



CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Date: October 17, 2008
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Meeting Date: October 30, 2008

TO: Standing Committee on City Services and Budgets
FROM: General Manager of Engineering Services
SUBJECT: 2009 Solid Waste Utility (SWU) Fees and By-Law Changes

RECOMMENDATION

A.

- i) THAT the 2009 garbage collection fees be established as follows:

<u>Cart Size</u>	<u>2009 Fee</u>
75 litres	\$85
120 litres	\$101
180 litres	\$122
240 litres	\$143
360 litres	\$185

- ii) THAT the 2009 annual garbage collection fees be increased by \$9 to \$59 for each collection point, and increased by \$8 to \$35 for each garbage can allocated or purchased for properties receiving garbage can service;
- iii) THAT the 2009 recycling collection fees for each dwelling unit be increased by \$1 to \$19, except where one or more common collection points, at locations agreed to by the City Engineer are serviced the rate be increased by \$1 to \$11 for each dwelling unit, and the rate for each collection point remain at \$8;

iv) THAT the 2009 yard trimmings collection fees be established as follows:

<u>Cart Size</u>	<u>2009 Fee</u>
120 litres	\$45
180 litres	\$52
240 litres	\$58
360 litres	\$72

- B. THAT effective January 1, 2009 Vancouver Landfill demolition material disposal fees be increased from \$520 to \$550 for each tandem axle trailer, and from \$630 to \$660 for each tridem axle trailer to reflect market rates.
- C. THAT the garbage disposal fee at the Vancouver Landfill and Vancouver South Transfer Station for loads greater than 900 kilograms be increased from \$68/tonne to \$71/tonne effective January 1, 2009, if a Metro Vancouver proposed regional tipping rate increase of the same amount receives their Board's approval in 2008.
- D. THAT the yard trimmings material disposal fee at the Vancouver Landfill and Vancouver South Transfer Station for loads greater than 900 kilograms be increased from \$50/tonne to \$56/tonne effective January 1, 2009, if a Metro Vancouver proposed regional tipping rate increase of the same amount receives their Board's approval in 2008.
- E. THAT Council approve the following capital projects at the Vancouver South Transfer Station and Vancouver Landfill:
- i. Pit Wall Repairs (\$500,000)
 - ii. Weighscale Software Upgrades (\$250,000)
 - iii. Road Paving (\$300,000)

at an estimated total cost of \$1,050,000 to be funded with a loan from the Capital Financing Fund (Solid Waste Capital Reserve) to be repaid by the various users of those facilities on terms acceptable to the Director of Finance.

- F. THAT the Director of Legal Services be instructed to bring forward for enactment the revisions to the Solid Waste By-law substantially as referred to in these Recommendations and substantially as set out in Appendix A.

CONSIDERATION

- G. THAT Council endorse in principle changing the current Solid Waste Utility cost of service rate structure for garbage collection to a uniform price per litre rate structure effective January 1, 2010, and instruct staff to:
- i) conduct public communications and solicit cart size change information based on estimated new program rates;
 - ii) report back in 2009 with details of an implementation plan including staff and equipment resources and budget requirements.

CITY MANAGER'S COMMENTS

City Council directed that the savings arising from the 2007 civic strike be returned to Vancouver taxpayers in 2008. As a result, the solid waste fees in 2008 were lower than they would normally have been. As this one-time reduction ends in 2009, the 2009 rates have to be increased to reverse this one-time saving. Therefore, the 2009 solid waste fees need to reflect both the actual increase in providing solid waste services and the additional one-time supplementary increase which represent approximately 40% of the overall rate change.

COUNCIL POLICY

On May 3, 1994, Council agreed to support the Greater Vancouver Regional Solid Waste Management Plan, which includes the need for recycling and yard waste programs, as well as a user pay principle for solid waste programs.

On October 7, 1997, Council approved the implementation of the Solid Waste Utility effective January 1, 1998.

On January 29, 2004, Council approved the implementation of automated garbage collection service beginning in 2005, and automated yard trimmings collection beginning in 2006.

On September 30, 2004, Council adopted various Garbage Service and Yard Trimmings Administrative Policies for automated collection, including but not limited to minimum service allocations and fees for change in service levels.

Solid waste utility rates are reviewed annually to ensure that fees recover the full cost of providing services or are equivalent to competitive charges where the fee is of a market nature, such as for demolition material tipping fees at the Vancouver Landfill.

Fee increases require Council approval.

SUMMARY

Costs within the Solid Waste Utility (SWU) are recovered through user fees rather than from property taxes. While property taxes are based on assessed value, utility fees are based on a user pay concept. The SWU is therefore self funded and independent of the City's property tax supported operating budget. A surplus (savings) or deficit (cost overrun) accrued in a given year is normally reflected in the following years' utility rates. The solid waste capital reserve is used as a solid waste utility rate stabilization fund.

Collection Program Fees

For 2008, the SWU rates approved by Council were based on expected inflationary and program increases offset by an estimated one-time savings as a result of the 2007 work stoppage. The one-time savings were uncertain at the time of rate setting, and were lower than anticipated.

Rate increases are now required for 2009 to cover the expected inflationary increases for 2009, to reverse one-time work stoppage savings, and to begin to draw down accumulated deficits as discussed in the report. Staff recommend that one third of the accumulated deficits in the garbage and yard trimmings operations be recovered through the 2009 fees.

For 2009, the average homeowner will see an increase of about \$40 (weighted average) in their annual total solid waste collection fees, compared to 2008 rates which accounted for estimated strike savings. The weighted average increase per household is about \$24 if the estimated strike savings in the 2008 rates are factored out. Fees are summarized as follows:

Garbage Collection Fees:

Garbage Cart Size (litres)	2008 Approved Fees*	2007 Est. Work Stoppage Savings	2008 Recommended Fees**	2009 Recommended Fees	\$ Change from 2008 Recommended	\$ Change from 2008 Approved
75	\$68	\$7	\$75	\$85	+\$10	+\$17
120	\$81	\$7	\$88	\$101	+\$13	+\$20
180	\$97	\$8	\$105	\$122	+\$17	+\$25
240	\$114	\$9	\$123	\$143	+\$20	+\$29
360	\$148	\$9	\$157	\$185	+\$28	+\$37

*includes previously estimated 2007 work stoppage savings

**does not include previously estimated 2007 work stoppage savings

The weighted average increase to homeowners for 2009 garbage collection fees is about \$27, compared to 2008 rates which accounted for estimated strike savings.

