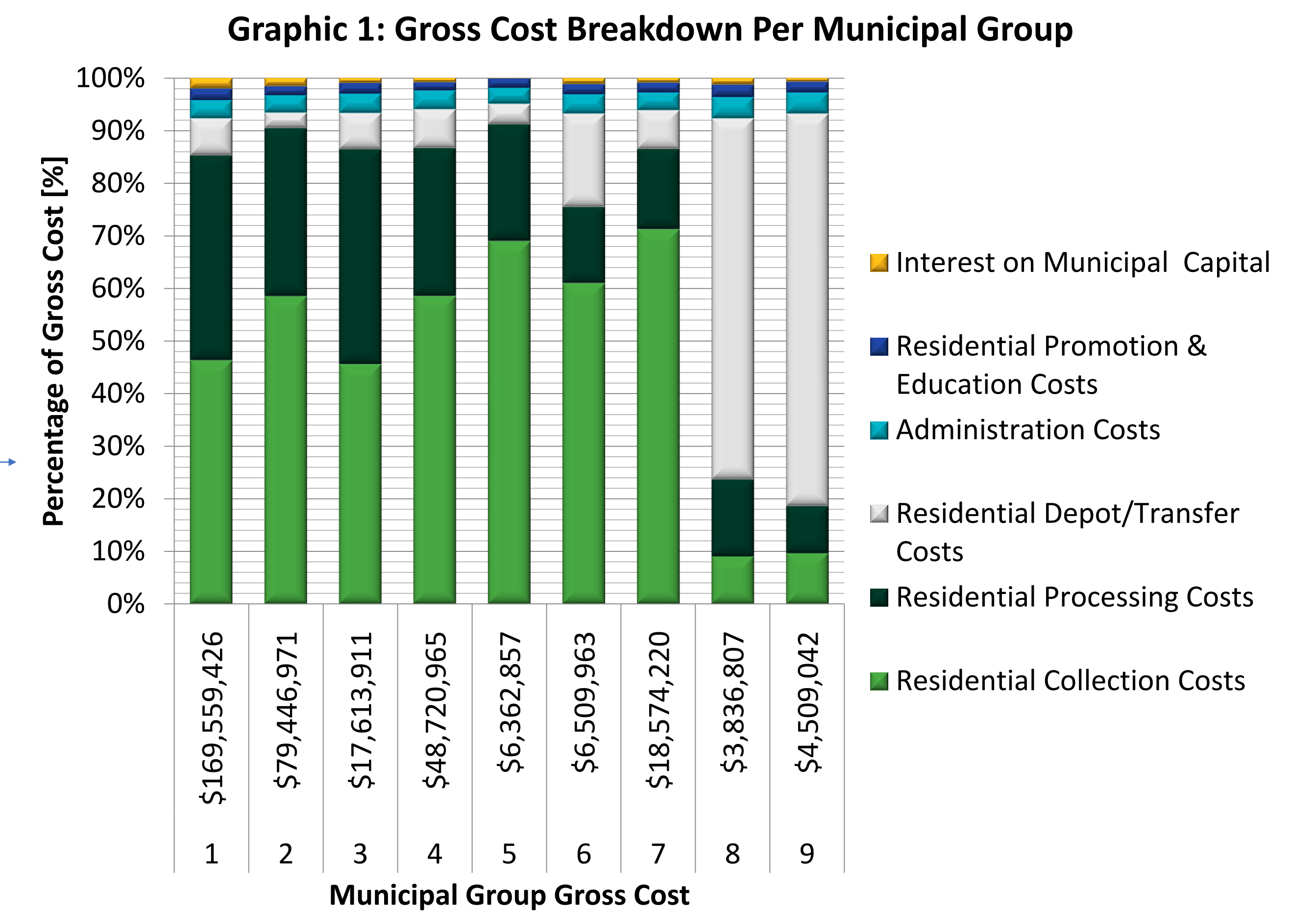


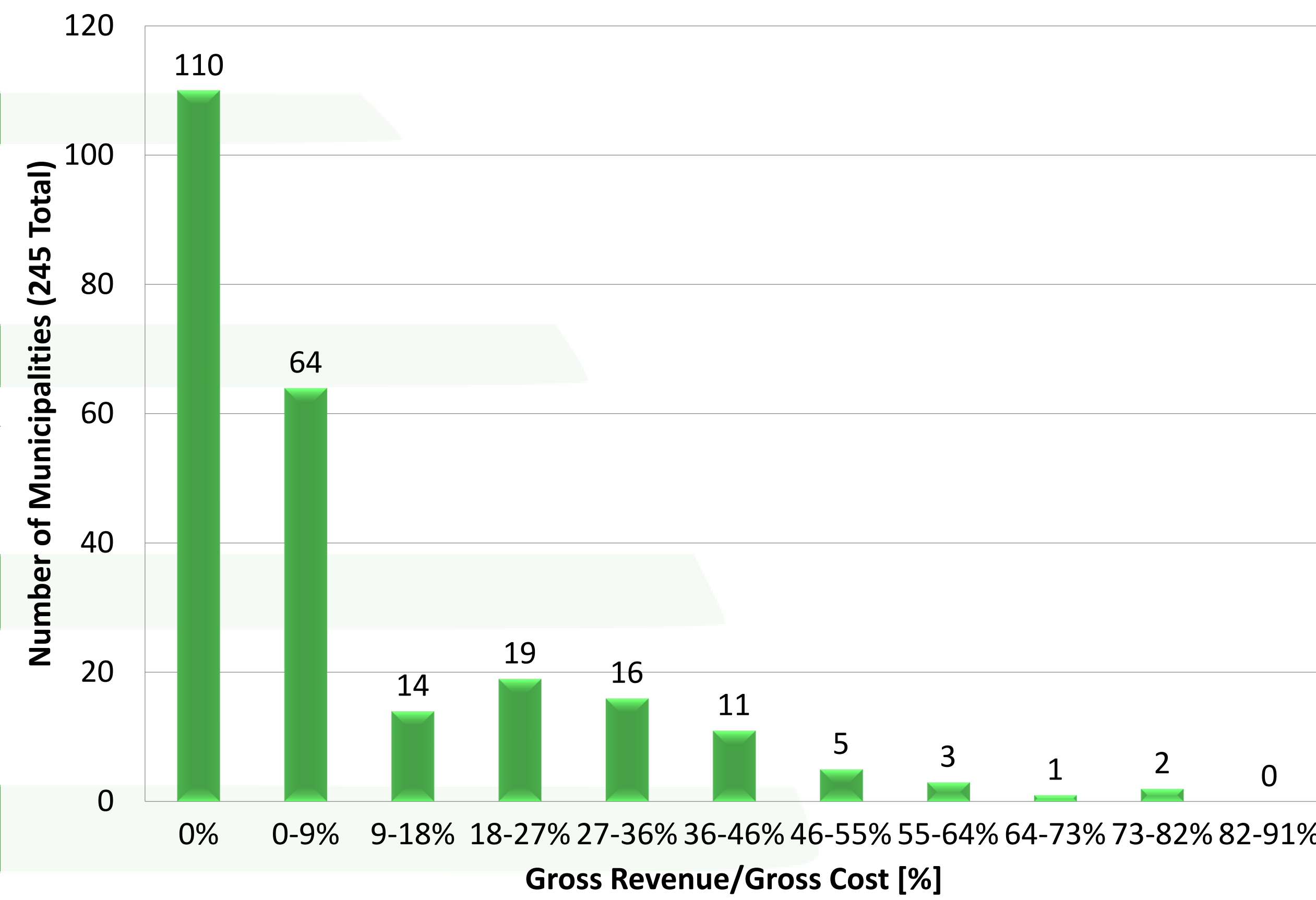
Key Experiences

- Data Verification of Ontario's Municipal Blue Box Programs - Datacall: Verified data on costs, capital expenditure, revenues, tonnages of collected recycling material, and individual program characteristics. Communicated with municipalities to correct inaccuracies or significant variances found in data. Analyzed and plotted the received data in a report.
- Understood how the financial system of the Ontario Blue Box programs works, as well as how waste diversion numbers are calculated.
- Learned how to engage with external stakeholders, communicate information, seek compliance and manage disputes.
- Provided a sustainability assessment report using the Future-Fit Business Benchmark Framework: Assessed the sustainability of RPRA's operations for their environmental performance, human resources management, procurement policies, operational impacts, financial assets and business ethics.
- Proposed further actions for the improvement opportunities identified in the sustainability assessment report.
- Understood how an organization develops its internal policies and codes.

