Ontario Recycler Workshop

November 25, 2010
9:30 a.m. to 4:00 p.m.

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Welcome!

Jon Arsenault
Manager, Engineering & Programs
Waste Management

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What Defines the Region of Waterloo?

- Mennonite Community
- World Class Educational Institutions
- High Tech. Industry/Business
- Kitchener Rangers!!!!

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Blue Box Recycling

Where It All Began!

1981 – City of Kitchener
Nyle Ludolph

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Ontario Recycler Workshop

Andy Campbell,
Director, CIF

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Ontario Recycler Workshop

- Presented by: CIF & partners
  - Waste Diversion Ontario (WDO)
  - Association of Municipalities of Ontario (AMO)
  - City of Toronto
  - Stewardship Ontario (SO)

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ORW Plastics Session & Workshop

- Yesterday: Pilot municipal workshop for adding more plastics to BB program
  - CIF helping promote additional plastics recovery
  - 15+ municipal participants
  - valuable feedback on workshop & information
  - anticipate revising workshop & offering sessions across ON (early 2011)
- Today: 11th Ontario Recycler Workshop
  - semi-annual event by & for ON recyclers
  - trusted, up to the minute information

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Today's Audience

- Approximately 70 people in Kitchener-Waterloo
- Expecting 50+ people on webcast
- Audience members include:
  - municipal councillors, recycling & waste staff & other staff members
  - stewards
  - industry association representatives
  - program representatives, consultants & other stakeholders

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Today's Program & Housekeeping

- Full day session (to ~4:00 p.m.) with program & project updates
- For webcast viewers
  - ❶ sound slider
  - ❷ webcast technical assistance
    ❸ "Ask a Question"
    - no response via console
    - check email
  - ❹ link to slides & resources

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Today's Program: Snapshot…

- Program updates
- Break
- Workshop: Next Steps for Continuous Improvement
- CIF 2011 Action Plan
- Lunch
- Results of MRF upgrade projects
- Improving transportation efficiencies with technology
- Break
- Need to know…
- Plastics Market Update

CIF Thanks Today's Speakers & Moderators

- Anne Boyd, City of London & CIF
- Craig Bartlett, MIPC & Durham Region
- Derrick Tuyl, Efficient Waste Management Systems Inc.
- Doug Vanderlinden, Nexgen
- Erwin Pascual, Region of Peel
- Francis Veilleux, Bluewater Recycling Association
- Geoff Love, Love Environmental
- Jerry Biersteker, Region of Waterloo
- John Dixie, StewardEdge Inc.
- Maria Kelleher, Kelleher Environmental
- Mike Birett, CIF
- Navin Sharma, City of Hamilton
- Peter Kalogerakos, Region of Peel
- Rick Denyes, Stewardship Ontario
- Waste Diversion Ontario

Special thanks to Jon Arsenault, Region of Waterloo!

CONTINUOUS IMPROVEMENT FUND

BB Program Updates

Andy Campbell
Director, CIF

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This Session

- Reports represent varying perspectives on recycling
  - Waste Diversion Ontario
  - Craig Bartlett, Durham Region & MIPC
  - Rick Denyes, Stewardship Ontario

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CIF CONTINUOUS IMPROVEMENT FUND

Municipal BB Performance 2008 & 2009

Andy Campbell for WDO

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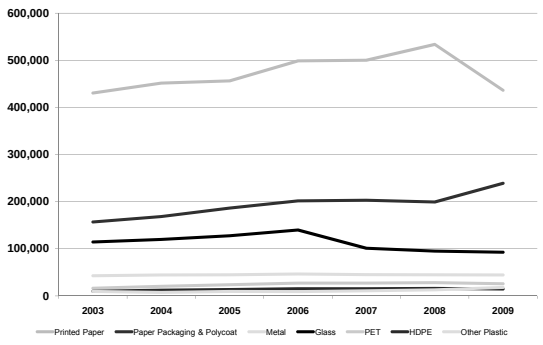
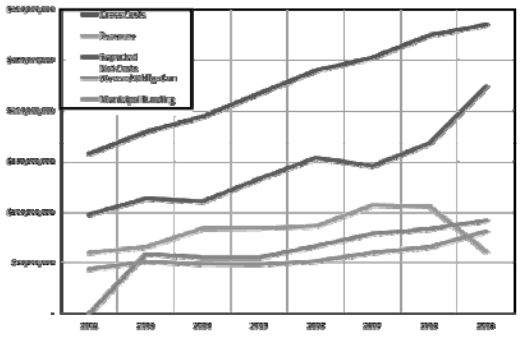
Historical Material Data



Historic Costs & Revenues



2009 Performance by Municipal Group

Program Type	Blue Box Tonnes Marketed	Total Net Costs	Gross Costs per Tonne	Net Costs per Tonne	Recycling Rate
Large Urban	414,157	$105,232,598	$328	$254	71%
Urban Regional	224,200	$47,860,129	$298	$213	67%
Medium Urban	50,457	$11,154,283	$270	$221	66%
Rural Regional	95,019	$31,201,891	$398	$328	57%
Small Urban	22,619	$5,010,896	$251	$222	66%
Rural Collection - North	9,746	$3,149,064	$332	$323	42%
Rural Collection - South	41,332	$15,296,479	$404	$370	53%
Rural Depot - North	4,747	$2,747,268	$600	$579	28%
Rural Depot - South	7,936	$2,119,774	$276	$267	47%

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2009 Compared to 2008

Program Type	Tonnage	Net Cost	Gross Cost per Tonne	Net Cost per Tonne	Recycling Rate
Large Urban	-8%	48%	25%	60%	-4%
Urban Regional	-7%	49%	11%	67%	0%
Medium Urban	-3%	-8%	-18%	130%	4%
Rural Regional	-2%	13%	-2%	11%	-1%
Small Urban	-5%	12%	-6%	-4%	8%
Rural Collection - North	-12%	7%	-51%	-47%	-9%
Rural Collection - South	-3%	13%	-25%	-21%	-1%
Rural Depot - North	10%	20%	-35%	-36%	-29%
Rural Depot - South	18%	2%	-41%	-39%	-5%

2008 Net Cost per Tonne = $181.14
2009 Net Cost per Tonne = $257.15

Fundable Revenues Down

	Tonnage	Revenue Used to Calculate Net	Revenue per Tonne
2008 Actual	929,529 T	$100,138,121	$107.73
2009 3-year Rolling Average Revenue	870,214 T	$87,404,260	$100.44
2009 Declared Revenue		$60,805,375	$69.87
Additional Revenue used in calculation of 2009 Net		($26,598,886)	($30.60)

3 year average revenues 44% higher than actual 2009 revenues

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Reported Net Costs Up

	Tonnage	Overall Cost	Cost per Tonne
2008 Reported	929,529	$168,370,435	$181.14
2009 Reported	870,214	$223,772,383	$257.15
% change	-6.4%	32.9%	42.0%

Real Net costs per tonne increased by 42% from 2008 to 2009

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2009 Funding Summary

	Total	Cost per Tonne	% of Reported Net Cost
Reported Net Cost	$223,772,383.17	$257.15	100.0%
2009 Fundable Net Cost	$183,681,206.47	$211.08	82.1%
Steward Obligation	$91,840,603	$105.54	41.0%
CNA/OCNA In-Kind	$1,706,117	$1.96	0.8%
CIF Contribution	$9,013,449	$10.36	4.0%
Cash Funding Available to Municipalities	$81,121,037	$93.22	36.3%

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CIF CONTINUOUS IMPROVEMENT FUND

Blue Box Program Plan Best Practices & Performance Funding Update

Craig Bartlett
Manager – Waste Operations
Region of Durham
Municipal MIPC Member

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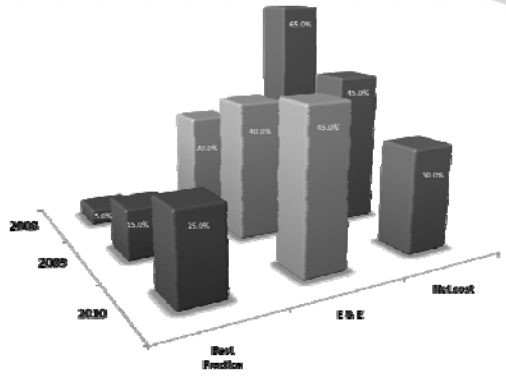
Calculation of 2011 Steward Obligation (Based on 2009 Datacall)

