Ontario Recycler Workshop

June 14, 2016

ORW begins at 9:00 a.m. ET

CIF
CONTINUOUS IMPROVEMENT FUND

Ontario Recycler Workshop
June 14, 2016

Mike Birett

CIF

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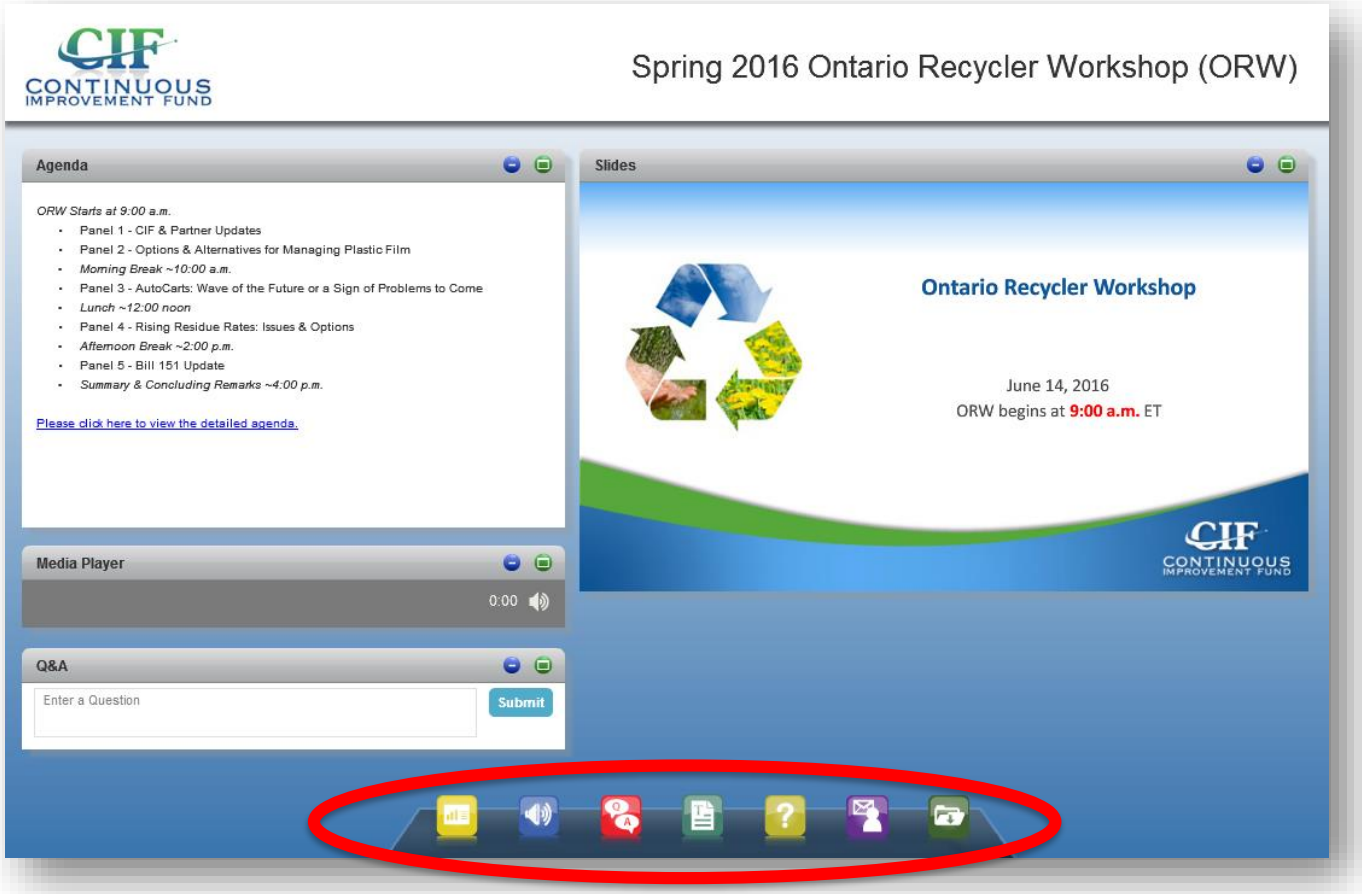
Intro & Welcome

- Good morning & welcome to the 21st ORW
- 200+ participants registered online & in person
- Thank you all for taking the time out of your busy schedules to join us today

Housekeeping - Webcast

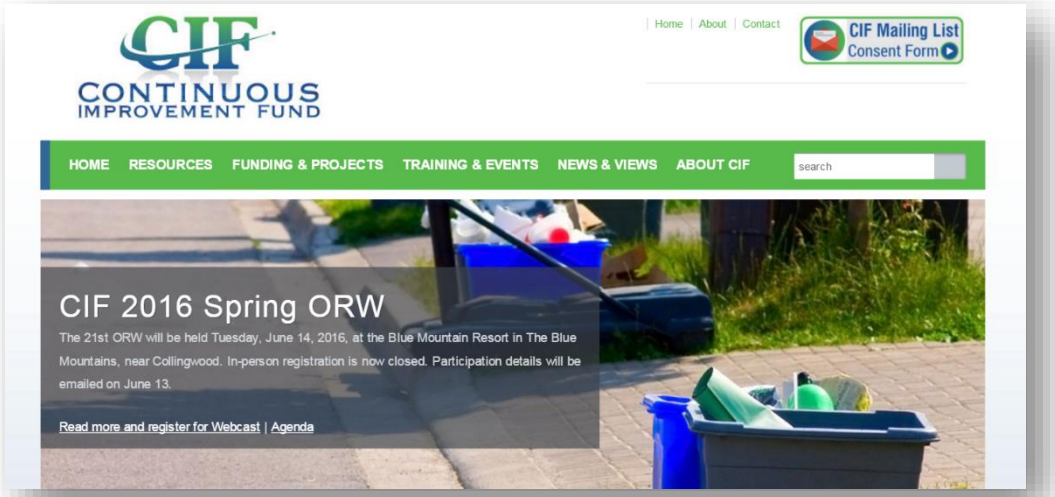
- Full day – to ~4:00 p.m.
- Webcast console
  - Components can be moved, opened/closed by toggling widgets
  - Listen in on mobile device

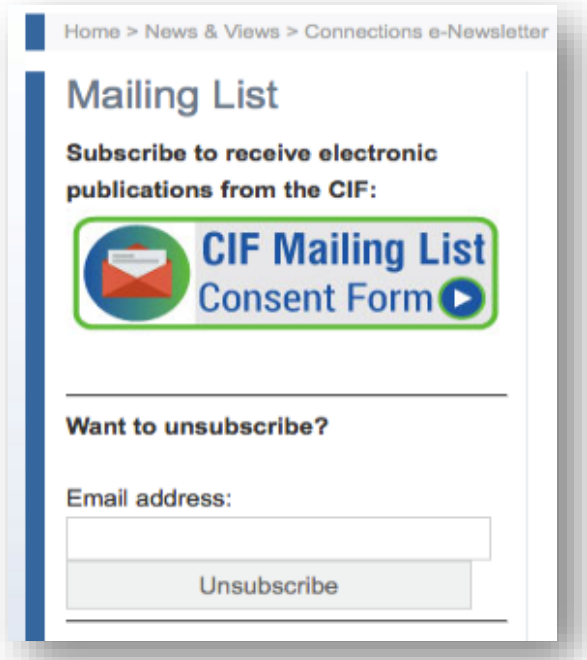
Slides | Media Player | Q&A | System Needs | Contact TSN | Agenda | Lobby Page



