responsiveness of maintenance and repairs. However, because routes are often longer than expected and vehicle return times are unpredictable at the City, Heavy Equipment Technician schedules and work priorities are not always aligned with vehicle return to the Fleet Management shop which increases vehicle downtime.

Recommended Action

Solid Waste Division and Fleet Management Division should coordinate to optimize routes and align vehicle downtime with Heavy Equipment Technician availability to facilitate timely servicing of solid waste collection vehicles.

Management Response

Fleet Management Division

Fleet Management Division is in agreement with this recommendation and is actively engaged with the Solid Waste Division relative to optimizing routes, truck availability, and repair processes via the inspection lane mentioned above in item #2. The inspection lane will require complete collaboration with Solid Waste Division drivers, supervisors, and Fleet Management personnel relative to accurately completing, reporting, and scheduling the results of daily pre/post trip inspections. Fleet Management Division will remain engaged and work directly with the Solid Waste Division to optimize routes related to vehicle downtime. Ultimately, the Solid Waste Division is the primary on route schedules and other direct services provided directly to the community.

Estimated Completion Date: June 30, 2024

OBSERVATIONS – CONTINUED

7. Road Mechanic

Observation

The Fleet Management Division does not have a dedicated Road Mechanic position. Heavy Equipment Technicians are pulled from scheduled work to address emergent issues at the roadside. After hours a contracted vendor provides road mechanic service.

Public and private sector benchmarked organizations utilized road mechanics to accomplish vehicle evaluations and simpler repairs away from the Fleet Management Division shop. A Road Mechanic reduces down time because vehicles do not have to leave their routes to be serviced. Vehicles also benefit because when Drivers are confident a repair can be made quickly, they are more likely to seek help in the middle of the route rather than continue driving a vehicle with a mechanical problem.

Recommended Action

The Fleet Management Division should evaluate the cost/benefit of creating dedicated Road Mechanic positions to increase the timely response to solid waste collection vehicle breakdowns.

Management Response

Fleet Management Division

Fleet Management Division respectfully accepts this recommendation and initiated the process of acquiring an additional maintenance truck specifically designed to provide services in the field. As noted above, Fleet Management Division/Human Resources Department have increased the number of technician positions. The positions have been advertised and interviews are currently in process to fulfill this recommendation.

Estimated Completion Date: June 30, 2024

OBSERVATIONS – CONTINUED

8. *Access to Vehicle Data*

Observation

The Solid Waste Division is the functional owner of the solid waste collection vehicles. However, these vehicles are held and maintained within the Fleet Management Division which also owns and controls all the vehicle data within FASTER. Fleet Management Division provides monthly reports and preventive maintenance notices to the Solid Waste Division as well as sharing access to a Heavy Equipment Turnover sheet tracking vehicles being serviced. This is relatively limited information and does not facilitate the Solid Waste Division management's real-time decisions making. Per inquiry of Fleet Management Division staff, the current implemented version of FASTER does not provide remote connections. However, the Fleet Management Division is in the initial stages of implementing a cloud-based fleet information management system which should support much broader remote access.

Recommended Action

The Fleet Management Division should prioritize migration to the new system and coordinate with the Solid Waste Division management to provide more reporting access to vehicle utilization and maintenance data.

Management Response

Public Works Department

The Solid Waste Division has previously requested access and is available and eager to work with the Fleet Division on a solution.

Fleet Management Division

Fleet Management Division is in agreement with this recommendation and has initiated the process to acquire/implement a new Fleet Management Software with the Information Technology Department. The new software will not only provide benefits of operational data review for the Solid Waste Division, but it will also be beneficial to other departments throughout the City that the Fleet Management Division provides with internal services.

Estimated Completion Date: June 1, 2025

OBSERVATIONS – CONTINUED

9. *Service Level Agreement*

Observation

The Solid Waste Division is entirely reliant on the Fleet Management Division to provide the necessary vehicles and vehicle maintenance. Without these resources, the Solid Waste Division cannot accomplish its primary mission of solid waste collection. Benchmarked organizations had maintenance staff within the Solid Waste function or in the same organization department. Being close organizationally supports coordination and alignment of priorities.

The Divisions do not have shared reporting lines or a common executive below the Chief Administrative Officer. The Solid Waste Division Manager, Fleet Management Division Manager, and other members of management reported the Divisions work well together and there is a cordial and cooperative relationship.

