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TORONTO

STAFF REPORT
ACTION REQUIRED

Vehicle Capital Reserve Contributions Shortfalls

Date:	December 16, 2014
To:	Budget Committee
From:	Director, Fleet Services, and Director, Financial Planning
Wards:	All
Reference Number:	P:\2015\Internal Services\Fleet\bc15001Fleet - (AFS20627)

SUMMARY

This report provides a status update on the recommendations outlined in the staff report titled Vehicle Capital Reserve Contribution Shortfalls, dated November 21, 2013. The report projected the City's Vehicle and Equipment Replacement Reserve will be in a deficit position of $5.004 million by 2017 and highlighted the potential growth to the City's vehicle replacement backlog and increase in age of the vehicles due to the lack of adequate funding.

Following the November 2013 Report, Fleet Services and Financial Planning have developed and began to implement a strategy consisting of three point action plan in order to attain a multi-year plan that will eliminate the backlog of vehicle replacements and fund each division's optimal vehicle replacements requirements.

The strategy has already yielded positive results. Overall, the deficit balance of the Reserves has improved from the forecasted deficit position of $5.004 million at the end of 2017, to the current forecasted deficit position of $0.698 million at the end of 2019. As the strategy continues to be implemented, it will address the forecasted deficit prior to 2019 by optimizing replacement requirements with lifecycles, change in business practices, and balancing contributions with optimal replacements.

Replacing vehicles and equipment based on optimum life is one of the key pillars of a good fleet optimization model. As an asset begins to reach high operating hours and/or kilometres, unscheduled downtime and associated maintenance costs can begin to escalate. Timing of the replacement of vehicles and equipment is impacted by vehicle type, and the nature and intensity of its use. Effective lifecycle analysis and timely replacement are important for controlling vehicle costs, availability, reliability and safety.

RECOMMENDATIONS

The Director, Fleet Services Division, and Director, Financial Planning, recommend that the Budget Committee receive this report for information.

Financial Impact

In 2014, the budgeted contribution to the Vehicle and Equipment Replacement Reserves were in excess of planned replacements (withdrawals) by $1.855 million (Table 1).

In 2015, planned replacements are expected to exceed contributions to the City Vehicle and Equipment Replacement Reserves by $25.726 million. This is a result of deferred vehicle replacements from previous years that will be due for replacement starting in 2015. There is no immediate financial impact on the 2015 Operating Budget as there are sufficient funds in the Reserve to cover planned expenditures.

In 2016, even with proposed changes to the divisional contribution levels, planned replacements are expected to exceed contributions to the City Vehicle and Equipment Replacement Reserves by $24.253 million as a result of deferred replacements and the lead time required to procure specialized vehicles. There are sufficient funds in the Reserve to cover planned expenditures.

The total balance of the City Vehicle and Equipment Replacement Reserves will be in a deficit position of $0.698 million at the end of 2019 based on current service needs.

Table 1 – 2014 – 2024 Corporate Vehicle & Equipment Reserve Summary (000's)

Year	Projected Opening Balance	Planned Contribution	Estimated Capital Plan	Net Contribution (Shortfall)	Projected Closing Balance
2014	62,855	33,280	(31,425)	1,855	64,710
2015	64,710	39,419	(65,145)	(25,726)	38,984
2016	38,984	35,616	(59,869)	(24,253)	14,731
2017	14,731	37,143	(37,330)	(187)	14,544
2018	14,544	37,008	(39,581)	(2,573)	11,971
2019	11,971	36,701	(49,370)	(12,669)	(698)
2020	(698)	36,376	(44,906)	(8,530)	(9,228)
2021	(9,228	36,362	(34,552)	1,810	(7,418)
2022	(7,418)	36,605	(61,548)	(24,943)	(32,361)
2023	(32,361)	36,655	(51,800)	(15,145)	(47,506)
2024	(47,506)	36,655	(38,764)	(2,109)	(49,615)
Total	**62,855**	**401,820**	**(514,290)**	**(112,470)**	**(49,615)**

DECISION HISTORY

At its meeting held on September 9, 2013, the Government Management Committee, in considering item GM24.15 – *2014 Service Level Review – Government Management Committee Programs*, adopted a recommendation requesting that "the Chief Corporate Officer report back to the Government Management Committee on which divisions have not been committing sufficient capital reserve contributions for vehicle replacements and also what the replacement/sustainability concerns and increased costs are."