Housekeeping Items: In-house

- Be sure to sign in at registration desk for Datacall credit
- Confirm interest to stay on CIF mailing list
  - Connections Blog, REOI, Bulletins etc.
  - Check-off at registration desk or go online





Snapshot…Today's Program

Morning Session

- CIF & Partner Updates
- Options & Alternatives for Managing Plastic Film
- *Morning Break*
- Automated Cart Collection: What Have We Learned
- *Lunch*

Afternoon Session

- Rising Residue Rates: Issues & Options
- *Afternoon Break*
- Bill 151 Panel
- *Summary & Concluding Remarks*

A Sincere Thank You to Today's Speakers!

- Alec Scott
- Dave Gordon, AMO
- Dave Johnstone, Region of Waterloo
- D. Trevor Barton, Region of Peel
- George South, Progressive Waste Solutions
- Glenda Gies, Glenda Gies & Associates
- Joel McCormick, City of Hamilton
- Mary Cummins, WDO
- Laurie Westaway, Wasteaway
- Nathiel Egosi, RRT Design & Construction
- Neil Menezes, Reclay StewardEdge
- Nina Butler, Moore Recycling Associates
- Peter Hargreave, OWMA
- Rick Findlay, RFCL Innovations Inc.
- Sherry Arcaro, Stewardship Ontario

CIF Update
2016 ORW

Mike Birett
Managing Director, CIF

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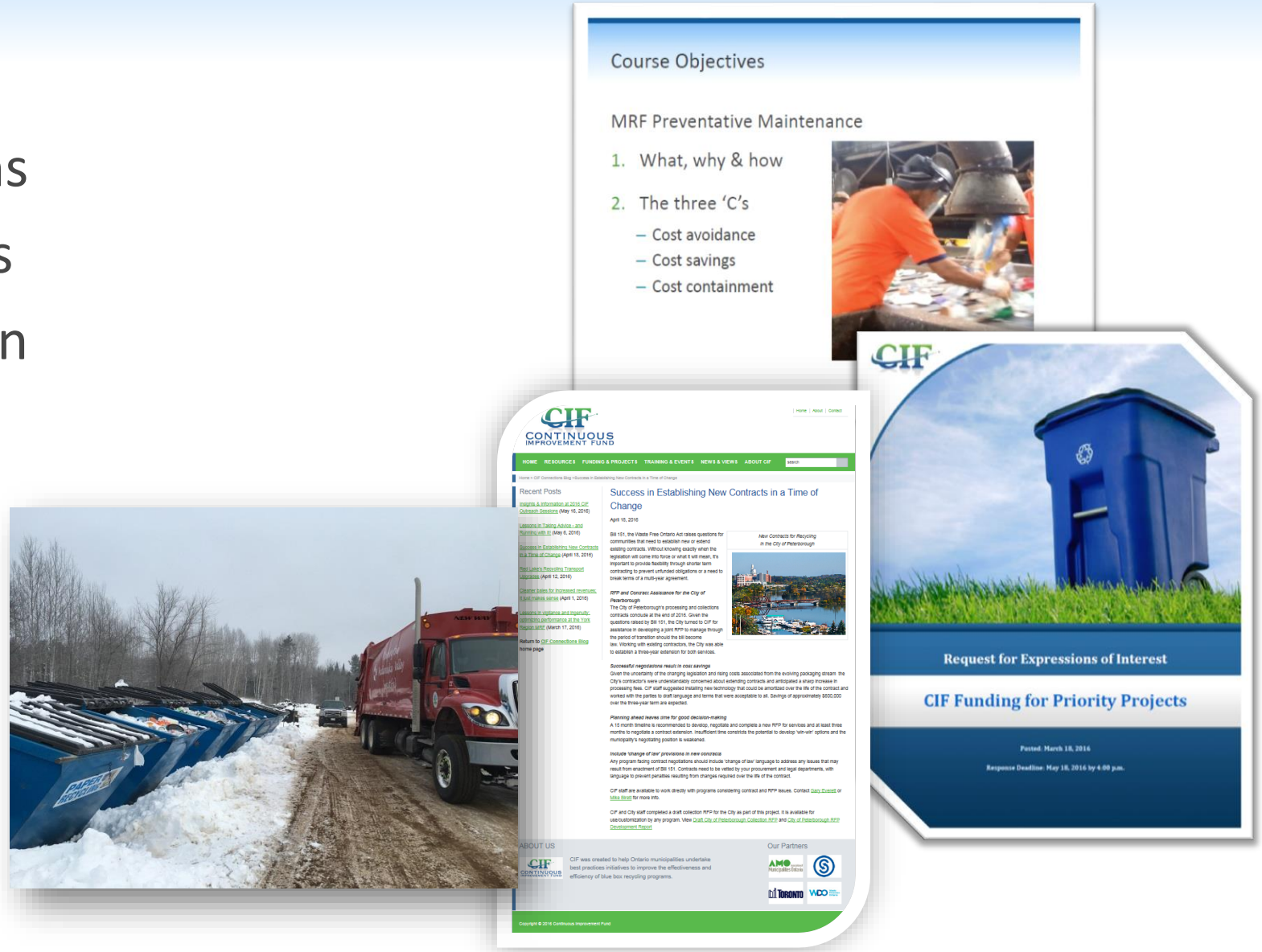
Top of Mind Issues

- Bill 151
- Preparing for change
  - Contract services
  - Capital asset management
  - Knowing your numbers

Current Areas of Effort

- 2016 REOI applications
- Building out resources
- Financial reconciliation
- Budget discussions



Wrapping up Our Spring Consultation

- Six sessions: 119 attendees
- Thank you to our partners:
  - London, Peel, Smiths Falls, North Bay, Dryden, Oliver Paipoonge
- Presentations to & meetings with representatives of 53 municipalities
- Key topics:
  - Bill 151
  - CIF planning
  - WDO/Datacall Update
  - Cost allocation

What We Heard…

- Municipalities remain generally happy with CIF focus
- Sessions continue to provide value
  - Consideration should be given to doing one in Ottawa
- Opportunities exist to tighten up Datacall interpretation
- Challenges in understanding implications of Bill 151
- Help required to understand municipal costs & options
- Growing interest in forming ‘cooperatives’

WDO Direction to CIF

- Assume operations to 2018
- Develop a 3 Yr. Strategic Plan
- Provide a funding recommendation for sustainable operations