The Fleet Management Division Manager provided a draft SLA that he has been developing in coordination with the Solid Waste Division Manager and other Public Works Department staff. The draft includes:

- Business objectives to be achieved in the provision of the services
- Performance standards expected in the provision of services
- Ongoing mechanisms for measuring the expected performance standards
- Annual assessment and revision of the SLA

SLAs are formal documents that define the expectations, responsibilities, and performance standards between service providers and their clients. SLAs provide a structured framework for ensuring that services are delivered efficiently, reliably, and align with organizational goals.

SLAs are widely used to provide:

- Clarity regarding service expectations, response times, and quality standards
- Consistent service across different organizational departments and teams
- Accountability for meeting predefined performance benchmarks
- Timely and accurate operational reporting to stakeholders

OBSERVATIONS – CONTINUED

9. *Service Level Agreement*

Recommended Action

Fleet Management Division Manager should:

- Continue to refine and improve the draft SLA in coordination with the Solid Waste Division Manager. Additional useful provisions would include a mechanism to address performance standards not met by either Division.
- Execute the SLA with the Public Works Department and Solid Waste Division management.
- Identify the SLA owners of the day-to-day execution and operation of the SLA – we recommend the Solid Waste Division Manager and the Fleet Management Division Manager.

Management Response

Public Works Department

The Solid Waste Division has presented the Fleet Management Division with a draft version and is currently awaiting comments. The Solid Waste Division is ready to move forward with a SLA for the benefit of both Divisions.

Fleet Management Division

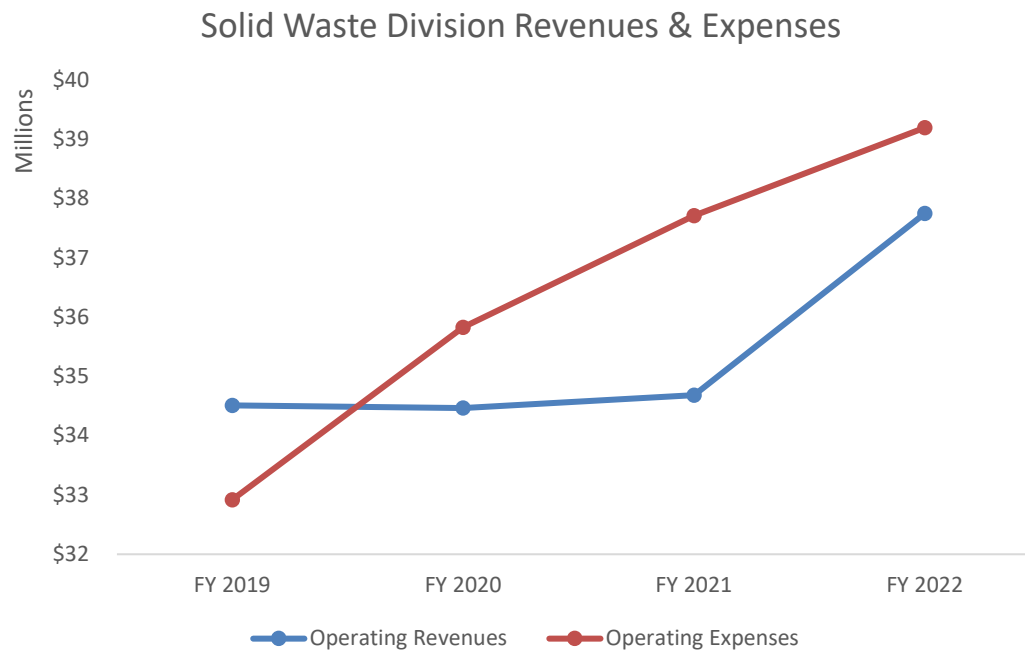
Fleet Management and Solid Waste Divisions are engaged in revising the current draft and finalizing the proposed SLA. Previous versions of the draft will need to be updated with current operational functions and agreements for both divisions. Fleet Management and Solid Waste Division Managers are actively engaged in necessary updates.

Estimated Completion Date: January 1, 2025

10. Collection & Disposal User Fees

Observation

The Solid Waste Division has been operating at a loss since FY 2020.



