Winnipeg | Audit

Fleet Management Audit

June 2022

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Audit at a Glance

Summary of Recommendations

We recommend that the Chief Administrative Officer:

- Establish a fleet oversight committee to provide oversight and accountability for the City's municipal light and medium fleet through the establishment of a vehicle utilization policy with minimum criteria for utilization, review and adjudication of underutilized vehicles and the development of summary reporting to the Chief Administrative Officer.

We recommend that the Winnipeg Fleet Management Agency General Manager:

- Review the general controls on data inputs into the Fleet Management Solution software to ensure the data on the City's fleet complies with the City's Corporate Recordkeeping Administrative Standard and in order to effectively assess the City's utilization of the fleet.

Project Background

This audit examined management of the City's municipal light and medium fleet. In 2021, the municipal light and medium fleet consisted of approximately 782 units with a value of approximately $12 million. We evaluated the municipal light and medium classification of vehicles to assess the efficiency and effectiveness of the fleet based on utilization, vehicle types used and related selection process, as well as the vehicle replacement process. We also examined processes associated with administration of vehicles repairs, and the progress made toward the goals of the City's Green Fleet Plan. We did not include municipal light or municipal medium vehicles that are typically used for front-line emergency response.

Observations

The vehicle inventory and performance data maintained by Winnipeg Fleet Management Agency (WFMA) contained errors and anomalies, and therefore the data was not sufficiently reliable, which limited the depth of analysis conducted on the fleet (See Appendix 1 - Scope). While, this limited the depth of our assessment it was suitable for general insight about the municipal light and medium fleet of vehicles.

The City's decentralized approach to fleet management has contributed to autonomous Department fleets, limiting opportunity for potential efficiencies associated with a whole-of-government approach.

The City does not have documented standards or guidance to set the minimum expectations for vehicle use in support of service delivery. We identified that in 2021, 67 percent of the municipal light and medium fleet met the WFMA's definition of light utilization, accumulating under 12,000 km annually with 29 percent accumulating less than 5,000 km.

All City Departments are accountable for vehicle procurement and performance through the regular budget request/approval process. WFMA has reported annually on vehicle types and quantities per City Department; however, we did not find any reporting on specific details, such as the quantity, type/sizes and utilization rates of vehicles used by the department in support of achieving service delivery objectives to the City's corporate offices or Council.

While the City's process for identifying and reporting damage on municipal light and/or medium vehicles is adequate and consistent across departments, we found the process for identifying responsibility and enforcing accountability for preventable incidents involving a City vehicle was inconsistent and not based on City standards or guidance. We found limited examples of employee and/or contractor remedial training or reimbursement of an insurance deductible for vehicle operators deemed responsible for repeated preventable incidents.

Measurable progress made towards the emission reduction goal of the Green Fleet Plan is inconclusive; fuel and emissions have not been sufficiently tracked or reported as required by the Council-approved Plan.

Audit Background

The intent of the audit was to:

Independently assess the efficiency and effectiveness of the municipal light and municipal medium classification of the vehicle fleet, and report to Council, the Public Service, and public stakeholders.

Audit Objectives

The objectives of this audit were:

1. To evaluate the efficiency and effectiveness of the municipal light and municipal medium fleet by assessing:
    - Vehicle utilization;
    - The vehicle selection process and the support for the types and sizes of vehicles;
    - The fleet age, life cycle management and replacement process.
2. To evaluate if adequate processes and practices are in place to effectively administer vehicle damage claims;
3. To evaluate Winnipeg Fleet Management Agency's progress in supporting the achievement of the goals established in the City's Green Fleet Plan.

Conclusions

Conclusion 1: Efficiency and Effectiveness of Light and Medium Fleet

We were unable to conclude on the overall efficiency and effectiveness of the municipal light and medium fleet due to the following factors:

- The fleet inventory and performance data obtained contained errors and incomplete information;
- The City did not have standards or guidance for vehicle utilization, or for the sizes/types of vehicles required to support objectives;
- We found limited supporting documentation indicating why a type of vehicle was required, how it was intended to be used, or why a vehicle was required over alternatives.

We found that WFMA's ability to adhere to managing vehicle replacements based on Life Cycle Cost Management (LCCM) principles has been limited in recent years due to various challenges, including reduced capital funding and supply chain issues. We were informed that between 2017 and 2021, an average of approximately 85% of municipal light and medium vehicles were kept in the fleet beyond the intended replacement date.

Conclusion 2: Administration of Vehicle Damage

The process for identifying and reporting damage on municipal light and/or medium vehicles is adequate and consistent across departments. However, we found that accountability for vehicle operators deemed responsible for damage to a City vehicle was limited.

Conclusion 3: Progress Towards Goal of Green Fleet Plan

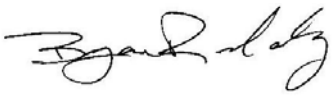
We found that measurable progress towards the goal of the Green Fleet Plan was inconclusive; fuel and emissions data have not been sufficiently tracked, or reported annually as required by the Council-approved Plan.

Independence

The Audit Department team members selected for the audit did not have any conflict of interest related to the audit's subject matter.

Acknowledgement

The Audit Department extends its appreciation to all of the stakeholders who participated in this audit.



September 2022

Bryan Mansky, Date

City Auditor

Overview

1.0 What is Fleet Management?

The term *fleet management* describes a concept involving a range of activities and processes intended to ensure a collection of vehicles and/or equipment is available when needed, operating within budget, and effectively and efficiently supporting achievement of objectives. Many organizations, including the City of Winnipeg, rely on specialty software to enhance fleet management by providing inventory, status and performance information.

1.1.1 Role of Winnipeg Fleet Management Agency

The Winnipeg Fleet Management Agency (WFMA) is a Special Operating Agency that reports to the Director of Public Works. WFMA is governed by its Operating Charter with the mandate to provide efficient and effective fleet, manufacturing and equipment management services to civic departments and other public organizations.

Terms of the WFMA Operating Charter dictate that it is responsible for supporting City departments through procurement, distribution, fuel, and maintenance/repair of non-emergency response vehicles and specialty equipment. WFMA also supports departments through supply of internal and external rental vehicles as temporary replacements and/or temporary additions.

The City has a decentralized approach to fleet management in which each department determines vehicle needs, and oversees vehicle performance. WFMA's role is limited to recommending to departments on quantity, type, and size of vehicles necessary to support achievement of department objectives, as well as on the timing of disposal and/or replacement of vehicles used by departments.

1.1.2 Role of City Departments

Departments are responsible for identifying the quantity, type, and size of vehicles required, and how best to deploy vehicles in support of department operations. Departments are also responsible for the capital and operating costs of each vehicle under its control. Departments develop a budget intended to support their activities; once approved, senior department officials have the authority to determine the quantity and types of vehicles needed within the parameters of the approved budget.

Departments have decision-making authority for its fleet of vehicles. Section 5.4 of the WFMA Operating Charter states that "*departments will be responsible for rationalizing size and mix of their fleet within their budget constraints*." Departments are expected to rationalize their fleet through steps in the procurement process, and through the City's budgetary process.

1.2 Municipal Light and Municipal Medium Vehicles

WFMA manages and maintains a fleet of approximately 2,300 vehicles and specialty equipment for the City. In 2021, approximately 782 of these vehicles were defined as municipal light or municipal medium, a common industry classification based on weight and commercial availability without additional significant modification.

