

## Ontario Recycler Workshop

November 22, 2012  
ORW begins at 9:30 a.m.



**CIF**  
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IMPROVEMENT FUND

## Ontario Recycler Workshop

November 22, 2012



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## Intro & Welcome

- Approximately 70+ people in Barrie
- Expecting 50+ online
- Audience members include:
  - municipal councillors, recycling & waste staff & other staff members
  - industry association representatives
  - program representatives, consultants & other stakeholders

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## Today's Program & Housekeeping

- Full day session (to ~4:00 p.m.)
- For webcast viewers
  - 1 sound slider (hover over black bar)
  - 2 "questions & comments for speakers"
    - not seen on other screens
  - 3 link to agenda & slides
  - 4 webcast technical assistance



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## Snapshot...Today's Program

- CIF and Partner Updates
- *Morning Break*
- Making it Work...
- *Lunch*
- Multi-res: KPIs to Super's Support
- Waste composition 2012 audit report/Evolving Blue Box in ON
- *Afternoon break*
- Overcoming challenging materials
- Concluding remarks

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## Thank You to All ORW Speakers

- |  |  |
|--|--|
| • Alec Scott, MIPC                               | • Mustan Lalani, Stewardedge Inc.              |
| • Anne Boyd, City of London                      | • Perry Blocher, WDO                           |
| • Ben Bennett, Municipal Waste Association (MWA) | • Peter Veiga, Regional Municipality of Durham |
| • Catherine McCausland, City of Guelph           | • Renée Dello, City of Toronto                 |
| • Claudia Marsales, City of Markham              | • Rick Denyes, Stewardship Ontario             |
| • Joseph Hall, CPIA                              | • Sherry Arcaro, Stewardship Ontario           |
| • Karl Allen, Northumberland County              | • Willma Bureau, County of Simcoe              |

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## CIF Update

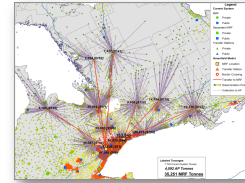
Mike Birett  
Director, CIF



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## 2012 Was All About Change

- Staff turn over
- Completion of MIPC infrastructure study
- New mandate & directives



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## Current Status

- 470+ projects funded to date
- 274 active projects
- Over \$3M in new projects approved in 2012

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## Key Projects

- Problematic Materials
  - EPS
  - film
- Audits
  - seasonal audits
  - ABC audits
- Contracts management training course



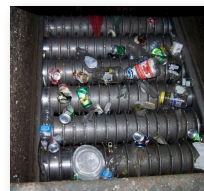
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## 2012 YE Projected Financials

| Description                     | Value        |
|---------------------------------|--------------|
| 2012 funding contribution       | \$4,450,757  |
| Total funds received to date    | \$61,012,480 |
| 2012 project approvals          | \$3,245,395  |
| Total project approvals to date | \$34,426,150 |
| Projected Closing Balance       | \$19,696,918 |

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## 2013 Budget Overview



- CIF Ops Plan developed annually
- Based on existing Strategic Plan & MIPC directives
- Based on your feedback:
  - AMO outreach consultation
  - CIF “needs” assessment

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### Key MIPC Directives (1)

- 2011
  - allocate funds based on the merits of regionalization projects
  - develop & operate a knowledge centre
- 2012
  - three year extension of the fund's mandate
  - allocation of funds by June 2015

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### Key MIPC Directives (2)

- \$4.62M in new funding for 2013
- Support to spend held back funds as recommended by municipalities & CIF



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### Municipal Feedback

- Increased focus on:
  - problematic materials
  - Blue Box (BB) harmonization
  - best practices (BP)
  - training & support
  - RFPs & contract services



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### Proposed 2013 Expenditures

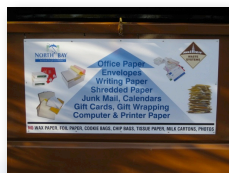
Reference: Section 4 of 2013 Ops Plan

- **\$4M:** support for voluntary initiatives consistent with the MIPC infrastructure study
- **\$4M:** cost savings related projects
- **\$4M:** additional funds to address existing demand

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### 2013 Budget Highlights

- \$2M to support BB harmonization
  - \$300,000 to increase curbside capacity
  - \$200,000 to improve P&E efforts



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### Proposed Guidelines

- Same evaluation process
- 2011 infrastructure applications to be evaluated
  - no requirement to re-apply but submission of updated data recommended



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## Centre of Excellence

Reference: Section 5 of 2013 Ops Plan

| Item  | Proposed<br>2013 Budget |
|---|-------------------------|
| General Support & Stakeholder Advisory Services | \$125,000               |
| Best Practice Development & Tool Kits           | \$150,000               |
| RFP, Tender & Recycling Plan Support            | \$175,000               |
| Training  | \$300,000               |
| Problematic Materials Management                | \$150,000               |
| Performance Auditing                            | \$75,000                |
| <b>Total</b>                                    | <b>\$975,000</b>        |

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## Ops Plan Summary

- Continued emphasis on outreach
- Development of Centre of Excellence
- Expanded training opportunities
- Next steps:
  - development of action plans
  - your feedback is important

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**Website:** [www.wdo/cif.ca](http://www.wdo/cif.ca)

**Mike Birett** – Director, CIF  
mbirett@wdo.ca 905-936-5661

**Carrie Nash** – Project Manager, CIF  
CarrieNash@wdo.ca 519-858-2396

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## WDO: Progress Report

Perry Blocher  
Director of Communications  
Waste Diversion Ontario



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## Progress in Waste Diversion

- How are we doing?
- What's new?

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## WDO – A Year in Review

- Minister's Action Plan of February 9
- Our new Board of Directors
- Strategic planning
- Datacall updates
- Staff changes

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## What's Next

- Stakeholder engagement
- December 7 forum
- Environmental Commissioner of Ontario's roundtable
- New website

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## Talk to me!

Perry Blocher  
 Director of Communications  
 Waste Diversion Ontario  
 perryblocher@wdo.ca  
 416-226-5799 or 888-936-5113

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## AMO Update

Alec Scott, MIPC



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## Spring Consultation



- Sessions in Chatham; Smith's Falls; Kenora & North Bay
- Booth at ROMA/OGRA; FONOM; OSUM; NOMA & AMO conventions
- Spring ORW & webcast in Barrie

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## Funding Allocation Formula Update

### What AMO heard:

- More payment should be on basis of reported net costs
- Maintain some tension to encourage continuous improvement & efficiency
- Best Practice questions did not apply equally to all programs & needed review
- AMO should push for caps & eventual elimination of the CNA/OCNA in-kind obligation in favour of cash payments

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## Funding Rules

### sect. 25(5) *Waste Diversion Act* (2002)

- Total amount paid to all municipalities under the program [shall be] equal to 50% of total net costs incurred by those municipalities

### 2005 Cost Containment Plan requirement

- Municipal Blue Box (BB) recycling programs will, where possible, work to operate at best practices (BP) to minimize gross & net BB program costs

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## New Audit Rules



- WDO audits 20 programs/year
  - no audits for programs <500 tonnes/year; these may be reviewed by municipal MIPC staff
  - programs audited in 2010 don't get audited
  - 5 programs from 2008 & 2009 audits that over-reported costs by >2% get re-audited
  - 5 programs with largest % change in net cost/tonne from last year get audited
  - 1 program from each of groups 1 to 5 with largest & increase from last year get audited
  - 5 random programs from remainder get audited

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## 2012 Funding Allocation

The old way – last year's Funding Allocation Model



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## 2012 Funding Distribution Calculation

Issues – last year's Funding Allocation Model

- Allocation was a bit odd...
  - model used a complicated E&E Factor to rate relative efficiencies within groups ... & then ...
    - multiplied it by whatever a municipality declared for net cost
  - model used a percentage BP score ... & then ...
    - multiplied it by a performance measure – municipality's percentage of total tonnes recovered
  - model accepted municipality's declared net cost without limit
    - net costs/tonne (T) ranged from \$27/T to \$5,670/T