WDO Approved Gross Costs	$284,577,757
Best Practices Model Calculated Gross Costs	$263,980,504
Funding Allocation Gross Costs	$269,299,019
3 Year Rolling Average Revenue	$87,404,260
Unadjusted Net Best Practice System Cost	$181,894,759
+ 50% of prior year cost adjustments	$1,786,447
System Net Cost	$183,681,206
2011 Steward Obligation (50% of Adjusted Net)	**$91,840,603**

Allocation of 2011 Municipal Funding

2011 Steward Obligation	~ 50%	$91,840,603
CNA/OCNA In-Kind	~ 2 %	($1,706,117)
CIF Contribution	~ 10 %	($9,013,449)
Total Municipal Funding Balance	~ 38 %	$81,121,037
2011 Distribution of Available Funds to Municipalities		
Net Cost Allocation	**45%**	$36,504,467
Performance Allocation	**40%**	$32,448,415
Best Practices Allocation	**15%**	$12,168,156

Funding Breakdown



Evaluation of Best Practice Score

- Best Practice (BP) scores determined by Stewardship Ontario based on scoring rules & municipalities' responses to BP Questions in the Datacall

Questions	Value	Components
Questions 1 & 4	Total of 25%	Municipal Collection: 9 sub-parts worth 2.8% each OR Contracted Collection: 6 sub-parts worth 4.2%
Questions 2 & 7	Total of 50%	5 sub-parts worth 10% each
Questions 3,4 & 6	Total of 25%	13 sub-parts worth 1.9% each

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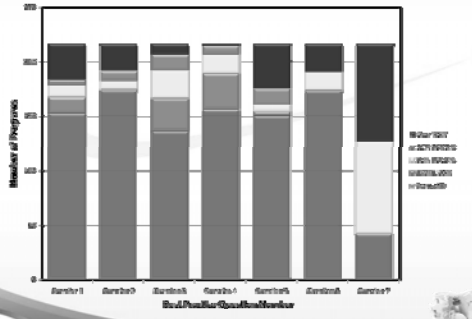
Response to Best Practices Questions



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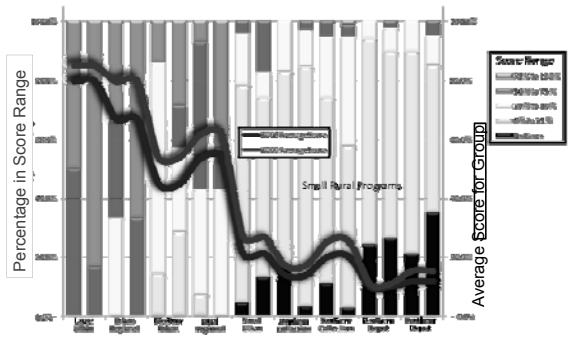
2009 Best Practices Questions

1	Development & implementation of a up-to-date plan for recycling as part of a Waste Diversion System or Integrated Waste Management System	12.5%
2	Establishing defined performance measures, including diversion targets, monitoring & a continuous improvement program	25%
3	Multi-municipal planning approach to collection & processing of recyclables	8.3%
4	Optimization of operations in collections & processing… …following generally accepted principals (GAP) for effective procurement & contract management	12.5%
5	Training of key program staff;	8.3%
6	Appropriately planned, designed, & funded Promotion & Education program;	8.3%
7	Established & enforced policies that induce waste diversion.	25%

Comparison of BP Scores Between 2008 & 2009



BP Funding–Calculation

Municipal Program Assigned Best Practice Score (as %) Based on Response to BP Questions in Datacall

BP Tonnes = Recovered Tonnes × BP Score

2009 BP Allocation is: $12,168,156

BP Funding = BP Tonnes ÷ ∑BP Tonnes × BP Allocation

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Program Performance Funding

- Performance accounts for Efficiency & Effectiveness of programs
  - efficiency is measured by Net Cost per tonne of material recovered
  - effectiveness is measured by percentage of produced material recovered
- E&E factor is Efficiency ÷ Effectiveness
- Performance funding attempts to reward efficient & effective programs to encourage cost control & increased recovery.

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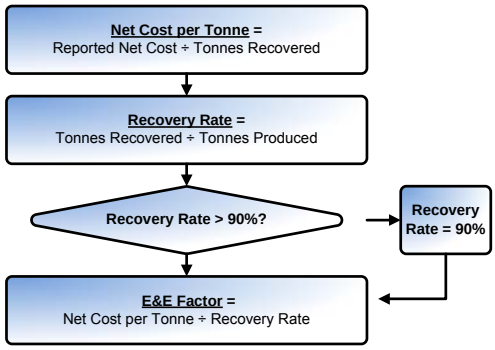
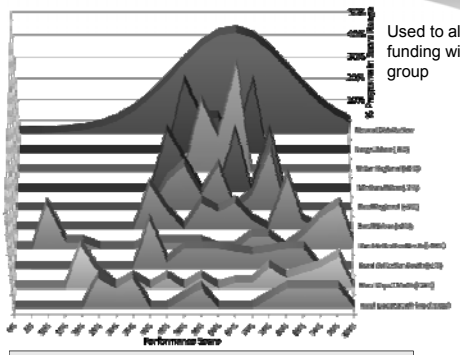
Calculation of Performance Funding
The E&E Factor



Programs In Score Ranges



Used to allocate funding within a group

Funding relative to other members of an individual group is proportional to their relative scores.

Calculation of Performance Funding
Assigning Funding

- Funding transfers between groups are related to how "out of balance" funding distributions are within groups.
  - groups that have bulk of their total funding assigned to programs with higher than average scores receive money from funding pool
  - groups with bulk of their total funding assigned to programs with lower than average scores contribute money to the funding pool

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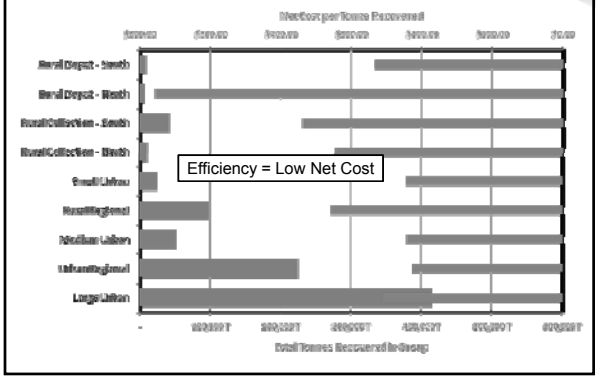
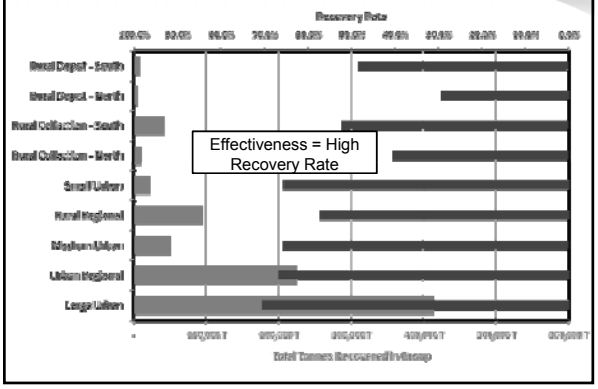
Recovery – Net Costs per Tonne



Recovery – Recovery Rates



Funding Changes Since 2007

	2007	2008	2009
Marketed Tonnes	902,498 T	929,529 T	870,214 T
Reported Gross Costs	$252,550,562	$274,245,169	$284,577,757
Reported Revenue	$106,662,214	$105,874,734	$60,805,374
3 Year Average Revenue	$91,610,410	$100,138,121	$87,404,260
Reported Net Cost	$145,888,349	$168,370,435	$223,772,383
Fundable Net Cost	$157,050,436	$166,985,852	$183,681,206
Steward Obligation	$78,525,218	$83,492,926	$91,840,603
Total Municipal Funding	**$60,179,095**	**$65,640,318**	**$81,121,037**

Summary - Improving Funding

- Look at opportunities to increase BP Score
- Monitor & reduce program costs
- Explore joint ventures with other municipalities
- Take advantage of Continuous Improvement Funding
- Send staff to Blue Box Training Sessions
- Support 100% Extended Producer Responsibility

Allocation Method	2011	2012
Net cost	45%	30%
Performance	40%	45%
BP Questions	15%	25%

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What Next – Actions for 2011

