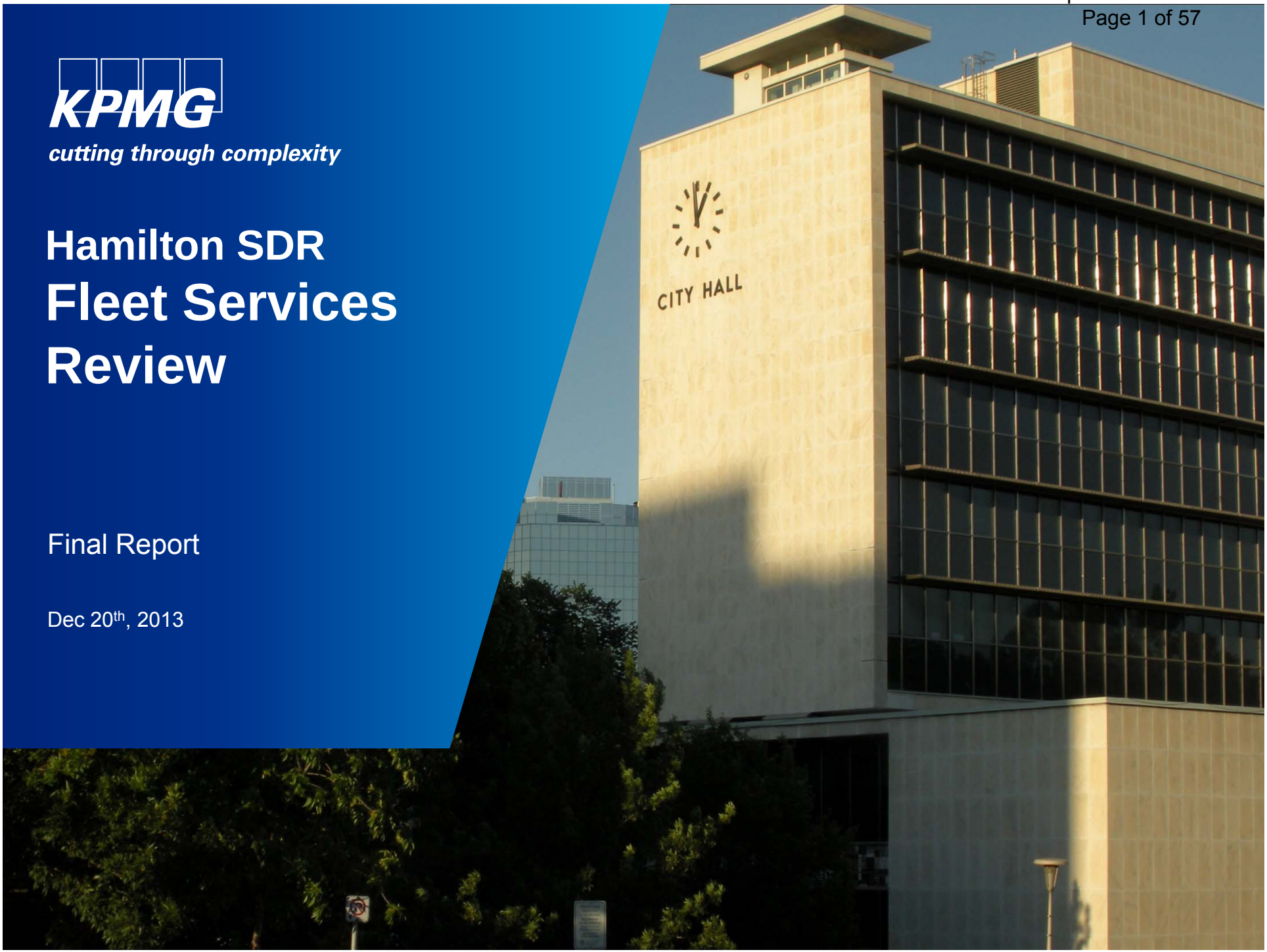
KPMG
cutting through complexity

Hamilton SDR Fleet Services Review

Final Report

Dec 20th, 2013



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Summary of Recommendations

This report considers a number of opportunities identified by the Service Delivery Review conducted by the City of Hamilton in 2012

1) A Sustainable Fleet Reserve

Recommendations 1 to 5 deal with the most important challenge Fleet Services faces, and the biggest opportunity for improvement.

Buying vehicles at the right time will reduce the total cost of vehicle ownership and improve the efficiency and effectiveness of the operating departments

A debt financing model will facilitate this, and free up capital for other city priorities

Following review of five aspects of Fleet Services, the following recommendations are provided for your review. The rationale for each is provided in the report which follows

1. That the City adopt a debt financing model for financing its Fleet

- The Finance Department should consider from time to time whether it is more beneficial to fund vehicles through internal loans, or arrange with its bank to use the line of credit
- The financing of each vehicle should include a mark up of 4.8% that will be used to finance the role of Fleet Services in the procurement process (and disposal of any retiring vehicle)
- The costs of debt payments will be charged to the user department
- The finance payments will assume an appropriate salvage value for the vehicle at the end of its life, and the user department will be responsible for, or credited with, any net value after the vehicle is disposed

2. That the transition process be handled as follows

- That each existing vehicle be assigned a loan to the extent of its current undepreciated value until the value of the payments required in 2014 equal the 2013 reserve contribution of the user (other vehicles will not have loans attached, with the result that the maximum increase in 2014 for any user department would be the loan cost of any new vehicle acquisitions, and the increased tax requirement will be phased in as the vehicles without loans are replaced)
- That the Finance Department consider on a corporate basis whether the existing reserve balance should be used to reduce other debts, or applied to other purposes

3. The City adopt the goal of achieving minimum life cycle costing for vehicle use.

a) Fleet Services is to complete its project to analyze the appropriateness of current planned lifetimes,

b) Fleet Services is to ensure consistent review, in consultation with users, of vehicles approaching retirement for possible early or late retirement based on usage levels and maintenance history, and

c) Fleet Services is to ensure consistent review, in consultation with users, of early retirement options for vehicles facing major repair expenses late in their planned life.

4. That all vehicle purchases be based on a business case analysis by Fleet Services (in consultation with users), signed off by the Director of the user department

5. That Fleet Services be directed to conduct a full service lease pilot project generally consistent with the approach described on page 28

Summary of Recommendations

2) Competitive Service Provider

Recommendations 6 and 7 will make Fleet Services more responsive to its customers

3) In-House vs. Outsourced Services

The City outsources many vehicle repairs now. It needs to analyze the cheapest approach regularly, and can improve how it outsources when in does (recommendations 8 to 11)

4) Outsourcing Parts Management

Recommendations 12 to 14 outline a process for measuring the current performance and determining if outsourcing should be pursued

6. **That Fleet Services have the explicit authority to adapt services and service levels to particular customer requirements and the authority to adopt a variety of charging approaches as required to reflect and recover the costs of providing the different service levels**
7. **That vehicle and equipment users have the option to arrange for some of the fleet services they require from other sources, but only with the approval of the City Manager, and only if they continue to use the corporate FMIS and Training and Safety services required by legislation**
8. **That Fleet Services begin a program of systematically reviewing the range of services it outsources and the approach it takes to the contracting on a periodic basis. This should include a review of the Waste Collections maintenance contract after it has been in place for at least a year.**
9. **That future standing offers for maintenance contracts provide the opportunity for different contractors to serve different parts of the fleet based upon their location.**
10. **That the process for sending vehicles to contractors for maintenance be amended to have the vehicles picked up and dropped off by the contractor from the user location, rather than from Fleet Services, wherever possible, and to allow customers to leave and pick up vehicles at the contractor location, rather than the Fleet location in other cases.**
11. **That the implementation of the Hansen FMIS include the ability to compare actual to "book" hours for repair activities and the opportunity to receive and record electronic invoices from suppliers if possible**
12. **Continue the process to measure fill rates and inventory turns. At the very least this will facilitate monitoring and improvement of in-house operations.**
13. **In early 2015, when the results of the measurements are available and the results of the other initiatives discussed in this report are becoming clearer, begin a discussion with NAPA and competitive suppliers to determine the best approach to in Hamilton, taking into account current labour agreements, inventories, maintenance locations and strategies for outsourcing maintenance**
14. **Based on the outcomes of those discussions, the circumstances as they then exist, the performance of the parts group as measured, and considering the other effects noted by Ottawa and Toronto, conduct a business case analysis on the outsourced parts management concept and conduct a competition, if warranted.**

Summary of Recommendations

5) Fleet Rightsizing

A number of "low use" vehicles were identified and recommendation 15 identifies

15. That the following program be undertaken to identify specific opportunities for fleet rightsizing:

- Fleet Services prepares lists of vehicles and related data to be reviewed by each department (based on those presented in this report, with any updated information available to Fleet). Fleet should remove from the list any vehicles that have subsequently retired or which to its knowledge obviously meet the criteria for low usage vehicles
- Fleet Services documents suggested approach, incorporating the concepts above and any others Fleet Services can identify to help guide departments in their review, and setting timeframes for the process
- Fleet Services circulates the lists and suggested approaches to Departments, either to Directors or to individuals the Directors have assigned to conduct the review, offering to work with the department to review the lists and examine possible strategies to achieve cost reductions
- Each department shall prepare a document which discusses each vehicle on the list, identifying:
  - The low use vehicle justification category (a to e on page 54) that applies to the vehicle, with a sentence or two explaining how the criteria applies, or
  - The approach to be taken (e.g. 1 to 4 on page 54) to reduce fleet size and reduce costs, or
  - A detailed explanation of why the vehicle is required and none of the reduction options can be applied
- The report from each Department is to be approved and signed by the Department Head
- Each of the Department Reports is to be presented to the Steering Committee for approval
- The Fleet Review Steering Committee is to remain in place and receive regular reports from Fleet Services on the progress, to review department reports as they are completed and to encourage department participation when reports are not forthcoming

Fleet Review Mandate

The Service Delivery Review conducted by the City of Hamilton (the "City") in 2012 identified a number of opportunities with respect to Fleet Services that offered the potential for savings and/or service improvement.

- **A Sustainable Fleet Reserve**
- **Competitive Service Provider**
- **In-House vs. Outsourced Services**
- **Outsourcing Parts Management**
- **Fleet Rightsizing**

This Fleet Services Review was mandated to examine the following five opportunities, particularly the first two which had the highest ranking for potential impact:

1. **Fleet Replacement Reserve Sustainability: Move to a model of purchasing vehicles on credit and charge user departments the cost of the debt payments, and using lifecycle costing analysis to determine when vehicles should be retired.**
2. **Make Fleet Services a competitive service provider (users can buy service from Fleet or elsewhere)**
3. **Review the range of services provided in-house and those out-sourced**
4. **Outsource Parts Management for vehicle & equipment service and maintenance.**
5. **Review the use of City vehicles to ensure they respond to valid business case (usage rates, etc.)**

The report discusses each of these opportunities and how the City should proceed with respect to each of these opportunities.

Approach

This Draft Final Report is based on KPMG findings flowing from:

- **Interviews within the City of Hamilton;**
- **Comparisons with our previous Fleet Service benchmarking information from 7 Canadian cities; and**
- **Review of our Interim Report by the Steering Committee.**

The Review incorporated the following activities:

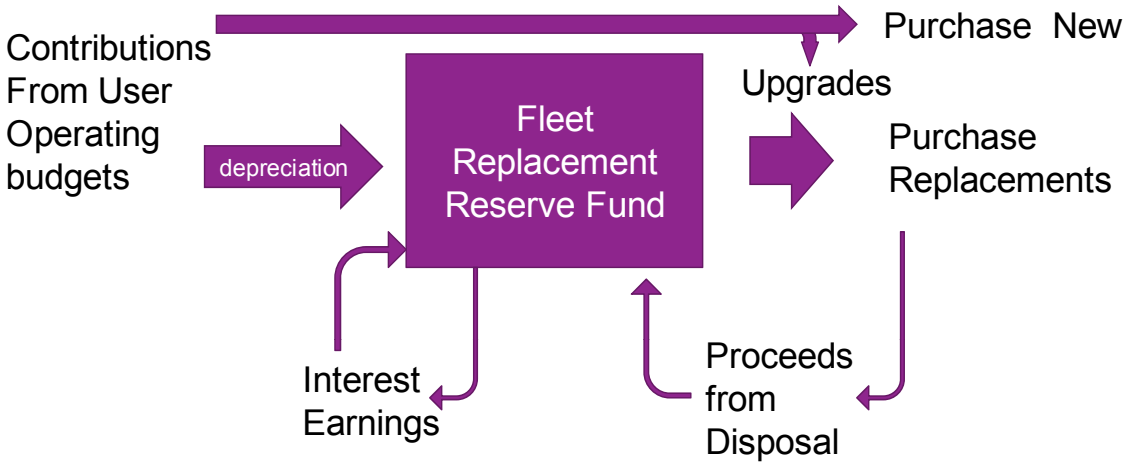
- Interview senior management of Fleet Services
- Interview representatives of Finance
- Conduct a workshop with and interview additional key customers
- Review existing documents and data relating to the Fleet Replacement Reserve, fleet size, usage, composition and age
- Collect data from Avantis and conduct analysis
- Review findings from our previous Fleet Services benchmarking processes particularly in Calgary (data from Calgary, Toronto, Winnipeg, Vancouver, Edmonton, Ottawa and Hamilton)
- Conduct targeted interviews with Fleet Managers in Ottawa
- Prepare Interim Report
- Review with the Steering Committee
- Analyze comments and input
- Prepare a Draft Final Report.

- *Review Draft Final Report with Fleet management and Steering Committee.*
- *Revise and submit Final Report*

Replacement Reserve Sustainability
A Sustainable Reserve Fund Model

The Fleet Replacement Reserve is intended to provide a reliable, sustainable way to fund vehicle purchases and a way to recognize the costs of buying vehicles over their life cycle, rather than all at once when they are acquired.

A sustainable model works as illustrated.



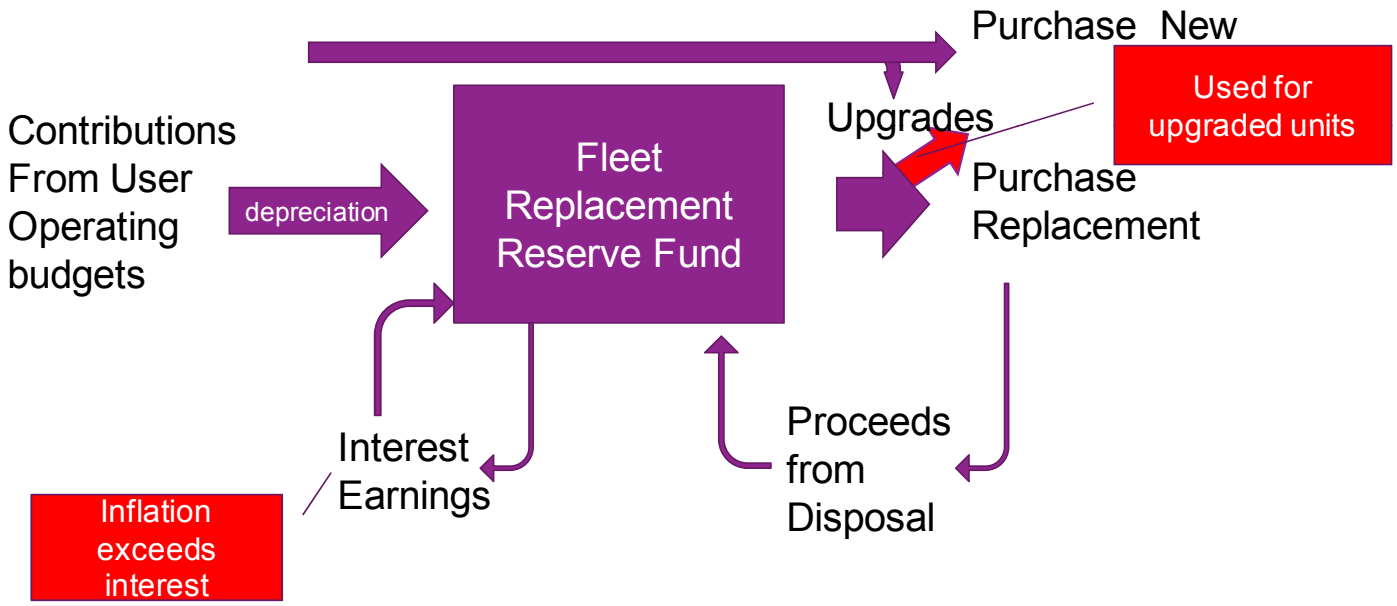
- The reserve concept is consistent with a “pay as you go” philosophy for capital costs.
- It does not require that funds be accumulated so the funds to replace each vehicle are actually in the reserve at all times. That would require having a cash balance equal to half the fleet value at any time – a poor use of resources.
- But it does require that the contributions equal the depreciation costs of the funded vehicles so replacements can be purchased.
- Purchases of vehicles to expand the fleet and the costs of significant upgrades must be funded from other sources, generally from the user.
- It is a REPLACEMENT reserve.

