
Waste & Recycling Assessment

Completed by RecycleSmart Solutions Inc.

Auditor: Jaclyn McPhadden, B.Sc, MBA
ABC Co. • Vancouver, BC • April, 2013



Waste Audit

Waste Assessment Summary & Waste Management Recommendations

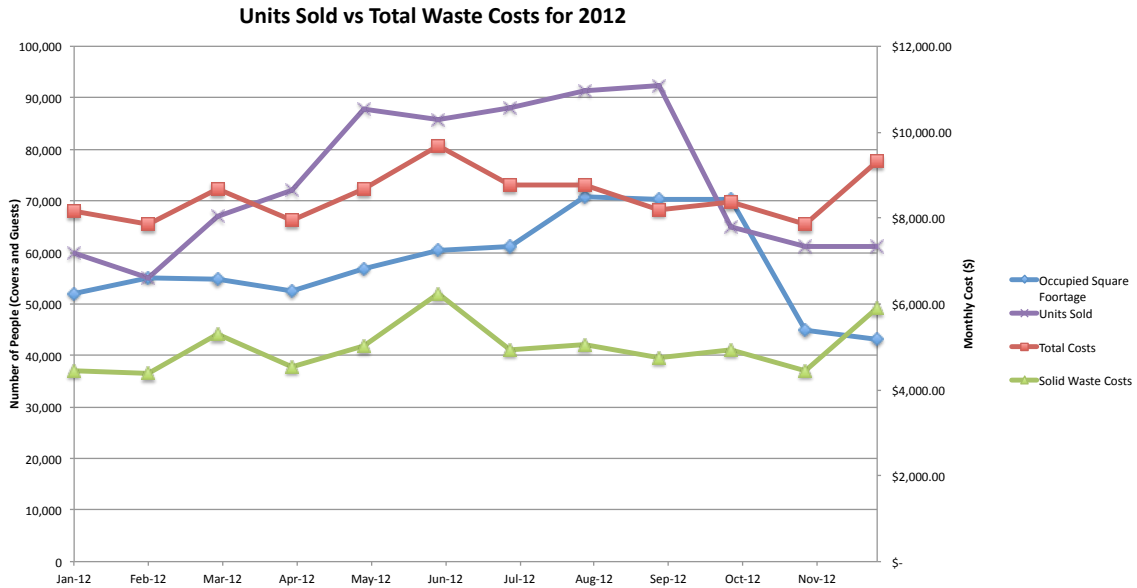
SUMMARY



Identify Guaranteed Savings • Waste Reduction • Organic Waste Management • Recycling

The data collection at the ABC Co., a 75,00 ft² building with an on-site food and beverage outlet exclusively used by employees, occurred over a 49 day period starting on February 14 2012 and ending on April 4 2013. The assessment included a detailed analysis of financial data from January 1-December 31 2012, informational interviews with key personnel, on-site analysis of equipment and waste processes and capacity utilization of existing collection bins. The results of the assessment revealed average monthly waste and recycling costs were \$10,000 (before rebates and taxes), with diversion rate of 41%. RecycleSmart Solutions Inc. estimates monthly savings related to waste and recycling of approximately **\$3000.00 /month** or **30% cost reduction.** (see Figure 1).

Figure 1. Historical Accumulated Waste Costs



Cardboard

Current System

Currently, loose cardboard is collected in carts throughout the property and are emptied into the owner-owned vertical baler serviced twice per week. The service agreement with the incumbent service provider for this material recently auto-renewed for another 3 year period....

Alternatives

Depending on business requirements, there are many alternate ways to collect and recycle cardboard. High volume producers benefit from a baler. The advantage of using a baler is...

- ABC Co.

...whereas, the disadvantage is its space requirement and upfront expense or monthly rental.

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Mixed Paper

Current System

Mixed paper is currently collected in 96 gallon totes throughout the building, which is serviced by Acme Co. The segmented operational areas on each floor of the building each has one tote each and there are several others placed throughout the building. There are 21 totes on site which are picked up 3x a week. ABC Co. receives a monthly rebate that fluctuates with market pricing and pays a monthly rental fee of \$XX / tote. The service agreement with Acme Co recently auto-renewed for another 3 year period.

Alternatives

Mixed paper can be collected individually or mixed in with other materials. Most commonly, paper can be...

Alternatively,
paper can be collected in...

...can be cheaper alternatives to totes depending on the volume....

- ABC Co.