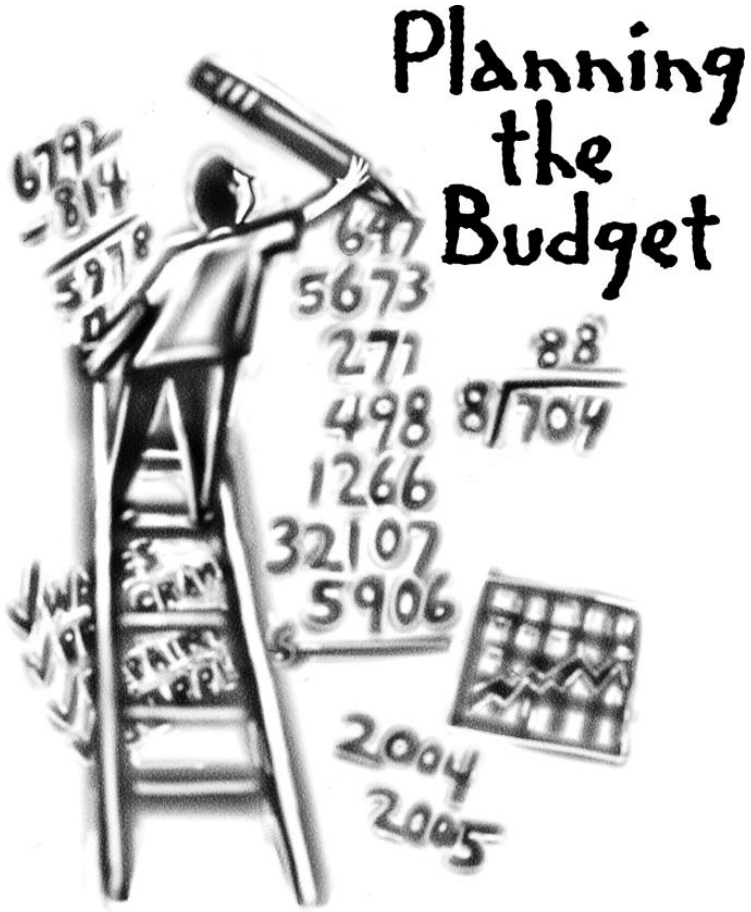
CIF's Funding Recommendations

- $4 million in new funding
  - To come first from surplus funds available after the initial allocation of funds against Best Practices scores under the current payout funding model (or equivalent)

- Contingency plan:
  - In the absence of new funding, repurpose the $3 million commitment to transitional support

2017/2018 Considerations

- Sufficient funding to operate to 2018 & wind down the CIF by June 2020
- Sufficient funding to operate the Centre of Excellence to 2018
- Additional funds would be required to support individual municipal grants



We’re Seeking Feedback On:

- Priorities through to 2018
  - Review and comment on CIF 3 Yr. Strategic Plan
    - Depot operations
    - Activity based costing
    - Problematic materials
    - Multi-res best practices
    - Training
    - RFPs & contracts
- Expectations of the Centre of Excellence?

Website: http://cif.wdo.ca

Mike Birett – Managing Director
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Carrie Nash – Project Manager
CarrieNash@wdo.ca (519) 858-239

Gary Everett – Project Manager
Gary@Egroup1.com (519) 533-1939

2016 CIF REOI
Request For Expressions of Interest

Gary Everett

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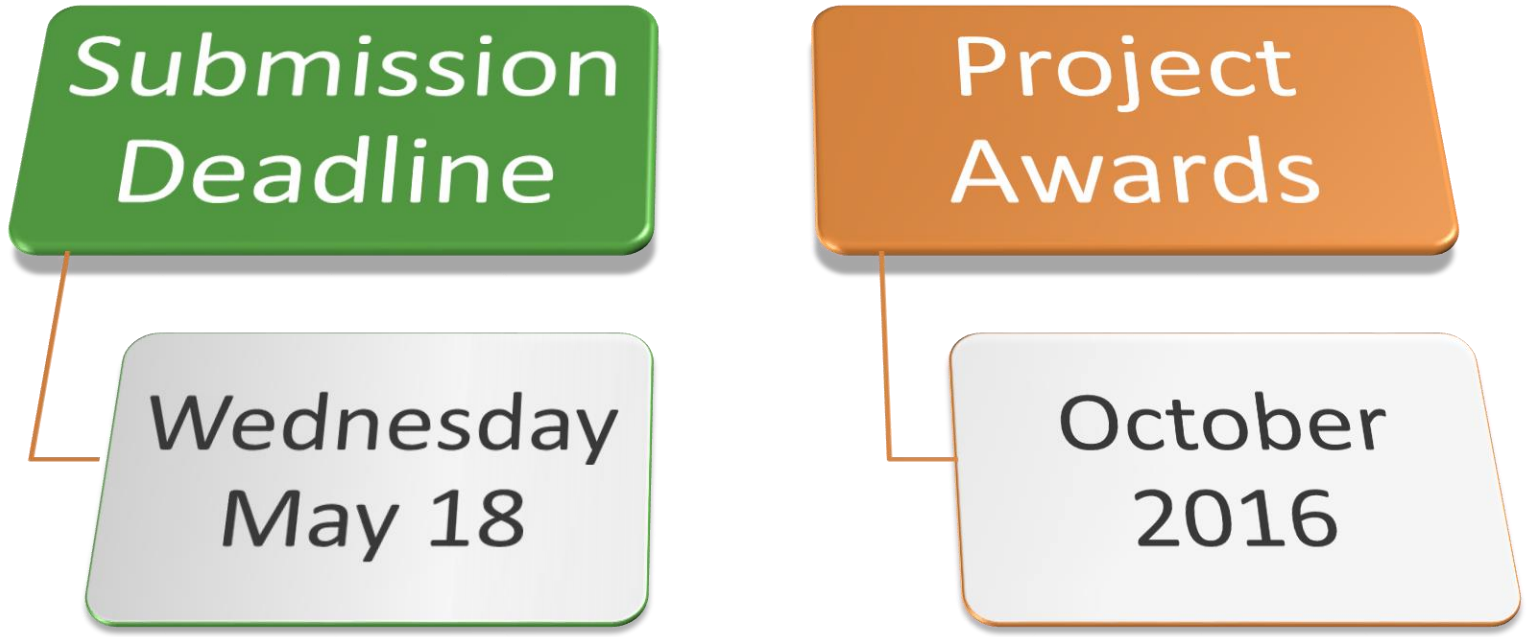
Key Dates


Submission Deadline
Wednesday May 18
Project Awards
October 2016

REOI Overview

- Designed to encourage municipalities to undertake new effectiveness & efficiency projects
- Seventh REOI
- 635 projects to date
- $126 million in total project value

Budget Recap by Priority Areas

Priority Areas	Available Funding
System rationalization	$1,200,000
Projects achieving cost savings	$1,000,000
Blue box harmonization	$100,000
Cost containment initiatives	$300,000
Transitional support for new legislation	$1,000,000
Centre of Excellence (C of E)	$965,000
Total	**$4,565,000**