The municipal light classification[2] typically includes:

- Light duty pick-up trucks
- Cargo and passenger vans
- Sport utility vehicles
- Sedans
- Specialty equipment[3]

The municipal medium classification[4] typically includes:

- Medium duty pick-up trucks
- Cargo vans

Approximate Quantity of Types of Municipal Light and Medium Vehicles[1]

	2017	2018	2019	2020	2021
Light					
Sedan	43	51	49	45	41
Sport Utility	70	84	78	76	71
Passenger van	34	30	27	26	22
Cargo van	65	63	71	68	68
Light duty truck	309	323	327	308	300
Specialty equipment	1	1	1	1	1
Medium					
Cargo van	21	20	22	28	33
Medium duty truck	307	283	269	261	246
Total	**850**	**855**	**844**	**813**	**782**

We obtained recent financial information for the municipal light and medium fleet:

Municipal Light and Municipal Medium Financial	
2021 Fiscal Year, Approximate Operating Costs (not including fuel)	$2,857,800
Value of Inventory at December 31, 2021	$12,266,800
Value of Purchases, 2021	$2,363,419

[1] Winnipeg Police Service vehicles are not included in the audit scope and are not in this chart.
[2] Vehicle Gross Weight less than 10,000 lbs or 4,535 kg.
[3] Vehicle or equipment that performs a specific function that cannot be performed by any other common vehicle or equipment that is commercially available.
[4] Vehicle Gross Weight of 10,001 - 26,000 lbs or 4,535 – 11,739 kg.

1.3 Key Interactions in the Vehicle Life Cycle



Procurement

- WFMA works with department representatives to identify quantity and types needed to support service delivery; WFMA recommends to departments, and department representatives make final decision (See Section 1.3.1 Procurement Process).

Fuel

- WFMA is responsible for procurement, availability, and inventory controls; departments are responsible for compliance with fueling procedures and fueling vehicles.

Maintenance

- WFMA establishes a preventative maintenance schedule when vehicle is procured; departments are responsible for monitoring vehicle operating conditions, and arranging/delivering vehicle to WFMA when due for service.

Repair

- WFMA is responsible for identifying unreported damages during regular maintenance, reporting observations to department, and repairing or arranging for repair; departments are responsible for reporting damage and paying for repair or insurance deductible.

Replacement

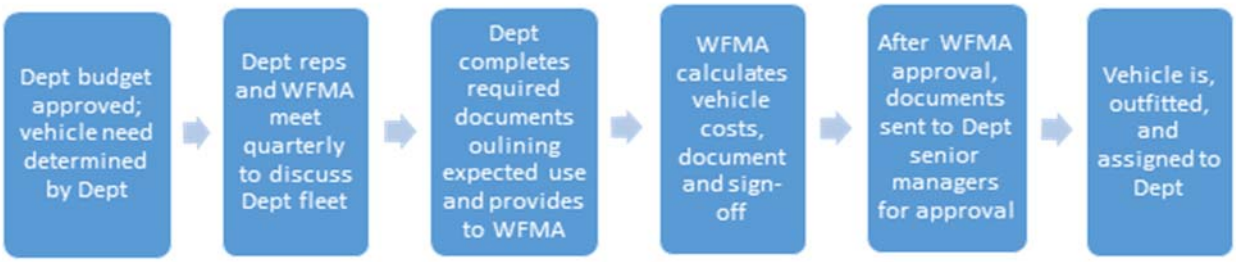
- WFMA works with department representatives to determine when a temporary rental is needed, and ensures availability. WFMA also work with department representatives to evaluate each vehicle near the conclusion of its planned life cycle to determine if a replacement is required; departments are responsible for notifying WFMA of a rental need, and for the decision to replace each vehicle.

Disposal

- Departments are responsible for the decision to retain or dispose each vehicle. When circumstances allow, WFMA will repurpose a vehicle with a different end user. When the decision is made to dispose a vehicle, WFMA is responsible for the sale of vehicles through external auctions.

1.3.1 Procurement Process

The procurement process is where quantity, type, and performance are rationalized by departments.



Observations

2.0 Quantity of Light and Medium Fleet, Based on Utilization

We were unable to conclude on the appropriateness of the number of vehicles in the municipal light and medium fleet, based on vehicle utilization.

Observations

- The Fleet Management Solution (FMS) software, maintained by WFMA, contained missing and/or erroneous vehicle data, including data collected at the City fueling depots. We found the data to be non-compliant with the City's Administrative Standard on Corporate Recordkeeping.
- In 2021, 67% of the vehicles in the municipal light and medium classification had less than 12,000 km travelled for the year, meeting the WFMA's Replacement Policy definition for light utilization; 29% percent of these accumulated less than 5,000 km in 2021.
- The City does not have documented standards or guidance to set minimum expectations for vehicle use in support of service delivery for the municipal light and medium fleet.
- We found limited instances of completed documented support that rationalized the need, or expected utilization of assigned municipal light or municipal medium vehicles.
- Between 2017 and 2021, the size of the municipal light and medium fleet has declined.

Analysis

Fleet Data Contained Errors, Limiting Assessment

In order to help inform an assessment of the quantity and utilization of the City's fleet, we sought the annual kilometre data for municipal light and medium vehicles.

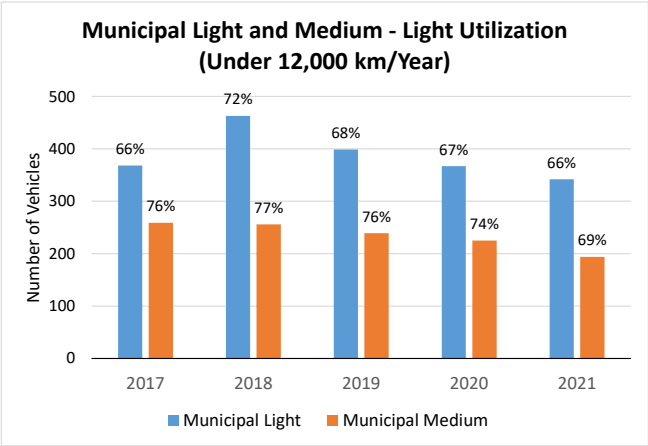
- Vehicle kilometres are recorded at each fuel transaction, and are the basis for performance information that is maintained by WFMA.
- Due to errors identified in the data, the depth of our assessment was limited, however the data was suitable for reasonable estimation of quantities and annual kilometres travelled.
    - We have communicated findings related to controls intended to ensure data reliability to senior management separately.
    - Given the limitations associated with the data, we believe that it did not meet the requirements of the City's Administrative Standard on Corporate Recordkeeping including the necessity to *"generate, create, or maintain reasonably good quality, accurate, reliable, and authentic records that can be audited as required."*

Quantity of Municipal Light and Medium Vehicles Classified as Light Utilization

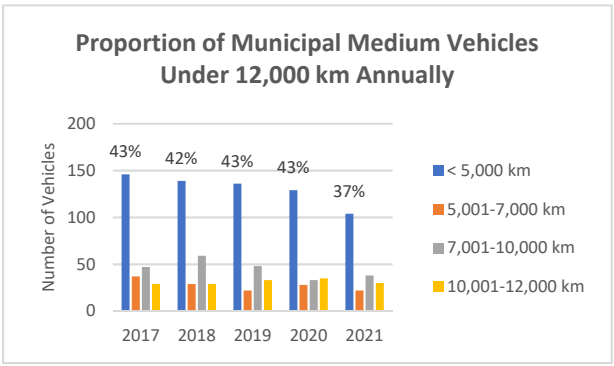
WFMA implemented a *Replacement Policy* in 2019 that defined utilization rates for the City's vehicles and equipment.

