List of Packaging Materials
Captured in the Current Canadian Recycling System

December 2013

INTRODUCTION

The PAC NEXT System Optimization committee is delighted to be able to present the list of packaging materials captured in the current Canadian recycling system. This publication compliments the Packaging Materials Recovery Systems map released in August 2013 (pac.ca/press_releases/pdf/pac0462_pac_next_systems_flow_publication.pdf). This list was created to help package designers, decision makers, manufacturers, government and non-government groups understand the possible pathways for packaging materials (i.e. residential, office, IC&I, public space) that come into the Canadian recycling system and whether there are available end markets for the materials. This list also identifies challenging materials and offers recycling tips where applicable.

120+ Materials Identified
With over 120+ packaging material types identified to date by the PAC NEXT Systems Optimization Committee, the number and quantity of materials being captured in today's recycling systems continues to grow. This list was developed based upon a detailed analysis of the packaging materials entering MRF facilities across Ontario, Alberta and Quebec.

The list consists of 5 tables as follows:

1. Paper based materials - Printed paper, Paper Packaging, Multi-Layer Paper packaging
2. Metals based materials
3. Glass based materials
4. Plastics based materials - PETE #1, HDPE #2, PVC #3, LDPE/LLDPE #4, PP #5, PS #6, Other #7 Generic, Other #7 Known, Multi-layer packaging
5. Other materials (e.g. textiles, wood, rope, hangers)

Capture Points - Possible Pathways
The Systems Map project work identified 8 possible pathways for the packaging materials to enter the recycling system:

1. Residential (Depot and Curbside Blue Box)
2. Industrial (Return to vendor, Deposit return & Depot)
3. Office / Commercial / Institutional
4. Retail Commercial
5. Public Space
6. Food Services
7. Litter
8. Other

Recyclable or Challenging Materials
The list also highlights whether a material is recyclable in the current programs, whether there is a viable end market for the material and identifies when a material is the source of problems and why. For example PETE and PP films are not compatible with PE films that have a high value end market (when clean, dry and uncontaminated)

End Markets
Successful recycling programs require viable, efficient and preferably profitable end markets for materials that depend upon the following:

- Sufficient supply of clean, dry, uncontaminated materials that consumers are prepared to purchase and recycle
- Sufficient demand from processors, manufacturers and exporters to handle the supply of the material cost efficiently
- Adequate transportation/bulking infrastructure available to deliver the material to end markets
- End market value should be greater than the cost of collecting, sorting, cleaning the recyclable material in an optimal system

Operation Green Fence Impact
It is important to note the changing sustainability landscape, especially the impacts of China's Operation Green Fence that has been in operation since February 2013. Recall, this tightened policy was enforced by China's National Center of Solid Waste Management whereby poorly sorted or contaminated bales of recyclable plastics, metals, paper from foreign exporters will not be accepted. This has brought greater focus onto the quality of recyclable bales and in particular, finding ways to reduce contamination due to food, glass and mixed materials. The ongoing impact is the increased need for reliable end markets since it is difficult to stop materials from entering the recycling stream once they have already been accepted.

We would like to thank all PAC NEXT members who collaborated on this project and provided their valuable input.

If you would like to receive more information and/or learn how to join the PAC NEXT 2.0 Materials and Systems Optimization Committee, please feel free to contact us.

With thanks,

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Disclaimer

This document was supported by a PAC NEXT Technical Committee consisting of member volunteers with packaging, materials management and policy experience from across the public and private sectors. The conclusions and views expressed in this document do not necessarily reflect the views of every PAC NEXT Member Company or Affiliate.

List of Packaging Materials

Table 1: *Paper Based Materials List*

Material	Recyclable in Current Programs	Possible Pathways (across Canada)								Available Markets	Challenging Materials	Notes and/or recycling tips
		Leave at PoP*	Deposit	Residential		Office	IC&I	Public Space	Litter			
				Depot	Curbside	Recycled	Recycled	Recycled				
Printed Papers												
Newspaper	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Newspaper Inserts	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Magazines	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Catalogues	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	
Telephone Directories	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	
Hardcover Books	Y	N	N	Y	Y	Y	N	N	Y	Y	Y/N	Covers can be removed to enable recycling
Paperback Books	Y	N	N	Y	Y	Y	N	N	Y	Y	N	
Kraft Paper	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Other Printed Media	Y	N	N	Y	Y	Y	N	Y	Y	Y	N	
Office Papers	Y	N	N	Y	Y	Y	N	N	Y	Y	N	
Misc. Papers	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Other												
Other												
Paper Packaging												
Old Corrugated Containers (OCC)	Y	?	N	Y	Y	Y	Y	Y	N	Y	N	
Waxed OCC	Y/N	?	N	Y	Y	N	Y	N	N	Y/N	Y/N	Not marketed in all jurisdictions
Old Boxboard (OBB)	Y	?	N	Y	Y	Y	Y	Y	Y	Y	N	
Wet Strength Boxboard	Y	N	N	Y	Y	Y	Y	Y	Y	Y/N	Y/N	Hard for mills to manage in blended bales
Molded Pulp	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	Y/N	Composting only option in some programs
Kraft Paper Bags	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	

