

**SUBJECT: 2023 FLEET VEHICLE AND EQUIPMENT PLANS – INFORMATION
SUPPLEMENTAL TO THE BUDGET ESTIMATES**

File Number ACS2023-FCS-FLT-0001

Report to Council February 1, 2023

**Submitted on February 1, 2023 by Laila Gibbons, Director, Fleet Services, Finance
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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE

**OBJET : PLANS 2023 DE REMPLACEMENT DES VÉHICULES ET DES BIENS
D'ÉQUIPEMENT– INFORMATION COMPLÉMENTAIRE DES
ESTIMATIONS BUDGÉTAIRES**

Dossier : ACS2023-FCS-FLT-0001

Rapport au Conseil le 1 février 2023

**Soumis le 1 février 2023 par Laila Gibbons, Directrice, Service du parc
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REPORT RECOMMENDATION(S)

**That Council receive the 2023 Municipal Fleet Vehicle and Equipment
Replacement Plan and the 2023 Municipal Vehicle and Equipment Growth Plan as
described in this report as supplemental information to the Draft Budget 2023.**

RECOMMANDATION(S) DU RAPPORT

Que le Conseil municipal prenne connaissance du Plan de remplacement des véhicules et des biens d'équipement municipaux de 2023 et du Plan de croissance des véhicules et des biens d'équipement municipaux de 2023 selon les modalités exposées dans le présent rapport en complément du budget provisoire de 2023.

EXECUTIVE SUMMARY

The 2023 Vehicle and Equipment Plans set out the funding requirements for replacement and growth of the City of Ottawa's municipal fleet. The plans detail the needs and costs of vehicle and equipment renewal, and growth requirements for consideration and approval in the 2023 City Budget process.

The proposed funding envelope for the **2023 Municipal Fleet Vehicle and Equipment Replacement Plan** is \$34,997,000, which will replace a total of 221 vehicles and equipment.

The proposed funding envelope for the **2023 Municipal Fleet Vehicle and Equipment Growth Plan** includes 11 new units with capital funding of \$1,097,000 and annual operating costs of \$330,000.

BACKGROUND

This report sets out the consolidated 2023 plans for renewal and growth requirements of the City's municipal fleet.

The Municipal Fleet Vehicle and Equipment Replacement and Growth Plan is developed annually in anticipation of the City's annual budget process. In January 2005, [Council motion 27/139](#) directed staff to provide pre-budget reports for the purchase of any new fleet required for growth. In response to this motion, Fleet Services' Vehicle and Equipment Plans report has been provided annually in advance of budget and since 2019, has been provided supplementary to the Budget and tabled with the Budget at City Council.

Since December 2018, Fleet Services has expanded the report content to include Transit Operations' support vehicles, those vehicles which do not generate revenue, to ensure that both Fleet Services and Transit Services are compliant with Council motion 27/139. For 2023, Transit Services does not have any replacement or growth non-

revenue vehicles, therefore there will be no additional reporting on behalf of Transit Operations.

The Ottawa Police Services, Ottawa Public Library, and OC Transpo revenue-generating vehicles and growth programs are addressed by their respective organizations and are not discussed in this report. Further, leased and rental vehicles are not part of these replacement and growth requirements.

Consistent with previous budget years, an advance purchase against the 2023 budget was authorized by the City Treasurer to allow for the ordering of specialized equipment such as ambulances, paramedic Emergency Response Vehicles (ERVs) and combo trucks due to the long build time required. Combo trucks are most notably used for winter operations but are also used in the shoulder months for materials movement and emergency support.

This report is provided for information purposes as support to the Draft 2023 Budget. As such, all 2023 Budget documentation and decisions in the Budget process supersede the content in this report. The Draft 2023 Operating and Capital Budgets will include the replacement and growth expenditure items and will be tabled per the usual budget process. The purchase of these vehicles and the associated costs are subject to the approval of Council as part of the 2023 City Budget approval.

DISCUSSION

2023 Fleet Vehicle and Equipment Replacement and Growth Plans

1. 2023 Municipal Fleet Vehicle and Equipment Replacement Plan

The City's municipal fleet consists of 2,825 vehicles and equipment that are owned by the City and grouped into five operational classes: ambulances, fire trucks, heavy vehicles, light vehicles, and equipment. The fleet is relied on daily to deliver municipal services across 2790 km². The fleet includes a wide variety of units ranging from compact By-law cars to the compactor at Trail Road landfill weighing in at just over 60 tonnes. The current replacement value of the fleet is estimated at approximately \$495 million. The detailed breakdown of the existing fleet is shown in Table 1 below.