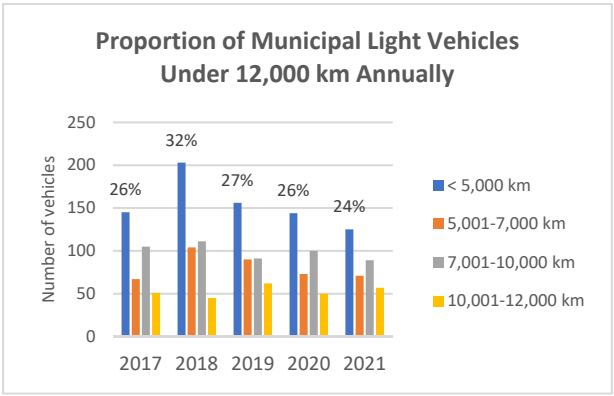
WFMA's Replacement Policy		
Utilization	**km / Year**	**Hours / Year**
Light	under 12,000	under 600
Medium	12,000 to 18,000	600 to 900
Heavy	18,000 to 24,000	900 to 1,200

Our analysis focused on the light utilization category of vehicles. We identified questionable annual kilometre data, prompting awareness of limited reliability; however, based on the data obtained from the FMS we found:



- During the period of 2017 to 2021, between, 66% and 72% of the municipal light fleet, and between 69% and 77 % of the municipal medium fleet, accumulated under 12,000 KM annually. These vehicles meet the criteria for the WFMA *Replacement Policy* definition of light utilization.
- The largest proportion of both the municipal light and medium vehicles under 12,000 km annually are those that accumulated less than 5,000 km per year.
- The proportion of municipal light and medium vehicles that have accumulated less than 5,000 km annually has decreased since 2018

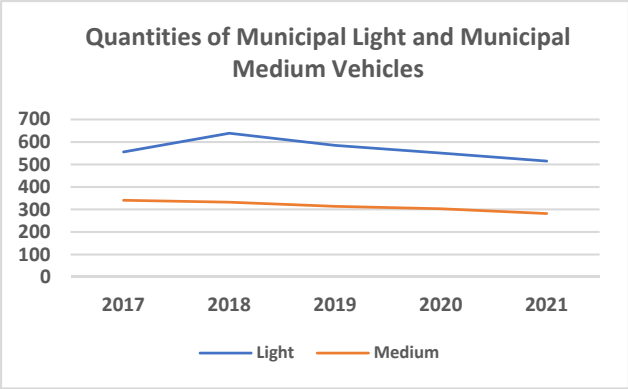




This proportion of light and medium vehicles with less than 5,000 km annually, indicates the potential of a significant number of underutilized vehicles. These vehicles should be further evaluated to ensure the most efficient and effective use of the assets.

Quantities of Municipal Light and Medium Generally Declining

- Over the audit scope period of 2017 to 2021, the size of the municipal light and medium fleet has declined.



No Policy for Minimum Use

Right-sizing the fleet requires identifying service delivery objectives and the minimum vehicle/asset requirements necessary to achieve those objectives.[5] The City does not have documented standards or guidance to set minimum expectations for vehicle use in support of service delivery for the municipal light and medium fleet.

- We were informed vehicle need is determined by the prior experiences of those involved, and includes consideration of past practices and planned operations.
- We were informed seasonal needs have a significant effect on the number of vehicles required, and how vehicles are used. This was also based on prior experiences, and not supported by documented analysis, or measurable service-level objectives that were associated with the need for a vehicle.
- We did not find department analysis in procurement related documents identifying specific quantities of vehicles required to support service delivery objectives.

The WFMA Replacement Policy defines utilization rates but does not define what the minimum acceptable utilization of a vehicle is.

An overarching fleet policy can be considered as a basis for adjustments to the size of a fleet. Industry guidance identifies fleet policy as a key component of successful efforts to implement fleet adjustments related to vehicle utilization.[6] Examples of fleet policies identified in industry literature include:

- Vehicle assignments, which may include minimum kilometre criteria, minimum use criteria, allowable exceptions, and exemptions;

[5] National Association of Fleet Administrators: The Ultimate Guide to Understanding Fleet Utilization and Achieving a Right-Sized Fleet. Page 1-1
[6] National Association of Fleet Administrators: The Ultimate Guide to Understanding Fleet Utilization and Achieving a Right-Sized Fleet. Page 4-1,

- Shared vehicle pools, including a process and criteria that encourage the use of shared vehicles;
- A standard that requires the lowest cost, and/or lowest emitting transportation alternative to be used.

WFMA has partially developed a draft *Fleet Utilization Policy* that was intended to provide a framework for improved asset management consistent with right sizing the fleet. The policy was also intended to support the City's Climate Action policy goal of minimizing environmental impact.

- The draft *Fleet Utilization Policy* included a clause that required written justification from a department director for an exemption from the low usage criteria identified in the Policy. If applied, this process would allow for insight and rationale to support the quantity of vehicles that appear to be under-utilized. This draft Policy was not implemented at the time of this audit.
    - Should the draft *Fleet Utilization Policy* be finalized and implemented, we noted opportunities for enhancement, including:
        - Defining low and/or under-utilized, and include rationale for the benchmark;
        - Defining how performance data will be collected, and the activities that will be performed to ensure the data will be complete, accurate, and reliable;
        - Defining all relevant roles and responsibilities of CAO, department and WFMA staff, including enforcement of the policy and accountability for outcomes;

The WFMA Operating Charter limits the authority the WFMA has over department fleet decisions. Given this limitation, we believe it is in the best interest of the City to develop and implement a corporate policy on utilization rates that can enforce and enable accountability. This consideration is included in the recommendation below.

In 2020, Council directed the Interim CAO to immediately reduce the number of City owned and leased vehicles by 5%, and report on the feasibility of further reductions to the fleet. The Interim CAO subsequently requested departments review their fleet complement with the intent of attaining a 5% reduction.

- At that time, a 5% reduction was estimated to be approximately 100 vehicles and/or equipment. This initiative resulted in the reduction of approximately 25 vehicles, representing approximately 1% of the fleet.

- Industry literature identifies that policy can support the efforts undertaken to increase the efficiency and effectiveness of the fleet by defining minimum utilization. The lack of a policy defining minimum utilization was likely a contributing factor for the minimal progress towards the Council directed goal.

We noted that a local, large public sector organization has a fleet oversight committee (the committee) made up of senior-level representatives from various business units. The committee has established fleet policies and procedures. The committee meets quarterly to discuss vehicle topics, and review and recommend approval for planned procurements. The committee also produces a quarterly fleet report for organization executives that includes an overview of the current fleet, the vehicle plan for the following quarter, fuel consumption, and budget to actuals data. The committee provides oversight of procurement and performance of the current fleet vehicles.

Limited Documented Rationale

The WFMA Operating Charter states that "*departments will be responsible for rationalizing size and mix of their fleet within their budget constraints*". The vehicle acquisition process requires a department representative to complete a requisition form outlining how, when, and where the vehicle is intended to be used.

- We found limited examples of sufficient rationale outlining why the vehicle was required, where the vehicle was expected to operate, how often the vehicle was required, or why alternatives (i.e. sharing) could not be implemented. As a result, our analysis of low-kilometre vehicles was limited, and we were unable to conclude on the appropriateness of the quantity of municipal light and medium vehicles to support service delivery objectives.



