

Garbage In, Garbage Out: the real costs of solid waste collection

Canadian Union of Public Employees
Toby Sanger, senior economist

CUPE·SCFP

The discussion over whether Toronto should contract out residential garbage collection has been influenced by claims in two recent reports.

- In its September 2010 report *Picking up Savings: the Benefits of Competition in Municipal Waste Services*, the C.D. Howe Institute claims that Toronto could save \$50 million a year from contracting out all residential waste services.
- In its *Bridging the Chasm* report of May 2010, the Toronto Board of Trade claimed Toronto could save \$104 million in 2014 and 2015 by bringing its costs of waste collection to 125% of the GTA average.

Both studies suggest that there are large savings that can easily be achieved.

The problem is that these reports of potential savings appear to be inaccurate or are highly speculative claims based on flawed analysis.

Unfortunately, few people actually read these reports, understand their analysis or bother to check on the facts.

Toronto Board of Trade

The Board of Trade report claims “In-house waste collection in Toronto is currently twice the cost per tonne of other GTA regional municipalities contracted waste collection services. Bringing this down to only 125% of the GTA average would cumulatively save the City almost \$104 million in 2014 and 2015.”

We contacted the Board of Trade to find out how they calculated these figures many months ago, and they promised to send it, but they never did. So we checked on the facts ourselves.

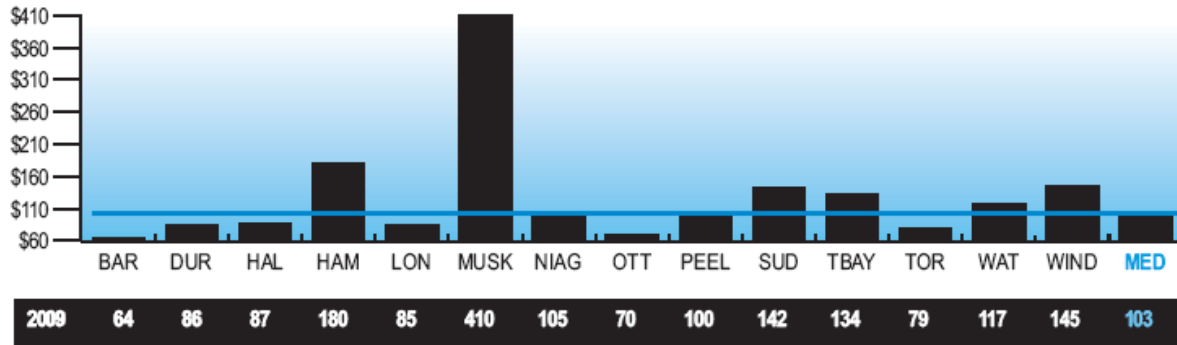
The following table shows what the GTA regional municipalities actually reported in their latest Financial Information Returns. **This clearly shows that the City of Toronto has lower costs of solid waste collection per tonne than all the other regional municipalities in the GTA—all of whom also contract out this work to private operators.**

Regional municipalities	Collection	Total cost of collection per tonne 2009
City of Toronto	Mostly public	\$72.22
Regional Municipality of Durham	Private (Whitby and Oshawa are public)	\$85.74
Regional Mun. of Halton	Private	\$86.79
Regional Mun. of Peel	Private	\$106.79
York	Local municipalities are responsible	N/A
http://cscconramp.mah.gov.on.ca/fir/ViewFIR2009.htm		

The Board of Trade’s numbers are contradicted by the information that municipalities submit to the provincial Ministry of Municipal Affairs. Figures reported by the Ontario Municipal CAO’s Benchmarking Initiative (OMBI) in their annual reports also show that the City of Toronto’s costs per tonne have been consistently below the provincial average and are below the average for other GTA regions.

How much does it cost to collect a tonne of residential garbage?

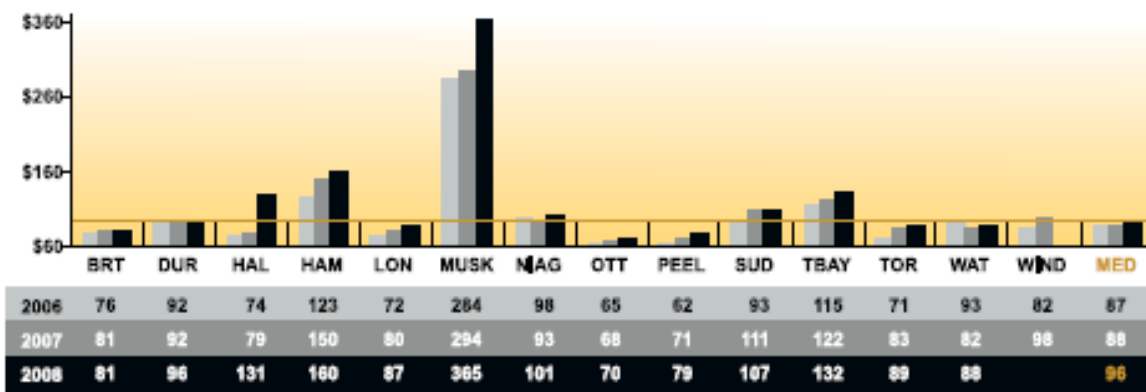
Fig. 19.2 Operating Costs for Garbage Collection per Tonne – Residential (MPMP)



Source: SWST311M (Efficiency)

NOTE: The Regional Municipality of York operates a two-tier system and is not responsible for the collection of garbage.