Graphic 1: The breakdown of costs varies in each municipal group (classification of municipalities by factors such as population, type of collection service, population density and geographical location), and this graphic shows the different types of expenses required to run each Blue Box program. The first seven groups have a higher cost related to curbside collection, and a decreasing tendency for processing costs. Groups 8 and 9 have costs mainly associated with depot collection. Administration, P&E and Interest on Capital costs represent a small share of the total cost for all groups (less than 8%). Toronto belongs to Group 1.

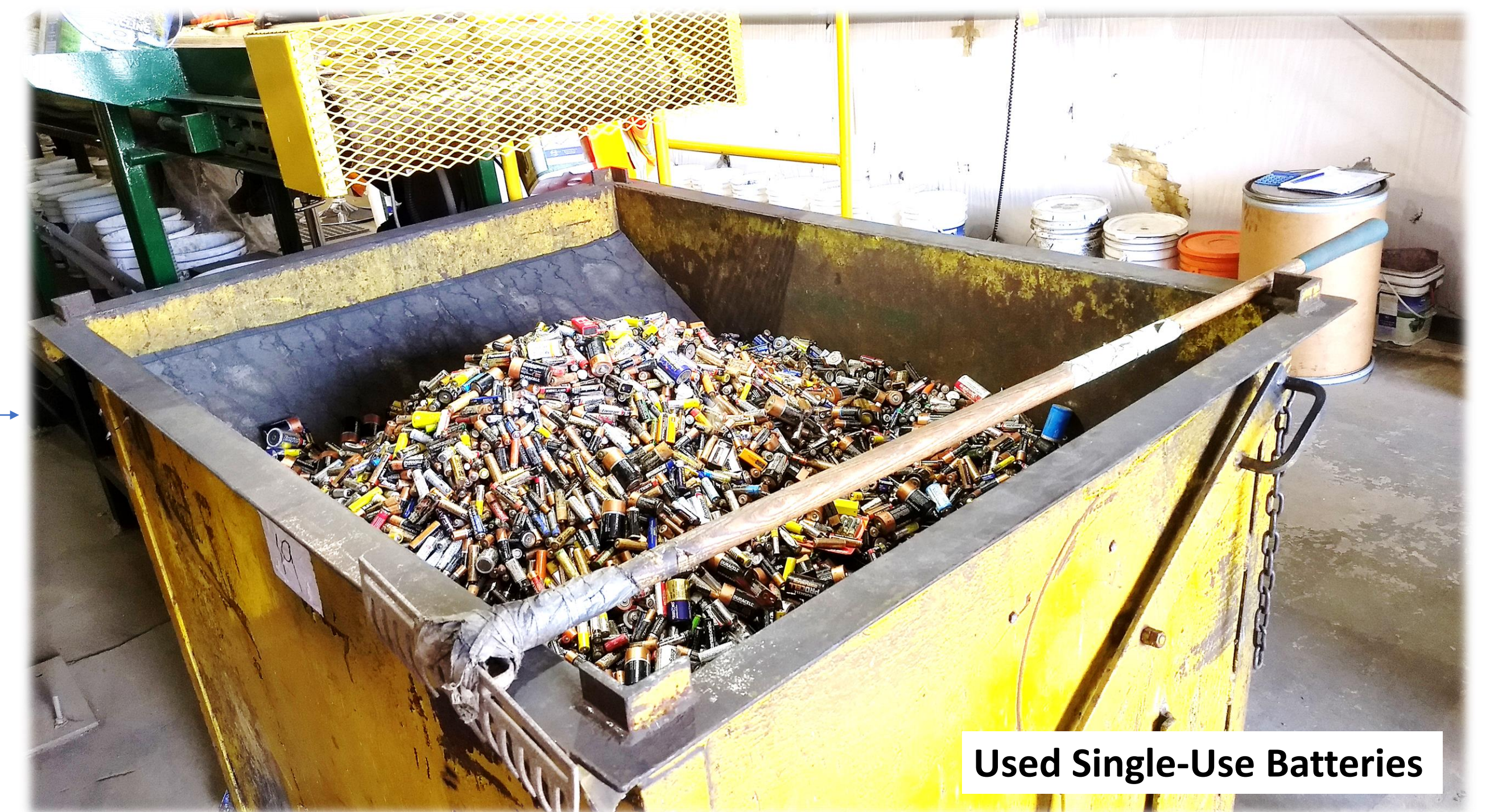


Graphic 2: Revenue Received to Gross Cost Ratio (%) Histogram



Graphic 2: Some municipalities were able to capture higher revenue than others from their marketed Blue Box recycling materials. This is the case of 11 municipalities who captured revenue above 46% of their gross cost. 60 municipalities were able to capture revenue representing 9 to 46% of their total cost. The highest revenue received was achieved by two municipalities, recouping 73 to 82% of their gross cost. In contrast, 110 municipalities did not capture any revenue. Lastly, 64 municipalities received low revenue (0 to 9% of the total cost). This is mainly caused by the type of processing contract and who carries the risk.

Illustration 1: During the field trips I participated in with RPRA, I learned that batteries can help corn crops grow. The company RMC closes the loop of the life cycle of used batteries and opens a business opportunity in the agricultural sector. Used batteries pose an environmental risk when disposed of in landfills, that is why RMC wanted to do something with their chemical components and find a beneficial solution for the environment. Their facilities extract elements from batteries such as Zinc, Manganese and Potassium, which are used by plants for their growth. These nutrients are attractive to farmers to increase yields.



Sustainability Issues Faced

- The transition from a linear economy "make-use-dispose" scheme to a circular economy "resource recovery" scheme in Ontario.
- Mindset and culture change in order for businesses and industry leaders to abide to the new circular economy and individual producer responsibility regulations.