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Confidential Shredded Paper

Current System

Confidential shredding is a service provided to ABC Co. by a company that provides 15 consoles for confidential paper collection which are located throughout the building. These consoles are serviced every week; however, due to time constraints and access to the security office, only 14 consoles are regularly serviced. According to a capacity survey completed in March 2013, the average fill level of the consoles are XX% at the time of service. Shredding at ABC Co. is charged a rate of \$X per minute with a minimum charge of \$Y. Time is based from the moment the driver signs in at reception, to the moment a ABC Co. representative signs off on the service which explains the variable costs from month to month.

Alternatives

Shredding is a service provided by a number of different companies. Some companies specialize in shredding and will charge based on ...

...Alternatively, shredding can occur...

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Scrap Metal

Current System

There is currently no formal program in place to remove scrap metal....

Alternatives

Scrap metal can be recycled for a rebate from many manufacturers. Often the only cost...

... scheduled service....

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Used Cooking Oil

Current System

ABC Co. uses Cooking Oil Collectors Co. to collect the used cooking oil generated by the food and beverage outlet. On average, ABC Co. generates about XXX kg / month of this material. The ABC Co. receives a rebate at \$X / lbs (\$XY /lbs prior to March 1st) with a total of \$XX.00 for 2012. The staff has expressed dissatisfaction with the service provided by Cooking Oil Collectors Co...

Alternatives

There are very few alternate providers for Used Cooking Oil collection. In British Columbia, ... New vendors have entered the market to provide competition. Most vendors pick up the used oil ...

...Used cooking oil are collected in medium sized bins, and can either be serviced on call or on a set schedule.

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

- ABC Co.

Recycling (Glass, Aluminum, Plastics, Tin & Paper)

Current System

ABC Co. does not have a system in place to collect and divert container recyclables (tin, plastics, aluminum, glass). Currently, all of these recyclable materials are placed in the garbage.

Alternatives

Options for recycling mixed containers are plentiful...

on wheels, but are less convenient to spread out.

...are also

Recommendation

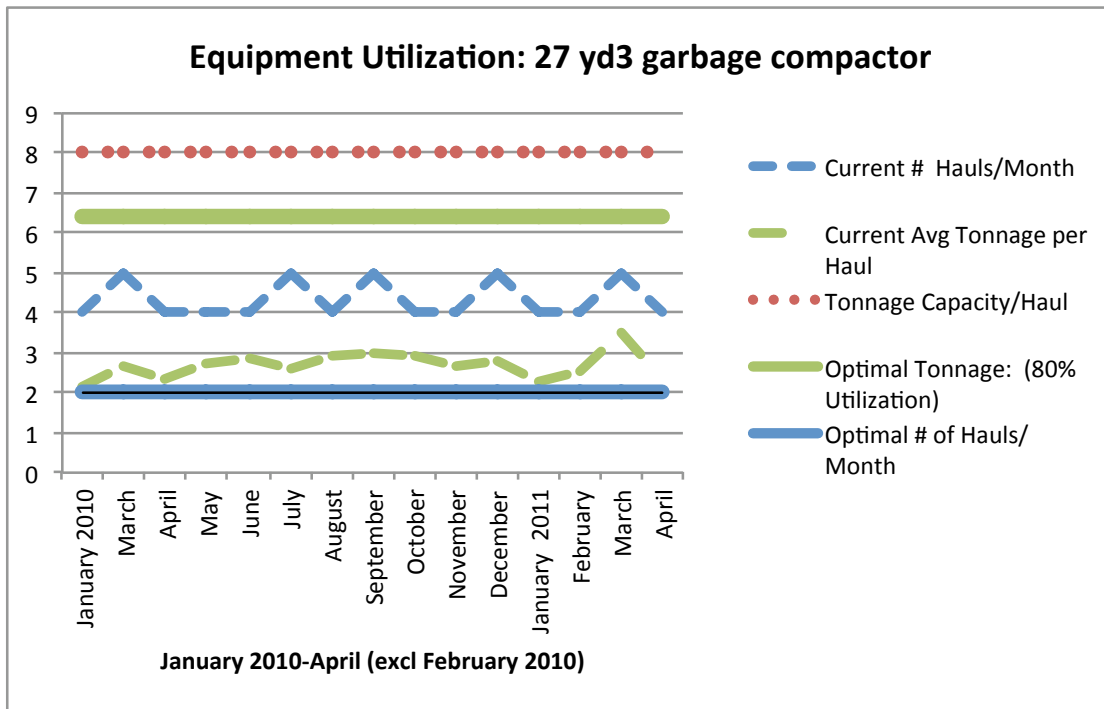
Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Garbage

Current System

Currently, ABC Co. has capacity for 117 yards of compacted waste/month based on the current service schedule. Waste is collected in a 27 yard compactor serviced once per week and is not being currently optimized (see Figure 2). ABC Co. can significantly reduce costs by improving the utilization rate for the compactor. RecycleSmart expects to reduce costs by \$XX/month by implementing a...

