

Regional Solid Waste Management Plan Review 2005 Public Advisory Committee

Garbage School 301

Residential Recycling presented by:

Deanne Stephenson

Manager, BC Interior
Metro Waste Paper Recovery Inc.

Presentation Overview

1. Collection Methods & Costs

- Blue Box
- Three Stream
- Blue Bag (with & without 1-7 plastics)

2. Blue Bag VS Blue Box

3. Plastics

4. Closing the Recycling Loop

5. New Technologies

Collection Methods & Costs



Blue Box

City of Penticton

- Newspaper
- Cardboard/Boxboard
- Tin/Alum
- Glass
- 1-7 plastics

Collection Methods & Costs

Three Stream

City of Delta

- Yellow bag holds Cardboard / Boxboard
- Blue bag holds Newspaper / Glossy
- Blue box holds Tin, Alum, Glass, 1-7 plastics

Collection Methods & Costs



Blue Bag

Regional District of the Central Okanagan

- Newspaper
- Cardboard / Boxboard
- Tin/Alum
- Glass
- #2 HDPE Natural in color
plastics only

Collection Methods & Costs

Blue Bag

Regional District of North Okanagan

- Newspaper
- Cardboard / Boxboard
- Tin/Alum
- 1-7 Plastics
- Glass collected at the Bottle Depots & other vendors

	Penticton	Delta	CORD	NORD
Population	41,500	100,000	165,000	73,200
Households	14,510	31,800	46,380	26,726
Program	Blue Box	3 Stream	Blue Bag	BB with plastics
Hauling / home	\$14.20	\$32.00	\$13.80	\$13.80
Processing / MT	\$69.68	\$70.00	\$63.75	\$69.00
Revenue Share	None	None	75 / 25	80 / 20
Processing plus Revenue Share	\$69.68	\$70.00	\$91.25	\$91.00 *\$8.50 glass



Blue Bag
VS
Blue Box

The Blue Bag Program

- ④ **Unlimited number of bags collected.**
- ④ **Up to 40% higher recovery rate.**
- ④ **The bags protect the recyclable materials from the elements.**
- ④ **No sorting required from the user or hauler.**
- ④ **Can use the same equipment for garbage collection.**
- ④ **Less WCB claims.**
- ④ **Lower collection costs.**

Plastic Recovery Rates

#1 PET (soft drink bottles)	47.000%	}	70%
#2 HDPE natural (milk jugs)	23.000%		
#2 HDPE color (detergents)	24.000%		
#3 VC & PVC (motor oil)	2.500%		
#4 LDPE (garbage bags & shrink wrap)	.008%		
#5 PP (yogurt & margarine containers)	2.300%		
#6 PS (Styrofoam)	.002%		
#7 Other (not defined)	1.190%		

**** American Plastic Council Annual Report 1998****

CORD Plastic Recovery Rates

- 15,000 milk jugs = 1 metric tonne or 1,000 kgs (2,2046 lbs).
- May 2004-2005 CORD recovered an average of 9.962 MT per month.
- In one year CORD recovered 1,793,250 milk jugs.
- Adding #2 HDPE colored plastics would increase the overall recovery rate of plastics to 94%.
- The estimated monthly recovery weight for #2 HDPE colored plastics is 10.395.
- This could equal 1,871,100 plastic containers.

Recommendation #1

- Add #2 HDPE colored plastics to the blue bag program
- Estimated cost per household per year 29 cents.

CORD Plastic Recovery Rates

- According to an audit Metro conducted for NORD “other plastics” made up 1.7% of the total material mix collected through the blue bag program.
- “Other plastics” includes #2 HDPE natural and colored.
- CORD recovered a total of 11,385 MT May 2004-2005.
- Therefore we can assume the monthly recovery rate of “other plastics” will equal 16.129 MT.
- #2 HDPE colored = 10.395 MT therefore 3-7 plastics = 5.734 MT per month

Recommendation #2

- **Move from a one stream program to a two stream program.**
- **Collect paper in blue bags and mixed rigids in clear bags.**
- **Estimated cost per household per year 15 cents.**
- **Collection costs may increase per household.**

Recommendation #3

- **Add all plastics to the program and remove glass.**
- **The largest complaint from the pulp mills regarding quality of paper is glass.**
- **Estimated cost per household per year 58 cents.**
- **Keeping glass in the program will jeopardize the long term, profitable markets for paper.**

Recommended Reading

- Letter from Keyes Fibre Corporation regarding the “glass content in ONP”.
- “Single-stream recycling. Searching for the bottom line” Resource Recycling, March 2002.
- “Single-stream: A recycling method that cuts both ways” Resource Recycling, October 2004.
- “Single Stream Recycling” Solid Waste Magazine, Oct/Nov 2004.

Closing the Recycling Loop



Newspaper – Norske Pulp Mill



Newspaper headed for the Pulper



Finished Product at Norske



Cardboard Bale from Metro



Cardboard / Boxboard

- **Cardboard / Boxboard is shipped to six different mills in the Pacific North West.**
- **Norampac Pulp Mill is the closest located in Burnaby, BC.**
- **Norampac holds 49% of the shares in Metro Waste Paper Recovery.**

Milk Jugs being Baled for Market



2 Cloudy Plastic Containers

- No. 2 cloudy coloured plastics like milk jugs and vinegar bottles are shipped to Merlin Plastics in Burnaby
- Plastics is melted down into pellets
- Pellets are remade into a wide range of items such as fleece jackets, new running shoes and fiberfill for pillows

Tin Cans

- Tins cans are sent to ABC metals in Burnaby
- They are melted into new metal products such as rebar



Glass Jars and Bottles

- **Glass jars & bottles are sent to Vitreous in Calgary and Harvey's Enterprise in Ardre, Alberta.**
- **The majority of the glass is crushed and sold as aggregate.**
- **Crushed glass is also used in reflective paints and in fibre glass.**



Mixed Waste Paper

- **Mixed waste paper (writing paper, computer paper, envelopes, etc.) are sent to Pacwest Fibers in Seattle, WA or China.**
- **Made into recycled papers, tissue and toilet paper and paper towel products**

New Technologies



New Technologies – Star Screens



New Technologies – Star Screens



\$125,000-\$200,000

New Technologies – Cyclone



\$55,000

New Technologies – Optical Sorter



New Technologies – Optical Sorter



\$250,000-\$300,000

New Technologies – Eddy Current



\$90,000

Thank you.