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## 2013 Funding Allocation

The new way – this year's Funding Allocation Model



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## 2013 Funding Distribution Calculation

- Changes ...
  - model starts by determining an upper reasonable limit on net costs/tonne by program group
    - uses municipality's net cost/tonne below this limit
    - uses limit value for your net cost if municipality is above
  - pays fixed rate/ tonne for tonnes you recover instead of applying a performance factor
  - scales BP payout on basis of reported net cost
    - uses the limitation of net costs here too

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## Program Goals

### Client – Municipality

- Demonstrate effective diversion & keep BB materials out of landfill
- Control costs so BB represents cost-effective diversion alternative

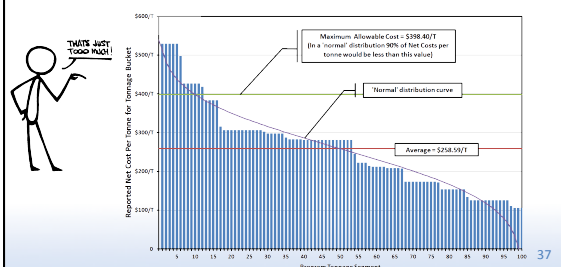
### Client WDO/Stewardship Ontario (BBPP authors)

- Continuously increase recovery rate for BB materials
- Demonstrate effective cost controls
- Continuously improve practices
  - cost control
  - new materials

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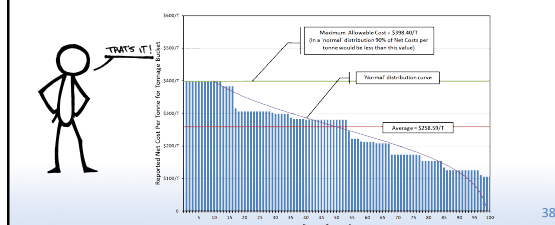
### Limiting Net Cost Value – Demonstrating Cost Control (1)

- Depends on cost characteristics of program group
- Determines maximum net cost/tonne for group



### Limiting Net Cost Value – Demonstrating Cost Control (2)

- Programs above maximum allowable net cost/tonne have their per tonne costs trimmed to this value
- Net cost for further calculations then becomes reported tonnes × maximum allowable net cost



### Recovered Tonnage Factor – Increasing Recovery Rate

- One of primary program goals – recover tonnage of BB materials
- Grouping of municipalities has already demonstrated consideration of regional & program size disparities
- Setting group-wise limit on cost has already demonstrated a commitment to efficiency
- Simply stated:
  - in this category, we set aside a fixed ‘pot’ of funds (35% of cash obligation) to pay for recovered tonnes
  - if you recovered 5% of tonnes in province, you get 5% of the pot

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### Best Practices Factor – Demonstrating a Will to Improve

- Municipalities said:
  - don’t think BP questions apply to everyone equally
  - ‘big picture’ idea of BP applied to everyone
    - planning & effective program management
    - P&E & staff training
    - good policies
- AMO set aside a ‘pot’ of 15% of cash obligation for BP
- Maximum share = your allowable net cost ÷ total allowable net costs from all programs × this pot of funds
- Actual share is this amount × your BP score from Datacall questions

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### Final Polishing Up – Making It All Fit

- No-one received 100% BP score; surplus funds remained
- Some programs ended up with pay-out of >75% of their reported net cost
  - need low net cost/tonne to get this
  - MIPC rules allow maximum of 75%
  - this represents a very minor adjustment (>0.1%)
- Funding subtotal was your net cost funding + recovered tonnage funding + BP funding
- Final adjustment applied in 2 steps:
  - proportional distribution of BP funding surplus to all programs
  - proportional distribution of >75% funding to under 75% programs

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### Benefits of the New Pay-out Allocation

- “Great, you’ve done more math, what’s in it for me?”*
- This represents what you told us – consensus opinion
  - It meets requirements of the “Rules”
  - Municipalities/programs can reproduce the calculations
    - no hidden generation pages
    - no weird E&E factor balancing act
    - maximum cost is a bit complicated, but can be done – you have all the information
  - It’s transparent & (reasonably) simple

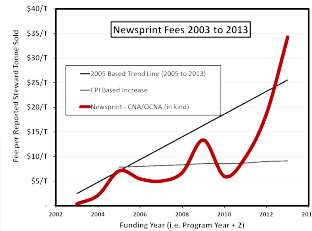
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## CNA/OCNA Issue – Life Throws Us a Curve Ball

**CNA/OCNA in-kind amount increased by 71% from 2012 to \$6,140,409**

- Originally capped at \$1.3M
- Cap removed in 2005 with modification to BBPP
- Funds deducted from total steward obligation

| Historic CNA/OCNA Fees |             |
|------------------------|-------------|
| 2008                   | \$1,829,057 |
| 2009                   | \$3,301,404 |
| 2010                   | \$1,424,501 |
| 2011                   | \$1,703,976 |
| 2012                   | \$3,571,471 |
| 2013                   | \$6,140,409 |



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## Reaction to CNA/OCNA Issue

### Posting of 2013 funding delayed until December 2012

- Municipal MIPC currently seeking fuller understanding of reasons for increase in in-kind obligation
- SO explanation:
  - increased net costs for newspaper processing
  - reconfiguration of their Activity Based Costing model
- MIPC working with SO & WDO to review changes

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Questions?



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Enjoy your break!



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Welcome back...

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Making it Work

Carrie Nash, CIF



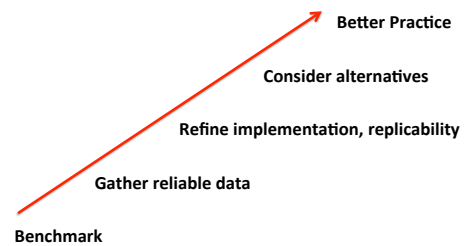
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### 'Making it Work', What It Means to CIF

- CIF is always seeking projects that:
  - lower/control costs
  - increasing material capture & recovery, particularly materials not currently captured
- In 2012, funding priorities included collection & recycling of more material, especially plastic packaging
- Projects were sought that identified potential solutions & helped lead toward better practices

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### How Do We Know It's Working?



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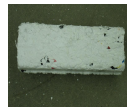
### Where Are We Making it Work?



Curbside



Processing



Marketing

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### Speakers

- Willma Bureau, County of Simcoe
  - Providing More Capacity at the Curb
- Catherine McCausland, City of Guelph
  - Going Automated
- Karl Allen, Northumberland
  - Container Baler Upgrade
- Claudia Marsales, City of Markham
  - Polystyrene Densifier Project

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### Providing More Capacity at the Curb



Willma Bureau  
County of Simcoe  
CIF Project #665.3



### Blue Grew



- Project goal
  - increase existing Blue Box (BB) material capture rates
  - add new plastics to the program
- Anticipated impacts
  - increase BB tonnages
- More information
  - [willma.bureau@simcoe.ca](mailto:willma.bureau@simcoe.ca)
  - [Simcoe.ca](http://Simcoe.ca)

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## The Need

- Best practices indicate that if sufficient BB capacity is not provided there is the potential that recyclables will end up in the garbage
- County's Solid Waste Management Strategy recommended analysis of data to determine if we needed to increase recycling container size in order to maximize capture rates
- Analysis indicated that the containers/BB were full 89% of the time & those that were not full were very near capacity when placed out for collection
- Feedback from residents indicated a strong desire to include additional plastics (particularly thermoforms) in the County's recycling program

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## Increased Blue Box Capacity



- New BB are 83 litres in size (~30% larger)
- Contain 60% post consumer content
- CIF procurement process for boxes
- Funded 50% by CIF due to concurrent addition of mixed plastics to program

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## Distribution



- Curbside distribution by contracted collection service providers
- 1 box distributed per household (~ 135,000)
- Commenced mid April, completed prior to May 18th
- Major seasonal areas completed last

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## Promotion & Education

- Comprehensive marketing campaign
- Campaign was multi-faceted & cost effective
- Included some new advertising mediums which utilized humorous & engaging messaging



