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Stewardship Ontario

Curbside Material Composition Study

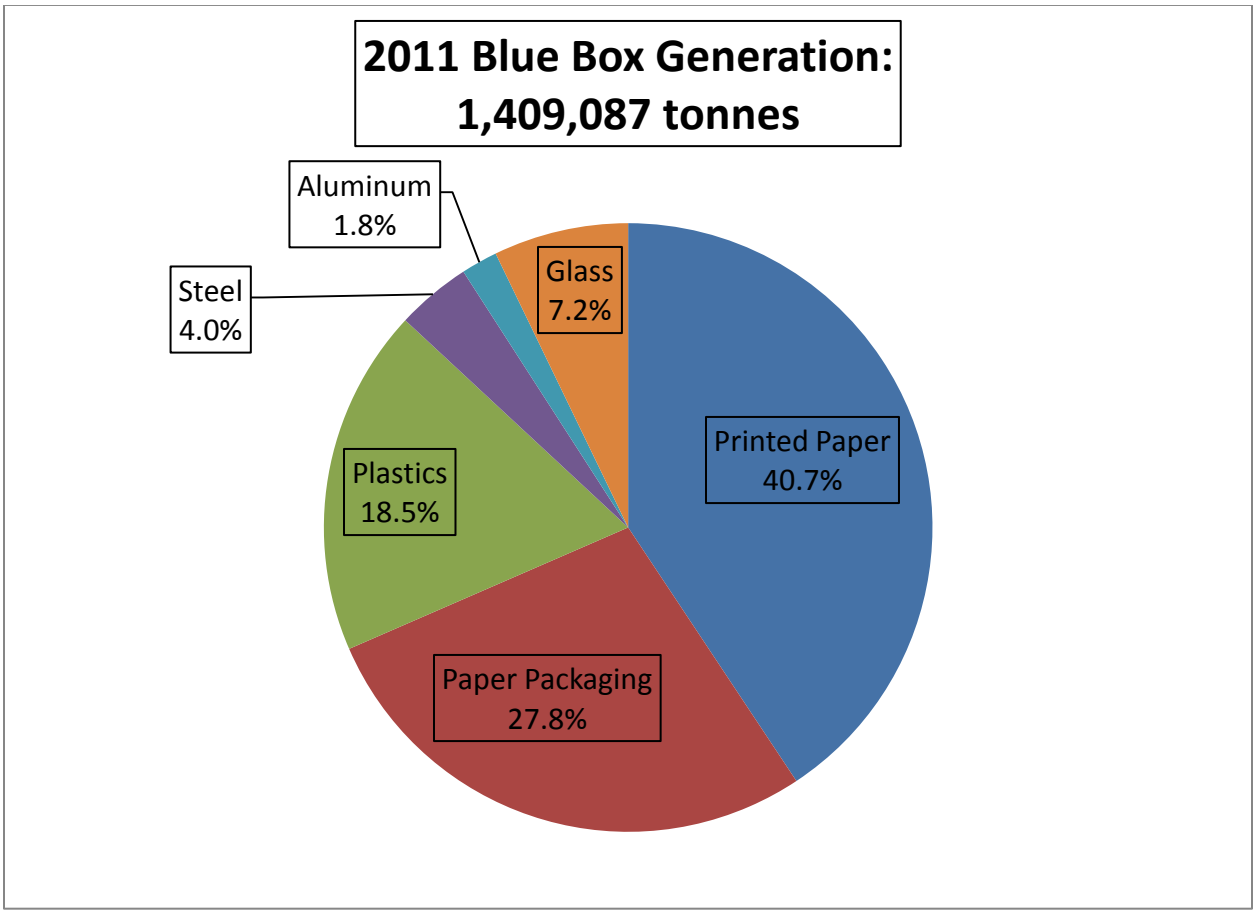
Background

Since the beginning of the Blue Box Program, Stewardship Ontario has undertaken studies of Blue Box materials generated from Ontario households. The studies measure the amount of Blue Box waste Ontario residents across the province, in all types of households, e.g. single-family households and apartments, put out for recycling and in the garbage.