- 2012 funding is the last year based on the current calculation agreement between municipalities & Stewardship Ontario
- Funding Model & Process Change Improvements:
  - new payout model–possible integration of Best Practices with a performance metric
  - joint evaluation of Best Practices scores
  - increased MIPC consultation with municipalities rather than just WDO

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For further information about specific program funding, contact:
Alec Scott
MIPC Blue Box Program Coordinator
(705) 722 0225
archenv@sympatico.ca

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CIF CONTINUOUS IMPROVEMENT FUND

Stewardship Ontario Update

Rick Denyes, Director
Materials Management

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Agenda

1. Director Material Management's Role
2. Blue Box Trends/Challenges
3. Current Initiatives
4. SO's Role/Commitment

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Director Materials Management Role

- Committed to work with municipal & private sectors to ensure continued success of BB program through improved efficiencies & reduced costs
- Work closely with CIF on developing new or improving existing sustainable Ontario-based markets for evolving BB materials
- Investigate & implement emerging technologies for processing equipment to meet evolving materials stream & improve efficiencies

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Blue Box Trends/Challenges

- Trends:
  - decreasing volumes of newsprint
  - increasing volumes of laminate paper products
  - increasing volumes of lightweight & laminated plastics materials
- Challenges:
  - diversion targets measured by weight
  - non-standardized program across system

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Current Initiatives

- Support provided to two major plastics processors in Ontario, both committed to phase 2
- CIF/SO investigating interests/technologies from multiple parties to process film plastics, rigid & EPS, PET, laminates (plastics & paper), glass & alternative fuel systems
- CIF/SO 2011 strategy to implement a focused effort to improved operating efficiencies at MRFs throughout Ontario

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Stewardship Ontario's Commitment

- Continued dedication & success in providing support & sustainable solutions for all our stakeholders
- Rick Denyes
  rdenyes@stewardshipontario.ca
  416-303-0691

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Questions

"Ask a Question" at console bottom right

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Refreshment Break

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Welcome Back

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Next Steps in Continuous Improvement

Mike Birett
CIF

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Introduction

- CIF fall budget & REOI is based on:
  - direct input & response
  - informal survey work
- CIF will be closing out soon
  - funds must be fully committed by year end 2012
  - need to ensure the remaining funds are spent on municipal priorities

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Background

- KPMG Best Practices report (2007)
  - significant time & effort involved
  - identified a number of possible good practices
- Are there other “promising ideas” or priorities?

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This Session

- Goal:
  - Solicit input into priority topics worth pursuing that might contribute to continuous improvement
    - examine practices identified in the KPMG doc & solicit new ideas
    - determine which, if any, are a priority for further evaluation in 2011
    - broader implementation where appropriate in 2012

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The Exercise (1)

- In-room participants go to 1 of 5 flipchart stations to address either:
  - Collection
  - Admin & Tendering
  - Policies & Incentives
  - Processing
  - Marketing
- Webcast viewers dial in to conference call workshop

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The Exercise: 3 Steps in 40 Minutes!

1. Review **associated practices** (yellow handout).
   Available at "Resources" section for webcast viewers
2. Write down the **practice** you want to review.
   What **specific information** do you need to evaluate &/or to put this into practise.
3. Add **other ideas/priorities** worthy of consideration.
   Write down where they're in use & any **related issues** or uncertainties.

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The Exercise (3)

1. Review **associated practices** (yellow handout)
2. Write down the **practice** you want to review &
   What **specific information** do you need to evaluate and/or put this in practice
3. Add **other ideas/practices** worthy of consideration & where they're in use
   Write down:
   -any **related issues** or uncertainties
   -any **other priorities** that we need to work on

Topics

Collection · Admin & Tendering · Policies & Incentives · Processing · Marketing

Webcast Dial-in:
Toronto local: 416-850-9144 or
Toll- Free: 1-866-400-3310

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Continuous Improvement Workshop

Plenary

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Continuous Improvement Wrap-Up

Andy Campbell, CIF

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2011 CIF Action Plan

Andy Campbell
Director, CIF

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Overall CIF Application Summary

	Number of Projects
Under Review	9
Under Review 2010 REOI	44
Rejected	15
Approved	267
Withdrawn	29
Total Applications	**364**

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2010 Approved Projects

Sorted by MIPC Strategic Area	Number of Approved Projects	Approved Funding w/ Taxes
Best Practices	126	$10,773,919
Innovation	9	$833,660
Emerging Technologies	1	$9,600
Communication & Education	29	$262,245
Project Support	12	$310,153
Total	**177**	**$12,189,578**

Sorted by CIF Committee Priority Area	Number of Approved Projects	Approved Funding w/ Taxes
Increase Existing Materials	77	$3,517,540
Increase New Materials	2	$27,126
Geographic Optimization	6	$1,573,217
Technology Improvements	18	$5,499,083
Other	74	$1,572,612
Total	**177**	**$12,189,578**

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Overall Funding Review to Nov. 15/10

Sorted by MIPC Strategic Area	Number of Approved Projects	Approved Funding w/ Taxes	Total Project Value	Total Funding ($millions)	Remaining Funds ($millions)
Best Practices	168	$22,629,985	$42,340,117	$20.697	-$1.933
Innovation	14	$3,079,250	$11,391,390	$10.349	$7.270
Emerging Technologies	6	$447,735	$876,000	$2.070	$1.622
Communication & Education	39	$671,483	$642,201	$4.139	$3.468
Project Support	40	$1,045,191	$724,561	$2.361	$1.316
Total	**267**	**$27,873,644**	**$55,974,268**	**$39.616**	**$11.742**

Sorted by CIF Committee Priority Area	Number of Approved Projects	Approved Funding w/ Taxes	Total Project Value	Total Funding ($millions)	Remaining Funds ($millions)
Increase Existing Materials	106	$7,537,356	$13,949,762	$4.754	-$2.783
Increase New Materials	3	$69,126	$30,000	$7.131	$7.062
Geographic Optimization	28	$7,247,772	$27,456,697	$16.639	$9.391
Technology Improvements	40	$10,801,517	$13,481,347	$8.319	-$2.483
Other	90	$2,217,873	$1,056,462	$2.773	$0.555
Total	**267**	**$27,873,644**	**$55,974,268**	**$39.616**	**$11.742**

Note: Total Funding does not include MIPC $2.85 million holdback

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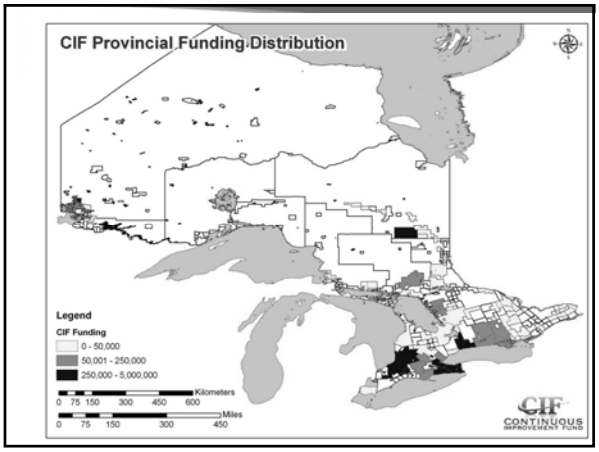

2010 Projects

- 100 small municipal recycling strategies
- 27 promotion & education projects
- 75,000 96 gallon recycling carts
- 250,000 22 gallon blue boxes
- 17 small rural transfer station upgrades
- 6 MRF upgrades
- 5 MRF energy audits

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CIF Strategy

- Identify & apply best practices (BP)
- Foster & support innovation
- Bias towards projects with clearly defined performance objectives & return expectations
- Investing to provide the greatest potential benefits toward:
  - increasing cost efficiency
  - improving performance &
  - increasing total BB material recycling rates

Focus on project implementation, not studies

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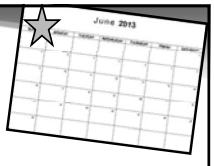
2011 Budget



- New funding approved for 2011
  - 10% of steward obligations to municipalities down from 20%
    - $9.01M
  - projects must be approved for funding by June 2013
- Draft budget is $20M
- Funds reserved for program operations & project management to the end of 2013

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Municipal Input to 2011 Budget

- Municipal Waste Association survey Oct. 2010
  - continued assistance to comply with WDO BP
  - assistance with contract development
  - more end market development
  - developing more “better practices”
  - more training opportunities
  - more technology research
  - assistance preparing for possible extended producer responsibility implications

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2011 Priorities

- New plastic packaging recovery
  - MRF upgrades
  - large blue boxes
  - P&E workshops
  - funding for plastics P&E at 60%

Budget - $2.68M

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2011 Priorities (2)

- Multi-residential
  - carts
  - add RFID (radio frequency identification) to existing carts
  - RFID implementation

Budget - $1.0M

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2011 Priorities (3)

- MRF & Transfer station infrastructure
  - regionalization & transfer stations
  - rural depot compactor bins
  - preventative maintenance evaluation & training

Budget - $8.25M

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2011 Priorities (4)

- Waste recycling plans
- Small municipal promotion & education

Budget - $1.175M

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2011 CIF Priority Projects REOI

- Great success in 2010 with over $23M in applications
- 2011 REOI budget approximately $10M
- Timing
  - CIF Committee approval December 10, 2010
  - REOI issuance January 6, 2011 or sooner
  - REOI closing March 21, 2011

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Summary

- All parts of ON receiving funding
- 70% of funding to date allocated to projects
- Budget $13M for priority projects in 2011
- $3M available for other municipal projects

Submit your applications !

