



SWANA New York State Chapter Plastics – Myths & Mysteries

Recycling as the Cornerstone of Extended Producer Responsibility

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Cascades Recovery National Perspective

- ❑ Blue Bag
- ❑ SS Carts
- ❑ Depot
- ❑ Two Stream



Plus Cascades is also a packaging producer: Boxboard, PS, PET



Why EPR for Packaging and Printed Materials?

- ❑ Environmental benefits
 - **Less waste to disposal**
 - **Lower environmental impact of resource extraction**
- ❑ Increase in source of materials to promote recycled content
 - **Historically a chicken and egg for some materials**
- ❑ Drive for design change
 - **One lever in looking at packaging design**





Why EPR for Packaging and Printed Materials?

- ❑ An answer for budgetary stresses in local and regional governments...at a cost
 - **Ultimately, the user of the product pays one way or the other**
 - **Moves costs upstream, less visible from downstream (part of the tax bill)**
- ❑ Can actually result in increased costs overall
 - **Increased infrastructure, impact on products currently generated**





What are the Goals of EPR?

- Promote diversion from disposal
- Promote sustainable packaging choices
- Equitable to all materials
- Cost sustainable system
- Public education on packaging choices

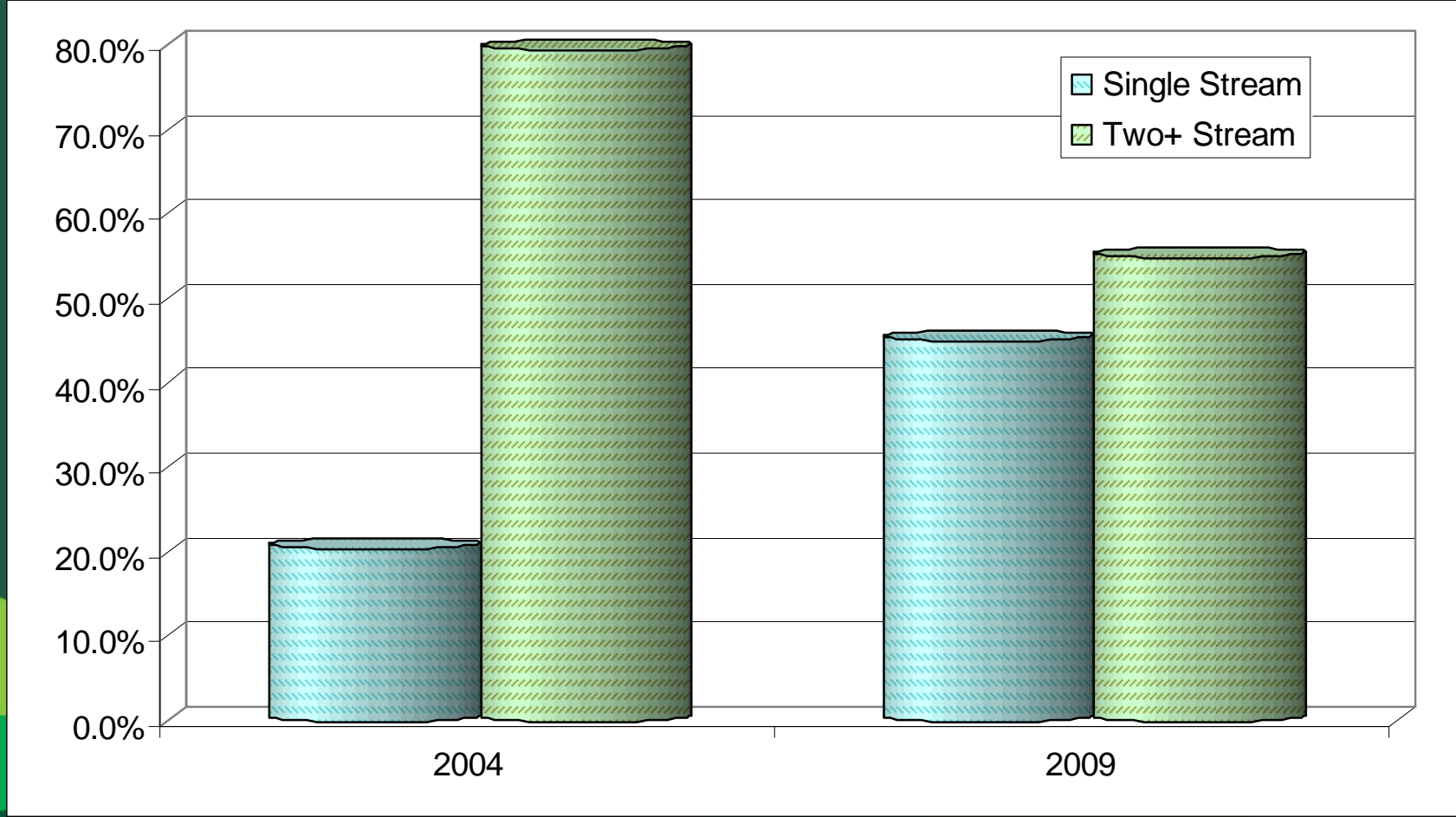


Where Are We Coming From?