The report decision can be accessed at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.GM24.15

In response to the above recommendation, (November 21, 2013) the Director of Fleet Services provided a report entitled *Vehicle Capital Reserves Contributions Shortfalls* (Reference Number: P:2013\Internal Services\Fleet\GM13002Fleet – (AFS 18279)) to the Government Management Committee. Fleet Services, in collaboration with Divisions and Financial Planning, was directed to develop a financing strategy which fully funds and optimizes the replacement of vehicles for all affected divisions.

ISSUE BACKGROUND

The Fleet Capital Replacement Plan is funded from the respective Program and Agency Vehicle and Equipment Replacement Reserves. The Reserves are financed annually by the Programs' budgeted contributions from their Operating Budgets. Vehicle and Equipment Replacement Reserves are established in accordance with the Municipal Code, Chapter 227, Article II, with the intent to promote efficiencies and to provide budget stabilization by moderating large fluctuations in annual replacement of vehicles and equipment. Fleet Services manages the vehicle and equipment procurement for 21 City Programs and Agencies. The Vehicle and Equipment replacement for Fire Services, Toronto Paramedic Services and Toronto Zoo are reported through Fleet Services, and Fleet Services is working closely with these Programs on addressing their vehicle and equipment replacements and ensuring adequate funding is available in the reserves. These Programs, however, procure and manage their own vehicles and equipment.

In 2005, City Council directed all Programs, commencing in 2006, to commit to the policy of contributing to the Vehicle and Equipment Replacement Reserve for all new purchases. Fleet Services was to establish the reserve contribution amount based on the following formula:

$$\frac{\text{[Future replacement cost] less [End of life salvage value]}}{\text{Projected useful life (years)}} = \text{Annual Reserve Contribution}$$

The reserve contributions ensure that adequate funds are available to facilitate the continued replacement of vehicles and equipment. The timely and continued replacement of vehicles and equipment strikes the optimum balance between depreciating asset value, resale value, rising repair costs, and decreased reliability.

The City is using an established replacement age for each category of vehicles as a guideline for budgeting purposes. Vehicle life-cycle cost, however, is regularly monitored and analyzed to determine the actual vehicle and equipment replacement point. For fleet replacements managed by Fleet Services, monthly contribution rates have been established for licensed vehicles and equipment. Programs with off-road vehicles and equipment such as backhoes, tractors, and mowers, are required to make additional provisions in their annual reserve contributions for the future replacement of these units.

City vehicles and equipment are assets used to deliver City's services. Thus, the primary objective is that vehicles and equipment are safe and reliable to provide the necessary functionality at an economical cost.

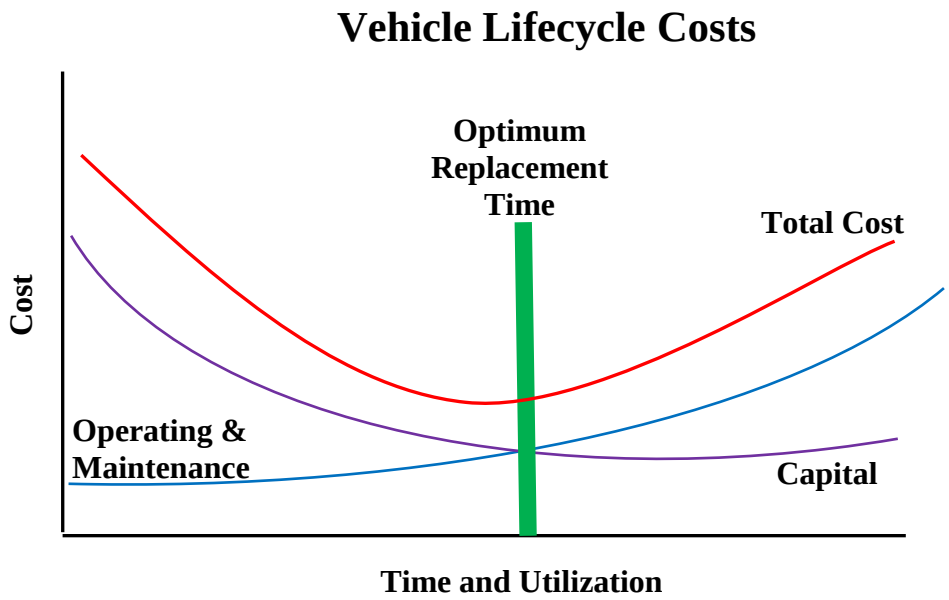
Inadequate replacement increases the age and operating cost of fleet which results in the accumulation of replacement needs. One of the challenges of managing a reserve fund is calculating and maintaining charge-back rates that will ensure ongoing adequate reserve fund levels.

