

# Instructions for Use of the Extended Producer Responsibility Financial Analysis Template

# 1 Introduction

The Extended Producer Responsibility Financial Analysis Template (the “Template”) is to be used by municipal solid waste management service divisional staff (“Template Users”) to calculate recycling-related net operating expenditures by the applicable cost driver(s). This template aims to support municipalities in better understanding the financial impact to their respective solid waste management divisions as the Province of Ontario transitions towards an Extended Producer Responsibility (EPR) framework.

The Template was based on a financial analysis conducted for the City of Toronto to estimate the financial implications of a transition to an EPR framework, where a greater allocation of recycling-related costs and operational responsibilities will be borne by the Producers. It was developed based on the City of Toronto’s recycling services and operations, and as such Template Users may need to adjust the Template to reflect the recycling services and operations provided by their respective municipality.

## 2 Navigating the Template

### 2.1 Overview

The Template has been set up to present a fairly comprehensive breakdown of the existing recycling-related gross expenditures and non-rate base revenues that could potentially be impacted by a transition to an EPR framework. The Template is intended to provide a summary of costs and revenues by general operating activity (e.g., collections, processing, etc.) and by customer type (e.g., single family, multi-residential, etc.). These gross operating expenditures and non-rate base revenues related to recycling activities are then used to calculate net operating expenditures and various metrics, such as cost per curbside bin pick-up and cost per tonne. This Template is intended to support municipalities in their transition efforts by identifying current cost drivers and estimating potential financial impacts as a result of no longer providing certain recycling services.

### 2.2 Identifying Cells to Update

The following colour coding is used to classify each type of cell in the Template.

Input Cell	Hard coded inputs that will need to be updated by the Template User are shaded in yellow.
Calculation Cell	Calculation cells are updated automatically based on the inputs and should not be adjusted by the Template User.

### 2.3 Categories of Inputs

There are three categories of Input Cells that are to be updated by the Template User. The three categories are gross operating expenditures, non-rate base revenues, and cost drivers, which are related to providing recycling services to customers in your respective municipality.

Input Category	Definition
Input Table 1: <i>Gross operating expenditures</i>	Recycling-related operating expenditures incurred as a result of delivering recycling services. Capital costs are not included in these inputs; however, any costs classified as operating costs that are related to capital expense items (e.g., cash reserves that are used to fund future capital projects), may be included. These costs can be broken down into five general categories – collections, processing, transfer, overhead and public goods (which are discussed further in Section 2.3.1) – and allocated by customer type.
Input Table 2: <i>Non-rate base revenues</i>	Recycling-related revenues received from sources other than paying customers that receive waste management services from the municipality. Examples of non-rate base revenues include stewardship funding, capital recovery, gas royalties, recoveries from other municipal departments, and the sale of recyclable materials. These revenues can be broken down into the same five general categories as the gross operating expenditures and allocated by customer type.
Input Table 3: <i>Cost drivers</i>	A unit of measure that impacts a change in a gross operating expenditure. A municipality may have different cost drivers for different types of gross operating expenditures – for instance, the City of Toronto's collection costs are driven by the number of recycling bin lifts/pick-ups, while other operating expenditures are driven by the amount of in-bound tonnage collected.

### 2.3.1 Recycling-Related Operating Activity

The Template identifies five categories of operating activities, which are defined in the following table. For each operating activity, costs can be further refined by fixed and variable costs (further in Section 2.3.3).

Activity	Definition
Collections	Relates to the collection of recycling materials from customers.
Processing	Relates to the sorting and preparation of recyclable materials for sale or disposal.
Transfer	Relates to the operations of transfer stations and related transfer activities.
Overhead	Allocated across the entire solid waste management system and are typically not specific to recycling activities. Examples of services are departmental support services, collections/operations support, solid waste communications, and business systems.
Public Goods	Services that benefit the municipality's entire customer base, such as community environment day events, household hazardous waste programs and street litter bin collection. These costs are allocated across the entire solid waste management system.