Table 1: 2022 municipally owned fleet breakdown by classification

| Classification | Total Number of Fleet Units | Total Current Replacement Value |
|-----------------------|------------------------------------|--|
| Ambulances | 90 | \$23,000,000 |
| Fire Trucks | 115 | \$149,000,000 |
| Heavy Vehicles | 471 | \$142,000,000 |
| Light Vehicles | 914 | \$68,000,000 |
| Equipment | 1235 | \$113,000,000 |
| Total | 2,825 | \$495,000,000 |

To ensure the municipal fleet is made up of the right number, size and type of vehicles and equipment to support City operations, Fleet Services assesses every vehicle and piece of equipment in the fleet through a comprehensive review at each annual client meeting. This review considers the age, use, and maintenance costs of the service's existing fleet, the future needs of the service, and consideration of marketplace availability.

In addition to this regular review to ensure the municipal fleet is made up of the right numbers and types of vehicles and equipment, it's critical to ensure vehicles and equipment coming to the end of their life cycle are replaced at the optimal point.

Replacement at the optimal point in the life cycle has many benefits including that the operating cost will be at its lowest point and the vehicle reliability is protected by minimizing on-the-road failures and maximizing vehicle availability.

Replacement vehicles also typically have lower greenhouse gas (GHG) emissions due to improved technology and the shift to hybrid or electric vehicles where available. This contributes to meeting the Council-approved target established in the Climate Change Master Plan ([ACS2019-PIE-EDP-0053](#)) to reduce GHG emissions from City operations based on 2012 levels by 30 percent by 2025, 50 percent by 2030, and 100 percent by 2040.

Conversely, deferring vehicle replacements beyond the optimal point in their life cycle has negative impacts such as, rapid increase of operating costs which is especially dramatic for heavy equipment; capital investment for required replacements is only deferred, not eliminated; vehicle resale value declines or is eliminated; and vehicle downtime increases.

The following chart illustrates the value of replacing vehicles at the optimal point in their life cycle, given that operational costs and failure risks associated with the asset increase with age, while the condition of the asset decreases.

Figure 1: Asset life cycle cost analysis

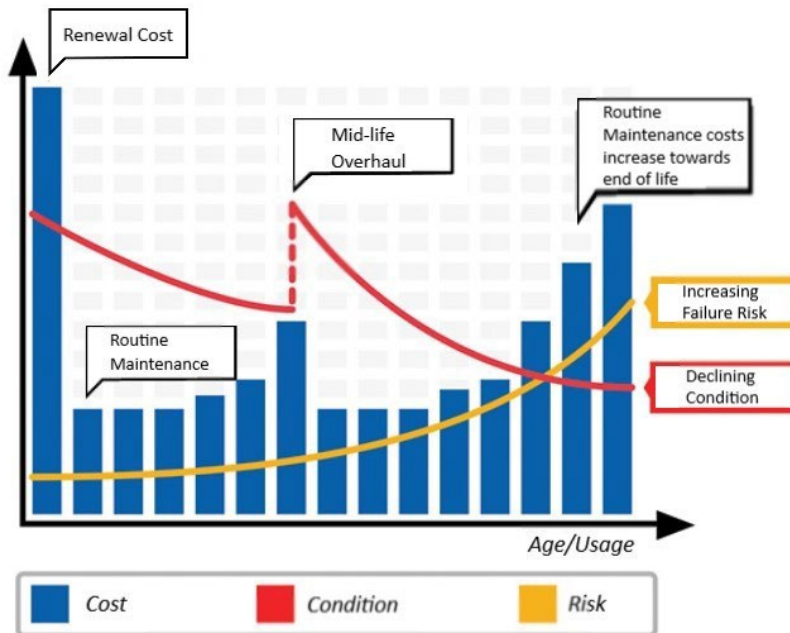


Figure 1: Asset Life Cycle Cost Analysis
(Source: The Institute of Asset Management, Asset Management – An Anatomy, Version 2, July 2014, Page 27, ISBN 9781908891044.)

Fleet Services uses the Fleet Funding Model tool that considers age, usage, and maintenance costs to identify the optimal replacement point for each type of unit in the municipal fleet. In 2021, Fleet Services reviewed and updated the threshold replacement age used by the model in response to the rising costs and operational disruption caused by the aging fleet. These updated values are based on a review of industry standards and the maintenance costs and performance of fleet units. For example, light fleet units are now planned to be replaced at 10 rather than 12 years of use.

The thresholds for replacement of a fleet unit vary by type and use, for example:

- **Combo trucks:** 10 years old, 250,000 kilometers, or cumulative maintenance cost exceeds the cost to replace (~\$360,000). Note: Combo trucks travel about 20,000 kilometers per year, and maintenance costs typically exceeds \$50,000 per year as they approach the 10-year threshold.