Highlights

$12.7M
Total Project Value

$6.9M
Funding Requested

41 Applications Submitted

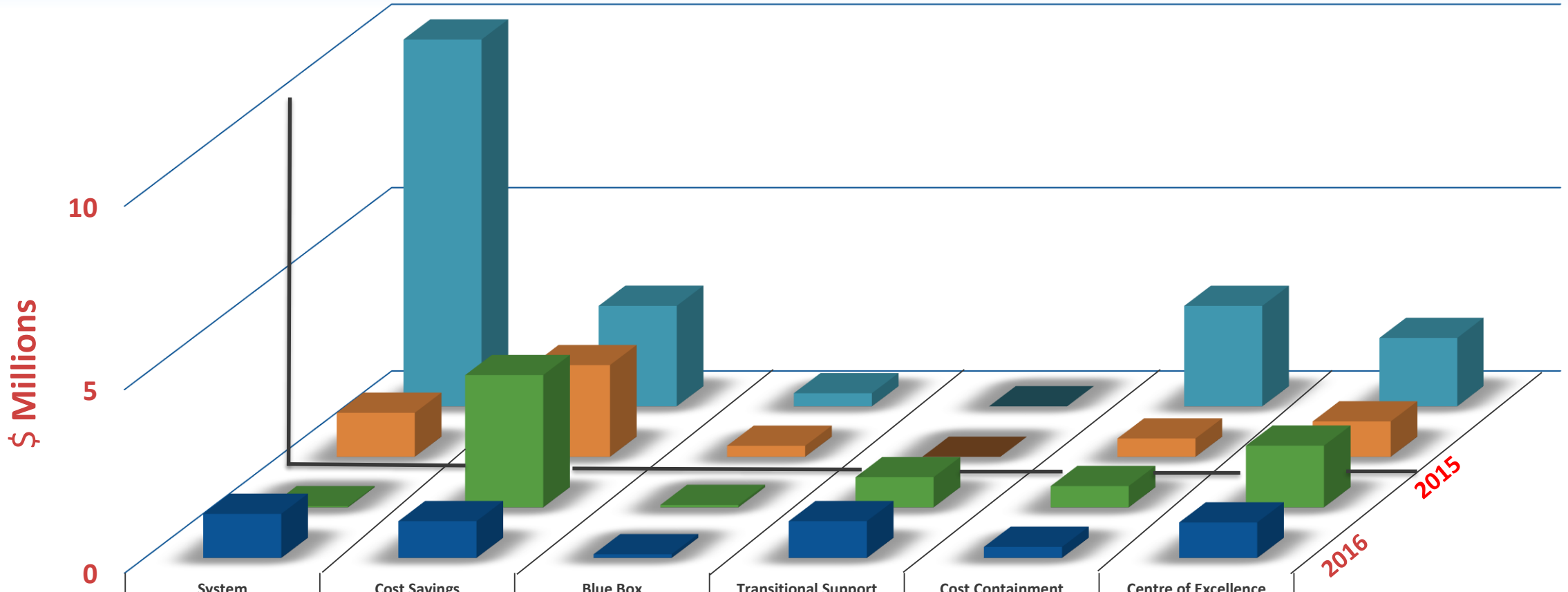
2016 Trends

1. Cost savings still top of priority lists

2. Strong need for EPR Transitional Support

3. C of E interest building — especially BP & Tool Kits

2016—2015 Funds Requested vs. Budget



	System Rationalization	Cost Savings	Blue Box Harmonization	Transitional Support for EPR	Cost Containment	Centre of Excellence
2016 Budgeted	1.200	1.000	0.100	1.000	0.300	0.965
2016 Requested	0.030	3.604	0.065	0.820	0.580	1.680
2015 Budgeted	1.200	2.500	0.300	0.000	0.500	0.965
2015 Requested	10.230	2.740	0.357	0.000	2.739	1.788

What Happened: Applications Breakdown

Project Value	Priority Funding Initiatives	Budget	Subscribed	Difference	Apps
$30,000	System rationalization	$1,200,000	$30,000	$1,170,000	**1**
$7,523,350	Projects achieving cost savings	$1,000,000	$3,603,900	-$2,603,900	**12**
$70,000	Blue box harmonization	$100,000	$65,000	$35,000	**2**
$1,174,030	Cost containment initiatives	$300,000	$580,250	-$280,250	**3**
$1,485,150	Transitional support for new legislation	$1,000,000	$820,150	$179,850	**7**
$2,458,000	Centre of Excellence	$965,000	$1,787,500	-$822,500	**14**
$12,740,532	**Total**	**$4,565,000**	**$6,886,800**	**-$2,321,800**	**41**

Funding Requested C of E Breakdown

C of E Priorities	Budget	Subscribed	Difference
Development of BP & Tool Kits	$100,000	$545,000	-$445,000
Materials Management Research	$100,000	$500,000	-$400,000
RFP/Tender Support Development	$75,000	$24,500	$50,500
Training Initiatives	$200,000	$200,000	$0
Outreach Services/Data Call Support	$190,000	$140,000	$50,000
Composition Studies/Performance Audits	$300,000	$230,000	$70,000
TOTAL	**$965,000**	**$1,787,500**	**-$822,500**

What's Next?

1. All applications & projects reviewed
2. Applications strengthened, supported, finalized
3. Applications evaluated
4. CIF Committee meeting Sept.
5. Approval/rejection letters sent
6. Agreements signed
7. Get started!

Questions?