Polycoated Paper-Based Packaging	Y/N	N	N	Y	Y	Y	Y	N	N	Y/N	Y/N	Only recyclable when no coatings on paper
Multi-laminated Paper Packaging	Y/N	N	N	Y	Y	Y	Y	N	N	Y/N	Y/N	Only recyclable when no coatings on paper
Other Paper Packaging	Y/N	N	N	Y	Y	Y	Y	N	Y	Y/N	Y/N	Only recyclable when no coatings on paper
Other												
Other												
Multi-layer (Composite) Packaging (Paper as Primary Component)												
Polycoated Milk Cartons	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Best recycled separately from mixed paper (more suited to container stream in 2 stream system)
Aseptic Containers	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Best recycled separately from mixed paper (more suited to container stream in 2 stream system)
Multi-laminated Paper-based Packaging	N	N	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
Paper Cup (polycoated)	Y	N	N	Y	Y	Y	Y	Y	Y	Y/N	Y/N	Evolving market
Paper Cup (PS coated)	Y	N	N	Y	Y	Y	Y	Y	Y	Y/N	Y/N	Evolving market
Other												
Other												

* PoP = Point of Purchase

Table 2: *Metals Based Materials List*

Material	Recyclable in Current Programs	Possible Pathways (across Canada)								Available Markets	Challenging Material	Notes and / or recycling tips
		Leave at PoP*	Deposit	Residential		Office	IC&I	Public Space	Litter			
				Depot	Curbside	Recycled	Recycled	Recycled				
Metals												
Steel Cans	Y	N	N	Y	Y	N	Y	N	Y	Y	N	
Steel (All) Paint Cans	Y	N	N	Y	Y	N	Y	N	Y	Y	N	
Steel Aerosol Cans	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	
Spiral Wound Cans (Steel Ends)	Y	N	N	Y	Y	N	Y	N	N	Y	N	
Steel Gas Cylinders	N	N	Y	Y	N	N	Y	Y	N	Y	Y	Contact local steel recycler or manufacturer for instructions / preparation instructions
Aluminum Beverage Cans	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Aluminum Cans (other)	Y	N	N	Y	Y	Y	Y	N	N	Y	N	
Aluminum Aerosol Cans	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	
Aluminum Foil	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Bimetal Containers/Aerosols	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Other												
Other												
Other												
Other												
* PoP = Point of Purchase												

Table 3: *Glass Based Materials List*

Material	Recyclable in Current Programs	Possible Pathways (across Canada)								Available Markets	Challenging Material	Notes and / or recycling tips
		Leave at PoP*	Deposit	Residential		Office	IC&I	Public Space	Litter			
				Depot	Curbside	Recycled	Recycled	Recycled				
Glass												
Clear Liquor bottle	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
Coloured Liquor bottle	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
Clear Beer bottle	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
Coloured Beer bottle	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
Clear Food Grade Bottles and Jars	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Coloured Food Bottles and Jars	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Ceramic Bottles and Jars	N	N	N	Y	Y	Y	Y	Y	Y	N	Y	Consider re-use
Pyrex/Corelle Type Glass	N	N	N	Y	Y	Y	Y	Y	N	N	Y	Consider re-use
Other												
Other												
Other												
Other												
* PoP = Point of Purchase												

Table 4: *Plastics Based Materials List*

Material	Recyclable in Current Programs	Possible Pathways (across Canada)								Available Markets	Challenging Material	Notes and/or recycling tips
		Leave at PoP*	Deposit	Residential		Office	IC&I	Public Space	Litter			
				Depot	Curbside	Recycled	Recycled	Recycled				
Plastics - PETE (#1)												
PETE Bottles	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
PETE Jars	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PETE Clamshells	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PETE Trays	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PETE Tubs & Lids	N	N	N	N	N	N	N	N	Y	N	Y	Not compatible in Tubs & Lids Programs
PETE Sealed Pkg (e.g., electronics)	Y/N	Y	N	Y	Y	Y	Y	Y	N	Y/N	N	Markets evolving
PETE Cold Drink Cups	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PETE Films	N	N	N	N	N	N	N	N	Y	N	Y	Not compatible with PE films
Other												
Other												
Other												
Plastics - HDPE (#2)												
HDPE Natural Bottles	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Coloured Bottles	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Jars	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Pails	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Tubs & Lids	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Planter Pots	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
HDPE Films	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	High cost to manage – low market value due to contamination
Other												
Other												
Other												
Plastics - PVC (#3)												
PVC Bottles	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
PVC Jars	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	