Insufficient charge-back rates or inadequate reserve contributions will create a growing backlog of future replacement costs. Accordingly, this increases fleet age and operating costs while potentially decreasing fleet safety, availability and reliability.

Replacing units based on optimum life is one of the key pillars of a good fleet optimization model. As the asset begins to increase in age and/or reach high operating hours or kilometres, unscheduled downtime and associated maintenance costs can begin to escalate.

The economic theory of vehicle replacement is that vehicles should be replaced when annual operating costs begin to outweigh annual capital costs - this is at the point when the total cost curve begins to turn upward (Figure 1).

Figure 1 – Economic Theory of Vehicle Replacement



Delaying replacement much beyond this point causes total vehicle costs to rise, making a fleet more costly to own and operate.

A recently conducted Fleet Services analysis of a small segment (394 units) of light duty vehicles shows a potential financial impact of extended vehicle life cycles (Table 3).

Table 3 – Financial Impact of Extended Vehicle Life Cycle (10 Year Period)

10 Year Vehicle Replacement Plan (394 Light-Duty Vehicles)	Option 1 (Replacing based on life-cycle analysis)	Option 2 (Extending life cycle – deferred replacements)	Option 1 vs. Option 2 Overall Financial Impact
Total Units Replaced	316	270	
Capital Cost	$14,709,012	$10,252,164	$4,456,848
Operating Cost	$62,965,670	$80,911,785	($17,946,115)
Overall Cost/(Savings)	**$77,674,683**	**$91,163,949**	**($13,489,267)**

This analysis clearly shows the direct financial benefits of maintaining regular replacement schedules (Option 1) compared to deferred replacement (Option 2). The net savings are estimated to be $13.5 million over a 10 year period (for the select segment of 394 light-duty vehicles). In this example, Option 1 maintains the average vehicle age of 5.5 years compared to Option 2 with an average vehicle age of 7.5 years.

In addition to the above mentioned tangible impacts of an aging fleet, age of City vehicles and equipment may impact public perception, opinion, and confidence in the City and its ability to provide reliable, timely, community-minded services.

COMMENTS

The November 2013 report, *Vehicle Capital Reserves Contributions Shortfalls* (GM26.14), identified a projected deficit in the Vehicle and Equipment Replacement Reserve of $5.004 million by 2017. The projected deficit suggested replacement of the City's inventory of vehicles may require deferral, thus increasing the backlog of replacements and average age of the fleet. In addition, the report raised concerns over the condition and availability of vehicles due to increased downtime and the affects to service delivery, and escalating operating costs if they are not replaced in a timely manner.

The following provides a status update on the actions to date.

Recommendation 1:

1. *City Council request the Director, Fleet Services in conjunction with Director, Financial Planning to develop a financing strategy to determine a minimum vehicle reserve balance, which fully funds and optimizes the replacement of vehicles for all affected divisions. The strategy is to be incorporated into the 2015 Budget submission process. Options may include;*

    - *The utilization and rationalization of the current fleet complement*
    - *Extending vehicle life cycles*
    - *Increasing reserve contributions*
    - *A combination of the above.*

In response to the above recommendation, Fleet Services and Financial Planning have developed and begun to implement a strategy consisting of a three point action plan in

order to attain a multi-year plan that will eliminate the backlog of vehicle replacements and fund each division's optimal vehicle replacements requirements.