The purpose of these studies is to determine how much of each Blue Box Program material is managed in the municipal waste stream, including the Blue Box, garbage and organics (green) bins and the amount of each material recovered for recycling - the recovery rate. Over the years, Stewardship Ontario has built up one of the largest repositories of such data, which provides a sound basis for program planning and fee setting. These data are one of the critical elements of the fee setting methodology.

Why carry out curbside material composition studies?

The curbside material composition study informs the waste generation rates by material and is ultimately used to estimate Blue Box waste generation in the province, enabling material recovery rates to be calculated. Once the data is compiled and analyzed, the generation rates can be compared to prior years to better understand waste generation trends. Generation volume is a key component to setting Blue Box fee rates.



Methodology

Curbside material composition studies span four seasons examining the composition of materials in the garbage, recycling and organics bins in the same single-family households over a two week period. Results from these studies are aggregated and scaled up to cover the entire province to provide annual tonnes of each Blue Box Program material generated in the municipal waste steam. The parties engaged to conduct the studies, including the collecting, sorting and weighing of the materials, do so according to specifications set out by Stewardship Ontario.

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Studies undertaken in 2012:

Starting in the summer of 2012 and continuing into 2013, Stewardship Ontario undertook a major field study of the curbside waste and recycling collected from residential homes in Ontario. The purpose of the study was to examine the make-up of materials found in the waste streams.

The curbside material composition study looked at:

- How much recyclable waste ends up in garbage and organics bins rather than the Blue Box
- How much garbage, organics and non-recyclable materials are contaminating the Blue Box

The curbside material composition study was conducted in the summer and fall of 2012 and will continue into winter and spring of 2013. Having four seasons of data will provide comprehensive information on the composition of waste generated over a year period, and help identify areas where residents are misplacing waste into the wrong streams.

Stewardship Ontario engaged a waste study crew, AET Consultants, to collect, sort and weigh the waste from a sample of 100 single family residences across the province.

The municipalities where curbside material composition studies were conducted included:

- Muskoka
- Orillia
- Simcoe
- London
- Peterborough City
- Peterborough County
- Toronto

For a list of what waste was analyzed and how it was categorized, see appendix 1.