RECOMMENDATION 1			
The WFMA General Manager review the general controls on data inputs into the Fleet Management Solution software and update processes to ensure that data is created, captured, and managed to ensure compliance with the City's Corporate Recordkeeping Administrative Standard No. AS-006. The general controls should include, but are not limited to those that address initial vehicle profile entries, controls around fuel transactions and timely processes to verify accuracy of all data entries.			
RISK AREA	Business Process	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Objective, timely, complete and accurate fleet data is key to understanding an organization's fleet of vehicles.		
MANAGEMENT RESPONSE			
Agreed. With the upcoming implementation of WFMA's new fleet software system the WFMA General Manager will ensure data created, captured and managed will meet with the City's Corporate Recordkeeping Administrative Standard No. AS-006. Controls around fuel transactions will require further investigation for opportunities to source a system or develop a City-wide process that can automatically upload vehicle and equipment meter readings for improved accuracy.			
IMPLEMENTATION DATE	Q4, 2023		

RECOMMENDATION 2			
The CAO establish a fleet oversight committee that includes the Chief Administrative Officer or their designate, a representative from Corporate Finance, the WFMA General Manager and Department Directors representing the departments using City owned, rented or leased vehicles and/or equipment.			
RISK AREA	Business Process	**ASSESSMENT**	High
BASIS OF ASSESSMENT	The City does not have a corporate authority to define and enforce acceptable minimum vehicle utilization rates, acceptable types/sizes of vehicles, or consistently engage in oversight of each department's fleet performance.		
MANAGEMENT RESPONSE			
The CAO will establish an oversight committee to ensure the recommendations of this report are implemented. Upon completion of these tasks, the CAO will reassess the mandate and role of an oversight committee to ensure it positioned to provide effective governance and oversight over fleet on an ongoing basis.			
IMPLEMENTATION DATE	Q1, 2023 (Phase 1), Q1, 2024 (Phase 2)		

RECOMMENDATION 3			
The CAO or designate, in collaboration with the fleet oversight committee, define the committee's terms of reference that include, but not limited to: • Scope of the committee; • Role and responsibilities of the committee; o Defining minimum criteria for vehicle utilization; o Review vehicle utilization annually; o Review vehicles that do not meet the minimum criteria for vehicle utilization, o Adjudicate vehicles and/or equipment that do not meet the defined minimums; o Develop annual summary reporting of activities for the Chief Administrative Officer.			
RISK AREA	Business Process	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Terms of reference for a fleet oversight committee are necessary to help ensure consistency of activities, and clarity of role and responsibilities for members.		
MANAGEMENT RESPONSE			
The CAO will set terms of reference for this oversight committee for the implementation of the recommendations of this report and will include scope, roles and responsibilities. After implementation of recommendations is complete, the terms of reference for the oversight committee will be reassessed to ensure it is positioned to provide effective governance and oversight over fleet on an ongoing basis.			
IMPLEMENTATION DATE	Q1, 2023 (Phase 1), Q1, 2024 (Phase 2)		

RECOMMENDATION 4

The CAO should direct the fleet oversight committee to develop and implement a corporate vehicle utilization policy.

The policy should include a requirement for departments to analyze vehicle needs and adequately support the necessity for a vehicle. The policy should also include a process requiring departments to report on the performance of their fleet to the fleet oversight committee, at minimum, on an annual basis.

A utilization policy should at minimum:

- Consider vehicle pool(s), vehicle swapping, and the use of personally-owned vehicles;
- Include the fleet oversight committee's definition of low and/or under-utilized vehicles;
- Define how performance data will be collected, and the activities that will be performed to ensure the data will be complete, accurate, and reliable;
- Include the fleet oversight committee's definition of all relevant roles and responsibilities, and enforcement of the policy and accountability for outcomes;
- Identify a process and timeline for providing required support for the necessity for a vehicle that does not meet the minimums defined by the fleet oversight committee;

RISK AREA	Business Process	**ASSESSMENT**	High
BASIS OF ASSESSMENT	A corporate fleet policy should establish enforceable standards and guide department fleet decisions.		

MANAGEMENT RESPONSE

The oversight committee established by the CAO will ensure that an enforceable vehicle utilization policy be developed and implemented that will address vehicle requirements and define roles and responsibilities.

IMPLEMENTATION DATE	Q1, 2024

2.1 Types of Municipal Light and Medium Vehicles

We were unable to conclude on the appropriateness of the types and sizes of the municipal light and medium fleet.

Observations

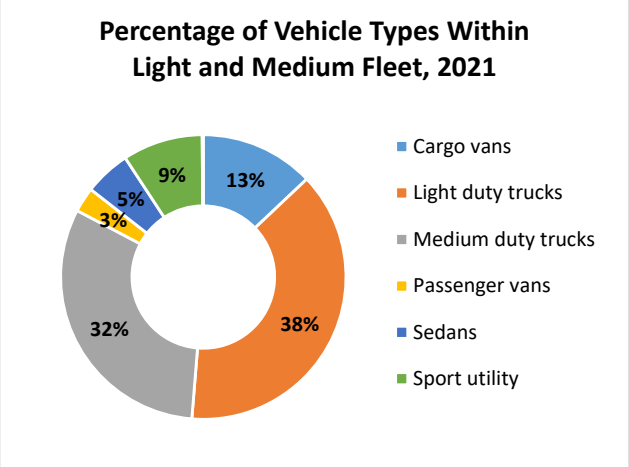
- The City does not have defined and documented standards or guidance to set parameters on acceptable types and sizes of municipal light and medium vehicles required to support achievement of service delivery objectives.
- We found limited examples of sufficiently documented rationale outlining the need of a specific size, type, or feature of vehicle.
- The majority of vehicle order forms we reviewed lacked the required approval of a department controller, or reasonable alternative.
- WFMA's role includes recommending to departments on the type and size of vehicle that the department is seeking to procure. The department has the final authority on the decision.

Analysis

No Corporate Standards or Guidance

Industry leading practice for right-sizing the fleet includes consideration of both the quantity, and the types/sizes sufficient to support organizational objectives[7].

- The City's lack of documented standards or guidance to set expectations for the types and sizes of vehicles required to achieve service delivery objectives results in inconsistencies, as departments determine needs autonomously. This contributes to missed opportunities for potential efficiencies and ongoing reassessments against an established benchmark.



- Given a lack of documented standards or guidance to set minimum and maximum parameters for the types of vehicles required, decisions are often based on past

[7] National Association of Fleet Administrators: The Ultimate Guide to Understanding Fleet Utilization and Achieving a Right-Sized Fleet. Page 1-1

practices, opinions of those involved in the procurement, department budgets, and the availability of vehicles from approved vendors.

- There are instances in which department representatives disagree with the WFMA recommendation for a type or size of vehicle to procure. The department has authority to make final decisions; however, without documented standards or guidance outlining the minimum and maximum parameters of acceptable vehicles to meet objectives, there are opportunities for over-sized, and/or over-equipped vehicles to be acquired.
    - This may result in decisions that are not consistent with leading fleet management practices, increased costs, and may limit opportunities for accountability for compliance with established criteria.

We noted that a local, large public sector organization has a documented list of acceptable vehicles and vehicle features/accessories for each of their service objectives and new vehicle types require approval by the oversight committee. While the City has a significantly diverse range of service delivery objectives, this type of approach is worthy of consideration.

Limited Examples of Departments Documenting Sufficient Rationalization

In addition to a lack of standards, we found limited documented department rationale outlining the need of a specific size, type, or features of a vehicle.

The WFMA Operating Charter states that "*departments will be responsible for rationalizing size and mix of their fleet within their budget constraints*". The procurement process requires a department representative to document the intended use, and why a particular type of vehicle is required, thus rationalizing the need for a vehicle. This is done through the WFMA Equipment Requisition Form.

- We believe this process and the requirement is adequate. It allows departments to work collaboratively with WFMA to ensure the most suitable option is procured. It also provides a documented record that can be accessed for future reassessments.
- However, we found limited examples of Equipment Requisition Forms that included sufficient details outlining the intended use, and why a particular type of vehicle was required which limits the effectiveness of the use of the Equipment Requisition Form in the procurement process.