- ❑ Original recycling programs handled a limited number of materials (9)
 - **ONP, OCC, Mixed Paper, PET, HDPE, Steel, Aluminum, Clear and Coloured Glass**
- ❑ Only about 5-7% of waste stream falls under deposit programs
- ❑ Mixed plastics, aseptics, milk cartons...now more than 20 materials typically in a program
 - **Shift to single stream....really?**



Trend to Single Stream?



Review of Program Costs

- ❑ Single stream and two stream programs for 2003 and 2010 were compared
- ❑ All programs were two stream in 2003; three moved to single stream
 - **2010 represents a minimum of five full years of operating as a single stream program**

Review of Program Costs – 2003

Municipality	2003			
	Quantity	\$/Tonne	# of	\$/HH
	Tonnes	Net	HHs	Net
Single Stream Programs (Two Stream in 2003)				
Program 1	43,516	\$ 141.59	331,000	\$ 24.29
Program 2	148,798	\$ 126.46	959,000	\$ 19.62
Program 3	82,231	\$ 147.66	253,700	\$ 36.68
Average	91,515	\$ 135.21	514,567	\$ 24.05

Two (+) Stream Programs

Program 5	30,780	\$ 162.53	194,200	\$ 25.76
Program 6	26,977	\$ 91.57	170,500	\$ 14.49
Program 7	38,491	\$ 90.10	177,700	\$ 19.52
Program 8	66,798	\$ 138.74	321,700	\$ 28.81
Average	40,761	\$ 123.94	216,025	\$ 23.39

All programs two stream in 2003

Review of Program Costs – 2010

Municipality	2010			
	Quantity	\$/Tonne	# of	\$/HH
	Tonnes	Net	HHs	Net
Single Stream Programs (Two Stream in 2003)				
Program 1	78,494	\$ 183.90	315,130	\$ 45.81
Program 2	155,010	\$ 273.69	894,100	\$ 47.45
Program 3	90,367	\$ 245.49	404,000	\$ 54.91
Average	90,367	\$ 244.06	404,000	\$ 49.00

Two (+) Stream Programs

Program 5	41,735	\$ 178.18	208,170	\$ 35.72
Program 6	35,265	\$ 161.54	162,830	\$ 34.99
Program 7	45,162	\$ 184.60	207,660	\$ 40.15
Program 8	63,213	\$ 147.61	377,100	\$ 24.74
Average	46,344	\$ 166.15	238,940	\$ 32.23

Single Stream increase - \$109/te

Two Stream increase - \$42/te



2003 vs 2010 Results

Single Stream Programs

	2003		
	Quantity	\$/Tonne	\$/HH
	Tonnes	Net	Net
Average	91,515	\$ 135.21	\$ 24.05
2010			
Average	107,957	\$ 244.06	\$ 49.00
Cost Increase 2003 to 2010 (1)		\$ 88.75 57.1%	\$ 21.38 77.4%

Two Stream Programs

	2003		
	Quantity	\$/Tonne	\$/HH
Average	40,761	\$ 123.94	\$ 23.39
2010			
Average	46,344	\$ 166.15	\$ 32.23
Cost Increase 2003 to 2010 (1)		\$ 23.78 16.7%	\$ 5.36 20.0%

2010 SS to 2S Difference	-\$ 77.90	-\$ 16.77
2S %'age less than SS	-31.9%	-34.2%

(1) Accounting for 2% inflation per year, compounded from 2003 to 2010.