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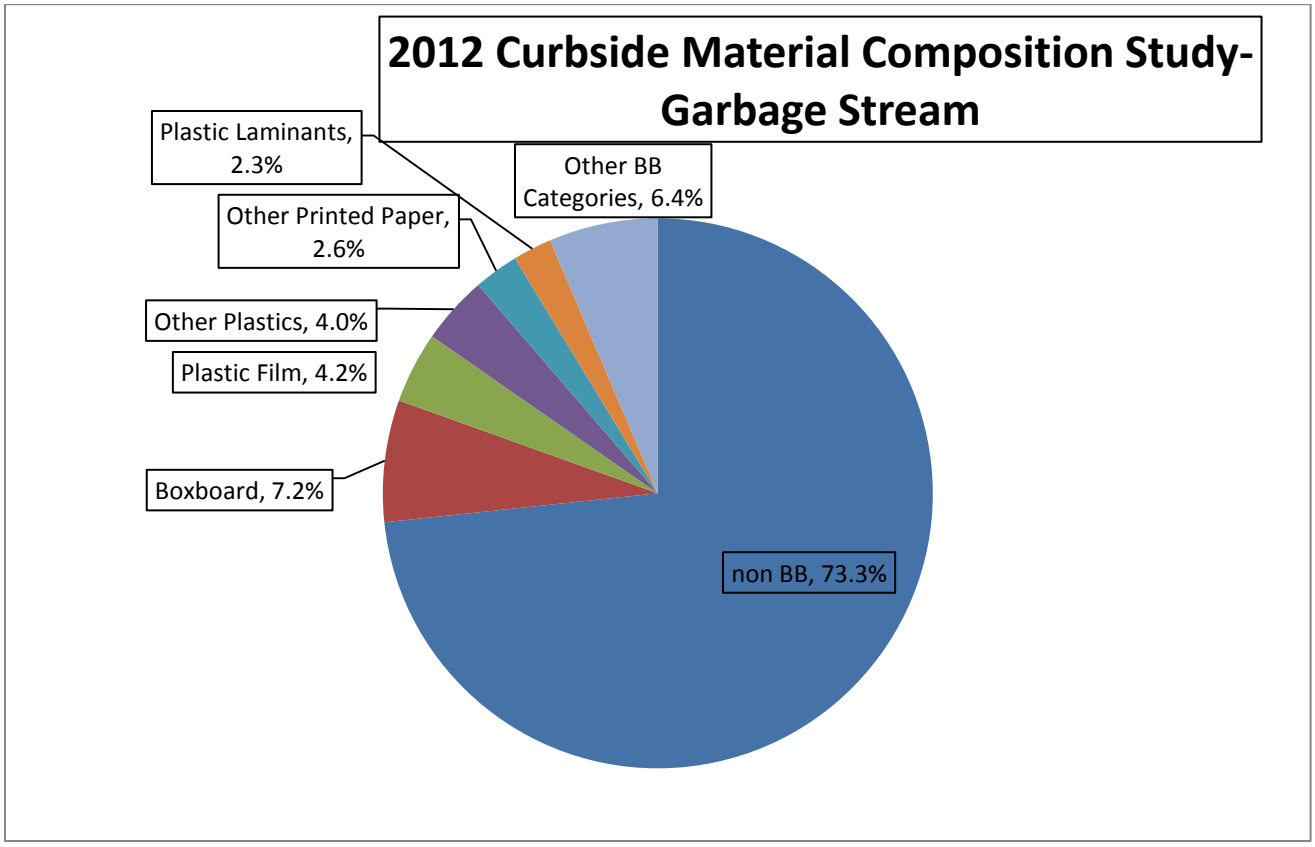
Key findings

Garbage contents

When examining the composition of garbage cans from across the province, boxboard, plastic film, other plastics and other printed paper made up the majority of recyclable items that should be disposed of in the Blue Box.

Overall, the typical make-up of the garbage stream was 73 per cent non-Blue Box materials (correctly placed in the garbage) and 27 per cent Blue Box materials (incorrectly put in the garbage when they should be placed in the Blue Box for recycling).

What these figures tell us is that Ontarians are still disposing of items that can be recycled in the Blue Box in their garbage receptacles. The main item here being plastics, representing over 40 per cent of the Blue Box materials found in garbage. Although still high in 2012, this is down compared to the curbside material composition study carried out in 2005-2007. Partly in response to the 2005-07 findings, the *Plastics Is In* campaign was launched with municipalities to educate residents about all the different types of plastics that can be recycled in the Blue Box. The longer-term success of the campaign on influencing resident disposal behaviour will become evident in the years to come.