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## Promotion & Education Components (1)

- Boxes were distributed with some educational material including:
  - handy 'fridge magnet
  - information card with a sticker for box outlining acceptable & unacceptable materials



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## Promotion & Education Components (2)

- Waste Wizard search tool on County website



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### Promotion & Education Components (3)

- Managing Your Waste newsletter featured new program highlights
- Full page newspaper ads
- Newspaper website 'takeovers'
- Press releases, media interviews



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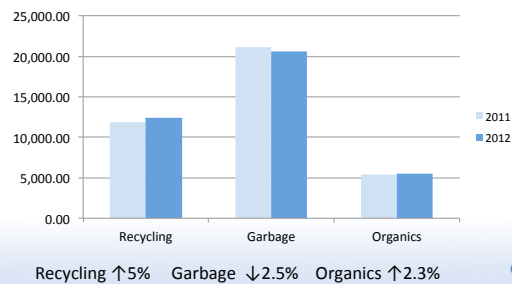
### Promotion & Education Components (4)

- Two minute promotional video humorously depicts program changes
- 30 second version utilized as CTV commercial
- Four different 30 second radio commercials
- Entertaining = elevates the mundane
- Entertaining = increased memory retention
- Entertaining = increased forwarding of message

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### Progress to Date – Tonnage

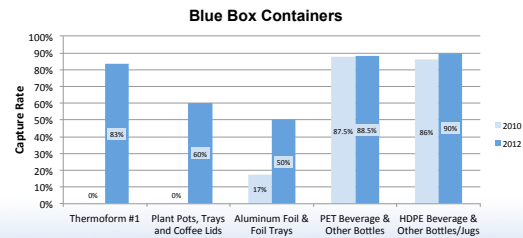
- 6 month period (May – Oct.) vs. same period last year:



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### Progress to Date – Capture Rates

Two week comprehensive waste audits conducted during June 2012 vs. same period in 2010 – some highlights:



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## City Of Guelph Going Automated

Catherine McCausland, City of Guelph  
CIF Project #284 & #177



### Overview



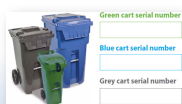
- Purpose: automate PET sorting in the MRF & waste collection at the curb
- Anticipated impacts: these projects will provide cost savings through improved operational efficiencies
- More information:
  - catherine.mccausland@guelph.ca
  - www.guelph.ca

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### Automated Collection (1)

- City required to phase out collection of organic waste in plastic bags
- Decision made to go to a full cart based program
- Required purchase of carts & automated collection vehicles
- Engaged in extensive promotion & education campaign to communicate with residents



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### Automated Collection (2)

- Fleet will drop from 18 to 15 trucks
- Reduction in labour force
- Reduced repetitive strain injuries, WSIB claims as well as associated costs of modified & return to work programs
- Program should result in operational savings of ~\$460,000
- Savings realized through staff reductions, improved program efficiencies & reduced trucks & fuel



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### PET Optical Sorter

- Manually pulling PET from recycling stream was inefficient
- There were space constraints when designing process flow
- We needed to design, build & install an auger system to handle dedicated PET
- Originally we programmed unit to separate both PET & polycoat/tetrapaks



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### PET Optical Sorter

- Installing the unit improved capture rates for PET & Polycoat/tetrapaks
- Resulted in reduced staffing levels of 3 sorters
- Recommend optical sorting for plastics
- Has reduced labour force, reduced operating costs & increased revenues through increased capture rates



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### Project # 284 – Automated Collections

| Long Term Savings             | Amount    |
|-------------------------------|-----------|
| Labour Savings                | \$342,000 |
| Yard Waste Collection Program | \$87,000  |
| Fewer Vehicles and Fuel       | \$31,000  |
| Annual Savings                | \$460,000 |

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### Project # 177 – PET Optical Sorter

| Material             | Pre Installation | Post Installation | Increased Capture (lbs) | Savings/Gain |
|----------------------|------------------|-------------------|-------------------------|--------------|
| PET                  | 11.77%           | 5.00%             | 20,467                  | \$5,730.70   |
| Polycoat & Tetrapaks | 10.00%           | 5.06%             | 13,226                  | \$661.29     |
| Residue              | 29.38%           | 19.82%            | 75,655                  | \$1,994.53   |
| Labour Savings       |                  |                   |                         | \$177,500.00 |
| Maintenance          |                  |                   |                         | -\$15,000    |
| Annual Savings       |                  |                   |                         | \$170,886.52 |

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## Conclusions

- Automating collections enables us to offer better service to residents of Guelph
- New cart program will allow residents to have their yard waste collected weekly
- Optical sorter provides flexibility in the operation
- Unit can be programmed to capture other material types if necessary

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## Container Baler Upgrade

Karl Allen, Northumberland County  
CIF Project # 271



## Project Highlights



- Project goal:
  - to improve overall processing performance & reduce operating costs
- Anticipated impacts:
  - reduce downtime & maintenance costs
  - increase bale density
  - improve revenue from material sales
  - increase processing capacity
- More information:
  - [allenk@northumberlandcounty.ca](mailto:allenk@northumberlandcounty.ca)
  - [www.northumberlandcounty.ca](http://www.northumberlandcounty.ca)

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## Background

- Northumberland County owns & operates our MRF
- Single & Dual Stream Processing to residents & IC&I sectors
- Since 2008 Northumberland has invested in:
  - fiber processing line upgrades
    - drum feed, triple deck fibre screen, fibre optical sort
  - ESCO Study resulting in new energy efficient lighting installed in 2012
  - container Dual Ram Baler
  - Fiber Baler Single Ram

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## Project Highlights (1)

- Why this project?
  - original baler was old & fatigued
  - required continuous maintenance & service
  - new market technology available



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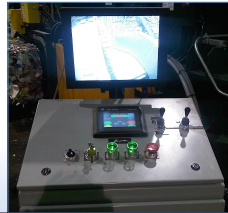
## Project Highlights (2)

- Project description
  - tender process, with 4 bidders
  - awarded to Metro Compactor Service
    - Nexgen, Marathon, Dual Ram, 2R 250 84, 100 HP
- Total price \$445 k (includes \$25 k trade-in allowance)
  - baler \$330 k
  - metal infeed conveyor \$100 k
  - installation \$15 k

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### New Baler – Key Features

- Dual Ram – maximum density
- 2 cameras – infeed conveyor & hopper/chamber
- Touchscreen controls



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### Impacts (1)

| Material       | Old Baler<br>Kg/ft3 | New Baler<br>kg/ft3 | Overall Change<br>in Bale Density |
|----------------|---------------------|---------------------|-----------------------------------|
| PET            | 9.71                | 11.54               | 19%                               |
| HDPE           | 7.79                | 13.35               | 71%                               |
| Mixed Plastics | 8.6                 | 14.11               | 64%                               |
| Aluminum       | 6.87                | 10.46               | 52%                               |
| Steel Cans     | 13.52               | 18.61               | 38%                               |

Increase bale density in all materials 19 – 71%

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### Impacts (2)

- Increased floor space
- Reduction in downtime
  - 347 hours annually
    - resulting in \$11,000 labour costs



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### Impacts (3)

#### Faster bale times

| Material       | Old Baler<br>(minutes) | New Baler<br>(minutes) | Time<br>Difference % |
|----------------|------------------------|------------------------|----------------------|
| Aluminum Cans  | 12.24                  | 4.4                    | 63.87                |
| HDPE           | 16.46                  | 5.23                   | 68.12                |
| Mixed Plastics | 17.01                  | 5.53                   | 67.53                |
| PET            | 21.85                  | 7.19                   | 67.02                |
| Steel          | 13.54                  | 4.21                   | 68.92                |
| <b>AVERAGE</b> | <b>16.21</b>           | <b>5.31</b>            | <b>67.09</b>         |

Average 67% faster bale times

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### Impacts (4)