Gary Everett

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519-533-1939

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WDO Update - ORW

Mary Cummins

Program Lead, Blue Box & Hazardous Waste

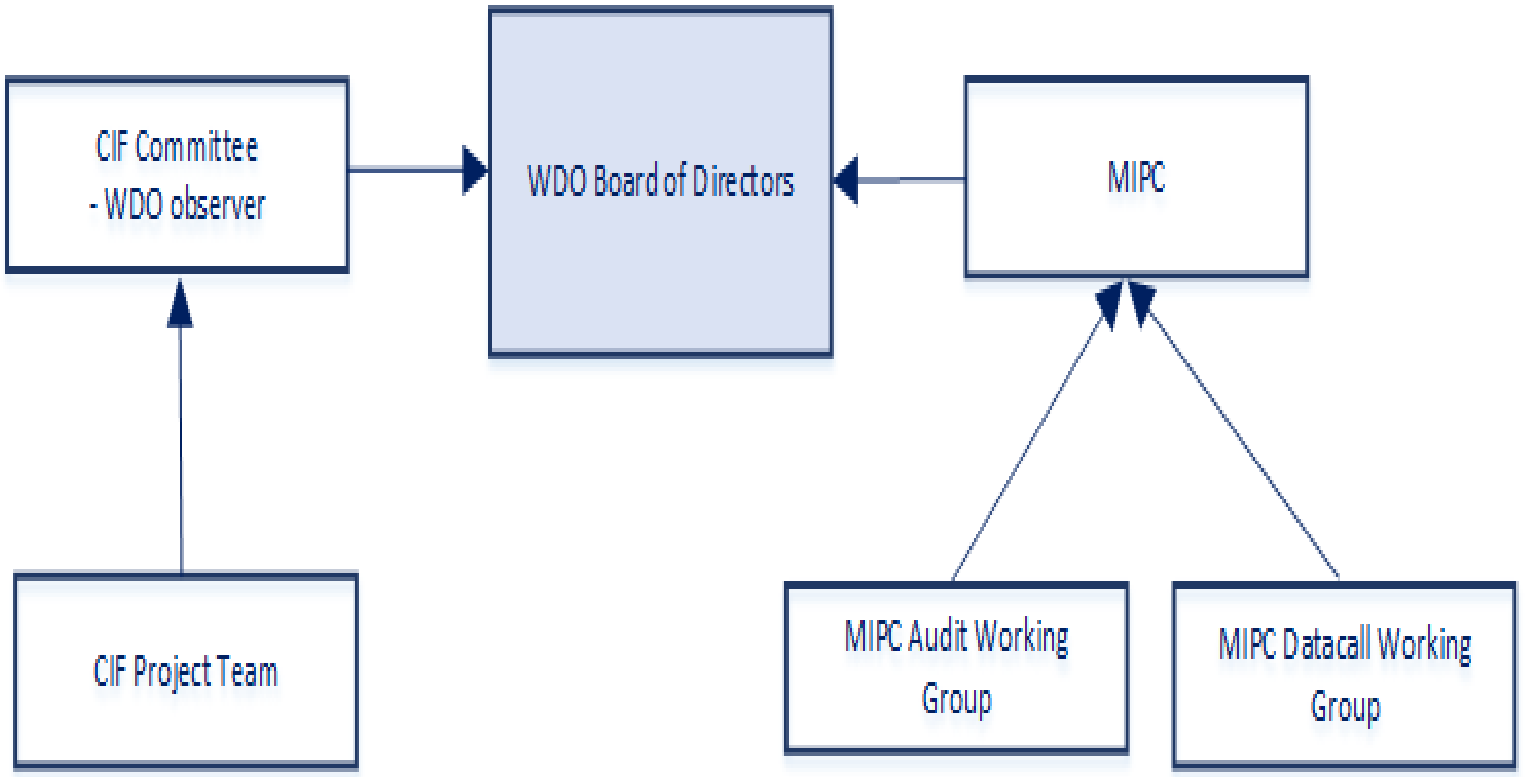
Agenda

- Update on CIF & MIPC
- BB Projects: InKind, the Model & Non-Obligated
- Industry Stewardship Plans

Update on CIF: Board direction on Sept 23rd, 2015

- WDO requires that the CIF & the CIF Committee report directly to the WDO for the purpose of carrying out the terms of the BB Program Plan (BBPP)

Revised Reporting Structure – As of September 23, 2015



Update on MIPC: Board Direction on Dec 9th, 2015

- WDO will work with MICP to implement technical advice regarding the Datacall & other matters
- WDO has overall responsibility pursuant to the WDA for the implementation & operation of the BBPP
- The Board may ask for MIPC recommendations & may, failing any recommendation by MIPC, make a final determination
  - Datacall
  - Steward obligation
  - Financial matters arising (e.g., Datacall penalties)

MIPC

- MIPC a technical working group that will make recommendations to WDO
  1. MIPC Datacall Subcommittee
  2. MIPC Audit Subcommittee
  3. MIPC Datacall Short Form Subcommittee

Audit Subcommittee

- Procurement process for the audits
- Selection process (i.e., municipalities chosen)
- Timelines
- Audit process
- Appeals process
- Process for previous year adjustments
- Review audits and develop audit summary

Datacall Subcommittee

- Datacall User Guide
- Formal appeal process for Datacall extensions
- Late penalties process
- Best practice scoring
- Residue rates

Short Form Datacall Subcommittee

- Develop a streamlined Datacall Short Form
- Rules for use

How can you get involved?

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BB Projects

- WDO Board meeting on June 15 - Board has been provided with the results on 3 projects: Non-Obligated Review, The Model & InKind

- Municipal representatives have been involved in all of these projects (developing scope, commenting on reports, presenting to our Board)

Non-Obligated Review

- An independent review in order to make recommendations on how much, if at all, net reported costs would need to be adjusted (in dollars) and if/and the recycled tonnes would need to be adjusted if municipal costs for managing “non-obligated” BB materials were to be excluded from annually reported municipal BB costs & tonnes

The Model

- The creation of a working group to recommend a new model to determine the steward obligation

InKind

WDO is reviewing the eligibility of InKind expenses as they relate to the calculation of the net reported costs

WDO has been directed by its Board to implement those recommendations in the final BB Cost Containment Panel Report on the BB InKind Program that are deemed appropriate & within the authority of WDO

Industry Stewardship Plans

- Automotive ISP
- Paint & Pesticides, Solvents & Fertilizers ISP
- SodaStream ISP

Waste Diversion in Ontario: Policy Update

Dave Gordon, AMO

Senior Advisor, Waste Diversion

Waste-Free Ontario Act

- In November 2015, the Minister of the Environment & Climate Change introduced Bill 151 – a new legislative framework for waste management
- The legislation is comprised of two proposed Acts:
  - Resource Recovery & Circular Economy Act
  - Waste Diversion Transition Act (WDTA)
  - also contains Strategy for a Waste Free Ontario: Building the Circular Economy to support Ontario in achieving its goals
- The Bill passed 3rd Reading on June 1, 2016 & awaits Royal Assent
- Proclamation is expected later this year or early 2017

Municipal Position on Bill 151 (1)

- Municipal governments are generally supportive of the Bill & the move to real producer responsibility…

Why?

- Financial savings for municipal governments
- More flexibility to designate a wide range of products & packaging
- Producer's current funding cap for the Blue Box program could increase beyond 50%
- Oversight agency will be created with proper tools to ensure effective compliance & enforcement
- Efforts will be made to maintain & improve upon current service standards & geographic coverage for programs

Municipal Position on Bill 151 (2)

- …However, there is considerable uncertainty with respect to the future role of the municipal sector in integrated waste management

Why?

