CIF
CONTINUOUS IMPROVEMENT FUND

Ontario Recycler Workshop

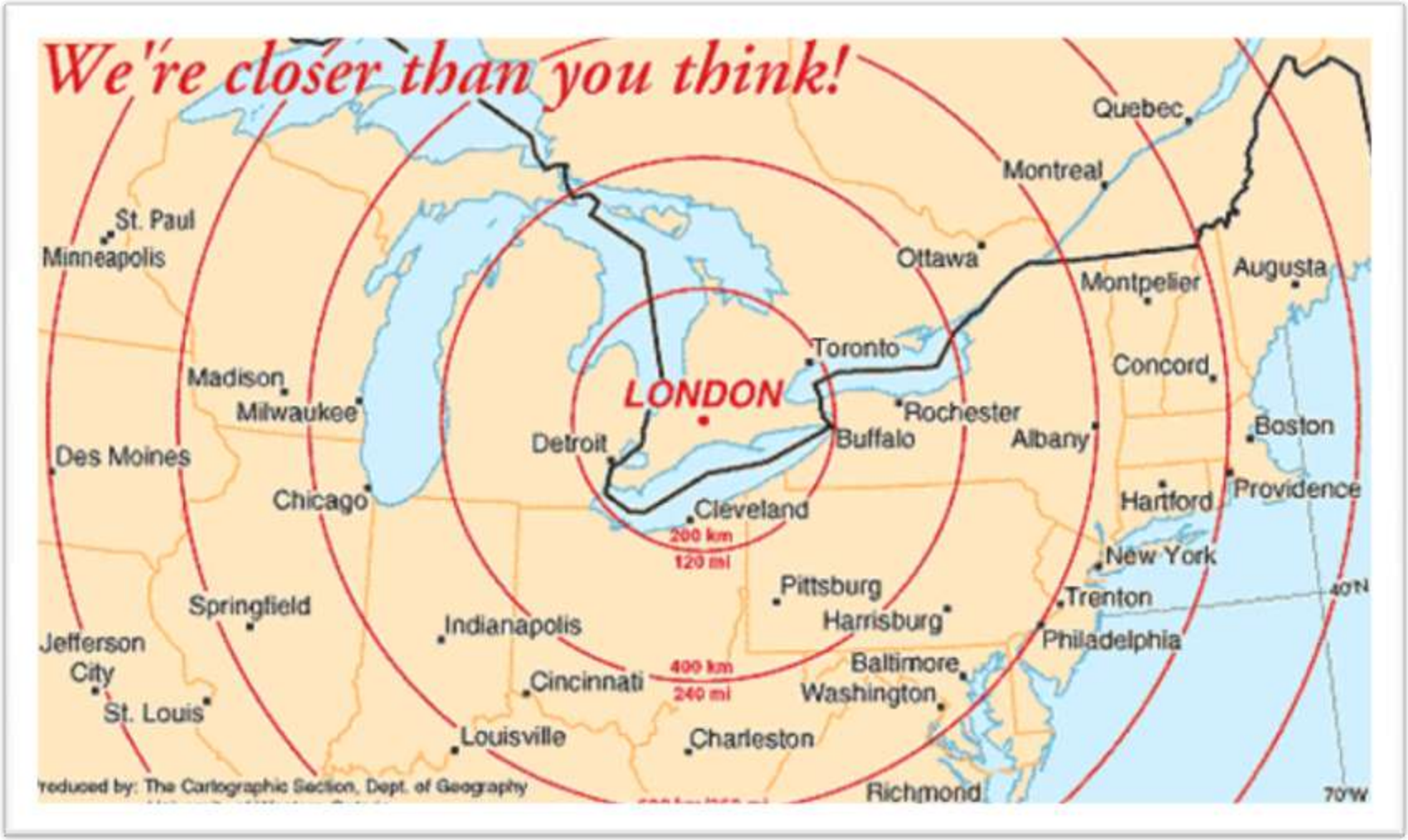
Thursday, November 24
9:30 a.m. to 3:30 p.m.

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO

Welcome from the City of London

Jay Stanford, Director,
Environmental Programs & Solid Waste

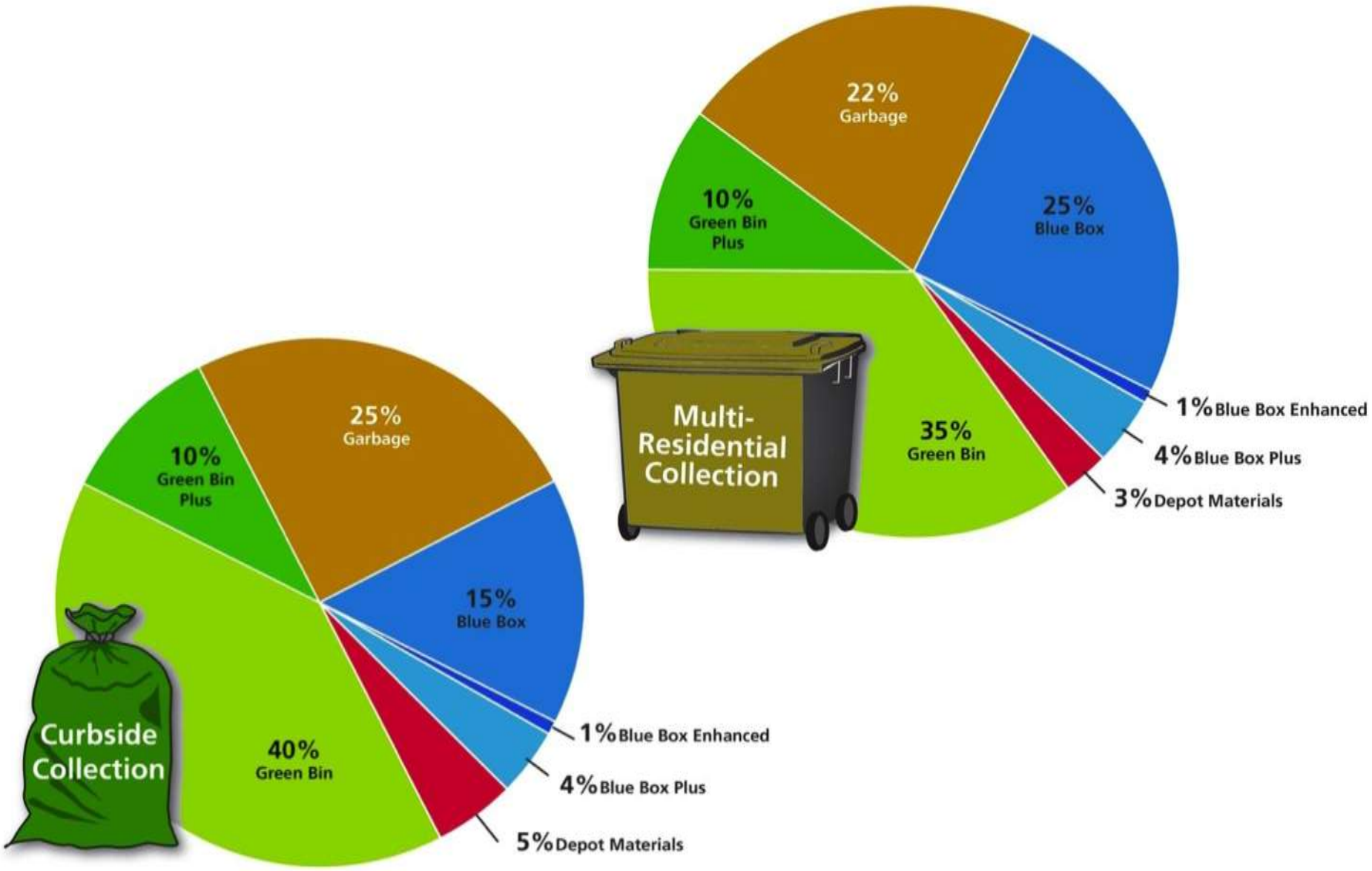
Welcome to London, Ontario



A Few Facts & Figures. . . That Matter to Recyclers

- 365,000 people
- 115,000 curbside homes (20% townhome)
- 50,000 multi-residential (stacked) units
- Since 2005, kg/hhld is stagnant; volume has grown about 30%
- Recycling penetration − outside the home − is not growing

What's Been Bugging Us?



What's New in Recycling?

2011 was a banner year for recycling in London

CIF
CONTINUOUS IMPROVEMENT FUND

New Materials with more MRF capability and capacity

Aerosol cans (empty)

More Plastics (3, 6 & 7. . Plus clamshells)

Spiral wound cardboard cans

CIF funded for plastics P&E

CIF CONTINUOUS IMPROVEMENT FUND

Adding Curbside Capacity with 80 Litre (22 Gallon) Big Blue

CIF funded

CIF
CONTINUOUS IMPROVEMENT FUND

Adding Multi-residential Capacity – Carts

CIF funded

CIF
CONTINUOUS IMPROVEMENT FUND

Adding Multi-res 'OCC' Capacity – OCC Bin Pilot

CIF funded

CIF
CONTINUOUS IMPROVEMENT FUND

Manning Drive MRF – Opened August 2011

CIF funding to build regional MRF

What Are Some of the Biggest Challenges We Face?

1. Reducing contamination
2. Managing challenging materials
3. Improving curbside & multi-res (capture, participation rates)
4. Highlighting the value of recycling
5. Securing sustainable funding

CIF
CONTINUOUS IMPROVEMENT FUND

Our Focus for 2012

Optimization Projects. . . targeting:

1. materials with low capture rates
2. contamination and non-recyclables
3. neighbourhood recycling performance feedback
4. litter reduction from Blue Boxes

CIF
CONTINUOUS IMPROVEMENT FUND

A Few Perspectives from London Staff

- Partnerships/relationships are a key part of our foundation
- All aspects of an integrated waste management system must be maintained and optimized
- Local and regional benefits of resource management have not been optimized

CIF
CONTINUOUS IMPROVEMENT FUND

EPR in London. . . Some Different Meanings

- **E**xtended **P**artner **R**elationships
- **E**ducated **P**artner **R**esponsibilities
- **E**nthusiastic **P**eople **R**equired

CIF
CONTINUOUS IMPROVEMENT FUND

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario Recycler Workshop

Andy Campbell,
Director, CIF

Waste Diversion Ontario
AMO Association of Municipalities of Ontario
TORONTO

Today's Audience

- Approximately 60 people in London
- Expecting 40+ online
- Audience members include:
  - municipal councillors, recycling & waste staff & other staff members
  - industry association representatives
  - program representatives, consultants & other stakeholders

CIF
CONTINUOUS IMPROVEMENT FUND

Today's Program & Housekeeping

Full day session (to ~3:30 p.m.) with program & project updates

- For webcast viewers
  1. sound slider
  2. webcast technical assistance
  3. "Ask a Question"
     - no response via console
     - check email
  4. link to slides & resources

Tour of Two MRFS

- ~40 people
- Preventive Maintenance Program presentation by Bob Marshall, HMI Consulting Services Inc.
- London MRF presentation & guided tour
- Bluewater MRF presentation & guided tour

Special thanks to London & Bluewater MRF Staff & to Bob Marshall, HMI for a successful day!

CIF CONTINUOUS IMPROVEMENT FUND

Snapshot…Today's Program

- Program updates
- Morning break
- Meeting Best Practices (BP) for Planning & Procurement
- Lunch
- Automated Collection: The Wave of the Future
- Afternoon break
- The Future of Blue Box Collection
- Reflections on Managing Printed Papers & Packaging

CIF
CONTINUOUS IMPROVEMENT FUND

Today's Speakers

- Abby Barclay, Town of Arnprior
- Larry Freiburger, AET
- Cory Smith, Mississippi Mills
- Francis Veilleux, Bluewater Recycling Association
- Glenda Gies
- Jay Stanford, City of London
- Joe. C. Williams Innovative Hydrogen Solutions
- Kevin Vibert, City of Toronto
- Maria Kelleher, Kelleher Environmental
- Mary Little, 2cg Inc.
- Paul Shipway, McKellar Township
- Paul Speed, Rehrig Pacific Company
- Rick Clow, MIPC
- Sherry Arcaro, Stewardship Ontario
- Shirley McLean, Halton Region

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

CIF Update

Andy Campbell, P.Eng.
Director, CIF

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO

Overall CIF Project Status

Total Applications	612
Total Approved Projects	445
Total Approved Funding	$30.5M
Total Project Value	$73M
Outstanding Applications	24 w/request for $19.6M
Remaining Funds for 2011	$11M

CIF CONTINUOUS IMPROVEMENT FUND

2011 Project Highlights

Program Area	Total 2011 Approvals
RFP assistance	$105,000
Large blue boxes	$401,000
Multi-residential	$456,000
Promotion & education	$769,000
Public space recycling	$782,000
Recycling plans	$440,000
Northern Ontario	$308,000
Energy efficiency	$109,000
MRF & transfer stations	$256,000
Other	$1,109,000

171 projects approved in 2011

MIPC Decision Summer 2011

- CIF to be extended for 2 years
- 2012 contribution ~$4.5M
  - up to 50% for rationalization
- 2013 contribution TBD in BP discussion before year end
  - will not exceed 10% of Base Steward Obligation less CNA/OCNA in-kind obligation
- Up to $8M of existing uncommitted CIF funds for regionalization
  - no spending until Rationalization Study complete
- MIPC to develop new set of strategic directions for CIF
  - new mandate to direct funds to system rationalization, based on Provincial Optimization Study recommendations

CIF
CONTINUOUS IMPROVEMENT FUND

New CIF Strategic Direction

- Change funding emphasis from 2008 priorities to expenditures based on new project priorities set by MIPC & the CIF Committee
- Focus on provincial optimization
- Focus on materials management strategies
- Focus on Blue Box BP knowledge & training

CIF
CONTINUOUS IMPROVEMENT FUND

What are Municipalities Asking For

- How to create a sustainable waste management system in EPR world
- Outreach–practical examples on how to improve system
- How to do business cases to implement change
- Articulate CIF learnings
- Training on how to operate facilities, write tenders/ RFPs
- Training on health & safety
- What are future BP & how to adopt them

CIF
CONTINUOUS IMPROVEMENT FUND

2012 CIF Operations Plan

- Reduced resources as a result of reduced budget
- Work with municipalities to complete nearly 400 outstanding projects
- $10M in proposed funding for provincial optimization projects
- $0.75M for knowledge resource centre
- Continue to provide on-site assistance with municipalities to discuss operational improvements

CIF
CONTINUOUS IMPROVEMENT FUND

Knowledge Resource Centre Concept

	Proposed 2012 Budget
Business, Operations & BP training	$300,000
BP development	$150,000
RFP, tender & recycling plan development	$100,000
Materials management studies	$100,000
Sustainable waste management systems	$100,000
Ontario Recycler Workshops	Included in Admin budget
Total	$750,000

Study for Optimization of Blue Box Material Processing System in ON (1)

- Purpose: to seek an optimal Blue Box system on a “waste shed basis”−not on municipal boundaries
- Use more transfer stations
- Use larger regional MRFs
- Minimize transportation logistics
- Include municipal & private sector facilities
- Options to include analysis for 2012 & 2025
- Sensitivity analysis to changing fuel costs & material volumes

CIF
CONTINUOUS IMPROVEMENT FUND

Study for Optimization of Blue Box Material Processing System in ON (2)

- Retain a consultant in December
- Project to be completed in spring, 2012
- CIF & MIPC will need to determine funding policies for $10M budget
- Develop application process for municipal submissions

CIF
CONTINUOUS IMPROVEMENT FUND

Blue Boxes & Carts

- 2012 budget does not include funding for large Blue Boxes or carts
- Municipalities can still access CIF tenders for carts & 22-gallon Blue Boxes at substantial savings in 2012

CIF
CONTINUOUS IMPROVEMENT FUND

RFP & Recycling Strategies Assistance

- CIF staff will approach municipalities who scored lowest on WDO Best Practice questions
- Municipalities who have immediate contract renewals should contact CIF

$100,000 total budget for 2011

CIF
CONTINUOUS IMPROVEMENT FUND

CIF Staff

Website - www.wdo/cif.ca

Andy Campbell−Director CIF

andycampbell@wdo.ca 705.719.7913

Mike Birett−Manager CIF

Mbirett@wdo.ca 905.936.5661

Clayton Sampson−CIF Project Manager

csampson@wdo.ca 519.539.0869

CIF CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Incremental Change Today... Better System Tomorrow

Sherry Arcaro
Director, Blue Box System Optimization
Stewardship Ontario

Waste Diversion Ontario
Association of Municipalities of Ontario
Toronto

The landscape is changing for the better

Partnerships that create positive change in the system

Thinking beyond the box
Stewardship Ontario

Waste Diversion Ontario

RCC the voice of retail
Retail Council of Canada

The Association of Postconsumer Plastic Recyclers

NAPCOR™

CIF
CONTINUOUS IMPROVEMENT FUND

Industry Initiatives

100% plant based bottle to be piloted in 2012

Partnership between Heinz & Coca-Cola on 30% plant based bottle

CIF CONTINUOUS IMPROVEMENT FUND

On-going Communication & Collaboration

- **What is the purpose of PAC NEXT?**
- **VISION:** *A world without packaging waste*
- **MISSION:** *To unite leading organizations across the packaging value chain to collaboratively explore, evaluate & mobilize innovative packaging end-of-life solutions*
- **SOLUTIONS:** *Economical recovery that leads to improved Reduction, Recycling, Reuse, Up-Cycling, Composting, Energy-from-Waste & other Emerging Solutions*
- **OBJECTIVE:** *To facilitate the convergence of ideas & identify sustainable solutions that lead to zero packaging waste*

CIF CONTINUOUS IMPROVEMENT FUND

Lots of Work Still To Be Done!

CIF
CONTINUOUS IMPROVEMENT FUND

Multi-municipal “Plastic Is In” Campaign

City of Peterborough

Be WasteWise™
Sort it Out!
City of Kawartha Lakes

Northumberland County

County of Peterborough

CIF
CONTINUOUS IMPROVEMENT FUND

Creative

CIF
CONTINUOUS
IMPROVEMENT FUND

Results:

#1 other rigid pkg – clear 6.2% to 72.7%

#1 other rigid pkg – clrd 5.4% to 60.4%

#1 other rigid bottles 3.9% to 90.8%

CIF CONTINUOUS IMPROVEMENT FUND

Upcoming Projects

- City of North Bay (in market)
- Region of York (working on agreement)
- City of Kingston (working on agreement)
- City of London (spring 2012)
- Region of Niagara (spring 2012)

Is your Plastic In? SO can help.