For properties that are not serviced by automated collection, the proposed fee for garbage collection service in 2009 is \$35 per garbage can (maximum 100 litres) plus a \$50 stop fee.

Increases are due to: inflation in wage, truck fuel and disposal costs; catching up from the fee reductions approved in 2008; and drawing down the accumulated deficit in the garbage program.

Recycling Collection Fees:

For 2009 it is recommended that the recycling collection fee remain at \$8 per collection point and the per dwelling unit rate increase by \$1 to \$11. This increase will partially offset the combined effect of the 2009 cost increases and the reversal of the one-time 2007 work stoppage savings fee reduction. This recommended fee is forecasted to result in a budgeted deficit of about \$487,000 which will be funded from an accumulated surplus that has accrued in this program over the past few years. This surplus is a result of recycling revenues being greater than budgeted over the past few years due to strong recycling commodity market prices.

Yard Trimmings Collection Fees:

Yard Trimmings Cart Size (litres)	2008 Approved Fees*	2007 Est. Work Stoppage Savings	2008 Recommended Fees**	2009 Recommended Fees	\$ Change from 2008 Recommended	\$ Change from 2008 Approved
120	\$37	\$7	\$44	\$45	+\$1	+\$ 8
180	\$42	\$7	\$49	\$52	+\$3	+\$10
240	\$46	\$9	\$55	\$58	+\$3	+\$12
360	\$54	\$11	\$65	\$72	+\$7	+\$18

*includes previously estimated 2007 work stoppage savings

**does not include previously estimated 2007 work stoppage savings

The weighted average increase to homeowners for the 2009 yard trimmings collection fees is about \$12, compared to 2008 rates which accounted for estimated strike savings. Similar to the garbage collection cost drivers, this increase is due to inflation in wage and truck fuel

costs; to reverse one-time work stoppage savings; and drawing down the accumulated deficit as discussed later in the report.

Tipping Fees

Staff recommend tipping fees for demolition materials accepted at the Vancouver Landfill be increased from \$520 to \$550 for each tandem axle trailer load and from \$630 to \$660 for each tridem axle trailer load to reflect market conditions.

Staff also recommend increasing commercial tipping fees at the Vancouver Landfill and Vancouver South Transfer Station for garbage and yard trimmings loads greater than 900 kilograms from \$68/tonne to \$71/tonne and from \$50/tonne to \$56/tonne, respectively. The fee increases are meant to match the proposed regional tipping fees that will come into effect on January 1, 2009, subject to the approval of the Greater Vancouver Sewerage & Drainage District Board.

Earlier this month, Metro Vancouver staff recommended that the regional garbage tipping fee be increase incrementally from \$71/tonne in 2009 to \$102/tonne in 2013. The regional yard trimmings tipping fee is set at \$15/tonne less than the garbage tipping fee.

By-law Changes

In addition to Solid Waste By-law fee and housekeeping changes required for 2009, staff recommend that the list of prohibited and restricted materials be updated and streamlined to incorporate materials banned from disposal in the region, and a surcharge on the tipping fee for restricted material violations be implemented to increase waste diversion and recycling. This by-law change will allow additional fees to be charged to customers who violate regional disposal bans, as intended by Metro Vancouver, and as done at other regional facilities.

Further, staff recommend the by-law be amended to incorporate provisions requiring maintaining the cleanliness of areas adjacent to recycling carts at properties where recycling carts are stored on City street or lane, and that a fee for storage of recycling carts on City streets and lanes be established comparable to the current Garbage Container License fee for commercial dumpsters.

Solid Waste Capital Items

Three new capital initiatives are currently planned in 2009 for Transfer & Landfill Operations: pit wall repairs at the Transfer Station; upgrades to the weighscale software at the Transfer Station and Landfill; and road paving at the Landfill. Transfer Station pit wall repairs are necessary to stop water penetration between the wall steel plates and the concrete wall. The repairs are estimated to cost approximately \$500,000. Software upgrades are required to address the fact that the current version will no longer be supported at the end of 2009. The cost to upgrade the software is estimated at \$250,000; however the actual cost will depend on the selected vendor. Road paving is required in particular areas of the Landfill to decrease wear and tear on vehicles and reduce dust. This road paving is to be completed in 2009 and the cost of this work is estimated at \$300,000.

Rate Structure

The report also discusses a concern previously raised by Council that the current cost of service rate structure for garbage collection may not provide an adequate incentive to reduce or divert waste. Various findings of a consultant's study into alternative rate structures are

noted, along with anticipated risks, costs and benefits. Overall, staff conclude that the assumed waste reduction and diversion incentive from switching to a linear (uniform price per litre) rate structure is marginal, at best. Such a switch would result in considerable implementation cost and disruption to Solid Waste Utility customers. We therefore do not recommend that Council change from the current cost of service approach. However, staff have provided a Consideration item in this report if Council does not agree with this conclusion. In that case, staff recommend that the change be made effective January 1, 2010 to allow sufficient time to develop detailed cost estimates and an implementation plan to meet customer needs and expectations.

PURPOSE

The purpose of this report is to obtain Council authority to set 2009 Solid Waste Utility fees, amend the Solid Waste By-law, and set a 2009 capital budget for three Transfer & Landfill Operations projects. This report also provides information on alternative garbage collection fee structures and provides Council with a Consideration if Council's preference is to adopt a linear (uniform price per litre) rate structure for garbage collection.

BACKGROUND

The establishment of the Solid Waste Utility (SWU) in 1998 resulted in a significant change in the way solid waste costs are allocated. Within the utility the City charges user fees rather than utilizing property taxes to recover the cost of services. While property taxes are based on assessed property value, utility fees are based on the service levels provided to customers. The SWU is self funded through user fees and is independent of the City's tax supported operating budget.