- The lack of recognition or mention of municipalities' roles & responsibilities in integrated municipal waste system
- No formal role for municipalities at the decision-making table in either transition or future state-impact on waste systems
- Language mirrors that of the WDTA that simply continues long-standing conflicts between municipal governments & stewards
- Principles for setting producer responsibility targets are not outlined in the legislation

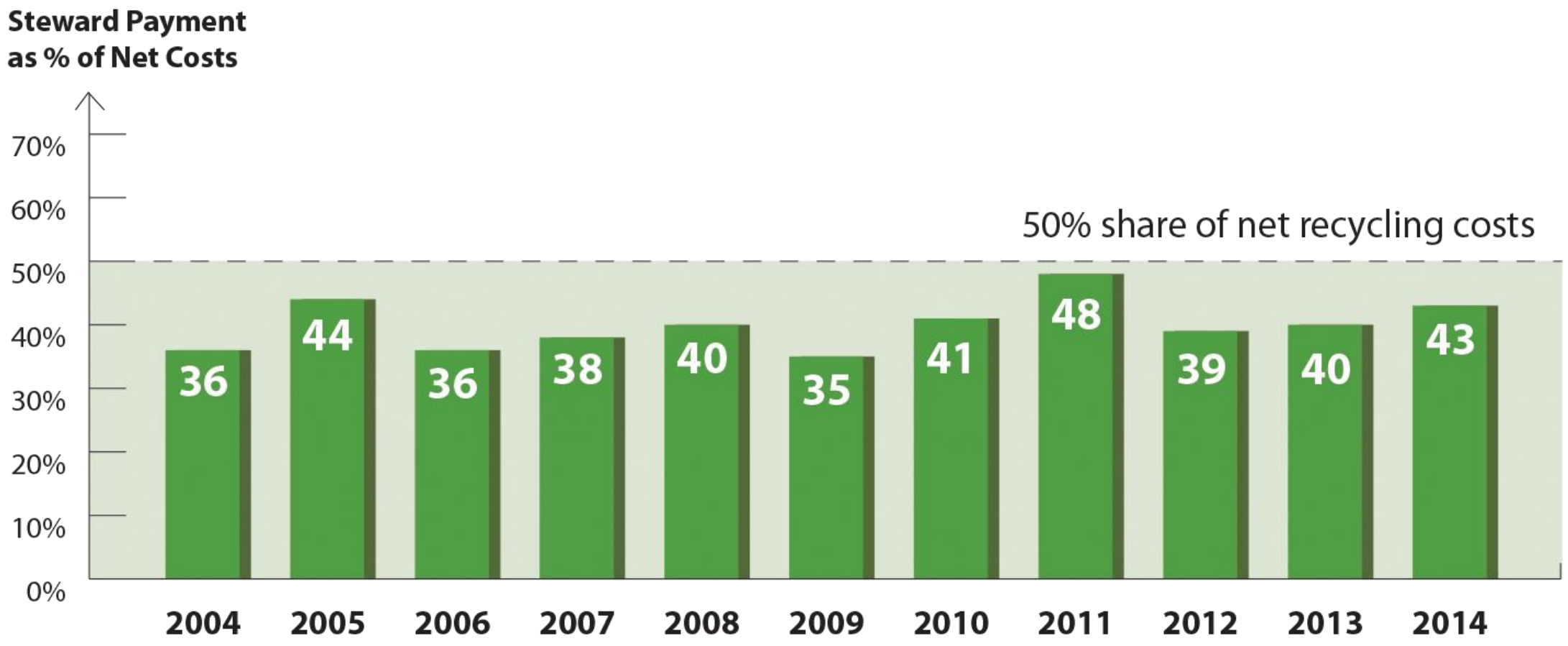
AMO's Advocacy Efforts on Bill 151

- AMO & City of Toronto pursued amendments to address the lack of municipal role & the need for clarity on how municipalities should be paid for Blue Box services during the transition
- Both NDP & PC MPPs raised these issues during the clause-by-clause review of the Bill, but very few substantive amendments were accepted
- Substantive Results:
  - Section 11 of the WDTA was amended to give the Minister explicit powers to determine how the payments should be made
  - Any requirements for consultation had the language 'with municipal representatives' added to reference municipal interests

Advocating for Fair Payment for Blue Box

- Meanwhile, municipal governments are trying to get paid fairly for the Blue Box services currently being provided (2014 arbitration)
- Following the unsuccessful mediation in 2015, the Minister requested that WDO determine an appropriate Steward Obligation
- As a result, WDO commissioned the “Blue Box Cost Containment Panel”. The Panel’s report made recommendations to WDO
- Municipalities did not support the recommendations of the Panel and submitted a dissenting report
- WDO Board subsequently directed staff to:
  - Develop a new cost containment model to set the Obligation
  - Investigate Stewardship Ontario claims regarding inclusion of non-obligated materials in the Blue Box system costs
  - Implement changes to the In-Kind Program

Municipalities Have Contributed an Extra $233M

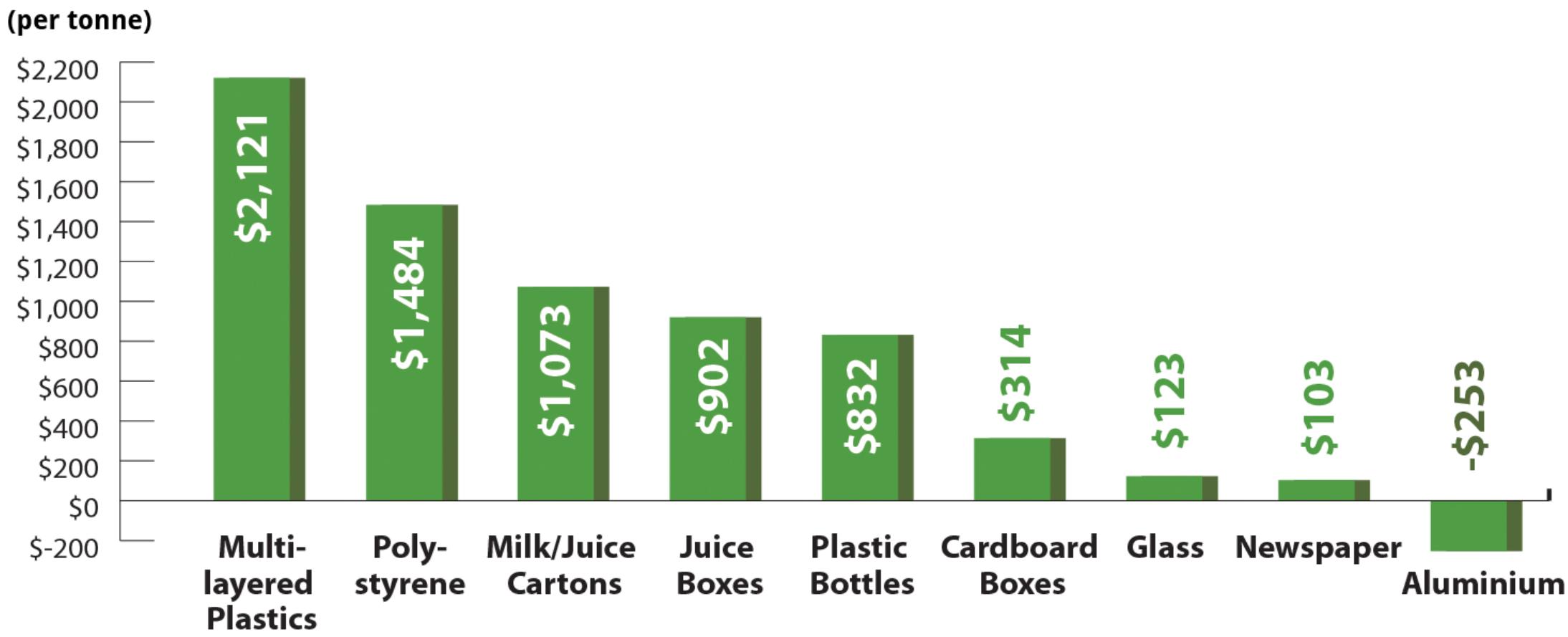


Municipalities Have Invested to Improve the Program

	Municipal Investment	Steward Investment
Effectiveness & Efficiency Fund	$18.3M	
Matching Funds from Municipalities	$18.3M	
Subtotal E&E Investment	**$36.6M**	
CIF	$47.3M	
Matching Funds from Municipalities	$67.2M	
Subtotal CIF Investment	**$114.5M**	
Total Investment	**$151.1M**	**< $10M**

Stewards have only paid a fraction of the municipal investment in the Blue Box system.