CIF CONTINUOUS IMPROVEMENT FUND

Other materials…

In some cases, market development to be done

In other cases, effective MRF technology needed!

CIF
CONTINUOUS IMPROVEMENT FUND

Contact Info:

Sherry Arcaro

Director Blue Box System Optimization – Stewardship Ontario

Phone: 416-725-3156

sarcaro@stewardshipontario.ca

Rick Denyes

Director Blue Box Materials Management – Stewardship Ontario

Phone: 416-303-0691

rdenyes@stewardshipontario.ca

CIF CONTINUOUS IMPROVEMENT FUND

CIF
CONTINUOUS IMPROVEMENT FUND

Distribution of 2012 Funding

Rick Clow
MIPC

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO

2012 Steward Obligation

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

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

2005 Cost Containment Plan Requirement

Municipal Blue Box recycling programs will, where possible, work to operate at **best practices** to minimize gross & net Blue Box program costs

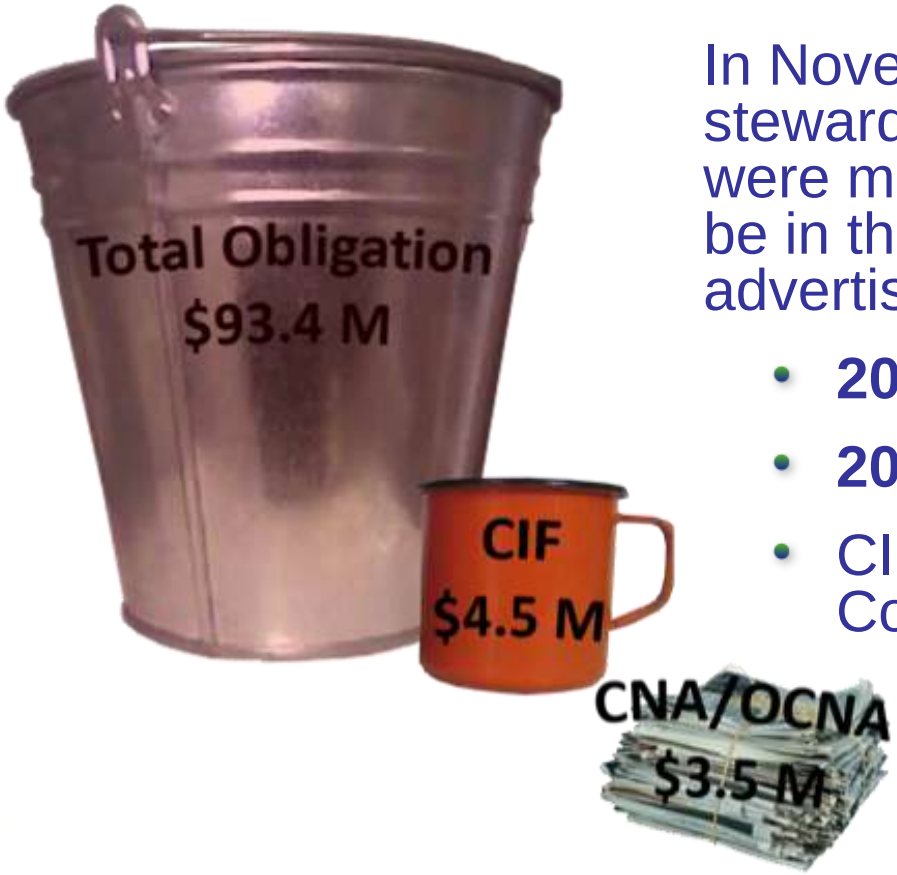
2012 payment to all programs is $93.4 M

CIF
CONTINUOUS IMPROVEMENT FUND

2011 Datacall Begets 2012 funding

DATACALL RESULTS	
Total Gross Cost:	$298.5 M
Total Revenue:	$95.2 M
Total Net Cost:	$203.1 M
COMPARISON COSTS	
BP Estimated Gross:	$270.3 M
3 Year Average Revenue:	$86.0 M
FINAL NEGOTIATED	
Best Practices Net Cost:	$187.7 M
2012 Steward Obligation:	$93.4 M

In-kind Funds & CIF



Not Everything is Paid in Cash

In November 2005 the Minister agreed that steward fees for newsprint producers who were members of the CNA or OCNA would be in the form of in-kind newspaper advertising

- **2012 CNA/OCNA deduction: $3.5 M**
- **2012 CIF Contribution: $4.5 M**
- CIF Investment Demonstrates Municipal Commitment to BP
- From 2008 to 2011 municipalities invested $53.4 M of steward's obligation to demonstrate their commitment to continuous improvement & promotion of BP. In addition funds have been matched by municipalities

Final Breakdown of Our Share

Remaining Funds in 3 Buckets			
Funding Year	2010	2011	2012
Datacall Year	2008	2009	2010
Best Practice	5.0%	15.0%	25.0%
Performance	30.0%	40.0%	45.0%
Net cost	65.0%	45.0%	30.0%
2012 Funds for Distribution: $85.4M			

CIF
CONTINUOUS
IMPROVEMENT FUND

What's Left to Distribute?

2012 Funds for Distribution: $85.4 M

Not everyone gets 50% of what they spent

recall: "total amount paid to all municipalities under the program [shall be] equal to 50 per cent of the total net costs

50% of our reported net costs = $101.5 M

50% of the negotiated net cost = $93.4 M

8.6% of this goes to CNA/OCNA & CIF

- 2005 Cost Containment Plan directs us to: reward municipalities that have implemented identified BP & provide incentives for municipalities to adopt BP
- **Funding distributed in 3 sub-buckets to satisfy this direction**

Net Cost Funding

Represents 30% of total $85.4 M available funds

Represents 12.6% of $203.1 M Reported Net Costs

All programs receive 12.6% of their Reported Net Costs

Represents guaranteed minimum funding level

CIF
CONTINUOUS IMPROVEMENT FUND

Facts About Recovery Rates – 2012

- Provincial Recovery Rate: 67.6%
  - Stewardship Ontario develops annual estimate of generation by municipal program
    - "generation" is tonnes of Blue Box materials available for collection from residential sources

Recovery Rate = Marketed Tonnes ÷ Estimated Generation

- 223 programs reported recovery rates from 3.3% to 286%
  - recovery rates capped at 90% for performance calculations

CIF CONTINUOUS IMPROVEMENT FUND

Best Practices (BP) Funding

Represents 25% of total $ 85.4 M available funds

Represents 10.5% of $203.1M Reported Net Costs

BP Score from Section 3.4 of Datacall

- recall the Cost Containment Plan instruction to provide incentives for municipalities to adopt BP?

- **Step 1:** Calculate each program's "tonnage based share of net costs"
- **Step 2:** Multiply all programs tonnage based share of net costs by their BP score from Section 3.4
- **Step 3:** Scale each program's best practice score down equally so total funding adds up to $21.4M

- **Basic Principle: All programs with the same BP score get same percentage of their tonnage based share of funding**

Performance Funding

- Represents 45% of total $85.4 M available funds
  - represents 18.9% of $203.1 M Reported Net Costs
  - “performance” includes:
    - **Efficiency = net cost per tonne recovered**
    - **Effectiveness = tonnes recovered per tonne generated**

CIF CONTINUOUS IMPROVEMENT FUND

Facts About Net Costs–2012

Average Net Cost per Tonne	**$228.86/T**
– lowest cost 5% of tonnes	$ 125.03/T
– highest cost 5% of tonnes	$ 517.53/T
– 95% of programs cost less than	$1416.92/T
– 90% of programs cost less than	$ 853.78/T
– 80% of programs cost less than	$ 589.93/T
– 50% of programs cost less than	$ 357.75/T

CIF
CONTINUOUS IMPROVEMENT FUND

Performance Funding

Goals:

- Reward efficient programs
- Reward effective programs

How it's done:

- comparison with other like programs using 9 municipal groupings
- recovery rates capped at 90%
- E&E factor = net cost per tonne ÷ recovery rate

- Programs score based on performance within municipal grouping determines funding level
- Municipal group with more good performers than other groups will get additional funding

Program Funding Analysis

- Final funding should be consistent year to year & explainable
- 2012 will return relatively less for steady excellent BP programs because more programs are sharing BP bucket

	Net Cost Allocation $25,628,135	Best Practices Allocation $21,356,779	E & E Allocation $38,442,203	Total Est. Funding $85,427,117
Large Urban	$12,463,281	$11,002,570	$17,977,021	$41,442,872
Urban Regional	$4,870,891	$5,971,652	$7,705,218	$18,547,761
Medium Urban	$1,285,739	$959,820	$1,923,214	$4,168,772
Rural Regional	$3,424,977	$2,241,901	$5,186,452	$10,853,330
Small Urban	$606,126	$377,127	$1,039,947	$2,023,200
Rural Collection - North	$424,010	$99,786	$740,667	$1,264,463
Rural Collection - South	$1,888,726	$585,768	$2,873,774	$5,348,269
Rural Depot - North	$352,068	$26,394	$494,181	$872,643
Rural Depot - South	$312,317	$91,763	$501,728	$905,808

2012 vs. 2011 Funding

- Funding increased in all groups
- Total available funds increased from $81,121,037 to $85,427,117 for participating programs
- Tonnes increased from 870,214 to 887,242

	Total Estimated Funding $85,427,117	2011 Total Funding $81,121,037
Large Urban	$41,442,872	$38,704,666
Urban Regional	$18,547,761	$18,410,421
Medium Urban	$4,168,772	$3,932,501
Rural Regional	$10,853,330	$10,756,240
Small Urban	$2,023,200	$1,755,655
Rural Collection - North	$1,264,463	$1,091,775
Rural Collection - South	$5,348,269	$4,984,757
Rural Depot - North	$872,643	$798,307
Rural Depot - South	$905,808	$686,714

CONTINUOUS IMPROVEMENT FUND

Questions

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Break

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Welcome Back

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

Meeting Best Practices for Planning & Procurement

Clayton Sampson, CIF

Today's Session

- Discussion about two important Blue Box program components:
  - Blue Box program planning
  - procurement for recycling services
- Both are BP for Blue Box recycling
- Planning first, then procurement in this segment

CIF
CONTINUOUS IMPROVEMENT FUND

Background - Planning

- Development & implementation of up-to-date plan for recycling is BP #1
- Accounts for 12.5% of BP funding
- Difficult to meet other BP without a recycling plan
- Plan enables programs to operate & improve
- Plan answers four questions:
  1. where do we want to be
  2. where are we now
  3. how do we get there
  4. how do we know when we get there

CIF
CONTINUOUS IMPROVEMENT FUND

CIF Initiatives

- Recognized that planning was the first step for continuous improvement
- Decision to create a template for planning to help municipalities develop plans
- Waste Recycling Strategy guideline & template available for programs to utilize
  - http://www.wdo.ca/cif/resources/planning.html
- Held workshops to explain template
- Provided funding to programs for plan development

CIF CONTINUOUS IMPROVEMENT FUND

Results

- 2009 Datacall–75% of programs did not meet planning BP
- 2010 Datacall–45% of programs did not meet planning BP
- CIF has approved 93 planning projects–10% have been co-operative planning projects
- Based on approved projects & Datacall responses, estimate only 65 programs not meeting planning BP (29% of programs)
- Goal was 100% compliance

CIF
CONTINUOUS IMPROVEMENT FUND

Recycling Planning Session

- Have different perspectives on Recycling Planning
  - overview of planning & what are the main issues being encountered
  - how a large municipality handles ongoing task of keeping a plan current
  - benefits of planning for a smaller program & how it assists with implementing improvements

CIF
CONTINUOUS IMPROVEMENT FUND

Today's Speakers

- Mary Little, Senior Consultant
  2cg Inc.
- Shirley Mclean, Supervisor, Waste Planning
  Halton Region
- Paul Shipway, Administrative/Treasury Assistant
  Township of McKellar

CIF
CONTINUOUS IMPROVEMENT FUND

Planning for the Future Through a Waste Recycling Strategy

Mary Little
Senior Consultant
2cg Inc.

Presentation Highlights

- Creating an Effective Waste Recycling Strategy
- For more information:
  - mary@2cg.ca
  - www.2cg.ca

What is a Waste Recycling Strategy?

- A Strategy is defined as:
  - a plan, approach or tactic
- A municipal Waste Recycling Strategy is a tool to help your program achieve Best Practices (BP) in the management of your Blue Box material

CIF
CONTINUOUS IMPROVEMENT FUND

Requirement

- The funding to municipalities in 2011 will be:
  - 15% based on 2009 Datacall BP questions
- The cash funding to municipalities in 2012 based on responses to 2010 Datacall will be:
  - 25% based on 2010 Datacall BP questions

CIF
CONTINUOUS IMPROVEMENT FUND

Municipal Reaction

- “Limited staff resources & budget to devote to a Strategy”
- “No time to deal with a consultant/third party”
- “Where do I start?”

CIF
CONTINUOUS IMPROVEMENT FUND

Getting Started

- The CIF guidebook offers a format for your strategy & funding to complete it
- Use the Recycling Option Score table as a starting point for your program
- It's a reference tool—adjusted to suit your own municipal needs
- Get's you thinking

CIF
CONTINUOUS IMPROVEMENT FUND

What Works

- Work through the Recycling Options Table as a group (environment committee, waste management staff)
- Add or remove options to suit your needs
- Example:
  - if your program is depot based, replace option of collection frequency with option of increase depot hours

What Doesn't Work

- Working in isolation from your group
- Having your committee/waste management staff fill out the option score individually & not as a team effort

CIF
CONTINUOUS IMPROVEMENT FUND

Strategy Suggestions:

- Start with comparing your Blue Box diversion rate & costs with your municipal group average

Average Blue Box Diversion Rate	
Your Municipality	18.3%
Municipal Grouping: Medium Urban	20.38%

- *If you are lower/higher than your group— is this a surprise?*

CIF CONTINUOUS IMPROVEMENT FUND

What We Found Effective

- Focus on enhancing your existing program vs. re-vamping your entire program
- Choosing BP that are manageable for your program
- This is not a lengthy waste management master plan—keep it short & to the point

CIF
CONTINUOUS IMPROVEMENT FUND

How We Engaged Feedback?

- Provided open communication with municipal staff
  - back & forth emails, highlight areas in the strategy requiring comments, etc.
- Provided summary tables highlighting easy to follow program initiatives
- Provided BP examples of other municipal programs to assist with decision making

CIF
CONTINUOUS IMPROVEMENT FUND

Some Examples of Effective Strategies (1)

- Town of Meaford
  - defined performance measures & diversion targets for their program
  - they have limited staff resources & are considering using volunteers & summer students to assist with re-launching their program
- Town of West Nipissing
  - identified areas needing additional promotion & education & applied to CIF for P&E funding

CIF
CONTINUOUS IMPROVEMENT FUND

Some Examples of Effective Strategies (2)

- City of Kawartha Lakes
  - identified need for staff training & have participated in several CIF, MWA core competencies workshops
- County of Northumberland
  - identified need to bolster their P&E for film plastic sorting requirements
  - as result, has re-launched their ‘Bag your Bags’ campaign

Some Examples of Effective Strategies (3)

- Township of McKellar
  - identified need for staff training & need to reduce overall program costs
  - as result, has participated in CIF, MWA core competencies workshops & applied for capital funding for depot site
- City of Stratford
  - identified need to optimize collection & processing services for Blue Box program
  - as result, applied to CIF to prepare RFP & have recently secured a new processing contract

CIF
CONTINUOUS IMPROVEMENT FUND

In Summary

- A Recycling Strategy essentially acts as an extension to your annual Datacall
- It tracks your Blue Box program & can be updated annually
- A Recycling Strategy is a document that demonstrates Blue Box program accountability

CIF
CONTINUOUS IMPROVEMENT FUND

Halton Region Solid Waste Management Strategy Waste Recycling Plan Development: CIF Project #631.11

Shirley McLean
Supervisor Solid Waste Planning
Halton Region

Project Highlights

- Project goal: To reach a waste diversion rate of 65%
- Anticipated impacts:
  - reduce garbage, increase Blue Box & GreenCart material
  - increase access to diversion programs
  - increase landfill lifespan four years
- For more information:
  - shirley.mclean@halton.ca / www.halton.ca/waste
  - Twitter: @HaltonRecycles
  - Blog: www.haltonrecycles.ca

Why Develop a Solid Waste Management Strategy?

- Halton landfill a valuable resource that should be conserved
- Conditions of Approval to form citizen advisory committee with goal of 3Rs
- Committee achieves this goal through development of strategy that is reviewed every five years
- Continuous improvement of waste diversion to continue increasing landfill lifespan
- Avoid need to site new disposal capacity
- 2006-2010 Strategy has been implemented with diversion rate of 57.4% in 2010

CIF
CONTINUOUS IMPROVEMENT FUND

2012-2016 Strategy Development

- Met with citizen advisory committee to develop vision for updating strategy
- Staff retained consultant, Genivar Inc., through RFP process to undertake research & develop diversion options
- Genivar worked with staff to develop criteria
  - resulted in short list of options to reach diversion target
- Involved Finance Division to determine tax impacts on residents
- Draft Strategy approved by Council & public consultation conducted

CIF
CONTINUOUS IMPROVEMENT FUND

Finalizing Strategy Results

- Draft strategy contained 11 initiatives to achieve 70% diversion ranked
  - objective to achieve the greatest impact to diversion at the least cost
- To reach 65%: $2.06/$100,000 CVA
- To reach 70%: $7.26/$100,000 CVA
- Consultation results found greatest support for 65% due to tax impacts
- Final Strategy contains six initiatives to reach 65% at $2.47/$100,000 CVA

CIF
CONTINUOUS IMPROVEMENT FUND

Council Approved 2012-2016 Solid Waste Management Strategy

Initiative	Diversion	Cost /$100,000
Decrease bag limit with bag tags	3.0%	$1.03
Expand Blue Box materials & capacity	1.6%	$0.44
Enhance P&E	1.5%	$0.29
Enhance Multi-res Diversion	1.0%	$0.67
Enhance Textile P&E	0.30%	$0.0
Expand Special Waste Drop-off Days	0.20%	$0.04
Total	7.6%	$2.47

CIF
CONTINUOUS IMPROVEMENT FUND

Best Practices

- Sets targets that result in continuous improvement while remaining cost effective
- Introduces policies such as reduced bag limit that will support shift of recyclable material from garbage to Blue Box
- Plan has been approved by Council
  - should ensure programs are supported when brought forward in budget process

CIF
CONTINUOUS IMPROVEMENT FUND

Next Steps

- Developed booklet to communicate strategy to public
- Some initiatives added to 2012 Budget:
  - partial P&E
  - multi-res FTE
  - $ for more recycling containers, drop-off days
- Staff will start R&D for details of bag limit
- Working with CIF & recycler on feasibility of adding materials to Blue Box
- Plan to phase in implementation of the six initiatives over next five years to smooth out impact to budget

CIF
CONTINUOUS IMPROVEMENT FUND

Implementing A Plan Working Towards Sustainability, Efficiency & Effectiveness

Waste Recycling Plan
CIF 350
(Solar Compactors-CIF 280)

Paul Shipway
Township of McKellar

Project Highlights

- Project goal
  - remove recycling program from just another item line on budget
- Sustainable anticipated impacts:
  - increase efficiency & effectiveness
  - improve performance/reduce costs
  - increase public support/awareness
  - generate drastic quantifiable results
- More information:
  - admin@township.mckellar.on.ca
  - www.township.mckellar.on.ca
  - www.wdo.ca/cif/projects/projects.html

CIF CONTINUOUS IMPROVEMENT FUND

Priority Implementation

Why this project?