Replacement Reserve Sustainability
Things That Can Go Wrong (but haven't)

There are some theoretical constraints to the reserve concept

- **inflation can exceed the interest income,**
- **technological change and changing standards and expectations can make the replacement vehicles more expensive.**

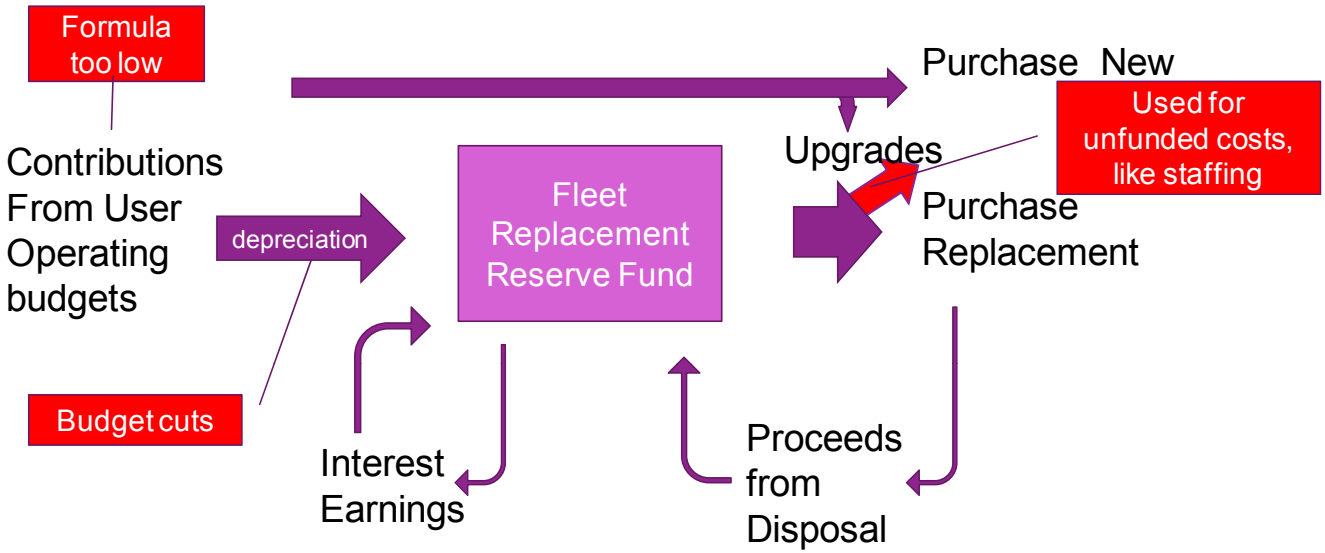
However, these have generally not been issues in Hamilton, at least in recent years, with vehicle cost inflation generally below the CPI



Replacement Reserve Sustainability
Things That Have Gone Wrong

Contributions are not at a sustainable level – and efforts to raise them have been subject to budget cuts

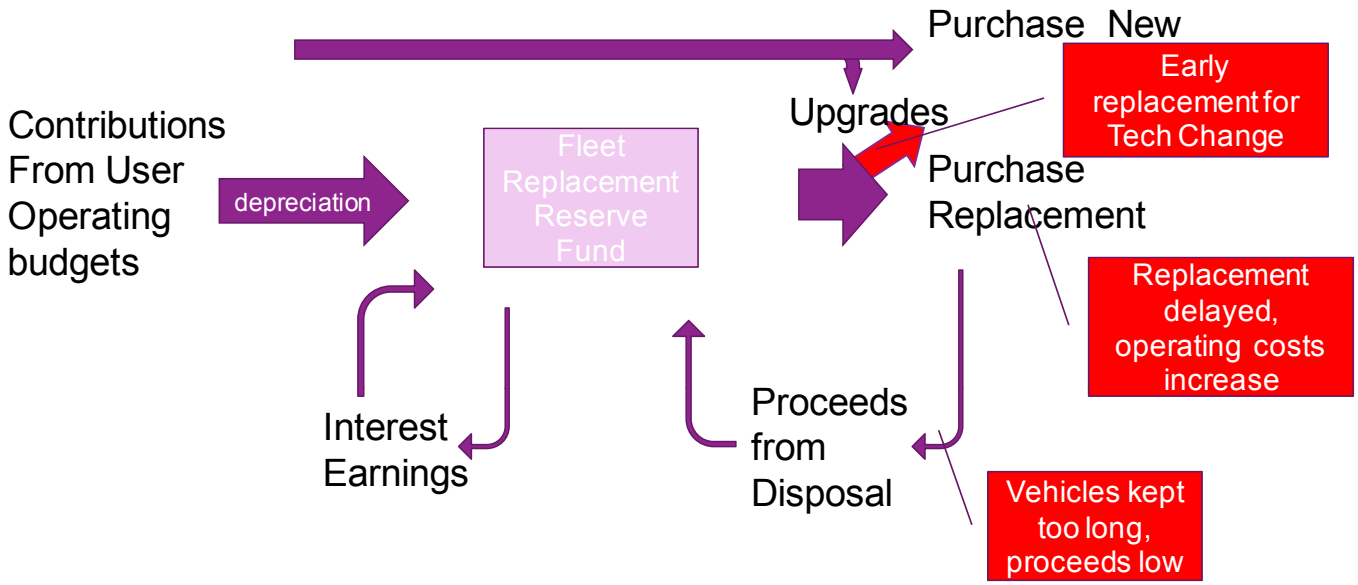
The reserve is being drawn for purposes that are not funded, depleting resources available for intended purposes



- Some departments, particularly Public Works, have never developed a consistent approach to resolving pre-amalgamation differences
- Efforts to return annual contributions to a sustainable level were themselves subject to budget cuts.
- The problem is not getting better too slowly – it is actually getting worse, and some sections of Public Works are now contributing about one-half the replacement cost of their vehicles, with the result vehicles cannot be replaced on schedule.
- The replacement reserve has also been used to fund some of the staff that acquire the vehicles, and it is planned to use the reserve to fund garage improvements, even though no funds are contributed for these purposes.

Replacement Reserve Sustainability
Things that Have Gone Wrong

As the fund diminishes, the pressure to delay replacements beyond the economic point grows, and the impact on operating budgets expands.



- Some vehicles have been replaced early as technological change offered potential operating savings, or have been replaced with more expensive units incorporating new technologies, using reserve funds rather than user capital contributions.
- Some vehicles have been kept too long, either because there are no funds for a replacement, or because there were no funds to expand the fleet as the city grew.
- This results in sale proceeds lower than assumed when contributions were calculated, and higher operating costs for Fleet customers as they must operate old, expensive vehicles and manage without vehicles – or expand the fleet further – to accommodate the impact of increased downtime.

Replacement Reserve Sustainability
Things that have Gone Wrong

Reserve contributions and needs are not aligned

The Fleet contains a significant number of units which are past their planned retirement date, or in the last year of their planned life.

There are inadequate reserve funds and inadequate annual contributions to replace the fleet units as required

Fleet Services has developed a series of "coping mechanisms" to manage into the future

In Hamilton, most of these problems have emerged:

- Reserve contributions from some major users (most of Public Works) are much lower than the depreciation rate of the vehicles. This reflects:
  - Some continuing effects of varying policies before amalgamation
  - Budget reductions have hit reserve contributions from non-self-sustaining departments in the expectation services will not suffer (at least not now)
  - Programs to phase in increased (sustainable) levels of reserve contribution over a number of years were dropped part way through
  - Expenses not contemplated in the contribution rates, such as upgrades for technological change
- Reserves have been used for expenses that were not contemplated when the contribution rates were set, such as upgrades for technological change, additions to the Fleet, and the staff involved in vehicle acquisition
- Vehicle replacements have been postponed due to inadequate reserve funds, resulting in higher operating costs, and lower recoveries when the units are finally sold.
- Vehicles due for retirement and sale have been continued in service to manage growth pressures when new vehicle funding is not available

The Fleet of 847 vehicles currently contains 150 units which are past their planned retirement date, and another 46 in the last year of their planned life. Of 403 pieces of off-road equipment (mowers, trailers, generators, forklifts, etc.) , 42 are past their planned retirement date and 20 are in their last planned year of service

There are inadequate reserve funds and inadequate annual contributions to replace the fleet units as required

Fleet Services has developed a series of "coping mechanisms" to manage into the future, including:

- Phasing and postponing vehicle and fleet replacements
- Rebuilding the street sweepers instead of replacing them. This may in fact be a cost-effective solution, but it involves significant risk converting the entire fleet in an untested approach, and it will be implemented over a number of years with vehicles already due for replacement
- The plan to replace hoists in the garage from the replacement reserve, even though no contributions have been made against the old hoists

Replacement Reserve Sustainability
Reserve Forecasts

A number of reserve forecasts have been prepared in recent years, generally showing the reserve going into deficit in the future. The current forecast does not show a deficit. Does that mean things ARE getting better?

CITY OF HAMILTON RESERVE FORECAST										
CENTRAL GARAGE VEHICLE RESERVE #110025										
Exerpt ftom 2008 TO 2020 ANALYSIS										
Dated:	December 11, 2013	Projection 2013	Projection 2014	Projection 2015	Projection 2016	Projection 2017	Projection 2018	Projection 2019	Projection 2020	Totals
Opening Reserve Balance - Jan 1		**13,013,819**	**7,497,769**	**5,408,095**	**4,483,312**	**4,555,987**	**4,623,286**	**4,872,731**	**5,570,943**	**13,013,819**
Add:	Transfer From Operating - Cont to Reserve	5,589,930	5,879,640	5,879,640	6,056,030	6,232,420	6,414,100	6,601,070	6,793,490	49,446,320
	Inflationary Increase at 3%			176,390	176,390	181,680	186,970	192,420	198,030	1,111,880
	Sale of Vehicles @ 10% of Previous Year Capital Budget	151,900	539,000	539,110	570,290	589,360	608,530	627,810	647,160	4,273,160
	Add'l Sale of Vehicles- Removed from Service May 2013 not s	180,000								
	Excess available from Projects in Previous Years	505,523								
	Interest Revenue @ 3%	206,701	223,726	215,797	221,782	228,855	219,372	221,906	221,542	1,759,682
Total Contributions to Reserve		6,634,054	6,642,366	6,810,937	7,024,492	7,232,315	7,428,972	7,643,206	7,860,222	57,276,565
Less:	Vehicle Replacement Capital Costs	(5,390,000)	(5,391,050)	(5,702,855)	(5,893,607)	(6,085,336)	(6,278,127)	(6,471,614)	(6,665,937)	(47,878,526)
	Projects Initiated in Previous Years	(6,524,254)	(2,349,250)	(995,875)						
	Transfers to Current from Reserve (funding Fleet Acq. Team)	(235,850)	(241,740)	(273,990)	(282,210)	(290,680)	(299,400)	(308,380)	(317,630)	(2,249,880)
	Street Sweeper Rebuild Program		(600,000)	(610,000)	(620,000)	(630,000)	(440,000)			
	Shop Equipment Replacement (Hoists)		(150,000)	(153,000)	(156,000)	(159,000)	(162,000)	(165,000)	(168,000)	(1,113,000)
Total Payments from Reserve		**(12,150,104)**	**(8,732,040)**	**(7,735,720)**	**(6,951,817)**	**(7,165,016)**	**(7,179,527)**	**(6,944,994)**	**(7,151,567)**	**(64,010,785)**
Ending Reserve Balance - Dec 31		**7,497,769**	**5,408,095**	**4,483,312**	**4,555,987**	**4,623,286**	**4,872,731**	**5,570,943**	**6,279,599**	**6,279,599**

Replacement Reserve Sustainability
Reserve Forecasts

There are some important factors to note about the forecast:

1. **The planned contributions are based on the current levels plus 3% per year for inflation, not on the need for vehicle replacements.**
2. **The proceeds from the sale of retired vehicles is assumed to be 10% of the previous year's purchases. In 2007 to 2012 they averaged 8% of previous year's purchases as vehicles are retired later than standard.**
3. **About $240,000 is withdrawn each year to cover the costs of the Fleet Acquisition Team. There are no contributions to cover this cost.**
4. **The forecast assumes the reserve covers the cost of replacing hoists in Fleet garages. There are no contributions planned for these costs.**
5. **What is left is then shown as available to replace vehicles. As shown on the chart below, the forecast shows $51M ($6.3M per year on average) can be spent on new vehicles and equipment over the eight year period. A total of $80.5M will be required to renew the fleet on a sustainable basis (allowing for a 2% per year increase in vehicle costs)**
6. **There is currently a backlog of $7.8M needed to replace vehicles that are still active, but should have been retired in 2012 or earlier.**
7. **Without trying to remove the backlog, there is a need to spend $72.5M over 8 years, an average of $9.1M* per year from 2013 to 2020 to maintain a sustainable fleet, but the reserve forecast only provides for $6.4M per year on average. $10.1M per year would be required to resolve the backlog over this period – suggesting an increase in annual contributions of $3.7M on average over the nest 8 years.**
8. **The planned rebuild of the sweepers will reduce the cost of the Sustainability Requirement by $900K. Over eight years the savings would only reduce the required contributions by about $.1M per year.**
9. **Constraining vehicle replacement expenditures to the forecast level will result in an increasingly older fleet. On a Fleet that was acquired for a total of $80M, the $30M replacement deficit that could occur just between now and 2020 based on the forecasts, is very significant.**

Comparison of Forecast Expenditure on Replacement Vehicles and Expenditure Required for Sustatinable Fleet*

	Overdue	2013	2014	2015	2016	2017	2018	2019	2020	Total
Vehicle & Equipment Replacement		$ 5,390,000	$ 5,991,050	$ 6,312,855	$ 6,513,607	$ 6,715,336	$ 6,718,127	$ 6,471,614	$ 6,665,937	$ 50,778,526
Sustainability Requirement	7,831,577	3,177,270	15,369,883	7,307,938	4,998,004	10,911,441	13,812,476	5,924,838	11,211,202	80,544,628
Funding Gap	(7,831,577)	2,212,730	(9,378,833)	(995,083)	1,515,603	(4,196,105)	(7,094,349)	546,776	(4,545,265)	(29,766,102)

•Sustainability Requirement assumes vehicles will be replaced at the end of their planned life as recorded in Avantis, and that replacement vehicles will cost the same as the initial purchase price plus 2% per year inflation. The forecast assumes replacement rather than rebuild of sweepers. Details are provided on the following page
•Note that Reserve forecast does show $6.7M higher expenditures in 2013 based on delivering purchases more quickly and reducing outstanding Work in Process, however there are no incremental resources shown to allow this to occur.

Replacement Reserve Sustainability

Replacement Requirements

The tables below provide additional details on the sustainability forecasts, identifying the annual expenditures required to replace vehicles when they arrive at the end of their planned lifecycle.