Stewards Have Not Complied With Cost Containment Principles



Comparing Program Performance for PPP

*Printed paper & packaging

	British Columbia (2015 projected)	Manitoba (2013 actuals)	Ontario (2013 actuals)	Saskatchewan (preliminary projections)
Households with program access	>80%	93%	97%	tbd
Kg recycled/capita	59.7	68.7	68.3	40.1
Net cost/tonne	$452	$275	$274	$261
Net cost/capita	$27	$19	$19	$10
Net cost/capita paid by producers	**$27 (100%)**	**$15.20 (80%)**	**$9.50 (50%)**	**$7.50 (75%)**

Next Steps for WDO

- WDO proceeded with three projects:
  - 1. Creating a new cost containment model
  - 2. Developing a position on non-obligated materials
  - 3. Updating the In-Kind Program guidelines
- WDO's Board is considering all three projects at a meeting on June 15, 2016 & is expected to make a decision on how to set the Steward Obligation
- Once the decision is communicated to AMO, we will provide an update, to communicate the outcomes & next steps

Municipal MIPC Feedback to WDO

- Timelines for the projects are far too ambitious to enable meaningful recommendations
- Projects need to be open & transparent to all stakeholders with all data being shared across the interested parties

Cost Containment Model	Non-Obligated Materials
Must include all five principles included in the CCP; in particular, Principle 5 which requires Producers to use materials that can be cost-effectively managed in the Blue Box Program	Attempts to examine cost of non-obligated materials must be material-specific, including associated revenues, & consider fixed versus variable costs in the system
Cost containment cannot negatively impact diversion	Consider if non-obligated material was solicited by municipal program or is advertent contamination
	Consider Datacall instructions from WDO on defining & accounting material
* Feedback provided on In-Kind Program was consistent with prior messaging	Ensure suggested 'non-obligated materials' aligns with definitions & intentions of *Waste Diversion Act* & Blue Box Program Plan

Implications & Thoughts

- The methodology to calculate the steward obligation is important as it will be used as long as we're in 'transition'
- Producers will decide how to provide services to residents that may or may not include municipalities
- The transition period will likely involve negotiations between municipalities & producers; likely multiple producer organizations to determine service provision
- Municipalities will remain responsible for balance of integrated waste management system (e.g. garbage, organics, LYW, etc.); it is critical that they understand the collection & processing costs for electronics, HHW, tires, & the Blue Box

Considerations for Transition Period

- Will require municipalities to determine if they wish to provide services or not, & to prepare Councils for future decisions:
  - Agree to terms with Producer Organization(s) to provide service for fair compensation
  - Agree to terms with Producer Organizations(s) & subsidize shortfall from tax base
  - Turnover services to producers
- AMO has organized a steering committee with representation from the City of Toronto, Regional Public Works Commissioners of Ontario & the Municipal Waste Association to oversee collective work on this file
- Important to negotiate with a small group representing the sector than allowing ‘one off’ negotiations with individual municipalities

Contact

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416-389-4160
Or via e-mail at dgordon@amo.on.ca

2016 ORW Update

Sherry Arcaro, Stewardship Ontario

Director of Field Services

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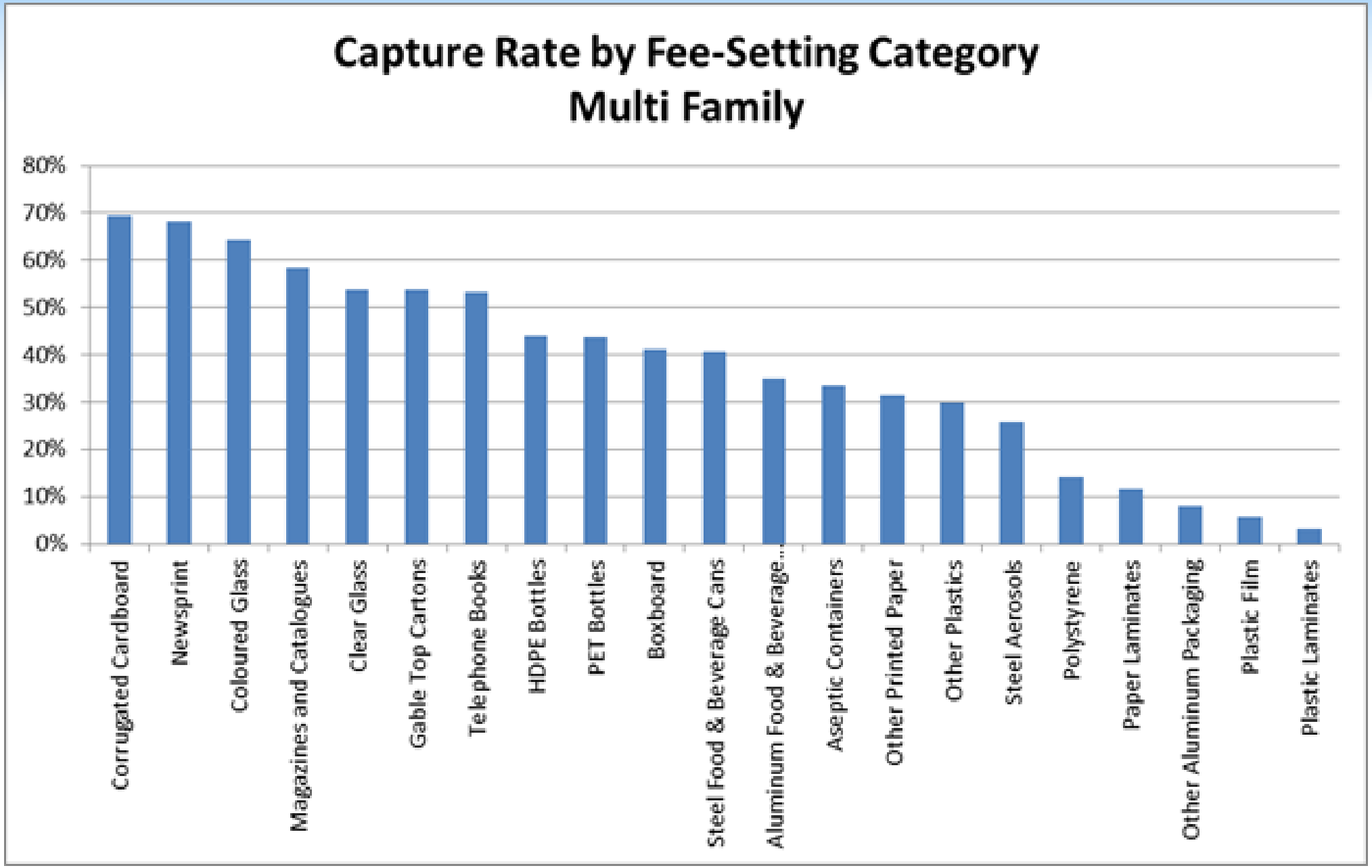
Focus of Update