- Shipping Trailer Weight
  - single ram baler plastic loads averaged 38,500 lb.
  - new Dual Ram Baler – trailer loads average 48,000 lb.
  - resulting in an average increase of \$0.01 /lb. sold
    - multiplied by annual tonnage
      - results in \$17,000 increase to sales revenues

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### Savings Summary

#### Summary of cost savings

| Activity                   | Annual Savings  |
|----------------------------|-----------------|
| Non-Productive Baling Time | \$11,308        |
| Part-time Operator         | \$16,998        |
| Additional Revenue         | \$17,359        |
| Annual Baler Maintenance   | \$25,000        |
| <b>Annual Savings</b>      | <b>\$77,665</b> |

Annual savings of \$77,665

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## Summary

- Summary:
  - reduced downtime & maintenance costs
  - increased bale density
  - improved revenue from material sales
  - increased processing capacity

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## Polystyrene Densifier Project

Claudia Marsales, City of Markham  
 Senior Manager, Waste &  
 Environmental Management Division  
 CIF Project #291



## Overview



- Project goal: streamline handling, storage & shipping of clean polystyrene
- Impacts: significantly reduced costs & environmental pressure associated with collecting polystyrene (PS)
- More information:
  - [cmarsales@markham.ca](mailto:cmarsales@markham.ca)
  - [www.markham.ca](http://www.markham.ca)

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## Polystyrene in Markham

- Not collected in curb-side Blue Box (BB)
- Markham's 4 Community Recycling Depots accept over 20,000 kg of clean polystyrene (PS) per year
- Use large clear plastic bags for storage
- Extreme space limitations
- High handling & transportation costs - shipped to CPRA in Port Hope with no revenue



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## Polystyrene Storage Issue



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## 2009 Pilot - Pilot #1

- Thermal processing
- Many issues:
  - difficult to find local market
  - melting of impure material caused internal fires
  - required additional sorting & conveyer
  - worker Health & Safety concerns
- Pilot concluded ... returned machine

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### 2010 Pilot - Pilot #2



- 2010 – partnered with EPIC & CIF to pilot compression technology
- Funding: \$56,080
- Up-front costs:
  - machine purchase: \$42,000
  - initial wiring set-up: \$10,000
  - additional re-wiring: \$15,000
  - CSA approval: \$5,500
  - consultant's fees: \$5,594
  - sub-total: \$78,094
- Issues
  - electrical compliance
  - location
  - staff resources

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### Surplus Building



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### “Polymax” – Pilot #3

- PS Densifier Machine compresses material into condensed polystyrene bricks.
- Can now be transported in gaylords
- Before PS Densifier, a truckload of undensified polystyrene would carry ~191 bags
- One truckload of densified polystyrene carries the equivalent of 1,240 bags or 8,250 lb.



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### Analysis of Polystyrene Densifier

- 34,660 kg collected per year
- Compressed into 203.57 gaylords = avg. densification factor of 21.35
- Processed by The Recycle People under contract



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### Reduced Operating Costs

| Annual Transportation Costs                    | Pre PS Densifier | Post PS Densifier |
|--|------------------|-------------------|
| Transport cost of PS from depot to 8100 Warden | \$20,800         | \$20,800          |
| Average cost per truck                         | \$750/ week      | --                |
| Average # of trucks sent                       | 65               | 6.97              |
| Average cost for trucking                      | \$48,750         | 0                 |
| <b>Total Transportation Costs</b>              | <b>\$69,550</b>  | <b>\$20,800</b>   |
| Handling Costs                                 | \$11,943         | \$35,265          |
| Labour for PS handling                         | \$3,380          | --                |
| Operating Densifier                            | --               | \$18,036          |
| Bags   | \$8560           | \$8560            |
| Revenue  | --               | \$3,816           |
| <b>Total Annual PS Recycling Costs</b>         | <b>\$81,493</b>  | <b>\$56,248</b>   |

### Project Results

- Annual Operating budget for polystyrene recycling program reduced \$16,000/year
- PS Densifier produces high quality, densified log that is well accepted by market
- Reduced transportation by 5803 km & CO<sub>2</sub> emissions by 9% per year



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## End Product

Densified PS is made into crown moulding and picture frames



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## A Summary...



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## Questions?



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## In Summary...



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## Enjoy your Lunch!



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## Welcome Back...



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### Afternoon Agenda

- Multi-res: KPIs to Super's Support
- Waste Composition 2012 Audit Report
- Break
- Managing Other Materials

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### MR: Key Performance Indicators (KPIs) to Superintendent's Support

Anne Boyd, City of London



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### Why the Multi-Residential (MR) segment

- CIF has invested in 45 MR projects
- ~\$5.5M including muni contribution
- Most at the municipal level – implementing BPs
  - increasing containers, site visits, P&E development
- Final reports – 5 complete, 15 are 90% done
- Highlights of 2 completed projects:
  - EWSWA – added 170 buildings & from 70 to 90 kg/unit
  - North Bay – recycling participation increased from 90% to 97% buildings & from 42 to 72 kg/unit

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### Today's presentations

3 diverse projects looking at different MR issues

- 1) Tracking MR performance – continuous improvement requires KPIs
- 2) Municipal implementation of MR best practices
- 3) Taking the next steps – building relationships with Property Managers & Superintendents

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### Our speakers

- Ben Bennett, Municipal Waste Association
  - Improving Data Capture for Recycling Programs in ON Multi-Residential Buildings
- Renée Dello, City of Toronto
  - Toronto's Multi-Residential Waste Reduction Workshop for Property Managers and Superintendents
- Peter Veiga, Durham Region
  - Multi-Residential Recycling Program Update "Sort it, Bag it, Tote it, Recycle it!"

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### Improving Data Capture for Recycling Programs in Ontario Multi Residential Buildings

Ben Bennett, Municipal Waste Association  
CIF Project #183

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## Project Highlights



- Project goal: to benchmark recycling performance indicators for multi-residential (MR) waste management services in mid-size to large Ontario municipalities
- Anticipated impacts: guidelines for improved performance & recommended changes to MR Datacall reporting
- More information:
  - [ben@municipalwaste.ca](mailto:ben@municipalwaste.ca)/[www.municipalwaste.ca](http://www.municipalwaste.ca)
  - 519-823-1990

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## Basic Project Information

- Partners: London, Guelph, Peel, Niagara, Ottawa, Halton, Waterloo, & City of Peterborough
- Funded jointly by partners & CIF
- Municipal Waste Association (MWA) undertook earlier research, & GENIVAR Inc. retained to help complete work



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## Project Scope

- Part 1:
  - examine several MR programs
  - develop guidance for the calculation of key performance indicators for the different waste streams
    - include cost/unit, cost/tonne, kg/unit collected/diverted
- Part 2:
  - formulate recommendations to WDO regarding reporting MR numbers as part of municipal Datacall process

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## What are Key Performance Indicators?

- Key performance indicators (KPIs) measure & track municipal waste management programs over time
- KPIs serve as benchmarks that can show the impacts of internal program changes & be used to compare recycling & garbage programs among municipalities
- MR KPIs fall into 3 major areas:
  - diversion
  - cost
  - community involvement



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## KPIs: Diversion, Cost & Community Involvement

- Indicators of diversion, cost & community involvement look at program performance in MR recycling in terms of:
  - what could be diverted & what is actually diverted
  - how much money is spent on various activities on an overall & a per-unit basis
  - participation, public awareness & correct use of system

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## KPIs: Data Requirements & Data Sources

- Detailed report outlines data necessary to measure each KPI
- From early data collection efforts, it became clear that many municipalities do not have immediate access to data they need to calculate KPIs
- Report outlines where some data can be acquired & methodologies by which missing information can be assessed to produce a meaningful result

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## Data Acquisition

- Methodologies suggested to separate MR program costs from other costs include:
  - use of cost information from a neighbouring or similar municipality
  - use of contractor-provided detailed cost break-downs
  - cost allocation work
  - inclusion of future procurement clause requesting separate MR costing data



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## Recommendations for Waste Diversion Ontario (1)