Replacement Requirements Based on Planned Lifecycle (in years)

Units	Overdue	2013	2014	2015	2016	2017	2018	2019	2020	Total
Heavy Vehicles	39	6	21	10	16	33	26	9	44	204
Sweepers	0	0	8	7	0	0	3	0	0	18
Packers	1	2	22	0	1	0	3	3	0	32
Light Vehicles	110	38	52	49	65	57	88	61	11	531
Equipment	42	20	22	52	22	38	47	27	26	296
Total	**192**	**66**	**125**	**118**	**104**	**128**	**167**	**100**	**81**	**1081**

Replacement at Cost Value

Heavy Vehicles	2,083,323	600,303	3,438,830	1,464,998	1,456,948	5,451,650	4,996,443	953,767	7,434,780	27,881,042
Sweepers	-	-	2,044,975	1,815,290	-	-	801,900	-	-	4,662,166
Packers	175,950	385,696	4,954,476	-	142,200	-	1,010,998	495,144	-	7,164,464
Light Vehicles	3,541,596	1,261,950	1,919,853	1,612,674	2,134,400	2,481,262	3,547,244	2,901,479	464,949	19,865,408
Equipment	708,660	434,814	516,409	1,183,373	431,187	931,542	954,936	504,638	1,017,733	6,683,293
Total	**6,509,528**	**2,682,763**	**12,874,544**	**6,076,336**	**4,164,735**	**8,864,454**	**11,311,521**	**4,855,028**	**8,917,462**	**66,256,372**

Replacement Cost With 2% Inflation

Heavy Vehicles	2,658,043	726,248	4,290,360	1,884,090	1,787,088	6,882,531	6,354,674	1,204,667	9,401,603	35,189,304
Sweepers	-	-	2,412,592	2,126,902	-	-	939,554	-	-	5,479,048
Packers	206,153	451,905	5,804,958	-	173,341	-	1,184,545	615,649	-	8,436,552
Light Vehicles	4,165,402	1,479,839	2,248,732	1,900,966	2,510,291	2,919,729	4,196,284	3,487,678	550,725	23,459,645
Equipment	801,979	519,279	613,240	1,395,980	527,284	1,109,180	1,137,419	616,844	1,258,874	7,980,079
Total	**7,831,577**	**3,177,270**	**15,369,883**	**7,307,938**	**4,998,004**	**10,911,441**	**13,812,476**	**5,924,838**	**11,211,202**	**80,544,628**

It has been suggested that vehicles do not need to be replaced at the end of their planned lifecycle, and letting the fleet get a little older is acceptable. The section that follows explores whether this is true.

Replacement Reserve Sustainability

Are there consequences to an aging fleet?

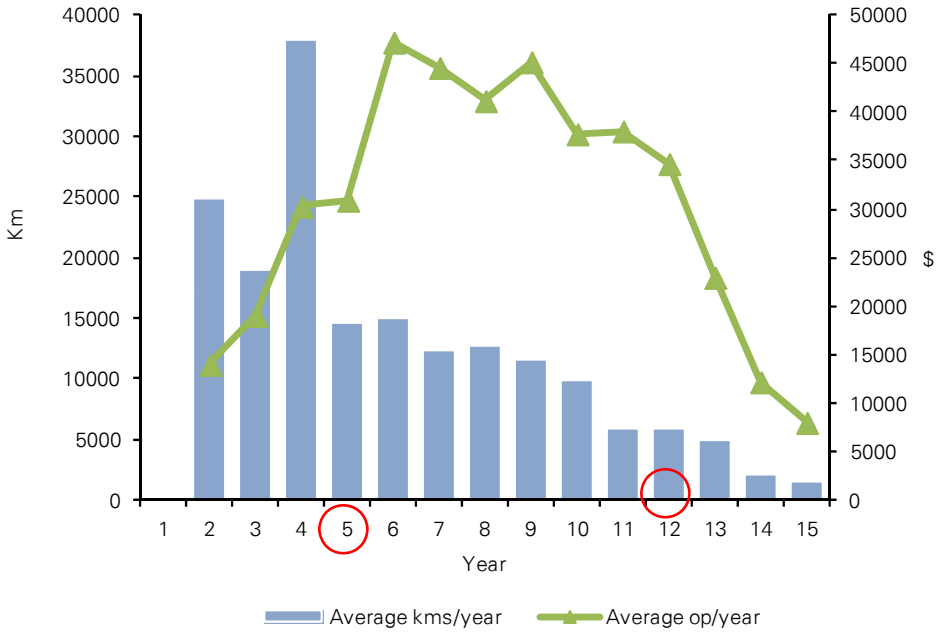
We looked at the sander fleet which has relatively good data over the lifecycle of a number of vehicles to see how costs vary with the age of the vehicles.

Operating Cost/km is approaching 3 times higher in year 12 vs. year 5

- The green line shows the average operating costs (including maintenance, fuel, licencing) increases as the vehicles age, but then begins to actually decrease after year 6.
- The decrease reflects the average yearly km (usage) of the sanders, which declines at a faster rate than operating costs
- It costs 112% of Year 5 operating costs to continue using vehicle in Year 12 compared to obtaining only 40% of Year 5 utilization*

*Does not account for changes in environmental conditions (i.e., weather)

Sanders
Average km/year vs. average operating cost/year



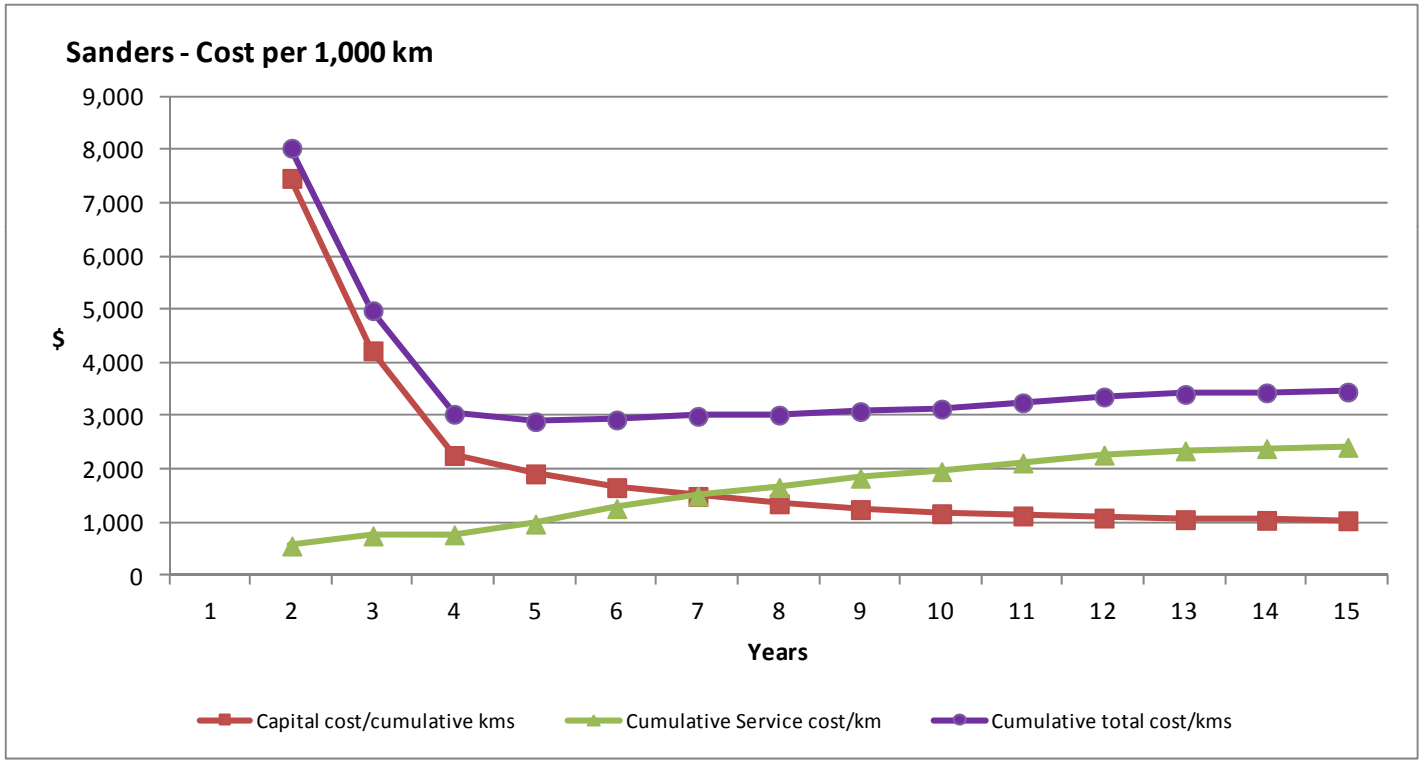
Year	Km	Op cost	Op cost/ Km
Year 5	14,606	30,916	2.12
Year 12	5,912	34,687	5.87
Year 12 % use compared to Year 5	40%		
Year 12 op cost compared to Year 5		112%	

Replacement Reserve Sustainability
Are there consequences?

Looking at the lifetime costs per 1,000 kms driven makes it clear the vehicles are more expensive in the later years.

These sanders would actually have been cheapest per 1,000 kms. If disposed of after year 5

The chart below shows the capital cost of buying a sander spread over the number of kilometers it is driven when it is kept for various periods of time. The red line shows that the longer the truck is kept, the lower the cost of buying the truck, per 1,000 kilometers. On the other hand, the operating costs (green line) per 1,000 kilometers of use increase with the age of the vehicle. Added together you have the total lifecycle cost of having a vehicle cover 1,000 kms, depending upon how long it is kept.

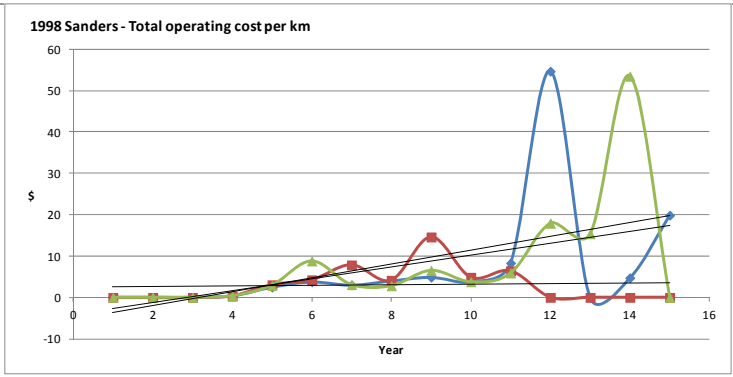


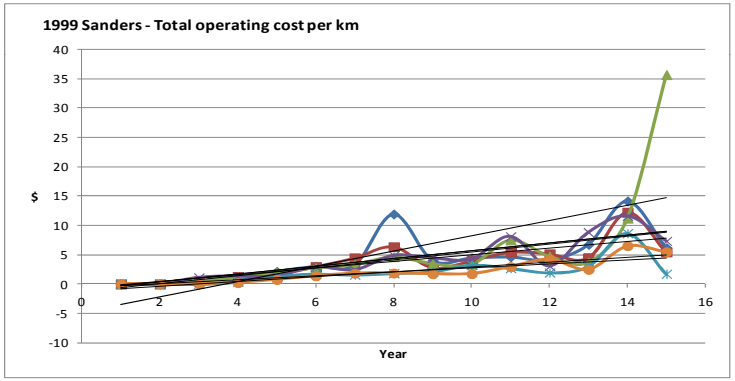
The lowest cost is actually at 5 years, much sooner than expected, and much less than the 12 year planned life. This is partly because older sanders are not used as much, in fact only about half as much as younger trucks – because they are only used for larger snow events. In this particular case there is an argument to hold the "second wave" trucks longer than the five years, as it isn't possible to run fewer sanders more often and get the same effect, but keeping the trucks beyond 9 or 10 years clearly does increase total costs.

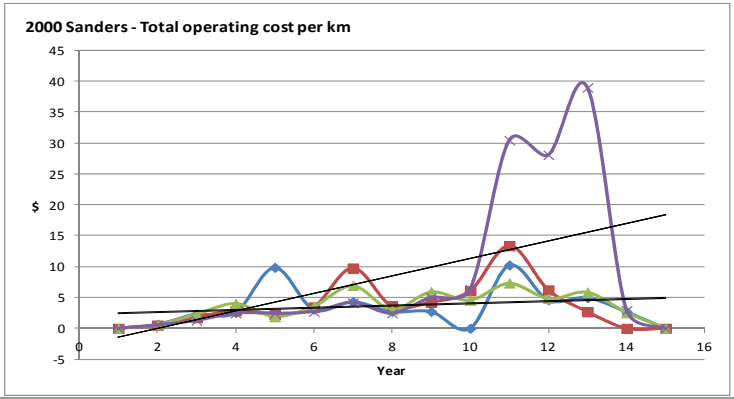
Replacement Reserve Sustainability
Are there consequences?

Charts show costs of individual sander units purchased in 1998, 1999 and 2000.

Costs have risen through the life of most machines and significant expenditures were made near the end of life of some vehicles







These charts show the maintenance costs per km travelled in each year for each of the individual sanders from model years 1998, 1999 and 2000.

Operating costs gradually increase over the vehicle life (for each 1,000 kms traveled).

There have also been some very large investments (maintenance expenditures) in particular sanders as they near end of life.

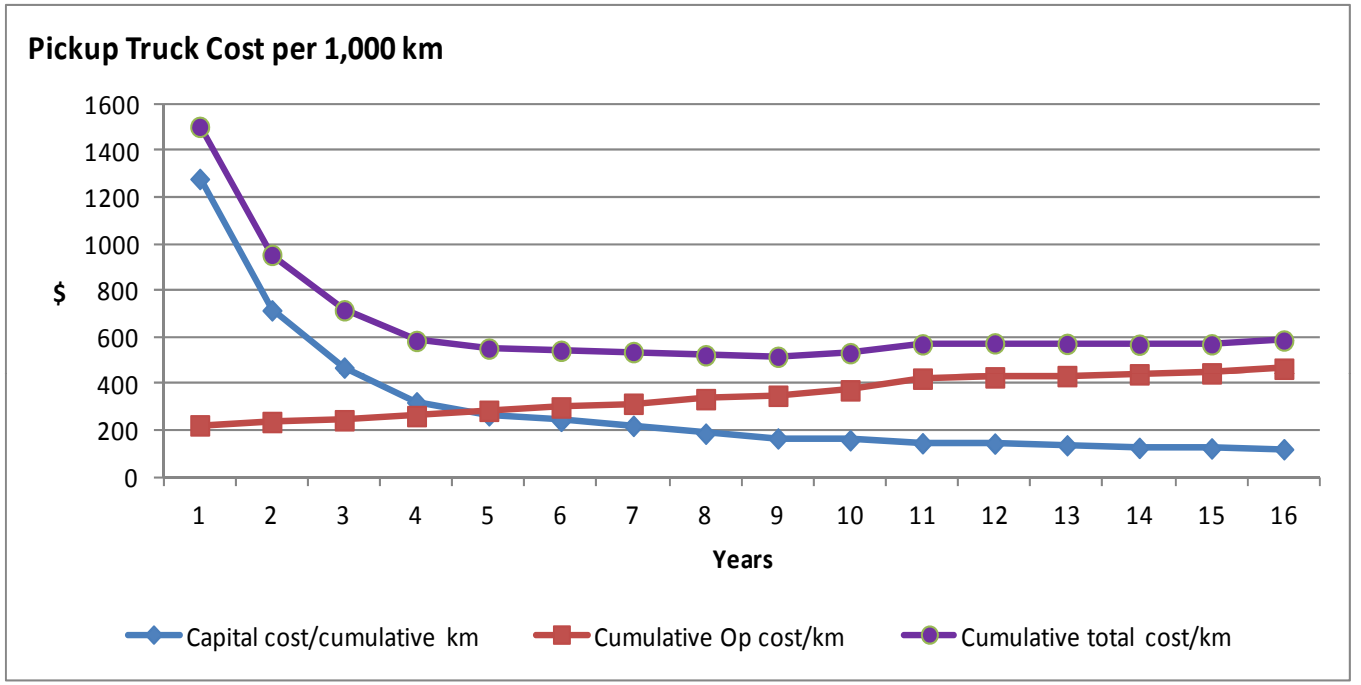
These large expenditures are cheaper than replacing the fleet in the short run and are necessary to maintain the level of service when replacement units are not available, but they clearly do not return good value.

Replacement Reserve Sustainability
Are there consequences?

An example using the actual costs of Hamilton's pickup trucks*.

The lowest cost option is to replace these vehicles after 9 years, which is very close to the planned life of 8 years for most pickups and 10 years for the 4 one ton pickups.

However more than a third are beyond their planned life, with some as old as 16 years.