In 2004 Council approved a rate structure for the newly introduced automated collection program consisting of a flat "Service Fee" to recover fixed costs, and a volumetric "Cart Fee" to recover variable costs related to the various sizes of carts. The total of these two component fees is set to recover total program costs.

DISCUSSION

Recommended 2009 Solid Waste Utility Fees

Garbage Collection

For 2008, the garbage collection rates approved by Council were based on expected inflationary and program increases offset by an estimated one-time savings as a result of the 2007 work stoppage. At that time total estimated savings were made up of two components: estimated costs that were avoided because of the work stoppage, and a deficit that was forecasted in the garbage collection program had the strike not occurred. The rates adjustment did not reflect higher than anticipated costs from catching up on collections after the 2007 labour dispute and higher than budgeted disposal costs in 2008. We forecast that the effect of the reduced 2008 rates combined with increased costs will result in a deficit of approximately \$1.2 million for 2008. Adding that deficit to the \$0.28 million of accumulated deficits in the garbage collection program, the program has a total deficit of \$1.48 million. For 2009 it is recommended that this deficit be drawn down by one third and that the remaining deficit be recovered through future year revenues.

The 2009 recommended expenditure budget for garbage collection is \$11,152,000, which is a 9.9% increase from expenditures in 2008. This increase is primarily due to inflation in wages (mainly a result of collective bargaining), equipment and fuel (which has increased by 14% mainly due to a 36% increase in fuel) and higher transfer costs (mainly due to decreased tonnages received at the transfer station, which increases costs per tonne).

The effect of these individual increases results in 2009 garbage fees increasing by about \$27 per homeowner (weighted average) compared to 2008 rates which accounted for estimated strike savings, or \$19 if those savings are factored out.

The 2009 budget for the garbage collection program is reflected in the fees noted in Table 1.

Table 1 - Summary of 2008 - 2009 Garbage Collection Fees

Garbage Cart Size (litres)	2008 Approved Fees*	2007 Est. Work Stoppage Savings	2008 Recommended Fees**	2009 Recommended Fees	\$ Change from 2008 Recommended	\$ Change from 2008 Approved
75	\$68	\$7	\$75	\$85	+\$10	+\$17
120	\$81	\$7	\$88	\$101	+\$13	+\$20
180	\$97	\$8	\$105	\$122	+\$17	+\$25
240	\$114	\$9	\$123	\$143	+\$20	+\$29
360	\$148	\$9	\$157	\$185	+\$28	+\$37

*includes previously estimated 2007 work stoppage savings

**does not include previously estimated 2007 work stoppage savings

The City also provides garbage collection service to about 200 properties that are unable to use carts with automated service for various reasons (e.g. lack of space for carts, properties are not accessible with automated trucks). For properties that are not serviced by automated collection, the proposed fee for garbage collection service in 2009 is \$35 per garbage can (maximum 100 litres) plus a \$50 stop fee. The reason for the cost increase for can service is the same as noted previously for carts.

Recycling Collection

The 2009 recommended net expenditure budget for recyclables collection is \$4,113,000, which is a 10.0% increase from 2008 due to similar inflationary increases noted in collections (i.e. inflation in wage and equipment costs). Staff forecast that at the end of 2008 the recycling collection program will have an accumulated surplus of about \$955,000. This surplus is a result of recycling revenues being greater than budgeted over the past few years due to strong recycling commodity market prices. In keeping with the principle of utilizing surpluses to maintain utility rate stability when possible, staff recommend that about one-half of the current surplus in the recycling collection program be used to offset the increase in costs for 2009. Therefore, staff are recommending only a \$1 increase in the per dwelling unit recycling fee for 2009. This increase will partially offset the combined effect of the 2009 cost increases and the reversal of the one-time 2007 work stoppage savings fee reduction.

The 2009 budget for the recycling collection program is reflected in the fees noted in Table 2.

Table 2 - 2008 Recommended Recycling Collection Fees

Recycling Collection Service	2008 Recommended Fees	2008 Approved Fees	2009 Recommended Fees	\$ Change from 2008 Approved
Single dwelling unit property	\$19	\$18	\$19	\$1
Multiple dwelling unit property				
- per dwelling unit	\$10	\$10	\$11	\$1
- per stop	\$9	\$8	\$8	\$0

Yard Trimmings Collection

For 2008, the yard trimming rates approved by Council were based on expected inflationary and program increases offset by an estimated one-time savings as a result of the 2007 work stoppage. At that time total estimated savings were made up of two components: estimated costs that were avoided because of the work stoppage, and a deficit that was forecasted in the yard trimmings collection program had the strike not occurred. The rates adjustment did not reflect higher than anticipated costs from catching up on collections after the 2007 labour dispute. We forecast that the effect of the reduced 2008 rates combined with increased costs will result in a deficit of approximately \$0.53 million in 2008. Adding that deficit to the \$0.23 million of accumulated deficits in the yard trimmings program, the program has a total deficit of \$0.76 million. For 2009 it is recommended that this accumulated deficit be drawn down by one third and that the remaining deficit be recovered through future year revenues.

The 2009 recommended expenditure budget for yard trimmings collection is \$4,615,000 which is a 6.1% increase from 2008. This increase is due to inflation in wage, equipment and fuel costs. Yard trimmings collected have increased from 14,000 tonnes in 2005 to a projected 20,000 tonnes in 2008. This is positive from a waste diversion perspective, but results in increased program costs.

The effect of these individual increases results in 2009 yard trimmings fees increasing by about \$12 per homeowner (weighted average) compared to 2008 rates which accounted for estimated strike savings, or \$4 if those savings are factored out.

The 2009 budget for the yard trimmings collection program is reflected in the fees noted in Table 3.