Questions

"Ask a Question" at console bottom right

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Morning Session Concludes

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Enjoy Your Lunch

Courtesy of the City of Barrie

please let us know which practice is of greatest importance to you–click on "ask a question" to send in your thoughts

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ORW Resumes Soon…

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Welcome Back!

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Afternoon Agenda

- Session 4–MRF Upgrade Project Results
- Session 5 - Improving Transportation Efficiencies with Technology
- Afternoon Break (~2:15)
- BB Training Update
- Session 5–Need to Know
- Session 6: Plastics Markets
- ORW ends (~4:00)

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CIF CONTINUOUS IMPROVEMENT FUND

MRF Upgrade Project Results

Erwin Pascual, Region of Peel

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Today's Session

- Examines some of the CIF's early investments in MRF infrastructure
- Project related goals included:
  - upgrading strategically located facilities
  - evaluating new & emerging technologies
  - examining the innovative MRF design
  - proving out reported better practices

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Today's Speakers

- Navin Sharma, City of Hamilton
  - City of Hamilton Material Recycling Facility Upgrade
- Francis Veilleux, Bluewater Recycling Association
  - Lessons Learned Single Stream MRF #135
- John Dixie, StewardEdge
  - Update on Optical Sorting Installations in ON MRFs

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CIF CONTINUOUS IMPROVEMENT FUND

City of Hamilton Material Recycling Facility Upgrade

Navin Sharma
Public Works Department
Operations & Waste Management Division

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Project Highlights

Hamilton

Providing services that bring our City to life!

- *Project features:*
  - MRF processing
  - new container line
- *Anticipated impacts:*
- *More information:*
  - Navin.Sharma@hamilton.ca, 905-546-2424, ext. 4477
  - www.hamilton.ca/waste

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Background (1)

- 2-stream collection (papers & containers)
- Recycling collection available for homes, apartment buildings, small commercial properties, schools, city buildings & special events
- BB collection for curbside customers & “Blue cart” collection for apartment buildings & schools
- Recycling collection part of general tax levy
- Recycling revenues help offset collection costs

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Background (2)

- Location: 1579 Burlington Street East
  - 15.4 Hectares (38 acres)

History:

- former Firestone Tire & Rubber Company of Canada (1922 to 1987)
- Philip Services Corporation (1987 to 2001)
- obtained by City of Hamilton in 2001

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Background (3)

- Total building area ≈79,000 m2 (850,000 ft2)
- Materials processing area ≈ 10,405 m2 (112,000 ft2)
- 2-stream processing system
  - fibres processing in central section
  - containers processing in east section
- West section previously used for storage

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MRF Processing–Fibres Processing System

- Between 2003 & 2006, fibres were loose loaded & sent for processing at Canada Fibers Ltd.’s MRF in Toronto
- March 2006: new Machinex fibers processing line installed
  - includes both manual & machine sort
  - handles newsprint, hardpack & cardboard

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MRF Processing (2)

- Containers processing system
  - installed in September 2008
  - features Bollegraff equipment, TiTech Optical Polysort system, innovative “film grabber” & Hocker air suction system

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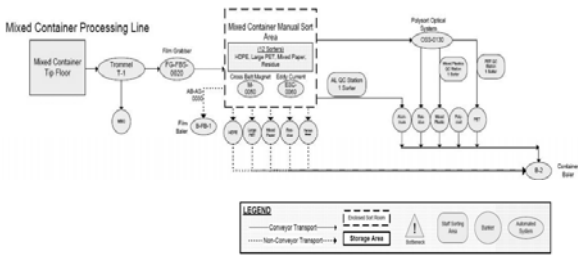
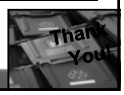
Container Line



Container Line (2)

- Dual stream system installed in September 2008
  - cost: $2.7M; operated at 7 tonnes/hour
  - 40% decrease in staff
  - 4 days a week, Mon. to Thurs.; Fri. maintenance

CIF Funded Equipment	Costs	CIF Funded
Film Grabber	$ 529,000	$ 308,700
TiTec Polysort Optical System	$ 441,000	$ 132,500
Total	$ 970,000	$ 441,200



Lessons Learned
Single Stream MRF #135

Francis Veilleux
Bluewater Recycling Association

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Project Highlights

- *Project goal:* convert dual stream facility to single stream
- *Anticipated impacts:*
  - decrease system cost
  - increase diversion
- *More information*:
  - bluebox@bra.org
  - www.bra.org

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Lesson #1

Process

Single stream process is not a dual stream system with presort

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Lesson #2

- Single stream system can be effective & efficient
  - affordable
  - efficient
  - high quality commodities
  - low residue rate
  - reasonable labour requirements
  - safer work environment

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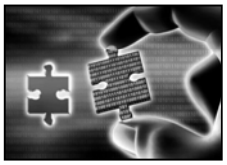
Lesson #3

- Optical sorter very effective if…
  - understand technology limitation
  - maintain equipment
  - use trained professionals

Lesson #4

- System only as good as sum of parts
  - equipment design, positioning, use
  - treatment methodology
  - material composition
  - material throughput
  - personnel quality
  - competent operators



Lesson #5

- Not everything works as expected
  - optical sorter
  - baler
  - compactors
  - air classifier
  - air emissions

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Next Steps

- Continue to look for system improvements
- Want additional external sources of materials
- Continue to expand automated collection system

CIF CONTINUOUS IMPROVEMENT FUND

Update on Optical Sorting Installations in Ontario MRFs

John Dixie
StewardEdge Inc.

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Objectives of Presentation

- Update on optical sorter installations in Ontario (ON)
- Encourage development of a body of knowledge on optical sorting technology (OST)
- For more information:
  - jdixie@stewardedge.ca

STEWARDEDGE

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Optical Sorter Installations (1)

- No optical sorters in ON MRFs prior to 2005
- Currently 16 units in 13 MRFs–12,000 to >100,000 tpy capacity
- Primary use is PET
  - also HDPE, other plastics, polycoat, fibre cleaning
- 3 brands in ON:
  - Pellenc (9 units), MSS Inc (4), TiTech (3)

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Optical Sorter Installations (2)

Program	BBPP Funding	Commissioned	Stream	Manufacturer	Materials Targeted
Ottawa-Metro Waste	N/A	2004	containers	Pellenc	HDPE, PET
Durham	E&E	2007	containers	Pellenc (2 units)	PET, tubs & lids; HDPE, polycoat
Peel	E&E	2007	containers	MSS	PET, polycoat
Toronto-Metro Waste	E&E	2007	fibres	MSS (2 units)	both do OCC & OBB, non-fibre
Hamilton	CIF	2008	containers	TiTech	PET, mixed plastics & polycoat
Guelph	N/A	2008	glass	TiTech	glass
Northumberland	N/A *	2008	fibres	MSS	OCC & OBB, non fibre
EWSWA	E&E	2008	containers	Pellenc	PET, HDPE
Toronto (Dufferin)	E&E	2008	containers	Pellenc	PET, polycoat
Waterloo	N/A	2009	containers	Pellenc	PET, #2-7 plastics
Bluewater	CIF	2009	containers & fibres	Pellenc (2 units)	PET, HDPE; polycoat, non-fibre (multi-pass unit for containers)
Guelph	CIF	2010	containers	TiTech	PET
Niagara	CIF	2010	containers	Pellenc	PET, #2-7 plastics
London	CIF	install 2011	containers	Pellenc	PET, HDPE (or mixed plastics)
York	N/A	install 2011	containers	Pellenc (2 units)	PET, HDPE