Impact on Diversion Rates

- ❑ Typically all programs report an increase in the quantity received as a result of moving to single stream
- ❑ Results may not be due to single stream
 - **Public education**
 - **A change reminds people about the program**
 - **Introduction of bag limits**
 - **Introduction of user pay**

Impact on Diversion Rates

Single Stream Programs

Municipality	Households		Quantity/HH (kg)		
	2003	2010	2003	2010	Increase/Decrease
Program 1	253,700	315,130	171.5	249.1	45.2%
Program 2	959,000	894,100	155.2	173.4	11.7%
Program 3	331,000	404,000	248.4	223.7	-10.0%
Weighted Avg			177.8	200.8	12.9%

Two Stream Programs

Municipality	Households		Quantity/HH		
	2003	2010	2003	2010	Increase/Decrease
Program 4	194,200	208,170	158.5	200.5	26.5%
Program 5	170,500	162,830	158.2	216.6	36.9%
Program 6	177,700	207,660	216.6	217.5	0.4%
Program 7	321,700	377,100	207.6	167.6	-19.3%
Weighted Avg			188.7	194.0	2.8%

- ❑ 2S programs recover approximately 3% less per household
- ❑ 20% more newspaper in single stream programs – effect of large dailies

Impact on Diversion Rates

Single Stream Programs

Municipality	Households		Quantity/HH (kg)		
	2003	2010	2003	2010	Increase/Decrease
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Two Stream Programs

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Program 5	170,500	162,830	158.2	216.6	36.9%
Program 6	177,700	207,660	216.6	217.5	0.4%
Weighted Avg			177.4	211.1	19.0%

- ❑ Removing programs with negative growth, two stream programs recovering 18kg (9.3%) more per household
- ❑ Similar growth over seven years for both programs
- ❑ **No apparent link between quantities recovered and single stream**

Seven Years of EPR Later...

- ❑ In 2004, Ontario diverted 823,000 te of material...
16.1% of generated
- ❑ In 2010, Ontario diverted 900,000 te of material...
16.9% of generated
 - **9.4% growth**
- ❑ In 2004, gross cost of recycling in Ontario was \$244
per tonne
- ❑ In 2010, gross cost of recycling in Ontario was \$317
per tonne
 - **30% increase**



Impact on Packaging

- ❑ Lightweighting of PET bottles
 - **13.2 g Aquafina bottle now 10.9 g**
- ❑ Move to more multi-laminated films





2011 Stewards' Fees

Plastic Packaging

PET Bottles	13.78¢/kg
HDPE Bottles	13.27¢/kg
Polystyrene	28.16¢/kg
Other Rigid Plastics	28.16¢/kg
LDPE/HDPE Film	28.16¢/kg
Plastic Laminants	28.16¢/kg
Biodegradable Plastic Film	28.16¢/kg
Biodegradable Rigid Plastics	28.16¢/kg
Textiles	28.16¢/kg

Steel Packaging

All Steel Pkg, Paint, Aerosols inc.	6.26¢/kg
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Aluminum Packaging

Food and Beverage Cans	0.52¢/kg
Foil and All Other Al Pkg	7.50¢/kg



2011 Stewards' Fees

Printed Materials

Newsprint (CNA/OCNA Members)	0.29¢/kg
Newsprint (Non-Members)	1.12¢/kg
Magazines and Catalogues	2.48¢/kg
Telephone Directories	2.48¢/kg
Other Printed Materials	2.48¢/kg

Paper Packaging

Gabletop/Aseptics	23.75¢/kg
Paper Laminants	23.75¢/kg
Corrugated Containers	7.70¢/kg
Boxboard/Other Paper Pkg	7.70¢/kg

Glass Packaging

Clear Glass	3.69¢/kg
Coloured Glass	5.35¢/kg



Fairness

- ❑ PET yields at end markets 70-75% today, down from over 90% ten years ago
 - **Full bottle jackets**
 - **Lightweighting changing closure to bottle ratio**
 - **Thermoforms – 25%+ of available PET in marketplace**
- ❑ Why does a bottle with a full jacket pay the same as a bottle with a minimal paper label?
 - **What is the impact on market value of that full jacket?**
- ❑ How much should a degradable PET bottle user pay?





So....

- ❑ Looking at the fee structure...
- ❑ And looking at EPR program structure and the focus on recycling...

Where's the incentive to innovate packaging?





EPR = Recycling

- ❑ EPR is equated with only recycling
 - **Do not give credit for reduction or recycled content**
- ❑ Always speak of “goals” as recovery goals
 - **e.g., BC – 75%; Vermont – 60%**
 - **European countries more concerns with quantities per capital to disposal**
- ❑ Financial responsibility only for the recycling fraction



What's to be Expected?

