LATE DISTRIBUTION
FOR COUNCIL – JULY 20, 2010

A12

CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date:	June 1, 2010
Contact:	Doug Smith
Contact No.:	604.326.4791
RTS No.:	08636
Van RIMS No.:	08-2000-20
Meeting Date:	July 20, 2010

TO: Vancouver City Council

FROM: General Manager of Engineering Services

SUBJECT: Fleet Additions - Equipment Services Branch

RECOMMENDATION

A. THAT Council approve the allocation of $203,000 from the Truck and Equipment Plant Account for the Equipment Services fleet as follows:

   i. $37,000 to add one (1) forklift to replace an existing leased unit

   ii. $36,000 to add one (1) 4X4 pick-up to replace an existing leased unit

   iii. $130,000 for the "not-like-for-like" replacement of an existing service truck

   The addition of these units results in a net annual operating budget savings of $12,200 to the Equipment Services Operating Budget.

B. THAT Council authorize one (1) existing tractor be retained beyond its scheduled replacement date at no cost to the Truck and Equipment Plant Account with operating costs to be funded from the existing Equipment Services Operating Budget for this unit.

COUNCIL POLICY

Council approves expenditures from Reserves, including the Truck and Equipment Plant Account.

Council approves all increases in service levels, including the addition of vehicles and equipment to the fleet.

PURPOSE

The purpose of this report is to seek Council approval to replace a forklift and leased pick-up with City-owned units, to perform a "not like for like replacement" of pick-up to a service truck and to authorize the retention of an existing tandem axle tractor truck that has reached the end of its service life.

BACKGROUND

The City owns and operates a fleet of approximately 4,000 units for the purpose of delivering City services. The Equipment Services Branch (EQS) procures and manages the City's fleet. This business model allows for corporate control of the fleet through centralized procurement, budgeting, financing, analysis, inventorying and maintenance. Repair and maintenance services are provided from four locations: Manitoba Yard, National Yard, Evans Yard and the Vancouver Landfill.

The majority of City services are provided by the use of City owned vehicles and equipment as they cost less to operate than external leases and rentals. Units are kept to a predetermined life based on when the capital and operating costs of the unit exceed the cost of purchasing and operating a new unit. All costs associated with the unit are recovered through a charge to fleet users; these costs include repayment of capital, maintenance, fuel, and insurance.

Long Term Lease Replacement

In response to recommendations from the 2004 Truck & Equipment Rental Audit done by the Internal Audit Group, there is an initiative underway by the Equipment Services Branch (EQS) to review all long term leases. The review is based on the operational need for the unit and the cost effectiveness of converting the leases to City owned units. When a review indicates that fleet additions are appropriate, staff seek approval from Council for these additions.

Funding Mechanisms and Approval Process for Vehicle and Equipment Purchases

In 2007 Equipment Services and Corporate Budgets formalized a procedure for determining the funding mechanism that is used when procuring City-owned vehicles and equipment. The fleet policy is included in Appendix A. Units that are purchased using Truck and Equipment Plant Account funding are units that are either valued at over $15,000, or can be licensed and/or insured, or require an operator to operate the unit from a seated operator's station. Units that are funded using this mechanism must be approved by Council as permanent additions to the City fleet. Units that do not meet any of the criteria above and have a purchase value greater than $300 are purchased using Small Equipment Plant Account funding.

Not-Like-for-Like Replacement Process

In 2007 Equipment Services and Corporate Budgets established a Vehicle and Equipment Replacement Process to define the two (2) types of equipment replacements and the approval method for each. The fleet policy is included in Appendix B. The first type, a "like-for-like" replacement, applies when the new unit is similar in class, cost, or operational usability to the existing unit in the fleet. The financial implications of the "like-for-like" replacement are submitted to Corporate Budgets for concurrence and approval.

In cases where the characteristics listed above differ, a "not-like-for-like" replacement approval is required. The approval method for the "not-like-for-like" replacement depends on whether the usability and the incremental capital and operating costs are within limits set out in the fleet policy. "Not-like-for-like" replacements that are within the policy limits can be directed to Corporate Budgets for approval. Council approval is required for "not-like-for-like" replacements that are outside of the limits because the replacement units differ significantly in cost or use (service level) compared to the unit originally approved by Council.