* Monitored by E&E Fund

Lessons Learned: OST System Design

- Build in sufficient space for quality control, esp. for large volume materials such as PET
- Allow sufficient space below to prevent backups
- Enough platforms/space for proper/safe servicing?
- Compressor system powerful enough?
- Keep film & polystyrene out of machine
- Need good air quality/flow & temp./humidity control
- Retrofits more expensive & plan for longer than expected phase-in period

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Lessons Learned: Training

- Optical sorting systems high-tech & can be temperamental
- Need on-going technical support & good staff training
- Insist on supplier providing one week on-site training
- Negotiate to have full access to controls

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Lessons Learned: Monitoring

- Regular monitoring is important
- Mass balance audits to determine capture & purity rates
- Sampling methods vary
  - one size does *not* fit all but need to standardize test more
- Good agreement on capture rates measured by weight or count (except for HDPE)
- Considerations:
  - sensor glass cleaned before test?
  - throughput level normal?
  - account for “heavies”
  - lower performance if material is wet/icy

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Lessons Learned: Operation / Maintenance

- Many installations largely problem free
- Valve & sensor block replacements (all brands)
- Some flow issues with film, PS & OCC
- Sensors & air jets must be realigned periodically
- Other repairs/adjustments:
  - cracked glass over sensors, burnt lamps, seals on electronics, valve block shifted, software upgrades, air compressor freezing
- Regular maintenance is key to better performance:
  - clean air jets & wipe lamp/sensor glass (each break)
  - scrape off burned on material at least twice a week
  - Checkups: on-site (at least 2x year), dial-in (quarterly)
  - routine maintenance & repairs approx. $20K to $30K/year

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Lessons Learned: Performance (1)

- Excellent results for PET & Polycoat
- Good on HDPE
- Fair on mixed plastics, OCC & OBB

Target Material	Capture Rate	Purity Rate
PET	80% to 90%	80% to 90%
Aseptic / Gabletop	80% to 90%	70% to 80%
HDPE	75% to 85%	70% to 80%
Mixed Plastics	60% to 75%	NA
OCC	50% to 70%	NA
OBB	20% to 30%	NA

Lessons Learned: Performance (2)

- What OST does well
  - sorts very quickly, far more efficient than manual sort
  - captures small containers missed with manual
  - flexible & can be set to target different materials
- Some limitations
  - performance rates generally a little lower than manufacturer spec
  - requires low burden depth & QC on eject streams
  - difficulty differentiating between HDPE/LDPE
  - misses non-brown OBB & OCC, dark plastics, "heavies," PET bottles if PP cap registers first

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Lessons Learned: Summary

- OST is widespread in ON & performing well
- Some material flow & recognition issues
- Good system design & training & regular maintenance is key
- OST increases material recovery & revenues & decreases disposal costs
- Can facilitate cost effective high-grading of materials

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Next Steps

- Starting to experiment with multi-pass OST, e.g. Bluewater
- StewardEdge & CIF to discuss requirement for detailed report on OST installations with analysis of
  - performance data
  - monitoring standards
  - operation / maintenance issues
  - material recognition issues
  - cost / benefits
  - opportunities
- More information:
  - John Dixie, jdixie@stewardedge.ca

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CIF CONTINUOUS IMPROVEMENT FUND

Questions

"Ask a Question" at console bottom right

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CIF CONTINUOUS IMPROVEMENT FUND

Improving Transportation Efficiencies with Technology

Jerry Biersteker, Region of Waterloo

113

Building an Effective Supply Chain…

- Developing cost-competitive transfer infrastructure
  - cost-effectively transport materials to market
  - gain access to more markets
    - benefit from wider market options

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Today's Speakers

- Derrick Tuyl, Efficient Waste
  - compactors for smaller, rural sites
- Doug Vanderlinden, NexGen Municipal Inc.
  - Transtor systems for ON MRFs
- Mike Birett
  - Halton & Kawartha compactor systems

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CIF CONTINUOUS IMPROVEMENT FUND

Small Program Depot Upgrades

Derrick Tuyl
Efficient Waste Management Services Inc.

116

Project Highlights

EWM

- *Project Goal*: examine opportunities to improve operational efficiencies at drop-off depots & rural transfer stations
- *Impacts*: reduced transfer/hauling costs & improved site operations
- *For more information*:
  - dtuyl@efficientwaste.com
  - www.efficientwaste.com

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The Problem

- Rural depot bins generally inefficient
  - low-medium volume
  - high cost of haulage/tonne
    - at an average cost of $450 per bin

Goal: determine how best to gain hauling efficiencies through compaction

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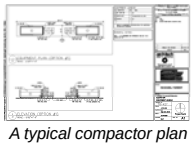
Compactor Systems

- Compactor system selected to match site servicing conditions
- Available systems:
  - single or 3-phase
  - solar system with 110 single phase backup
  - stand alone solar with generator backup
- Compactors paired with software monitoring systems



A typical compactor plan

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Compactor Projects through CIF's REOI

- Compactor systems installed (or soon to be) at public drop-offs & rural depots
  - 209 & 282 McDougall
  - 303 District of Muskoka
  - 275 Peterborough County
  - 280 McKellar
  - 281 Whitestone
  - 283 Carling

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Actual Project Costs

- Solar Compactors ~$30,000 ea/ amortized at $645/mo
- Receiver bins:~$9000 ea/ amortized at ~$194/mo.
  - prior to WDO/CIF funding
- Payback: <5 years
- Project costs include
  - site visits & feasibility studies; training, implementation assistance
  - process assessment & cost analyses

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Sample "All-In" Costs

Transportation Costs & Savings		Cost of Compaction Bins (Solar Powered)	
Total transportation cost for recyclables 2009:	$71,085	4 Hydraulic Compactor @ $29,340 each	$117,360.00
Estimated cost savings for compaction 75%	$51,314	6 - 40 Yard receiver boxes @ $8,845 each:	$53,070.00
Estimated annual transportation costs:	$19,771	Delivery & installation	$8.250.00
		Concrete pads (4)	$2,400.00
Total		**$181,080.00**	
Less 60% Funding		**$108.648.00**	
Total purchase		**$72,432.00**	
Total Payback time:		**1.41 years.**	

Project Results: Start Up Issues

- Experienced by some sites:
  - solar units run 6 cycles/hour, providing lots of sun
    - after that, they need back up: generator or 110 volt
  - Electrical Safety Authority (ESA) changed approval requirements on units after order
    - changed all invertors to suit (existing & ordered units)
  - incorrect oil installation in one unit resulted in issues in first 'cold spell'
    - resolved by oil change

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Compaction: A Positive Change for Rural Transfer Sites

- Results from this project point to:
  - improved 'curb appeal'–cleaner, neater, better organized depot sites
  - reduce haulage–replace up to 9 loads with just 1
    - cost savings–up to ~$2,400/month (summer – MacDougal Twp.)
  - power servicing requirements (esp. in winter; also in summer)

Tip: CIF recommends no more than 2.5:1 compaction without approval of processing MRF

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Next Steps

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CIF CONTINUOUS IMPROVEMENT FUND

Recycling Transfer Systems– Mid-sized Programs

Doug Vanderlinden
NexGen Municipal Inc.