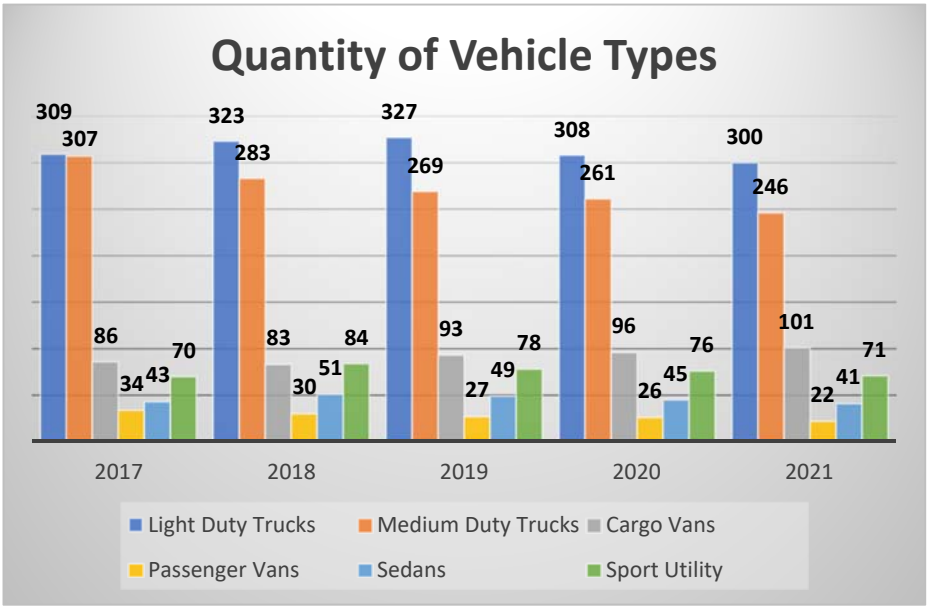
Limited Examples of Required Approval

An additional requirement of the procurement process is an approval signature of the department's controller on the vehicle order form. This requirement provides an opportunity for a senior department employee, not directly involved in the procurement, to oversee the types and sizes of vehicles the department procures.

- We found limited examples of the required approval signature on order forms limiting the effectiveness of this process and the oversight of the department's procurement process.

Vehicle Type and Size Trends

Based on the inventory data obtained, we found that light and medium duty trucks make up the majority of the municipal light and medium duty fleet. The number of cargo vans and sport utility vehicles has increased slightly since 2017, but all other types of vehicles in the municipal light and medium categories have declined during the same period. We did not include Winnipeg Police Service vehicles in our count.



RECOMMENDATION 5			
The CAO direct the fleet oversight committee to collaborate with WFMA and Department representatives to develop a framework of acceptable vehicle types, including guidance regarding the minimum and maximum specifications of vehicles. Proposed vehicle acquisitions that do not meet the approved specifications should be reviewed and approved by the fleet oversight committee prior to acquisition.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Minimum standards help to ensure consistency, and reduce unnecessary costs associated with potentially over-equipped and/or over-sized vehicles used to accomplish specific tasks.		
MANAGEMENT RESPONSE			
The oversight committee established by the CAO will ensure that a framework is established and implemented that will define acceptable vehicle type as well as guidance on specifications.			
IMPLEMENTATION DATE	Q1, 2024		

2.2 Vehicle Replacements

WFMA's ability to adhere to managing vehicle replacements based on Life Cycle Cost Management (LCCM) principles has been limited in recent years due to various reasons.

Observations

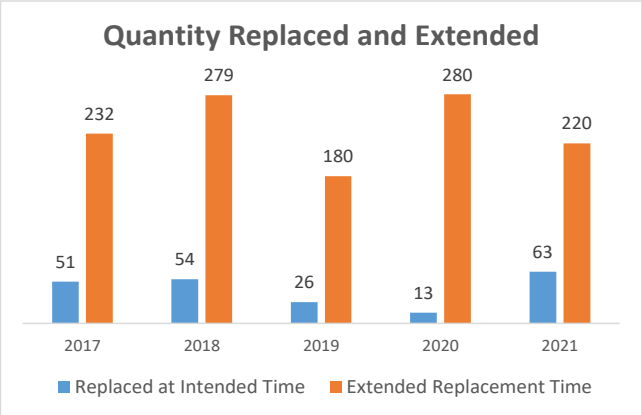
- Budgetary limitations, supply chain limitations, and departmental authority over individual vehicle decisions has affected WFMA's ability to adhere to the LCCM model. This increases the risk of higher fleet costs, and lower resale values moving forward.
- We were informed that between 2017 and 2021, approximately 85% of municipal light and medium vehicles had been extended beyond their originally planned replacement date.

Analysis

Vehicle Replacement Policy

Industry guidance recognizes LCCM as leading practice for fleet management (see Appendix 2). WFMA's Operating Charter and Replacement Policy identify the LCCM model as a guiding principle for administration of the City's fleet.

- WFMA determines maintenance schedules and the intended replacement period for each vehicle once it has been procured; however, various factors, including vehicle condition, reliability and maintenance/repair needs influence the actual replacement date. Each vehicle is evaluated prior to disposal or replacement.
- We were informed that replacement of fleet vehicles continues to be evaluated on a case-by-case basis, but generally, these vehicles are now being kept in service longer than the intended replacement date.



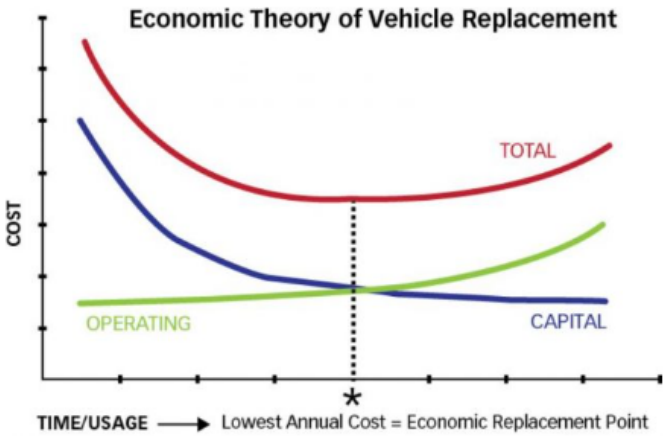
Source: WFMA

- WFMA staff identified challenges with aligning the replacement process with LCCM principles, including:
  - Reduced annual capital funds lowering purchasing power;
  - Supply chain issues encountered during the global pandemic;
  - Longer term planning requirements associated with the City's four-year budget planning process;
  - Departmental authority for vehicle decisions.

We noted that a department decision to retain a vehicle beyond its intended replacement date may be motivated, in part, by lower costs for the department; vehicle capital costs will be fully paid at the end of its planned life cycle, leaving only the operating costs for maintenance and repairs.

This graph exemplifies how the capital portion of costs decreases over time while the maintenance and repairs costs increase. Where the two lines intersect is the ideal time to replace a vehicle.

The risk of delaying the replacement of vehicles is that operating costs are shifted.



Source: American Public Works Association, Timely Replacement of Fleet Assets.

Older vehicles will have lower resale value upon disposal and typically require increased maintenance, shop resources and temporary replacements. The City as an organization will incur these costs in some fashion.

Dynamic Life Cycle

We were informed by representatives of a large, public sector organization, that they use a dynamic life cycle approach to vehicle management. This is a process of swapping lower use vehicles with higher use vehicles on a regular basis in order to extend the vehicle life beyond initial expectations.

- There may be an opportunity to further maximize the return on investment for each vehicle by engaging in a dynamic life cycle approach for all municipal light and medium vehicles; however, given departmental authority over individual vehicle decisions, a cooperative 'whole of government' approach must be an accepted priority for this approach to be successful.

Limited Data Analysis

We did not obtain measurable data to show financial impacts of the shift away from replacements based on LCCM; we believe that the combination of the relatively limited amount of time elapsed and the effects of the COVID pandemic on vehicle use made measurement of impact invalid.

RECOMMENDATION 6			
The WFMA perform and document a cost benefit analysis of fleet management based on adherence to the Life Cycle Cost Management principles compared to the practice of extending vehicles beyond their planned replacement date. The analysis should also include the feasibility of implementing a dynamic life cycle approach for the City's light and medium fleet vehicles. The analysis should be communicated to elected officials for consideration during future budget deliberations.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Council should be provided with comprehensive information about life cycle cost management principles in order to make informed budgetary decisions.		
MANAGEMENT RESPONSE			
Agreed. WFMA will perform and document a cost benefit analysis comparing Life Cycle Cost Management principles to that of extending vehicles beyond their planned replacement date which will be included in WFMA's annual budget and business plan submission.			
IMPLEMENTATION DATE	Q4, 2023		

2.3 Fleet Reporting

The current level of reporting is insufficient to support adequate oversight of fleet management effectiveness and efficiency.