Fig. 24.2 How much does it cost to collect a tonne of residential garbage?



Source: SWST311M – Operating Costs for Garbage Collection per Tonne – Residential (MPMP) (Efficiency)

Note: The Regional Municipality of York operates a two-tier system and is not responsible for the collection of garbage.

Figure 24.2 indicates how much it costs to collect a tonne of residential garbage. Increased costs can be attributed to aging infrastructure, fuel prices, service contracts, increasing the diversion tonnage and the addition of new services, such as the introduction of a green cart program (Halton).

Charts from OMBI 2009 Performance Benchmarking Report, p. 72 and OMBI 2008 Performance Benchmarking Report, p. 78. <http://www.ombi.ca/docs/db2file.asp?fileid=216>
<http://www.ombi.ca/docs/db2file.asp?fileid=212>

C.D. Howe Report

In order to make its argument that private is less expensive, the C.D. Howe report uses several complicated econometric models. But the report actually shows that they struck out on their first two attempts to show that contracted-out waste collection is consistently cheaper, so they engineered their data in a biased way in an attempt to prove this point—and then generalized their biased results in a highly speculative manner to calculate municipal savings.

In fact, the basic data on municipal spending used by this report from the Ontario government show **no** relationship between the extent of contracting out and costs of waste collection per household and a diverging relationship on a per tonne basis.

Solid Waste Collection Costs in Ontario by % Contracted-out					
Data from Table 2, C.D. Howe Institute Report <i>Picking up Savings</i>					
	<i>Contracting percentage quartile</i>				
	0-25%	25-50%	50-75%	75-100%	Average
Collection costs per tonne	\$121	\$77	\$81	\$92	\$94
Collection costs per household	\$56	\$51	\$56	\$50	\$52

If anything, Table 2 from the CD Howe report (above) appears to show higher costs on a per tonne basis both at the low end of the contracting-out spectrum and then also rising costs as a higher proportion is contracted out. But, as the report itself notes, the figures on a per tonne basis are likely to be biased because larger municipalities are heavily overrepresented in this group (p.11).

On a per household basis, there appears to be no consistent relationship between the proportion contracted-out and costs per tonne, as the table above shows. Average costs for the group of municipalities that contracted-out the least were the same as those who contracted-out the 2nd most: both \$56 per household. Average costs for those who contracted-out the most were almost identical to those who contracted-out the 2nd least: \$50 and \$52 per household.

The second type of analysis that the CD Howe report used is a statistical technique called “ordinary least squares” (OLS) regression. This tests the difference in costs of waste collection per household can be explained by a number of different explanatory variables such as the proportion contracted-out, size of the municipality, number of pick-ups, diversion rates, and so on.

What did this standard OLS regression show? Not much at all. *All ten of the variables combined only explained 10% of the changes in collection costs per household.* The only statistically significant difference was whether a city is in Northern Ontario or not. The percentage of the budget contracted out wasn’t at all statistically significant.

Any self-respecting economist should have thrown out that equation and looked for other more significant explanatory variables to try and figure out what really makes the difference in costs between one municipality and another. For instance, the CD Howe study could have looked at tonnes of garbage produced, diversion rates, frequency of collection and a number of other variables which weren’t even included in this “study”.

Instead of including more relevant factors and really trying to figure out what explains the costs of waste collection, the CD Howe study instead chose to ignore everything else except contracting out. Their third attempt to justify their foregone conclusion, used a statistical method that effectively “stacked the deck” to try and prove that contracting out waste collection leads to savings for households. This method of “fixed effects regression” effectively freezes all other factors that could explain the variance in costs and only considers changes in costs in relation to changes in the proportion that is contracted out each municipality.

This type of method might be legitimate to use in some cases, but it is inherently biased in this instance. A municipality will not increase contracting-out if it costs them more in the short-term. The decision to contract-out is not random, but is highly dependent on the cost. The statistical method that the CD Howe report finally relies on only picks up the impact of those who make a

change in the share of the budget contracted out. Municipalities who chose not to contract out because the costs would have been higher are ignored, as are all the other factors affecting costs of collection. Not surprisingly, this method finally provides them with what seem to be significant results, but that is only because the analysis is inherently biased.

What's more, the C.D. Howe study only included a maximum of eight years of data. Reputable academic studies (see below) show that, while contracting-out may lead to lower costs in the first few years, these savings rarely last. Private waste collection may cost less in the short-term because they use newer equipment, younger crews who haven't been injured yet and low bids to get in the door. But the costs of private waste collection soon escalate and within few years are similar or higher than the costs of public waste collection.