- Phase in reporting of MR info as part of Datacall in several areas:
  - Section 3.2 Set-out limit/user pay
    - require MR data on set-out limit/user pay
  - Section 3.3 P&E
    - require P&E spending for MR, including annual budget
  - Section 3.4 Best Practices questions
    - e.g., site-plan approval process for new constructions, provision of bins/carts

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## Recommendations for WDO (2)

- Section 4 Services Received (by contract) – additional recycling information
  - quantify number of carts/bins & litres/unit capacity
  - report on actual or estimated tonnes
- Section 4 Blue Box costs (collection & processing)
  - report on actual, estimated or % of cost that are MR

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## Conclusion

- Tracking data will give municipalities tools to evaluate their programs & take steps to implement effectiveness & efficiency measures
- Competitive nature of funding program should reward programs actively improving operations



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## Toronto's Multi-Residential Waste Reduction Workshop for Property Managers & Superintendents

Renée Dello, City of Toronto  
CIF Project #434.2



## Project Highlights

- Project goal: to improve customer service and use adult education techniques to aid in long term retention of information
- Anticipated impacts: inspire action to improve waste diversion in multi-residential properties
- More information:
  - [rdello@toronto.ca](mailto:rdello@toronto.ca)
  - [www.toronto.ca/garbage/multi/index.htm](http://www.toronto.ca/garbage/multi/index.htm)



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## Background

- Service ~4,500 building locations (425,000 units)
- City of Toronto has been working on improving waste diversion in multi-residential dwellings for years
- Initiatives include:
  - volume-based rate system for waste
  - in-unit recycling containers
  - initiating organics collection
  - 3Rs Ambassador Program
  - free information materials including annual calendar to all residents
- Want to improve customer service
- Need Property Managers/Superintendents on board for success

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## Project Description

Participants at workshop



- Hosted 2 workshops AM/PM ~50 people at each
- Wanted to incorporate adult learning techniques with facilitated discussions & still target a larger audience
- 5 staff involved in planning workshop content (total of 91 hours)
- Betty Muise consulted on presentation content & led group through practice run & facilitated overall workshop
- 9 staff involved as table facilitators
- 5 staff for registration & available for specific questions (billing, contracted collection, communications)

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## Evaluation: Participants

- 50 participants filled out an evaluation form (50% response)
- 78% preferred facilitated discussions vs. lecture format
- What respondents liked best:
  - having a group leader at each table
  - contact with staff
  - free handouts
  - update on what is recyclable
  - seeing how recyclables are processed (virtual tour)
  - sharing information/discussions
  - real case scenarios
  - sorting exercise



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## Evaluation: Staff Perspective

- What worked:
  - Betty as overall facilitator
  - group leader at each table
  - sorting exercise ★
  - virtual tour ★
- What needs improvement:
  - capture rate exercise
  - need simpler messaging around 50% capture rate and contamination messaging
  - food/timing/waste-free glitches

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## Best Practice/Continuous Improvement

- Facilitated discussions allow everyone a chance to speak & be heard
- Relationship building
- Improves customer service
- Access to resources



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## Next Steps: Building on Success

- Plan to make workshop an annual event
- Plan to develop a shortened mini-workshop (1.5 hour) to go "on the road"
  - corporate meetings (Dell, Minto, Greenwin, etc.)
  - apartment & Condo association meetings
- Investigate targeted workshops:
  - Superintendents vs. Property Managers
  - in-house customers vs. Miller Waste contracted customers
- Develop a virtual tour DVD that managers can borrow to show to tenants
- Other materials based on feedback

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## Multi-Residential Recycling Program Update "Sort it, Bag it, Tote it, Recycle it!"

Peter Veiga  
Regional Municipality of Durham  
CIF Project # 189



## Project Highlights (1)



Part of Durham's 70% diversion strategy

1. Increased recycling tonnage
  2. Decreased garbage tonnes
  3. Meet best management practices of 50 litres collection capacity per unit &/or 1 cart for every 7 units
  4. Promote other waste diversion programs: tires, HHW, E-waste & polystyrene recycling at Regional waste management facilities
- More information:
    - peter.veiga@durham.ca
    - www.durham.ca/waste

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## Why this Project?

Durham Multi-Residential Diversion Rates 2008-2010

| Year           | 2008    | 2009    | 2010    |
|----------------|---------|---------|---------|
| Recycling      | 2,493t  | 2,125t  | 2,136t  |
| Waste          | 13,613t | 13,695t | 13,446t |
| Diversion Rate | 15%     | 13%     | 14%     |

- Multi-residential sector diversion is stagnant at 14%
- Compared to 53% overall diversion rate
- This sector had not been addressed in many years
- Good opportunity for improvement

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## Project Highlights (2)

- Increase multi-residential recycling by addressing barriers to increased recycling
  - convenience for residents (sorting/transport)
  - convenience for property managers/superintendents (sufficient collection capacity)
  - awareness of acceptable materials
  - awareness of sorting requirements
  - accessibility to recycling areas



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## Distribution Details

### Resident Kits

- 1 Reusable recycling tote bag
- 1 Fridge magnet
- 1 Three-fold brochure

### Building Kits

- Superintendent / property manager
- Brochures
- Updated recycling cart/bin sticker labels
- Recycling posters
- Additional totes/bins
- Website update with online order form



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## Refrigerator Magnet

**Sort it. Bag it. Tote it. Recycle it in the correct recycling bin. No plastic bags allowed.**

|   |  |
|---|--|
| <b>CONTAINERS</b><br>Plastic bottles, jugs, tubs and lids<br>Paper juices, milk, and soup cartons<br>Aluminum cans, aerosol cans, tin and steel cans, empty, dry paint cans<br>Glass bottles, jars and lids | <b>PAPERS</b><br>Newspapers and magazines, telephone and paperback books, catalogues, calendars, junk mail and flyers, cards and envelopes<br>Gift wrap (no foil), paper and gift bags, computer and writing paper |
| <b>CARDBOARD BOXES</b><br>Paper towel and toilet rolls, shoe and gift boxes, dry food and detergent boxes<br>Packing boxes, pizza boxes and loose cardboard   |  |

**Region of Durham Works Department**  
905-973-5254  
1-800-467-5671

**Waste Management Services**  
www.durhamregionwaste.ca  
waste@durham.ca

Graphics & a material stream colour coding system makes it easy

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## Distribution Details (1)

- Met with property managers/ superintendents to outline project
- Distributed intro letter notice & "Bags are Coming" posters & flyers about two months in advance to all units
- Hired 4 students for delivery & data management
- Scheduled delivery appointments days/weeks in advance
- Averaged 400 door to door deliveries daily
- Delivery period – May to August 2011



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## Distribution Details (2)

- 24,000 recycling bags delivered to 344 buildings
- Installed 152 additional 95 gallon recycling carts
- Installed 9 additional front end cardboard bins
- 4 locations increased recycling services to twice/ week
- Installed 72 22-gallon blue boxes at strategic locations to capture recyclables from chute rooms, laundry rooms, mail rooms, etc.

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## Resident &amp; Building Brochures



Residents

Managers/Owners/  
Superintendents

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## Posters



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## Tote Container &amp; Bin Labels



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## Project Results

- Recycling tonnes increased by 3% or 64 tonnes in 2011 over 2010
- Garbage tonnes decreased by only 0.5% or 73 tonnes in 2011 over 2010
- Recycling capacity increased from 46 litres to 52 litres per unit (Best Management practices 50 litres) & established 1 cart to 7 unit ratio for most sites

|                    |          |
|--------------------|----------|
| Total program cost | \$95,728 |
| CIF funded         | \$36,027 |
| Net cost to Region | \$59,701 |

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### Diversion Rate Results

| Municipality      | 2010 Diversion Rate | 2011 Diversion Rate | Change |
|-------------------|---------------------|---------------------|--------|
| Town of Ajax      | 9.8%                | 12.2%               | +24%   |
| City of Oshawa    | 14.5%               | 12.9%               | -11%   |
| City of Pickering | 15.6%               | 20.4%               | +31%   |
| Town of Whitby    | 12.9%               | 16.4%               | +27%   |

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### Project Challenges

- Scheduling appointments
- Tracking down individual building contacts
- Gaining access into buildings for delivery
- Ensuring on-site safety of delivery staff
- Lack of space for additional tote carts
- Ongoing maintenance
- Resident turnover

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### Conclusions & Next Steps

- Upward trend in recycling tonnage
- Participation compliance has improved
- BMPs matched – over 50 litres/unit recycling collection capacity & 1 recycling cart for every 7 dwelling units
- More effort needed to capture recyclables from waste stream & reduce recycling contamination
- Ongoing maintenance for bags, posters, brochures, etc. at all properties

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### Questions?