DISCUSSION

Manitoba Yard Location

EQS operates a fleet of 40 units. These units include service vehicles and service loaners/rentals. One of these units is a yard tractor. None of the other units in the EQS fleet can perform the function of the yard tractor.

Fleet Addition Authorization: Tandem Axle Truck (Yard Tractor)

The Transfer and Landfill Operations Branch (TLOB) employ a fleet of nine (9) tractors and eleven (11) trailers; the tractors (semi-trucks), when combined with 53 foot trailers, form complete transfer refuse hauling units. The transfer hauling units transport refuse from the Vancouver South Transfer Station (VSTS) to the Vancouver Landfill. The trailers are equipped with hydraulically actuated floors that allow for the dumping of refuse and hydraulically operated overhead screens that prevent refuse from escaping the trailer body when traveling at highway speeds. There are more trailers than tractors because the trailers are in need of ongoing maintenance and two (2) extra trailers are used to compensate for trailer downtime of the other nine (9). The tractor and trailers units are maintained at the Manitoba Works Yard.

EQS has historically held back the disposal of one (1) of the nine (9) tractors as they come due for replacement to serve as a yard truck at the Manitoba Works Yard. Because of its original service application, the truck is equipped with all the required components to operate the hydraulic floors and screens for the trailers. The screens and floors are high wear and stress components and as such require ongoing repairs. The trailers are routinely moved for service and repair within the 2 acre repair facility at Manitoba Works Yard. This unique yard truck application results in an annual usage of approximately 250 kilometers per year. Since the capital cost of the truck was fully paid over its original service life, there is only a small loss in residual value for the operation of it for the time it serves in the yard truck application. Maintenance costs are also limited because of the low use application. The cost of operating a held back yard truck is approximately $5,000 per year.

The next most cost effective solution to address the operational challenge is to purchase a new dedicated yard tractor. This however is not recommended because of the associated operating and capital repayment cost of approximately $15,000 per year.

The alternative to using the held back yard tractor or purchasing a new tractor is to accomplish the required shifting/moving of trailers by scheduling the work through TLOB tractors that are used to haul refuse to the Landfill. However, the cost in lost productivity for both the TLOB and EQS by having TLOB staff decouple the trailers from the tractors, move the trailer that is in for service and then wait for EQS mechanics to perform floor and screen adjustments significantly out weighs the cost of holding back one of the old trucks at disposal. The cost in lost productivity is estimated to be approximately $20,000 per year. The

loss in productivity of TLOB staff equates to a loss of 177 loads hauled per year (5700 tonnes/year) which would slightly increase Landfill annual operating costs (by approximately 0.75%) because of a reduction in the annual volumes received.

To that end, it is recommended that a transfer tractor be held back from disposal when the tractors are replaced and used in the yard truck application.

Vancouver Landfill Location

EQS services a fleet of approximately 60 pieces of equipment/vehicles at the Landfill with nine field and two stores staff over two shifts. The service needs are met through the use of one authorized pick-up truck (unit A1943), one authorized rough terrain crane (unit A2509), a tandem axle crane truck (unit B1400) that was not decommissioned at the end of its life, a leased forklift and a leased pick-up truck. Apart from the main haul access roads and shop repair pad the vehicles (excluding the forklift) are driven in mud and deeply rutted axle deep terrain that contains garbage and protruding metal objects that gouge the vehicles undersides. Given the severe service application, the vehicles at the Landfill require a great deal of underbody clearance, robust chassis construction with significant heavy duty suspension and drive train components capable of sustaining the abuse of the application.

Mobile Service Truck: Not-Like-for-Like Replacement

EQS currently has a half ton 4x4 pick-up truck (unit A1943) that transports mechanics and tools at the Landfill. It is used daily by the day and the afternoon shifts; consequently it is in service approximately 16 hours a day and 5 days a week. Because of its size, A1943 lacks tool and fluid storage capacity and therefore does not serve well as a mobile service truck. It services the Landfill fleet mechanical repair function in conjunction with a larger tandem axle flat deck crane truck (unit B1400) and rough terrain crane (A2509). The cranes allow for loading, unloading, and positioning of heavy components when servicing the large equipment fleet at the Landfill. B1400 is equipped with a pressure washing system that allows for the washing of the radiators of the equipment. It is important this task be performed regularly as overheating of equipment caused by plugged radiators (from dust and garbage) can lead to costly repairs and downtime. A1943 currently does not have this functionality.

