

## Appendix 1

### Options to Maximize the Potential of the MRF and the partnership with Niagara Recycling

The financial viability of MRFs in Ontario is based on the ability to secure inputs/haulage (i.e. tonnage of recyclables) and to be able to find markets for those products. Currently, aluminum recycling represents the highest revenue per metric tonne of all products. Plastics such as PET, HDPE represent a distant second and third. Although these three areas generate the greatest revenue on a per tonne basis, they represented only 5.6% of the total tonnage processed by the Region's MRF in 2018. In comparison, plastic film and mixed plastics high grade, represent the lowest revenues per tonne and account for 6.2% of the tonnage processed at the Region's MRF. Newspaper #8 and Cardboard/Boxboard, when combined, represent 69% of the total Regional tonnage, but the revenues generated on a revenue per metric tonne measure are only \$69 per tonne and \$110 per tonne, respectively. The revenue per tonne for the fibre product may decrease in 2019, however if the amount of prohibitives/garbage could be reduced through added investment to the MRF, the Region could receive a premium for these streams.

- The majority of the Region's MRF's processing capacity is dedicated to fibre product. Unless there is an ability to generate more value on the fibre stream or identify an opportunity for value-add processing to increase the MRF's revenues per tonne of these inputs, this will limit the facility's overall capacity to increase its competitiveness.
- Opportunities to improve revenue on the fibre stream (primarily newspaper #8) would have significant impact, but would require advanced technology to reduce operating costs. This would include investment in current technology such as AI, more optical sorters for polycoat cartons and aseptic packaging and reducing double handling of fibres through the installation of another baler.

The plastics being processed at the MRF represent a potential opportunity to undergo value-added manufacturing onsite to increase their associated revenue per tonne. During the tour of the MRF Norman Kraft, CEO of Niagara Recycling, provided examples of extruded plastic pellets that have the potential to be manufactured on site. However, at this time there has been no market analysis conducted to determine the feasibility for selling extruded plastics as a product.

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Niagara Region and Niagara Recycling should investigate the opportunity for new product development. This includes testing the extruded plastic pellets to better understand their composition and determine if there is a potential market. This will allow Niagara Recycling to increase its revenues per metric tonne of plastics, which can be used to offset other costs associated with the facility.

- Niagara Recycling should engage the Niagara Industrial Association to get a third-party assessment of the value of extruded plastics and the possibilities for it to be used as a manufacturing input.

Niagara Recycling and Niagara Region is currently undertaking value-added manufacturing through its “Niagara Ecoglass” Sandblasting Abrasive. The process that Niagara Recycling employs allows full control over the specifications of the final product. Currently the product is only being used as a sandblasting material. However, there are other potential markets that require crushed glass as an input.

- Currently the only market outside of Niagara that Niagara Recycling is selling into is Quebec. Niagara’s strategic location allows for easy shipping of bulk goods, such as Niagara Ecoglass, into US markets along the Great Lakes. The value of the Canadian dollar and easy access to low-cost shipping opportunities provides Niagara-based companies with a significant advantage. The St. Lawrence Seaway Management Company is able to provide business development services to help determine if there are new markets that Niagara Recycling might be able to sell Ecoglass in to.
- Although Niagara Recycling is actively seeking new and alternative markets for the crushed glass materials produced by the MRF, opportunity for the MRF to create new product lines, diversify markets, and increase the profitability of the facility should be investigated.

Historically, the primary focus of the MRF has been finding cost-effective solutions for processing and maximizing revenue from the sale recyclables to third-parties. During the site tour of the MRF, aluminum, paper, cardboard, and plastics were bundled for resale. The only value-add processing that is currently occurring on the premises is the use of crushed glass into Ecoglass.

One option to consider is how the MRF should move up the supply chain by identifying value-add services that can be done onsite. This would increase the utilization rate of the facility, adding new skilled labour, and increasing the revenues for Niagara Region. For example, this could include the de-inking of paper or turning paper into biomass pellets to be used in biomass energy plants. Currently, provision of shredding services to the private and public is provided as a value added service which could be further expanded.

A consumer market that has an increasing awareness of the impacts of climate change and the need to reduce their carbon footprint is creating an opportunity for manufacturers to utilize recycled inputs and sell their end products at a premium. Cascades is a Canadian-based company that specializes in collecting and converting recyclable materials into a range of paper products. The potential changes to the Ontario recycling sector provide second-mover advantage to organizations like Niagara Recycling if there is a desire to identify markets that would allow for new product development.