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### Waste Composition 2012 Audit

Mike Birett, CIF  
Moderator



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### The Evolving Blue Box in Ontario

Sherry Arcaro  
Director, Blue Box System Optimization



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## What Has Changed?

How has the evolution of packaging impacted the Blue Box?



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## 2012 Data Gathering Projects

- Partnership between SO, municipalities & CIF
- Spring/summer MRF Material Audits – 9 facilities across Ontario
- 4 season Curbside Waste Composition studies – 7 municipalities, complete spring 2013  
– last series completed 06/07
- Cost Allocation Study – 5 municipalities
- Total 2012 study costs >\$546,000



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## Need for Study & Lessons Learned

- Changing material composition
- System changes (single stream vs. multi-stream)
- Improve audit methodology, establish best practices (BP)



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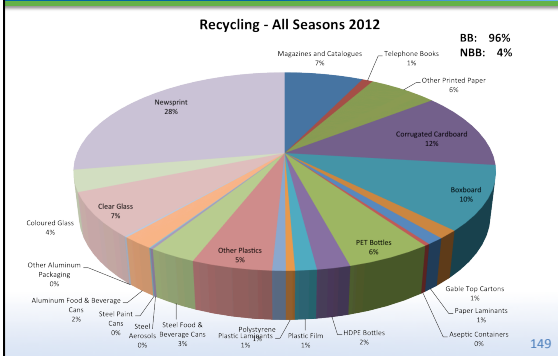
## Curbside Audit “Preliminary” Findings

- Glass – clear non-beverage & coloured liquor bottles
- Mixed fine paper
- PET bottles
- Aluminum foil & trays
- Batteries



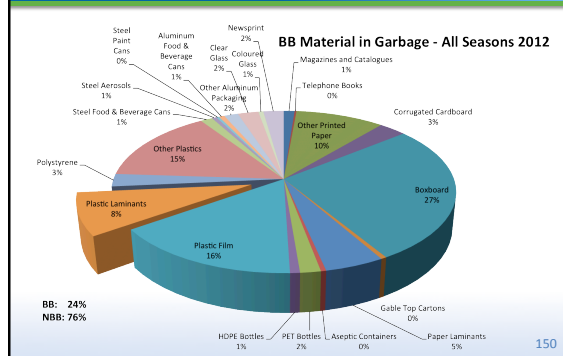
148

## What's in the Box?

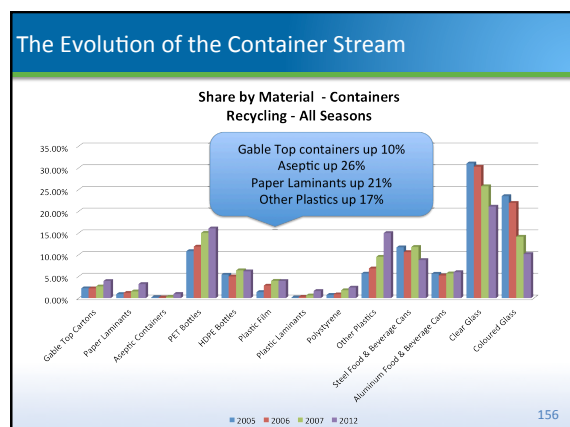
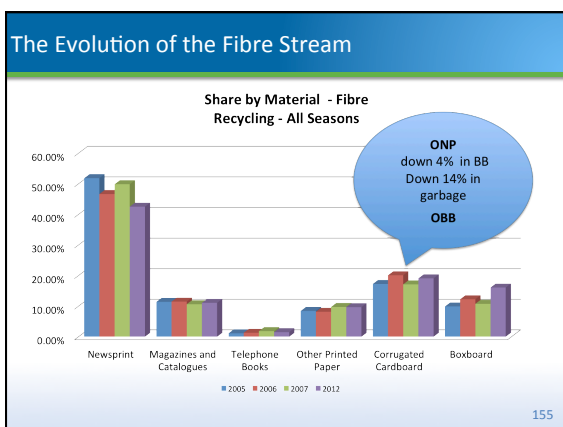
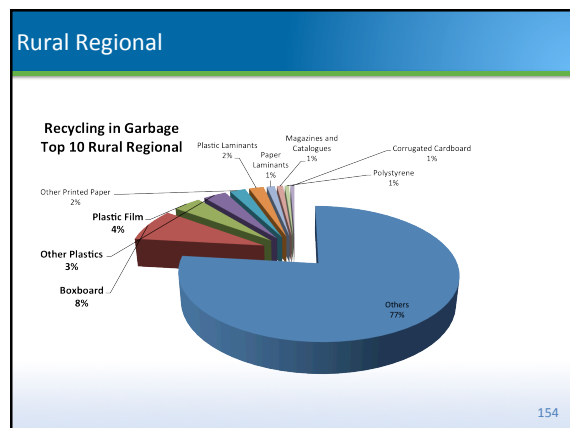
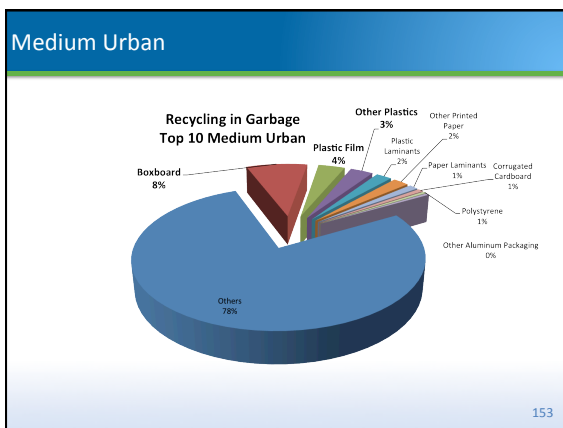
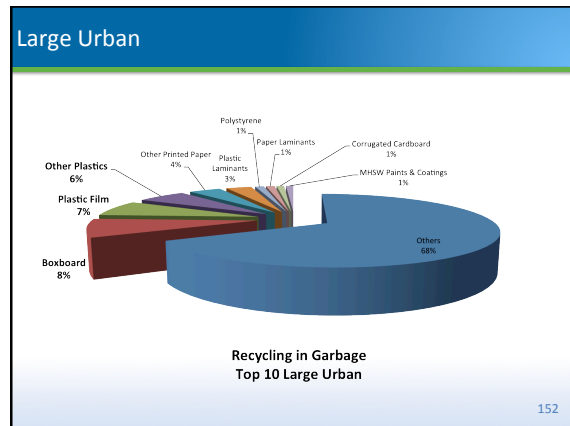
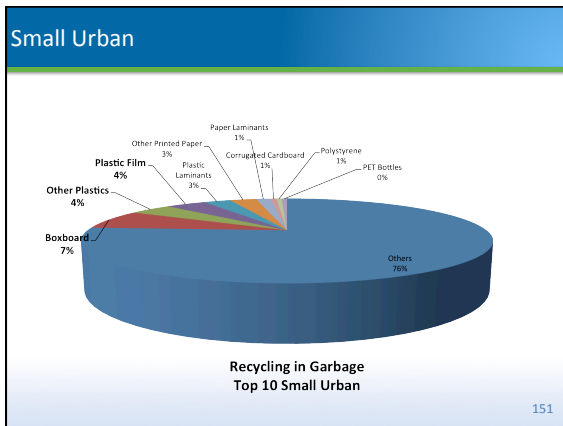


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## What are We Missing?