The Solid Waste Division is organized under an enterprise fund which is a best practice to promote and maintain long-term financial sustainability for functions operated in a manner similar to a private business enterprise. The intent is that the costs of providing services to the general public on a continuing basis be recovered through user charges.

City Code section 28.09 provides for an annual increase of residential and commercial service fees increase by 4% per year unless the City Council chooses to forgo the increase. The City had no fee increase from 2018 to 2021 and the scheduled increase of 4% occurred in 2022.

OBSERVATIONS – CONTINUED

10. Collection & Disposal User Fees - continued

Enterprise funds cannot indefinitely operate at a loss without impacting other City operations.

Recommended Action

Public Works management should analyze long-term trends and forward-looking efforts at cost management over time to determine if commercial and residential user fees are sufficient to fund the Solid Waste Division operations.

Additionally, refer to Observations #1 through #5 which have recommendations supporting cost control at the Solid Waste Division.

Management Response

Public Works Department

A rate study is currently on-going to determine our rates, operational costs and revenue needs (FY 2024). The Solid Waste Division anticipates rate adjustment implementation in FY 2025. As part of the study scope of work, an analysis of long-term costs and revenue trends is being undertaken.

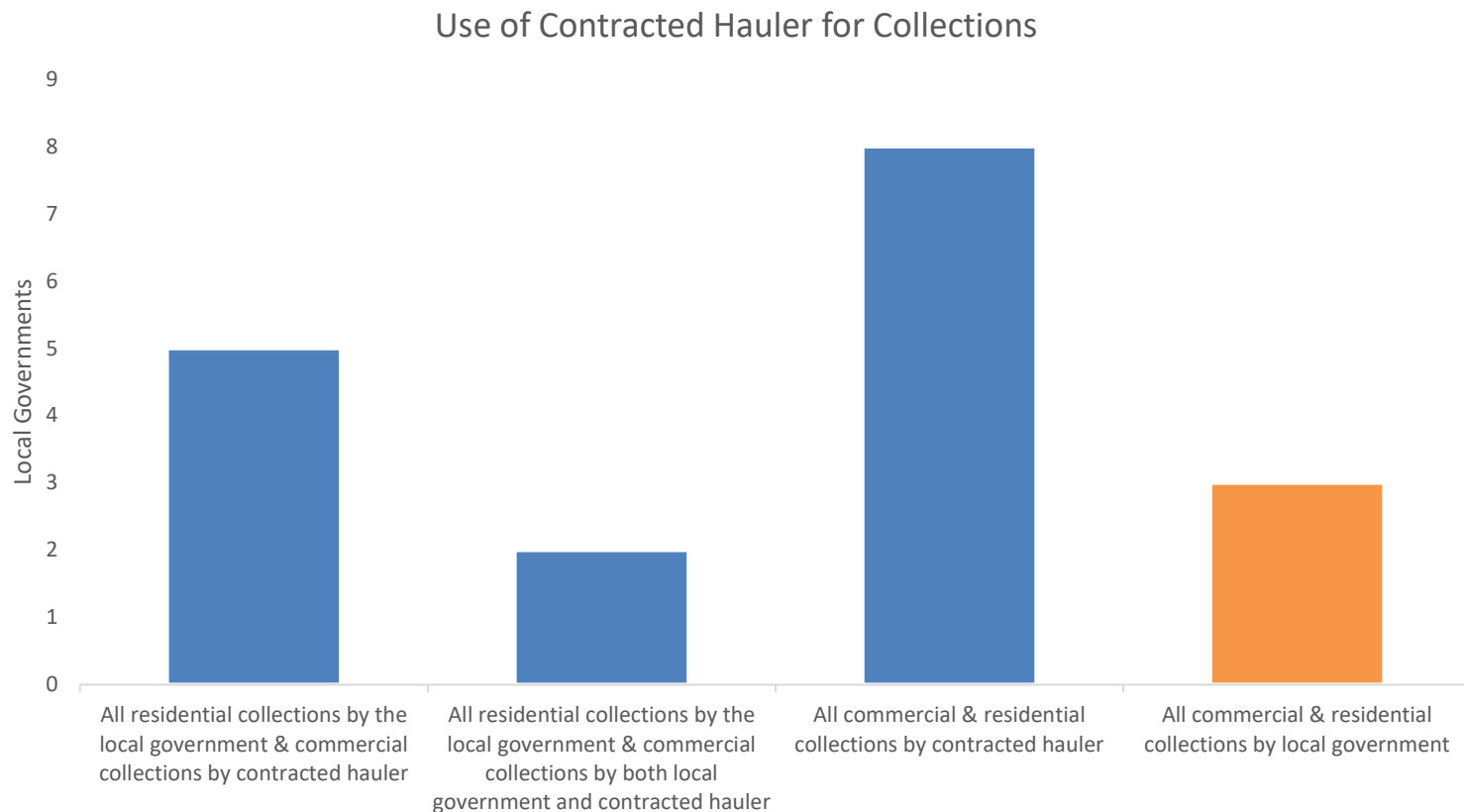
Estimated Completion Date: FY 2025

OBSERVATIONS – CONTINUED

11. Use of Contractors

Observation

The Solid Waste Division performs all residential and commercial collections with City employees and vehicles owned or leased by the City. Vehicle availability is an on-going issue for the Solid Waste Division. The Division has experienced extended employee shifts, lack of timely maintenance, and escalating maintenance and repair costs. Benchmarked organizations used contracted haulers extensively in a variety of ways to provide additional services and collection capacity. Eighty-three percent of benchmarked organizations used contracted haulers to perform some collections.



OBSERVATIONS – CONTINUED

11. Use of Contractors - continued

Florida City #6 explained that they have used a contracted hauler for 15% - 20% of their commercial solid waste collections for over ten years. These collections are billed by Florida City #6 and performed under the supervision of the Florida City #6 Solid Waste collection function. This arrangement was initiated because the City needed more capacity faster than they could hire and train employees or procure solid waste collection vehicles. Florida City #6 has continued to use the contracted hauler because it provides a flexible, scalable resource to the City as collection volumes fluctuate. It was also noted that for Florida City #6 contracted costs were comparable or less than the cost to perform solid waste collection with City resources.

