

## 1.0 INTRODUCTION

The IC&I sector produces waste that is generally collected by private sector haulers rather than municipalities. In Ontario, IC&I waste is not regulated, therefore good records are not available of the amount produced or where this waste is disposed. In fact, about half of the IC&I waste produced in Ontario is believed to be exported out of the province to inexpensive landfills in Michigan and New York State.

Oxford County staff are interested in understanding how IC&I waste generated within the county is managed, and more specifically how much is exported out of the County for disposal elsewhere. In January 2017, Oxford County engaged AET Group Inc, with Kelleher Environmental as a sub-consultant, to identify to the extent possible the amount of IC&I (industrial, commercial and institutional) waste that is generated in the County but not disposed at the County landfill in Salford. The estimate was developed using a number of different approaches outlined in this report.

A survey of IC&I waste generators was carried out to identify current waste management practices, and which service providers are used for hauling wastes and recyclables from IC&I waste generators. The service providers were then contacted to identify reasons why they export waste outside of the county for disposal.

The Kelleher Waste Allocation Model (KE-WAM) was used to estimate the composition of the waste disposed by the IC&I sector, and specific business groups within this sector that generate particular types of waste. This information is useful for waste diversion policy development.

Conclusions and recommendations are based on the study findings and also on Provincial policies expected within the next five years under the *Waste Free Ontario Act*. These future Provincial policies and regulations may impact on Oxford County waste management practices and are presented at the end of the report.

## 2.0 APPROACH AND METHODOLOGY

The approach used to complete the assignment is described briefly in this section.

### 2.1 IC&I Sector Profile

The IC&I sector in Oxford County was profiled through the following sources:

- Employment data by business sector (2 and 3 digit North American Industry Classification System (NAICS) code) obtained from the County Planning Department (originally from Statistics Canada);

- Business counts (number of businesses) by 2 and 3 digit NAICS code purchased from Statistics Canada;
- A review of business directories and websites of each of the municipalities which form the county.

## 2.2 IC&I Sector Survey

A contact list of about 600 businesses in the County was compiled through a review of business directories for the County. These businesses were contacted through a survey administered through Survey Monkey. The full text of the survey is included in Appendix A. In general, the information of most interest for this study included:

- Description of the business (manufacturing, warehousing, retail, service industry, etc.);
- Number of employees;
- Which waste hauler is used;
- How many garbage, recycling, etc. bins are used for waste management, and of what size (2,4, 8 cubic yards and other options) are at the facility;
- How often the bins are picked up, and how full they are when picked up (1/4; ½; ¾, etc.);
- What materials are sent directly to recycling (metals, plastics, wooden pallets, etc.), and what volumes are recycled.

Responses from these surveys were used for a number of different purposes in the study:

- The haulers identified through the IC&I generator survey were contacted in a separate hauler survey;
- The relative kg/employee/year of garbage disposed by different types of businesses in the county was used along with other sources to calibrate the Kelleher Environmental Waste Allocation Model (KE-WAM) to allocate waste between different sectors in the county;
- The information on materials sent for recycling was used to create a picture of levels of material diversion in the county from IC&I sources.

## 2.3 Hauler Profile and Survey

The main haulers which service the county were identified through business directories and also the IC&I survey. The main haulers servicing the county (Progressive, Waste Management, MCQ, Norfolk Disposal) were contacted initially by email and with a follow up phone call to ask about the reasons they dispose of IC&I waste in Oxford County or outside of the County.

## 2.4 Estimated IC&I and C&D Waste Available for Disposal and Exported

The amount of IC&I waste disposed was estimated using Statistics Canada data on IC&I waste disposed from Ontario sources and pro-rating the values to Oxford County based on relative populations.

The amount exported was estimated by subtracting the IC&I waste that is received at the Oxford County landfill from the estimated total IC&I waste available for disposal. The amount of IC&I waste received was estimated using landfill records for 2016, and excluding loads not considered to be true IC&I waste from the estimates. Any loads identified as “mixed C&D” or demolition waste were also excluded from the calculations.

Waste from C&D (construction and demolition) activities was addressed separately for reasons described later in the text.

## 2.5 IC&I Model

The Kelleher Environmental Waste Allocation Model (KE-WAM) is customized and updated for use by different clients, the most recent being the City of Calgary (in 2010 and 2014). The model was updated and re-calibrated for Oxford County using the following information:

- Number of employees by 2 and 3 digit NAICS code in the County, which was provided to the study team by Oxford County staff;
- Updated waste audit and waste composition information, as well as kg/employee/year data from recent audits and studies.

The output of the model allows Oxford County to see which businesses generate the most waste relative to other business types in the county, and the composition of the waste disposed.

Output from the model is generally used by clients to target policies (bans, etc.) to reduce the amount of ICI waste (excluding C&D waste) disposed.

For Oxford County, this information will be particularly useful as disposal bans currently being contemplated by the Province under the new *Waste Free Ontario Act* come into effect. This is expected to occur over the next few years, with a food waste ban possibly coming into effect in 2022.

## 3.0 IC&I SECTOR PROFILE

The following section describes the IC&I sector in Oxford County.