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### Low Hanging Fruit?

Boxboard

Film Plastic

Polycoat Containers

Mixed Plastics

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### Boxboard Found in Garbage Stream

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### Questions?

Sherry Arcaro  
 Director, Blue Box System Optimization  
 Phone: 416-725-3156  
 Email: sarcaro@stewardshipontario.ca

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### Got Polystyrene? Talk to Rick!

Do YOU Have a Waste Polystyrene Problem?

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### Questions?

### Enjoy your break

## Welcome Back



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## Overcoming Challenging Materials

Mike Birett, CIF



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### New Markets Don't Happen Over Night

- Developing new markets is time consuming & difficult
- At the outset of BB program there were limited markets
  - HDPE & boxboard were challenging
- 3-7 plastics were identified as a key priority by municipal program operators in 2008
  - today we have stable, local processing capacity
  - there are still challenges

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### They Require Cooperation of All Stakeholders

- Thermoforms were identified as a growing problem in 2009
- Today Ontario is a world leader in their diversion
- Film, EPS & laminated paper packaging continue to present very real technical and financial challenges
- Today's speakers will update us on collective efforts of stakeholders involved in diversion of these materials

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### Our Speakers

- Rick Denyes, Stewardship Ontario
  - Problematic Materials: Expanded Polystyrene (EPS)
- Joseph Hall, CPIA
  - Flexible Film Plastics Packaging Project
- Mustan Lalani, StewardEdge Inc.
  - Optimizing Collection Volumes of Paper Based Packaging to Meet Market Demand
- Mike Birett on behalf of NAPCOR
  - PET thermoforms

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### Problematic Materials: Expanded Polystyrene (EPS)

Rick Denyes  
Stewardship Ontario

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### Material Issues/Problems

- Lightweight/bulky – high transportation costs/tonne
- Collection – curbside vs. depot
- Processing
  - tends to break apart during processing
  - contamination can be an issue
  - storage of baled material
- Reprocessing – consistent markets (densification)
- End market users – domestic vs. overseas



EPS baled to ship to end market

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### Material Benefits

- Packaging benefits
  - rigid
  - lightweight
  - low/stable cost
  - marketing benefits
- Stable polymer/market pricing
- Emerging end markets

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### The Ontario Issue

#### Issues

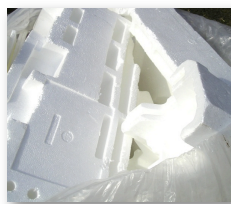
- Not all municipalities collect EPS – tap on
- Unstable re-processing capabilities

#### Solution

- Develop stable reprocessing capability

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### Ontario Solution (1)



EPS pre-bale: bulky, cumbersome; difficult to store

- Joint REOI (CIF/SO/CPIA) July 2012 for densification of EPS
- Key elements
  - Ontario-based solution
  - \$75 k financial contribution (SO/CIF)
- Key considerations
  - location
  - capacity – processing & storage
  - proponents' experience
  - financial stability
  - material knowledge

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### Ontario Solution (2)

- REOI highlights
  - 6 respondents
  - detailed review/interviews
  - detailed scoring system
- Successful Respondent
 

HGC Management  
555 Station St., Belleville ON K8N 4Z6  
Telephone: 613-968-3848

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### Project Update

- HGC Management
  - equipment ordered
  - target start January 2013
  - accepting material now
- Contact information
  - Herb Lambacher, HGC Management Inc.
  - Telephone: 519-754-4732
  - Fax: 519-754-1413
  - herb@hgcmanagement.ca

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## Flexible Film Plastics Packaging Project

Joseph Hall, Canadian Plastics Industry Association  
Plastics Post-Use Recovery Consultant



## Flexible Film Plastics Packaging Project (F<sup>2</sup>P<sup>3</sup>)




Thinking beyond the box



Canadian Plastics Industry Association

### F<sup>2</sup>P<sup>3</sup>: Overview

- Flexible film study will go beyond PE film diversion:
  - consider the current packaging and future film trends
  - identify approaches and actions to successfully manage all types of films at each stage of the diversion value chain.
- Retained the Consortium comprised of:
  - StewardEdge
  - Resource Recycling Systems
  - More Recycling Associates Inc.

### F<sup>2</sup>P<sup>3</sup>: Objectives (1)

- Assess curbside, municipal depot and commercial return sites
- Identify collection & processing methodologies:
  - single/multiple stream systems
  - pros & cons
  - cost drivers
  - associated capital and operating costs

### F<sup>2</sup>P<sup>3</sup>: Objectives (2)

- Understand
  - what film is currently available & recyclable;
  - issues for recycling facilities & plastic re-processors
- Identify commercial & pre-commercial sorting technologies to capture variety of film grades
  - at a MRF
  - at a plastics re-processor

### F<sup>2</sup>P<sup>3</sup>: Deliverables (1)

- Packaging trends to discern current and future applications, ratios of PE, non-PE film & multi-layered film packaging
- North American reprocessors' specifications, demand, capacity & end uses for all films
- Current PE film reprocessing issues, abilities & limitations for various types of flexible films mixed with PE films

F<sup>2</sup> P<sup>3</sup>: Deliverables (2)

- Sorting technologies & costs in North America & globally for reprocessing mixed flexible films into usable PE & non-PE film grades
- Complementary packaging design modifications that could address reprocessing issues & opportunities
- Other end market specifications: cement kilns, plastics to oil & energy from waste:
  - demand, capacity, barriers to market entry for either mixed films & for non PE film grades

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F<sup>2</sup> P<sup>3</sup>: Deliverables (3)

- Life cycle implications of alternative packaging designs to enhance recyclability
- Literature search that includes global sources that are relevant to project;
- Use information to conduct a comparative analysis:
  - collection systems: curbside single and multiple stream systems, municipal & commercial depots
  - capital & operating costs and recovery capabilities

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F<sup>2</sup> P<sup>3</sup>: Study Use (1)

- Assess opportunities & priorities for improving cost-effective recovery in all current collection systems
- Identify collection & processing BP or determine better methods to achieve higher recovery rates & increase film quality for all film grades;

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F<sup>2</sup> P<sup>3</sup>: Study Use (2)

- Assess future system investments:
  - to achieve more effective and efficient curbside and depot collection programs; and
  - to maximize film sorting and film material grades that meet multiple end market specifications

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F<sup>2</sup> P<sup>3</sup>: Timing & Questions

- Work commenced in October 2012
- Draft study expected in January 2013
- Report available in early 2013

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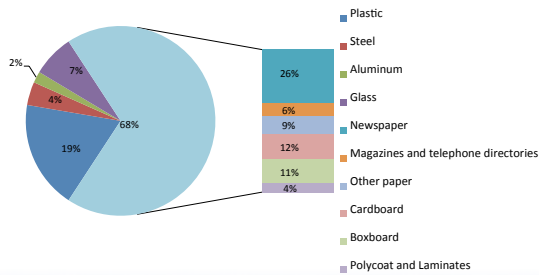
### Optimizing Collection Volumes of Paper Based Packaging to Meet Market Demand

Mustan Lalani, Consultant


 STEWARDEDGE


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### Residential Fibre Stream in Ontario (ON) Today



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### Current Recycling Rates for Paper & Paper Packaging

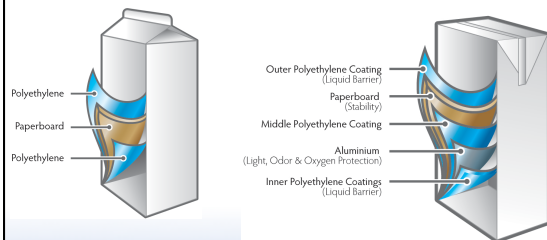
| Material type                           | Recycling rate |
|---|----------------|
| Newspaper                               | 95%            |
| Magazines, Catalogues & Telephone Books | 95%            |
| Cardboard                               | 86%            |
| Other paper                             | 51%            |
| Boxboard                                | 42%            |
| <b>Polycoat &amp; Laminates</b>         | <b>9%</b>      |

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### What Are Cartons?