We also noted other local governments had Heavy Equipment Technicians employed within the Solid Waste function and/or contracted directly with third-party vehicle maintenance providers giving the Solid Waste function more direct involvement with the repair and maintenance of solid waste collection vehicles.

Recommended Action

City Administration, Public Works Department management, Solid Waste Division management, and Fleet Management Division management should coordinate to investigate:

- Contracted haulers to provide additional solid waste collection capacity.
- Creating Heavy Equipment Technician positions within the Solid Waste Division or contracting directly for solid waste collection vehicle repair and maintenance services.

Their consideration of these approaches should include an overall cost benefit analysis including but not limited to: flexibility and scalability of resources, cost efficiency, access to expertise, and risk mitigation or exposure.

Management Response

Public Works Division

The Solid Waste Division will continue to monitor the need for private haulers once the route adjustments take place and adequate vehicle supply issues are addressed.

Fleet Management Division

Fleet Management Division is NOT in agreement with the recommendation of embedding technicians within the Solid Waste Division due to total cost to perform maintenance, the lack of consistency relative to tracking repairs (safety), providing internal supervision as well as the complexity to implement necessary quality control measures needed to support the Solid Waste Division. However, Fleet Management Division will continue to discuss the noted concerns with the Solid Waste Division and remain open-minded to future suggestions/considerations with the Solid Waste Division Management.

BENCHMARKING RESULTS & DATA

We identified industry standards and key performance indicators by reviewing public information and/or interviewing management at 17 Florida Cities and Counties as well as two for-profit solid waste collection organizations. Best practices and innovative approaches noted among benchmarked organizations are noted below.

Best Practices and Innovative Approaches used by Public and Private Sector Organizations surveyed include but are not limited to:

- Organizational Structure
Equipment availability is integral to the solid waste collection function and Fleet Management is typically closely aligned with the solid waste collection function. Often, Fleet Management is under the same organizational group as Solid waste or Solid Waste directly employs maintenance technicians and contracts with external providers for maintenance and repair services.
- Timely Maintenance
Timely maintenance is essential for functional solid waste collection vehicles. Preventive maintenance is prioritized to ensure a reliable vehicle fleet, avoid or postpone significant repairs, extend the life of vehicles, and reduce lifetime maintenance and repair expenses.