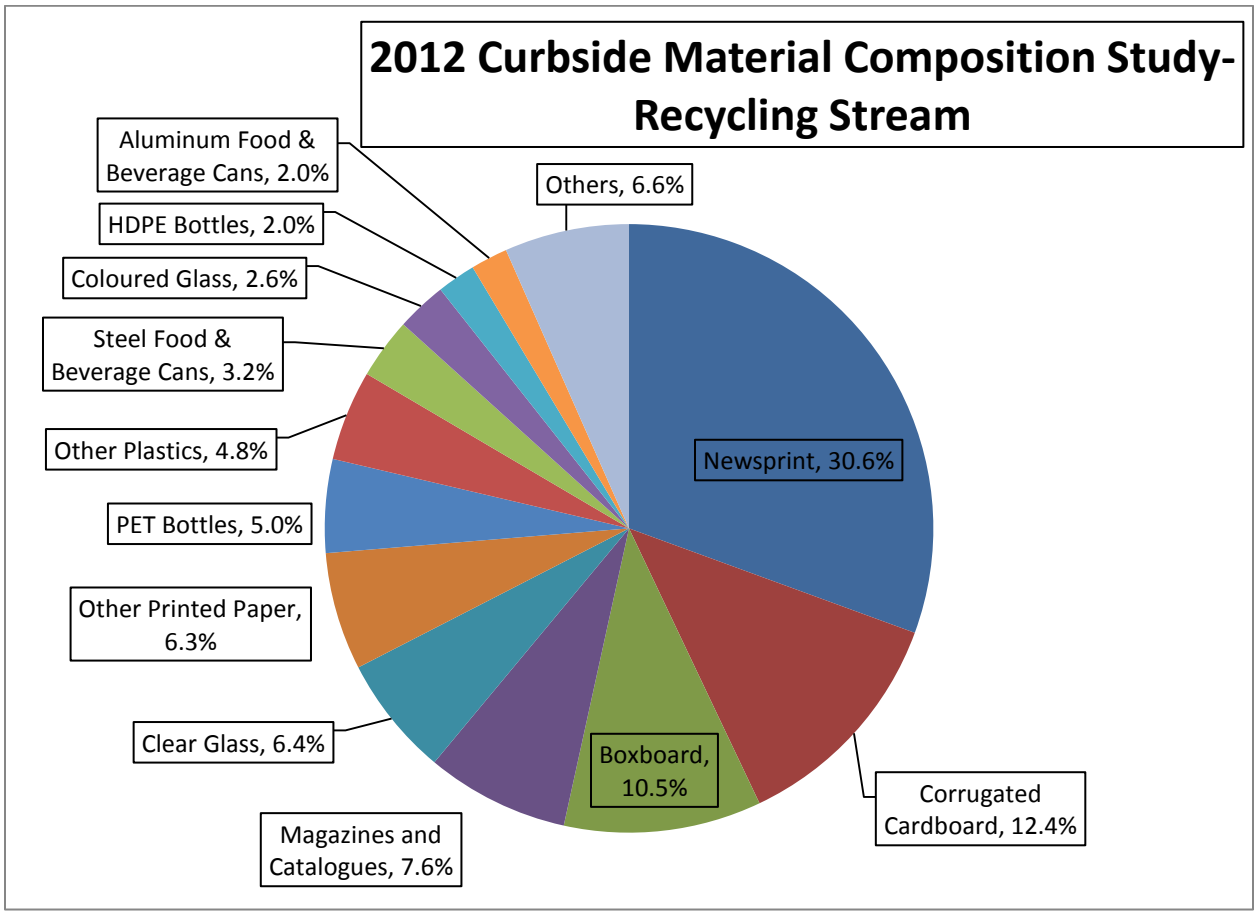


Blue Box contents

The good news is that the curbside material composition studies do indicate that residents are careful about what they put in the Blue Box for recycling. The figure combined across the seven municipalities studied so far, showed that 96 per cent of materials placed in the Blue Box were correct, with only four per cent of contents being non-Blue Box materials.

As in previous curbside material composition studies, the most popular materials put in the Blue Box for recycling include:

- Newsprint – 31 per cent
- Corrugated cardboard – 12 per cent
- Boxboard – 10 per cent
- Magazines and catalogues, and clear/coloured glass – all at 8 per cent.



Organics content

Studies were also carried out for organics in those municipalities that provide this service. The results indicate that around eight per cent of materials in this stream are Blue Box materials, with boxboard being the most significant. Other materials included plastic film and laminates.

Conclusion

The curbside material composition study demonstrates that residents in Ontario are diligent when it comes to putting the right materials in their Blue Boxes for recycling. However, with some more guidance and education, more Blue Box material, which is currently ending up in the garbage, can be diverted to recycling. Overall, the study findings are positive and demonstrate widespread concern for doing the right thing when it comes to recycling, and a healthy appetite for recycling in general.

