Waste Processing and End Market Challenges

The information in this document offers insight into the challenges faced in processing and preparing divertible material to be recycled and finding end markets for the final products. It is important to have an awareness of these challenges in order to participate in discussions that will come up during Solid Waste Master Plan development that consider the life cycle of waste.

Background

The City's processing and marketing of recyclables is currently contracted to Cascades Recovery+. Cascades Recovery+ processes and sorts the City's recyclable material into different products and typically sells the material monthly to the highest bidder. On occasion, longer term contracts are used due to market instability. The City retains all revenues from the sale of recyclables.

In 2019, approximately 55,000 tonnes of recyclables was marketed by Cascades Recovery+. The City received approximately $6.9 million in revenue for the sale of recyclable material.

Recycling markets have fluctuated for decades, with commodity pricing trends being labelled as "volatile" due to the large annual swings. Recently, there have been a combination of forces that are impacting the marketing of recyclables and putting greater than usual pressure on commodity pricing.

Global Context

Recycling and end market challenges are not unique to Ottawa or Canada – it is a challenge experienced around the world by consumers, governments, and manufacturers alike. There have been policy changes and trends over the last ten years that have had substantial impact on waste diversion programs and end markets.

> *China Sword (2018):* a ban on the import of 4 classes of recycled materials, and strict quality standards on other recycled materials imported from around the world. This was

introduced to reduce the amount of contaminated recyclable material arriving in China to be processed. China handled over half of the world's recyclable waste prior to the enactment of China Sword. Many processors that could not meet China's new policy measures have sought out alternative markets for recyclable plastics. As prices for recyclables began to decline, some recycling facilities across North America were forced to close as the industry struggles to stay profitable.

New Products and Packaging: One of the most dramatic changes in packaging in the past several years that is contributing to the disposal dilemma has been the enormous growth in the use of flexible plastic packaging, called plastic laminates, such as stand up pouches, resealable film packaging, juice pouches and tube pouches – none of which can be recycled at this time. These materials are mistakenly disposed of as recycling and can cause challenges at recycling facilities.

The "Evolving Tonne": Over the past decade, the packaging industry has shifted its packaging from traditional heavier materials, such as glass and steel, to light-weight materials such as multi-layered and plastic packaging. While some of this applies to new products and packaging that cannot be recycled, the weight and composition of materials already in the marketplace are changing. For example: the current weight of plastic water bottles has decreased by 50 percent over the past 14 years. Whereas one tonne of PET bottles contained about 35,000 individual units ten years ago, today one tonne of PET bottles contains about 70,000 units, i.e. double the number of PET bottles. The concept of the 'evolving tonne' also encompasses the slow decline of printed newspaper and magazines as they move to an online format.

Market forces: The demand for recyclables has a direct impact on the value of each material. As the price of oil and natural gas drops, the value post-consumer plastics falls as well. Plastic producers will use virgin material when it becomes less expensive than recycled content. The value of paper has also dropped dramatically, primarily due to a shift from printed paper to online consumption on information.

Provincial Context

Many of the challenges seen at the global level are also experienced here in Ontario. The Resource Productivity and Recovery Authority reported in 2018 that market recycling tonnage continued to decrease, with a 16% decrease in recycling tonnages over the last 10 years a result of declines in newsprint and a shift to the use of lightweight plastic packaging. This does not mean that people are recycling less; it means that the composition of material we consume has changed. Given that recyclables are marketed by weight (tonnes), lightweight plastic packaging means that recycling facilities need to receive a greater volume of material to sell to market the same quantity of goods (by weight).

Ottawa Context

Despite all of the challenges faced at the global and provincial level, the City of Ottawa has taken several steps to secure stable end markets and successfully process recyclables set out by residents. The City of Ottawa does not sell any of the banned materials outlined in “China Sword” through the Blue Bin Program. The products the City sells to international end markets have been limited to a small portion of printed paper and gable-top products, such as juice and milk cartons, while the City’s remaining recycled material is sold within North America.

The impacts of “China Sword” have had a more significant impact on municipalities with a single-stream recycling program. The City of Ottawa provides a dual-stream recycling program through the Blue and Black Bin programs. Separately collected recyclable streams have lower contamination levels (e.g. food and glass does not soil fibre materials), which yields a higher quality and cleaner product that is reputable, and thus holds a higher revenue value.

While these marketing strategies help mitigate the impacts of changing markets; lower revenues are expected to continue. The City continues to work with its recycled material processing and marketing contractor to monitor market fluctuation and evaluate new market opportunities.

What's Next?

In 2016 the province released Ontario's Strategy for a Waste-Free Ontario: Building the Circular Economy. The strategy, and associated legislation, incorporates the establishment of a producer responsibility regime. Commonly referred to as Extended Producer Responsibility, this initiative will support the circular economy by driving innovation in product and packaging design and encouraging producers to create materials that can be recycled and more easily marketed.

The City of Ottawa will continue exploring new and innovative end markets to increase the type of material that can be diverted as it develops the new Solid Waste Master Plan. The Master Plan will also consider service collection models in light of the provincial shift to full extended producer responsibility for the City's blue and black bin programs.

The City will be seeking feedback from residents and other stakeholders on how to best manage changes to commercially available products and packaging to continue to increase waste diversion.

We look forward to hearing from you!