

## **Attachment A**

### **Summary of Expert Research conducted for the Hot Drink Cup Taskforce**

The following is a summary of research conducted for the Hot Drink Cup Taskforce on End Market Assessment, Processing and technological capabilities of Toronto's current Material Recovery Facilities and Source Reduction Behaviour Change. The full reports can be found here:

[http://www.toronto.ca/garbage/packaging\\_reduction/index.htm](http://www.toronto.ca/garbage/packaging_reduction/index.htm)

#### **End Markets Assessment**

Full Report:

[http://www.toronto.ca/garbage/packaging\\_reduction/pdf/amec\\_cups\\_end-market\\_assessment\\_rpt.pdf](http://www.toronto.ca/garbage/packaging_reduction/pdf/amec_cups_end-market_assessment_rpt.pdf)

AMEC conducted an assessment of potential end markets that could conceivably accept post consumer polycoated paper cups from Toronto's Blue Bin program. The scope of research included an identification of potential end-users of post-consumer polycoated paper cup products (with a focus on the North American market); processing limitations at those end-user facilities with regard to useful consumption of the material; potential changes required to successfully and reliably process post-consumer polycoated paper products; and the willingness of end-users to co-fund capital improvements to their processing operations.

AMEC conducted interviews with sixteen companies which represented more than 40% of the total North American consumption of recovered paper. The companies interviewed produced or brokered a wide variety of products including containerboard, paperboard, tissue and newsprint.

Key findings:

AMEC's research concluded several key findings:

*"None of the 16 companies interviewed were willing to commit to taking this grade of recovered fibre without first completing the mill-scale trials" (AMEC report)*

- Adding another grade of fibre to Toronto's Blue Bin program could have detrimental effects on the existing recovered fibre end markets.
- Pre-consumer poly-coated cup end-users do not necessarily have the capability or interest to effectively utilize post consumer poly-coated paper products.
- Combining post-consumer poly-coated paper cups with other grades of recovered fibre of poly-coated materials does not improve the marketability of post-consumer poly-coated paper cups.

- Post-consumer poly-coated paper cups may need to be kept separate from other grades of recyclables in order to be effectively marketed.
- An offer to co-fund the necessary Capital Expenditures for mill end-users of post-consumer poly-coated paper cups was well received by mill end-users.
- Mill scale trials are a necessary next step in defining the end market.

Assuming cups would be free of plastic lids, several potential challenges were identified with the existing cup package:

- The kraft paper sleeve is not compatible with the production of tissue.
- Dark ink on the cup is a concern for paper mills.
- Polylactic Acid (“PLA”) coating was not considered to be compatible with mill requirements.

### **Processing Equipment and MRF Assessment**

Full Report:

[http://www.toronto.ca/garbage/packaging\\_reduction/pdf/entec\\_report\\_mrf\\_assessment.pdf](http://www.toronto.ca/garbage/packaging_reduction/pdf/entec_report_mrf_assessment.pdf)

In order to achieve the recycling goals set out in the In-Store Packaging staff report, it was necessary to understand how the addition of hot drink cup materials (e.g., cups, lids, insulating sleeves) would be sorted at MRFs and the impact the new material would have on existing operations and marketable products.

Entec Consulting Ltd. conducted a technical assessment of how cups and lids would flow through Toronto’s two current MRFs; the potential for optical sorting technology to recognize post consumer hot drink cups and lids; a survey of other municipalities that manage cups and lids; and recommendations of how much additional sorting systems (i.e., both hand-picked and automated) would be required to capture post-consumer hot drink cups.

Key findings:

In order to attempt to recover hot drink cups and lids additional manual sorters (15 at Dufferin and 19 at Metro Waste Paper) would be needed along with 6 optical sorters.

- An estimated total capital cost of \$1.8 Million for each facility and \$1.75 Million in annual operating costs.

There are limitations and challenges with respect to using optical sorting technology to separate hot drink cups from the single stream recycling material:

- The concern is not the majority of cups and lids on the container lines, but rather the quantity potentially missed on the fibre lines (i.e., the contamination of existing paper streams with post-consumer paper cups).
- End-markets have already expressed concern about the current levels of out-throw fibre contamination in newsprint – adding cups and lids would only increase this problem in a product that is Toronto’s largest generator of recyclables revenue..
- Even if optical sorters were able to effectively identify and sort hot drink cups, many would still be buried in the ONP (estimated 5%-10%), leading to increased product contamination.
- Neither of Toronto’s existing MRFs has space currently available to retrofit for the sorting of these products.

Entec recommended that:

1. Toronto not add hot drink cups and lids to the Single Stream Recycling Material (“SSRM”) at this time.
2. Any future Toronto MRF be designed to isolate the processing of recyclables collected from public space bins so as to minimize the potential for Old Newsprint (“ONP”) contamination. This could be done either by processing this “commercial” material through conventional processing equipment during designated hours, or through the design of a separate dedicated processing line.
3. The City should work with cup manufacturers and optical sorter suppliers to improve the ability to sort and capture hot drink cups and lids.

### **Behaviour Change**

Full Report:

[http://www.toronto.ca/garbage/packaging\\_reduction/pdf/kell\\_env\\_hot\\_drink\\_report\\_behaviour\\_change.pdf](http://www.toronto.ca/garbage/packaging_reduction/pdf/kell_env_hot_drink_report_behaviour_change.pdf)

In order to achieve the source reduction and recycling goals outlined in the In-Store Packaging staff report, consumer behaviour would have to shift from a mindset of disposable cups to recyclable and refillable hot drink cups. To this end it was necessary to understand the effectiveness of public education and outreach marketing campaigns, as well as the effectiveness of financial incentives (e.g., discounts, fees, etc.) aimed at changing behaviour.

Kelleher Environmental conducted research on the effectiveness and success of public outreach and education campaigns designed to alter consumer behaviour; the effects and impacts of social marketing programs; economic and other incentives which result in behaviour change; and other policies and incentives targeting hot drink cups.

Key findings:

1. Behaviour change requires an extended period of time and consistent promotion and education campaigns constantly reinforcing the messages which resonate with the Toronto audience and commuters.
2. There is little baseline information available to the City of Toronto on the current uptake of refillable mugs at hot drink retail locations; on the effectiveness of the existing 10 cent discount for refillable mugs; and on the predicted effectiveness of a 20 cent discount for refillable mugs at hot drink retail locations.
3. There are other innovative strategies tested by some retailers to increase the use of refillable mugs, which are not a direct discount to the consumer (e.g., the retailer donates 10 cents to a charity each time a customer uses a refillable mug).