Action #1: Align Cash Flow Funding with Vehicle Delivery Plans

This involves understanding the divisions' and agencies' operational requirements, analyzing usage and lifecycles of vehicles, and reviewing procurement strategies to align cash flow funding with the delivery of vehicles.

The focus for the 2015 Budget process has been on the major contributors to the deficit and those with specialized fleets: Fire Services, Transportation Services, Solid Waste Management Services, and Toronto Water. Fleet Services and Financial Planning Division staff have worked closely with these divisions to align their cash flow funding for vehicle replacements with vehicle procurement plans, thereby better matching budgeted contributions to actual replacement spending.

A great deal of work with Fire Services took place during the 2015 Budget process to review their backlog of vehicle replacements. A replacement plan that meets their requirements and matches capital replacements with actual spending and delivery plans was developed. As a result of this work, Fire Services will be taking delivery of 21 fire trucks in 2015 and 28 in 2016, and the Program's 2015 Recommended Operating Budget will see increases in their contributions to the Vehicle & Equipment Replacement Reserve beginning in 2015, and by increments of $500,000 in each of the following two years, for a total increase of $1.5 million by 2017. This will allow Fire Services to eliminate the current backlog of their fire trucks within the next five years.

A review of Transportation Services, Solid Waste Management Services (SWMS), and Toronto Water Services vehicle replacement needs has resulted in the deferral of some of their replacement vehicles based on operational requirements and a better alignment of forecasted cash flow funding to actual experience. In 2015, SWMS will take delivery of 46 garbage collection trucks to replace those in critical need. With the exception of SWMS increasing its contributions to the reserve by $5 million in 2015, all three divisions are able to maintain fixed contribution levels over the 10 year plan to 2024.

As a result of the above efforts during the 2015 Budget process, the most recent reconciliation of the Vehicle and Equipment Reserves indicates that the total reserve will maintain a positive balance for the end of 2014, and through to 2018. By the end of 2019, however, the total balance of the City Vehicle and Equipment Replacement Reserves will be in a deficit position of $0.698 million (Table 1). This represents an improvement of the original forecast provided with the November 2013 Staff Report that forecasted a deficit of $5.004 million by the end of 2017.

The attached Appendix 1 – 10 Year Vehicle Replacement Reserve Forecast (2014-2024) summarizes each Program's reserve account over the 10-year capital planning period. The 2015 estimated contribution levels reflect those included in the Programs' Staff Recommended Operating Budgets are based on each Program's 2015 Budget and the

amounts are based on estimates provided by Financial Planning Division and the Programs.

A review of each Division and Agency's reserve account has also identified those with projected negative reserve balance in future years. Table 2 lists these Divisions and Agencies which are forecasted to have deficits, and the year this deficit is projected to occur. For 2016, 2017 and 2018, divisions with projected deficits are offset by other divisions' reserve balances until the implementation of the strategy.

Table 2 – Projected Reserve Shortfalls

Division	Projected Deficit Year	Projected Deficit (000s)
Parks, Forestry & Recreation	2016	(984)
Toronto Community Housing Corp.	2016	(440)
Transportation Services	2016	(129)
Fleet Services	2018	(204)
Toronto Water	2019	(1,549)
Toronto Paramedic Services	2020	(455)
Solid Waste Management	2022	(4,294)

In 2015, Fleet Services and Financial Planning will continue to work with the remaining Divisions and Agencies on aligning cash flows with actual spending and delivery of vehicles, and ultimately determining a funding strategy which fully funds and optimizes the replacement of vehicles for all affected Divisions and Agencies.