A properly equipped multi-function mobile service truck with lifting and pressure washing functionality will replace the pickup truck A1943, flat deck crane truck B1400, and rough terrain crane A2509. Reducing the size of the fleet will reduce costs and limit the risk exposure of the City given the existing units are old and expected to incur high repair and operating costs in the future.

It is recommended that the new mobile service truck be equipped with a crane, pressure washing system, and ability to carry 45 gallon oil drums, house 24-volt jump start systems, air supply, staff wet-weather gear, and night work lighting. These are in addition to the standard personal tooling and/or specialized items such as heavy duty jacks, bars, hammers, wrenches that may be required.

A properly sized and designed truck will assist in minimizing the need to move the heavy steel wheeled/tracked equipment off the face of the Landfill and into the shop; walking (slow speed move of equipment for the sole purpose of moving from point a to b) the equipment - from the Landfill face to the shop results in the Landfill roads being prematurely degraded and damaged and the equipment incurring significant wear as a result of the 3 plus km trip.

Transporting the equipment via a hired low bed truck is costly at approximately $700 per move round trip. To that end, doing more scheduled and unscheduled work at the Landfill face reduces lost machine and staff productivity, and wear and tear on components unnecessarily traveling to and from the site to the shop. A mobile service truck is typical for these applications and is recommended to do this work.

Lease to City Owned Conversion: Forklift

EQS has historically leased a forklift for use at the repair facilities at the Vancouver Landfill. The fleet repair facility services vehicles and equipment and is supported by a Stores operation that processes approximately $586,000 worth of parts annually. A forklift is essential to operations so that staff can transport palleted items, parts, and equipment around the repair facility and storage areas. This piece of equipment reduces the risk of injury to staff and resulting WorkSafe BC claims when moving heavy components. The forklift also saves time for moving large quantities of parts around the stores site thus improving staff productivity.

There is a permanent requirement for this machine. There will be savings of approximately $6,200 per year by converting the leased unit to a City-owned unit (Table 1).

Lease to City Owned Conversion: 4x4 Pick-Up- Welding

EQS has historically leased a 4x4 pick-up for the transportation of the welding and fabrication crew and material at the Vancouver Landfill. Welding and fabrication staff repair approximately $8 million of heavy earth moving equipment that is used at the Landfill; this equipment includes compactors, bulldozers, loaders, grinders, etc. There is only one other fleet service truck at the Landfill and it is used to perform mechanical repairs. The use of that truck is listed in the not-like-for-like replacement justification above. Converting the leased welding pick-up to a City owned welding pick-up will save the City approximately $6,000 per year (Table 1). The new unit will be sized to meet the necessary payload and suspension requirements in order to ensure vehicle longevity.

FINANCIAL IMPLICATIONS

The expected lives, one-time capital costs, and operating budget requirements of each unit are listed in Table 1 below, along with any associated offsets and the resulting net operating budget impact. The one-time capital costs will be provided from the Truck and Equipment Plant Account. Offsets are available through existing operating budget provisions which are described below for each unit. There will be a net annual savings of $12,200 by proceeding with the recommendations.

Table 1. Total Operating Costs for New Units

Vehicle Description	Expected Vehicle Life	One-Time Capital Costs	Annual Operating Budget Requirements			Offset *	Operating Budget Savings
			Capital	Operating	Subtotal		
Yard Tractor	6 years	$0	$0	$5,000	$5,000	$5,000	$0
Mobile Service Truck	12 years	$130,000	$15,500	$10,200	$25,700	$25,700	$0
Fork Lift	10 years	$37,000	$4,800	$8,300	$13,100	$19,300	($6,200)
4X4Pick-Up	10 years	$36,000	$7,000	$8,000	$15,000	$21,000	($6,000)
	Total	**$203,000**	**$27,300**	**$31,400**	**$58,800**	**$71,000**	**($12,200)**

** Costs associated with current budget.*

Yard Tractor

There will be no capital cost for the held-back unit as all capital has already been fully recovered. This unit will still require an operating budget of approximately $5,000 per year to cover operating costs of the unit. This funding will come from existing EQS budgets.