### 2.3.2 Customer Types

Costs in the Template are expected to be allocated for each activity by customer type. The Template identifies 14 types of customers that are related to 5 different collection methods. This list is comprehensive and is based on the various customers serviced by the City of Toronto. Template Users may need to adjust the customer types to match the profile of their specific municipality. The customer types included in the Template are:

#### *Customers with Curbside Bins:*

1. Residential Units Above Commercial (RUAC) properties
2. Single family homes
3. Divisions, Agencies & Commissions (DAC)
4. Charities, Institutions & Religions Organizations (CIRO)
5. Commercial properties
6. Schools
7. Multi-residential properties

#### *Customers with Front End Loaded (FEL) Bins:*

8. Divisions Agencies & Commissions (DAC)
9. Charities, Institutions & Religions Organizations (CIRO)
10. Schools
11. Multi-residential properties

#### *Other customer types:*

12. Tipping customers – material dropped off at transfer stations from residential and non-residential tipping customers that pay a tipping fee
  - Tipping has been broken down into the following categories:
    - Tires
    - Electronics
    - Municipal Hazardous or Special Waste (MHSW)
    - Other
13. Beautification activities (e.g., litter pick-up)
14. Parks collection

### 2.3.3 Variable and Fixed Operating Costs and Non-Rate Base Revenues

Template Users can classify their operating costs and non-rate base revenues as fixed or variable in the Template. Municipalities may already have costs and revenues within their operating budgets classified as fixed and variable or may need to undertake an exercise to classify costs and revenues as fixed or variable for use in this Template. The key consideration when assessing the fixed or variable nature of each cost is to determine whether the cost would continue to be incurred or not under an EPR transition scenario. Specifically:

- Municipalities can classify costs as **variable** if it is assumed that these costs and revenues would no longer be incurred under an EPR transition scenario where the municipality is no longer responsible for delivering recycling services.
- Municipalities can classify costs as **fixed** if it is assumed that these costs and revenues would continue to be incurred, regardless of whether recycling services are provided by the municipality.

# 3 Steps to Update the Template

## 3.1 Step 1: Allocating Costs and Revenues

As identified in Section 2, use of the Template will require Template Users to have a firm understanding of their operating costs, non-rate base revenues and other recycling data (e.g., tonnage collected and processed). This includes the ability to identify distinct cost and non-rate base revenue categories (e.g., collections, processing, etc.) that are specific to groups of customers (e.g., single family, multi-residential, etc.) serviced by the municipality.

Some municipalities that are completing the Template may already have this level of granularity in their operating budgets and recycling data, while others will need to undertake an exercise to adjust the way they currently report and track their operating costs and non-rate base revenues. There is no one size fits all approach for collecting and preparing data for input into the Template; however, this is an important step in improving the accuracy and reliability of the output tables in the Template.

For example, the City of Toronto has approximately 80 unique cost centres in its Solid Waste Management Services operating budget that did not align with the inputs required to fill out the Template. The cost centres covered all costs related to the city’s solid waste management services and operations, which included parks collection, transfer station operations, recycling processing, and business systems, but this type of reporting made it difficult to determine the actual costs associated with delivering waste management services to its customers. The city worked through each of the cost centres and determined the appropriate activity (or activities) and waste type (e.g., recycling, garbage, organics or leaf and yard waste) that the cost centre should be allocated to. Using various customer data (e.g., number of customers, frequency of collection, bin sizes, etc.) and annual waste management data (breakdown by type of waste and tonnage) the city was able to estimate the approximate gross operating expenditures and non-rate base revenues applicable to each customer type. Costs related to curbside collection were allocated to customers based on the number of pick-ups required on an annual basis for each customer type, while the costs associated with front-end loading collection and all other waste management activities (i.e., processing, transfer, overhead and public goods) were allocated based on the assumed waste tonnage generated by each customer type.

Undertaking this re-allocation of the solid waste management operating budget was necessary for determining the inputs required for completing Steps 2 to 6 described below.