Table 3- Summary of 2008 - 2009 Yard Trimmings Collection Fees

Yard Trimmings Cart Size (litres)	2008 Approved Fees*	2007 Est. Work Stoppage Savings	2008 Recommended Fees**	2009 Recommended Fees	\$ Change from 2008 Recommended	\$ Change from 2008 Approved
120	\$37	\$7	\$44	\$45	+\$1	+\$ 8
180	\$42	\$7	\$49	\$52	+\$3	+\$10
240	\$46	\$9	\$55	\$58	+\$3	+\$12
360	\$54	\$11	\$65	\$72	+\$7	+\$18

*includes previously estimated 2007 work stoppage savings

**does not include previously estimated 2007 work stoppage savings

Demolition Materials Tipping Fee

Demolition material, which should be comprised of at least 80% wood, is required at the Vancouver Landfill. The demolition material is used primarily as construction material for building roads, regrading previously filled portions of the site for end-use purposes and promoting adequate drainage. Demolition material meeting the City's specifications is and has historically been accepted at preferential tipping fees compared to the commercial waste tipping fees, to allow flexibility in meeting demand for Landfill construction. A review of the fees charged at private demolition sites indicates that the City can increase its fees by approximately 5% and still receive sufficient material for regrading purposes. The recommended demolition fees for 2009 are \$550 for each tandem axle trailer and \$660 for each tridem axle trailer. The rates reflect market rates, and are up from the 2008 rates of \$520 and \$630, for tandem and tridem axle trailer loads respectively.

Garbage and Yard Trimmings Tipping Fees

At the July 10, 2008 Greater Vancouver Regional District (GVRD) Finance Committee Meeting, Metro Vancouver staff recommended increasing the regional garbage tipping fee by \$3 to \$71/tonne, effective January 1, 2009. This recommendation was subsequently approved at the Greater Vancouver Sewerage & Drainage District's (GVS&DD) July 2008 Board Meeting. It awaits final approval as part of Metro Vancouver's 2009 budget process at the October 31, 2008 GVS&DD Board meeting.

Historically, the City has set the tipping fee for garbage disposal at the VLF and VSTS to match the regional tipping fee, which stabilizes waste flows within the regional waste management system. In contrast, the City has set a lower tipping fee for yard trimmings to encourage recycling, which until 2008 was not reflected in the regional tipping fee applied to Metro Vancouver's facilities. To match regional rates, staff recommend increasing tipping fees for loads greater than 900 kg of garbage from \$68/tonne to \$71/tonne, and of yard trimmings from \$50/tonne to \$56/tonne, subject to GVS&DD's Board approval of the 2009 regional rates.

Earlier this month, Metro Vancouver staff indicated the regional garbage tipping fee is forecasted to increase to \$74/tonne in 2010, \$79/tonne in 2011, \$87/tonne in 2012 and \$102/tonne in 2013 subject to the GVS&DD's Board approval. The regional yard trimmings tipping fee is set at \$15/tonne less than the garbage tipping fee.

Potential Additional Costs

Each quarter, the City pays Metro Vancouver for leachate from the Vancouver Landfill that is discharged into their sewer system. These costs are typically around \$1,500,000 and depend highly on the amount of precipitation that falls on the Landfill footprint.

In July 2008, City staff provided comments in response to Metro Vancouver's Issue Paper for Revisions to Metro Vancouver's Liquid Waste Regulatory Fee Structure. This issue paper is proposing the change from a usage-based fee structure to a capacity-based one. As a result, Metro Vancouver is considering basing sewer fees on peak loading and peak capacity. However, City staff do not consider this to be appropriate for the Landfill as peak flows occur during rainfall events, resulting in low loadings (of biochemical oxygen demand and total suspended solids) while peak loading occurs during low flow periods. Using the proposed rates, the sewer fees are estimated to increase by approximately \$500,000 to \$2,000,000 annually. If this proposed new sewer use rate structure is implemented, additional costs would be borne by the users of the Landfill, including Vancouver homeowners.

Solid Waste By-law Changes

In addition to fee and housekeeping changes required for the Solid Waste By-law for 2008, staff recommend the following:

- That the lists of materials restricted and prohibited from collection and/or disposal be updated so that they are aligned with Metro Vancouver's list of materials banned from disposal. Customers with loads containing restricted materials (i.e. banned from disposal) in excess of specified tolerances will be subject to a 50% surcharge on their tipping fee. This surcharge would apply at Vancouver-owned facilities only and is identical to the surcharge imposed at regional facilities since January 1, 2008 for regionally banned materials. The surcharge is intended to increase waste diversion and recycling in the region. Revenues resulting from the surcharge are not expected to be significant, but will be used to offset costs arising from additional promotions and staffing for education and enforcement of disposal bans.
- That the Solid Waste By-Law be amended to incorporate provisions that require property owners or occupiers to maintain cleanliness of areas adjacent to recycling carts at properties where recycling carts are stored on City street or lane. Further, to recover costs associated with inspection and enforcement, it is recommended that the Solid Waste By-Law be amended to incorporate a fee for storage of recycling carts on City streets and lanes. The cost of that fee is consistent with the permit fee charged to commercial container users through the City's garbage container license agreement.

A draft of Solid Waste By-law amendments is shown in Appendix A.

Solid Waste Capital Items

Three new capital initiatives are planned in 2009 for Transfer & Landfill Operations at an estimated cost of \$1.05 million. First, the pit wall at the Vancouver South Transfer Station is covered by steel plates and requires substantial repairs to stop water from leaking through cracks in the plates. The water originates from the incoming garbage and the dust suppression system which consists of sprinklers over the pit. The consultant who supervised the repairs conducted in 2005, 2006 and 2008 has identified that the water may be building up to a height of 2 metres behind the plates which is evidenced by corrosion staining. This staining may be a result of corrosion of the plates or the wall reinforcement. The extent of the damage will be assessed this fall through the update of the 2003 Vancouver South Transfer Station Inspection Report. The initial cost estimate for the repairs is \$500,000.

Second, the weigh scales software at the Vancouver South Transfer Station and the Vancouver Landfill is planned to be upgraded because the current version will no longer be supported at the end of 2009. A Request For Expressions of Interest issued in the summer resulted in four responses and a Request For Proposals is currently being drafted for release before year end. The cost to upgrade the software is estimated at \$250,000; however the actual cost will depend on the selected vendor.

Third, there are significant areas at the Landfill that require paving in order to decrease wear and tear on vehicles and reduce dust. These areas include the access road and parking lot for the new administration building, portions of Landfill roads that are permanent and some significant repairs. This road paving is to be completed in 2009 and the cost is estimated at \$300,000.