- Reducing the environmental impact of resource extraction by increasing the reuse of materials recovered with a circular economy system.
- Reducing the necessity of new landfill sites or expanding their capacity by implementing a circular economy as this would lead to less recoverable materials deposited in them.

Things You Should Know

- RPRA's mission in Ontario is to enforce producer responsibility and advocate for the circular economy to spur innovation and protect the environment.
- RPRA's mandate is given by two provincial acts: the Waste Diversion Transition Act, and the Resource Recovery and Circular Economy Act (2016).
- With a circular economy framework, Ontario has an opportunity to reduce emissions associated with waste, decrease reliance on virgin materials, enhance environmental protection and bring a renewed economic growth with new jobs and business opportunities.
- A circular economy includes designing for a better end-of-life recovery of products, minimizing the use of raw materials and energy through a restorative system.
- A circular economy also aims to eliminate waste, by maximizing the value of materials and by bringing the opportunity for business models to improve their resource recovery practices.

Illustration 2: In another field trip I learned that paint can be recycled. The paint the company Loop provides to the market was given a second chance to be used by collecting unused residues. These are commonly found as the content of a paint can is often not used completely during a paint job. A resource recovery mindset creates new business opportunities such as Loop.

Graphic 3: Single stream collection is characterized by separating recycling materials at the point of source, whereas multi-stream collection is carried out receiving all recycling materials in a single bin. Municipalities with multi-stream collection received a higher revenue per marketed tonne (\$153 CAD/tonne) compared to municipalities with single stream collection (\$126 CAD/tonne). Additionally, multi-stream collection had a lower cost per tonne (\$386 CAD/tonne) compared to single stream collection (\$477 CAD/tonne). Multi-stream collection seem to perform best due to its lower cost and higher revenue generation.

Graphic 3: Blue Box Single & Multi-Stream Collection Comparison of Gross Cost & Revenue per Marketed Tonne