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Appendix 1: Material Categories

Material Category	Description / Examples
PAPER	
Newsprint – Dailies and weeklies	Daily and weekly newspapers published by the Canadian Newspaper Association (CNA)* and the Ontario Community Newspapers Association (OCNA)*; Globe and Mail, Toronto Star, Hamilton Spectator, community newspapers. No inserts, flyers and magazines from newspapers were included in this category
Other Newsprint - Other	Non-OCNA/CNA publications (e.g. TV guides, Auto Trader, Real Estate News) plus inserts and flyers from OCNA/CNA newspapers. Includes glossy flyers and advertising distributed with newspapers
Magazines and Catalogues	Glossy magazines, catalogues, calendars, annual reports (must be bound, i.e. stapled or glued)
Directories / Telephone books	Telephone books and other directories
Mixed Fine Paper	Fine household papers, writing paper, office paper, copy paper, bills and statements, ad mail, etc. Includes glossy flyers and advertising that are not distributed with newspapers
Other Printed Materials	Gift wrap, construction paper, photographs, etc. This is a default paper category and as such should not contain a large amount of material
PAPER PACKAGING	
Gable Top Containers - milk and milk substitute	Polycoat containers with a gable shaped top; milk and milk substitutes like soy, almond and rice milk
Gable Top Containers - other beverages	Polycoat containers with a gable shaped top; predominantly juices
Gable Top Containers - non beverage	Polycoat containers with a gable shaped top - some foods, sugar, molasses etc.
Aseptic Containers - milk and milk substitute	Polycoat fibre and foil containers (e.g. Tetra Pak) for soy, almond and rice milk
Aseptic Containers - other beverages (non-alcoholic)	Polycoat fibre and foil containers (e.g. Tetra Pak) for juice boxes, water

Aseptic Containers - alcoholic beverage containers	Polycoat fibre and foil containers (e.g. Tetra Pak) for wine and other spirits
Aseptic Containers -non beverage	Polycoat fibre and foil containers (e.g. Tetra Pak) for soup, sauces etc.
Hot drink polycoat cups	Hot beverage containers, typically with polycoat on inside only, including coffee cups, soup cups/bowls, chili cups etc. (excludes fountain drink cups)
Cold drink polycoat cups	Cold beverage cups, typically with polycoat on both sides including fountain drinks, take-out ice cream cups
Spiral wound containers	Polycoat or paper containers with steel bottoms including chip containers, frozen concentrate juices, pre-packaged cookie dough etc. May also have foil and or plastic on ends
Ice cream containers	Polycoated paper ice cream containers, typically with a lid, excluding boxboard folded ice cream boxes
Other bleached long polycoat fibre	Food containers with white fibre and a rolled or folded rim, includes frozen food packaging and tubs
Other paper laminate categories	1. Paper with aluminum foil; 2. Paper with plastic; 3. Multi-layered paper - Includes microwave popcorn bags, some cookie bags, gift wrap, dog food bags, paper granola bar wrappers etc.
Corrugated Cardboard	Electronic product boxes such as television and computer boxes, pizza boxes, kraft wrapping paper for mailing packages, kraft bags such as brown grocery bags, prescription bags, paper take-out bags used for mushrooms or food delivery, kraft bags for food such as flour, sugar, potatoes or oatmeal, kraft produce and bulk bag, store bags used for mushrooms, boxes used to direct mail for residential consumers
Boxboard / cores (tubes)	Paperboard such as cereal boxes and shoe boxes, moulded pulp paper packaging such as egg cartons and formed coffee take-out trays, Stiff paperboard used to mount plastic blister packs (e.g., for products such as toys and batteries), the roll inside of toilet paper, paper towel, tin foil and plastic wrap
PLASTICS	
#1 PET Bottles - excluding alcoholic beverage containers	Soft drink/water bottles, salad dressing bottles, peanut butter jars
#1 PET Bottles > 5 Litres	Water Bottles