126

Project Highlights

- *Project goal:* reduce recycling transfer costs
- *Anticipated impacts:*
  - reduce operating costs
  - provide access to efficient MRFs
  - simplify operation
  - reduce greenhouse gases
- *More information*:
  - dcv@nexgenmunicipal.com
  - www.nexgenmunicipal.com

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Recycling Cost Control for Smaller Communities

- Smaller communities lack critical mass to drive down process costs
- Early, local systems not cost effective
- One or two stream processing necessary to control collection costs
- Processing at high capacity regional MRFs significantly cheaper if payloads can be achieved
- All inclusive cost review (collection, transfer & processing) required

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Project Description

- Transtor units receive, store & transfer material
- Design system to eliminate building, loader & labour
- Compactor transfer trailers maximize payload

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Project Description

- High capacity trailers maximize payload
- Auto pack feature allows compression, while meeting MRF requirements
- 48' to 53' depending on material & destination

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Anticipated Impacts

- Cut program costs by eliminating local processing
- Leverage regional MRF volumes & capacity
- Speed collection by facilitating one or two stream collection
- Simplify local truck routing
- Improve recovery rates
- Reduce local program administration
- Piggyback regional MRF sales, particularly in tight markets

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Progress to Date

- Demonstrated initial success at City of Dryden, using single stream Winnipeg MRF since 2006
- 2010 transtor/trailer sites now completed & commencing operation at:
  - Haldimand County–2-stream to Niagara MRF
  - City of Timmins –1-stream to Sudbury MRF
  - integration of compaction trailer to transfer building at City of Kenora–1-stream to Winnipeg MRF
  - initial loads in optimization process

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Haldimand County

Demonstrates use of regional two stream MRF to reduce costs & increase efficiency for collection & processing municipalities

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City of Timmins

Demonstrates cost reduction by adopting single stream, automated collection & leveraging regional MRF facilities over 3 hours away

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City of Kenora

Demonstrates retrofit of conventional single stream packer system to high capacity trailer loading & regional cooperation with City of Dryden

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NEXT STEPS

- Monitor load generation for each stream at each site
- Gradually increase compaction rates to maximize payloads without impacting MRF process
- Tune system to handle continuous changes to incoming materials, broader streams
- Handle site specific issues including wind & variances in hauling collection trucks

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CIF CONTINUOUS IMPROVEMENT FUND

Large Program Opportunities

Mike Birett
CIF

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Project Highlights

- *Project goal:* support development of municipal transfer infrastructure
- *Anticipated impacts:*
  - reduced transfer & hauling costs
  - better access to markets & improved processing opportunities
- *More information:* mbirett@wdo.ca

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What is the Right Infrastructure for the Job?

- Transtor or traditional transfer station?
- CIF commissioned Project 148:
  - Report on Transfer of Blue Box Recyclable Materials: Factors Affecting Decision Making
- Study examined:
  - when to direct haul, when to transfer
  - cost implications of different transfer station designs

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Project 148 Results

- Study found:
  - hauling distances of up to 600 km were more cost effective depending on circumstances
  - Transtor style facilities were, in principle, more cost effective below 5,000 MT/yr
- But what if you have more than 5,000 MT/yr?

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Large Program Opportunities

- Projects for discussion:
  - City of Kawartha Lakes LEED Certified Centralized TS–CIF #508.11
  - Halton Region TS–CIF #186
  - Strong Township–CIF #581.11 processing facility

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Kawartha Lakes (1)

- Construction of centralized transfer station
- To be located at Lindsay/ Ops landfill site
- Facility size: 18 m X 30 m or 5920 ft^2
- 7000 TPY capacity
- Installation of polystyrene (EPS) densifier

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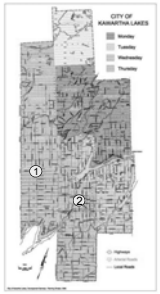
Kawartha Lakes (2)

- #1- Current site (Lorneville TS)
- #2- Proposed site (Lindsay/Ops landfill)



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Kawartha Lakes (3)

- Benefits:
  - reduced collection route times & operating costs
  - access to other processing options
  - utilize landfill staff & infrastructure
  - avoid operating costs of existing facility
  - EPS densification will reduce operating cost

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Kawartha Lakes (4)

Full project cost	$1,107,400
CIF funding requested	$578,700
Full Cost: est. payback (yrs)	**3.67**
CIF Cost: est. payback (yrs)	**1.92**

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Halton Region Transfer Station (1)

- Construction of centralized transfer station
- Located at Halton waste management site
- Facility size: 600 m^2
- 6700 TPY capacity

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Halton Region Transfer Sites (2)

- Benefits:
  - centralized location to primary collection routes
    - reduction of ~50,000 km/yr
  - reduced reliance on private sector transfer sites
    - gross savings of over $100,000 in tip fees
  - ability to use existing site staff & infrastructure

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Halton Region Transfer Site (33)

- BB-related capital costs of $700,000
- Operating costs of $25,000/yr (est.)
- Net savings of almost $77,000/yr on operating excluding collection route savings

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When is a Transfer Site Something More?

- Strong Township:
  - typical rural transfer site handling under 150 TPY
  - producing fibre & container bales utilizing simple down stroke baler
  - recognized an opportunity to increase revenues by separating aluminum from container stream

Strong Township

- $50,000 project included:
  - building expansion
  - ferrous magnet
  - new P&E program & signage
- Increased revenues of up to $9,000/yr
- Payback on CIF funding of under three years

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Questions

"Ask a Question" at console bottom right

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Refreshment Break

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Welcome Back

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Need to Know

Andy Campbell, CIF

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Key Items of Interest

- Blue Box Recycling Training Update
  - Vivian DeGiovanni, Municipal Waste Association
- Multi-residential initiatives
  - provincial update by Anne Boyd, City of London & the CIF
  - Front End Recycling Project report by Peter Kalogerakos, Region of Peel
- Sustainable Financing of Solid Waste Management Systems
  - Maria Kelleher, Kelleher Environmental

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Ontario Blue Box Recycler Training E&E Fund 341

Vivian De Giovanni
Municipal Waste Association

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Ontario BB Recycler Training Updates 2011

Fundamentals Course:

- Three Deliveries in 2011
  January, February & March

Specialized Courses:

- **Data Management**
  March (in time for Datacall)
- **Markets & Marketing**
  June
- **Contract Management**
  September
- **Promotion & Education**
  October

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Update: CIF Multi-residential Support Project

Anne Boyd
CIF & City of London

158

Project Highlights

- *Project goal:* support multi-residential recycling in municipalities through direct funding & technical expertise
- *Anticipated impacts:* improved effectiveness & efficiency of multi-residential programs
- *More information*:
  - aboyd@london.ca
  - www.wdo.ca/cif/

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Presentation Overview

- Summary of municipal projects underway
- Spotlight on five municipal projects
- Considerations to evaluate your program
- How CIF can help

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Current Municipal Multi-res Projects

- Stratford
- Quinte
- Barrie
- Peterborough
- Woodstock
- London
- Sarnia
- St. Thomas
- Sudbury
- Durham Region
- Niagara Region
- Oxford County
- Region of Waterloo
- Essex Windsor (Ph 1 & 2)
- Toronto Housing
- Toronto (Ph 1 & 2)
- Peel Region (Ph 1 & 2)
- Kawartha Lakes
- Town of Perth

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Summary –Municipal Projects

- 22 municipal projects
- 900,000 households

$2.3M funding from the CIF

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MR Spotlight: Perth–Small Program

2,900 households
500 MR households – 17%
~ 20 buildings
CIF funding - $6,000

- Current program:
  - minimal MR program
  - residents can set out a blue box
- Goal:
  - cart program for all buildings
  - supply 80 carts (1 cart: 7 units)
  - provide in-unit containers, new P&E

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MR Spotlight: St. Thomas–New Program

16,000 households
3,800 MR households – 24%
105 buildings
CIF funding - $27,000

- Current:
  - < 20% of buildings recycle
- Goal:
  - service all buildings
  - supply 430 recycling carts (1 cart: 7 units)
  - in-unit containers, new P&E for residents
  - handbook for superintendents & property managers

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MR Spotlight: Sarnia–Signs

41,000 households
11,000 MR households – 27%
165 buildings
CIF funding - $60,000

- Current:
  - old program, limited resources
- Goal:
  - signage at all buildings, enforce by-law
  - add 450 recycling carts to program (1 cart: 7 units)
  - new P&E for residents
  - handbook for superintendents & property managers

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Old signs–out-of-date, reflect old multi-stream program

New signs–reflect current program with room for program updates

MR Spotlight: London–Increase Capacity

162,000 households
49,000 MR households – 30%
750 buildings
CIF funding - $194,000

- Current:
  - 3,000 carts – 50% of BP level
- Goal:
  - double number of containers:1 cart per 7 units
  - new P&E
  - outreach, e.g., workshop for superintendents & managers

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MR Spotlight: Toronto–Incentives

1 million households
550,000 MR households – 55%
> 5,000 buildings
Pilot project at 11 buildings
CIF funding - $100,000

- Pilot outreach initiatives:
  - train staff, pay incentives, door-to-door, floor-to-floor
- Anticipated outcome:
  - business case for property owners to support recycling as means of saving garbage levy costs

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Considerations to Evaluate your Program

- ✓ Do you have up-to-date MR properties database?
- ✓ What % of buildings have recycling programs?
- ✓ Are there enough recycling containers?
- ✓ Do you do routine site inspections to evaluate program at individual buildings?
- ✓ Do you have P&E program for MR?
- ✓ Do you know program KPIs: kg/unit, $/unit, % recovered?
- ✓ What impact does MR performance have on overall program efficiency & effectiveness?