- It's not good enough to just have a program!
- Maintain/increase funding (BP)
- Program was operating so poorly it was considered a statistical outlier

2010 Stats	McKellar	Group Average	Group Rank
$/Ton	$2,028.65	$877.07	9/10
Capture Rate	17.2%	30.81%	9/10
Funding %	21.3%	27.1%	10/10 – 206/217

Project Description

Integral Aspects of the plan

- Mindset – “Get the plan off the shelf”
- CIF-Guidebook for Waste Recycling Strategy
- CIF funding assistance
- Knowledgeable, open-minded consultants
- Staff eager to become “Recycling Experts”
- Public consultation
- Sound data/information

CIF
CONTINUOUS IMPROVEMENT FUND

Anticipated Results-Goals

- Maintain/improve funding
- Reduce depot costs:
  - target-2012 ($982/tonne)
- Maximize capture rate
  - target-2015 capture rate of 65% (2012-35%)
- Increase promotion & education
  - use CIF tools
  - generate McKellar-specific communication methods

CIF
CONTINUOUS IMPROVEMENT FUND

Program Improvement Timeline

Plan improvement components prioritized based on immediate impact:

April 2010

WRS Development Workshop

↓

May 2010

Solar Compactors (CIF 280)

↓

January 2011

Waste Recycling Strategy

CIF CONTINUOUS IMPROVEMENT FUND

Progress To Date

- *"Generate drastic quantifiable results"*

McKellar Stats	2010	2011 (YTD)	+/-
$/Ton	$2,028.65	$278.45	-$1,750.20
Capture Rate	17.2%	29%	+ 11.8%
Tonnage	57.26	80.67 (90.67)	+ 23.41(+33.41)

- Generation of a sustainable recycling program
- Improvement of integrated waste management program
- Awareness of weakness (positive/negative)

CIF
CONTINUOUS IMPROVEMENT FUND

Conclusion

- Benefits are not possible without support of Recycling Industry, SO, WDO & CIF
- Recycling Plans pave a trail towards efficient, sustainable waste management
- BP & Continuous Improvement transform from “buzzwords” to daily activities
- Development of adaptive, monitored recycling plan can produce tangible results!

For more information
Paul Shipway
admin@township.mckellar.on.ca

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Questions

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Recycling Services Procurement

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

Background

- BP is Effective Procurement & Contract Management
- Effective procurement makes for better contract management
- Majority of programs contract for recycling services
  - collection &/or processing
- This is where programs can make or break program operations

CIF
CONTINUOUS IMPROVEMENT FUND

Effective Procurement

- Provides—quality, flexibility, effectiveness & efficiency
- Not difficult to do—need to include:

Clear Terms	Detailed Background Information
Detailed Performance Specifications	Ability to amend
Incentives and Penalties, performance related	Dispute Resolution
Clear payment terms	Explained evaluation & selection process

CIF
CONTINUOUS IMPROVEMENT FUND

Procurement Initiatives

- E&E Fund had Model Tender on Recyclers' Knowledge Network
- CIF developed new model procurement documents
  - annotated collection & processing RFP's
  - include best practices
  - provide options & examples
  - searchable & downloadable– http://contracts.wdo.ca
- Provide support to programs for RFP development

CIF CONTINUOUS IMPROVEMENT FUND

Today's Speakers

- Cory Smith, Public Works Technologist, Town of Mississippi Mills
- Abby Barclay, Environmental Engineering Technologist, Town of Arnprior

Stratford Example

- Contracting for collection & processing
- Wanting to make changes in recycling program – new contract to reflect changes
- Separate procurement for processing & collection
- Processing RFP—received four submissions
- Successful bid included:
  - expanded program—improved collection options
  - full revenue share—completive processing price
- Evaluating Collection bids as we speak

CIF
CONTINUOUS IMPROVEMENT FUND

Best Practices – Joint Procurement Opportunity

Abby Barclay
Environmental Eng. Tech.
Town of Arnprior

Project Highlights

- Goal:
  - acquire services to collect, process & market recyclable materials from the towns of Renfrew & Arnprior using BP in the procurement process
- Anticipated Impacts:
  - improved contract & best practice compliance
- For more information
  - abarclay@arnprior.ca
  - www.arnprior.ca

CIF CONTINUOUS IMPROVEMENT FUND

State of Affairs

- Town of Arnprior had extended their contract since 2006
  - had no monitor/measurement system
- Town of Renfrew's contract was expiring
- No joint processing services
- No coinciding end dates (between internal waste management contracts or neighbouring municipalities)

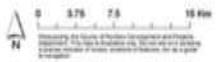
CIF CONTINUOUS IMPROVEMENT FUND

Key Features

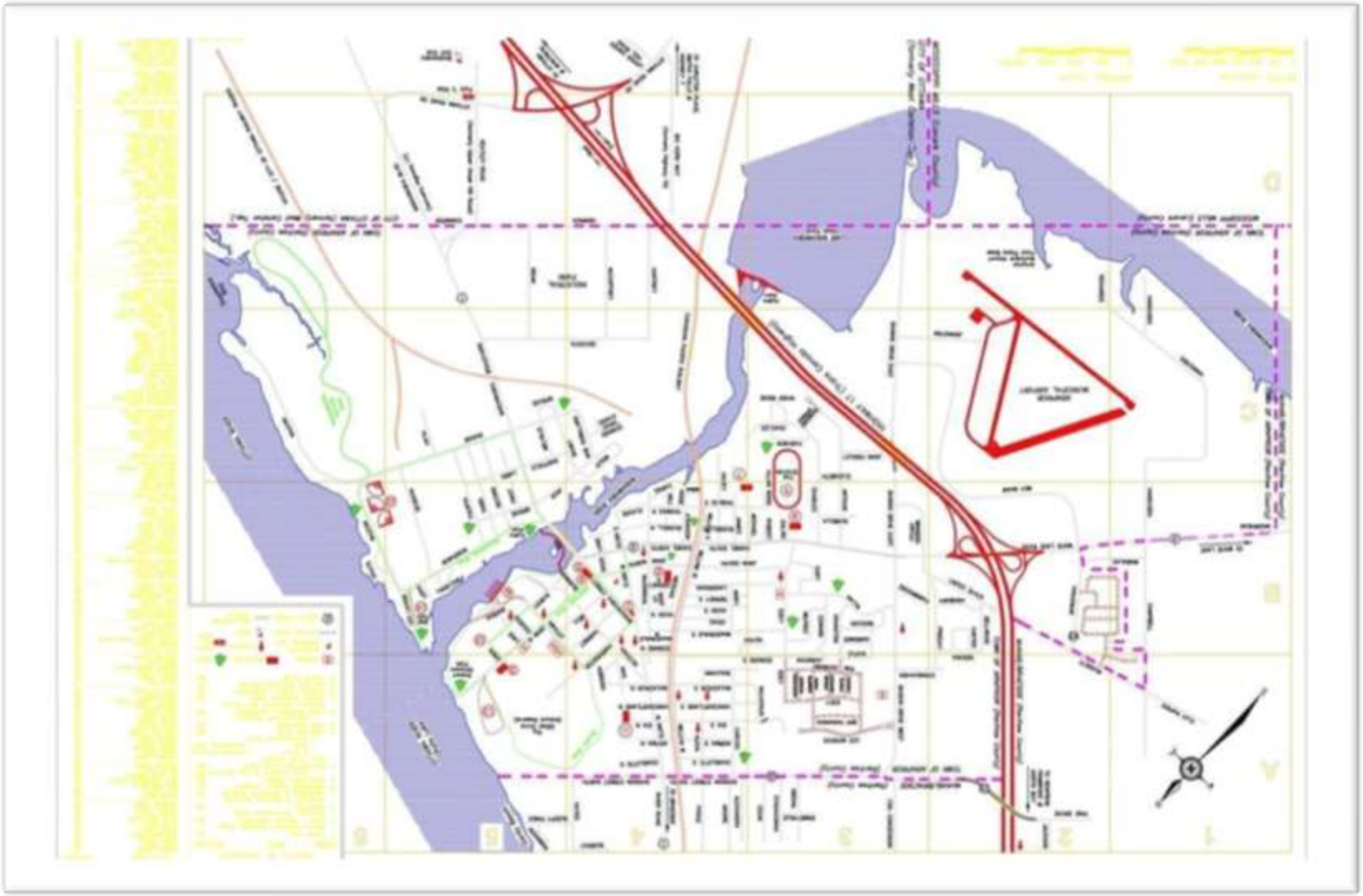
- Establish open dialogue between municipalities for all possible opportunities
- Incorporate all BP elements with support from CIF
  - i.e. synchronizing expiry date of contracts
- Collaborate on RFP for recycling services
- Separate agreement between contractor & each municipality

CIF
CONTINUOUS IMPROVEMENT FUND

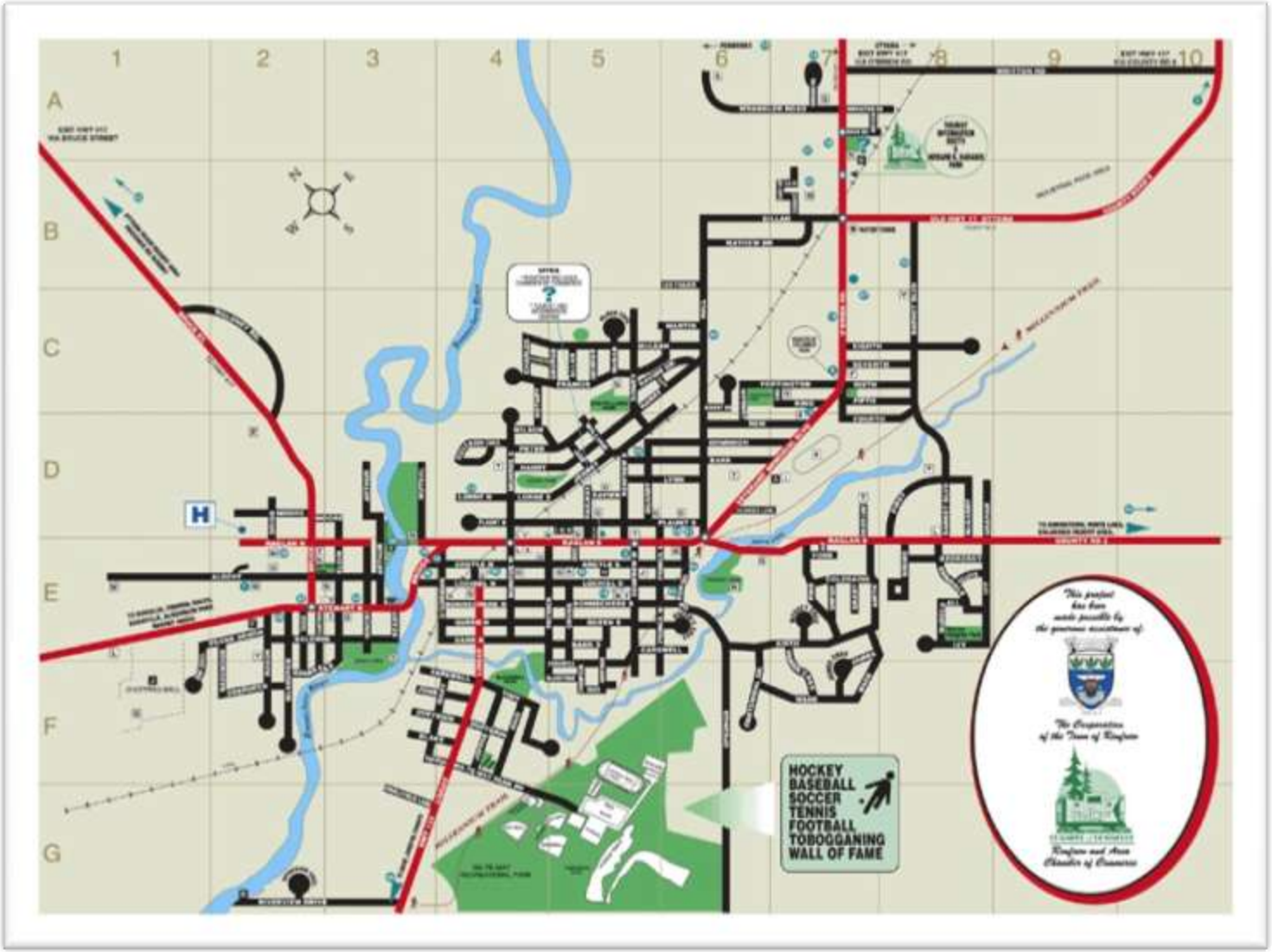
Renfrew County



Town of Anrprior



Town of Renfrew



Benefits

- Cost savings in dividing work & sharing workload with different staff skills & expertise
- Creates better competitive bid process
  - economies of scale
- Promotes enhancement of both recycling programs
  - motivation for continuous improvement
  - expansion of materials
  - improved co-operation

CIF
CONTINUOUS IMPROVEMENT FUND

Results

- Well drafted, detailed contract that encompasses all areas within BP & both Town's individual recycling programs
- Eliminated negative impacts that were not included in each Town's previous contracts
- Cost savings of $2,000/year/municipality
- Addressed importance of relationship management between the contractor & municipalities

CIF
CONTINUOUS IMPROVEMENT FUND

Next Steps

- Monitor & measure the program to provide opportunity for continuous improvement:
  - promotion & education
  - set out rates
  - capture rates
  - contractor operations

You can't manage what you don't measure!

CIF CONTINUOUS IMPROVEMENT FUND

Multi-Municipal Procurement Of Recycling Services

Cory Smith
The Town of Mississippi Mills

Project Highlights

- Project goal:
  - to develop a tender & contract administration model for multi-municipal approach within our Municipal Waste Recycling Group that is mutually beneficial for all
- Anticipated Impacts:
  - lower costs & improved contract management for group
- For more information:
  - csmith@mississippimills.ca
  - http://www.mississippimills.ca

Background

- Mississippi Mills is part of a Municipal Recycling Waste Group (MRWG) with partners:
  - Beckwith, Carleton Place, Montague, Drummond, North Elmsley (formerly also Perth & Smiths Falls)
- MRWG used Multi-Municipal approach to procure waste collection & processing & recycling services (including Blue Box)
  - both used SO Tendering Model
- Very successful Blue Box Recycling Services Tender
  - last tendered in 2005; contract extended through negotiation in 2009 (CIF Project #153)

CIF CONTINUOUS IMPROVEMENT FUND

Advantages of Multi-Municipal Procurement

- Allows purchasing power/leverage
  - Mississippi Mills has 800 tonnes of Blue Box recyclables
  - with Waste Group, 3,700 tonnes of Blue Box recyclables
- Coordination of knowledge & staff resources
- Benefits MRF & collection contractors
  - allows for consistent service
- Using SO Tendering Model
  - well laid out to help with standardization; allows for easier contract co-ordination under admin. portion
  - important decisions made up front
  - contract able to be extended with additional services

CIF
CONTINUOUS IMPROVEMENT FUND

Measuring Our Success

1. New contract negotiated in 2009
2. Materials collected increased
3. Operational costs decreased
4. Mississippi Mills Blue Box tonnes up 7.5% in 2010
   - number corrected for growth

Coordination

- Coordination of the process
  - who takes the lead?
- Can be cause of delay
- Can limit effectiveness of program
  - not all municipalities have same ideas
- Can maximize staff effectiveness
  - many hands make light work

CIF
CONTINUOUS IMPROVEMENT FUND

Where Do We Go From Here?

- Preparation for next Tender/RFP
- Gather appropriate information for making up front system decisions
  - the industry is changing
- Allow appropriate time for review
  - many hands = many decision makers

CIF
CONTINUOUS IMPROVEMENT FUND

Conclusions

- Is Multi Municipal Procurement of Recycling Services BP?
  - for Mississippi Mills−yes
- Does Multi Municipal Procurement of Recycling Services allow for continuous improvement?
  - for Mississippi Mills−yes
- Are there Challenges with Multi Municipal Procurement of Recycling Services?
  - for Mississippi Mills−yes, but worth the effort

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Questions

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Morning Wrap-up

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Enjoy Your Lunch

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

We're about to resume…

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CIF
CONTINUOUS IMPROVEMENT FUND

Welcome Back

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO

This Afternoon…

- Automated Collection: The Wave of the Future
- The Future Of Blue Box Collection
- Break
- Reflections on Managing Printed Papers & Packaging

CIF
CONTINUOUS IMPROVEMENT FUND

Auto Collection
The Wave of the Future?