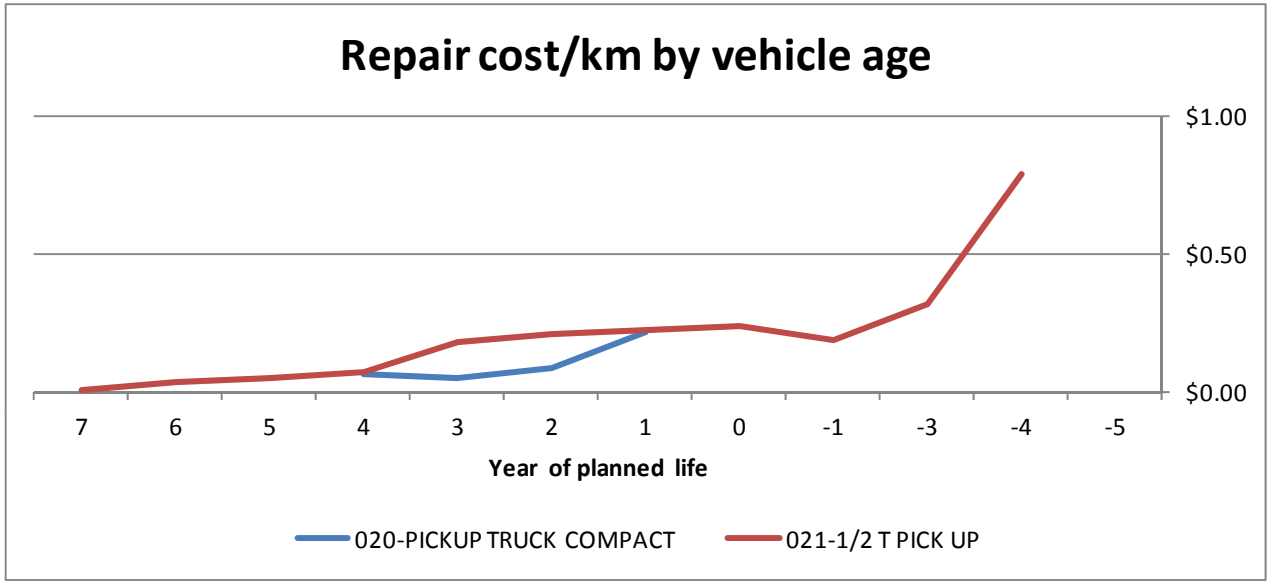


- The chart uses the actual costs of Hamilton's pickup trucks*. It shows the same result as the sander example.
- The longer the truck is kept, the lower the cost of buying the truck (per 1,000 kms),
- However operating costs increase with the age of the vehicle resulting in a gradual, but eventual, upward trend for total lifecycle costs.
- The lowest cost option is to replace these vehicles after 9 years, which is very close to the planned life of 8 years for most pickups and 10 years for the 4 one ton pickups.
- But at the moment 54 of the 144 pickups are beyond their planned life, with some as old as 16 years.

* In order to confirm the validity of the conclusion, this analysis used the 2012 operating costs of the current fleet of pickup trucks of various ages, rather than the historical data on the same trucks as done with the sanders, but found the same results

Replacement Reserve Sustainability
Are there consequences?

Hamilton data shows that the longer the vehicle is kept past its planned service life the more expensive it is to maintain



- Looking at repair costs alone, with "0" being the year vehicles are planned for retirement, the longer the vehicle is kept past its planned service life (negative numbers) the more expensive it is to maintain.
- It should also be noted that the actual vehicle maintenance costs are only the thin edge of the wedge.
- More maintenance means more frequent breakdowns during operation, more vehicle down time, more frequent trips to the repair location and less efficient operations for the Fleet clients who operate the vehicles.
- The indirect costs to users can far exceed the direct costs of vehicle maintenance.

Note: Fleet Services has begun its own life cycle analysis program using the National Association of Fleet Administrators Life Cycle Analysis tool. This work has not been completed at this time, but could be the basis of an ongoing program to assess life cycle costs, major repair and vehicle retirement decisions. Pending completion of this work, Fleet Services does currently review vehicles approaching the end of their planned lifecycle and only replaces vehicles that

1. Fit into the budget plan, and
2. Have lifetime repair costs that exceed 90% of purchase costs

Replacement Reserve Sustainability

What do others do? Vehicle lifecycles

Benchmarking data from a previous study suggests Hamilton tends to plan longer vehicle lives than some other cities

The table below compares three typical vehicles in five different Cities. The planned life cycles for Hamilton (Fleet "D" in the table) tend to be longer than the other cities, even before considering that many Hamilton vehicles are not retired when planned. Financial conclusions from this data should be cautious, recognizing vehicles are not always directly comparable (look at the capital cost column to see which vehicles are most similar).

Class	# of units in class	Class avg. age	Planned life cycle for the class	Class avg. capital cost $/unit	Class avg annual usage km or hr	Class avg maintenance cost $/usage	Class avg other annual charges to customer *
1 ton flat decks	(A) 137 (B) not reported (C) 282 (D) 94 (E) 131 (F) 87	(A) 3.8 yrs (C) 5.39 yrs (D) 6 yrs (E) 5.4 yrs (F) 6.6yrs	(A) 8 yrs (C) 8.5 yrs ** (D) 10 yrs (E) 7 yrs (F) 7-15 yrs (Ave of 9.5 yrs)	(A) $46,696 (C) $58,979 (D) $58,110 (E) $48,000 (F) $44,052	(A) 10,062 km (C) 11,312.69 km (D) 22,285 km (E) 13,727 km (F) 12,384 km	(A) $0.34/km (C) $0.45/km (D) $0.30 / km (E) $0.26 / km (F) $0.16/km	(C) 9,286.5 ** (D) 3,097.68 (E) 11,470 (F) $3,728 Fuel
diesel tandem axle dump trucks, 12-14 ft box (e.g. Freightliner M2 or similar)	(A) 112 (B) not reported (C) 127 (D) 80 (E) 173 (F) 164	(A) 6.7 yrs (C) 4.2 yrs (D) 6.5 yrs (E) 7.2 yrs (F) 4.5 yrs	(A) 10 yrs (C) 5.6 yrs ** (D) 12 yrs (E) 10yrs (F) 10-12 yrs (Ave of 10 yrs)	(A) $138,427 (C) $159,868 (D) $219,249 (E) $305,000 (F) $179,288	(A) 6,912 km (C) 19,927 km (D) 14,453 km (E) 15,306 km (F) 20,845 km	(A) $1.36/km (C) $1.60/ km (D) $1.82 / km (E) $1.25 / km (F) $0.69 / km	(C) 26,410.09 ** (D) 9,659.8 (E) 43,112 (F) $10,527 Fuel
125 hp tractor/ loader/backhoe * **	(A) N/A (C) 26 (D) 20 (E) 27 (owned) (F) 41	(C) 4.57 yrs (D) 5 yrs (E) 6.5 yrs (F) 4.9 yrs	(C) 5.5 yrs ** (D) 7 yrs (E) 10 yrs (F) 7-12 yrs (Ave of 7 yrs)	(C) $231,525 (D) $90,768 (E) $375,000 (F) $131,818	(C) 587.86 hrs (D) Not tracked by Fleet (E) 745 hrs (F) 804 hrs	(C) $22,668 / yr (D) $5,292.37 / yr (E) $10,132 / yr	(C) 34,257.79 ** (D) 7,204.16 (E) 48,100 (F) $3,768 Fuel

* "Other annual charges" are not comprable between cities as the range of items covered varies widely

** Average of annual lease payments

*** Data reported by various cities for the tractor/loader/backhoe is not for comparable equipment as is evident from the cost per unit data

Replacement Reserve Sustainability

What do others do? Replacement Reserve

Ottawa's approach is experiencing the same pressure as Hamilton's, moving toward an unsustainable replacement reserve

Calgary and Winnipeg finance the purchase of vehicles, replacing based on the most efficient lifecycle costing model

Some other cities still have Vehicle Replacement Reserves (VRRs)

- We spoke with Ottawa, which has used a reserve
  - It does still charge departments a monthly reserve contribution on each vehicle they operate
  - The funds do go to the reserve
  - The reserve is used to buy replacement vehicles
  - But the annual replacement budget is set by Council as part of the budget process, with capital allocated among competing needs, not based on vehicle amortization
  - The list of vehicles to be replaced each year is designed to match the budget, not the lifecycle requirements
  - The reserve contributions were calculated based on depreciation at one time, but now they are calculated to collect the approved budget
  - Budgets have been reduced in "challenging" years, recently Council has increased contributions to a number of asset classes, including vehicles.
  - In other words, Ottawa is moving in the same direction as Hamilton, towards an unsustainable reserve

Some other cities use a debt financing model

- Calgary and Winnipeg decide when to replace vehicles based on the most efficient lifecycle costing model, then finance the purchase
- Calgary has a provincial fund it can borrow from, Winnipeg uses a commercial arrangement
  - Interest costs are often raised as a concern, but they really are not material. Funding with cash also incurs opportunity costs that are almost as high – or in Hamilton's case actually higher at the moment, as the City earns more on investments than it pays on debt
- The approach allows purchases based on lifecycle analysis to determine the timing with the lowest total cost of ownership

Replacement Reserve Sustainability

What do others do? Vehicle Retirement and Replacement

Some cities use a lifecycle costing approach to vehicle purchases, considering the total cost of owning a vehicle over its lifetime, rather than just the lowest capital cost

Some cities keep vehicles longer than planned if the repair costs and usage has been lower than expected, and retire some vehicles early, particularly when major repairs are required

The purchase decision

- All cities surveyed treated technical specifications and performance specifications as mandatory to consider or otherwise evaluate a vehicle
- Cities reported two different approaches to evaluating qualified vehicles
  - Some make the decision on a lowest cost basis, considering the capital cost, in a “tender” oriented model,
  - Some make the decision based on lifecycle costing considerations, considering repair costs, salvage value, fuel consumption expected downtime/repair experience and availability of dealer support (for parts if not repairs) and occasionally training availability. These additional factors may be considered in a tender model (e.g. comparing expected lifecycle costs) or may be considered as part of am request for proposals style purchase, using a point rating system
  - Hamilton is closest to the first model, considering capital costs but not lifecycle costs in the procurement process, although some items that influence operating costs can be considered in the process.

The Retirement Decision

- All cities surveyed establish an estimated lifecycle for vehicles and do their long term planning based on replacing vehicles at the end of that period. Technological change, changing legislative requirements, or new business requirements can also result in earlier replacement
- Most cities will examine particular units as they approach the end of their planned life and look at the usage level and repair history and extend units that have relatively low utilization and good repair histories.
- Most cities also consider the age of the vehicle when considering whether to conduct major, expensive repairs. If the vehicle is nearing the end of its planned lifecycle, it may be sold rather than repaired, depending upon the nature and cost of the repair required.
- Hamilton does all these things to some extent, however, because of the limitations on the Vehicle Replacement Reserve, some vehicles have been extended even though age, use and repair history do not suggest it, and as shown on slide 15, some major repairs have been carried out very late in the vehicle life.

Replacement Reserve Sustainability
Case for Change

The Fleet Reserve Fund does not function like a vehicle replacement reserve, and it is not funded to support the activities it supports.

Continuing the current practices will result in an increasingly old and increasingly expensive fleet. The low contributions are a false economy, and will result in a major funding crisis in the future.

A new approach is required

Hamilton does not really have a Vehicle Replacement Reserve

- It has an annual budget for vehicle replacement activities that is not charged to user departments in a consistent fashion
- The budget is not established in a way that provides enough funds for vehicle replacement when required, and some funds are used for other purposes
- The funds are used to meet the highest priority needs across the corporation
- The future procurement plans are adapted to the available budget, not to the "needs", and not to achieving the lowest lifecycle costs
- The result is higher than necessary operating costs for user departments (both the costs for fleet operation and the costs of downtime and other disruptions to operations), an uncertain environment for planning department activities, and conflict between Fleet Services and its customers – who expect they will get new vehicles when required because they have been paying for them (at least in part)
- The positive outcome is that funds are not being wasted on premature vehicle replacement and Fleet Services is being pushed towards creative cost savings solutions (the sweeper rebuilds) - even if the business case analysis is incomplete.
- Several studies and reviews have identified the problem and suggested solutions, some suggesting increased contributions, some suggesting a new model

The options available include:

1. Continue the current practices
2. Establish a proper Fleet Replacement Reserve, with contributions based on calculated depreciation amounts, and funds dedicated to the purposes funds are contributed for – replacing vehicles at the end of their lifecycle
3. Allocate and track the Fleet Replacement Reserve by user group, allow user groups to set the rate of contributions they support, and only purchase new vehicles to the extent the user group has the available funds
4. Purchase vehicles when required to minimize lifecycle costs, using lifecycle analysis and business cases, financing the vehicles with loans (assumes a simple to use commercial arrangement with the City's banker, a line of credit with individual amounts drawn against particular purchases)
5. Use Full Service Fleet Leases, contracting for vehicles and maintenance on a lease basis. Could be applied to part or all of the fleet, most likely to the light fleet at least at first.

Replacement Reserve Sustainability
Option Evaluation

The table summarizes the advantages and disadvantages of each approach

The use of debt financing meets the most criteria, but there would need to be additional measures to encourage thrift.

The evaluation criteria are discussed at greater length on the pages that follow

	Status Quo	Classic VRR	User VRRs	Debt Finance	Full Service Lease
Short Term Budget Impact	None	Significant Increase	Uncertain	Depends on structure	Depends on structure
Long Term Budget Impact	Impact on Users	Minimize lifecycle costs	Uncertain	Minimize lifecycle costs	Uncertain, Requires Pilot
Accountability	Unclear	Clear	Clear	Clear	Clear
Flexibility to act	Low	Adequate	Low	High	Constrained during term
Incents thrift	High	Low	Moderate	Low	Low
Stability of funding	Low	Low	Low	Moderate to High	Moderate to High

Highlights

1. The status quo is unsustainable. It's major advantage is that it strongly encourages thrift – even when it is not the best long term approach.
2. Returning to a Classic Replacement Reserve model would require a substantial increase in reserve contributions, which has not been attainable in the past, and the contributions could just as easily be reduced again in the future. It can work well, but only if the rules are respected (which seems difficult).
3. Allocating the funds by user group would improve accountability, but decrease flexibility, and would not improve the stability of funding.
4. Using debt to finance vehicles would ensure the ability to acquire vehicles when optimal, and ensure stability of funding, e.g. debt needs to be repaid. The downside would be the need to control purchases, to ensure the business case is sound, and all options considered
5. The full service lease is becoming more popular, especially for light vehicles

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

Restoring the sustainability of the Fleet Reserve fund (the Classic VRR) will require an increased contribution of $2.6M per year.

As shown in the detailed financial forecast in the sections that follow, that would be partially offset by reduced maintenance expenses

Implementing a debt model could result in redeployment of the existing reserve, and a gradual increase in annual costs

Short Term Budget Impacts of Alternate Approaches

- The short term budget impact is an important consideration as it has a major impact on the viability of implementation.
- The "Classic VRR", in other words, a sustainable replacement reserve, will require an increase in annual contributions to the reserve of $2.6M per year. This increase would be partially off-set by savings in maintenance and other factors, leaving a requirement for a net extra $1.5M investment in year one. Past attempts to phase in an increased levy to cover increased reserve fund contributions have not been successful beyond a first year. Thus this is considered a significant drawback to this approach. Even with the extra $3.7M contribution, the large 2014 fleet requirements would drain the reserve.
- Switching to the User Based reserves would make little difference in the budgets for users who currently provide full funding, however the full $3.7M in extra contribution requirements would fall on the other departments, primarily within Public Works, creating substantial short term pressures.
- The "Depends on Structure" evaluation of the net short term impact of the Debt Finance and Full Service Lease options reflects a number of phase in options the City could consider:

  A. At one extreme, existing reserve funds could be applied to 2013 purchases and the balance applied to other purposes. Users could be charged lease payments on new vehicles and only pay operating costs on existing vehicles. This would result in reduced vehicle costs in the short run, although in the long run, as all vehicles are replaced, costs would increase back to about current levels for those users who contribute appropriately now, and to a higher level for Public Works and other users which do not contribute to the reserve on a sustainable basis.

  B. At the other extreme, all existing vehicles could be placed on leases (internally or with the City's bank as part of the Line of Credit) for their current amortized value over their remaining planned life. Users would pay leases on existing and new vehicles, requiring a sustainable level of funding in the short term. This would increase costs immediately, largely for Public Works, by about $400K. The reserve balance (including planned 2013 purchases) and proceeds of the loans, could be used on a one-time basis, for other corporate priorities, such as reducing other debts or resolving some infrastructure deficits.

