Material Cost Differentiation Project

Canadian Stewardship Services Alliance

Consultation on the Material Cost Differentiation Methodology

Introducing the MCD Methodology

The Material Cost Differentiation (MCD) project was initiated in 2017 to develop a new and better way to measure how packaging and paper product (PPP) materials impact the cost of recycling system activities. The new methodology will produce a critical input to fee setting and will replace today's Activity Based Costing (ABC) for the Recycle BC, MMSW, MMSM and Stewardship Ontario programs.

The proposed move to MCD from ABC is driven by a number of factors including: ABC's inability to satisfy steward priorities; ongoing challenges of regularly collecting data that is typically private and confidential; and the evolution of materials and recycling systems since ABC was created more than a decade ago. MCD will provide better and more reliable data for differentiating material cost impacts and calculating fees. MCD builds on the work of the Four-Step Fee Methodology principle that each material's specific cost impact should continue to be a key input to setting fees.

MCD Methodology Features and Benefits

Feature	Benefit
Principle-based	• Satisfies principles developed by stewards that reflect their priorities of fairness and comprehensiveness (i.e., all material characteristics count; and the cost impacts to bring all materials to a repurpose-ready state must be considered).
Fair	• Establishes a level playing field because the methodology treats all materials in a standardized and consistent way. • Differentiates the impacts that each material category's group of characteristics have on cost to recycle as well as its repurpose-ready commodity value. • Promotes confidence that the MCD methodology's outcome satisfies its principles.
Defensible	• Is clearly articulated and supported by procedures that can be replicated year-over-year. • Is based on defensible assumptions. • Generates results that are sound and comparable over the long term.
Comprehensive	• Applies to all obligated materials whether or not they are currently managed in a recycling system, i.e., every material pays its fair share of system costs. • Includes new and innovative measurement protocols including a device to measure the density of materials under compaction simulating compaction on a collection truck.

Feature	Benefit
	• Can be applied to all packaging and paper product programs supported by CSSA.
Nimble	• Reflects emerging trends, including changing materials, packaging formats, recycling technologies and end-markets.

Principle-Based and Developed by Stewards

A working group of stewards, each a delegate from one of the four PPP stewardship boards, identified eight principles to guide the MCD project and the measurement of material specific cost impacts, (see the fully articulated principles here):

- Relativity counts.
- All designated materials count.
- All material characteristics count.
- All activities count.
- Value counts.
- System design and operations count.
- Emerging trends count.
- The material mix counts.

On behalf of the programs, CSSA has worked for the past two years to develop the MCD Methodology guided by the principles and input from the Steward Consultation Committee (SCC). The SCC has reviewed and approved the MCD methodology for consultation with the stakeholder community. Steward input and feedback on the proposed MCD Methodology will help identify issues and questions, and allow for refinements and adjustments before the program boards consider MCD in September 2020.

The MCD Methodology

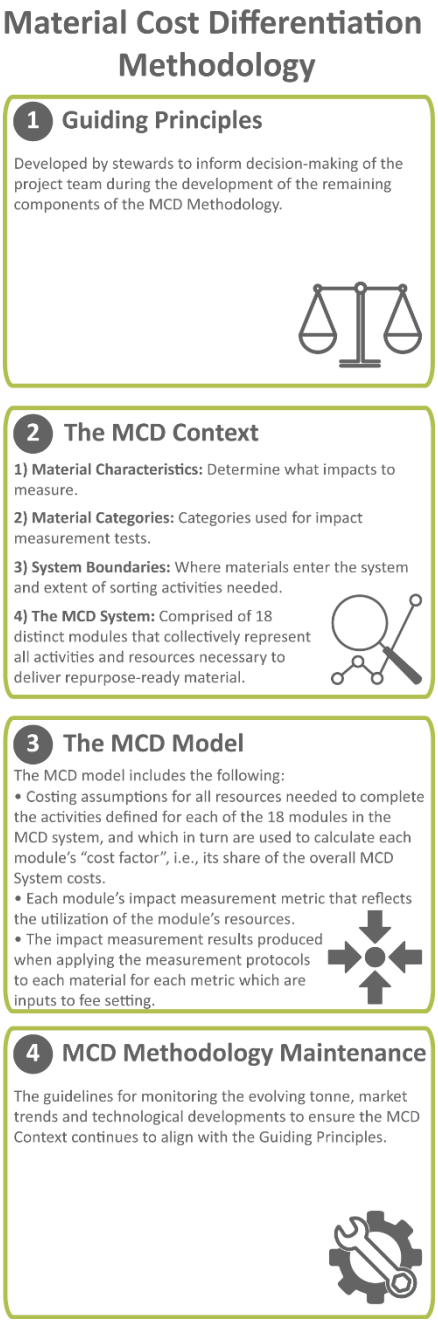
The MCD Methodology has four components.

The first is its **Guiding Principles**. Created by stewards, these principles informed decision-making when developing the remaining components of the MCD Methodology. They articulate the priorities stewards want considered when determining how material category cost impacts are measured.

Second, the **MCD Context** provides the assumptions, definitions and concepts necessary for the MCD model to successfully measure and calculate cost impacts. The MCD Context consists of four key elements: 1) material characteristics and the impacts to be measured; 2) material categories are identified and used to measure material cost impacts; 3) system boundaries that establish how materials enter the system and the extent of sorting activities needed; and 4) the conceptual MCD system, comprised of 18 distinct modules that collectively represent all activities and resources needed to deliver repurpose-ready material.