Organizations manage collection routes to ensure vehicles are available for routine maintenance during the Fleet Management second shift which improves timely maintenance and vehicle availability.
- Maintenance & Repair costs
Maintenance and repairs costs are tracked over the life of a vehicle and benchmarked organizations indicated it would be unusual for lifetime costs to exceed 50% of the vehicle acquisition cost. Vehicle utilization is monitored in conjunction with maintenance and repair costs incurred. Maintenance and repair costs per hour of utilization is a useful metric to identify underperforming vehicles.
- Road Mechanics
Road Mechanics are widely utilized to accomplish vehicle evaluations and simpler repairs away from the Fleet Management shop. Organizations cited these positions as critical for timely response and improved safety.
- Pre-Trip and Post-Trip Inspections
Pre-trip and post-trip inspections are widely used to identify needed maintenance. A rigorous inspection process was cited by multiple organizations as key for supporting timely maintenance and repairs, making the fleet more reliable, and creating significant reductions in lifetime maintenance and repair expense.

BENCHMARKING RESULTS & DATA - CONTINUED

- Vehicle Utilization & Fleet Size
Fleet size is optimized for vehicle availability, cost savings, and technician/mechanic workload. A right-sized fleet provides more vehicle availability and reliability at a lower cost. Among benchmarked organizations, a typical spare rate would be 10%-30% of the vehicles required for daily routes.
- Route Management & Driver Schedules
Routes should be planned for completion within 11 hours and drivers should not be on duty for more than 12 hours at a time. Overtime is typical at benchmarked organizations but weekly work schedules should not exceed 55 hours maximum for safety, efficiency, and effectiveness of drivers.
- Contracted Haulers
Local governments make extensive use of contracted haulers to provide flexible, scalable resources and expertise in the solid waste collection function. Among local governments surveyed, 83% used contracted haulers for part of the solid waste collection function.

Detail benchmarking data collected is included on pages 55 – 58.

BENCHMARKING RESULTS & DATA - CONTINUED

	City of Orlando	City 1	City 2	City 3	City 4	City 5
Demographics						
Population	309,000	Less than 250,000	250,000 - 500,000	Less than 250,000	Less than 250,000	Less than 250,000
Square Miles	119	20	55	80	65	25
Annual Tonnage	185,000	-	-	-	-	-
Commercial Customers	9,071	1,500	-	-	-	-
Residential Customers	43,210	15,000	-	82,000	-	-

Services						
Municipal Solid Waste	1 day/week	2 days/week	2 days/week	1 day/week	1 day/week	2 days/week
Recycling	1 day/week	No curbside service	2 days/month	1 day/week	1 day/week	2 days/month
Bulk	1 day/week	scheduled	1 day/week	1 day/month	1 day/week	1 day/month
Bulk limit	No	Fee based only	-	2 cubic yard/month	No	-
Yard Waste	1 day/week	1 day/ week	1 day/week	1 day/week	1 day/week	1 day/month
Tires	Yes	Limited Curbside	Landfill - not curbside	Landfill - not curbside 4 tires/year	No	No
Household Hazardous and e-Waste	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside
Construction & Demolition	Yes	Limited	None	None	None	None
Additional Pick Ups	Yes	Scheduled for a fee of \$10 - \$35/item	None	Bulk \$18.50/cubic yard	Bulk or Yard Waste for a fee	Scheduled
Residential Annual Fee	\$250	-	-	\$430	\$230 - \$450	\$440
Performed by Municipality	Residential & Commercial	Residential & Commercial	Residential	None	Residential	None
Performed by Contracted Hauler	Some Commercial	None	Commercial	Residential & Commercial	Commercial	Residential & Commercial

Legend:

- Data not available

BENCHMARKING RESULTS & DATA - CONTINUED

	City of Orlando	City 6	City 7	City 8	City 9	City 10
Demographics						
Population	309,000	250,000 -- 500,000	250,000 -- 500,000	500,000 - 1 million	Less than 250,000	Less than 250,000
Square Miles	119	175	140	1,560	40	50
Annual Tonnage	185,000	400,000	-	1,200,000	-	-
Commercial Customers	9,071	10,000	6,000	1,000	-	-
Residential Customers	43,210	90,000	-	250,000	40,000	38,000