Mobile Service Truck

A "like-for-like" replacement of the 4x4 pick-up truck (unit A1943) would require an allocation of approximately $32,500 and approximately $350,000 would be required for the rough terrain crane from the Truck and Equipment Plant Account for the purchase and outfitting. The one-time capital cost of the "not-like-for-like" mobile service truck is approximately $130,000.

The annual operating budget requirement for the not-like-for-like replacement will be approximately $25,700 per year. This cost will be offset by the existing annual operating budget for A1943 ($11,700 per year) and A2509 ($14,000 per year). As a result there will be no increase in costs for this "not-like-for-like" replacement. B1400 will be removed from the fleet and not replaced. There are no offsetting savings associated with flat deck crane truck (B1400) since the unit had reached the end of its service life in 2002 and therefore had no operating budget.

Forklift

The one-time capital cost of the forklift is approximately $37,000 and, because this unit will replace a leased unit, the annual operating budget requirement of approximately $13,100 would be offset by the current lease and operating costs of $19,300, resulting in annual savings of approximately $6,200.

4X4 Pick-Up

The one-time capital cost of the unit is approximately $36,000 and because this unit will replace a leased unit, the annual operating budget requirement of approximately $15,000 would be offset by the current lease and operating costs of $21,000, resulting in annual savings of approximately $6,000.

ENVIRONMENTAL IMPLICATIONS

All new and replacement equipment in the City fleet go through an environmental and right-sizing review process. This is to ensure that the equipment will meet the user's operational needs and that the selected equipment has the best combination of fuel efficiency and cost effectiveness.

Yard Tractor

The yard tractor will continue to produce approximately 2,000 kg of greenhouse gasses (GHGs) per year. As it a truck that will be held back from disposal it will not have the most up to date emissions reduction technologies; to address this issue, the truck will be retrofitted with a diesel oxidization catalyst muffler that will reduce emissions up to 40%.

Mobile Service Truck

The mobile service truck has been right sized to an F-550 (or equivalent) chassis based on the service application. There are no commercially available alternative fuel or hybrid vehicles that can sustain the severe service off road work cycle and operate the necessary auxiliary equipment in this class of vehicle. To that end, the mobile service truck will be procured with a diesel engine and therefore use biodiesel. The mobile service truck will produce approximately 4000 kgs of GHGs per year. The GHG production is similar to the current state with the existing gasoline engine pick-up and the diesel engine powered rough terrain crane. The elimination of B1400 would be in addition to the figures noted above and would result in a net GHG reduction of 1500 kgs per year.

Forklift

Electric forklifts are available in the marketplace but are not recommended in this application as the forklift will be used outdoors. Dust from the Landfill and adverse weather such as rain and snow will cause the electronics to prematurely fail; to that end a more robust forklift engine/control option is required.

Diesel and propane forklifts are also commercially available and better suited for outdoor use. A propane forklift is recommended as it will produce less carbon monoxide, hydrocarbons, particulate matter, and nitrogen oxide emissions than a diesel forklift. A propane forklift will produce approximately 500 kg of GHGs per year.

4X4 Pick-Up

The pick-up truck has been right sized to ¾ ton pick-up chassis based on the service application. There are no commercially available alternative fuel or hybrid vehicles that can sustain the severe service off road work cycle in this class of vehicle. To that end, the pick-up truck will be equipped with a diesel engine as it will allow for the use of biodiesel. The vehicle has been right sized based on the service application in which the vehicle will be operating. The pick-up will produce approximately 3,500 kg of GHGs per year.

CONCLUSION

To meet the ongoing operational requirements of the Equipment Services Branch, four (4) additional units are required. Accordingly, we recommend that a yard truck, mobile service truck, forklift and 4X4 pick-up be added to the Equipment Services fleet. The one-time capital cost of the units will total $203,000, and will be allocated from the Truck and Equipment Plant Account. It is recommended that the capital repayment and operating costs for these four (4) units be provided from the existing Equipment Services Branch operating budget.

* * * * *

Equip	**POLICIES AND PROCEDURES** **Equipment Services**	**APPENDIX A**
Category: Operations	Subject: Procurement – Funding of Vehicles and Equipment	Policy Number: 4.1.2

Funding Mechanism – City-Owned Vehicles and Equipment

Purpose

To set out a procedure for determining which of the Equipment Service Branch administered funding mechanisms will be used for the procurement of city-owned vehicles and equipment.