Figure 2. Equipment Utilization Over Time



A tote tipper was added to the compactor since its original arrival. The compactor is rented at a rate of \$ XX / month from AAA Co., and garbage is picked up by BBB Co. The service agreement with AAA Co. is...

Throughout 2012, weights per service varied from as low as XX tonnes to as high as XX tonnes. Costs for servicing the solid waste are a...

This is a difference of \$XX per tonne, which on average results in \$XX/month in landfill premiums paid by ABC Co. Additionally, the hauling rate for BBB Co...

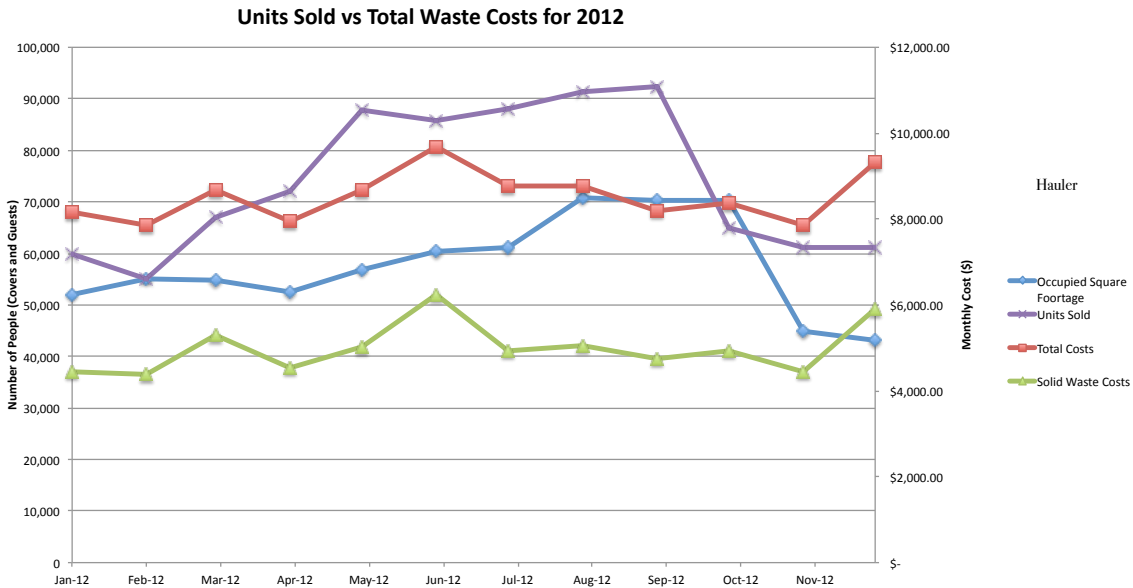
On

average, this results in \$XXX / month in excess fuel surcharges paid by the ABC Co....

The waste costs trends (see Figure 2) for ABC Co...

...The increased costs are associated with increased tonnes reported by BBB Co., and are amplified with the ...

Figure 3. Units Sold & Utilized Square Footage vs Waste Costs for 2012



Alternatives

Garbage can be collected via a number of methods. For low volume waste generators, garbage is often collected in a front load bin. These range in size from 2 yard to 8 yards. The advantage of a front end bin is...

The major disadvantage of a compactor is ...

- ABC Co.

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Refundable Beverage Containers

Current System

ABC Co. is using XYZ Co. for refundable beverage containers. Totes are placed throughout the building for collection and are brought down to the loading bay every Monday to be serviced. ...

The ABC Co. is receiving XX% of the rebate for all beverage containers with XYZ Co.

...free of charge.

Alternatives

Several companies will pickup refundable beverage containers...

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

- ABC Co.

Food Waste Recycling

Current System

ABC Co. is using ZZZ Co. for food waste recycling from the staff cafeteria. The building has 7 totes on site which are serviced 7 days a week. The monthly cost for this service is above market pricing at \$XX/tote. Throughout 2012, ABC Co. had 4 months with extra pickups, charged at \$XX per tote. Totes are...

Alternatives

Several companies provide food waste recycling service. Food waste is collected in totes and set on a regularly scheduled service. Totes are either...

...Due to the needs of commercial businesses, food waste recycling must...

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

Miscellaneous Materials (textiles, e-waste, scrap wood etc)

Current System

ABC Co. currently uses a number of charities to pick up various materials. These include donations of...

Recommendation

Based on the assessment, market conditions and the analysis, RecycleSmart recommends...

DIVERSION

The diversion rate is calculated by dividing the weight of waste recycled over the weight of all waste.