Observation

- The Office of the Chief Administrative Officer (CAO) does not receive sufficient information to determine the effectiveness and efficiency of fleet management - including details about the department's vehicle quantities, vehicle types/sizes, or the vehicle utilization rates.
- WFMA exception reporting to departments did not include sufficient details to enable effective review of the use of the vehicle, or implement corrective actions.

Analysis

Departments are accountable for their vehicle inventory and vehicle performance generally through the City's budgeting process and service delivery outcomes.

- While the WFMA Operating Charter outlines the City's accountability framework and reporting relationships around fleet management, there is no guidance outlining reporting requirements from departments to the Office of the CAO. We did not find any reporting on specific details, such as the quantity, type/sizes and utilization rates of vehicles used by the department in support of achieving service delivery objectives to the Office of the CAO.
- WFMA reports their annual Business Plan to Council through the Standing Policy Committee on Innovation and Economic Development. The quantities within vehicle classifications is included in the Business Plan; however, the specific types, sizes and features of vehicles within the inventory are not included, nor is vehicle utilization.
- In the current approach to fleet management there is limited accountably for specific department vehicle decisions or performance outcomes. Defining and communicating expectations for reporting on performance is a key aspect of effective oversight. We believe the City should identify and define the metrics necessary to evaluate department fleet performance and reporting requirements.
- For consideration, industry leading guidance identifies potential common performance metrics used in evaluating vehicle utilization, including but not limited to quantity, odometer readings and fuel consumption.

WFMA reporting to departments did not include sufficient details about fuel transactions.

- As required by the Master Lease Agreement, WFMA provides a monthly billing report to departments that includes notice that an exception occurred during a fuel transaction, and that a WFMA service charge has been applied; however, no other

details are included. This limits the effectiveness of potential review of the circumstances, and the ability for a department to address errors with the vehicle involved.

RECOMMENDATION 7			
The CAO or their designate, in consultation with the fleet oversight committee, determine the information necessary to make informed budgetary decisions, and provide effective oversight of department fleet performance. At minimum, department reporting should be annual and include vehicle quantities and types per division, and the utilization rates of these vehicles. In addition, the CAO or their designate, ensure this information is made available for future budget decisions.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Departments have the authority to make fleet decisions within budgetary constraints but do not report to an authority on the performance or composition of their fleet.		
MANAGEMENT RESPONSE			
The oversight committee established by the CAO will ensure that a reporting framework is implemented that will measure fleet performance and will inform future budget planning.			
IMPLEMENTATION DATE	Q1, 2024		

RECOMMENDATION 8			
The CAO or their designate, in consultation with the fleet oversight committee, develop standardized minimum and maximum parameters for fuel transactions, and develop and implement a process to ensure exceptions are identified and corrected, at minimum, on a monthly basis. The process should require WFMA to provide complete, accurate, timely reporting with sufficient detail to enable departments to identify the root cause of the exception and take corrective action.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Errors in fleet performance data should be identified and addressed promptly to help ensure reliability for informed decision making; errors caused by vehicle operator should be identified and addressed to help prevent reoccurrence.		
MANAGEMENT RESPONSE			
The oversight committee established by the CAO will ensure that fuel standards are established, a reporting system implemented and define a process for exceptions.			
IMPLEMENTATION DATE	Q1, 2024		

3.0 Administration of Vehicle Damage

We found that accountability for vehicle operators deemed responsible for damage to a City vehicle was limited.

Observations

- The City does not have a standard or guidance to set and communicate expectations for enforcing accountability for preventable incidents while in the care and control of City vehicles, and/or equipment.
- We obtained an approximate number of preventable (at fault) incidents, total value of preventable damages, and total value of insurance deductibles/WFMA service charge for the operational life of all active municipal light and medium vehicles at December 22, 2021.

Only Active Municipal Light & Medium Vehicles as of Dec 22, 2021		
# of at Fault Incidents	Total $ Value of Damages	Total $ Value for Deductible plus WFMA Service Charged to Depts
268	$814,866	$159,292

- We did not find examples of reimbursement for repairs or an insurance deductible, and instances of remedial training after a preventable incident were inconsistent and occasional.

Analysis

Limited Guidance for Accountability for Preventable Incidents

We found that within the existing Administrative Standard related to safe and responsible driving, there is no standard or defined expectation requiring specific accountability for a preventable incident while in the care and control of City equipment and/or vehicle.

- The City has established expectations for accountability related to traffic and parking fines.
    - Administrative Standard HR-004, *Traffic Regulation Infractions While in the Care and Control of City Vehicles*, states that *employees who are identified in the care and control of the City of Winnipeg leased or owned vehicles or motive equipment will be responsible for the cost of all traffic and parking fines issued to the employee or against the vehicle or motive equipment.*
- Administrative Standard, HR-019 *Safe and Responsible Driver*, outlines the process and associated requirements related to identifying and reporting damage on a City vehicle, but does not address accountability for preventable incidents.

- The Standard directs the Safe Driver Review Committee[8] to review vehicle incidents[9], determine if preventable by the operator, and recommend corrective actions.[10] However, the recommendations are only provided to departments for consideration. The decision to take any disciplinary action is made by department management in consultation with human resource representatives. We did not find any guidance or policy for these decisions.

The City exemplifies public sector leadership and promotes trust in public institutions by demonstrating commitment to the concepts of responsibility and accountability. The City can enhance accountability by establishing and enforcing a standard outlining how those in the care and control of City vehicles and equipment will be held to account in the event of a preventable incident.

Accountability Policy

The City should consider adopting a policy that outlines employee accountability for preventable incidents involving a City vehicle. A fleet representative of another large public sector organization informed us of their requirement for reimbursement and progressive discipline for preventable incidents.

- The process is based on an organizational policy that outlines what is considered 'normal' use of vehicles and equipment, and related expectations for employees. Those using vehicles and/or equipment are required to review and sign-off prior to use. We did not obtain supporting documents for this information, but noted it as an example for consideration.

Accountability Outcomes

Department representatives informed the audit team that operators of vehicles and/or equipment are accountable for preventable incidents through application of driver licence demerits if Manitoba Public Insurance is involved, discussion with the immediate supervisor, retraining, and possible removal and/or suspension from operating duties.

[8] The Safe Driver Review Committee is made up of representatives from the Equipment Operator Training Branch of Public Works, WFMA, the Department HR and Safety Officer, and an employee Union if requested/required.

[9] We were informed that Winnipeg Transit, Winnipeg Police Service, and Winnipeg Fire, Paramedic Service are not participants in the Safe Driver Review Committee.

[10] The Committee purpose of reviewing incidents and traffic infractions is to identify primary and contributing factors and determine the corrective action(s) required to mitigate the potential for reoccurrence. Recommendations may include training, retraining, reassessment of proficiency, and loss of operating privileges. Cases where the Committee finds the actions of the employee to be of a (culpable) disciplinary nature are referred to the Departmental HR Manager for determination of appropriate discipline.

- We identified eight City employees that had four incidents deemed preventable during the audit scope period; no employee had more than four preventable incidents during this period.
- We also identified seven contractor employees that operated municipal light City vehicles during this period; these seven employees had a total of 12 preventable incidents among them.
- We did not access employee personnel files to assess corrective actions that may have been applied; however, we determined that in all fifteen of these cases, there was no reimbursement for a repair or insurance deductible.
- In all eight cases involving a City employee, we found that remedial training did not occur after each preventable incident. In the instances in which vehicle operator training occurred after an incident, it was not clear that the training was relevant to the prior incident.

