

Should NYC implement a Single Stream Recycling Service?

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Introduction

DSNY currently collects residential recycling in two streams:

- Green bin: paper and cardboard
- Blue bin: metal, glass containers, hard plastics

The Department is considering changing to a single stream system which would allow residents to put all their recyclables in one container. The argument for single stream is:

- it is **easier for residents to understand** which will **increase participation** which is required if the City is to meet its Zero by 2030 goal; and
- **reduces collection costs** because less vehicles are required to collect recyclables when they are all together rather than in two streams

However, while there is evidence that more material is collected through single stream systems there is also evidence that;

- It leads to much **higher levels of contamination** because people will more likely treat the single stream bin as they do a trash binⁱ;
- **Single Stream Increases the processing and disposal costs** because the recycling facility has to put in infrastructure to attempt to remove the contaminants as well as pay to dispose of the contaminants to landfillⁱⁱ;
- The **quality of the resulting recyclables is lower** which makes them harder to market and will likely cost the City in reduced market prices and further distances to market, which can put further **pressure on budgets**ⁱⁱⁱ; and
- Once contaminants are removed the overall quantity of material recycled, the **recycling rate, is no different** to a two-stream collection^{iv}.

This briefing paper seeks to highlight some of the important questions that should be addressed before making the final decision on any service change. It recommends that DSNY prepares or has independently prepared a full cost benefit analysis of the two systems and makes this public, allowing for public participation in the decision.

Assessing if Single Vs Two Stream Recycling is the Right Option for NYC

Table 1 sets out a small number of questions that should be answered before deciding on any change in recycling service. The table also sets out why it is important that these questions are answered.

Table 1: Questions to Answer Before Implementing Recycling Service Change

Question?	Why is this important?
Will single or 2 stream recycling result in a higher quantity of quality material being sent for recycling?	Higher levels of contamination in single stream collections can in some cases negate the benefits of collecting greater volumes. Considered modelling is required to assess this for NYC's waste stream

<p>What impact will a single stream compared to a 2 stream service have on DSNY's or its contractors ability to secure reliable, high value local markets for recyclables?</p> <p>Will all current markets for NYC's recyclables accept our materials if we use single stream?</p>	<p>The price that recyclables can secure in a competitive fluctuating commodity market will impact on the cost of the service as will the cost of haulage. Recyclables from single streams can result in lower quality materials.</p>
<p>What costs will DSNY incur for the SIMS facility being redesigned (capital and ongoing) to accommodate single stream</p>	
<p>What will be the impact on the Pratt paper facility?</p>	<p>A cost benefit analysis needs to incorporate both the potential savings through reduced collection costs with the increased processing and disposal costs as well as impact on markets and revenues.</p>
<p>How many vehicles does DSNY believe would be reduced if it moves to a single stream collection and on what basis has this assessment been made?</p>	
<p>What level of contamination will a modified SIMS facility request from the City for the agreed processing fee?</p>	<p>When DSNY and SIMS renegotiate a price for processing NYC's single stream recycling, the price will be influenced by the level of contamination. The higher the contamination the higher the cost to process and as such to DSNY</p>
<p>What education and communication will be used to reduce contamination rates and what will this cost?</p>	<p>Education and communication is critical to the success of any recycling program. When processing costs are based on levels of contamination it is important to have appropriate budgets to ensure the educational program is robust and that contamination is kept to agreed upon levels.</p>
<p>If education programs are not adequate to minimize contamination, what is Plan B?</p>	

Conclusion & Recommendations

Effective recycling behavior means **increasing participation and capture rate**, and also **improving the quality of recyclables streams by discouraging contamination**. In other words, effective recycling means people **consistently placing all the materials** they are able to recycle **in their appropriate recycling containers**, and **not putting out items that are not intended to be collected locally for recycling**. Regardless of which system is in place, one of the most important factors that will increase both participation and capture rate while not reducing quality is **persistent, targeted, multi-approach messaging and education**.

The only way DSNY can make an informed decision on which system is right for NYC is to carry out a robust cost benefit analysis that addresses the questions listed in Table 1 and sets out at least the following:

- Recycling material flows: For each recycling system modelling should be carried out to ascertain the quantity of recyclable, organic and residual waste that is likely to be collected.
- Costs and revenues for each option including:
 - Collection, disposal and treatment costs;
 - Capital costs associated with:
 - changes to current recycling infrastructure; (SIM's Recycling Facility) and impact on DSNY's contract price with SIM's
 - potential replacement of some of the existing recycling vehicles
 - Implementation costs associated with a move to a new collection system, including education, removal and disposal of redundant bins etc.
 - Impact on markets, revenues.
- Performance including the level of contamination within the recyclables, the likely participation and capture rates, anticipated percentage recycling rate and GHG impact.
- Contractual risk: in respect to financial exposure that may result from terminating existing contracts.

ⁱ <http://www.waste360.com/source-separation/contamination-continues-hurt-recycling-efforts>

ⁱⁱ Resources 2015, 4, 384-397; doi:10.3390/resources4020384

ⁱⁱⁱ <https://citylimits.org/2015/05/20/single-stream-recycling-simple-for-residents-complex-for-the-city/>,
<http://finance.yahoo.com/video/waste-management-ceo-didnt-educate-125200599.html>,

^{iv} <http://www.eunomia.co.uk/reports-tools/review-of-the-welsh-government-collections-blueprint/>