Mike Birett
CIF

Background

- Auto cart collection has been an established practice in North America for decades
- Long standing debates about boxes, bags & carts
- Lingering questions about user friendliness, capital costs, functionality in different conditions

CIF
CONTINUOUS IMPROVEMENT FUND

CIF Funding

- CIF has funded several cart based projects:
  - CIF 248 Guelph
  - CIF 548.11 Toronto
  - CIF135 Bluewater
  - numerous multi-res applications
- Objective is to better understand their benefits & potential limitations

Today's Speakers

- Our speakers will provide updates on:
  - current CIF projects
    - Francis Veilleux, Bluewater Recycling Association
    - Kevin Vibert, City of Toronto
  - related technologies
    - Paul Speed, Rehrig Pacific Company
  - vehicular innovations
    - Joe. C. Williams, Innovative Hydrogen Solutions

CIF
CONTINUOUS IMPROVEMENT FUND

BRA Automated Collection Large Curbside Containers Project #559.3

Francis Veilleux
Bluewater Recycling Association

Project Highlights

- Project goal:
  - convert collection system to fully automated
- Anticipated impacts:
  - decrease system cost
  - increase diversion
- More information:
  - bluebox@bra.org
  - www.bra.org

Blue Box Program

- Launched in 1981
- Introduced Recycling
- UN Environment Award
- Undeniable Success

CIF
CONTINUOUS IMPROVEMENT FUND

Blue Box Recyclables

Now

Then

CIF
CONTINUOUS IMPROVEMENT FUND

Problems With Success

- Overflowing Boxes Create Litter Issues
- Lack of Capacity to Increase Further Recovery
- Poor Ergonomics Leading to Injuries
- Subject to Extreme Weather Conditions
- Scavenging is Easy & Costly

CIF
CONTINUOUS IMPROVEMENT FUND


Reese


BRA

Automated Collection

CIF
CONTINUOUS IMPROVEMENT FUND

Why Automate?

- Higher Productivity
- Increased Efficiency
- Increased Workers' & Users' Safety
- Reduce Litter & Unsightly Setouts
- Easy to Handle by Residents
- Discourages Scavenging
- Improves Neighbourhood Esthetics

CIF
CONTINUOUS IMPROVEMENT FUND

Recycling Container Option

65 Gallon

Option
4 Blue Boxes
Ideal for Individuals

95 Gallon

Standard
6 Blue Boxes
Built for Families

Convenience Depot

CIF
CONTINUOUS IMPROVEMENT FUND


BRA

City of Toronto Automated Cart Collection
Project #548.11

Kevin Vibert
City of Toronto

Project Background

- 2008: Toronto rolled out recycling & garbage carts
  - 454,000 residents with curbside collection
- Spring 2010: CIF issued REOI identifying priority projects with BP grants including:
  - automated collection
  - large curbside containers

- *For more information*:
  - kvibert@toronto.ca

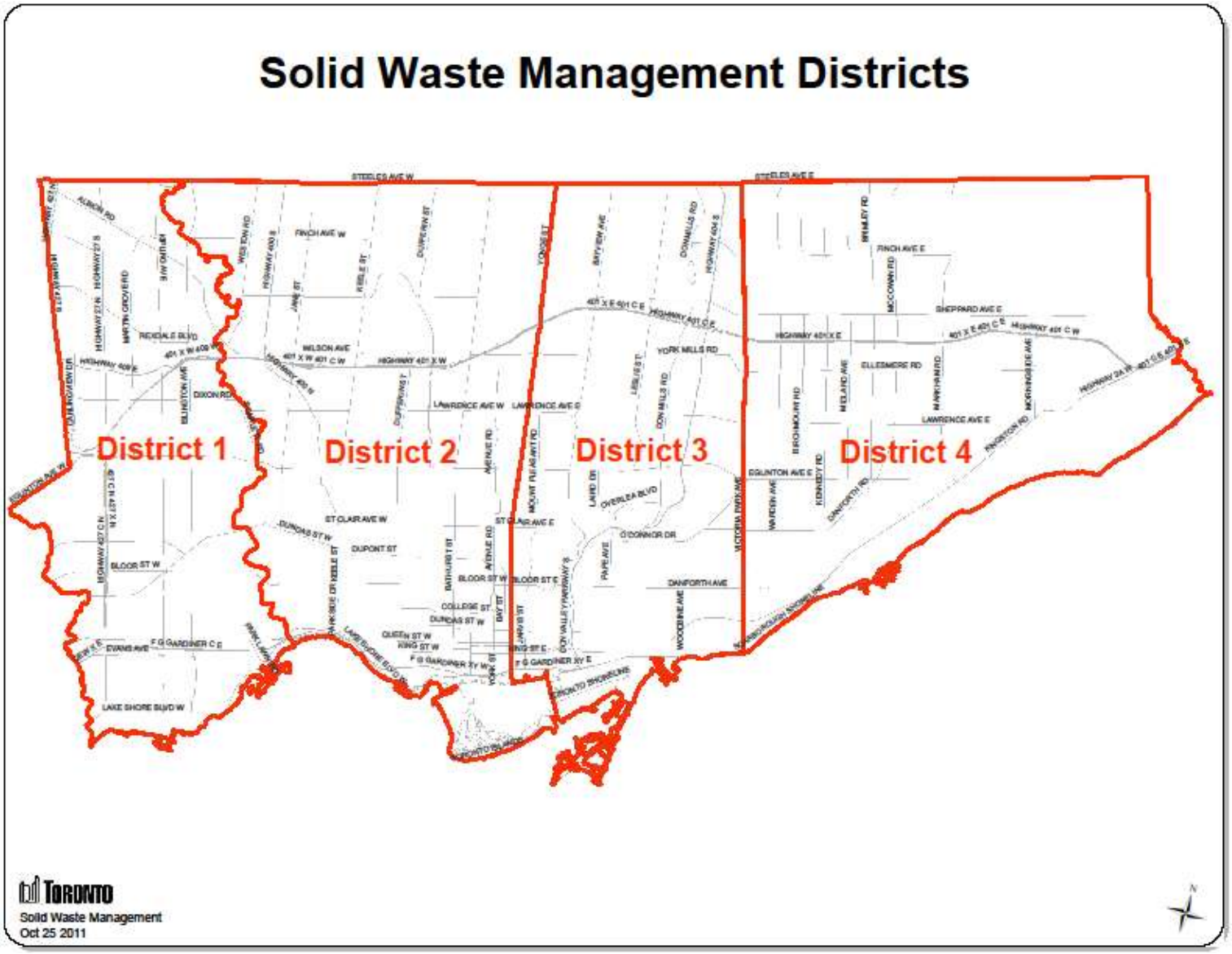
Project Scope

- Purchase 10,000 recycling bins for new residents.
- Purchase 46 automated collection trucks
  - 1st tender, 21 automated side loading trucks
    - delivery 2010 (20 diesel, 1 NG)
  - 2nd tender, 25 automated side loading trucks
    - delivery 2011 (23 diesel, 2 NG)
- Total Cost $11.7M; CIF Contribution 1.4M

CIF CONTINUOUS IMPROVEMENT FUND

Automated Collection

Solid Waste Collection Districts



Automated Collection Trucks

1st tender Labrie

2nd tender McNeilus

CIF
CONTINUOUS IMPROVEMENT FUND

Automated Collection Findings

- 21 semi-automated side loading trucks replaced with fully-automated side loading
- Automated side loading trucks cost approximately 70K more than semi–automated trucks
- Staffing
  - 2010 District 4 collection staff compliment 135
  - 2011 District 4 collection staff compliment 118
    - reduction of 17 staff or 13%

Natural Gas Truck Findings

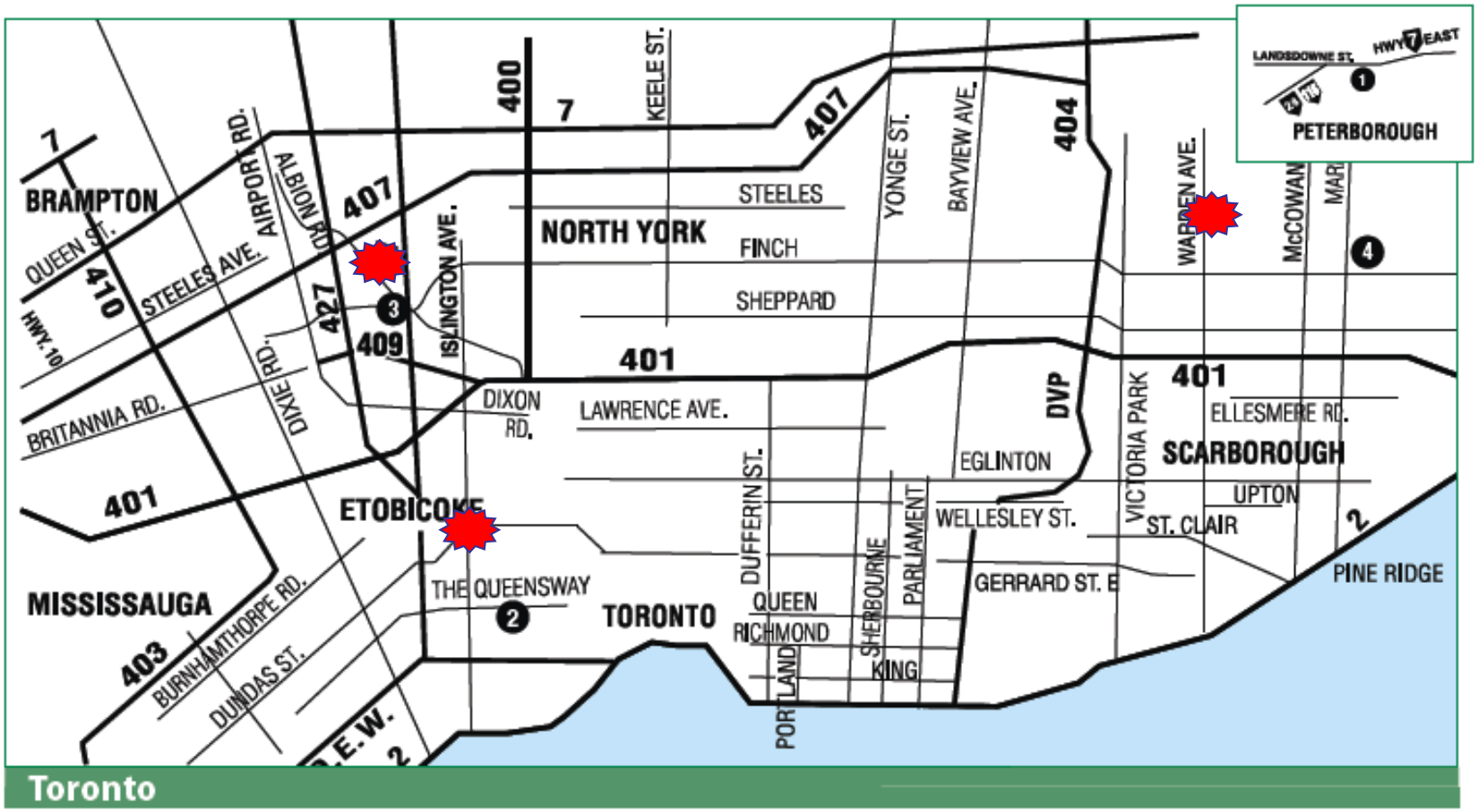
- NG trucks now cost approximately $11,000 more than diesel
- Natural gas costs
  - in 2011, NG cost $0.49/cubic meter
  - average cost = $1.33/km
  - yearly cost based on 13,000 km = $17,290
- Diesel costs
  - in 2010, diesel fuel cost $1.01/litre
  - average cost = $1.73/km
  - yearly cost based on 13,000 km = $22,490
- Difference $5,200

CIF
CONTINUOUS IMPROVEMENT FUND

Natural Gas Stations

ENBRIDGE GAS DISTRIBUTION

Franchise Area



Toronto

Greater Toronto Area

Natural Gas Truck Findings (2)

- Approximately 1 hour/day to fill truck
  - 20 minutes fueling time + travel time
- NG trucks have less power & operate slower
  - 10% slower (*estimate from crew)
- Enbridge fuel rental stations
  - connect to existing gas line
    - slow-fill overnight
    - cost approximately $4,000/yr

CIF CONTINUOUS IMPROVEMENT FUND

Best Practice Analysis & Next Steps

- Carts−Yes
  - reduce WSIB claims, reduce blowing litter & increase capacity; residence prefer over BB
- Automated Collection–Yes for Toronto
  - reduce staffing & operational costs
- CNG Truck–uncertain–further analysis required
- Next Steps:
- Time motion studies comparing automated versus semi-automated collection
- More detailed CNG truck monitoring
  - examine maintenance/repair costs compared to diesel; detailed fuel analysis
- Final report to CIF fall 2012

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

RFID Technology in Blue Box Recycling

Paul Speed
Rehrig Pacific Company

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO

Rehrig Pacific

- Family-owned company founded in 1913
- Leading manufacturer of curbside containers for recycling, organics & refuse programs
  - 32M Blue Boxes & 25M carts on the street. 60% of all RFID systems in N.A
  - Timmins, BRA & Toronto
- Developed Environmental Services Group in 2007 to support Toronto roll out. We provide the following services to our industry:

Asset Tracking

- C.A.R.T.S. – container inventory and work order tracking

RFID Tracking Services

- Service Verification Tracking, Participation, Lost Containers "Every Day Audits"
- 2.8 million RFID enabled containers on the street in over 75 customer locations

On Street Services

- In-House A&D, RFID Retrofitting, Route Auditing, and Container Management

Agenda/Goal for Today

Illustrate How Technology Can:

- Automate the asset (carts/bins) tracking process
- Minimize the loss of containers
- Eliminate the possibilities of servicing non paying accounts
- Re-Coup Lost Collection Revenue
- Increase Revenues from Recycling Programs

What have we learned?

Improved cart management can save money!

- A&D/Retrofit Audit Programs
  - Rehrig Pacific conducted a review of 32 programs (over 600,000 addresses) that used C.A.R.T.S. to distribute new carts or retrofit existing carts with RFID tags
  - found that approx 3% of customers serviced were not on the original customer account list
- Route Audit Program Findings – findings savings
  - Rehrig found several cases in mature programs where 10% or more of homes were only paying for one trash container, but had two or more
- Customer Case Study
  - a long term customer with 30,000 billable accounts, purchased 38,000 carts over 10 years = 2.6% container loss per year. Estimated at roughly $400,000 in excess container purchases!

Cost of Servicing Misplaced Carts

Operational Cost for Misplaced Refuse Carts	
Description	**Inputs**
# of Carts Misplaced	1
Tipping Fees Per Ton	$45.00
Average Pounds of Trash Per Cart Per Week	40
Collection Frequency Per Week	1
Cost Per Cart	$45.00
Pounds Collected Per Cart Per Year	2,080
Annual Collection Cost for Every Misplaced Cart	$46.80
Work Order Cost to Replace Misplaced Cart	$10.00
Capital Loss Associated with Every Misplaced Cart	$45.00
Total Annual Operational Cost for Every Misplaced Cart	**$101.80**
Existing Cart Float	50,000
Average % of carts that are misplaced per year	2%
Total Annual Operational Cost Related to Misplaced Carts	**$101,800**

Street Number	Street Name	Item Type	Resolution	Resolution Date	Route	Account Number	Serial Number	RFID	Latitude	Longitude	GPS Results
3110	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:35:37.000	WED-430	1	65R012935	000109414C04720526503287	26.16504	-80.2842	GPS READ
3120	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:57.000	WED-430	2	65R012943	000109414C0472052650328F	26.16519	-80.2842	GPS READ
3121	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:31.000	WED-430	3	65R012971	000109414C047205265032AB	26.16515	-80.2843	GPS READ
3140	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:47.000	WED-430	4	65R012941	000109414C0472052650328D	26.16526	-80.2842	GPS READ
3141	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:11.000	WED-430	5	65R012972	000109414C047205265032AC	26.16534	-80.2843	GPS READ
3160	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:28.000	WED-430	6	65R012973	000109414C047205265032AD	26.16541	-80.2842	GPS READ
3161	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:33:54.000	WED-430	7	65R012976	000109414C047205265032B0	26.1655	-80.2843	GPS READ
3180	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:34:12.000	WED-430	8	65R012974	000109414C047205265032AE	26.16554	-80.2843	GPS READ
3200	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:33:52.000	WED-430	9	65R012936	000109414C04720526503288	26.16574	-80.2843	GPS READ
3210	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:33:30.000	WED-430	10	65R012948	000109414C04720526503294	26.16597	-80.2844	GPS READ
3220	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:33:15.000	WED-430	11	65R012945	000109414C04720526503291	26.1661	-80.2844	GPS READ
3221	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:32:48.000	WED-430	12	65R013127	000109414C04720526503347	26.16613	-80.2846	GPS READ
3230	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:32:46.000	WED-430	13	65R013128	000109414C04720526503348	26.16623	-80.2845	GPS READ
3240	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:32:18.000	WED-430	14	65R013124	000109414C04720526503344	26.16633	-80.2845	GPS READ
3241	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:32:26.000	WED-430	15	65R013125	000109414C04720526503345	26.16632	-80.2846	GPS READ
3260	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:31:44.000	WED-430	16	65R013126	000109414C04720526503346	26.16654	-80.2846	GPS READ
3261	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:32:17.000	WED-430	17	65R012975	000109414C047205265032AF	26.16639	-80.2847	GPS READ
3280	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:31:11.000	WED-430	18	65R013129	000109414C04720526503349	26.16661	-80.2847	GPS READ
3281	101ST AVE NW	65R	Request Fulfilled	2011-07-26 12:31:59.000	WED-430	19	65R012977	000109414C047205265032B1	26.16661	-80.2848	GPS READ
2320	101ST TER NW	65R	Request Fulfilled	2011-07-18 11:19:08.000	FRI-431	20	65R006119	000109414C047205265017E7	42.52908	-87.8995	GPS READ
2340	101ST TER NW	65R	Request Fulfilled	2011-07-18 11:18:53.000	FRI-431	21	65R006117	000109414C047205265017E5	26.15327	-80.2851	GPS READ

Accurate Billing Database

RPL Delivery Detail Report

RPL
Rehrig Penn Logistics™

Report Parameters Used
StartDate: 9/1/2011
EndDate: 10/21/2011

Portal: LAKELAND, FL

	Route	Resolution	Service #	Street #	Suf	Street Name	Unit #	Serial#	RFID
AM	EZ64T	Request Fulfilled	2026520	3105		BOGER BL W		65G003202	0001094C4114120476500C
AM	EZ64T	Request Fulfilled	2026521	3115		BOGER BL W		65G003200	0001094C4114120476500C
AM	EZ64T	Request Fulfilled	2026523	3123		BOGER BL W		65G003203	0001094C4114120476500C
AM	EZ64T	Request Fulfilled	2026525	3137		BOGER BL W		65G003161	0001094C4114120476500C
PM	EZ64T	Request Fulfilled	2026584	505		LEE CR		65G003246	0001094C4114120476500C
PM	EZ64T	Request Fulfilled	2026533	410		BOGER BL S		65G003420	0001094C4114120476500D
PM	EZ64T	Request Fulfilled	2026541	3130		BOGER BL E		65G003273	0001094C4114120476500C
PM	EZ64T	Request Fulfilled	2026519	521		BOGER BL N		95G001317	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026522	3119		BOGER BL W		95G000909	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026524	3131		BOGER BL W		95G001521	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026526	524		BOGER BL S		35G001817	0001094C4114120473500
PM	EZ64T	Request Fulfilled	2026527	520		BOGER BL S		95G000258	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026528	514		BOGER BL S		95G006034	0001094C4114120479501
PM	EZ64T	Request Fulfilled	2026529	504		BOGER BL S		95G001687	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026583	503		LEE CR		95G000007	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026586	509		LEE CR		95G002381	0001094C4114120479500
PM	EZ64T	Request Fulfilled	2026587	511		LEE CR		95G001947	0001094C4114120479500

C.A.R.T.S. ROI

C.A.R.T.S. Customer Audit ROI	
Use C.A.R.T.S for A&D, Retrofits or a Route Audit and Identify Non Paying Customers	
Description	**Inputs**
Number of Homes in Address List Provided	50,000
% of Customers Not on Billing List as Identified in the Field with C.A.R.T.S.	2.00%
Estimated Cost of Collection Service Per Month	$15.00
Term of Collection Contract in Months	60
A&D Cost Per Cart	$5.00
Recouped Monthly Revenue	**$15,000.00**
Customer ROI	**$650,000.00**

Let Rehrig Pacific help you recoup your lost revenue!