## 3.2 Step 2: Update Gross Operating Expenditures (Table 1)

Template Users are to input annual recycling-related operating expenditures in Table 1 of the Template, which breaks down these expenditures by operating activity, customer type, and the portion of costs that are variable and fixed.

Template Users will need to review their cost data (e.g., annual budget) and may need to combine multiple cost items or isolate specific cost items in order to estimate the gross operating expenditures by the categories identified in the Template.

The below screenshot provides an example set of inputs for RUAC customers.

Table 1

Gross Expenditures - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
Curbside Customers	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
RUAC	800,000	100,000	700,000	250,000	-	250,000	100,000	100,000	-	100,000	80,000	20,000	50,000	50,000	

In the above example, the total gross operating expenditures for collection activities is \$800,000 for RUAC customers. Of that, \$100,000 are fixed costs and \$700,000 are variable costs.

If a customer type or activity has no costs allocated to it, those specific cells can be left blank.

### 3.3 Step 3: Update Non-Rate Base Revenue (Table 2)

Template Users are to input annual non-rate base revenues related to recycling activities in Table 2 of the Template, which breaks down these expenditures by operating activity, customer type, and the portion of revenues that are variable and fixed.

Similar to the gross operating expenditures, Template Users will need to review their revenue data and may need to combine multiple revenue items or isolate specific revenue items in order to estimate non-rate base revenues by the categories identified in the Template (further described in Section 4).

The below screenshot provides an example set of inputs for RUAC customers.

Table 2

Non-Rate Base Revenue - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
Curbside Customers	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
RUAC	100,000	-	100,000	100,000	-	100,000	50,000	50,000	-	40,000	40,000	-	-	-	-

In the above example, the total non-rate base revenues for collection activities is \$100,000 for RUAC customers. All the revenues are assumed to be variable.

### 3.4 Step 4: Update Net Expenditures (Table 3)

Table 3 automatically calculates the net operating expenditure, which is equal to the gross operating expenditure in Table 1 less the non-rate base revenue in Table 2. There are no Input Cells included in this table that Template Users will need to update.

The below screenshot provides Table 3 outputs, based on the inputs identified in the previous screenshot examples for Table 1 and Table 2.

Table 3

Net Expenditures - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
Curbside Customers	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
RUAC	700,000	100,000	600,000	150,000	-	150,000	50,000	50,000	-	60,000	40,000	20,000	50,000	50,000	-

In the above example, the net operating expenditures for collection activities is \$700,000 for RUAC customers (\$800,000 in gross operating expenditures less \$100,000 in non-rate base revenues).

### 3.5 Step 5: Update Cost Drivers (Table 4)

Table 4 allows Template Users to input the cost drivers for recycling-related activities. Cost drivers are the measure of activity that drive costs for each type of operating activity (e.g., collections, processing, transfer, overhead and public goods) to each customer type (e.g., single family, RUAC, multi-residential, etc.).

The Template identifies two distinct methods for collecting recyclable materials – curbside collection and front-end loading. Depending on the collection method assumed, this will determine the appropriate cost driver to be used, as outlined below. For all other activities, costs and non-rate base revenues are assumed to be driven by tonnage.

- Collection costs:
  - The Template assumes that collection costs for *curbside bin customers* are driven by the number of annual curbside recycling bin pick-ups/lifts for the respective customer type. For instance, if curbside recycling bins are collected bi-weekly for single family customers, this means that if a single-family household has one recycling bin, the City of Toronto will pick up its curbside bin 26 times a year. If a municipality has 300,000 curbside single-family customers, it would have 7.8 million pick-ups annually for this specific customer type.
  - The Template assumes that collection costs for *FEL bin customers* are driven by the amount of tonnage that each customer type generates annually.
- Processing costs, transfer costs, overhead costs and public goods costs are assumed to be driven by the amount of in-bound tonnage that each customer type generates annually.

The below table provides example cost driver data for RUAC customers.