Solid Waste Utility Rate Structure

The current Council approved Solid Waste Utility rate structure is based on charging for each cart size and full cost recovery with a breakeven budget objective on an annual basis. Since individual cart fees under this cost of service structure are comprised of the full fixed and variable cost of servicing a cart, cart fees do not increase by a uniform price per litre; the cart price varies directly with the variable cost component only so there is no cross subsidy between cart sizes.

As previously approved by Council, a fixed Service Fee, the same for each cart, is set to recover 50% of program costs and a volumetric or variable Cart Fee, which depends on cart size, the other 50%. The Service Fee reflects the fixed cost of providing collection service regardless of the size of cart or volume of material set out for collection. The variable portion of the fee (\$ per litre) is set to recover the costs which relate to the different cart sizes. This structure reflects the cost balance between fixed and variable costs. Table 4 shows the recommended 2009 garbage collection fees with the two fee components.

Table 4 - Garbage Collection Fees 2009

Cart Size (litres)	Service Fee (Fixed cost per collection point)	Cart Fee (Variable cost per cart @ \$0.35/litre)	Total Fee
75	\$ 59	\$ 26	\$ 85
120	\$ 59	\$ 42	\$ 101
180	\$ 59	\$ 63	\$ 122
240	\$ 59	\$ 84	\$ 143
360	\$ 59	\$ 126	\$ 185

The fixed Service Fee component (\$59 per cart) indicates the operational efficiencies that are gained by encouraging the use of larger shared carts at properties with multiple occupants, rather than servicing many smaller carts. The combination of a fixed fee for each stop and a variable fee attributed to the cart size ensures that each rate payer only pays the actual cost to service their property.

Council has previously expressed concern that this price structure may not adequately promote the City's environmental goals and asked staff to consider alternative rate structures which provide a greater incentive to reduce or divert waste.

Alternative Solid Waste Utility Rates - 2008 Consultant Study

In 2008 staff engaged a consultant to identify a number of approaches to solid waste fee structures in use in various North American cities, and to assess the effectiveness of alternative fee structures in influencing solid waste reduction and diversion behaviour.

The following highlights the consultant's findings:

- There are several Pay-As-You-Throw (PAYT) cart fee structures currently in use in North American cities, including:
 - cost of service (as used in Vancouver);
 - uniform price per litre ("linear");
 - increasing price per litre ("beyond linear").
- Vancouver's current garbage collection system and rate structure is regarded as leading edge by many jurisdictions and an example of PAYT, which uses economic tools to drive waste reduction and diversion.
- The consultant provided examples of other cities that structure rates to encourage waste diversion. In particular Toronto, Ontario and Austin, Texas were noted as utilizing a cost of service rate structure. Changing to linear rates was recently considered and rejected by Austin City Council.
- Some cities incorporate, or "embed", yard trimmings and/or recycling collection costs in the per litre fee for garbage service, using one of the above three fee structure approaches. However, embedding fees is less transparent than the cost of service model used by Vancouver.
- A more frequent billing cycle than the current annual fee cycle can send pricing signals to residents which encourage waste reduction behaviour.
- Implementation of linear and beyond linear fee structures is expected to result in some downsizing (residents going to a smaller cart) or right-sizing (picking a smaller cart because the cart they have is not always full when set out). Approximately 17,000 cart size change requests were estimated by the consultant, based on limited information available.
- Despite the number of cart size changes, there is limited impact on the actual quantity of waste generated or diverted. Price elasticity of demand analysis of estimated linear and beyond linear fees indicated that customer waste reduction and diversion behaviour is not sensitive to price (i.e. is inelastic) for a typical range of fees charged. Adding more convenient waste diversion options has a greater impact with changing waste diversion behaviour.

In the consultant's opinion, moving away from the current cost of service rate structure to a system that involves a cross subsidy between cart sizes is expected to result in some reduction in waste sent for disposal. However, a concern of staff is that currently there is a lack of supporting evidence available from other jurisdictions demonstrating a link between linear (and beyond linear pricing) and reduced waste generation and/or increased waste diversion. The only substantive finding was that cart downsizing occurs. For example, the consultant highlighted the experience in Seattle. When garbage fees were converted from a flat fee to rates that varied with the number of cans collected, the number of garbage cans set out for collection went down, but the weight per garbage can went up. Therefore there was little impact on the overall weight of garbage collected. This demonstrates that linear rates can result in unintended consequences. In Seattle the effect was referred to as the "Seattle Stomp", which is the way Seattle residents initially responded to the opportunity to pay less for a smaller cart by compressing the same amount of garbage into a smaller container.

A significant risk resulting from linear rates is that total budgeted revenues can be less than actual costs if a greater number of cart users switch to smaller carts than can be reasonably predicted. This risk exists with linear rates since the prices charged for the smallest carts are less than the actual cost of servicing those carts. This risk is avoided with the current cost of service rate structure. This risk can also be avoided with a linear model if the price of the smallest cart is set at the cost of service. However, that type of rate structure is profit generating, which is a departure from the financial principle established for the Solid Waste Utility that total budgeted costs are set to equal total budgeted revenue.

As mentioned above, embedded rates and more frequent billing cycles were also identified as factors which can incent waste diversion. At this time staff do not recommend pursuing those options. Embedding yard trimmings and/or recycling rates into the garbage rates reduces transparency of how composting and recycling costs are allocated, and introduces inequities in the distribution of collection costs to users. The City has about 1,500 customers that only require City garbage collection service. These are mostly small industrial, commercial or institutional properties that receive recycling and yard trimmings collection from private haulers, as required. There are also 140,000 multi-family customers that only receive recycling collection service from the City. It would be onerous and costly to administer a multi-tiered billing system involving embedded rates for some properties and individual program collection fees for others. Further, there is a lack of supporting evidence that the use of these types of fee structures alone results in waste diversion.

In terms of billing cycles and their relationship with waste behaviours, Vancouver currently bills for solid waste service once per year on the annual (Main) Property Tax Notice. This practice is administratively straightforward and cost effective. More frequent billing would increase administration and program costs which would drive up fees charged to SWU customers. This cost is expected to outweigh possible waste diversion benefits that may materialize. Cities which the consultant identified as utilizing more frequent billing to incent waste diversion charge collection fees that are much higher than ours. In our opinion our low rates are not expected to send the type of pricing signals necessary to influence waste diversion behaviours with a higher billing frequency.