Waste Diversion Calculation=	$\frac{\text{The total weight of recycled materials}}{\text{Total weight of garbage} + \text{Total weight of recycled materials}}$
------------------------------	--

Some weights were provided by haulers, whereas others required a calculation based on industry standards densities, size of bins, frequency of service and estimated fullness at time of service based off capacity surveys performed during the study period. Industry standard densities were retrieved from the California Integrated Waste Management Board (CIWMB). Weights were provided by the hauler for the following materials: paper, used oil, garbage and cardboard....

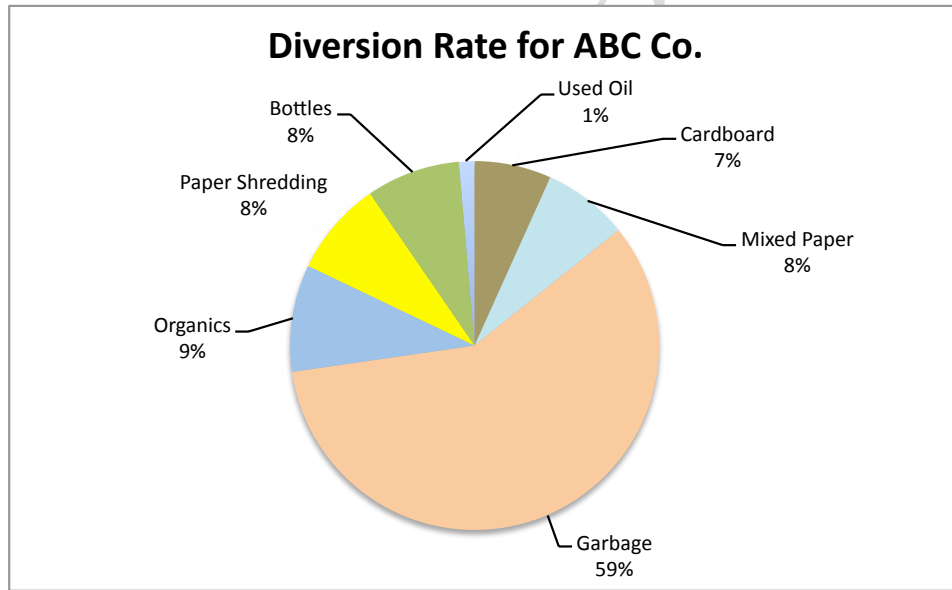
Industry standards were used to calculate weights of organics, shredded paper and beverage containers...

- ABC Co.

The diversion rate for ABC Co.y is estimated to be 41% (See Figure 4) during the audit period (January 2012-December 2012) where...

...could be significantly improved with the more accurate waste tracking, implementation of a mixed container recycling program, and increased utilization of the food waste recycling program.

Figure 4. Waste Stream Diversion Categorized by % Weight



FUTURE SAVINGS POTENTIAL & RECOMMENDATIONS

RecycleSmart predicts an average monthly savings of approximately \$3000.00/month or 30% (before rebates) Table 1 categorizes savings according to each waste stream reflecting RecycleSmart’s projected immediate savings once plan is implemented.

Table 1. Projected Average Savings

	Current Costs	Projected Costs	Monthly Savings	%	Annual Savings
Solid Waste	\$ X	\$ X	\$ X	X	\$ X
Paper Shredding	\$X	\$X	\$X	X	\$X
Cardboard Rental	\$ X	\$ X	\$ X	X	\$ X
Paper Rental	\$X	\$X	\$X	X	\$X
Paper and Cardboard Rebate	\$ X	\$ X	\$ X	X	\$ X
Bottles	\$X	\$X	\$X	X	\$X
Organics	\$ X	\$ X	\$ X	X	\$ X
Used Cooking Oil	\$X	\$X	\$X	X	\$X
Total (before tax)					

ABC Co. is currently under a contract with the service provider for waste removal until August 2013. Market research indicates that current pricing is...

- ABC Co.

ABC Co. currently has a food waste recycling program, but it is currently under utilized. This service could be increased which would further reduce landfill costs and increase the ABC's ABC Co. diversion rate.

through increased education, signage and bins...

ABC Co. does not currently have a mixed container recycling program. RecycleSmart has secured pricing at \$XX/pickup for 15 totes with a rental fee of \$XX/tote/month with...

Confidential Shredding consoles at the ABC Co. were found to be...

...This will reduce the monthly cost for this service significantly, and will also provide consistent and predictable costs.

The waste management plan developed by RecycleSmart Solutions for ABC Co. offers support through RecycleSmart's resources for training and education for employees.