Services						
Municipal Solid Waste	1 day/week	2 days/week	2 days/week	2 days/week	2 days/week	2 days/week
Recycling	1 day/week	1 day/week	1 day/week	1 day/week	1 day/week	1 day/week
Bulk	1 day/week	1 day/week	Scheduled	1 day/week	1 day/month	Scheduled
Bulk limit	No	1 cubic yard/pick up	-	-	10 cubic yard/pick up	-
Yard Waste	1 day/week	1 day/week	Bagged with household garbage Oversized included in bulk waste	1 day/week	1 day/month	1 day/week
Tires	Yes	Landfill - not curbside 4 tires/year	Up to 5 tires per pick up	4 tires/year	4 tires/year	4 tires/year
Household Hazardous and e-Waste	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside
Construction & Demolition	Yes	Limited	Limited	None	None	None
Additional Pick Ups	Yes	Scheduled	Bulk or Yard Waste for a fee	Scheduled	Bulk or Yard Waste for a fee	Scheduled \$8.25/cubic yard
Residential Annual Fee	\$250	\$420	\$330	\$210	\$550	\$200
Performed by Municipality	Residential & Commercial	Residential & Commercial	Residential & Commercial	None	None	None
Performed by Contracted Hauler	Some Commercial	Some Commercial	Some Commercial	Residential & Commercial	Residential & Commercial	Residential & Commercial

Legend:

- Data not available

BENCHMARKING RESULTS & DATA - CONTINUED

	City of Orlando	County 1	County 2	County 3	County 4	County 5
Demographics						
Population	309,000	250,000 - - 500,000	More than 1 million	1,500,000	2,600,000	More than 1 million
Square Miles	119	970	1,300	1,260	2430	950
Annual Tonnage	185,000	175,000	2,200,000	560,000	1,900,000	-
Commercial Customers	9,071	-	-	-	5,000	-
Residential Customers	43,210	-	-	-	340,000	-

Services						
Municipal Solid Waste	1 day/week	2 days/week	1 day/week	1 day/week	2 days/week	1 day/week
Recycling	1 day/week	1 day/week	1 day/week	1 day/week	1 day/week	1 day/week
Bulk	1 day/week	1 day/week	1 day/month	Scheduled	Scheduled - 2 free pick ups/year	1 day/week
Bulk limit	No	No	No	1 cubic yard/pick up	50 cubic yards/year	3 cubic yards/week
Yard Waste	1 day/week	1 day/week	Scheduled	1 day/week	Bagged with household garbage Oversized included in bulk waste	1 day/week
Tires	Yes	Landfill - not curbside	No	No	Landfill or bulk waste pick up	Landfill or bulk waste pick up
Household Hazardous and e-Waste	Landfill - not curbside	Landfill - not curbside	No	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside
Construction & Demolition	Yes	Limited	None	Limited	Bulk waste pick up	None
Additional Pick Ups	Yes	Bulk or Yard Waste for a fee	Bulk or Yard Waste for a fee	Bulk or Yard Waste \$30/cubic yard	Bulk \$27/cubic yard	No
Residential Annual Fee	\$250	\$180 - \$330	-	\$440	\$510	\$260
Performed by Municipality	Residential & Commercial	Residential	-	None	Residential	Residential
Performed by Contracted Hauler	Some Commercial	Commercial	-	Residential & Commercial	Commercial	Commercial

Legend:

- Data not available

BENCHMARKING RESULTS & DATA - CONTINUED

	City of Orlando	County 6	County 7
Demographics			
Population	309,000	250,000 -- 500,000	500,000 - 1 million
Square Miles	119	725	875
Annual Tonnage	185,000	750,000	1,300,000
Commercial Customers	9,071	6,000	-
Residential Customers	43,210	150,000	-

Services			
Municipal Solid Waste	1 day/week	1 day/week	1 day/week
Recycling	1 day/week	1 day/week	1 day/week
Bulk	1 day/week	1 day/week	1 day/week
Bulk limit	No	1 cubic yard/pick up	-
Yard Waste	1 day/week	1 day/week	1 day/week
Tires	Yes	Up to 4 tires/week	Scheduled
Household Hazardous and e-Waste	Landfill - not curbside	Landfill - not curbside	Landfill - not curbside
Construction & Demolition	Yes	None	Limited
Additional Pick Ups	Yes	Bulk or Yard Waste for a fee	Scheduled
Residential Annual Fee	\$250	\$235	\$150
Performed by Municipality	Residential & Commercial	None	None
Performed by Contracted Hauler	Some Commercial	Residential & Commercial	Residential & Commercial

Legend:

- Data not available