An expanded discussion of anticipated impacts to Vancouver with respect to linear per litre rates is provided in Appendix B.

FINANCIAL IMPLICATIONS

A comparison of the 2008 solid waste collection expenditure budget versus the 2009 recommended budget is provided in Table 5:

Table 5 - SWU Expenditure Budget Comparison

Service	2008 Budget	2009 Budget	% Change
Garbage Collection	\$10,149,100	\$11,151,900	+9.9%
Recycling Collection (net)	\$3,739,300	\$4,112,700	+10.0%
Yard Trimmings Collection	\$4,423,400	\$4,614,800	+6.1%
TOTAL	\$18,311,800	\$19,879,400	+8.6%

For 2009, the average homeowner will see an increase of about \$40 (weighted average) in their annual total solid waste collection fees.

Our preliminary estimate of the one time implementation cost of moving to linear fees for garbage collection is approximately \$1.1 million. That rough estimate includes the cost of carts, promotion and additional temporary staff. Further detailed planning and cost estimating would be required if Council's preference is to switch away from the current cost of service rate structure for garbage collection.

Three new capital initiatives are planned in 2009 for Transfer & Landfill Operations at an estimated total cost of \$1,050,000 to be funded with a loan from the Capital Financing Fund (Solid Waste Capital Reserve) and repaid by users of the Transfer Station and Landfill. Those projects include pit wall repairs at the Transfer Station, upgrades to the weighscale software at the Transfer Station and Landfill, and road paving at the Landfill.

CONCLUSION

Based on forecasted 2009 costs, staff recommend that the 2009 SWU fees, commercial tipping fees and demolition tipping fees be adopted as described in this report. Staff also recommend the Solid Waste By-law be revised as substantially described in this report and that funding for three capital projects in Transfer & Landfill Operations be approved for 2009.

Further, staff recommend maintaining the existing cost of service fee structure. However, if Council wishes to pursue implementation of a linear fee structure for garbage service, it is recommended that such a change not occur before January 1, 2010 to allow sufficient time to develop detailed cost estimates and an implementation plan to meet customer needs and expectations.

APPENDIX A

PROPOSED CHANGES TO THE SOLID WASTE BY-LAW (NEW TEXT IN ITALICS)

The Director of Legal Services in consultation with the General Manager of Engineering Services may re-order sections of the By-law.

In Part II, add new term:

“garbage container” means garbage bag, garbage can or garbage cart,

In Part II, remove term:

“banned material” means yard waste, recyclable materials, and products referred to under the product categories set out in each of Schedules 1, 2, 3, and 4 of Environmental Management Act of British Columbia Recycling Regulation No. 449/2004 and amendments to or replacements of those product categories from time to time,

Amend 5.6 to read:**5.6 Recycling Carts – Storage Location**

- (1) All recycling carts must be stored completely on the property in a space conforming to the Fire By-law and Building By-law. Where, in the opinion of the City Engineer, it is not possible to store the recycling containers on the property, the owner or occupier may apply to the City Engineer for permission to store the recycling containers on the street or lane.
- (2) *Where recycling carts are stored on a street or lane, an owner or occupier must maintain each cart and area adjacent to each cart in a condition that is clean and sanitary, and not noxious, offensive or dangerous to the public health.*
- (3) *Any recycling cart stored on a street or lane will be subject to the additional charges set out in Part IV of Schedule B to this By-law.*

Amend 6.6 to read:**6.6 Yard Waste Carts – Weight and Content Limits**

(1) An owner or occupier must not fill a yard waste cart in its possession:

(a) to a gross weight that exceeds:

Yard Waste Cart Size	Weight Limit
120 litres	50 kg
180 litres	75 kg
240 litres	100 kg
360 litres	150 kg

(b) to the extent that the lid does not close;

(c) to the extent that the collector cannot easily empty the contents; or

(d) with anything other than yard waste.

(2) No yard waste cart from which the City Engineer collects yard waste may contain tree limbs larger than 10cm diameter and 0.5m in length.

Amend 7.4 to read:**7.4 *Materials Prohibited from Garbage Containers***

No person must deposit any thing described in Schedule D to this By-law into a *garbage* container from which the City Engineer collects solid waste.

Amend 7.6 to read:**7.6 *Materials Restricted from Garbage Containers***

No *garbage container* from which the City Engineer collects garbage may contain *5% or more by volume one or more of the materials described in Schedule F to this By-law.*

Amend 8.4 to read:**8.4 *Materials Prohibited from the Vancouver Landfill and Transfer Station***

A person must not dispose of anything described in Schedule E to this By-law at the Vancouver Landfill or Vancouver South Transfer Station, referred to in section 8.3.

Add:**8.8 Materials Restricted from the Vancouver Landfill and Transfer Station**

A surcharge of 50% on the tipping fee may be assessed on garbage loads disposed at the Vancouver Landfill or Vancouver South Transfer Station that contain 5% or more by volume one or more of the materials described in Schedule F to this By-law.

In Schedule B Section IV add:**C. Additional Storage Charges**

For those properties which store recycling carts on City street or lane.....\$56.00 per cart

Amend Schedule B Section V to read:**V. Yard Waste Collection Service****A. Yard Waste Cart Rates**

For properties which receive yard waste collection service under Part VI - Yard Waste Service, per calendar year, payable concurrently with each year's real property taxes

Size of Yard Waste	Cart Rate
120 litres	\$37
180 litres	\$42
240 litres	\$46
360 litres	\$54

B. Purchase of Additional Yard Waste Service

Each property owner will be allowed one change per calendar year in the level of service under sections 6.2, 6.3 and 6.9 at no charge. A fee of \$25.00 will be charged for each additional change in that calendar year.