PVC Tubs & Lids	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PVC Sealed Pkg (e.g., electronics)	N	N	N	N	N	N	N	N	N	N	Y	Not yet recyclable
PVC Films	N	N	N	N	N	N	N	N	Y	N	Y	Not compatible with PE films
Other												
Other												
Other												
Plastics - LDPE (#4) (incl. LLDPE)												
LDPE Tubs & Lids	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
LDPE/LLDPE Films	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	High cost to manage – low market value due to contamination
LDPE Bottles	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Other												
Other												
Other												
Plastics - PP (#5)												
PP Bottles	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
PP Jars	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PP Clamshells	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PP Trays	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PP Tubs & Lids	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PP Cold Drink Cups	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PP Planter Pots	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
PP Sealed Pkg (e.g., electronics)	N	Y	N	N	N	N	N	N	N	N	Y	Not yet recyclable
PP Films	N	N	N	N	N	N	N	N	Y	N	Y	Not compatible with PE films
Other												
Other												
Other												
Plastics - PS (#6)												
PS Cushion Packaging (EPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PS Meat Trays (XPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
PS Clamshells (XPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Trays (XPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Clamshells (Rigid)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving

PS Trays (Rigid)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Tubs & Lids (Rigid)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Tubs & Lids (HIPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Hot/Cold Drink Cups (EPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Not compatible with PE films
PS Hot Drink Cups (XPS)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Cold Drink Cups (Rigid)	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Planter Pots	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y/N	N	Markets evolving
PS Sealed Pkg (e.g., electronics)	N	Y	N	N	N	N	N	N	N	N	Y	Not yet recyclable
Other												
Other												
Other												
Plastics - Other (#7) Generic												
Other Bottles	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	
Other Jars	Y/N	N	N	Y	Y	Y	Y	Y	Y	Y	N	
Other Trays	Y/N	N	N	Y	Y	Y	Y	Y	Y	N	N	
Other Tubs & Lids	Y/N	N	N	Y	Y	Y	Y	Y	Y	N	N	
Other Cold Drink Cups	Y/N	N	N	Y	Y	Y	Y	Y	Y	N	N	
Other Sealed Pkg (e.g., electronics)	N	Y	N	N	N	N	N	N	N	N	Y	Not yet recyclable
Other Films (e.g., candy bars)	N	Y	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
Other Films	N	N	N	N	N	N	N	N	Y	N	Y	Not compatible with PE films
Other												
Other												
Other												
Plastics - Other (#7) Known												
PLA Bottles	N	Y	N	N	N	N	N	N	Y	N	Y	Technically recyclable - not enough to start market
PLA Clamshells	N	Y	N	N	N	N	N	N	Y	N	Y	Technically recyclable - not enough to start market
PLA Cold Drink Cups	N	Y	N	N	N	N	N	N	Y	N	Y	Technically recyclable - not enough to start market
PHA Bottles	N	Y	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
EVA Films (e.g., clingwrap)	N	Y	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
PEF												
Other												

Multi-layer (Composite) Packaging (Plastic as Primary Component)												
Multi-laminated Plastic-based Packaging	N	N	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
Multi-laminated Juice Pouches	N	N	N	N	N	N	N	N	Y	N	Y	Not yet recyclable
Blister Packs (foil backing) (e.g., gum, pharmaceuticals)	N	N	N	N	N	N	N	N	N	N	Y	Not yet recyclable
Blister Packs (paper backing) (e.g., pharmaceuticals)	N	N	N	N	N	N	N	N	N	N	Y	Not yet recyclable
* PoP = Point of Purchase												

Table 5: *Other Materials List*

Material	Recyclable in Current Programs	Possible Pathways (across Canada)								Available Markets	Challenging Material	Notes and / or recycling tips
		Leave at PoP*	Deposit	Residential		Office	IC&I	Public Space	Litter			
				Depot	Curbside	Recycled	Recycled	Recycled				
Others												
Textile Packaging	N	N	N	N	N	N	Y	N	N	N	Y	Take to used clothing/textile bins in parking lots/depots
Wood Packaging	N	Y	N	N	N	N	Y	N	N	Y	N	Take to municipal depots or private transfer stations/C&D plants
Rope												
Hangers												Can be taken to steel yards or municipal depots
Other												
Other												
* PoP = Point of Purchase												