- **Cars, pick-ups, and vans:** 10 years old, 225,000 kilometers, or cumulative maintenance cost exceeds the cost to replace (~\$35,000 to \$48,000). Note: light vehicles travel about 10,000 to 20,000 kilometers per year.
- **Front end loaders:** 15 years old, 12,000 engine hours, or cumulative maintenance cost exceeds the cost to replace (~ \$500,000 to \$600,000). Note: heavy equipment works about 900 hours per year, and annual maintenance cost are approximately \$20,000 to \$25,000 beyond five years of operation.

The Fleet Funding Model's calculation of optimal replacement considering costs and benefits results in a recommended 2023 funding envelope of \$34,997,000 to replace a total of 221 vehicles and pieces of equipment in the Municipal Fleet. All of the units to be replaced in 2023 are at end of life. The recommended funding envelope in 2023 is related to the larger number of specialized pieces of heavy equipment due for renewal, specifically, fire trucks, graders and combo trucks.

This investment will ensure the reliability of the fleet to support the critical services the City provides every day. An additional benefit of this investment is the avoidance of maintenance costs by a projected amount of up to \$1.7 million annually given the age and condition of the City's fleet; and rental costs by a projected amount of \$1 million annually. Rental vehicles would be required to replace light vehicles that are not available to support operations due to ongoing repairs or their condition. As previously mentioned, if the investment is not made, the need for capital is deferred to the next budget year and not eliminated.

Of note, 73 of the 221 vehicles were part of previous replacement plans. The purchasing of these units was deferred and has therefore been incorporated into this plan as part of a capital funds review. A key reason for the deferrals was the lack of availability caused by COVID-19 related supply chain issues. The allocated funds were committed to other units on the previous replacement plan and to cover increased costs of vehicles as a result of the supply chain shortages stemming from COVID-19.

After the initial thresholds are applied by the funding model, staff adjust the timeframes to match resourcing levels, stagger replacements to support operations, time replacement purchases to capitalize on external funding, or take advantage of a new or upcoming replacement option that would further the City's goals regarding service delivery, fiscal responsibility, and reduction of GHG emissions.

Green Options and Supply Chain

Staff have reviewed available hybrid and electric options which meet the needs of the operations and identified 38 units for possible replacement with green alternatives.

The 38 units that have the ability to be replaced with hybrid and electric models could result in more than 563 fewer tonnes of GHG emissions over their life cycle. The initial capital cost of hybrid and electric vehicle purchases is higher than their traditional fuel counterparts with those increased costs reflected in the replacement plan. Future operating costs should offset the initial increased capital cost throughout the lifecycle of the vehicle.

Due to significant market constraints because of supply chain limitations caused by the pandemic, green unit availability continues to be limited. Vehicle manufacturers are anticipating that supply chain shortages will continue over the next two to three years affecting the availability of hybrid and electric vehicles. Until such time that the automotive market stabilizes, it may be required that hybrid or electric units that are up for lifecycle, are replaced with a traditional fuel vehicle to meet operational needs and maintain City services. However, every effort will be made to defer the acquisition of traditional fuel vehicles where a hybrid or electric vehicle has been identified as the replacement, unless the replacement is deemed critical to enabling service continuity. With these challenges, staff forecast approximately 10 to 20 per cent of identified green units will be delivered in 2023.

In the current purchasing climate staff continue to work closely with all vendors on the Light Fleet Standing Offer List to ensure the City is made aware of when green units may become available. Through this work, Fleet Services was able to purchase three hybrid and three electric SUV's and seven hybrid half ton pick-up trucks in 2022.

Summary of 2023 Municipal Fleet Vehicle and Equipment Replacement Plan

Specific vehicles and equipment to be replaced are set out in detail in Document 1 – 2023 Municipal Fleet Vehicle and Equipment Replacement Plan and summarized in Table 2 below.