The **MCD Model** is the third component of the methodology and it consists of the costing assumptions, impact measurement metrics and measurement protocols used to calculate each material category's cost impacts, which are inputs to fee setting.

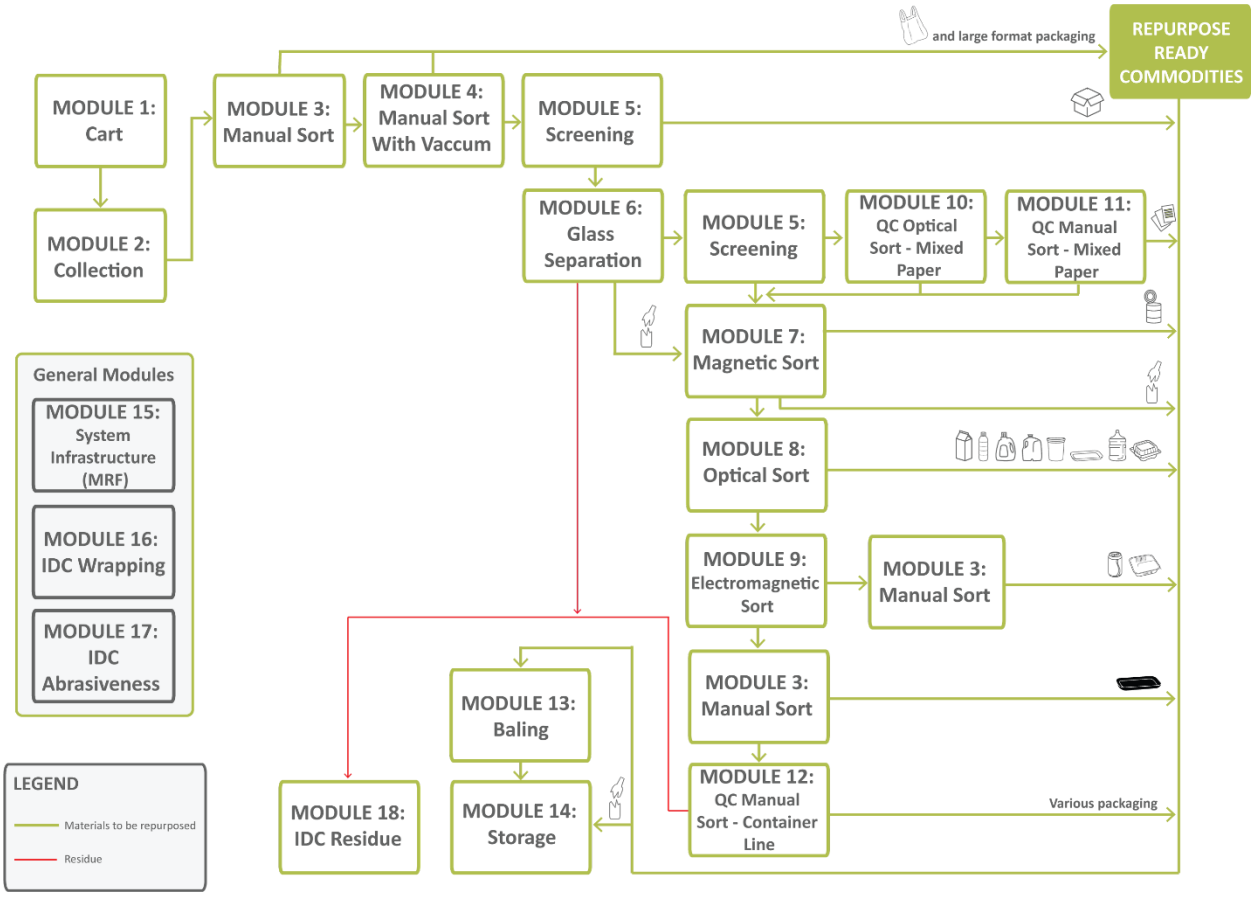
Lastly, there are **maintenance procedures** that instruct us on how to monitor the evolving tonne, recycling processes and technology and their costs to ensure that the MCD model itself can change over time to stay in step with the marketplace.



The MCD System

The MCD System refers to the conceptual recycling system engineered to include all activities necessary to prepare each material to be repurposed. It includes real-world recycling processes and equipment and is comprised of 18 'modules' that each represent a discrete set of activities, equipment, and processes and associated resources. Each module provides the opportunity to measure the relative cost impacts of MCD material categories' characteristics on the recycling system.

Collectively, the 18 modules ensure that material cost impacts related to collection, sorting, baling, (including quality control activities and including the impacts of impeding and damaging characteristics, such as abrasiveness), are measured relative to each other. A simplified illustration of the MCD's system modules is provided below.



The MCD Model Produces a Material Cost Index

The Model is the third component of the MCD Methodology and consists of the costing assumptions, impact measurement metrics and protocols that are used to calculate each material's cost impacts on the recycling system. The objective is to assess each material's cost impacts on the conceptual system that are necessary to bring it to a ready-to-repurpose state. The model tells us how to complete these calculations and produces an index, a Material Cost Index (MCI), that assigns each material a relative

cost impact value. The lower the MCI value, the lower the impact on the cost of the recycling system activities and vice versa.

The MCI is a key input to setting fees using the Four-Step Fee Methodology.