Amend Schedule C to read:

SCHEDULE C

MATERIALS ACCEPTED IN BLUE BOX RECYCLING CONTAINERS AND RECYCLING CARTS

- 1. Newsprint*
- 2. Flyers*
- 3. Corrugated cardboard*
- 4. Boxboard*
- 5. Magazines and catalogues*
- 6. Telephone directories*
- 7. Household paper (including junk mail, envelopes, writing paper and computer paper)*
- 8. Paper egg cartons, rolls, bags, gift wrap and cards*
- 9. Glass bottles and jars*
- 10. Ferrous and non-ferrous metal cans and tins*
- 11. Rigid plastic containers identified by the SPI Code #1 (Polyethylene Terephthalate or PET) or SPI Code #2 (High Density Polyethylene or HDPE) or SPI Code #4 (Low Density Polyethylene or LDPE) or SPI Code #5 (Polypropylene or PP)*
- 12. Aluminum trays and foil*
- 13. Any other material designated as recyclable by the City Engineer*

Amend Schedule D to read:**SCHEDULE D*****MATERIALS PROHIBITED FROM GARBAGE CONTAINERS***

1. Pathogenic, radioactive, toxic and biomedical waste, including sharps
2. Liquid wastes or sludges
3. Explosive substances
4. Chemicals which may create hazardous working conditions
5. Inflammable materials
6. Material hot enough to start combustion
7. *Oil, petroleum by-products, oil filters and empty oil containers*
8. Dead animals (excluding household kitchen meat and fish scraps)
9. All forms of excrement
10. Barrels, pails or other large liquid containers, whether full or empty
11. Gypsum
12. White goods (large appliances)
13. Any soil with contaminant levels exceeding those defined for Urban Park Land by the Contaminated Sites Regulation of the Environmental Management Act of British Columbia
14. Wire in excess of 1% by weight of the contents of the receptacle
15. Tires
16. Any material or substance defined as "Hazardous Waste" under the Environmental Management Act of British Columbia
- 17 *Lead-acid batteries*
- 18 *Propane tanks*
- 19 *Medications/pharmaceuticals*
- 20 *Paint*
- 21 *Desktop and laptop computers, desktop servers and printers (including computer monitors, keyboards, mouse and cables)*
- 22 *Televisions*
- 23 *Beverage containers with deposits*
- 24 *Any other material which the City Engineer or Medical Health Officer considers hazardous or unsuitable to handle.*

Amend Schedule E to read:**SCHEDULE E*****MATERIALS PROHIBITED FROM THE VANCOUVER LANDFILL AND TRANSFER STATION***

The following wastes are prohibited from disposal at the Vancouver Landfill and Vancouver South Transfer Station:

1. Pathogenic, radioactive, toxic and biomedical waste, including sharps.
2. Any material or substance defined as 'Hazardous Waste' under the Environmental Management Act of British Columbia.
3. Liquid wastes and sludges.
4. Explosive substances.
5. Chemicals or other materials which may create hazardous working conditions.
6. Inflammable materials.
7. Materials hot enough to start combustion.
8. Automobile bodies or boat hulls.
9. *Oil, petroleum by-products, oil filters and empty oil containers.*
10. Dead animals and animal parts (including bones, feathers, skin, hair, nails and teeth).
11. All forms of excrement.
12. Barrels, drums, pails and other large liquid containers, whether full or empty.
13. Lumber, timber, logs, etc., longer than 3.6 metres.
14. Solid objects larger in cross section than 3500 cm if longer than 2.5 metres.
15. Fabricated objects wider or thicker than 1.2 metres and longer than 2.5 metres.
16. Any soil with contaminant levels exceeding those defined for Urban Park Land by the Contaminated Sites Regulation of the Environmental Management Act of British Columbia.
17. Coated or uncoated wire or cable in excess of 1% by weight of any load.
18. Tires.
19. Commercial loads of dry cell batteries.
20. *Lead-acid batteries*
21. *Gypsum*
22. *Paint*
23. *White goods (large appliances) and other large metallic waste*
24. *Propane tanks*
25. *Medications/pharmaceuticals*
26. *Desktop and laptop computers, desktop servers and printers (including computer monitors, keyboards, mouse and cables)*
27. *Televisions*
28. *Beverage containers with deposits*
29. *Any other material deemed by the City Engineer as unacceptable for disposal at the Vancouver Landfill or Vancouver South Transfer Station.*

Add:

SCHEDULE F

MATERIALS RESTRICTED FROM GARBAGE CONTAINERS AND THE VANCOUVER LANDFILL AND TRANSFER STATION

A surcharge of 50% on the tipping fee may be assessed on garbage loads disposed at the Vancouver Landfill or Vancouver South Transfer Station that contain 5% or more by volume one or more of the following materials:

- 1. Newsprint*
- 2. Flyers*
- 3. Corrugated cardboard*
- 4. Boxboard*
- 5. Magazines and catalogues*
- 6. Telephone directories*
- 7. Office and household paper (including junk mail, envelopes, writing paper and computer paper)*
- 8. Paper egg cartons, rolls, bags, gift wrap and cards*
- 9. Glass bottles and jars*
- 10. Ferrous and non-ferrous metal cans and tins*
- 11. Rigid plastic containers identified by the SPI Code #1 (Polyethylene Terephthalate or PET) or SPI Code #2 (High Density Polyethylene or HDPE) or SPI Code #4 (Low Density Polyethylene or LDPE) or SPI Code #5 (Polypropylene or PP)*
- 12. Aluminum trays and foil*
- 13. Yard waste*
- 14. Any other material deemed by the City Engineer to be recyclable*

APPENDIX B

CONSIDERATION OF LINEAR COST PER LITRE GARBAGE COLLECTION RATES

The consultant identified Vancouver's existing program as one of the leaders in the PAYT community, using economic incentives to motivate waste reduction. A suggested alternative PAYT structure is to use linear (uniform cost per litre) collection fees. However, an important consideration with this type of rate structure is the fee charged per cart is not an accurate reflection of the cost of service provided. This point is illustrated in Table B1, which indicates what the 2009 garbage collection fees would be with linear rates. (These rates are provided as an example only and are based on the current distribution of cart sizes among our approximately 90,000 SWU customers. If a linear rate structure was implemented, a new distribution is expected to occur, which would require individual cart rates to be revised).