Table 2: Municipal Fleet Vehicle and Equipment Capital Replacement Summary

| Municipal Fleet Vehicle and Equipment Capital Replacement Summary | | |
|--|-----------------|---------------------------|
| 2023 | | |
| Classification | Number of Units | Current Replacement Value |
| Ambulances | 19 | \$4,845,000 |
| Fire Trucks | 7 | \$6,400,000 |
| Heavy Vehicles | 19 | \$6,220,000 |
| Light Vehicles | 58 | \$5,119,000 |
| Equipment | 45 | \$4,968,000 |
| Total | 148 | \$27,552,000 |
| Previous Years | | |
| Classification | Number of Units | Current Replacement Value |
| Heavy Vehicles | 10 | \$2,045,000 |
| Light Vehicles | 39 | \$2,914,500 |
| Equipment | 24 | \$2,485,500 |
| Total | 73 | \$7,445,000 |
| Combined Total | 221 | \$34,997,000 |

2. 2023 Municipal Fleet Vehicle and Equipment Growth Plan

Fleet Services worked with City departments to identify growth to the fleet required to meet the City's service delivery requirements. The 2023 Municipal Fleet Vehicle and Equipment Growth Plan includes eleven new units for all City departments. Of note, two of the growth units are message sign boards with green options for five of the other nine growth vehicles. An evaluation will be undertaken on the five vehicles to determine if a green alternative will meet operational needs.

These new units are reflected in the Draft Budget 2023 and represent an additional \$1,097,000 in capital costs and annual estimated operating costs of \$330,000. Document 2 – 2023 Municipal Fleet Vehicle and Equipment Growth Plan provides the estimated capital acquisition cost as well as the estimated annual operating cost for each of the units.

Advanced Funding Exercised in 2022

Under delegated authority exercised by the City Treasurer, early procurement of up to \$12,460,000 worth of vehicles and equipment identified in the replacement plan was placed in late 2022.

The advance order includes 55 vehicles, including 14 combination trucks, 19 ambulances and 22 Paramedic ERV's. These vehicles require advance ordering to accommodate for long build times, particularly during these times of unprecedented delays due to the impact of the COVID-19 pandemic on manufacturing and supply chains.

FINANCIAL IMPLICATIONS

The Draft 2023 Operating and Capital Budgets will include these expenditure items and will be tabled following the 2023 City of Ottawa Budget Process. The purchase of these vehicles and the associated costs are subject to the approval of Council as part of the 2023 City Budget.

LEGAL IMPLICATIONS

There are no legal impediments to receiving the information in this report.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a City-wide report.

ADVISORY COMMITTEE(S) COMMENTS

No advisory committee comments were collected for the purposes of this report.

CONSULTATION

This report did not require public consultation and is subject to the overall consultation processes of the Draft 2023 Budget process.

ACCESSIBILITY IMPACTS

Staff will ensure that applicable accessibility standards are adhered to during the execution of the Municipal Vehicle and Equipment Capital Replacement Plan.

ASSET MANAGEMENT IMPLICATIONS

The recommendations documented in this report are consistent with the City's [Comprehensive Asset Management \(CAM\) Program](#) objectives. The implementation of the Comprehensive Asset Management program enables the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable levels of service to community users. This is done in a socially, culturally, environmentally, and economically conscious manner.

CLIMATE IMPLICATIONS

The City is committed to replacing older fleet vehicles with new vehicles that have better fuel efficiency and less greenhouse gas emission impacts (where market availability allows), assisting in meeting the Council-approved targets to reduce GHG emissions from City operations based on 2012 levels by 30 per cent by 2025, 50 per cent by 2030, and 100 per cent by 2040. For example, the 38 light fleet units that are planned to be replaced with hybrid and electric models could result in more than 563 fewer tonnes of GHG emissions over their life cycle.

DELEGATION OF AUTHORITY IMPLICATIONS

Under delegated authority exercised by the City Treasurer, early procurement of up to \$12,460,000 worth of vehicles and equipment identified in the replacement plan was placed in late 2022. This exercise of delegated authority is in accordance with the Delegation of Authority By-Law Schedule B.

RISK MANAGEMENT IMPLICATIONS

Risk considerations have been addressed in the recommended plan within the 2023 Draft Budget process.

TERM OF COUNCIL PRIORITIES

This report supports key priority areas of Sustainable Infrastructure: Ensure sustainable investment to meet the future growth and service needs of the City of Ottawa. Fleet assets are effectively managed through evidence-based decisions using the Fleet Funding Model tool to prioritize investment. The investment recommended is required to meet long-term growth, renewal and service needs. This year's review was conducted with the updated Fleet Funding Model tool using detailed data as well as industry standards and best practices to ensure that the funding gap is reduced and going forward funding will be predictable and sustainable.

This report also supports Council's strategic priorities of Integrated Transportation (Transportation infrastructure investment is sustainable and meets long-term needs), and Environmental Stewardship (reducing greenhouse gas output and embedding climate change considerations across all operations).

SUPPORTING DOCUMENTATION

Document 1 – 2023 Municipal Fleet Vehicle and Equipment Replacement Plan

Document 2 – 2023 Municipal Fleet Vehicle and Equipment Growth Plan

DISPOSITION

The Finance and Corporate Services Department will implement the recommendations as approved by Council.