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CIF Can Help Improve your MR Program

- Funding: $35/bldg, 50% funding for container purchase
  - 2011 funding priority for RFID integration
  - present a proposal
- Technical support:
  - P&E • database • cart purchase contract • final report template
  - up next: guidelines for site plan approval process for new buildings

Watch for MR resources pages on CIF website by year end

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CIF CONTINUOUS IMPROVEMENT FUND

Front End Recycling Implementing Best Practices Project # 566.4

Peter Kalogerakos

Region of Peel
Working for you

171

Project Highlights

Region of Peel

- ***Project goal:*** To increase the capture of recyclables at Multi-residential locations
- ***Anticipated impacts:*** Recycling tonnage will increase with additional recycling capacity
- *More information*:
  - peter.kalogerakos@peelregion.ca
  - www.peelregion.ca/waste

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Why this Project?

- Addresses one of the major barriers to recycling:

Lack of recycling capacity

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Project Description (1)

- Site assessments conducted to determine suitable buildings
- Negotiate/tender for change in collection service type
- Procure manufacturer for front end bins
- Allocate/budget for bins & staff to assist in program rollout & maintenance (planning & collections staff)
- Buildings remaining on cart collection provided with additional carts

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Project Description (2)

- ~ 375 multi-res properties receive FE recycling collection (over 50% of multi-res properties)
- ~ 1,000 bins (3, 4 & 6 yd^3) distributed ~ $1 million
- Bin design altered to allow more user-friendly access

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Impacts/Results (1)

- Greater cost efficiency
  - reduced collection costs by 41%: −$240,000
  - reduced long term bin repair/replacement costs
- Increased recycling tonnage
  - since 2009, tonnage increased by 30%
  - diversion rate increased by 4%

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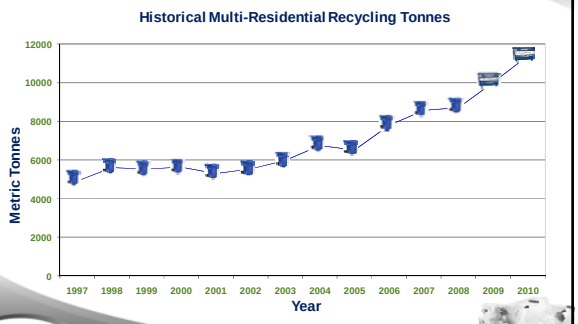
Impacts/Results (2)



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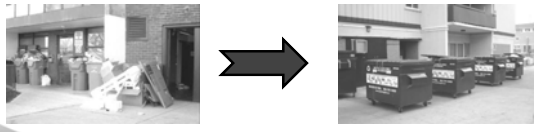
Impacts/Results (3)

- Improved Site Conditions
  - cleaner recycling areas
  - little or no loose recyclables outside of containers



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Project Learnings

- Assessment & consultation with each location is critical
  - determine appropriate bin size & numbers for space available
  - address building staff & residents concerns
    - i.e. bin design, location, current building infrastructure
- Follow up visits important
  - to ensure appropriate & efficient use of bins
- Experienced resistance at some locations

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Best Practice & Continuous Improvement

- Increasing recycling capacity is a best practice

  Capacity increased from 36L (9.5 gal.) to 56L (15 gal.)
  - systems may vary by municipality (i.e. separate OCC collection, single-stream vs. multi-stream)
  - cost/benefit analysis should be conducted to determine capital & operating cost impacts
- Project represents continuous improvement:
  - cost efficiencies
  - effective increase in recycling tonnes

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Stay Tuned…

- Report forthcoming on Best Practices Project
- Region Long Term Plan to increase Multi-Res BB Diversion
  - onboard Scale (volume/weight) tracking
  - RFID Integration
  - database creation for performance tracking & billing
  - volume-based user pay system (pending council approval)

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CIF CONTINUOUS IMPROVEMENT FUND

Sustainable Financing of Solid Waste Management Systems

Maria Kelleher
Kelleher Environmental

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Presentation Outline

- Definition of Sustainable Financing System For Waste Management
- Reasons Why Sustainable Financing Approach Should Be Considered
- Examples of Sustainable Financing Systems in Other Cities
- Lessons Learned from Operating Programs

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Issue

- Current property tax based financing of solid waste management systems not sustainable
  - residential solid waste management costs cross-subsidized by IC&I sector
  - solid waste competes with other municipal needs
  - no independence to make changes to solid waste management system to increase diversion
- Independent, self financed systems in place across US & Canada
- Many Ontario (ON) municipalities exploring sustainable financing approaches

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What is a Sustainable Financing System For Waste Management?

- Waste management is self-financing, separate cost centre
- Budget separate from other departments or services
  - not competing at budget time
- Fees charged to households
- Waste management not financed from property taxes
- Council less involved in day- to-day decisions – approves budgets & broad policy & program directions

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Sustainable Financing Systems For Waste Management Becoming Popular

- Many large cities across Canada have moved to sustainable financing systems
  - Vancouver -Victoria
  - Edmonton -Toronto
  - Ottawa
- Many others looking at sustainable financing options
- We now have significant information from operating programs to help move the issue forward

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Four Broad Sustainable Financing Options For Waste Management Systems

- Flat Fee Combined With Property Taxes (Ottawa)
- Flat Fee For All Waste Management (Edmonton)
- Variable Fees for Each Service (Vancouver)
- Variable Fees For Garbage Cover Costs of All Services (Toronto)
  - can add PAYT for extra bags

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Flat Fee Combined With Property Taxes (Ottawa)

- July 2005–Ottawa Council approved flat fee for garbage, diversion remains funded through tax base
- Bills sent to households with fee to cover off garbage collection & disposal, plus some admin/reserves
- Explained to residents that fee avoided 3.9% tax increase
- Diversion costs remain funded by property taxes

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Flat Fee Combined With Property Taxes –Ottawa (1)

- 2006 fees recovered $21 million of SW budget (about ½)
  - $18.5 SF collection & disposal
  - $2.5 million MF collection & disposal
- 2009 fees:
  - $86/SFHH
  - $35/MFHH
- Initially planned to add fee to water bill
  - 40,000 rural residents do not receive water bill
- Shown as line item “fee” on property tax bill

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Flat Fee Combined With Property Taxes –Ottawa (2)

- No PAYT option for extra bags
- IC&I sector property taxes no longer help to pay for residential garbage pick-up & disposal
- Flat fee provides stable source of funding
- Bag limit is policy which encourages diversion

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Flat Fee For All Waste Management – Edmonton (1)

- Introduced flat fee to cover processing & disposal costs in 1995
  - Embarking on large capital projects,
  - Needed certainty regarding availability of $ for new facilities (composter, MRF, etc.)
  - Needed “more controllable” source of funds
- Collection services (garbage, recycling) funded by property taxes before 1995

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Flat Fee For All Waste Management – Edmonton (2)

- Flat Fee increased over time
  - % of total waste mgt. costs covered by taxes decreased
- Gradually moved to financing system (2009) where all costs passed on to the household
- IC&I Subsidy of residential service has been eliminated
- Residential waste management system users paying full cost of providing service

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Flat Fee For All Waste Management (Edmonton) –SF Fee Changes Over Time (1)

- Edmonton 2009 annual fees:
  - $319/SFHH/year
  - $208/MFHH/year
- Edmonton does not provide curbside options for extra bags
- City of Victoria charges $155/year flat annual fee for all waste service
  - 1 bag limit per week for garbage
  - extra bags $3.10

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Flat Fee For All Waste Management (Edmonton) –SF Fee Changes Over Time (2)

Year	Flat Fee	Prop. Taxes	Total
1999	$60	$44	$104
2003	$125	$47	$172
2006	$159	$45	$204
2008	$182	$50	$232
2009	$319	$0	$319

Variable Fees for Each Service– City of Vancouver (1)

- Separate fees for garbage, recycling & leaf & yard waste (LYW)–until 2006
  - garbage –stop fee $28/yr plus per can fee $32/year
  - recycling–$10 stop fee plus $9 service fee
  - yard Waste – $38/year
- Typical family with 2 cans–$149/year

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Variable Fees for Each Service– City of Vancouver (2)