Table 4

Cost Driver - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
<b>Curbside Customers</b>	pickups	pickups	pickups	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
RUAC	500,000	500,000	500,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

In the above example, the total number of curbside bin pick-ups for RUAC customers is 500,000 annually. The number of curbside bin pick-ups will differ for each customer type. The table also shows that 10,000 tonnes of recyclable material is collected annually for RUAC customers. The amount of annual recyclable tonnage generated will differ for each customer type.

For the activities that use tonnage as the cost driver, the Template assumes that the tonnage is the same across all activities. Template Users may choose to differentiate the tonnage assumed for the various activities within a single customer type, but this may be contingent upon how the costs were allocated in Step 1.

### 3.6 Step 6: Cost and Revenue per Driver (Tables 5, 6, and 7)

Tables 5, 6, and 7 in the Template calculate the gross operating expenditure per driver, non-rate base revenue per driver, and net expenditure per driver respectively. The below screenshots provide an example based on the earlier inputs for RUAC customers.

Table 5

Gross Expenditure per Driver - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
<b>Curbside Customers</b>	per pickup	per pickup	per pickup	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton
RUAC	1.60	0.20	1.40	25.00	-	25.00	10.00	10.00	-	10.00	8.00	2.00	5.00	5.00	-

Table 6

Non-Rate Revenue per Driver - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
<b>Curbside Customers</b>	per pickup	per pickup	per pickup	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton
RUAC	0.20	-	0.20	10.00	-	10.00	5.00	5.00	-	4.00	4.00	-	-	-	-

Table 7

Net Cost per Driver - Recycling	Collections			Processing			Transfer			Overhead			Public Goods		
	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable	Total	Fixed	Variable
<b>Curbside Customers</b>	per pickup	per pickup	per pickup	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton	per ton
RUAC	1.40	0.20	1.20	15.00	-	15.00	5.00	5.00	-	6.00	4.00	2.00	5.00	5.00	-

In the above example, Table 5 identifies the gross operating collection expenditure per pick-up as \$1.60 for RUAC customers. This result is calculated by dividing the total annual gross operating collection

expenditure of \$800,000 by total annual curbside bin pick-ups of 500,000. For this example, the fixed collection cost is \$0.20 per pick-up and the variable collection cost is \$1.40 per pick-up.

Table 6 shows the non-rate base revenue per driver. Similar to the approach for gross operating expenditures, the result is calculated by dividing the total annual non-rate base revenue by the applicable driver. For instance, the non-rate base revenue related to *processing* activities is \$10 per tonne. This is calculated by dividing the total annual non-rate base revenue related to processing activities of \$100,000 by total annual tonnes generated by RUAC customers of 10,000. In this example, the non-rate base revenue is assumed to be entirely variable since the municipality would no longer receive this funding source if it stopped provided recycling services.

Table 7 shows the net operating expenditure per driver. Similar to Step 4, this table reflects the gross operating expenditure less the non-rate base revenue, except at a more granular level. For instance, the net operating expenditure related to *transfer* activities is \$5 per tonne. This is calculated by dividing the total net operating expenditure related to transfer activities of \$50,000 by total annual tonnes generated by RUAC customers of 10,000.

### **3.7 Step 7: Reviewing and Interpreting Results**

The output tables (Tables 3, 5, 6, and 7) should be reviewed carefully by the Template User. The accuracy and reasonableness of outputs can be reviewed by considering the nature of the inputs. For instance, if a customer type has significantly higher gross collection costs per tonne compared to another customer type, the Template User should determine if this is due to higher gross operating expenditures and/or lower tonnage, relative to the other customer type, and then consider the rationale for this difference in the inputs. This exercise of carefully reviewing the Template outputs against the expected results (considering the nature of the inputs) will assist the Template User in validating the accuracy and reliability of its EPR analysis.

## **4 Template and Instructions Limitations**

The reliability of the results of the Template is dependent on the data and information used in the Template by the Template User. Any party who obtains access to, makes any changes to, and/or chooses to rely on the Template and/or this instruction document (or any part of it) will do so at its own risk. It is advised that the results of the Template are carefully reviewed for internal logic and consistency before being relied upon.

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