Table B1 - Comparison of Garbage Collection Fees: Cost of Service vs. Linear

Garbage Collection Service: Cart Size(litres)	2009 Cost of Service Fees	2009 Linear Fees	\$ Difference
75	\$ 85	\$ 49	-\$ 36
120	\$ 101	\$ 78	-\$ 23
180	\$ 122	\$ 118	-\$ 4
240	\$ 143	\$ 157	+\$ 14
360	\$ 185	\$ 235	+\$ 50

As shown in Table B1, the fees charged for the smallest cart sizes are less than the actual cost of servicing those carts. The fees charged for the largest cart sizes are greater than the cost of service. This linear price per litre structure and the overall spread in cost between largest and smallest size cart is what is intended to generate an incentive and thus a motivation to reduce and divert waste. However, this also results in an inequity since large cart users are subsidizing the cost of service for smaller cart users. Further, this results in considerable risk that total budgeted revenues will be insufficient to cover costs if a greater number of cart users switch to smaller carts than can be reasonably predicted.

Risks and estimated costs resulting from switching to linear pricing for garbage collection are summarized as follows:

1. *Program revenue may be insufficient to offset costs*

As explained above, setting the fees for smaller carts below the cost of servicing those carts provides a financial incentive to reduce cart sizes, but results in a risk that revenues recovered will be less than costs. To mitigate this risk it becomes necessary to attempt to predict a future distribution of cart sizes used by customers, resulting in a greater degree of uncertainty with rate setting and budgeting.

2. *Cost and disruption to rate payers associated with cart downsizing*

It was evident from the consultant's report that if a linear garbage price structure was implemented on its own (a single financial mechanism only) for Vancouver's current garbage collection program, notable waste reduction is not expected. To experience a marked increase in diversion an expansion of convenient options is required.

What can be expected with linear rates is cart volume downsizing. There are three possible effects of cart downsizing, which are difficult to predict:

- Carts are used more efficiently. Extra space or spare capacity in carts is eliminated as customers “right size” their carts.
- Customers compress waste and pack material to a greater density in smaller carts.
- Tonnage of material set out in garbage carts is reduced.

Since the rollout of carts for automated collection was completed (2006) there has been a general shift upwards in the demand for cart sizes, as shown in Table B2.

Table B2 - Summary of Garbage Cart Size Distribution Changes

Garbage Cart Size (litres)	Original Distribution		2008 Distribution	
	# Carts	% Distribution	# Carts	% Distribution
75	7,179	7.9%	6,483	7.1%
120	16,721	18.4%	14,960	16.3%
180	40,349	44.4%	40,139	43.8%
240	20,447	22.5%	21,402	23.3%
360	6,634	7.3%	8,762	9.6%
Total	90,877	100%	91,746	100%

This shift indicates that customers originally underestimated the size of cart they required and over the last two years have adjusted. Since Vancouver’s automated collection program is only two years old, it is too early to predict whether the number of cart change requests have started to normalize. What is known is that with a high volume of customers (over 91,000 garbage carts are currently in use) these types of changes are costly to accommodate.

In 2008 the cost of garbage cart repair and replacement operations is forecasted to exceed \$180,000. We expect that would increase with a change in the rate structure. Our preliminary estimate of sanitation billing administrative costs related to accommodating 17,000 cart change requests as predicted by the consultant is that they would be a least \$55,000. That type of cost increase is expected in the first few years after a rate change occurred. Additional implementation costs which are difficult to estimate without further research and planning include:

- Additional administrative staff costs necessary to handle the high volume of cart change requests.
- The cost of procuring additional carts and disposing or reallocating excess large volume carts.
- Warehouse storage and related staff costs.
- Cart distribution staff, equipment and fuel costs.

3. *Removing the incentive to share carts*

Large families and other properties with multiple occupants would experience an inequity since the rates would discourage the use of shared large carts. It is expected that overall collection costs would increase. Staff estimate that at least 15,000 of the garbage carts in use currently are shared between units at the property. Collecting waste from a greater number of carts would require an increase in collection labour and equipment, as well as increased clerical and cart maintenance staff time. Each

additional collection truck and crew alone would add in the order of \$250,000 per year in program operating costs.

4. *Inappropriate cart sizing*

Reducing spare capacity in carts or providing incentive for users to undersize their carts (in an effort to save money) provides a motivation to pursue inappropriate methods of disposal (i.e. illegal dumping) or an incentive to purchase stickers for individual bags. Manual collection of bagged garbage increases the City's operating costs and the risk of injuries to workers.

5. *Timing*

Switching to an alternative rate structure prior to January 1, 2010 is not recommended since it is not considered practical or feasible and would result in considerable financial risk and disruption to SWU customers. Greater certainty would be required to determine the expected number of cart size changes if Council were to approve a switch to linear pricing. Adequate time would be required to develop and execute a public communications plan and program implementation strategy. Carts would need to be tendered, additional warehouse space may need to be secured, detailed equipment and labour cost estimates would need to be developed and a budget would need to be approved.

Switching to an alternative rate structure prior to the completion of regional solid waste management planning is also not recommended. One likely element of the next regional Solid Waste Management Plan is implementation of food waste collection and composting programs. Should this occur, Vancouver could potentially add food waste collection to the existing yard trimmings collection program, and move to weekly collection of a combined yard trimmings and food waste cart, and at the same time move to bi-weekly collection of garbage carts. In this scenario, an adjustment to the size of carts customers currently use for garbage collection would be required. The costs and benefits of switching to an alternative rate structure at that time could be considered. Introducing fees now that encourage the use of smaller garbage carts could increase future costs to change to larger garbage carts to accommodate bi-weekly garbage collection, and would be very disruptive to our customers.

In contrast to the anticipated risks and costs, benefits are assumed to be marginal. The consultant indicated that waste reduction and recycling is relatively inelastic to a change in cart price. However, as an order of magnitude estimate, potential waste diversion could be between 0% and 6%, but is subject to uncertainty. Optimistically, with a diversion rate of 6% the amount of garbage set out in carts could drop by about 3,860 tonnes based on current disposal rates. Staff's rough estimate of implementation costs associated with switching to a linear fee structure is approximately \$1.1 million. From a cost/benefit perspective, staff do not recommend that Council change from the current cost of service rate structure.

Overall, the financial risks and anticipated costs and disruption to rate payers associated with linear pricing are considered to outweigh possible benefits, which are expected to be marginal at best.

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