It is disturbing and quite incredible that the C.D. Howe study took these highly dubious results and then extrapolated to claim that Toronto could save \$50 million a year from contracting-out all waste services.

What should be the real finding of the C.D. Howe study? The real finding should be that factors other than contracting out have a much greater impact on the costs of the service. This is exactly what experts have found in their recent analyses of comparative costs of waste and recycling collection. For instance:

- A survey of 128 residential recycling producers across Canada by James McDavid of the University of Victoria summarized: "One of the most significant findings is the lack of relationship between private-sector companies collecting recyclables and the overall efficiency of collection operations. The dominance of the private sector collection of recyclables does not translate into greater efficiencies." In fact, his numbers show that public recycling and composting operations were an average of 16% less costly per tonne than private operations across Canada and 40% less costly than private operations in Ontario. Other operational measures can have a big impact on costs. For instance, this study estimates that requiring full bins reduces net costs by almost \$53 per tonne.ⁱ
- Germa Bel and Mildred Warner from Cornell University recently reviewed all the econometric studies of privatization and costs in water and solid waste. They found that, while some previous studies found lower costs with private production, "The most recent studies on waste collection have found no difference in costs. Cost savings from privatization appear to erode over time as there were no cost differences between cities that had privatized earlier and those that retained public production." Once again, they find that it is other factors that have a much greater impact on costs.ⁱⁱ

Actual studies of the relative costs of public and private waste collection by municipalities such as Ottawa, Hamilton and Toronto show that costs of public waste collection are comparable or lower than the costs of private waste collection.

- The City of Hamilton, which has a 50/50 split of public and private collection and closely monitors costs through an "Activity-Based Costing" model found "public sector provision of waste collection services is competitive in the waste collection industry. The public sector costs would be lower than those in the private sector if work accommodation costs were not considered in the ABC model ...and service complaints were comparable between the Public and Private Sectors."ⁱⁱⁱ

- A 2003 City of Toronto report analyzing the comparative costs found that in-house costs were higher because of the higher cost of collection in the downtown core. It also found that the per tonne cost of private collection for the city increased at a rate of over 13% per year—more than twice the rate of cost increase for in-house collection.^{iv}
- Annual audits by independent auditors Ernst and Young for the City of Ottawa found that in-house collection in just one zone provided the City with savings of \$6 million over six years.^v The cost for in-house collection is lower per tonne than the average cost per tonne for private collection, despite being in a more difficult zone, and the actual costs for in-house collection have been 30% lower than what the private sector would have charged.
- In 2008 the City of Peterborough was ready to contract out waste collection and other municipal services on the basis of private consultant's reports. But when the City took a closer look at the numbers, it found that these promised savings were unlikely to materialize, and contracting out would have lost the City the flexibility and other benefits that in-house collection provides. Instead, city officials worked closely with public works staff and union representatives on a very detailed analysis of their costs. Following this exercise, city managers and workers were able together collaboratively to achieve significant savings and efficiencies and develop excellent labour-management relations.^{vi}

Garbage In, Garbage Out: the real costs of solid waste collection

Contracting out municipal services on the basis of ideology and biased reports rather than factual analysis won't result in savings for the residents of Toronto. The real numbers and the experience show that Toronto's waste collection service is one of the most effective in the province and compares favourably to other cities in Ontario.

Prepared by: Toby Sanger, economist, CUPE

ⁱ James McDavid and Annette Mueller 2008. "A cross-Canada analysis of the efficiency of residential recycling services." *Canadian Public Administration*, Vol 51, No 4. December 2008.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1754-7121.2008.00043.x/abstract>

ⁱⁱ Germa Bel and Mildred Warner. *Privatization of solid waste and water services: What happened to the cost savings?* <http://government.cce.cornell.edu/doc/pdf/priv%20waste%20water%20complete.pdf>

ⁱⁱⁱ City of Hamilton Public Works Department, *Activity Based Costing/ Waste Collection Services W04113 – City Wide*, September 22, 2004.

^{iv} City of Toronto Staff Report, 2003. *2002 Curbside Collection Costs*, April 24, 2003.

^v *City of Ottawa Audit Report - Financial Statements For In-House Solid Waste Collection – 2009*

<http://www.ottawa.ca/calendar/ottawa/citycouncil/occ/2010/02-24/pec/12%20-%20ACS2010-ICS-ESD-0005%20-%20Audit%20report%20In-house%20Solid%20Waste%20Collection.htm> *City of Ottawa, Audit Report – Financial Statements for In-House Solid Waste Collection, 2006.*

<http://ottawa.ca/calendar/ottawa/citycouncil/occ/2007/05-09/pec/ACS2007-PWS-UTL-0008.htm>

^{vi} Toby Sanger, *Costs and Consequences of Solid Waste Collective Alternatives in Peterborough*, 2010.

http://cupe.ca/updir/Costs_and_Consequences_Peterborough_-_April_2010-1.pdf