- Introduced automated garbage & LYW collection in 2006/2007
- Residents choose from:
  - 5 garbage cart sizes
  - 4 LYW cart sizes
- Separate fees for garbage, recycling & LYW, but more choice
  - garbage–stop fee $59/yr plus $35/100l collection
  - recycling–$10 stop fee plus $9 service fee = $19/year (no change)
  - yard waste–$35/year stop fee + $9/100l collection

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Variable Fees for Each Service– City of Vancouver (3)

- Average per household costs increased:
  - 2005 $149/SFhh/year
  - 2006 $161/SFhh/year
  - 2007 $172/SFhh/year
- Financing system provides recycling at low costs ($19/household/year)
- Garbage costs much higher than recycling or leaf & yard waste costs
- Garbage cart charges encourage smaller carts

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Variable Fees For Garbage Cover Costs of All Services (Toronto)

- City of Toronto set up a Solid Waste Utility in 2008
- Self finances all waste management related costs & contribution to capital reserves
- All programs paid for by fee on garbage bin
- Municipal Act constraints – collect $ through taxes & transfer to utility
- Bills to SF households show a credit of $209 per year
- Bills to MF units show credit of $157 (changed to $175 in July, 2010)

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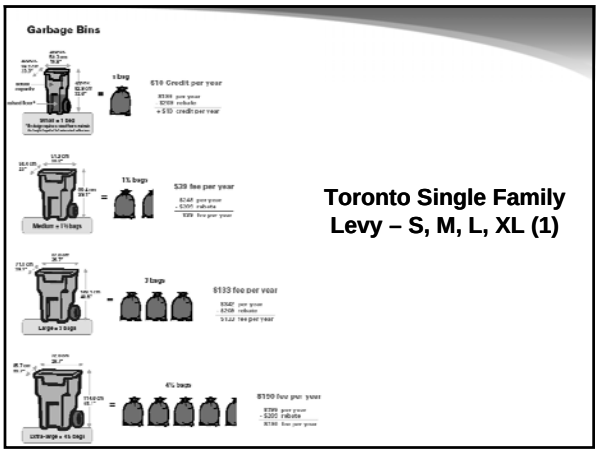

Toronto Single Family Levy – S, M, L, XL (1)

Toronto Single Family Levy Rates– S, M, L, XL (2)

Garbage Cart Volume	Bag Equiv.	Total Annual Cost	Net Cost (-$209 rebate)
75L	1	$199	-$10
120L	1.5	$248	$39
240L	3	$342	$133
360L	4.5	$399	$190

City of Toronto Multi-Family Levy

- S, M, L & XL rates to match single family system
  - volumes & rates assumed MF HH = 2/3 SF HH
- Buildings charged for each bin collected assuming it is full
- Compacted rate (3x un-compacted rate) charged to all buildings assumed to have compactors
- 2009 budget–$106.5M from MF levy

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City of Toronto MF Levy Rates

- Small $150/unit/year
- Medium $175/unit/year
- Large $205/unit/year
- Extra Large $235/unit/year
- Additional garbage
  - $28.67/cy/y compacted
- SW Rebate $157/unit/year transferred from tax bill to solid waste utility

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Impacts of Toronto MF Levy

- Significant bills to buildings which received free collection before July, 2008
- 252 of 4,000 buildings moved to lower size category:
  - 182 From XL to L
  - 33 from L to M
  - 15 from XL to medium
  - 11 from L to S
  - 3 from XL to small
  - 8 from M to S

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Unintended Consequences of MF Levy

- Private sector haulers offered cheaper rates for garbage pick-up (recycling at extra charge)
- GTAA developed standard collection contract for members
- Buildings left the City system
- City waste utility lost revenue
- Levy re-designed in July, 2010 to charge by cu yd, with 2:1 compaction ratio

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Lessons Learned So Far Regarding Sustainable Financing Systems

- More transparent way to operate waste management
- Removes IC&I subsidy of waste management services
- Residents see what the service costs
- Moving to utility structure needs careful planning
- Fees can be designed to encourage diversion

- For more information: mkelleher@kelleherenvironmental.com

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CIF CONTINUOUS IMPROVEMENT FUND

Questions

"Ask a Question" at console bottom right

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CIF CONTINUOUS IMPROVEMENT FUND

Update on Blue Box Plastics Projects

CIF& Stewardship Ontario Joint Projects #238

Geoff Love
Love Environment

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Project Highlights

- *Project goal:* expand re-processing capacity & end markets for non-bottle blue box plastics # 1-7
- *Anticipated impacts:*
  - NAPCOR project–new market for thermoform PET
  - EFS–expand mixed rigid & film capacity up to 14,000 tonnes/year
  - Entropex–#1-7 mixed rigid demonstration project at 30,000 tonnes/yr – seeking 50% increase in Ontario's overall plastics recovery
- *More information*: loveenvironment@routcom.com

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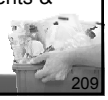
NAPCOR Project (1)

- Options
  - collect thermoforms with bottle stream (many Ontario programs today; 15% or greater)
  - separate thermoforms from OST systems (Waterloo)
  - thermoforms as part of mixed #1-#7 bales
- Issues
  - thermoform PET projected to grow to 50% of bottle stream generation
  - technical issues e.g. contamination, fluorescents & adhesives



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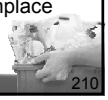
NAPCOR Project (2)

- Progress
  - 4 reclaimers investing in processing systems focused on thermoform PET
  - developed specifications for thermo PET bale
  - demand for recycled content from brandowners
- Anticipated Outcome:
  - optical sorting likely required
  - new MRF specs likely to include thermoform PET stream (e.g. London, Toronto)
  - recycling thermoform PET becomes commonplace



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EFS Plastics, Elmira ON

- Background
  - initial capacity of 5000 tonnes mixed rigids & film
  - NA innovator in curbside film recycling
    - honored as CPIA "Newcomer of the Year" in 2010
- Progress
  - Phase 1 expansion complete
    - 25% more capacity (i.e. 7500 tonnes/year)
  - CIF/Stewardship Ontario (SO) matching loans & grants to install second line
    - up to 14,000 tonnes/year by mid to late 2011

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EFS Plastics–Next Steps

- EFS seeking municipal customers with film & mixed rigid streams
- Expanding end markets:
  - PE–low/med density
    - garbage bags, pipes, garden edging
  - PP
    - tool boxes, packaging, clothes hangers, flower pots
- Active new product development always underway
- Please contact: martin.vogt@efs-plastics.ca

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Entropex

- Background
  - 30-year leader in green innovation
  - successful 30 month/1,000 tonne mixed plastics demonstration pilot project
    - jointly funded by Entropex & SO
    - subsequent phases leading to closed loop mixed rigid #1-7 non-bottle recovery
- Progress
  - five municipal partners in initial demonstration
    - Guelph, Hamilton, Sudbury, York, Ottawa Valley
  - issued detailed mixed rigid plastics specs
    - no film, < 5% contamination, etc.

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Entropex – Next Steps

- October 2010: Mixed Rigid Plastic Container Program Expression of Interest
  - target: #1-7 non-bottle, BB plastics from ON municipalities
- Expanding demonstration project
  - will process 15,000 tonnes mixed rigid non-bottle plastics over next year
- Please email Carl at: cyates@entropex.com

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Plastics: Looking Back 5 Years

- Accomplishments
  - all bottles collection works; the consumer gets it
  - 11 plastics optical sort systems installed since 2007
  - two new plastics re-processing plants with significant new capacity (incl. film & non-bottle PET)
- Where do we still need to do more
  - BB plastics recycling rate only 23%
    - we don't know the "right rate" to work towards
  - steward demand for recycled content still lacking

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BB Plastics Projects Summary

- Thermoform PET: emerging re-processing capacity & market demand
- CIF, SO & partner investments: increased BB #1-#7 plastics capacity
  - 5,000 tpy to > 20,000 tpy
- Need infrastructure improvements for collection, processing & communications

CIF assistance available for municipalities to make changes to recover more plastics. Call CIF!

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CIF Plastics Wrap-up

Andy Campbell, CIF

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What's stopping your municipality from adding more plastics?

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Over the Next Few Months

Andy Campbell, CIF

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How can CIF assist you?

- Review WDO best practice questions & look for program deficiencies & gaps
- Prepare for municipal role if Extended Producer Responsibility is legislated
- Increase plastics recovery & processing

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Thank you!

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How Can We Help Your Municipality?

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