Value of Incidents Deemed Preventable

The approximate total value of vehicle damages related to preventable incidents during the audit scope period of 2017 to 2021 was $814,866.

The approximate total value of the insurance deductible and WFMA service fees related to preventable incidents during the audit scope period of 2017 to 2021 was $159,292.

Vehicle Incidents Deemed Preventable
All Active Vehicle as at Dec 22, 2021

Department	# of Preventable Incidents	Value of Total Damages	Value of Deductible and Fees
A	8	$14,824	$3,404
B	10	$28,109	$5,500
C	36	$159,461	$20,524
D	6	$35,273	$33,665
E	1	$550	$550
F	15	$26,919	$7,226
G	20	$67,244	$11,343
H	131	$325,921	$58,795
I	41	$156,567	$18,285
Grand Total	**268**	**$814,866**	**$159,292**

This chart represents figures at a point in time; vehicles that operated during the audit scope period, but were removed from service before this date are not included. Example: if vehicle entered service in 2017, and was removed in 2019, that vehicle incident and related damage would not be included in this total.

RECOMMENDATION 9			
The CAO or their designate, in consultation with the fleet oversight committee, evaluate and document the City's position on an individual's responsibility for at fault preventable incidents while in the care and control of a City vehicle and update *the Administrative Standard No. HR-019 Safe and Responsible Driver* with the City's position.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	There is no City standard or policy to guide accountability for preventable damage, and we identified limited examples of demonstrated accountably for preventable incidents while in the care and control of a City vehicle.		
MANAGEMENT RESPONSE			
The oversight committee established by the CAO will ensure that individual responsibility for at fault preventable incidents while in the care and control of a City vehicle will be reviewed and the Administrative Standard HR-019 will be updated accordingly.			
IMPLEMENTATION DATE	Q1, 2024		

4.0 Progress on the Goal of the Green Fleet Plan

We found that measurable progress towards the goal of the Green Fleet Plan (the Plan) is inconclusive.

Observations

- Fuel and emissions data have not been sufficiently tracked, or reported annually as required by the Council-approved Plan.
- City fleet fuel data for the audit scope period contained errors, and anomalies that prompted awareness of limited reliability; however, the fuel data provided reasonable insight into trends of consumption.
- The fuel data indicated that fuel consumption in the municipal light and medium fleet has trended down over the course of the audit scope period[11]; this is consistent with the goal in the Plan – to reduce emissions through reduction of fuel use.

Analysis

Goal of the Green Fleet Plan

The City's Green Fleet Plan was approved by Council in 2010. The purpose of the Plan is to reduce the environmental impact of the City's vehicle and equipment fleet by reducing associated fuel consumption and emissions, while maintaining or increasing service levels.

The goal of the GFP is to reduce greenhouse gas emissions from the vehicle and equipment fleet by 17.65% below the 1998 level, by the end of 2019. The Plan identified total fuel use as the primary indicator of emission levels.

The Plan included a commitment for WFMA to provide the Executive Policy Committee an annual report on the Plan's progress, the Plan's effectiveness, the financial costs incurred to date, and a forecast of costs for the remainder of the Plan.

We were unable to measure the progress made toward the goal of the Plan due to various challenges, including:

- The City fleet emissions for 1998 are not quantified in the Plan; 1998 emissions were identified as the benchmark to measure progress against.
- An estimate of these emissions was quantified in the Administrative Report that accompanied the Plan. We were unable to determine how this estimate was calculated, or what scope of vehicles were included.

[11] Fuel consumption in 2020 and 2021 may not be a true indicator of regular business fuel consumption due to the Covid 19 Pandemic.

- The Plan committed to measuring fuel consumption to determine emission levels; however, the City's fuel consumption for 1998 is not identified in the Plan, and this information was unavailable from City records.
- We were informed that the method for calculating vehicle emissions has evolved since 1998, hindering comparison of measurements over time.
- No annual report of progress has been submitted to the EPC.

Updated Green Fleet Plan

An updated Green Fleet Plan was included in the Council-approved WFMA 2022 Business Plan. We observed that the updated Plan was a collection of strategic activities intended to support climate change mitigation. The Plan did not include a starting baseline measurement, clear and measurable goals, or a timeline to enable measurement of progress.

- We have found opportunities to improve the Plan and further promote conditions for success, including:
    - Identification of the starting benchmark from which progress will be measured, as well as how, and when measurements will be recorded;
    - Creation of goal(s) that are SMART (Specific, Measurable, Attainable, Relevant, and Time-bound).
    - Coordination with the Office of Sustainability to avoid misunderstandings and/or duplication of work.
    - Regularly and consistently report on the status and progress to those responsible for oversight.

Reporting on Emissions

The City's Climate Action Plan (CAP), approved by Council in 2018, "*outlines the City and the broader community's commitment to work together".* It includes "*a framework to proactively, meaningfully, and effectively mitigate climate change by reducing greenhouse gas emissions*". Council approval of the CAP included the requirement for the Public Service to report back on the CAP annually.

- The Office of Sustainability, a Branch of the Department of Water and Waste, began reporting to Council in 2020 on the City's corporate greenhouse gas inventory through the Climate Action Plan Annual Report. An annual report was provided to Council in 2020 and 2021 that included fleet vehicle emissions.
- The 2020 CAP Annual Report included the fleet vehicle emissions for 2014 – 2017, and the 2021 CAP Annual Report included the fleet vehicle emissions for 2014 – 2019. The

2021 CAP Annual Report indicated that the City's vehicle fleet emissions remained relatively unchanged from 2018 to 2019[12].

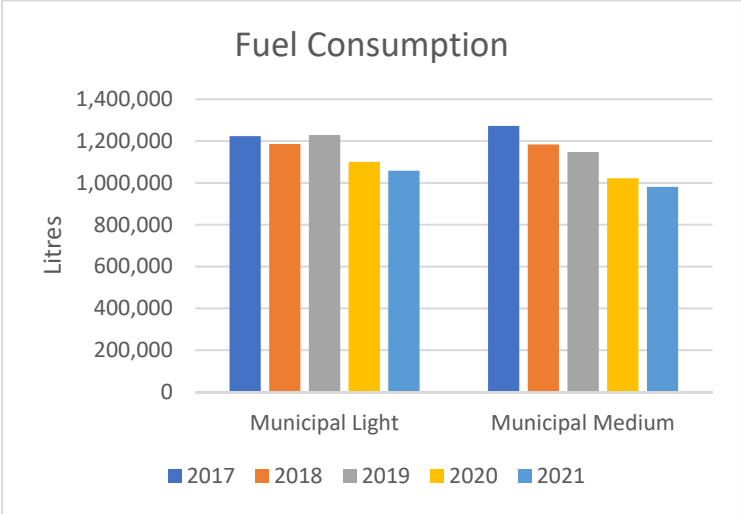
The CAP and the Green Fleet Plan are separate plans, each with a different scope of focus, but both have the common objective of reducing the City's environmental footprint. Specifically, the Green Fleet Plan is centered on the City of Winnipeg's fleet, while the CAP includes targets, strategies, and actions that include the wider community and stakeholders. With the exception of the Transit fleet, there are no fleet goals in the CAP that are not also in the Green Fleet Plan.



Fuel Consumption Trends

The original Green Fleet Plan identified fuel consumption as the basis for measurement of fleet emissions.

- We obtained fuel consumption data for the City's municipal light and medium vehicles during the audit scope period of 2017 to 2021. The data included indicators of errors and anomalies, and therefore should be considered with caution; however, the data indicated fuel consumption of municipal light and medium vehicles has trended down over the course of the audit scope period.[13]



[12] City of Winnipeg Corporate Greenhouse Gas Emissions Inventory and Forecast, 2014-2019. http://clkapps.winnipeg.ca/DMIS/permalink.asp?id=A20210624(RM)C-152

[13] Fuel consumption in 2020 and 2021 may not be a true indicator of regular business fuel consumption due to the COVID 19 Pandemic.