RPL
Nothing Plann Logistics

Inventory Summary

2/26/2008 3:29 PM

Location Type	Item Type	Status	Quantity
Distribution			
	35 Gallon Recycle Cart	At Residence	0
	35 Gallon Recycle Cart	In Stock	12,058
	35 Gallon Recycle Cart	In Transit	1
	35 Gallon Recycle Cart	Newly Manufactured	0
	65 Gallon Recycle Cart	At Residence	0
	65 Gallon Recycle Cart	In Stock	51,174
	65 Gallon Recycle Cart	In Transit	1,288
	65 Gallon Recycle Cart	Newly Manufactured	0
	95 Gallon Recycle Cart	At Residence	0
	95 Gallon Recycle Cart	In Stock	4,888
	95 Gallon Recycle Cart	In Transit	0
		Location Type Subtotal:	**69,409**
MFG Plant			
	35 Gallon Recycle Cart	Newly Manufactured	4,854
	65 Gallon Garbage Cart	Newly Manufactured	3,360
	65 Gallon Recycle Cart	Newly Manufactured	5,125
	95 Gallon Recycle Cart	Newly Manufactured	11
		Location Type Subtotal:	**13,350**
Multi Family Home			
	35 Gallon Recycle Cart	At Residence	614
	65 Gallon Recycle Cart	At Residence	5,767
	95 Gallon Recycle Cart	At Residence	739
		Location Type Subtotal:	**7,120**
Single Family Home			
	35 Gallon Recycle Cart	At Residence	6,470
	65 Gallon Recycle Cart	At Residence	73,003
	95 Gallon Recycle Cart	At Residence	15,538
		Location Type Subtotal:	**95,011**
		Report Total:	**184,890**

RPL
Rehrig Penn Logistics™

Frederick County, MD Closed Work Order By Route Report

From 6/8/2009 to 6/15/2009

SR Num	Attempt Count	Service Address	Service Description	Requested Date	Completion Date	Days to Comp	Maintenance Resolution	Srvc'd Item
Route: 80								
AWFC000018698	1	114 E 4TH ST	New Account Medium 35Gallon/Recycle Cart	6/12/2009	6/13/2009	1	Delivered Bin or Cart	35R002662
AWFC000018688	1	245 MOUNTAIN TER	New Account Large 65Gallon/Recycle Cart	6/11/2009	6/11/2009	0	Delivered Bin or Cart	65R060342
AWFC000018522	1	10331 KEYSVILLE RD	Size Swap to Medium 35Gallon/Recycle Cart	6/10/2009	6/12/2009	2	Resident Cancelled order	
AWFC000018508	1	8132 BOLIVAR RD UNIT #A	New Account Large 65Gallon/Recycle Cart	6/10/2009	6/11/2009	1	Delivered Bin or Cart	65R057725
AWFC000018076	1	13150 NEW WINDSOR RD	Size Swap to Extra Large /95Gallon/Recycle Cart	6/8/2009	6/8/2009	0	Cart or Bin Swap/Exchange	95R000844
AWFC000018257	1	205 E 3RD ST	New Account Medium 35Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	35R003419
AWFC000018157	1	210 E CHURCH ST	New Account Medium 35Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	35R002661
AWFC000018187	1	2213 W GREENLEAF DR	Size Swap to Extra Large /95Gallon/Recycle Cart	6/8/2009	6/12/2009	4	Cart or Bin Swap/Exchange	95R000722
AWFC000018128	1	2425 LONGFELLOW CT	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R003742
AWFC000018192	1	7005 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062594
AWFC000018194	1	7018 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062498
AWFC000018167	1	7105 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062508
AWFC000018169	1	7105 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062507
AWFC000018172	1	7108 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062543
AWFC000018174	1	7108 EDGEMONT RD	New Account Large 65Gallon/Recycle Cart	6/8/2009	6/10/2009	2	Delivered Bin or Cart	65R062544

CIF
CONTINUOUS IMPROVEMENT FUND

RFID Features (1)

- Eliminates cost of printing work orders
  - on a program with 3500 work orders per month, this could result in a $350-$1,000 monthly cost savings
- Minimizes Administrative & IT Support
  - eliminate three hours of admin work per day and save $900. per month
- Reduces lost containers/capital loss
  - program with 30K carts that experiences 2% container loss over 1-year, can result in $30,000 loss of capital
- Minimizes purchases of excess containers
- Inventory, Work Order & Warranty Tracking
  - provides Online Visibility of Inventory, work orders & streamlines the warranty process
- Provides accurate billing data & maintains your billing database
  - avoid servicing non paying accounts
  - pro-actively track lost or stolen assets

RFID Features (2)

- Asset Management Programs
  - proactively track lost & stolen containers “every day audit”
- Collection Data Tracking Programs
  - service verification
  - recycling participation pay-as-you-throw programs
  - typically volume based incentive based recycling programs
  - rewarding people for their recycling efforts
- Improving Collection Efficiencies
  - visibility of your operations
  - route optimization & balancing
  - collection time studies

Service Verification/Participation

RPL
Rehrig Penn Logistics™

Report Parameters Used

StartDate: 3/14/2011
EndDate: 3/18/2011
Route: EZ01F
Times Participated: 1

Portal: City of Lakeland Florida

Serial #	Service #	Street #	Suffix	Street Name	Unit #	City	State	ZIP	TruckID	Latitude	Longitude	Tip Date
95G002159	2113379	2142		DEERFIELD DR		Lakeland	FL	33813	7186150	27.9910	-81.9253	3/18/2011 5:16:03 AM
65G001919	2115360	2140		DEERFIELD DR		Lakeland	FL	33813	7186150	27.9910	-81.9254	3/18/2011 5:16:23 AM
95G002607	2092066	2114		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9908	-81.9257	3/18/2011 5:17:23 AM
35G001288	2054411	2110		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9908	-81.9259	3/18/2011 5:18:08 AM
65G001812	2036479	2106		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9907	-81.9260	3/18/2011 5:18:28 AM
95G004709	2036481	2092		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9264	3/18/2011 5:18:58 AM
35G001845	2060745	2080		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9904	-81.9265	3/18/2011 5:19:18 AM
95G005054	2021838	4820		DENISE AV		Lakeland	FL	33813	7183750	27.9773	-81.9264	3/18/2011 5:19:21 AM
95G004539	2054816	2070		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9268	3/18/2011 5:19:38 AM
65G002563	2021839	2035		E GACHET BL		Lakeland	FL	33813	7183750	27.9778	-81.9264	3/18/2011 5:19:46 AM
95G004540	2069116	2062		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9904	-81.9270	3/18/2011 5:20:18 AM
95G005865	2021817	2025		E GACHET BL		Lakeland	FL	33813	7183750	27.9777	-81.9264	3/18/2011 5:20:41 AM
95G004704	2068902	2058		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9904	-81.9271	3/18/2011 5:20:43 AM
65G002526	2021818	4819		DENISE AV		Lakeland	FL	33813	7183750	27.9774	-81.9265	3/18/2011 5:21:01 AM
35G002112	2036483	2054		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9272	3/18/2011 5:21:03 AM
65G002603	2036484	2050		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9272	3/18/2011 5:21:18 AM
65G002528	2021819	4825		DENISE AV		Lakeland	FL	33813	7183750	27.9771	-81.9265	3/18/2011 5:21:21 AM
95G004708	2047136	2046		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9275	3/18/2011 5:22:08 AM
95G003769	2047135	2042		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9275	3/18/2011 5:22:48 AM
95G004716	2036486	2038		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9905	-81.9276	3/18/2011 5:25:23 AM
95G002870	2069638	2030		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9904	-81.9278	3/18/2011 5:25:48 AM
35G001167	2068963	2026		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9903	-81.9278	3/18/2011 5:27:08 AM
95G002863	2061056	2022		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9902	-81.9279	3/18/2011 5:27:28 AM
95G003203	2087021	2018		WINDWARD PASS		Lakeland	FL	33813	7186150	27.9902	-81.9279	3/18/2011 5:27:43 AM

Non Participants

RPL NON-Collection By Route Detail Report

RPL Rehrig Penn Logistics™

Report Parameters Used
StartDate: 3/14/2011
EndDate: 3/18/2011
Route: EZ01F

Portal: City of Lakeland Florida

Serial #	Service #	Street #	Suffix	Street Name	Unit #	City	State	ZIP
35G002120	2129466	4203		ARIETTA LN		Lakeland	FL	33813
95G002201	2129475	4204		ARIETTA LN		Lakeland	FL	33813
95G003764	2129467	4205		ARIETTA LN		Lakeland	FL	33813
95G005959	2129474	4206		ARIETTA LN		Lakeland	FL	33813
65G002468	2129468	4207		ARIETTA LN		Lakeland	FL	33813
95G005042	2129473	4208		ARIETTA LN		Lakeland	FL	33813
95G002150	2129469	4209		ARIETTA LN		Lakeland	FL	33813
95G002359	2129472	4210		ARIETTA LN		Lakeland	FL	33813
95G002149	2129470	4211		ARIETTA LN		Lakeland	FL	33813
95G005044	2129471	4212		ARIETTA LN		Lakeland	FL	33813
95G006306	2036380	3813		BENT TREE LP E		Lakeland	FL	33813
35G002060	2036381	3821		BENT TREE LP E		Lakeland	FL	33813
95G006302	2036382	3829		BENT TREE LP E		Lakeland	FL	33813
35G002115	2036374	3830		BENT TREE LP E		Lakeland	FL	33813
95G006301	2036384	3845		BENT TREE LP E		Lakeland	FL	33813
65G002579	2036385	3909		BENT TREE LP E		Lakeland	FL	33813
95G004954	2036415	2028		BENT TREE LP N		Lakeland	FL	33813
35G002061	2036413	2044		BENT TREE LP N		Lakeland	FL	33813
95G002224	2036425	3903		BENT TREE LP W		Lakeland	FL	33813
35G001755	2129486	4257		BUFFUM PL		Lakeland	FL	33813
65G002470	2129487	4259		BUFFUM PL		Lakeland	FL	33813
65G002586	2129488	4261		BUFFUM PL		Lakeland	FL	33813
95G002151	2129489	4263		BUFFUM PL		Lakeland	FL	33813

Recycling Participation Increase ROI

	Today	Tomorrow
Homes	72,000	72,000
Annual Residential Recycling Tonnage	17,486	26,609
Participation rate	46%	70%
Average Pound Per House Per Pickup	40.61	40.61
Collection Frequency/Pickups Per Year	26	26
Total Number of Homes Participanting	33,120	50,400
Annual Recycling Tons from Increased Particpation		9,123
Revenue from Recycling MRF	$35.00	**$319,312.30**
Disposal Cost Avoidance	$45.00	**$410,544.39**
Total Annual Revenue/Cost shift from Participation Increase	**$729,856.70**	

Hydrogen Enhanced Combustion for Recycling Trucks Innovative Hydrogen Solutions Inc.

Joe C. Williams, President,
Innovative Hydrogen Solutions Inc.

Project Highlights

- Project goal:
  - demonstrate effectiveness of IHS i-phi system in curbside recycle truck application
- Anticipated impacts:
  - increased mileage
  - cleaner engine
  - reduced emissions
  - reduced carbon footprint
- More information:
  - jcw@ihstruck.com
  - www.ihstruck.com

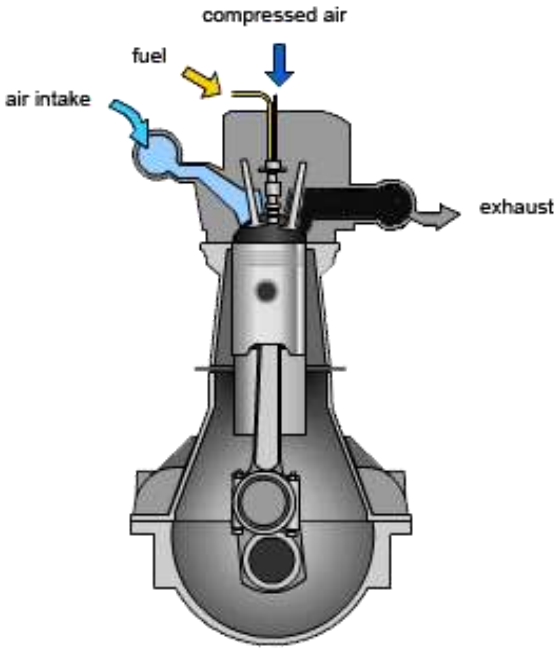
The i-phi

- No maintenance—just add distilled after once a week
- Only connections are to the battery, alternator & air intake
- Uses only about 25 amps
- Safe & reliable

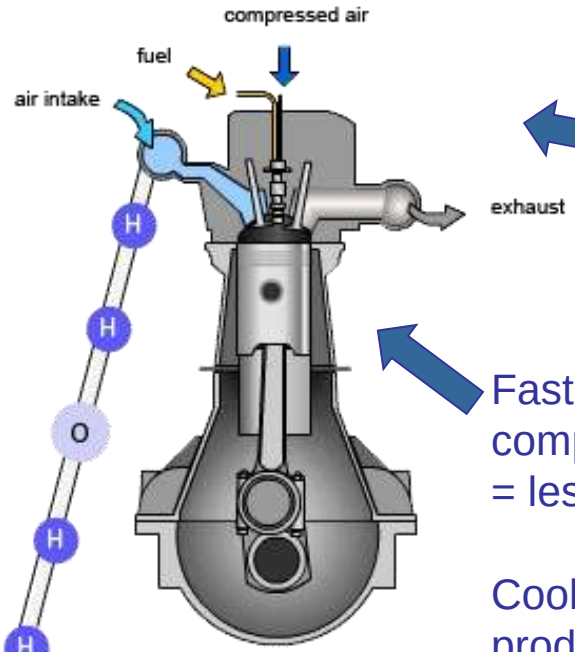
CIF
CONTINUOUS IMPROVEMENT FUND

How the *i-phi* works

Diesel Engine



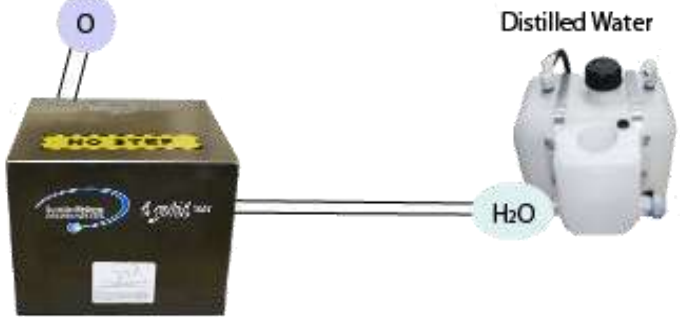
Diesel Engine With IHS *i-phi*



Reduces Particulate Matter

Faster more complete burn = less fuel used

Cooler burn produces less NOx



CIF CONTINUOUS IMPROVEMENT FUND

Expected Benefits

- Cleaner burn means cleaner engine & exhaust
- Reduce frequency of oil changes
- Fewer if any EGR replacement
- Fewer Regen cycles on DPF filter
- Cleaner exhaust & cleaner vehicle

CIF
CONTINUOUS IMPROVEMENT FUND

Continuous Improvement Fund Field Trials

- From April 3, 2011 to October 2, 2011
- Tested on five recycling trucks—urban & rural curbside pickup runs
  - Plein Disposal in Waterloo Region
  - Turtle Island in York Region
- Tests conducted by Global MRV—independent testing company that manufactures Portable Emission Measuring equipment
- Results
  - fuel savings averaged 7.27%
  - particulate matter reduced by an average of 38.26%
  - NOx reduced by average of 29.89%