Refrigerated "gable top" cartons contain ~80% paper & 20% polyethylene

Shelf-stable "aseptic" cartons contain on average 74% paper, 22% polyethylene & 4% aluminum



Contain no wax coating

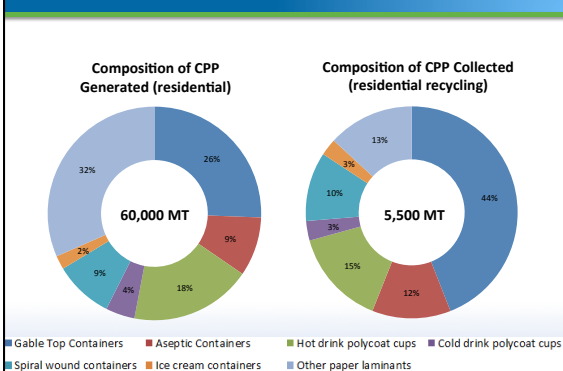
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### What Are Paper Laminates?



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### How Much Of These Materials Exist In Ontario Today?



### How Are These Materials Managed Today in ON?

#### Cartons

- Gable top & aseptic containers collected at curbside & depots in remote areas
- 23 MRFs positively sort cartons into polycoat
  - these MRFs service 78% of ON population

#### Paper laminates

- Paper laminates
- Coffee cup recycling not consistent amongst municipalities
  - green bin, blue box, garbage bin
- Ice cream cartons accepted in 9 of 224 municipal BB recycling programs & 7 green bin programs
- Spiral-wound containers often managed with steel containers
- Other coated paper packaging not widely collected today

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### Challenges in Capturing More Volumes: Seeking Transition to Stable Supply/Demand

1. Markets for polycoat fibre have come & gone over last decade
2. +/-30% way-from-home consumption
  - e.g., empty juice boxes not always discarded at home
3. Difficult for MRF operators to produce regular loads of polycoat due to low volumes
4. Cartons & other polycoated materials
  - e.g., ice cream cartons, coffee cups) may “act-like-paper” in MRFs & flow with newspaper, mixed paper

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### Industry Alignment to Address the Problem

- The Carton Council of Canada - leading carton manufacturing companies in Canada
- Member companies manufacture & market processing & packaging systems that are convenient, safe & environmentally sound



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### Industry Support for Recycling Chain



- ✓ Identify suitable North American mill partners
  - ✓ Polycoat grade now ISRI traded commodity (PSI #52)
- ✓ Negotiate agreements with partners to buy cartons at prices that drive collection & sorting (facilitators)
- ✓ Develop broker ties to move supply to markets

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### Ship More Volumes From MRFs

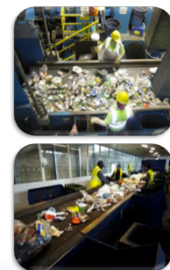


- ✓ Ensure MRFs separate compatible CPP into separate grade – best value
- ✓ Provide technical support to improve efficiency at MRFs
- ✓ Link marketing managers with brokers & end-markets

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### Understand CPP Materials Flow in a MRF

- Participated in study to measure & observe flow of all composite paper packaging materials in 8 ON MRFs
- Visits underway to help develop regional recycling growth strategy



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### Capture More Volumes



- Provide communications content support to municipal recycling coordinators
- Improve convenience to recycle CPP materials
- Engage in municipal P&E efforts to improve residential capture of CPP materials

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### Promoting Consumer Awareness Engaging Municipalities & Stakeholders

- Carton Council website  
– [www.recyclecartons.ca](http://www.recyclecartons.ca)
- Tool-kit templates  
– ads, posters & more
- FAQs for communities, haulers & MRFs
- Video footage
- Technical assistance
- Social media support
- Collaboration opportunities



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### Status of PET Thermoformed Package Recycling

NAPCOR Update



### Presentation Outline

- Project Review
- Objectives & Challenges
- Program Plan
- Identifying the Obstacles
- Current Market Status & NAPCOR Program Initiatives

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### Project Review & Partners

- In 2009 NAPCOR, CIF & SO set out to remove obstacles that to recycling PET Thermoformed Packaging (e.g., cups, clamshells, trays, tubs & egg cartons)

#### Project Partners:

Region of Waterloo  
Continuous Improvement Fund  
Stewardship Ontario  
Canadian Plastics Industry Association (CPIA)  
Association of Postconsumer Plastic Recyclers (APR)  
SPI: Plastics Industry Trade Association  
Retail Council of Canada (RCC) US & Canadian PET Reclaimers

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### Summary: 2009 to present

- Goal: Identify & remove collection to end use obstacles that prevent recycling of PET thermoformed packaging
- Increase the availability of post consumer RPE



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### NAPCOR PET Thermoform Recycling Program: Recap

- Create cost-effective recycling infrastructure for thermoformed PET consistent with bottle recycling
  - acceptable to collection & intermediate processing
  - no jeopardy for existing bottle recycling assets.
- Plan entailed
  - conduct lab research on technical issues
  - work to identify/remedy logistical & technical issues
    - collection programs & intermediate processors
    - reclaimers & technology providers
  - create partnerships where possible

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### Obstacles to PET Thermoform Recycling...

- Look-alike containers made from other resins
- Non-recycling friendly adhesives
- Fluorescing packages
- Variable IVs
- Mechanical engineering issues

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### Addressing the Obstacles (1)

- Conversion to PET: Canadian Grocers Initiative
- Creation & adoption of APR compatibility protocol with input & approval from NAPCOR, the Adhesives & Sealants Council (ASC), & the Tag & Label Manufacturers Institute (TLMI)

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### Addressing the Obstacles (2)

- Inclusion of fluorescence check in APR compatibility protocol for products packaged in thermoforms. Walmart took lead
- Blending during additional melt filtration; solid stating
- Provision of sample loads (over 600,000 lb.) to reclaimers & technology providers

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### Canadian Grocers Initiative

- Loblaw; Sobeys; Walmart; Metro; Safeway (under Retail Council of Canada organizational umbrella)
- Conversion out of unrecyclable packaging
- Conversion to PET of all in-store & private label, followed by those products that are shipped in thermoforms
- Adoption of APR compatibility protocol & required supplier adherence, <http://plasticsrecycling.org/pet-thermoforms>

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### Current MRF Market Options: Canada

- For those MRFs that have autosort capacity, markets are available for PET thermoforms manually sorted from the bottles & baled separately, or included at some specified percentage in PET bottle bales 5-20%
- For those that do not have autosort capacity, PET thermoforms can be included in a mixed rigid bale. PET market options provided mixed rigid processors
- Export (not recommended)

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### Moving Forward (1)

- Total PET packaging available for recycling in US & Canada in 2011 > 7.4 billion lb.
- Thermoforms in 2011 > 1.6 billion lb.
- Projected growth rate for thermoforms > 15%
- Projected growth rate for bottles in lb. – 2%

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### Moving Forward (2)

- Investment in plants & technology capable of efficiently processing PET thermoforms is accelerating
- The most efficient way for MRFs to handle this material is to include it with bottles—most PET bottle reclaimers will have the capacity to handle some % before the end of the year with thresholds as high as 30%

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### Moving Forward: Processing Capacity

- Of the 30 Reclamation plants currently operating in the US (26) & Canada (4) all but 12 are currently processing thermoforms at some percentage.
- The plants that aren't, process exclusively deposit material
- Estimated volume of thermoforms recycled in 2012 around 100 MM lb.

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### Moving Forward (3)

- End market demand not a problem
- PET Thermoforms are successfully being recycled back into fiber, sheet & bottle applications; no show stoppers identified
- No reason not to move forward with collection programs

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### Expectations Moving Forward

- The value of the thermoforms, & their impact on the bottle stream will be largely determined by the additional amount of contamination they carry & the adhesive issue
- Consumer education is now the key



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**For More Information**

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**Questions?**



**Closing Remarks**

Mike Birett, CIF



**Thank you...  
see you next spring!**