Scope

This policy applies to all City owned vehicles and equipment that are inventoried and tracked by the Equipment Services Branch.

Procedures

In order for a vehicle or piece of equipment, herein known as a "Unit", to be funded from the Truck and Equipment Plant Account, the Unit must meet the following conditions:

- Be a permanent addition to the corporate fleet via a Council approved Administrative Report that has been concurred with by both the Equipment Services Branch and Corporate Budget Services.
- Unit maintenance history must be collected in the City Fleet Management System.
- Must be procured by Equipment Management staff.

In order for a Unit to be funded from the Small Equipment Plant Account, the Unit must meet the following condition:

- Unit maintenance history must be collected in the City Fleet Management System.
- Must be procured by Equipment Management staff.
- Must be a serviceable item that is placed on regular preventative maintenance schedule that will be maintained by the City (which will include VFRS).

The table below lists the criteria used to determine the appropriate funding mechanism for the procurement of City-Owned vehicles and equipment.

Funding Mechanism	
Truck & Equipment Plant Account	**Small Equipment Plant Account**
Any City-Owned Unit worth over $15,000 at time of procurement.	Any City-Owned Unit that does not meet Truck and Equipment Plant Accounting funding mechanism criteria and has a purchase value greater than $300.
Any City-Owned Unit that can be licensed and/or insured.	
Any City-Owned Unit that requires operator to operate the Unit from a seated operator's station.	

*Unit is defined as a vehicle or piece of equipment that incorporates mechanical technology.

Additional Notes

The Equipment Services Branch is responsible for administering the Truck and Equipment Plant Account and the Small Equipment Plant Account and evaluating fleet requirements and technologies funded from this funding source.

Both the Truck and Equipment Plant Account and the Small Equipment Plant Account are part of the Truck and Equipment Reserve Fund.

Any Units not defined by the criteria listed above shall be reviewed by the Manager of Equipment Services to determine the appropriate funding mechanism.

Issued by: Mani Deo	**Approved by:** 	**Date:** January 15, 2007

Equip	**POLICIES AND PROCEDURES** **Equipment Services**	**APPENDIX B**
Category: Operations	Subject: Procurement	Policy Number: 4.1.3

Vehicle/Equipment Replacement Process

Purpose

The Equipment Services Branch is responsible for administering the Truck and Equipment Plant Account. As part of the 2007/2008 Replacement Program process, the Equipment Service Branch was tasked by Corporate Budget Services to document the processes used for replacing vehicles and equipment funded from this funding source.

Scope

This Policy deals with all units funded from the Truck and Equipment Plant Account.

Process

There are two methods of replacing units funded from the Plant Account. Regardless of the method, the capital costs of the unit (minus estimated resale) must be paid back to the Plant Account in full before the unit can be replaced. Additionally, economic modeling techniques are to be used to determine optimal life of the unit based on maintenance and operating cost history for the class of unit being replaced.

Like for Like Replacement (LFLR)

The Equipment Services Branch is to ensure that there are sufficient funds available in the Plant Account for a LFLR. A LFLR means that the new unit being procured is similar in class, size, operational usability, and is of similar financial value of the unit being replaced.

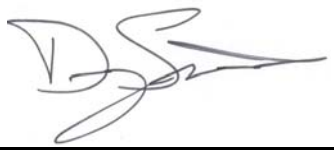
Financial implications of the LFLR are to be presented to COV Budgets for concurrence before the unit can be replaced.

Not Like for Like Replacement (NLFLR)

A NLFLR is used in place of LFLR for vehicles and equipment that are need of replacement and differ in class, size, cost or operational use from the unit being replaced. The NLFLR can be performed when:

- Net annual ownership cost (capital and operating) of the replacement unit are similar or less than the unit being replaced and,
- Incremental cost of the replacement unit does not surpass 35% of a LFLR (net outfitting), up to a maximum of $300,000, unless there is proven improvement in operational productivity that decreases operational costs or increase City revenues in excess of the annual increase in fleet costs and,
- The replacement is not a component of a larger change in fleet standard for a particular class of replacement.

If any of the above criteria for NLFLR's are not met, the replacement is to be directed to Council.

Issued by: Mani Deo	**Approved by:** 	**Date:** January 15, 2007