  C. A "balanced" approach would apply loans to existing vehicles to the extent the current contributions can support them, with new vehicles having full lease payments as they are acquired, phasing in the sustainable funding level gradually, but more quickly than the first option. This approach could eliminate the need for a budget increases in 2014. This approach could still make substantial funds currently invested in the fleet, available for other corporate priorities.

- Option A is not recommended. It would not be appropriate to reduce the vehicle replacement contributions in the short run, only to have them rise again in the near future. However the Debt or Lease options are rated highest as they have great flexibility on how they can be implemented, which makes implementation more likely

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The long term forecasts make clear the advantages of a sustainable model that allows vehicles to be replaced when planned to minimize lifecycle costs. Either the Classic VRR or the Debt Finance model would achieve this. However the Debt Finance model would have lower costs over the seven year forecast period, would require smaller (or no) increases immediately, and would allow the redeployment of up to $40M in City funds currently invested in the fleet.

Long Term Budget Impacts of Alternate Approaches

- The table below provides a comparison of the long term financial impact of continuing with the current approach (the Status Quo), converting to a Classic VRR (reserve contributions based on vehicle amortization and other costs funded by the reserve) and the Debt Financing Option
- The detailed calculations are presented in the pages that follow. As the table indicates, the Classic VRR will have higher costs in the short term, but reduced costs over time as the fleet becomes younger and maintenance costs decline. Over the seven year forecast it would be slightly cheaper, but the savings would continue to grow past 2020.
- The Debt Finance option would have the same savings in maintenance costs as the Classic VRR but would have larger savings in total over the 7 year forecast period, largely because it would only finance vehicles at their current value and repay loans based on that amount, where the Classic VRR would require contributions based on the initial cost of the current fleet, in order to produce the cash required to replace current vehicles.

Summary of Impacts (000,000's)	Status Quo	Classic VVR	Debt Finance
Value of fleet	$33 declines to $27	$33 increases to $50	$33 increases to $50
Average vehicle age	Increases to 7.13 years	Decreases to 5.7 years	Decreases to 5.7 years
Net Assets Committed	$40 declines to $32	$42 increases to $55	$0 to 0.5
Funds freed to other priorities	$0	$0	$40
Operating Costs			
First Year Budget	$14.4	$16.1	$14.8
Maintenance (7 yrs)	$62.8	$53.4	$53.4
Total Tax/Rate Cost (7 yrs)	$113.8	$112.8	$103.5

- Note that the option for User VRRs would fall somewhere between the Status Quo and Classic VRR depending upon whether individual departments fully funded their reserves based on depreciation – or continued with current contribution levels.

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The Full Service Lease concept is worth trying on a Pilot basis before considering broad application.

Long Term Budget Impacts of Alternate Approaches

- The long term cost of the Full Service Lease is more complex. It would likely carry a higher implicit interest cost as it would use private financing that may not recognize the full value of the City credit rating. But it will also be impacted substantially by the maintenance and operating costs and warranty conditions that apply. A more detailed review, or a pilot procurement process would be required to test the net financial impact in Hamilton's market conditions.
- The initial full service lease pilot project should include:
  - Selecting a particular segment of the fleet, perhaps the ½ ton pick-ups or the hybrid vehicles with a significant number of vehicles and a local dealer network
  - Identify the range of specialized modifications required, and determine which of those could be included in the tender, which would suggest leaving particular vehicles out of the tender (e.g. if unique modifications require maintenance not generally available from general vehicle maintenance providers) or which modifications should be specified as supplier provided vs. carried out by in-house resources (e.g. are modifications generally outside the expertise of general vehicle maintenance providers)
  - Identify any particular requirements for after hours service, emergency support, mobile response, etc. (recognizing that any new requirements will require an adjustment of the "target price" below) and any requirement for liquidated damages in the event of non-availability.
  - Prepare a tender document seeking suppliers who will provide the vehicles on a full service lease basis with an all-in price (gasoline excluded) for supply and maintenance of the vehicle (repair of user caused and accident damages excluded) with the price expressed as a cost per month plus a cost per kilometer. The tender could invite suppliers to bid based on any timeframe they selected, or for multiple timeframes (e.g. $X per month for a 3 year lease, $Y per month for a 6 year lease). The tender would seek a fixed price for a specific number of vehicles in the first year, and indicate how the price will be adjusted for delivery in subsequent years, seeking deliveries over at least three years. The tender evaluation process should be based on estimated lifecycle costs, averaged over the life of the lease, considering the monthly and per km costs, fuel costs and the expected cost of delivering the vehicles for servicing from the expected "home" locations of each vehicle to the maintenance location(s) specified by the bidder. The vendor would be expected to play the role of day to day fleet manager, e.g. scheduling and arranging maintenance. Fleet Services would manage the contract, reviewing invoices and arranging putting new vehicles into service and taking the old out.
  - The tender should indicate the historic costs of vehicles (including all the factors to be considered in the tender lifecycle costing calculation) adjusted for inflation to provide an "as is" price target and indicate the City does not intend to award a contract if the prices are not at least 5% lower than the target (to recognize the costs of adjusting the business model). This protects the City from entering a higher cost contract, and gives potential bidders an opportunity to determine if the effort involved in a full bid is worthwhile.
  - Distribute the tender document to the industry and invite comments and suggestions before issuing it. After considering any input, issue the tender document and evaluate the proposals. If the tender results in cost reductions, consider expanding it to another type of vehicle or user.
- The potential saving (or the extra cost) will not be known until the pilot project is completed, however there is the potential for both reduced cost and improved vehicle quality (e.g. more frequent rotation through shorter leases).

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

A detailed financial comparison of two options was carried out – the status quo and the Debt Finance Model

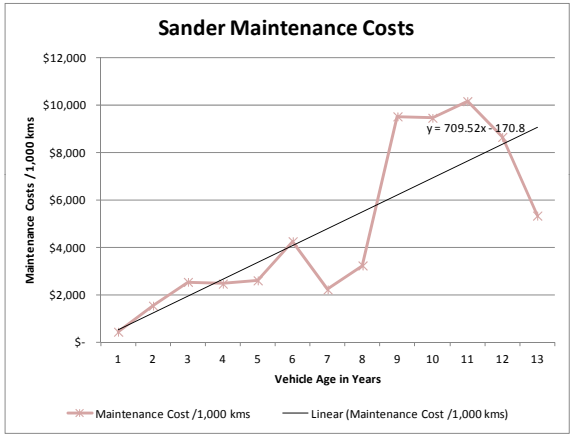
The major challenge was to estimate the savings that would occur by replacing vehicles at the optimal time to minimize lifecycle costs

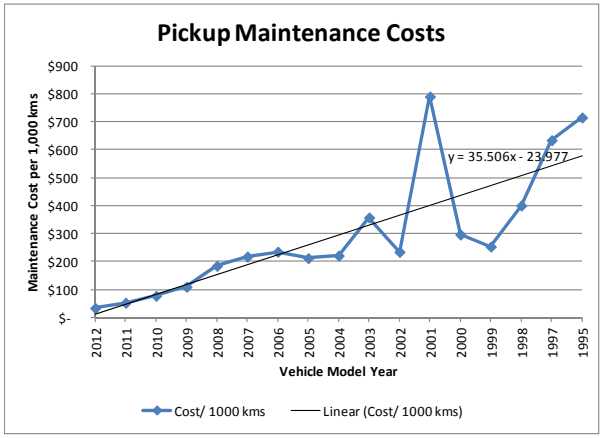
Vehicle maintenance costs increase with vehicle age. The amount of the increase varies by type of vehicle, but the trend is the same.

Similarly the disruption that servicing causes to operations increases as the vehicle ages and must be taken for servicing more frequently

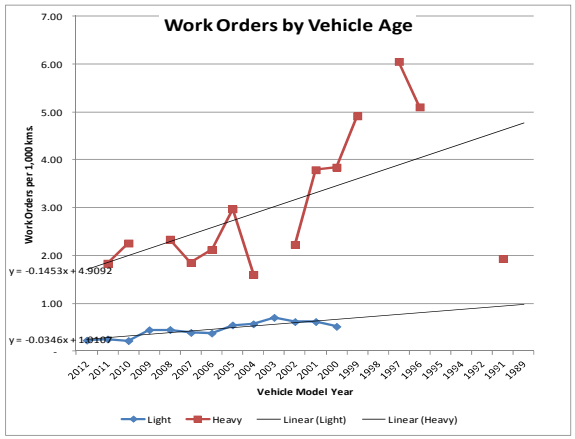
Long Term Budget Impacts – Calculation Details

- This section provides a detailed forecast of the long term financial impacts of retaining the Status Quo, or adopting the Debt Finance Option, using implementation option B, immediate implementation for the purposes of the model. The impact of other options is considered after this analysis.
- One major change the Debt Financing Option would achieve is implementation of lowest lifecycle costs by allowing replacement of vehicles at the optimal time. The charts below help to identify the impact of the vehicle replacement date on maintenance costs.





- The graphs at left show the cost per thousand kms for maintenance of the sanders and pickup trucks discussed earlier, showing how the costs increase with age. The slopes of the lines shows the average rate of increase.
- The graph below shows the number of work orders for each 1,000 kms of travel for vehicles by their model year. Each work order requires that the vehicle be withdrawn from service and left with or taken to the maintenance facility, impacting user operations



KPMG

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

Based on generalizing data from the sanders and pickup trucks, it appears that the City could save $2M per year in maintenance costs if it reduced the average age of the fleet by 1 full year. To be conservative, this estimate was reduced to $1.33M for further analysis.

Extra trips to the shop cost user departments an extra $225K per year for every year older a vehicle gets.

Long Term Budget Impacts – Calculation Details

- The table below calculates the net impact of increasing maintenance costs and increased disruption to operations as the fleet as a whole gets older (or the cost reductions if the fleet gets younger).
- The "Increased Maintenance Cost/Vehicle/Year Older" is based on the previous page. For light vehicles, it is $35/1,000 kms based on the pickup trucks, for the heavy vehicles, it is $709 per 1,000 kms, based on the sanders. The increase for equipment is assumed to be the same percent as for light vehicles, and the increase for packers and sweepers is assumed to be the same percentage as the heavy vehicles. The weighted average is $1, 576 per vehicle (per year), or $1.97M for the fleet if the average age increases by a full year.. With total maintenance expenditures around $8M per year for a fleet about 6 years old this estimate may be a little high (sanders may not be "typical" heavy vehicles) but does give a reasonable sense of the range. To be conservative, the balance of this analysis assumes a figure of $1.33 M per average year older (or younger), based on $8M in maintenance expenditures divided by 6 year average age. As the trend line on the graphs on the previous page do pass close to the origin this seems a reasonable, conservative approach.
- The chart below assumes the number of work orders increases proportional with the maintenance expenditure and assumes a cost of $100 on average for the client to bring the vehicle to the garage, pick up the driver, return to pick up the vehicle and return the vehicle and both drivers to their work, as well as any costs to rent replacement equipment and/or operators while the vehicle is out of service. Packers are shown with a lower cost as most maintenance is done on location, in the evening. Given these assumptions, the extra maintenance that comes with age would result in an additional client cost of $225,000 per extra year old over the full fleet.

Weight Class	Number of Vehicles	Number of Work Orders	Average km/hrs	Total Repair Costs	Average Annual Mintenance Cost / Vehicle	Increased Maintenance Cost / Vehicle / Year Older	Ave WorK Orders / Vehicle	Increased WOs /Vehicle / Year Older	Delivery cost per WO	Cost/Vehicle
Equip	403	1848	61	1,081,435.63	$2,683	$421	4.59	0.72	$100	$72
Heavy	264	4217	5,663	3,741,623.67	$14,173	$4,018	15.97	4.53	$100	$453
Light	533	3557	15,552	1,878,170.57	$3,524	$552	6.67	1.05	$100	$105
Packer	32	1388	15,513	1,130,886.73	$35,340	$11,007	43.38	13.51	$25	$338
Sweeper	18	590	7,253	542,303.88	$30,128	$5,146	32.78	5.60	$100	$560
Total	1250	11600	8,841	8,374,420.48				2.1		
Weighted Average						$1,576		2,575.8		$180
Total for Fleet for 1 Year Older						$1,969,539				$225,158

KPMG

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

A series of very conservative assumptions was applied to the analysis

Long Term Budget Impacts – Calculation Details

An analysis was completed comparing the continuation of the "status quo" with the alternative of switching to a Debt Financing model. The key assumptions were established to make the status quo option as positive as possible. They are:

a) The Status Quo option will execute as shown in the Reserve Forecast as shown on page 14. This assumes that all the outstanding WIP will be spent in the next couple of years, and specifically that $11.6M in vehicles will be acquired in 2013. This is likely beyond the capacity of the current resources, with the result that the fleet will likely start 2014 even older than shown in the forecast.

b) The analysis starts 2014 on the assumption that $11.9M is spent on vehicles in 2013 – all the funds shown in the forecast including reducing the WIP by over $6M. The result is an expectation that the fleet will actually be newer at the end of 2013 than it actually will. This approach favours the status quo in the analysis, although it is unlikely to be achieved.

c) All transaction occur at the end of the year they are shown in. In practice some will occur earlier while some, particularly purchases, will not be completed until the following year.

d) The Debt Finance Option is shown with implementation Option B which provides for an immediate full conversion with the existing fleet financed as well as new purchases.

e) Proceeds of sales are shown in the "Status Quo" as forecast, at 10% of the cost of replacement vehicles, even though the vehicles will be retired well past their planned retirement age. In the Debt Finance option recoveries are shown as 5% of the initial cost of the vehicles retired, a much more conservative assumption.

f) In the Debt Finance option, the cost of the vehicle acquisition team is shown as 4.8% of the cost of vehicles purchased, giving sufficient resources to execute the program. These costs are shown as being borrowed as a mark-up on vehicle costs, but could be funded from current contributions if desired.

g) In the Status Quo option, the opportunity cost shown is the cost of the capital committed, calculated at 1.75% the rate the City charges for internal loans (lower that the rate attainable by investing funds).

KPMG

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

Even with the optimistic assumption for 2013 purchases, the fleet will start older than desired (half the average planned life) and continue to get older over the course of the next seven years if the Status Quo is pursued.

As the fleet ages (and declines in value), the City cash tied up in the fleet will decline from $40M to $32M.

The Debt Finance Option will allow vehicles to be acquired when required, with the average age of the fleet declining.