#1 PET Bottles - alcoholic beverage containers	Bottles used to contain alcoholic spirits and beverages
#1 PET - clear thermoform packaging	Bakery trays, egg cartons, veggie trays, molded protective packaging
#1 PET - other thermoform (coloured)	Coloured PET microwave trays etc.
#2 HDPE Bottles and Jugs	Laundry detergent, bleach, vinegar, milk jugs, personal care products such as shampoos, conditioners and body wash, antifreeze containers, cleaning supplies
#2 HDPE Bottles and Jugs > 5 litres	Laundry detergent, bleach, cleaning supplies
#2 HDPE Other	Single use trays from items such as lunchables and plant pots
#3 PVC	Tubs, condiment containers
LDPE/HDPE Film - Carry-Out Bags	Plastic shopping bags with or without images or text
LDPE/HDPE Film - Other from food	Fresh and frozen vegetable bags, milk bags and pouches, bread bags etc.
LDPE/HDPE Film - Other - Non-food	Over-wrap from toilet paper and paper towel, dry cleaning bags, over-wrap from pop cases and water cases
LDPE/HDPE Film - Products (not packaging)	Garbage bags, kitchen catchers, zip lock bags, leaf bags
Plastic Laminates	Chip bags, granola bar wrapper, stand-up pouches
#4 LDPE - Rigid	Some condiment bottles, plant pots etc.
#5 PP - bottles, tubs and jugs	Includes plant pots and trays
#6 PS - Expanded polystyrene - white foam packaging	White packaging foam from televisions etc.
#6 PS - Expanded polystyrene - other (food service etc.)	Expanded foam trays, clamshells, coffee cups etc.
#6 PS - Non-expanded - other	Includes plant pots and trays, coffee cup lids
Other Rigid Plastic Packaging	Plastic packaging not captured elsewhere (regardless if it has a recycling # or not). Examples might include blister packaging, unmarked trays, unmarked single-serve yogurt tubs, deodorant sticks, toothpaste tubes, mesh bags, 6-packs rings, strapping etc.
Large HDPE & PP Pails & Lids	Greater than 5 litres and less than 25 litres
Other Plastics - non-packaging/durable	Rubbermaid tubs, toys etc.

METALS	
Aluminum- food and beverage containers (excluding alcohol containers)	Single-serve juice/soft drink cans, pet food cans, food cans (e.g., sardine cans)
Aluminum - alcoholic beverage containers	Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles
Aluminum - foil and trays	Foil wrap, pie plates, yogurt/sour cream seals, frozen food trays (e.g., lasagne food trays)
Aluminum - aerosol containers	Mousse spray cans, air freshener spray cans, deodorant spray cans, hairspray cans, food spray cans for cheese or whipped cream
Other Aluminum - non-Blue Box	Aluminum siding, baking trays etc.
Steel - food and beverage cans	Food cans (e.g., soup), large juice cans for apple juice, lids and closures on packaging
Steel - aerosol containers	All non- MHSW. Air freshener spray cans, deodorant spray cans, hairspray cans, wax and polish spray cans, lubricating oil spray cans, spray can foam, cleaners in a spray can
Other steel - Non-Blue Box	Propane tanks, baking trays, frying pans etc.
GLASS	
Clear Glass - food and beverage (excluding alcohol containers)	Food containers such as pickle jars, salsa jars and dairy tubs, cosmetic containers for creams, beverage bottles
Clear Glass - alcoholic beverage containers	Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles
Coloured Glass - food and beverage (excluding alcoholic beverage containers)	Olive oil bottles, balsamic vinegar
Coloured Glass - alcoholic beverage containers	Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles
Other Glass - non-Blue Box	Dishes, ceramics, window glass

* Link to the OCNA and CNA membership lists:

http://www.ocna.org/member_search

http://www.newspaperscanada.ca/about-newspapers/find-canadian-newspaper