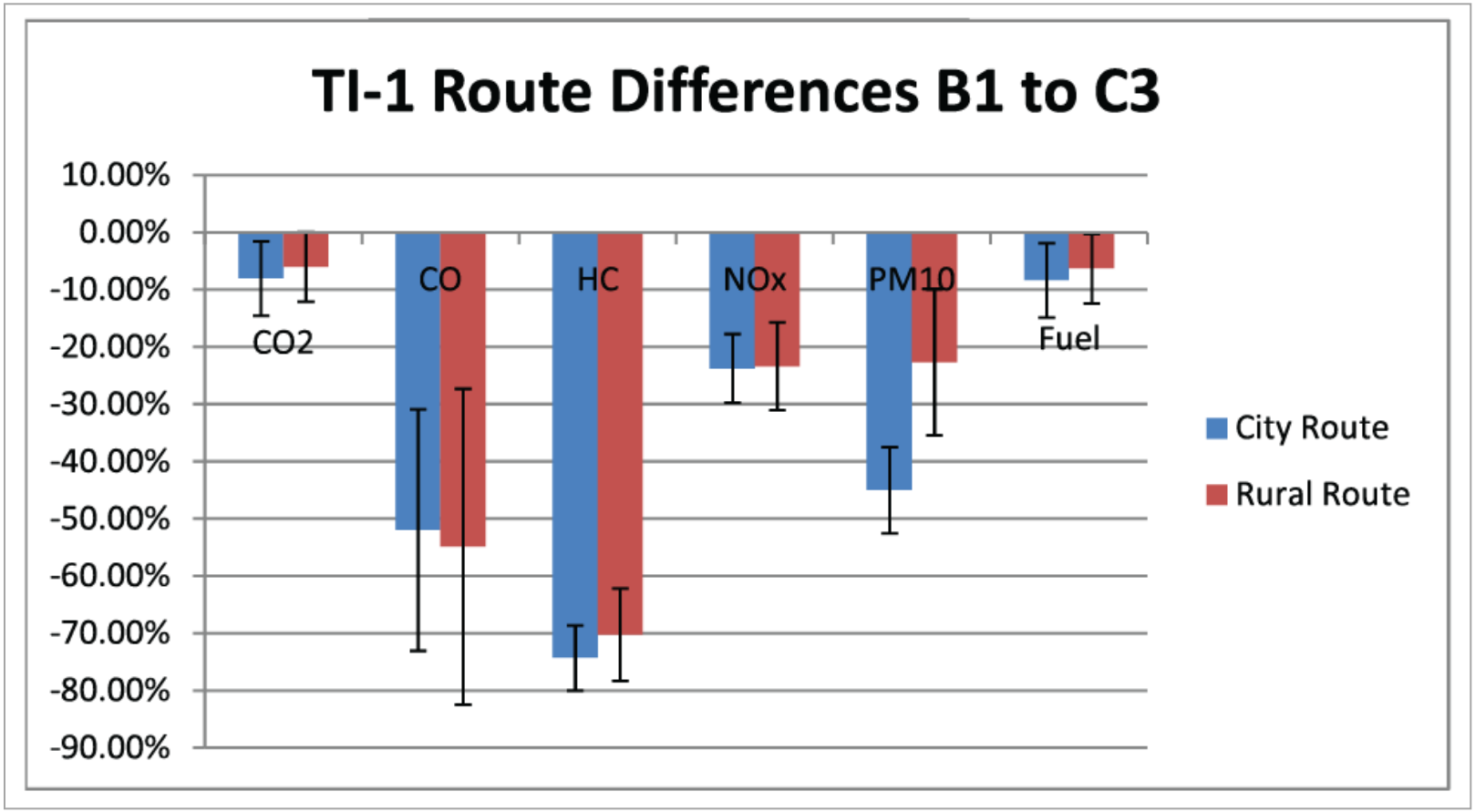
CIF
CONTINUOUS IMPROVEMENT FUND

CIF Test Results

- Fuel savings averaged 7.27%
- Particulate matter reduced by average of 38.26%
- NOx reduced by average of 29.89%
- One of five test trucks had non-related maintenance during the trial & excluded from final results

CIF
CONTINUOUS IMPROVEMENT FUND

Turtle Island Results



Customer ROI Model

Sample ROI	Monthly	Annual
Km / Month	4,000	48,000
Litres / Km	0.6	
Litres / Month	2,400	28,800
Cost / Litre	1.20	
Cost / Month	2,880	34,560
Average Fuel Savings	7.27%	
Fuel Savings / Month	$209	2,513
Oil Change Frequency (Kms)	15,000	
Cost	300	
Km / Yr	48,000	
Oil Changes / Yr	3.2	
Cost of Oil Changes	960	
Reduction in Oil Changes	50%	
Oil Change Savings	$40	$480
Total Savings	$249.38	$2,993

Unit cost:	$9,995
Typical installation:	$1,000
Total cost:	$10,995
Typical monthly lease:	$375
Payback period:	3.6 years

*Rental program available

Other Uses

- I-phi works on all diesel engines
- Better results & payback on highway runs

CIF
CONTINUOUS
IMPROVEMENT FUND

Help Clean-up the Environment

- Reduce your carbon footprint
- Reduce particulate matter & NOx emissions
- While cleaning the environment you also:
  - reduce your maintenance
  - keep trucks on the road longer
  - **SAVE MONEY**

Let's Clear the Air!

www.ihstruck.com

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Questions

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Enjoy Your Break

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

Welcome Back

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

The Future of Blue Box Collection

Mike Birett
CIF

Background

- Blue Box composition is an evolving thing
  - addition of new products
  - evolution of existing products
- Potentially significant implications to collection & processing
- Today's speakers will give us a glimpse at what:
  - we're seeing at curb
  - we might expect in future

CIF CONTINUOUS IMPROVEMENT FUND

The Changing Evolution of Blue Box Composition

Larry Freiburger
AET Consultants

Highlights

- Purpose:
  - to discuss changing evolution of Blue Box recycling composition & identify key trends including common themes
- For more information:
  - lfreiburger@aet-consultants.com www.aet-consultants.com

Considerations

- Is the changing evolution based on weight or volume or both?
- How has Blue Box composition evolved?
- What has caused the evolution of Blue Box composition?
- What are some key indicators driving changing composition?
- What are the composition studies telling us?

CIF
CONTINUOUS IMPROVEMENT FUND

3 Main Themes

1. Volume vs. weight
2. Municipal Blue Box recycling programs
3. Changes in types of packaging used

CIF
CONTINUOUS IMPROVEMENT FUND

1. Is it a matter of weight or volume?

Source: WellHome.com

1. Is it a matter of weight or volume?

2006 Study: 1 blue box eq. + overflow = 1.69kg

2011 Study: 2.5 blue box eq. = 2.34kg or 0.94kg/blue box

2. More Blue Box Materials Accepted

3. Changes in type of packaging

- Shift to more recyclable packaging (e.g. PET packaging)

3. Changes in type of packaging

- More plastic overwrap & mixed resins

Conclusions

- Blue Box composition has & is evolving
- Volume density needs to be considered—optimized, greener packaging means less weight by volume but not always less material composition by volume
- Expanded municipal recycling programs directly affect Blue Box material composition
- Packaging industry directly impacts Blue Box composition

CIF
CONTINUOUS IMPROVEMENT FUND

Markets for Ontario Blue Box Paper Fibres (Printed Paper & Paper Packaging)

Maria Kelleher
Kelleher Environmental

Presentation Outline

- Amount of printed paper & paper packaging and how this will change
- Markets and how these will change
- Considerations for future planning

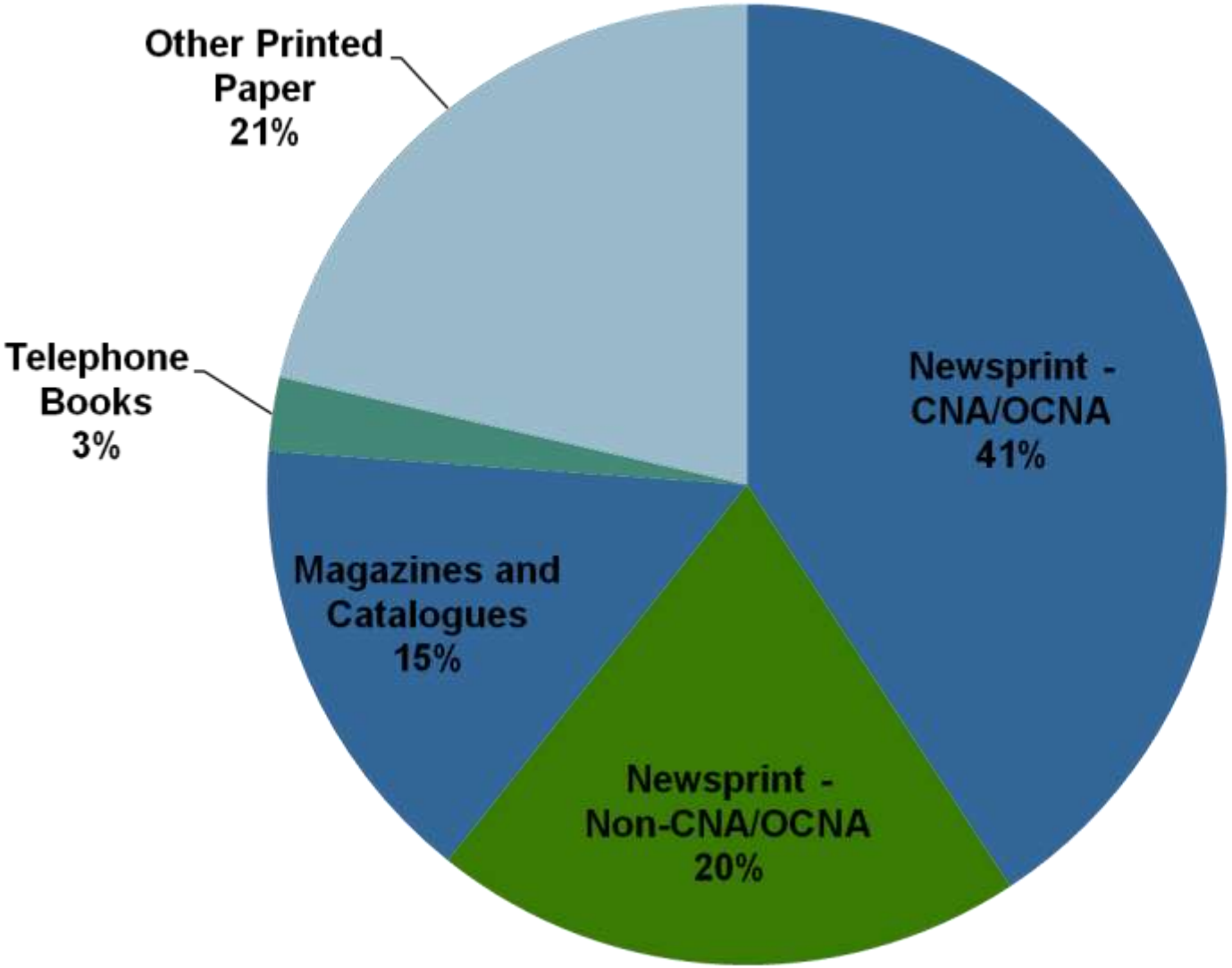
- For more information
  - Maria Kelleher, Kelleher Environmental
  - maria@kellenv.com

Ontario Blue Box Paper Fibre Quantity Estimates – 2009 – Big Numbers!

	Generated	Diverted	Disposed
Total Printed Paper and Packaging	913,267	674,843	238,425
Printed Paper	555,369	439,341	116,029
Paper Packaging	357,898	235,502	122,396