This approach will tie up virtually none of the City's resources, freeing up the $40 M currently invested in the fleet for other purposes

Long Term Budget Impacts – Calculation Details

Capital Activity Compared

Status Quo								
	Capital Program	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
	Opening Fleet Cost	81,716,761	82,973,414	84,102,343	85,084,923	86,226,527	87,363,271	88,531,804
	Opening Fleet Value	33,096,518	33,288,813	32,241,348	30,387,398	28,766,409	27,506,378	26,541,619
	Opening VRR Balance	7,497,769	5,408,095	4,483,312	4,555,987	4,623,286	4,872,731	5,570,943
	Average Planned Life	10.18	10.18	10.18	10.18	10.18	10.18	10.18
	Average Age	**6.06**	**6.10**	**6.28**	**6.54**	**6.78**	**6.97**	**7.13**
	Vehicle Purchases Required	14,464,501	14,032,164	12,331,463	17,349,322	25,076,486	24,723,222	29,462,835
	Vehicle Purchases	7,740,275	6,698,705	5,893,582	6,085,311	6,278,102	6,471,589	6,665,912
	Purchases Deferred	(6,724,226)	(7,333,459)	(6,437,881)	(11,264,011)	(18,798,384)	(18,251,633)	(22,796,923)
	Vehicles Disposed (Cost Value)	6,483,622	5,569,777	4,911,002	4,943,706	5,141,358	5,303,056	5,302,110
	Closing Fleet Cost	82,973,414	84,102,343	85,084,923	86,226,527	87,363,271	88,531,804	89,895,607
	Closing Reserve Balance	5,408,095	4,483,312	4,555,987	4,623,286	4,872,731	5,570,943	6,279,599
	Proceeds of Sales (to reserve)	539,000	539,110	570,290	589,360	608,530	627,810	647,160
	% of Fleet Replaced	7.9%	6.7%	5.8%	5.8%	6.0%	6.1%	6.0%
	Capital Committed	**39,645,598**	**37,710,784**	**35,834,022**	**34,166,539**	**32,884,402**	**32,245,835**	**32,821,217**

Debt Finance (Option B - Immediate Conversion)								
	Capital Program	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
	Opening Fleet Cost	81,716,761	84,065,110	85,296,711	86,129,980	88,176,967	90,677,921	91,747,731
	Opening Fleet Value	33,096,518	41,095,091	41,423,969	39,723,603	44,484,812	52,170,281	51,796,525
	Average Planned Life	10.18	10.18	10.18	10.18	10.18	10.18	10.18
	Average Age	**6.06**	**5.26**	**5.50**	**5.96**	**5.74**	**5.26**	**5.70**
	Vehicle Purchase Required	14,464,501	7,307,938	4,998,004	10,911,441	13,812,476	5,924,838	11,211,202
	Vehicle Purchases	14,464,501	7,307,938	4,998,004	10,911,441	13,812,476	5,924,838	11,211,202
	Purchases Deferred	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Vehicles Disposed (Cost Value)	12,116,153	6,076,336	4,164,735	8,864,454	11,311,521	4,855,028	8,917,462
	Proceeds of Sales	605,808	303,817	208,237	443,223	565,576	242,751	445,873
	% of Fleet Replaced	**14.8%**	**7.2%**	**4.9%**	**10.3%**	**12.8%**	**5.4%**	**9.7%**
	Loans							
	Opening Loan Amount	-	41,183,579	41,491,220	39,719,861	44,435,371	52,040,587	51,465,670
	Finance Existing Fleet	33,096,518						
	Vehicle Purchases Financed	14,464,501	7,307,938	4,998,004	10,911,441	13,812,476	5,924,838	11,211,202
	Finance Fleet Acquisition Team	694,296	350,781	239,904	523,749	662,999	284,392	538,138
	Amortization (Capital Repayment)	(6,465,929)	(6,979,059)	(6,698,371)	(6,150,231)	(6,127,007)	(6,298,594)	(5,689,323)
	Amortization (Fleet Acquisition Team)		(68,202)	(102,660)	(126,226)	(177,675)	(242,802)	(270,739)
	Repayment from Vehicle Sales	(605,808)	(303,817)	(208,237)	(443,223)	(565,576)	(242,751)	(445,873)
	Closing Loan Value	41,183,579	41,491,220	39,719,861	44,435,371	52,040,587	51,465,670	56,809,074
	Capital Committed (end of year)	**(88,488)**	**(67,251)**	**3,742**	**49,441**	**129,693**	**330,855**	**509,329**

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The analysis shows the debt financing option would be $230K more expensive in the first year, but the City will be $11.4 M ahead over the next seven years if it adopts a Debt Financing model for financing its fleet.

Vehicle maintenance costs will be reduced by over $9M as the fleet becomes younger.

Savings will likely be higher than shown because of the conservative assumptions.

While the opportunity costs – the value of diverting the $40M tied up in the fleet, are important, the change is warranted even without considering this.

Long Term Budget Impacts – Calculation Details

Annual Operating Costs Compared

Status Quo									
	Annual Costs	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
	Contribution to Reserve	5,879,640	6,056,030	6,232,420	6,414,100	6,601,070	6,793,490	6,991,520	44,968,270
	Fleet acquisition team	241,740	273,990	282,210	290,680	299,400	308,380	317,630	2,014,030
	Maintenance Costs	7,756,834	7,965,852	8,382,076	8,934,800	9,465,993	9,942,060	10,375,542	62,823,158
	Increased Delivery Costs	(158,298)	(149,550)	(108,659)	(48,568)	5,360	48,369	82,872	(328,474)
	Opportunity Cost (at 1.75%)	693,798	659,939	627,095	597,914	575,477	564,302	574,371	4,292,897
	Total	14,413,714	14,806,261	15,415,142	16,188,926	16,947,301	17,656,601	18,341,935	113,769,881

Debt Finance (Option B - Immediate Conversion)									
	Annual Costs	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
	Amortization Cost	6,465,929	7,047,261	6,801,030	6,276,457	6,304,682	6,541,396	5,960,062	45,396,817
	Interest Costs	579,189	720,713	726,096	695,098	777,619	910,710	900,649	5,310,074
	Hoist Replacement	150,000	153,000	156,000	159,000	162,000	165,000	168,000	1,113,000
	Maintenance Costs	7,756,834	6,807,857	7,282,784	8,096,320	7,923,492	7,374,036	8,189,579	53,430,903
	Increased (decreased) Delivery Costs	(158,298)	(337,552)	(283,631)	(179,410)	(230,623)	(336,803)	(238,567)	(1,764,885)
	Total	14,793,654	14,391,279	14,682,280	15,047,465	14,937,170	14,654,340	14,979,723	103,485,910

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The classic VRR will result in an improved fleet and reduced maintenance costs. Due to the need to remove the backlog of vehicle purchases, the reserve account will be drained, but that is not a major concern.

Implementing the classic reserve would result in reduced costs in the long term, but would not provide the same savings as the Debt Financing option over the 7 years, nor would it provide the opportunity to reinvest the roughly $40M tied up in the fleet. In fact an additional $10M in cash will be required over the 7 years.

Long Term Budget Impacts – Calculation Details

Classic VRR Approach

- The analysis of the Classic VRR approach builds off the assumptions from the Debt Financing model. In particular, it assumes the vehicles are purchased when planned in order to minimize lifecycle costs. Thus the cost of the fleet, the purchases and disposal each year and the maintenance costs would be identical to the Debt Finance model. However the financing, interest and amortization values would be different as shown below.

Classic VRR									
	Reserve Balance								
	Reserve Opening Balance	7,497,769	1,341,576	2,213,266	5,449,879	3,093,437	(1,914,541)	856,278	
	Contributions	8,470,123	8,348,757	8,355,813	8,720,419	9,053,694	8,911,477	9,268,058	
	Vehicle Purchases	(14,464,501)	(7,307,938)	(4,998,004)	(10,911,441)	(13,812,476)	(5,924,838)	(11,211,202)	
	Fleet Acquisition Team	(694,296)	(350,781)	(239,904)	(523,749)	(662,999)	(284,392)	(538,138)	
	Hoist Replacement	(150,000)	(153,000)	(156,000)	(159,000)	(162,000)	(165,000)	(168,000)	
	Sale of Vehicles	605,808	303,817	208,237	443,223	565,576	242,751	445,873	
	Interest Income	76,673	30,835	66,471	74,106	10,226	(9,179)	(4,295)	
	Reserve Closing Balance	1,341,576	2,213,266	5,449,879	3,093,437	(1,914,541)	856,278	(1,351,426)	
	Capital Committed (end of year)	42,436,667	43,637,236	45,173,482	47,578,249	50,255,739	52,652,802	55,966,978	
	Annual Costs	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
	Amortization to Reserve	7,625,827	7,844,976	7,959,909	8,037,670	8,228,695	8,462,085	8,561,920	56,721,083
	Hoist and FA Team Contributions	844,296	503,781	395,904	682,749	824,999	449,392	706,138	4,407,259
	Maintenance Costs	7,756,834	6,807,857	7,282,784	8,096,320	7,923,492	7,374,036	8,189,579	53,430,903
	Increased Delivery Costs	(158,298)	(337,552)	(283,631)	(179,410)	(230,623)	(336,803)	(238,567)	(1,764,885)
	Opportunity Cost (at 1.75%)	16,068,659	14,819,062	15,354,966	16,637,330	16,746,563	15,948,710	17,219,070	112,794,360

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The current approach makes it difficult to hold department accountability for service delivery quality and service costs.

With technology and service expectations constantly changing, some flexibility in service delivery is useful

Accountability

- The current reserve approach does not provide effective accountability for any party.
- Fleet Services cannot be held accountable for achieving the lowest possible cost, for providing usable, effective, reliable vehicles to users, or for replacing vehicles when planned, when expected by users, or when required. The limitations of the reserve approach limit their ability to act.
- Similarly, user departments cannot be held fully accountable for the effectiveness or economy of their operations when they can't obtain the vehicles they need to deliver services and when they experience increased vehicle breakdowns.
- Any of the options would improve accountability.
  - The development of user based reserves would make it the responsibility of each user to obtain the funding required to support an appropriate fleet.
  - The Classic VRR, Debt Finance and Full Service Lease options would allow users to obtain the vehicles they require and can justify to support operations.

•Flexibility to Act

- With the Status Quo there is very little opportunity respond to new opportunities, new technologies, new service requirements, even when there is a good business case to do so. There are so many urgent claims on the available reserve funds, that new initiatives are difficult to accommodate.
- A Classic VRR would introduce more, and probably enough flexibility. There are still limits on the funds available at any point in time, but they would likely be adequate to respond to any urgent requirement or strong business case that is likely to emerge.
- The User Department based VRRs would be more limited, tied to the resources available within the department. So the department would have flexibility on how to use the resources, but far fewer resources to work with and there would be no ability to direct limited resources to the highest priorities.
- The Debt Financing approach would have considerable flexibility, as new requirements could be met with new borrowing. The Full Service Leases would be more constrained, at least during the term of the lease for any vehicles involved. While the City is currently well below its debt limits, it could choose to use the current investment in the fleet as well as the current fleet reserve to reduce other debts if there was concern to limit the total amount of City debt.

Replacement Reserve Sustainability
Option Evaluation – Detailed Discussion

The debt option has the potential to discourage thrift, which must be dealt with if implemented

Improving the stability of funding is an important element of making the fleet funding approach sustainable – not just sustainable in theory, but also sustainable in practice

•Incents Thrift

- The strongest positive of the Status Quo is that it has forced Fleet Services, and to some extent the users, to find creative ways to reduce costs. The rebuild of the sweepers is one example, the extension of the life of many vehicles is another, the retention of "retired" vehicles in service to meet growth needs is another. Although these have not always produced lower long term or lifetime costs, they are creative efforts to manage within the available funds.
- There is a concern that having adequate funds – or even unlimited funds (e.g. debt) removes the incentives to reduce costs, and could encourage users to buy Cadillacs when Chevs would do, or keep extra vehicles around "just in case". The Debt Finance and Full Service Lease options do not provide strong built in constraints against overspending (although departments would bear the lease or financing costs, which does provide some disincentive), so additional constraints should be considered.
- The Classic VRR would not provide a strong disincentive to overspending, although departments would have to make amortization payments, and Fleet, as holder of the reserve, would tend to push back.
- The User VRRs would be a little better in this context, as the user would feel they are spending "their own" funds, providing some additional incentives to thrift.

Stability of Funding

- The stability of funding has been a major problem for the current model, with the temptation of making budget cuts that won't be felt until some time in the future stronger than the desire to maintain the principles, and long term savings, available in other models.
- This concern is also a major drawback to the move to a Classic VRR. The City has tried to do this before, but never attained the goal. We see the same problem in other cities. The same temptations would exist within User department based VRRs. Those departments with intense budget pressures (e.g. tax funded) would be under the same pressures to underfund their departmental reserves.
- The debt financing approach rates highest on this criteria. Once a debt is incurred, the City is very likely to continue the regular payments required. The implications for its credit rating are too severe to consider any other options. The use of internally funded debt might make the debt more vulnerable, hence the moderate to high rating, but the expectation is that internal debts would also be paid. Departments would still need to budget the operating and lease payment funds required to obtain new vehicles, but that is as it should be, they need to justify any expansion in programs including the vehicles required.
- The Full Service Lease process could come under pressure during renewals, but once the lease is approved, the funding would follow.

Replacement Reserve Sustainability
Conclusions

The Status Quo is not sustainable. The "Classic VRR" (a funded reserve) is just the Status Quo waiting to "rehappen".

A debt model allows for sustainable, accountable use of fleets and the best opportunity to minimize fleet costs to the taxpayer.

The most appropriate response to the current unsustainable replacement reserve is to move to debt financing of vehicles.

This approach will allow the City should commit to a minimum lifecycle costing solution, the most important step involved in reducing the total cost of vehicles to the City. It will provide a means to buy vehicles when warranted to minimize life cycle costs.

The City needs to increase its investment in fleet purchases in order to obtain savings, both in vehicle maintenance costs and in user department operating costs. Some of those savings are currently funded (e.g. part of department operating costs), but many are savings in the future, when the costs of an aging fleet will continue to grow if fleet renewal is not accelerated.

This approach will allow departments to acquire vehicles when they have the program funding required, and allow departments to make trade-offs between vehicle expenditures and other expenditures so they can achieve their program objectives in the most economical way possible. It will support a minimum vehicle lifecycle cost approach, resulting in the lowest possible costs to the City. As noted above, given the city's financial position, this approach will not be more expensive. In any case, the interest costs are very small compared to the operating cost implications, in terms of the cost of vehicle repair, the cost of carrying spare vehicles, and the cost to operating departments of bringing vehicles for repair and having staff pulled out of service delivery.

Increasing funding to restore the integrity of the Vehicle Replacement Reserve is not an achievable option. It would require increased contributions to the reserve immediately, primarily increases in the Public Works budget. Previous efforts to phase in sustainable funding have failed, and there is no reason to expect it would succeed at this time.

Establishing a series of user specific reserve accounts will not resolve the problem. It would make it easier for users who can fully fund their fleet requirements, but it would not remove the need for increased funding for the other users, or make it any easier to obtain.

The full service lease approach is promising, but requires a pilot project to determine the extent of net benefit it will produce. It will also be more suited to some elements of the fleet than others. The pilot should proceed, but will not be applied to the full fleet, at least not for many years.

The transition process for converting to debt financing should be designed to meet corporate criteria, in terms of the extent of budget impact that can be tolerated in 2014 and 2015, and the best use of available capital resources.

Replacement Reserve Sustainability
Recommendations

Moving to a debt model for financing the fleet will give the City the resources to deal with the current "crunch" (the many vehicles currently requiring replacement) and prevent deferral of these current needs until they create a large replacement deficit in the future.

At the same time, it will allow the city to redeploy its current investment in the fleet, and the fleet reserve balance to meet other corporate priorities.

1. **That the City adopt a debt financing model for financing its Fleet**
   - The Finance Department should consider from time to time whether it is more beneficial to fund vehicles through internal loans, or arrange with its bank to use the line of credit
   - The financing of each vehicle should include a mark up of 4.8% that will be used to finance the role of Fleet Services in the procurement process (and disposal of any retiring vehicle)
   - The costs of debt payments will be charged to the user department
   - The finance payments will assume an appropriate salvage value for the vehicle at the end of its life, and the user department will be responsible for, or credited with, any net value after the vehicle is disposed
2. **That the transition process be handled as follows**
   - That each existing vehicle be assigned a loan to the extent of its current undepreciated value until the value of the payments required in 2014 equal the 2013 reserve contribution of the user (other vehicles will not have loans attached, with the result that the maximum increase in 2014 for any user department would be the loan cost of any new vehicle acquisitions, and the increased tax requirement will be phased in as the vehicles without loans are replaced)
   - That the Finance Department consider on a corporate basis whether the existing reserve balance should be used to reduce other debts, or applied to other purposes
3. **The City adopt the goal of achieving minimum life cycle costing for vehicle use.**
   a) Fleet Services is to complete its project to analyze the appropriateness of current planned lifetimes,
   b) Fleet Services is to ensure consistent review, in consultation with users, of vehicles approaching retirement for possible early or late retirement based on usage levels and maintenance history, and
   c) Fleet Services is to ensure consistent review, in consultation with users, of early retirement options for vehicles facing major repair expenses late in their planned life.
4. **That all vehicle purchases be based on a business case analysis by Fleet Services (in consultation with users), signed off by the Director of the user department**
5. **That Fleet Services be directed to conduct a full service lease pilot project generally consistent with the approach described on page 28**

Competitive Service Provider
What Others Do

This section asks if User Departments should have the choice of using Fleet Services, or finding other service providers

Most municipalities, like Hamilton, define the scope of responsibility of their Fleet Services unit by policy. Departments within scope must have their vehicles managed and maintained by Fleet Services. Ottawa has a mandate for most departments, but serves the police department by agreement. In Calgary Fleet Services is an optional service provider the departments may choose to use.