As well, there will be a change to the business process. Vehicle replacement business case submission deadlines will be accelerated from September to May for the 2016 Budget process. This is expected to eliminate the year-end business case backlog that occurs annually due to the proximity of timing with the budget process. It will also provide additional time to review and understand requirements, develop specifications and accelerate the delivery of vehicles. The accelerated schedule will maximize the number of divisions that will go through the review (Action Item #1) to improve alignment of cash flow funding with requirements and actual delivery of vehicles for the 2016 Budget process.

Action Item #2 - Lifecycle Analysis

Changing operational requirements and vehicle and equipment demands, combined with new models of vehicles, means that optimal replacement time is a moving target that requires frequent evaluation. With technological advancements, Fleet Services has implemented additional reporting and system enhancements to assist with regularly monitoring and analyzing vehicle life-cycle cost. This will help to ensure that vehicle and equipment replacement is increasingly aligned with the optimal replacement time.

Maintaining optimal replacement practices helps ensure alignment between resource requirements and demand. This helps to keep costs to a minimum while also reducing vehicle downtime. With a reduction in vehicle downtime, Fleet Services will be in a

better position to advance fleet rationalization efforts, including vehicle rightsizing, sharing and utilization.

Fleet Services has already identified small segment of vehicles whose life cycle, due to their operational requirements and use, can be extended past those initially established, and will be adjusting replacement schedules to reflect these extensions in the 2016 Budget process. For the majority of other City vehicles and equipment, however, extending life cycles beyond those currently would increase vehicle operating costs, and impact vehicle availability and reliability.

Action Item # 3 – Develop a Multi-Year Funding Plan

As the Divisions' and Agencies' replacement requirements are reviewed, information on their operational requirements, optimal replacement schedules, and lead time required to procure and take delivery of vehicles will be made available.

The multi-year plan will be developed based on the reviews with each division/agency individually and collectively to optimize replacements and minimize operating and capital costs while ensuring operational requirements are met. The plan will align contributions to the Vehicle and Equipment Replacement Reserve with optimal replacement requirements for all divisions and agencies.

Recommendation 2:

City Council request the Director, Fleet Services to establish a monthly replacement reserve contribution for all off-road vehicles and equipment and that the Director, Fleet Services in consultation with Director, Financial Planning determine the feasibility of including such contributions as part of the 2015 Operating Budget Process.

The majority of off-road equipment such as backhoes, tractors, and mowers are funded through a one-time annual contribution as needed. In response to the above recommendation, Fleet Services, in consultation with Financial Planning, is working on establishing a monthly replacement reserve contribution for all off-road vehicles and equipment. This new contribution is planned to be part of the 2016 Budget process and will be modelled after the revised plan for on-road vehicles.

Recommendation 3:

City Council request the Director, Fleet Services to continue to lead and educate Divisions on proper use and maintenance of vehicles in order to maximize useful life, minimize operating costs and maintain safety standards.

Fleet Services continues to provide training and education to client Divisions on proper use and maintenance of vehicles and equipment. Through effective vehicle and lifecycle management, Fleet Services, in conjunction with the Divisions, have been able to maximize asset lifecycles, which has mitigated the incurrence of any increased costs while meeting safety standards.

The timely replacement of vehicle and equipment assets must continue in an effort to ensure that increased operating costs are not unnecessarily incurred as a result of delayed replacement.

The three point action plan developed and implemented during the 2015 Budget process does not just inject additional funding into the Vehicle and Equipment Replacement Reserve. Increasing reserve contributions alone will have budget and tax impacts which must be balanced against all competing City needs. Instead, it balances increasing contributions with optimal replacements of vehicles. This is done so by reviewing operational requirements, vehicle lifecycles and potential opportunities for consolidation of fleets, and aligning cash flow funding with when replacements are required and procurement realities. This ongoing process will ensure adequate vehicle and equipment reserves are in place that will meet City's future vehicle and equipment replacement needs.

The overall Vehicle and Equipment Replacement Reserves balance is now expected to remain in a positive position until 2019.

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ATTACHMENTS

Appendix 1 – 10 Year Vehicle Replacement Reserve Forecast (2014-2024)