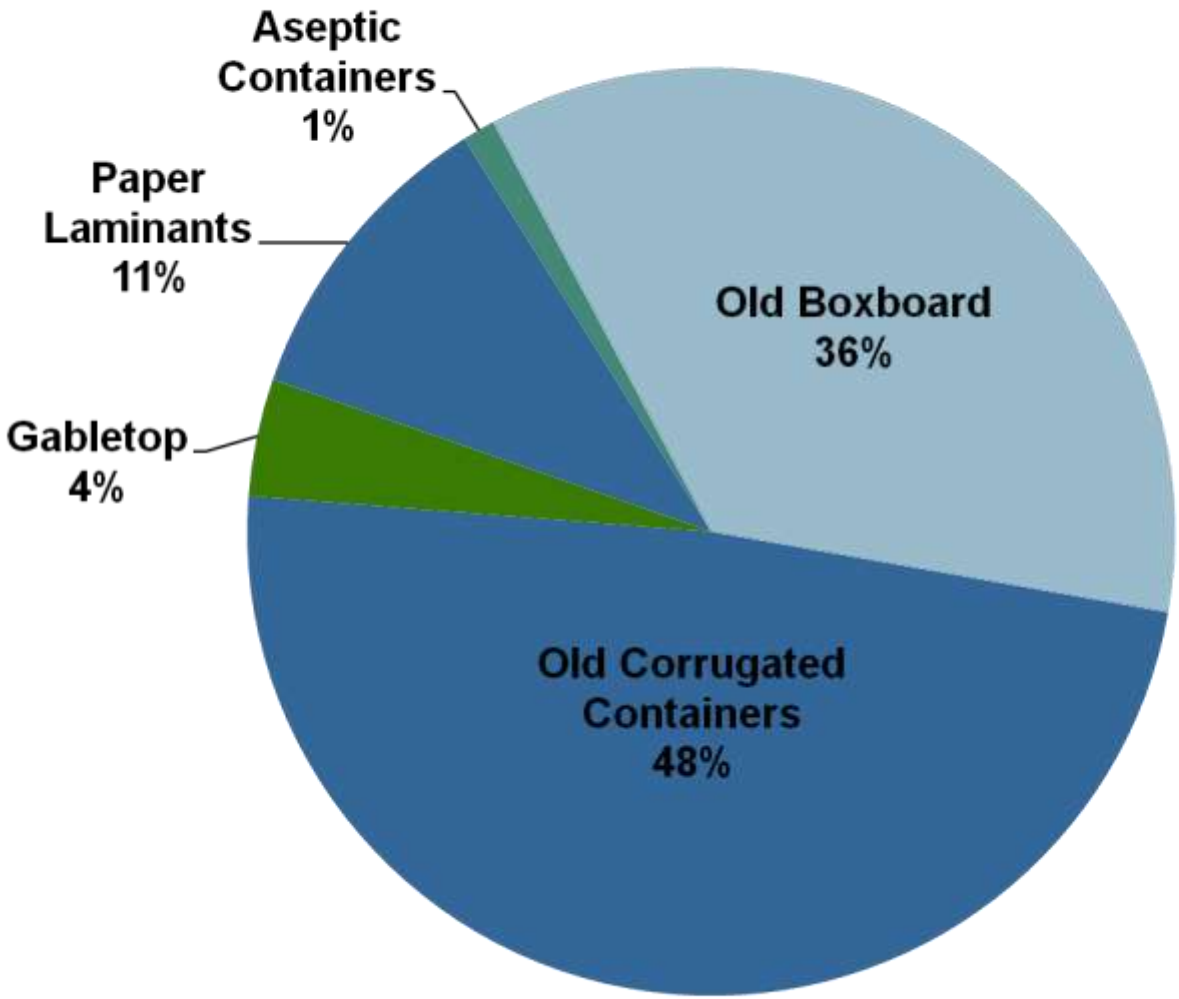
CIF
CONTINUOUS IMPROVEMENT FUND

Printed Paper Generated in 2009



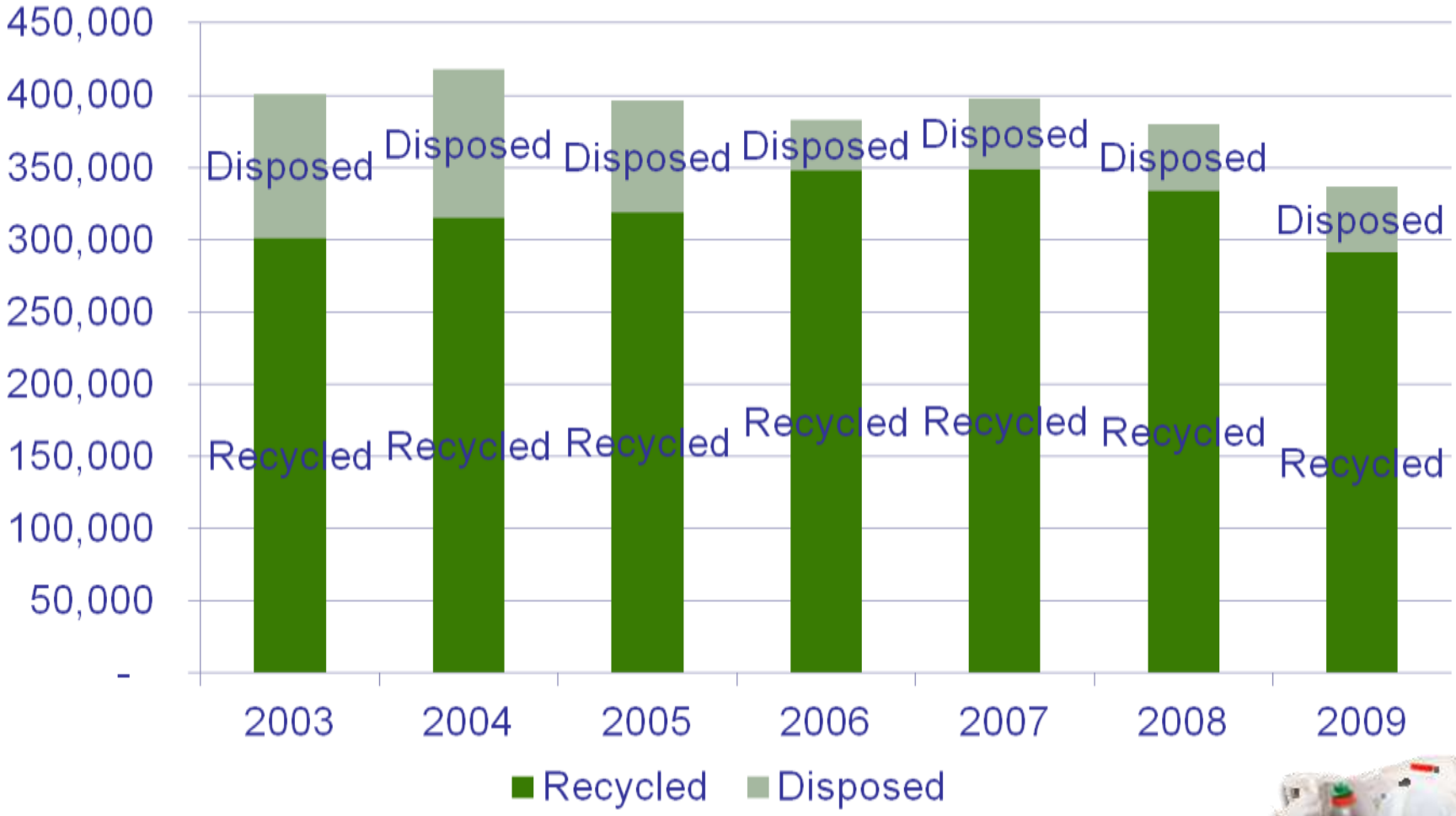
CIF CONTINUOUS IMPROVEMENT FUND

Packaging Paper Generated in 2009



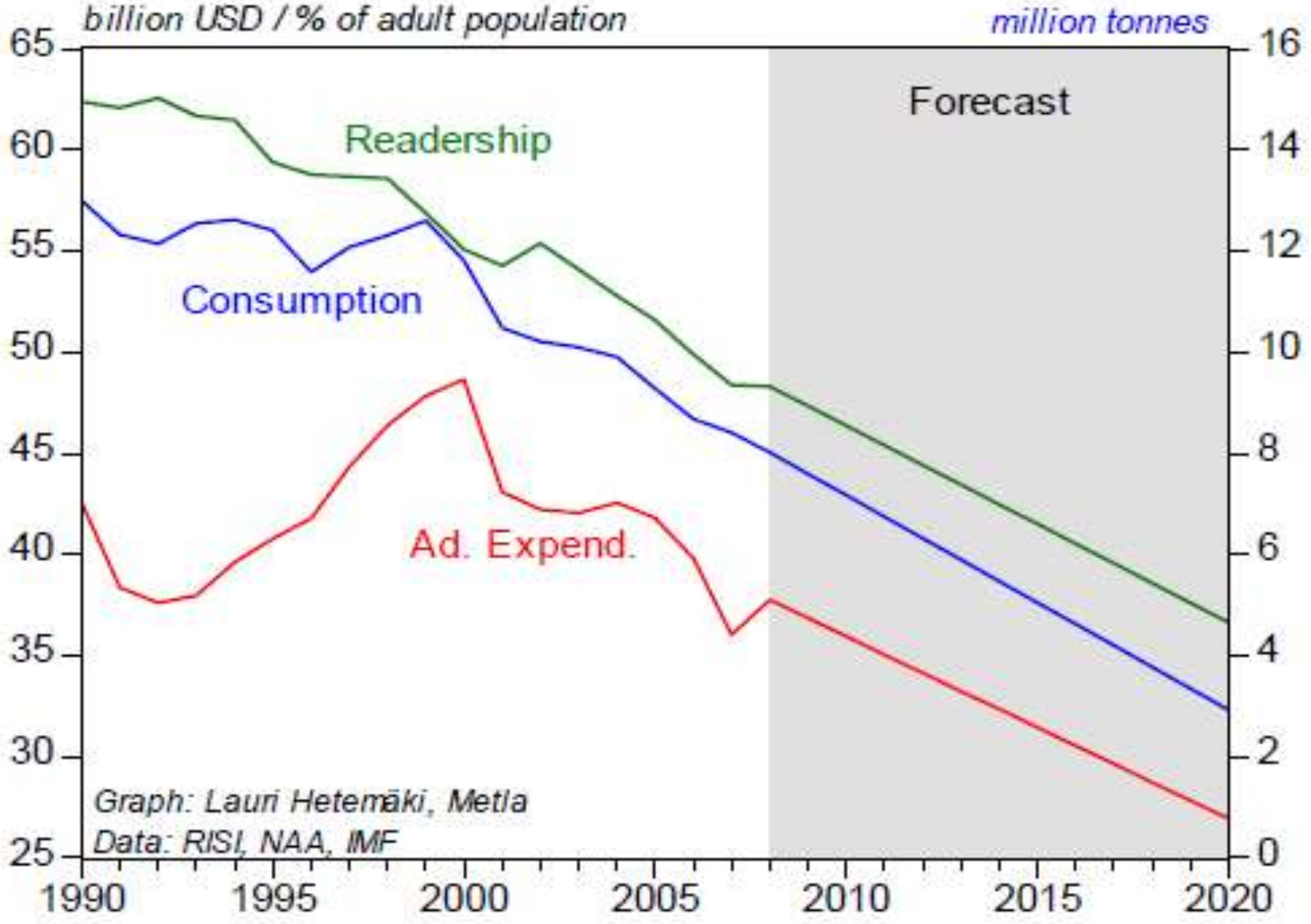
CIF CONTINUOUS IMPROVEMENT FUND

ONP Numbers Dropping Significantly 2006 to 2009



CIF
CONTINUOUS IMPROVEMENT FUND

The Death of Newspapers



Trends That Impact on Fibres in Blue Box

1. Decline in newspaper generation and recovery
   - because of electronic media
2. Reduction in telephone directory distribution
   - reduction of 3,300 tonnes in Toronto
3. Printers in every home, more home offices & working at home
   - more residential writing papers
   - shredded paper an issue
4. Increased internet sales
   - more corrugated containers and/or boxboard

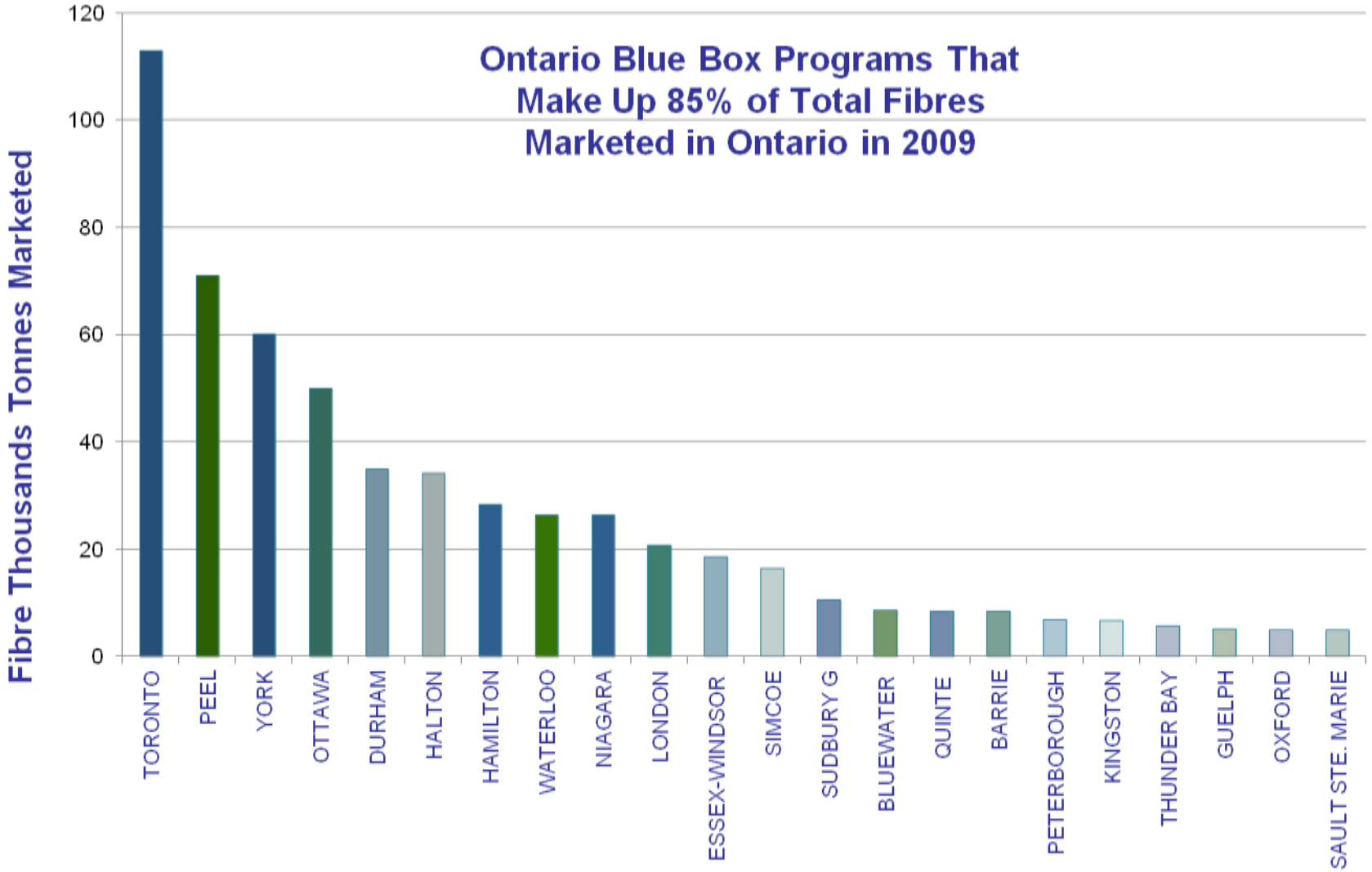
CIF
CONTINUOUS IMPROVEMENT FUND

Impacts of Lifestyle & Packaging Changes on Future Blue Box

- Conclusions of Toronto Future Blue Bin Study:
  - fibres: 18% decrease (46kg/sf hh) in 10 years
  - containers: weight stays the same (-2kg/hh) but composition changes significantly
  - +17% plastic
  - -50% glass
  - no change to metal
- Significant implications for collection, processing, revenues of Ontario (ON) Blue Box System

CIF
CONTINUOUS IMPROVEMENT FUND

85% of ON Fibres (675,000 tonnes) Collected From "Top 21" Programs



Top 21 Single Stream vs. Two-Stream Collection Programs

Single Stream	Single St Paper Fibre Tonnes	Two Stream	Two Stream Paper Fibre Tonnes	Two Stream Below 10k/y	Two Stream Paper Fibre Tonnes
Toronto	112,981	Ottawa	49,928	Quinte	8,486
Peel	71,081	Durham	34,918	Barrie	8,457
York	60,173	Hamilton	28,318	Peterb	6,949
Halton	34,168	Waterloo	26,464	Kingston	6,711
Bluewater	8,626	Niagara	26,351	Thunder B	5,669
Guelph	5,088	London	20,679	Oxford	4,988
Sudbury	10,670	Essex W	18,626	Sault	4,905
		Simcoe	16,353		
TOTAL	**303,000**		**222,000**		**46,000**

CIF CONTINUOUS IMPROVEMENT FUND

Single Stream & Two Stream Collection in ON

- Single stream recycling decisions by municipalities driven more by efficiency of organics collection than Blue Box interests
- In theory, single stream results in higher capture of materials BUT…
- Concerns with single stream collection at MRF:
  - higher MRF residue rates
  - challenges with paper quality – concern particularly for domestic mills
  - Is it a zero sum game?
- Two-stream programs still commonplace & belief has been that they are “more efficient” in terms of recovering “clean, more marketable fibre materials”
  - Ottawa; new London MRF; Durham; Hamilton ; Niagara

CIF CONTINUOUS IMPROVEMENT FUND

Single Stream vs. Two-Stream

- No-one goes back from single stream
- Original belief that it was cheaper & achieved higher recovery rates
  - not proven using 2009 ON data
- Variables that impact on pure analysis:
  - % of MF households makes a difference to stats on kg/hh &
    $/tonne
  - curbside garbage collection frequency (weekly or bi-weekly) impacts on recycling system participation
  - bag limit & user pay policies impact on participation

CIF
CONTINUOUS IMPROVEMENT FUND

Processing at Blue Box Programs >10k Tonnes/Year Fibres

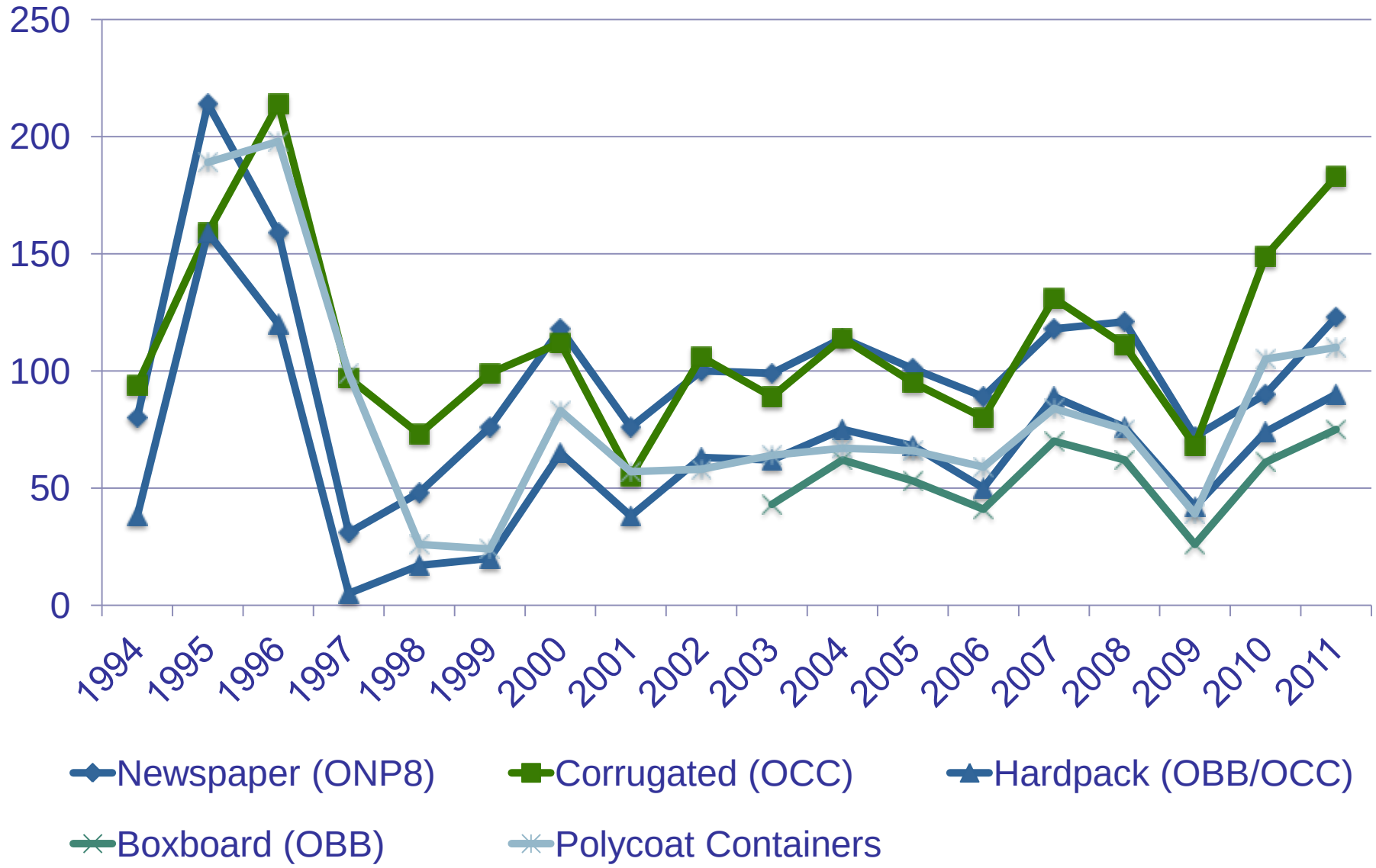
Single Stream	MRF Operators	Two Stream	Two Stream Paper Fibre Tonnes (> 10k t/y)
Toronto	Canada Fibres – Dufferin Canada Fibres – New Merch MRF Cascades - Scarborough Merch MRF	Ottawa	Cascades
Peel	Canada Fibres	Durham	Cascades
York	Miller	Hamilton	Canada Fibres
Halton	Emterra (2014)	Waterloo	Waterloo
Bluewater	BRA	Niagara	Niagara
Guelph		London	Miller
		Essex W	EWSWA
		Simcoe	Misc
		Sudbury	Canada Fibres
TOTAL	**303,000**		**222,000**

Fibre Revenues

- Paper fibre revenues are backbone of Blue Box program
- Toronto:
  - 71% to 75% of revenues from paper
  - 10% of revenues from aluminum
  - 10% to 12% of revenues from HDPE and PET
- Fibres traded as global commodity
- Prices vary by economy, supply/demand balance, price of virgin pulp, etc.
- Mills will substitute one fibre for another depending on price & demand
  - less picky about quality when economy good
  - very picky about quality in weak economy
    - i.e. will work with high contamination levels in buoyant economy, but not in weak economy

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario Fibre Prices ($/t) 1994-2011



Typical Fibre Bale Prices (Aug 2011)

- Significant drop in prices by October, 2011
- Very volatile market conditions with slowdown in China
- August 2011 prices:
  - OCC (Old Corrugated Containers) - $180/t
  - ONP (#8) – Newsprint mills – no one makes anymore (except BRA)
  - ONP #6 – not a newsprint bale
    - combo of OCC, ONP, OBB – used in packaging mills
  - Mixed Paper - $125/t (July, 2011)
  - Fine Paper (Sorted Office Paper SOP) - $204/t
  - Polycoat - $114/t
  - Hardpack (OCC & OBB) - $93/t
  - Boxboard (in US called Paperboard) - $77/t

CIF CONTINUOUS IMPROVEMENT FUND

Where Do Paper Fibres Grades Go?