Calgary has some distinct differences from other cities as a result:

- Some garages are dedicated to particular departments, with all costs charged to the departments (rather than particular services)
- Considerable mobile service is provided, including units that serve parks equipment in the parks, and a crew that follows the asphalt paving machine (downtime is very expensive as it impacts a large crew and a large number of vehicles)
- Building inspection decided to operate their own fleet, initially based on using an available subsidy, now using a full service lease
- Fleet Services has a large fabrication unit which competes for contracts with other departments

Advantages:

- Clarifies accountability – operating departments responsible for their costs
- More customer orientation, better customer service from Fleet Services
- More customization, services adapted to needs of particular customers
- Allows decisions based on total cost to City – e.g. Fleet costs and operating department costs

Disadvantages

- Can allow duplication to emerge
- Can leave Fleet with excess capacity if clients leave
- Fleet less useful in “policing” role, up to audit to monitor department fleet use

Competitive Service Provider
How it could work

Making Fleet Services optional would make it more responsive to user department needs, and make user departments more accountable for the level of service they want

Fleet would have a standard suite of services and pricing approach,. This is generally in place now in the form of a series of Fleet Services policies

There could be exceptions negotiated as required by departments

- Range of services to be provided expanded or reduced
- Service levels / service quality could be modified, to provide service at a specific location, or a mobile service as required by a user
- Particular KPI's could be established, e.g. target levels of vehicle availability, maintenance turn around times
- Pricing / charging approach could be varied, reflecting the user expectations in terms of services, service levels, and performance expected

Customers could purchase some or all of the services Fleet Services provides

- Fleet Management including Fleet Management Information System
- Acquisition support
- Vehicle disposal
- Maintenance
- Training and Safety

The principal would remain Fleet Services self-sufficiency, with customers required to cover any incremental costs of exceptions

Fleet could initiate offers to sell some services to fire, police, transit

Fleet would still deliver some services with its own staff, and manage outsourcing contracts for other services

Competitive Service Provider
Directions

The recommendations would give Fleet the opportunity to tailor services to User needs, and Users some flexibility to seek services elsewhere, but constrain the scope to limit corporate risk

Current Status

- Fleet Services initiated some customer unique solutions, including the new maintenance arrangements for Waste Collections, the services for golf courses and some mobile repair services
- The Waste Collections approach does provide for self-sustaining funding, with the costs largely as charged by the contractor, which reflects any incremental costs of the particular requirements
- The other special arrangements do not have any recognition of the cost of the premium services

Conclusions

- There are advantages to both Fleet Services and to customers if there is some flexibility to adjust services and service levels to particular client requirements. But improved services to some clients should not be at the cost of other clients, thus the need for flexible billing approaches.
- The ability of departments to “opt out” of Fleet Services is a useful mechanism to make Fleet Services responsive and accountable
- However the ability to “opt out” can lead to duplication and increased costs, sometimes simply the result of conflicts or disagreements
- The inclusion of all vehicles and equipment in the Fleet Management Information System is essential to maintaining corporate control and understanding of its fleet resources
- Some aspects of the Training and Safety services can have corporate implications if legislative requirements are not met. There are at least 3 depts (EMS, Transit & Central Fleet) delivering Driver Training & Driver license upgrades. Consolidation could produce efficiencies as well as improving risk management.

Recommendations

6. That Fleet Services have the explicit authority to adapt services and service levels to particular customer requirements and the authority to adopt a variety of charging approaches as required to reflect and recover the costs of providing the different service levels
7. That vehicle and equipment users have the option to arrange for some of the fleet services they require from other sources, but only with the approval of the City Manager, and only if they continue to use the corporate FMIS and Training and Safety services required by legislation

In-House vs. Outsourced Services
Cost of Labour

The cost of a Fleet Services mechanic is higher than the cost of contracted mechanics by the hour

There is no measure of efficiency available to determine if in-house mechanics do more or less in an hour than contracted mechanics

Are In-House vehicle maintenance services priced competitively?

- The cost of repairs is largely based on two factors:
  - the "door rate" – or the cost of making a mechanic available for one hour of "wrench time" (time billed to work orders)
  - The efficiency of the labour – in general, how many hours it takes to perform repairs

Door Rate

- The current door rate for the light duty contract is $80, and for the heavy duty contract $85
- The current door rate for Fleet Services in-house staff is $102, a 20% to 27.5% disadvantage compared to the contractor rates.
- The calculation of the in-house rate excludes "indirect costs" which includes the cost of the Director, the administration and a number of small items including training costs. Normally part of these costs, generally a pro-rata allocation between the maintenance and other services provided by Fleet, would be included in the costs to be recovered.
- The calculation does not consider costs for finance, human resources, IT or other support Fleet Services receives from other departments, so it understates the real costs of the service.
- 78.6% of the in-house cost is employee related, so reducing the door rate significantly will require reductions in employee related costs.
- Reducing facility costs could also help reduce the door rate

Efficiency of Labour

- Contractors generally charge the number of hours assigned to a job based on "the book", the industry standard time allocated to a particular task. For some particular tasks on specialized equipment, or for unusual circumstances, they will charge based on the actual time spent by the technician
- Fleet Services charges by the actual time spent on the work.
- Avantis does not provide the capacity to compare the actual time charged by in-house mechanics with the industry standard times, so there is currently no way of knowing if in-house mechanics are taking more or less time than the contractors are charging. It would be useful to gain this capacity as part of the implementation of the Hansen Fleet Management Information System

In-House vs. Outsourced Services

What is Currently Outsourced?

Fleet Services already contracts many types of repairs

The table below shows the types of work that Fleet Services outsources – as reported to the Calgary benchmarking study.

	All	Some		All	Some
Provincial Truck Safety Inspections		√	Glass replacement	√	
OEM Suggested Inspections		√	Towing	√	
Vehicle wash			Differential repairs/rebuilding		√
Lube and filter		√	Plow blade straightening		√
Brake pad / disc / drum replacement		√	Welding/fabricating		√
Machining brake drums / discs		√	Body work	√	
Tire Repair and Replacement	√		Painting	√	
Muffler/exhaust systems replacement	√		Air Conditioning		√
Electronic Diagnostic		√	Upholstery repair	√	
Electrical / electronic repair /replacement		√	Upholstery replacement	√	
Alignment	√		Parts rebuilding	√	
Engine repair/rebuilding		√	Heavy equipment components repair/rebuild		√
Engine replacement		√	Others (please list)		
Transmission repair/rebuilding		√			
Transmission replacement		√			
Hydraulics repairs/rebuilding		√			

There are two important changes since that time. One major change is the contracting of maintenance support for the Waste Collections vehicles that was implemented with the recent relocation. The second change is the continued outsourcing of light duty fleet maintenance work.

In-House vs. Outsourced Services

What Do Other Cities Outsource?

The table shows how other cities responded.

Hamilton is city "D"

Its responses generally align with the majority of other cities, and with recognized best practices.

	All	Some		All	Some
Provincial Truck Safety Inspections		(A)(C)(D)(E)(F)	Glass replacement	(A)(C)(D)(F)	(B)(C)(E)
OEM Suggested Inspections	(A)*	(C)(D)(E)(F)	Towing	(A)(C)(D)(E)	(B)(F)
Vehicle wash		(A)(E)	Differential repairs/rebuilding	(E)	(A)(C)(D)(F)
Lube and filter		(A)(C)(D)(E)(F)	Plow blade straightening		(C)(D)(E)
Brake pad / disc / drum replacement	(A)*	(C)(D)(E)(F)	Welding/fabricating		(A)(D)(E)(F)
Machining brake drums / discs	(A)*	(C)(D)(E)	Body work	(A)(D)(E)(F)	(B)
Tire Repair and Replacement	(A)(C)(D)(E)	(B)	Painting	(A(D)(E)(F)	(B)
Muffler/exhaust systems replacement	(A)(D)	(B)(C)(E)(F)	Air Conditioning	(E)(F)	(A)(C)(D)
Electronic Diagnostic	(A)*	(C)(D)(E)(F)	Upholstery repair	(A)(D)(E)(F)	(C)
Electrical / electronic repair /replacement	(A)*	(C)(D)(E)	Upholstery replacement	(A)(D)(E)	(F)
Alignment	(A)(D)(F)	(B)(C)(E)	Parts rebuilding	(A)(D)(F)	(B)(E)
Engine repair/rebuilding	(A) (C)	(D)(E)(F)	Heavy equipment components repair/rebuild		(A)(D)(E)(F)
Engine replacement	(C)(E)(F)	(A)(D)	Others (please list)		
Transmission repair/rebuilding	(C)(E)(F)	(A)(B)(D)			
Transmission replacement	(C)(E)(F)	(A)(D)			
Hydraulics repairs/rebuilding		(A)(C)(D)(E)(F)			

(A)* (in house)

In-House vs. Outsourced Services
Contracting Approaches

Currently light vehicles must be taken to Fleet Services, then are picked up by contractors, who return them to Fleet Services so users can pick them up.

More contractor locations would make it easier for users to relate directly to contractors

The contracted maintenance of Waste Collections vehicles is meeting user needs

- The areas where municipal Fleet Services departments are generally most effective is in dealing with the vehicles that are unique to municipal fleets or at east low volume in the community. These tend to be the heavy vehicles, particularly those in specialized uses.
- The move to outsourcing light duty fleet work is consistent with this industry direction. However the current approach for light vehicles causes a significant problem for customers. It requires customers to deliver their vehicles to Fleet Services, which then arranges for the contractor to pick up the vehicle. When the vehicle is repaired, it is returned to Fleet who then calls the customer for pick-up. This process increases the total downtime of the equipment needlessly. Apparently some previous negative client interactions with suppliers caused this approach. However all clients should not suffer as a result of the actions of a few. The customers involved should be dealt with instead, and Fleet Services can manage the supplier relationship. There are also instances where the Fleet garage has excess capacity and keeps the vehicle to repair itself. But the same decision could be made when managing the repair process without having the vehicle on site. Planning and coordination of maintenance should remain with Fleet Services even when the maintenance is outsourced.
- If Fleet Services initiates customer contact for preventative maintenance items or receives calls from customers for unscheduled work, it can determine what contractor will do the work (or direct it to a Fleet garage if appropriate) and direct the customer to deliver the vehicle directly to the contractor, saving considerable time. Indeed the contractor requirement to pick up the vehicle from Fleet may be transferable to the customer location in some instances, improving the service level further.
- The current standing offers provide for relatively few contractor repair locations. Particularly with the light fleet there may be an advantage to awarding standing offers to more than one contractor, or to a contractor with more than one location to give most light fleet users a convenient maintenance location. Apparently the procurement bylaw and related requirements have been interpreted to prevent competitions from specifying the location of acceptable contractors. The result was the requirement that contractors pick up vehicles to ensure the net cost to the city of various bids considers all factors. This approach could be taken a step further by issuing a number of RFPs (or inviting multiple severable bids to one RFP) for vehicles to be picked up in various locations within the City, reflecting the deployment of vehicles by location.
- The new approach for maintenance of the Waste Collections compactors is reported to be working well, although it is an unusual and innovative arrangement, with the contractor conducting most of the work at the City location, in the evening hours when vehicles are not in use. The arrangement itself is unusual in that the customer (Waste Collections) supervisors handle much of the direction and supervision of the contractor. The concept is tailored to a customer requirement and the arrangement has been well documented, however it would be useful to review the experience after a year, considering service levels achieved and costs. It may serve as a model to manage some other customer needs, particularly if Fleet reduces its number of active locations. Service to the golf courses, for instance, could easily follow this model.

In-House vs. Outsourced Services
Considerations

Regular review of the work that is contracted and work that is done in-house, including a review of relative costs and performance levels should be undertaken

- The pricing of outsourced work, with hourly rates below the in-house door rate suggests continued expansion of outsourcing may be cost effective, and the plan to develop a standing offer list for work on heavy vehicles would be appropriate. The standing offer should invite different bids to service different parts of the fleet that are in diverse locations, providing that geographically dispersed suppliers could be engaged if that is the most economical approach.
- However Hamilton does not have a program to regularly review its outsourced work and compare it to in-house options to ensure it is receiving best value in each category. The data as currently recorded in Avantis has not been adequate for this purpose. Contracted work tended to be recorded by the invoice rather than by the work items completed. Thus the same inspection was recorded as a $250 item or a $2,500 item after a number of repairs were carried out and reported with the inspection. This has now been changed, with manual input of invoice details which should also assist customers when they try to understand what they are paying for. The second concern relates to the hours of work applied to a work order. There is no way to compare work completed in-house with the industry standard time allocations generally used by contractors when preparing their invoicing. With Fleet door rates higher than contractors rates, one could assume costs are higher in house, but that would only be true if the same number of hours was charged, and that cannot be reasonably assessed from Avantis. If Hansen will have the capacity to recognize and compare in-house hours to industry standard times it would be good to use it, giving a good basis to evaluate mechanic productivity and the relative costs of in-house and contracted services. Similarly acceptance of electronic input of supplier invoices would improve efficiency.
- Fleet Services could pursue two different strategies with respect to in-house services. It can work to become a low cost supplier, which would require reductions in the door rate that could only be achieved by reducing the costs of labour and consolidating facilities, or it can become a specialized, customer oriented supplier, responding to specific customer needs in ways that best meet their operating requirements, which would mean providing services where customers want them, at the times of day when they best support customer operations – providing arrangements like the Waste Collections contract maintenance supplier now does. Given the constraints on the in-house operation, and particularly the limitations of the collective agreement, we suggest the latter approach would be more successful.

In-House vs. Outsourced Services
Conclusions

The planned implementation of the Hansen Fleet Management Information System is crucial and will influence Fleet for many years, facilitating the analysis of contracted vs. in-house services and minimizing the paper work involved

Conclusions:

- **The mix of in-house and outsourced work is generally consistent with industry best practices.**
- **The lack of ongoing analysis of the outsourcing mix is not consistent with industry best practices.**
- **The current outsourcing of work for light duty vehicles should evolve towards multiple vendor locations and direct pick-up of vehicles by the contractor at the customer location (or drop off of the vehicle by the customer at the vendor location when appropriate)**
- **The development of a standing offer for contractors to work on heavy vehicles should proceed with the opportunity to have multiple vendors with different locations and capacities awarded stand offers.**
- **The implementation of the new FMIS is crucial, and the relationship to contractors is a key element that should not be overlooked, as is the ability to analyze the relative costs of in-house and contracted work.**
- **Fleet Services should focus in-house maintenance services on meeting particular customer requirements, determined in consultation with customers, focused on heavy vehicles and dispersed locations (including mobile services)**

Recommendations

8. **That Fleet Services begin a program of systematically reviewing the range of services it outsources and the approach it takes to the contracting on a periodic basis. This should include a review of the Waste Collections maintenance contract after it has been in place for at least a year.**
9. **That future standing offers for maintenance contracts provide the opportunity for different contractors to serve different parts of the fleet based upon their location.**
10. **That the process for sending vehicles to contractors for maintenance be amended to have the vehicles picked up and dropped off by the contractor from the user location, rather than from Fleet Services, wherever possible, and to allow customers to leave and pick up vehicles at the contractor location, rather than the Fleet location in other cases.**
11. **That the implementation of the Hansen FMIS include the ability to compare actual to "book" hours for repair activities and the opportunity to receive and record electronic invoices from suppliers if possible**

Outsource Parts Management
What others are Doing

Toronto and Ottawa Fleet Services have followed a US trend towards outsourced parts management

NAPA typically provides some or all of the parts management staffing, owns the parts inventory, and sells the parts to the City when needed by a mechanic

Benefits are reported in staffing costs, order, invoice and payment processing costs

There is been a growing trend in the United States and more recently in Canada, to outsource the parts management function. The concept is generally an association with NAPA, although NAPA is now only part of the "Integrated Business Solutions" (IBS) offering of the Genuine Parts Company, which includes NAPA and Traction, a supplier of parts for heavy vehicles. Although the "NAPA" solution is the best known, competition is beginning to emerge.