RECOMMENDATION 10			
The CAO or their designate, in consultation with the fleet oversight committee, develop emission reduction goals and timelines at the department level in support of the Green Fleet Plan and in alignment with the Climate Action Plan. In addition, develop and implement a process for departments to report annually on their progress to the fleet oversight committee.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Consistent measurement, monitoring, and reporting on progress towards goals is necessary to promote intended outcomes.		
MANAGEMENT RESPONSE			
The oversight committee established by the CAO will ensure that emission targets are established at the department level and an annual reporting process on their progress towards these targets is developed and implemented			
IMPLEMENTATION DATE	Q1, 2024		

Appendix 1 – Audit Methodology

The City Auditor is a statutory officer appointed by City Council under *The City of Winnipeg Charter*. The City Auditor is independent of the Public Service and reports directly to Executive Policy Committee, which serves as the City's Audit Committee.

The City Auditor conducts examinations of the operations of the City and its affiliated bodies to assist Council in its governance role of ensuring the Public Service's accountability for the quality of stewardship over public funds and for the achievement of value for money in City operations.

Once an audit report has been communicated to Council, it becomes a public document.

We conducted our 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 observations and conclusions, based on our audit objectives. We believe the evidence we have obtained provides a reasonable basis for our observations and conclusion.

Project Risk Analysis

Our audits are conducted using a risk-based methodology. We considered the following potential risks for this audit:

- Is City vehicle utilization based on a standard, and are utilization rates meeting that standard?
- Does the City have standards to outline appropriate types and features of vehicles necessary to support service delivery objectives, and is the vehicle inventory meeting that standard(s)?
- Are municipal light and medium vehicles replaced, or removed from service at the ideal time to maximize return on investment?
- Is there sufficient and regular reporting to enable appropriate accountability and oversight?
- Are municipal light and medium vehicle operators deemed responsible for a preventable incident, accountable for their role in the incident?
- Is the Green Fleet Plan achieving, or on track to achieve, its goals as intended?

Scope

This audit examined the utilization, characteristics, and replacement process of the municipal light and medium classification of vehicles within the City's Fleet. This included the majority of City departments. The audit also examined the administration of vehicle damages and repairs, as well as the progress made towards the goal of the Green Fleet Plan.

We excluded municipal light and medium vehicles used by the Winnipeg Police Service, as those vehicles are routinely exchanged/rotated amongst the population of WPS vehicles used to support front-line responders.

We accessed vehicle data that is maintained in the City's Fleet Management Solution software. We determined the data contained errors and anomalies, and therefore, was not sufficiently reliable to allow us to conclude on a number of our audit objectives; we did, however, use this data to gain general insight about the municipal light and medium fleet of vehicles.

- The depth of our assessment of the municipal light and medium fleet was limited. We did not rely on the data as the sole source of our observations, but it was suitable for reasonable estimation of quantities and annual kilometers travelled.
- We have communicated findings related to controls intended to ensure data reliability to senior management separately.
- We have included a disclaimer for readers in observations and/or graphics to identify any information that was incomplete, unreliable, or not able to be obtained.

The scope period of examination for this audit was January 1, 2017 to December 31, 2021.

Approach and Criteria

We approached assessment of the efficiency and effectiveness of the municipal light and municipal medium fleet by dividing this objective into three areas of examination; fleet size based on utilization, vehicle size and type used to meet objectives, and the inventory replacement process. We used annual kilometres as the basis of measurement for utilization.

We approached assessment of the administration of damage claims of the municipal light and medium fleet through discussions and review of the process to identify and repair damage. We also reviewed accountability outcomes for employees deemed responsible for preventable incidents by reviewing records in PeopleSoft, and through discussions with department representatives and WFMA staff.

We sought to assess the progress made on the goal of the Green Fleet Plan through measurement of fuel use during the Plan's target period, as well as through the planned progress reporting to the Executive Policy Committee.

We reviewed all documented policies, and procedures applicable, the available vehicle inventory and performance information, met with WFMA and department fleet representatives, and conducted an analysis of 50 vehicle case studies. Case studies were divided into two groups. The first set of criteria used to select 25 case studies was municipal light or medium vehicles that had accumulated less than 5,000 kilometres annually during the audit scope period. The second set of 25 case studies were selected to provide variety; this set of case studies represented a mix of Departments, a mix of vehicle types and sizes, and a range of years of service that were within the audit scope period. This was not a representative sample and we did not extrapolate the results of the analysis.

We developed the criteria for this audit based on legislation, policy, standards, and industry best practices, including but not limited to:

- WFMA Operating Charter, Fleet Replacement Policy and Green Fleet Plan;
- Administrative Standard No. HR-019 Safe and Responsible Driver;
- The National Association of Fleet Administrators guidance on vehicle utilization;
- The American Public Works Association guidance on the Timely Replacement of Fleet Assets.

We recognized and acknowledge that the COVID 19 pandemic affected how and when City vehicles were used; we advise consumers of this report to consider the context in which City operations evolved during the pandemic as they review the audit observations.

Appendix 2 – Life Cycle Cost Management Principles (LCCM)

Life Cycle Cost Management (LCCM) is a strategy to manage an asset, based on consideration of the total cost of the asset over its life span. The principles of LCCM for vehicles include the following elements:

- Vehicle capital cost;
- Vehicle operating cost;
- Vehicle functionality (ensuring vehicle meets operational requirements);
- Vehicle useful life;
- Vehicle resale value; and
- Vehicle maintenance requirements.

Industry leading practice is to manage a vehicle fleet using LCCM principles to guide the timing of maintenance and replacement, in order to maximize the return on each investment.

Industry-related literature highlights risks associated with fleet management that is not based on the principles of the LCCM model. Key risks include[14]:

- Increase in total operating costs;
- Decrease in residual value as an asset ages;
- Increased downtime as complexity and frequency of repairs increase;
- Deferment of implementing 'green' sustainability initiatives, such as fuel economy and emission reduction.

[14] American Public Works Association, *Guidance Position Statement: Timely Replacement of Fleet Assets*, May 2014.
https://www.apwa.net/library/position-stmts/FL_Guidance-Timely_Replacement_of_Fleet_Assets.pdf

Appendix 3 – Risk Assessment

Likelihood	Potential Risks				
	Insignificant • None or minor change in services, project or processes • Very limited exposure of sensitive information • Very minor, non-permanent environmental damage • Insignificant financial impact to service, project, or organization	Minor • Minor change in achievement of service objectives • Limited exposure of sensitive information • Minor, non-permanent environmental damage • Minor financial impact to service, project, or organization	Moderate • Moderate change is delivery of essential services • Exposure of limited amount of confidential information • Moderate environmental damage • Moderate financial impact to service, project, or organization	Major • Significant change in delivery of essential service • Exposure of significant amount of confidential information • Significant change in quality of life indicators • Major environmental damage • Major financial impact to service, project, or organization	Extreme • Unable to perform essential services for extended period • Exposure of critical confidential information • Very significant change in quality of life indicators • Significant damage to environment • Significant financial impact to service, project, or organization
Almost certain Expected to occur unless circumstances change	M	M	H	C	C
Likely Probably will occur in most circumstances	M	M	H	C	C
Possible Might occur under different circumstances	L	M	M	H	H
Unlikely Could occur if circumstances change	L	L	M	H	H
Rare May occur in exceptional circumstances	L	L	M	M	M

Legend:

C - Critical risk:	Requires urgent action, monitor and review at least monthly by Senior Management, inform CAO and Committee of Council
H - High risk:	High impact, monitor and review at least quarterly by Senior Management inform COO
M - Moderate risk:	Monitor and review at least quarterly by management
L - Low risk:	Review periodically, no specific action required