- ❑ 100% funding of the programs by stewards will come with expectations
 - **“If I’m paying for the system, I expect to have my material managed”**
- ❑ No shift in the definition of EPR will mean the recycling industry will have to do more
 - **Of course, it will be expected to do it with less**

A Path to Sustainability

- 35-45% total possibly recyclable today
 - **Could increase to over 50% with advances for more rigids and films**
 - **How many categories do we need to separate?**

- Newspaper
- Old Corrugated Containers
- Mixed Paper
- Aseptics, Polycoated Cartons
- Aluminum cans
- Aluminum foil
- Steel cans
- Clear glass
- Coloured glass
- PET (bottles and thermoforms)
- HDPE bottles (natural and coloured)
- PP (emerging plastic)
- Tubs and Lids (PET, HDPE, LDPE, PP(?), PS)
- Plastic Film (monomer)
- Plastic Film (composite)
- EPS
- Hot drink cups (paper based)
- Cold drink cups (paper based); Cold drink cups (PET, PP, PS, PLA)
- PLA bottles, thermoforms

Build From What We Know

- ❑ Packaging changes/evolution constantly occurring
- ❑ Any sustainable infrastructure must be designed to ensure:
 - **Systems are up to date and continuously improving**
 - **Efficient low cost delivery**
 - **Flexibility to change as required**
 - **Participation is high**





Take it ALL!

- ❑ Recover and sort **ALL** printed and packaging materials
- ❑ If we recover **ALL** materials, will they come?
- ❑ End markets will find more options for materials once they realize the volume
- ❑ If end markets don't exist packaging producers and users will pay until an opportunity is found or change is made





Can We Sort Everything?

- ❑ Short answer...Yes!
- ❑ Long answer
 - **How much do you want to spend?**
 - \$50 million to do all materials on list for 150,000 tpy
 - Would increase recycling costs 1.5 to 2.0 times over current costs
 - **If we recover it, will they come?**
 - What do we do with all the recovered materials?
 - What do we do with incompatible materials?



Using only Recycling...

- ❑ Is the single system the best single choice for EPR of printed and packaging materials?
 - **Gross costs can be conservatively estimated at upwards of \$500 per tonne and beyond in order to manage the full list of potential materials**
 - **Even at that, does not account for ALL costs of managing all materials, i.e., industry not fully paying for the management of their materials**



Examining the Materials

- ❑ Printed and Packaging Materials encompass a myriad of materials
 - **Reduced but not recyclable**
 - Multi-laminate plastic films
 - **Compostable AND/OR recyclable?**
 - Boxboard, degradable PET
 - **Compostable but not recyclable**
 - Degradable films (e.g., Sunchips)
 - **Good for Energy from Waste**
 - Composite packaging (e.g., pet food bags)



Using only Recycling...

- ❑ No cost recovery for materials manageable only through composting, energy recovery and landfill
 - In so doing are we indirectly supporting move to non-recyclables/degradables
 - Is that fair? Do non-recyclables/degradables end up not having to pay for management?





Using only Recycling...

- ❑ Are we stifling evolution/revolution?
 - Forcing packaging into the “recycling” stream may not be beneficial over longterm
 - Maybe degradables from biogenic sources are better in longterm



EPR = Fairness/Level Playing Field

- Is recycling through curbside the answer for all materials?
- Should industry ONLY pay for recycling?
- Should industry pay for EFW, composting, landfilling?
 - **Particularly in light of new PLA, PHA, DPET packaging....composting no longer for food and limited non-food items**



EPR = Sustainability

- ❑ IFOs must also focus on what is not being diverted
 - **If not recyclable, then disposal costs to be included in management of product Alternatives?**
 - **Design for recyclability limitations**
 - **Punitive fees targeting hard to manage materials**
- ❑ Building models suitable to the current municipal recycling landscape will not meet what is required
- ❑ System should not differentiate between private and public sector, the best option is to be considered
 - **lowest cost, highest recovery**





Sustainability = Responsibility

- ❑ Stewardship agencies should identify the destiny and let the industry find its way there
- ❑ The packaging producers and brand owners now realize they carry the control of discarded materials
 - **The package/printed material and its management need to be considered right at the point of design**
 - **Real work is being done and strong investment is being made by industry**



Conclusions

- ❑ We CAN'T rely on JUST Recycling
 - **Recycling alone DOES NOT EQUAL EPR**
- ❑ Recycling is just one means of managing materials
- ❑ Packaging changes/evolution exceeding ability of facilities to adapt (product cycles < MRF cycles)
- ❑ Controlling costs more difficult when forcing materials into a fixed system

Conclusions

- ❑ To truly be EPR...
 - there **MUST** be consideration given to more than recycling
 - there **MUST** be preferred options that manage **ANY** material placed into the system
 - there **MUST** be consideration given to reduction, reuse

Thank You

- ❑ I would like to thank the New York Chapter of the Solid Waste Association of North America for this opportunity to speak to you today.
- ❑ If you have any questions please contact me at:
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