The main components of a NAPA parts outsourcing include:

- NAPA owns the vehicle parts inventory, including the inventory that is on site in various garages. This eliminates the concern for obsolete pars inventory or inventory shrinkage. Getting there may involve having NAPA work through the existing inventory, or arranging a sale of the inventory.
- The City "buys" parts when they are given to the mechanic for use on a vehicle.
- NAPA will source parts (for inventory or for special order) from its warehouses (including those of Traction and other associated suppliers) generally at the wholesale price a NAPA retailer would pay, or from other unrelated vendors, with an agreed mark-up applied
- NAPA uses its Total Automotive Management System (TAMS) to manage the inventory, place orders and record items sold to the city. TAMS has been integrated with M5 at many locations. It is not known if it can integrate with Hansen at this time.
- Staffing issues can be handled in different ways. In Toronto all parts supply staff are NAPA employees. In Ottawa City staff handle the counter and remote locations interfacing with mechanics, while NAPA employees handle the inventory, ordering and stocking

In Toronto:

- NAPA has completed its first five year contract and has entered into a new contract. Toronto reports that it has eliminated the risk of owning inventory and disposing of obsolete inventory, simplified the billing and payment process tremendously, marginally reduced staffing cost but improved staffing (NAPA provides coverage when staff is absent, which was not provided in the in-house model). They also noted that contract management is required and someone must be assigned, mostly to review and approve (or no) proposed purchases of large parts not coming from a NAPA family supplier. They report a fill rate of about 85% - and have no idea what it was before. The TAMS/M5 interface is working well. There has been some resistance to the change, e.g. Complaints of inferior parts (none have failed once put into service), which is slowly tailing off

In Ottawa:

- NAPA is completing its second year . Initial reports (not audits) indicate no major change in parts prices, but a saving of about $1.2M per year in staffing for positions were eliminated as NAPA took on the function. It also reports major simplification of the financial systems. Instead of processing 27,000 payments per year (at an estimated $43/payments, or $1.25M per year), the city now processes 12 payments – but still has all the relevant data in its FMIS – arriving electronically.

In Guelph:

- NAPA is providing parts support for both the municipal fleet and for transit.

Outsource Parts Management
Analysis

Some NAPA users think they benefit from higher "fill rates" – the frequency with which mechanics can get the parts they need the first time – but like Hamilton, most do not have the data from before

The most important factor in parts management is actually the availability of the parts, perhaps even more than the cost of the parts. Industry standards suggests that a good parts system should be able to deliver the right parts to the mechanic 85% of the time, on their first visit to the parts window (the fill rate). Ottawa has a penalty in its contract that comes in whenever parts availability falls below this target, and has applied penalties in some months. Toronto is also in this range while Guelph and Guelph Transit are both above 90%

Fleet Services, like Ottawa and Toronto before NAPA implementation, has not measured its fill rate or its turn rate, so it is not known at this time whether the NAPA arrangement at an 85% fill rate would improve the current situation and improve technician productivity. Fleet Services is currently implementing a program to measure inventory turn-over and the fill rate. If the City continues to operate its own parts supply function, these indicators should be built into the Hansen operating parameters as Key Performance Indicators. One report of inventory indicates the city carries about 17,000 unique items, 17% of which have not been issued since 2009 or earlier, suggesting there is at least some obsolete inventory.

Hamilton Fleet Services did look at the concept a couple of years ago, particularly by comparing the costs of a part list using current vendor pricing and NAPA pricing. The review concluded there would be no substantial saving on parts prices, which is consistent with the experience of Ottawa. However Ottawa reported substantial benefits that might also be available in Hamilton in the form of:

- Increased mechanic productivity based on parts availability
- Reduced staffing costs of the parts supply function
- Reduced administration, including the costs of payment processing and data entry
- Elimination of the need to write-off of obsolete inventory

The NAPA parts outsourcing concept is becoming a recognized best practice. The biggest unknown is the compatibility of the TAMS system with the proposed Hansen system in Hamilton. However the Hansen implementation process may be the best opportunity to deal with this, if there is a workable solution.

Outsource Parts Management
Analysis

Fleet Services has started to measure current performance which will allow a better determination of what benefits might derive from a "NAPA-like" arrangement

The concept should be considered again when the results are known, and other changes discussed in this report have been dealt with

Conclusions

- The NAPA parts outsourcing concept is something Fleet Services should examine in detail if it continues to have a substantial in-house maintenance function
- The analysis of this concept will benefit from the fill rate data now being collected.
- The viability of the concept will depend to some extent upon the results of the standing offer for heavy fleet services and the potential changes in the nature and scope of services provided to various Fleet Services customers

Recommendations

12. Continue the process to measure fill rates and inventory turns. At the very least this will facilitate monitoring and improvement of in-house operations.

13. In early 2015, when the results of the measurements are available and the results of the other initiatives discussed in this report are becoming clearer, begin a discussion with NAPA and competitive suppliers to determine the best approach to in Hamilton, taking into account current labour agreements, inventories, maintenance locations and strategies for outsourcing maintenance

14. Based on the outcomes of those discussions, the circumstances as they then exist, the performance of the parts group as measured, and considering the other effects noted by Ottawa and Toronto, conduct a business case analysis on the outsourced parts management concept and conduct a competition, if warranted.

Fleet Rightsizing
Current Circumstances

There are 67 heavy vehicles that travel less than 5,000 kms a year, and 158 light vehicles that travel less than 10,000 kms per year

Most municipalities review the size of their fleet periodically. Hamilton has done so recently, which would suggest potential savings may be modest, particularly with the recent confirmation of the Vehicle Take Home Policy and paid parking policies.

There is also concern from some departments that the fleet is too small – that vehicles have not been added to reflect growth and they have been retaining in service vehicles that have already been replaced, as a way of addressing this need. However there are still some vehicles with relatively low usage (e.g., <10,000 km for light vehicles, <5,000 for heavy vehicles)

The tables distributed separately identify 67 low usage heavy vehicles and 158 low usage light vehicles.

There is also a list of 54 units for which Avantis has no record of use in 2012. In many cases these are off-road vehicles and Avantis does not shows the hours of use, the traditional measure for these vehicles. We have shown the litres of fuel recorded against each vehicle, which does indicate that those near the bottom of the list are well used, but the units with low (or no) fuel use could be examined.

In addition we have used the model developed by CST Fleet Services to calculate the average kms related to vehicles assigned to each user department. While decisions still need to be made on a vehicle by vehicle basis, the analysis by department can help focus attention on the areas where opportunities may be strongest, especially opportunities for sharing a reduced number of vehicles.

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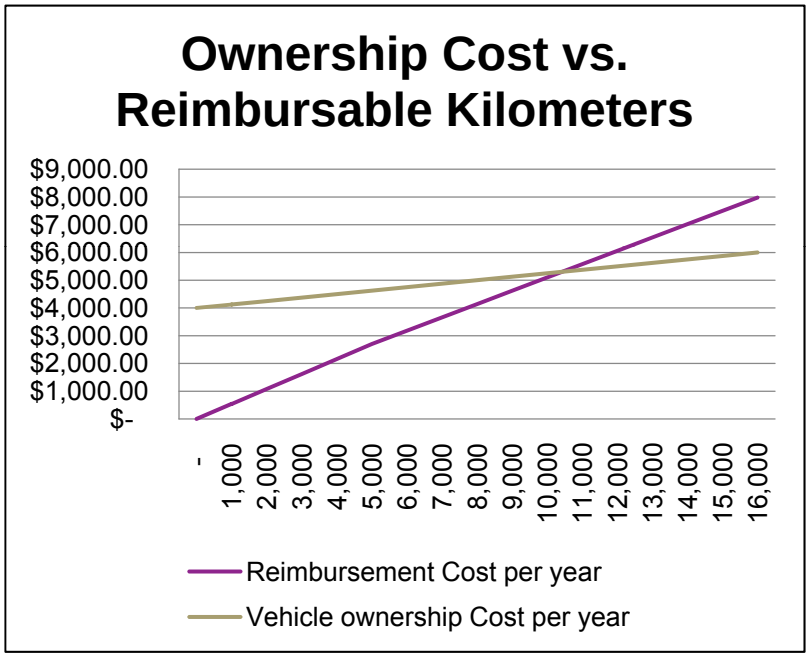
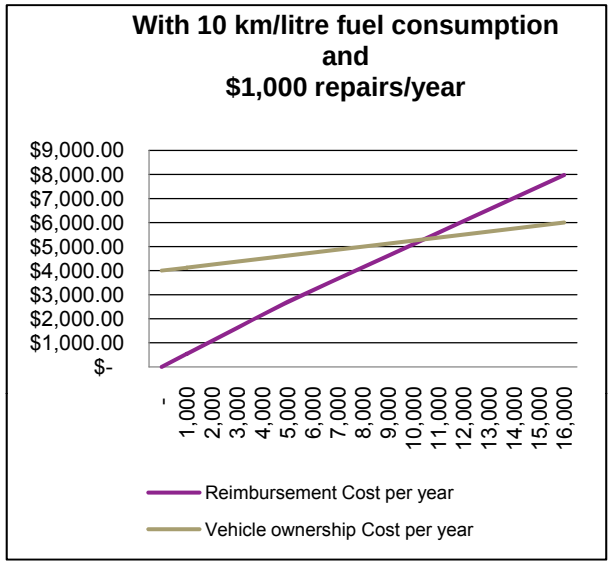
Fleet Rightsizing
Own vs. Compensate

This table looks at the cost of providing a city-owned vehicle compared to the cost of compensating an employee for on the job use of their private vehicle.

A light vehicle must be driven a long way before it is cheaper to own than to compensate the owner.

Even the small graph with more optimistic assumptions shows ownership is not less expensive until after 10,000 kms/year





Fleet Ownership cost factors		
Vehicle Cost	$24,000	per vehicle
fuel price	$1.25	per Liter
Life Cycle	8	years
maintenance	$2,000	per year
Fuel Consumption	7.5	km/litre

Personal Kilometers reimbursement		
First 5,000 km	$0.54	rate/km
> 5,000 km	$0.48	rate/km

Fleet Rightsizing
Costs of Using Low Usage Vehicles

The cost of operating a vehicle, per km, increases with decreased use

The table below shows the cost of operating several low use vehicles on a cost per km basis. For those that have not reached their planned age, the depreciation cost is included. Note that the lower the kms., the higher the per km cost.

Over/ under plan	Entity Classification	User Department	Number of vehicles	Total km travelled 2012	Total operating cost 2012	Cost/km
Light Duty						
-1	074A-1 T PICKUP W/PLOW	GENERALOPEXP	1	3,843	$10,179	$2.65
-2	155A-DUMP STAKE CREW 1T W/PLOW	CEMETERIES, MT. VIEW	1	6,483	$16,708	$2.58
-3	153-VAN MINI	HELPING HANDS	1	2,689	$5,377	$2.00
-4	021-1/2 T PICK UP	HELPING HANDS	1	1,557	$3,080	$1.98
5	026D-VAN SPRINTER 1 T	EXPNS - CENTRAL GARAGE	1	4,088	$8,076	$1.98
2	155-DUMP STAKE CREW 1 T	FORESTRY	1	6,325	$11,952	$1.89
4	152P-ALUM.DUMP CREW&PLOW	PKWEST	1	9,388	$14,274	$1.52
Heavy Duty						
0	045A-SWEEPER LRG MOBILE PM10	RDNORTH	1	157	$43,407	$275.91
5	058-VACTOR TRUCK	EAST	1	3,793	$83,577	$22.04
-7	122-HOIST TRUCK FORESTRY	FORESTRY	1	1,822	$24,677	$13.54
9	030B-DUMP MEDIUM DUTY w/PLOW	OPERMTCE	1	846	$9,114	$10.78
5	001-SANDER W/WING & FRNT 5.5	RDWEST	1	3,222	$21,155	$6.57
-6	126-WATER TANK TRUCK MTD	FORESTRY	1	2,002	$12,913	$6.45
-9	064X-EXT.USE FLUSHER	RDWEST	1	3,104	$9,232	$2.97

Fleet Rightsizing Conclusion

There are reasons low usage vehicles are appropriate – they may only respond to emergencies, or spend the whole day at one site facilitating some work.

However some fleet reductions may be possible by sharing low use vehicles between multiple users, by compensating employees for use of their own vehicles, or by using rented vehicles or taxis when special needs arise.

There are a significant number of low use vehicles in the Fleet despite the pressure on department budgets. This may suggest that most of the low use vehicles are necessary, for circumstances such as:

a) Vehicles with unique capabilities, required in unusual or emergency circumstances, and not available in the market for rental or hire

b) Vehicles which are used extensively on site, but which do not travel extensively between work sites

c) Vehicles used as occasional spares for unique or low volume unit types which are not available in the market for rental or hire (Note: larger fleets of similar vehicles should have some "spares" but they would generally be rotated through service so all units receive substantial use)

d) Vehicles that receive significant usage that is not captured in Avantis (e.g. the off-road vehicles where usage levels are not recorded in Avantis)

e) Unique vehicles (one of a kind) that are required occasionally and are not available for rental or hire on reasonable terms when they are required

Recognizing that even the low usage vehicles serve some purpose that is required, the owning departments (and Fleet Services when looking between departments) should consider the potential to reduce the total Fleet size using approaches such as:

1. Sharing one or more vehicles between low km users
2. Providing compensation to the employee for personal use of their vehicle instead of providing a city-owned vehicle
3. Using pool vehicles, rented vehicles, taxis or hired equipment instead of low km vehicles
4. Reduce the number of spares by replacing vehicles with poor maintenance records

Recognizing that users and their immediate superiors will generally prefer the easiest approach rather than the most economical, the process of reviewing the low use vehicles for possible reductions in fleet size will require the involvement of objective observers to provide challenge and to encourage serious consideration of options. This role is often provided by external consultants, however it can also be played by Fleet Services, the Fleet Review Steering Committee and department senior management. The approach outlined on the following page assumes the in-house approach, but could be modified if an outside resource is used.

Fleet Rightsizing
Recommendations

The recommendation outlines the steps the City can take to identify any opportunities to reduce the size of the fleet.

15. That the following program be undertaken to identify specific opportunities for fleet rightsizing:

- Fleet Services prepares lists of vehicles and related data to be reviewed by each department (based on those presented in this report, with any updated information available to Fleet). Fleet should remove from the list any vehicles that have subsequently retired or which to its knowledge obviously meet the criteria for low usage vehicles
- Fleet Services documents suggested approach, incorporating the concepts above and any others Fleet Services can identify to help guide departments in their review, and setting timeframes for the process
- Fleet Services circulates the lists and suggested approaches to Departments, either to Directors or to individuals the Directors have assigned to conduct the review, offering to work with the department to review the lists and examine possible strategies to achieve cost reductions
- Each department shall prepare a document which discusses each vehicle on the list, identifying:
  - The low use vehicle justification category (a to e on page 54) that applies to the vehicle, with a sentence or two explaining how the criteria applies, or
  - The approach to be taken (e.g. 1 to 4 on page 54) to reduce fleet size and reduce costs, or
  - A detailed explanation of why the vehicle is required and none of the reduction options can be applied
- The report from each Department is to be approved and signed by the Department Head
- Each of the Department Reports is to be presented to the Steering Committee for approval
- The Fleet Review Steering Committee is to remain in place and receive regular reports from Fleet Services on the progress, to review department reports as they are completed and to encourage department participation when reports are not forthcoming

Out of Scope

A number of issues emerged from the consultation process that are outside the scope of this review, but which might still deserve the attention of the Steering Committee.

These issues are:

1) **The opportunities to consider consolidation of Fleet activities.**
   a) There is some discussion underway concerning consolidation/reduction of Fleet locations, and/or other ways of providing service to the golf courses
   b) There may be some value in consolidating the fuel locations, with or without establishing a process that would allow some users to refuel at retail stations
   c) The potential to consolidate police and fire fleet activities with Fleet Services, and perhaps Transit non-revenue vehicles
2) **The Fleet financial model - it is largely break even, but not entirely, as some management costs are not recovered from customers**
3) **The major customer relations issues that we noted were:**
   a) The billing process. Customers note that bills for the same item can have widely varying prices, mainly because Avantis has not recorded the detailed line items, either because mechanics have not recorded them or vendor invoices are entered as one line. Fleet reports it is now recording vendor invoices line by line, which is time consuming, but should help once customers become familiar with it - however, this is also a Hansen implementation issue, particularly to reduce the labour intensive input process
   b) Customers want to sign off on major repairs (decide if they should happen). Fleet thinks they do, but it either doesn't happen all the time, or customer management doesn't know it happens.
   c) Fleet sets out rates at the beginning of the year and charges customers according to the rates through the year. Then at some point during the year, customers think Fleet finds it is in deficit and adjusts its rates retroactively to eliminate the deficit - transferring the budget problem to the customers. Fleet should set rates, with some margin included, and be accountable for breaking even or not over the course of the year.
   d) "Competitive Service Provider" will consider differential charging for "premium" services, but even if that doesn't move ahead, Fleet may want to consider at least two rates - in depot and mobile/on the road.
4) **Hansen - The implementation needs careful consideration of the business requirements - some of which are noted above - some of which are in the report itself. It will facilitate (or constrain) Fleet operations for at least a decade to come**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cutting through complexity