- ONP
  - mostly to recycled newsprint mills
  - used to make boxboard (e.g. Strathcona)
  - some to building applications if newsprint market not available
- OCC, boxboard, mixed paper
  - containerboard mills (linerboard or medium board)
  - if fine paper in mixed bale, to containerboard to improve quality
- Fine paper (not a residential grade) and polycoat
  - tissue mills
  - pulp suppliers to tissue mills
- All of these fibres can go to lower grade applications, depending on market prices & conditions

CIF
CONTINUOUS IMPROVEMENT FUND

ONP Markets – ON MRFs

- Newsprint mills
  - Abitibi Thorold (only newsprint mill remaining in Ontario)
  - Kruger, Montreal
  - White Birch, Quebec City (formerly Diashowa)
  - Atlantic, Whitby (now closed)
- Other markets
  - Sonoco (Trent Valley and Brantford both take recycled fibres)
  - Strathcona (Quinte – makes clay coated spiralwound)
  - overseas (Peterborough, BRA)
  - ONP going to boxboard more than OCC

CIF CONTINUOUS IMPROVEMENT FUND

OCC Markets – Ontario MRFs

- Atlantic (two sites in Scarborough, Progress Avenue)
- New Forest Scarborough (only new mill in Canada completely new mill four years old – owned by Atlantic)
- Cascades
- Norampac (owned by Cascades – six locations: Cabano, Jonquiere, Kinsey Falls, East Angus, QC; Mississauga & Trenton ON)
- Sonoco (Trent Valley)
- Strathcona, Napanee
- Smurfit US (Peterborough)
- Kruger Montreal
- Various mills in ON, QC, US

CIF CONTINUOUS IMPROVEMENT FUND

Boxboard & Mixed Paper Markets – ON MRFs

- Most MRFs report they do not produce “hardpack”:
  - mainly to medium board mills as filler
  - price discounted to % of OCC in bale
- Mills in ON, QC & Michigan
  - Brokered through Canada Fibres & Cascades Recovery Inc.
- Norampac Niagara Falls NY (Niagara) – existing 100% recycled mill
  - new mill to be constructed on property next door
  - 100% light weight containerboard, 540,000 t/y
- Sonoco (Quinte produces source separated Blue Box)

CIF CONTINUOUS IMPROVEMENT FUND

Mixed Paper & Polycoat Markets – ON MRFs

- Fine Paper
  - not a residential grade – all residential writing papers go in mixed paper bale
  - fine paper from offices to tissue mills ON, QC, US
- Mixed Paper
  - includes residential printing and writing paper
  - mostly overseas (China)
  - Cascades (Durham)
- Polycoat
  - South Korea (through brokers); some US
  - Cascades, QC

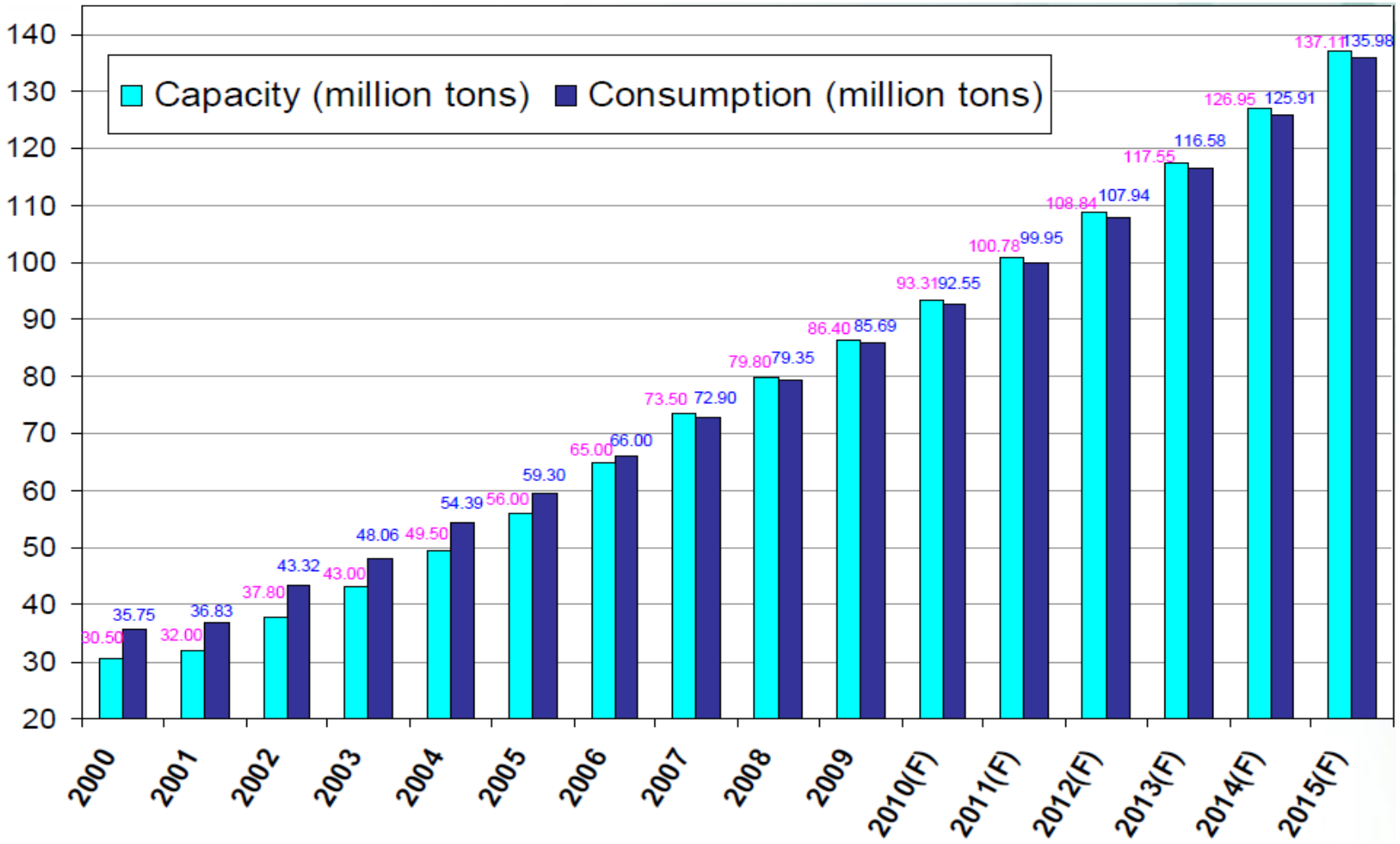
CIF
CONTINUOUS IMPROVEMENT FUND

China Factor

- More of ON fibres going to China
- China provided market when NA markets collapsed in 2008
- Split opinion on long term sustainability of China market
- Significant concern re: depending on China market & they “pull the plug”
- Caution not to let domestic industry close down & then be dependent on China

CIF
CONTINUOUS IMPROVEMENT FUND

China–Projected Paper Industry Growth to 2015



Chinese Demand Increasing
Chinese Domestic Recovery Also Increasing

(Million tonnes; rounded figures.)

	Domestic RP	RP imports	TOTAL collection
2010	39.3	24.5	**63.8**
2009	34.1	28	**62.1**
2008	31.3	24.5	**55.8**
2007	28	23	**50.7**

Source: RISI, China Paper Assn, US Dept of Commerce, Bureau of Census.

CIF CONTINUOUS IMPROVEMENT FUND

Blue Box Fibre Markets (2006)

- Lowest prices in 10 years
- Mills are closing – Sonoco, Abitibi, Domtar, Cascades, Tembec, Weyerhaeuser;
- Abitibi still running two ONP lines; #8 news $50 less than today's price
- OCC prices lowest in 10 years; 50%<than today
- OBB, gable & tetra markets just developing
- 62% ($62.5M) of Blue Box revenue is fibres
- Imports exceed exports by 1M tonnes
- Asian investments in fibre processing booming

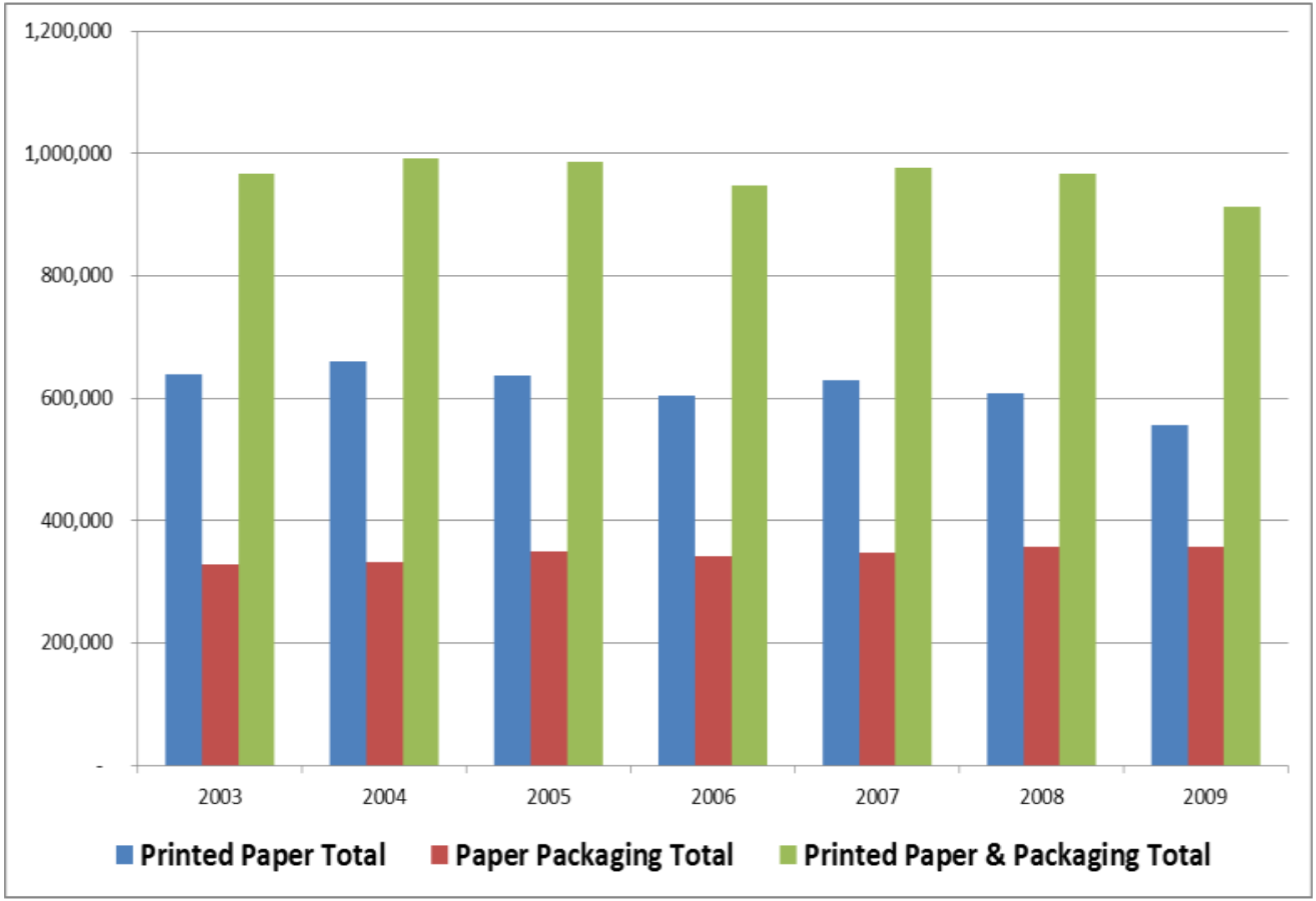
CIF
CONTINUOUS IMPROVEMENT FUND

Blue Box System Today (2011)

- Big SS programs: York, Peel & Halton (plus Bluewater and Sudbury) on line
- 300,000 tonnes ss fibre; > two-stream for first time
- Co-collection, bag limits, user pay, every other week garbage collection all increase fibres collected
- Over a dozen optical sorters installed; fibre trials not successful
- Amounts of fibre available and recycled beginning to drop
- Costs of Blue Box system costs have increased to $327/t gross; $257/t net

CIF
CONTINUOUS IMPROVEMENT FUND

Available Paper Dropping 2006 to 2009



Blue Box System Today (2011)

- Changing Blue Box fibre composition will have significant impact on collection, processing and revenues
  - 8-10% decrease in overall paper available in ON Blue Box
- Pulp and paper companies continue to build & expand where market is buoyant
  - closing newsprint mills
  - expanding & building containerboard capacity
- Price tag $450 million for 1 new US mill
- Cascades building new $450 million containerboard mill in Niagara Falls, NY

CIF
CONTINUOUS IMPROVEMENT FUND

Blue Box System in Five Years (2016)

- ONP sorting costs rise
- Shredded paper as % of residue grows
- Depending on price differentials, more mixed paper bales may be sold
- More Blue Box fibres co-processed with IC&I materials
- More multi-family co-processed with single family
- Blue Box costs will continue to rise as fibre revenues drop (because of lower fibre tonnages)

CIF
CONTINUOUS IMPROVEMENT FUND

Bottom Line Re: Blue Box Fibres

- Fibre recovery good, could be much better
  - still losing 238,000 tonnes per year
- Single Stream here to stay
  - need to live with it & make it better
- Multi family housing here to stay –
  - need to start keeping better records, tracking data for MF & SF separately in Datacall
  - need to figure out effective way to increase fibre recovery
  - mixed waste processing may be an option
- Fibre composition changing
  - need to address impacts on collection, processing, costs
- Export markets are here to stay (at some level)
  - adapt & understand what this means long term
  - recognize sustainability of local markets in long term planning

CONTINUOUS IMPROVEMENT FUND

Questions

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CONTINUOUS IMPROVEMENT FUND

EPR Insights

Andy Campbell, CIF

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

Reflections on Managing Printed Papers & Packaging

Glenda Gies

Glenda Gies & Associates

Presentation Overview

- BC Initiatives
  - full producer responsibility for printed papers & packaging
- Ontario's Blue Box System
  - where we started
  - where we've been
  - where we are
  - where (I think) we're headed

CIF
CONTINUOUS IMPROVEMENT FUND

BC Initiatives (1)

- October 2004 – Recycling Regulation (RR)
  - obligates producers to submit stewardship program plan for approval by director – or comply with specified stewardship program requirements
  - if producer fails to comply, producer may no longer sell, offer for sale, distribute or use product in BC
  - obligates 75% recovery rate – no timeline specified
- May 2011 – RR amended to include Schedule 5
  - defines packaging & printed paper (PPP)

CIF CONTINUOUS IMPROVEMENT FUND

BC Initiatives (2)

- Packaging
  - excludes beverage containers, which are managed under deposit-return program
  - milk containers not under deposit, included in definition of packaging under Recycling Regulation
- Printed Paper
  - includes paper that is printed, or is intended to be printed, with text or graphics
  - includes telephone directories
  - excludes other types of bound books

CIF CONTINUOUS IMPROVEMENT FUND

BC Initiatives (3)

- Key differences between BC & Ontario (ON)
  - producer choice
    - BC producers must choose to associate with a producer responsibility organization
    - ON producers obligated to pay fees to Stewardship Ontario unless exempted via ISP
  - municipal choice
    - in BC, no mandatory municipal role through regulation
    - not all BC municipalities provide PPP services
  - full producer responsibility
    - no ‘shared responsibility’ or cost sharing formula

CIF CONTINUOUS IMPROVEMENT FUND

BC Initiatives (4)

- Multi-Material BC retained consulting team
  - Glenda Gies, Maria Kelleher, Geoff Love, Liz Parry, Usman Valiante, Maura Walker
  - to undertake current state analysis
    - who, what, how much, at what cost
  - to develop & assess program design options
    - options for MMBC to interface with marketplace
    - evaluation with pros, cons, risks, opportunities
- Many are watching BC as a possible template for implementing full EPR in other jurisdictions

CIF CONTINUOUS IMPROVEMENT FUND

Ontario's System – Where We Started

- Local initiatives
  - volunteers operating drop-off depots
  - small community enterprises, often for training, employment for minorities, other social objectives
- Evolved into municipal services
  - driven by waste management planning requirements
  - residents demanded diversion before disposal
  - provincial/industry grants for start-up capital, P&E
  - expected that material revenue would offset costs

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario's System – Where We've Been

- Provincial/industry grants ended after roll-out
- Market revenue fell in early '90s during recession
- Municipalities looked for financial assistance
- RCO/MOE/AMO/CSR sponsored 'Who Pays' study
  - settled on 'shared responsibility' as middle ground
- Shared responsibility expected to deliver
  - co-operative partnership between producers & municipalities
  - motivation for both parties to contain costs

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario's System – Where We Are (1)

- Municipalities
  - frustrated with changing product mix & end-of-pipe responsibility
  - frustrated with cost containment & BP
  - would like more producer financial responsibility but reluctant to relinquish system design/delivery
- Producers
  - increasingly accepting their responsibility for EOL
  - now defining their role as responsible producers
  - looking to establish provincially optimized system

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario's System – Where We Are (2)

- Service levels
  - reasonable for single-family households
  - multi-family households still lag behind
- Inconsistent materials accepted
  - limits broad P&E
  - frustrates stewards of products excluded
  - constrains market development − SO's initiatives viable only if new products accepted for collection
  - decision required by each municipality which slows market development process

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario's System – Where We Are (3)

- Difficult annual negotiation to establish BP net system cost & producers 50% share
  - frustration on both sides with calculation of net cost & methodology to distribute available funding
- Continued pressure from producers to find system design & cost efficiencies
  - used to continuous improvement within their own businesses, expect same in Blue Box system delivery
- Leads to tension & conflict between producers & municipalities

CIF
CONTINUOUS IMPROVEMENT FUND

Where (I think) We're Headed (1)

- Need a different basis for the relationship between municipalities & producers
  - to support transition to full EPR
    - producers responsible to achieve program performance objectives & associated program costs
  - to redefine shared responsibility
    - originally 'responsibility' was defined as financial
    - under full EPR, producers responsible for program costs, no longer 'shared' responsibility
    - going forward, 'shared responsibility' could be redefined to build on strengths of municipalities & producers
  - build more collaborative, less rancorous relationship

CIF
CONTINUOUS IMPROVEMENT FUND

Where (I think) We're Headed (2)

- Looking to strengths of each party
  - Municipalities – resident interface, collection
  - producers – processing, marketing, market development
    - activities linked to remanufacturing
- Developing more collaborative relationship
  - negotiate roles & responsibilities linked to strengths
  - allows each to deliver their role within context of defined & (hopefully) more productive partnership
- All to achieve larger objectives
  - more diversion, more market demand, lower net cost
  - sustainable consumption by moving externalized EOL costs into product price

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Questions

Thank You All!

- Abby Barclay, Town of Arnprior
- Larry Freiburger, AET
- Cory Smith, Mississippi Mills
- Francis Veilleux, Bluewater Recycling Association
- Glenda Gies
- Jay Stanford, City of London
- Joe. C. Williams Innovative Hydrogen Solutions
- Kevin Vibert, City of Toronto
- Maria Kelleher, Kelleher Environmental
- Mary Little, 2cg Inc.
- Paul Shipway, McKellar Township
- Paul Speed, Rehrig Pacific Company
- Rick Clow, MIPC
- Sherry Arcaro, Stewardship Ontario
- Shirley McLean, Halton Region

CIF
CONTINUOUS IMPROVEMENT FUND

CONTINUOUS IMPROVEMENT FUND

Wrap-up

Waste Diversion Ontario

Association of Municipalities of Ontario

TORONTO

CIF
CONTINUOUS IMPROVEMENT FUND

See You In the Spring!

Waste Diversion Ontario
Association of Municipalities of Ontario
TORONTO