- 2016 Promotion and Education Campaign Highlights
- K-Cup Project Update
- Hot Beverage Cup Capture Project
- Annual Studies

2016 Stewardship Ontario Promotion and Education Campaign

- $200,000 investment in creative design and in-market
- Focus on multi-family buildings
  - Bring awareness to available programs in their buildings
- Improve capture on high value materials
  - Targeted approach
- Multiple media outlets for broader reach
  - Radio, billboards, magazines, TTC, digital media

Capture Rate by Fee-Setting Category
Multi Family



Campaign Creation

- Cynthia Hyland worked with the MWA Multi-Res Committee and others to gain input prior to inception
- Brees Communications provided 3 concepts
- 3 concepts displayed at MWA Workshop for feedback and sent out others for their input
- All input and ‘votes’ for favourite concept put together to determine final creative designs
- Campaign launch – July 4th with downloadable versions on SO website

Creative #1

Basis for radio ad, newspaper and magazine ads, bus shelter and transit signs, digital media.

Creative #2

All media including billboards and in-car elevator signage. More specific focus on materials.

In-Market Media Plan

- Heavy Radio coverage – 4 weeks over 3 stations
  - GTA – CHUM 104.5
  - London – JACK 102.3
  - Golden Horseshoe – EZ Rock 105.7
- Print – Condo Life Magazine – Full Page Ad
- TTC - 8 weeks – 380 In-car Posters
- Billboards – 8 weeks – London, Niagara, Mississauga
- Digital on-line presence for 8 weeks
- Downloadable PDF versions – 4 sizes on SO website

Resources Download Cent

stewardshipontario.ca/resources/

SEARCH WITHIN DOWNLOADS

Search...

RESOURCE DOWNLOAD CENTER

All Logos Documents Misc

Bathroom Campaign Orange Drop Plastic Is In Propane Campaign Stewardship Ontario

Bathroom Campaign – Nature is Calling

Download

Bathroom Campaign – No Aerosols (All Source Files)

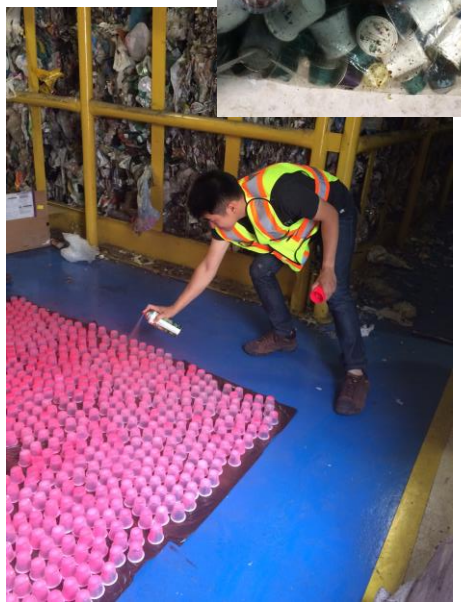
Download

Bathroom Campaign (All Source Files)

Propane Campaign (All Source Files)

K-Cup Capture Project Update

- Six MRF flow tests completed with SO and MMBC
  - 2 Ontario MRF's (1 single-stream, 1 two-stream)
  - 2 BC MRF's (1 single-stream, 1 two-stream)
  - 1 BC CRF (Container Recycling Facility)
- Overall > 70% cup flow to correct belt for capture
- Final report currently being developed by third-party
  - Data from MRF studies, curbside studies and other sources
- Mother Parkers' to present final report to stakeholders



Hot Beverage Cup Capture Project

- First optical sort trial completed in November 2015
  - 14 samples – all cups, normal material, wet material, paper mix
- Rejected cups sent back to Ti-Tech for further research
- Second optical sort trial with updated programming completed June 2016
- Excellent results
  - XX% capture of hot beverage cups
  - Programming can be turned on and off depending on markets
  - No increase in paper capture, even when using mixed fibre as base for sample

Other Project Aspects

- Mill survey undertaken in early 2016
  - North American mills widely accept hot cups in PSI-52 grade (gable aseptic), South Korean mills do not formally accept (do not de-ink)
  - Mixed Fibre mills do not want it, see it as contamination due to pulping time req'd
  - **Biggest issue in mill survey was cup 'sleeves' not ink issues**
- Important to confirm with mill or brokers specs required
- Of note, facilities studied in 2015 MMCS had an average of 9% cups in their polycoat (both cold and hot)

Next Steps to consider on Hot Beverage Cup Project

- Working with other optical sorter technology providers on same programming
- Add cups to programs where optical sortation will divert without added labour
- Work to divert more cups through higher value PSI-52 grade versus mixed fibre
- Continue to monitor mills in North America and South Korea to tolerance on hot cup content (due to de-inking)

Annual Studies

- SO, WDO and CIF working together on curbside studies
  - 8 single-family
  - 3 multi-family
  - 1 depot
- SO working on MRF material composition and density studies in 4 facilities – spring and fall

Thank-you!

Sherry Arcaro
Director of Field Services
Email: sarcaro@stewardshipontario.ca

Thinking beyond the box
Stewardship Ontario

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Questions

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Options & Alternatives for Managing Plastic Film

Carrie Nash, CIF

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Plastic Film: Definition

Typically stretchy & lightweight:

- Frozen vegetable bags, milk bags, shrink wrap for unitizing multi-packs, sandwich bags, produce bags, & retail/grocery shopping bags

Plastic Film: Challenges

- Participation rates
- Labour intensive to sort
- Capture rates
- Market value
- Interferes with capture of higher value materials

Plastic Film: Options & Alternatives

Considerations:

- Access
- Resident acceptance
- Recovery potential
- Cost savings
- Ease of implementation
- Timing & other initiatives

Today's Speakers

- Neil Menezes, Reclay StewardEdge
  - Film Plastic Collection: Comparison of Current Systems Costs & Alternative Scenarios for Managing Plastic Film in the City of Hamilton
- Joel McCormick, Hamilton
  - Film Plastic Collection: Choosing the Best Way Forward
- Nina Butler, Moore Recycling Associates
  - Plastic Film Collection – Return to Retail/Depot

Film Plastic Collection
Comparison of Current Systems Costs & Alternative Scenarios for Managing Plastic Film in the City of Hamilton
Project # 749

Neil Menezes

Reclay StewardEdge

Project Highlights

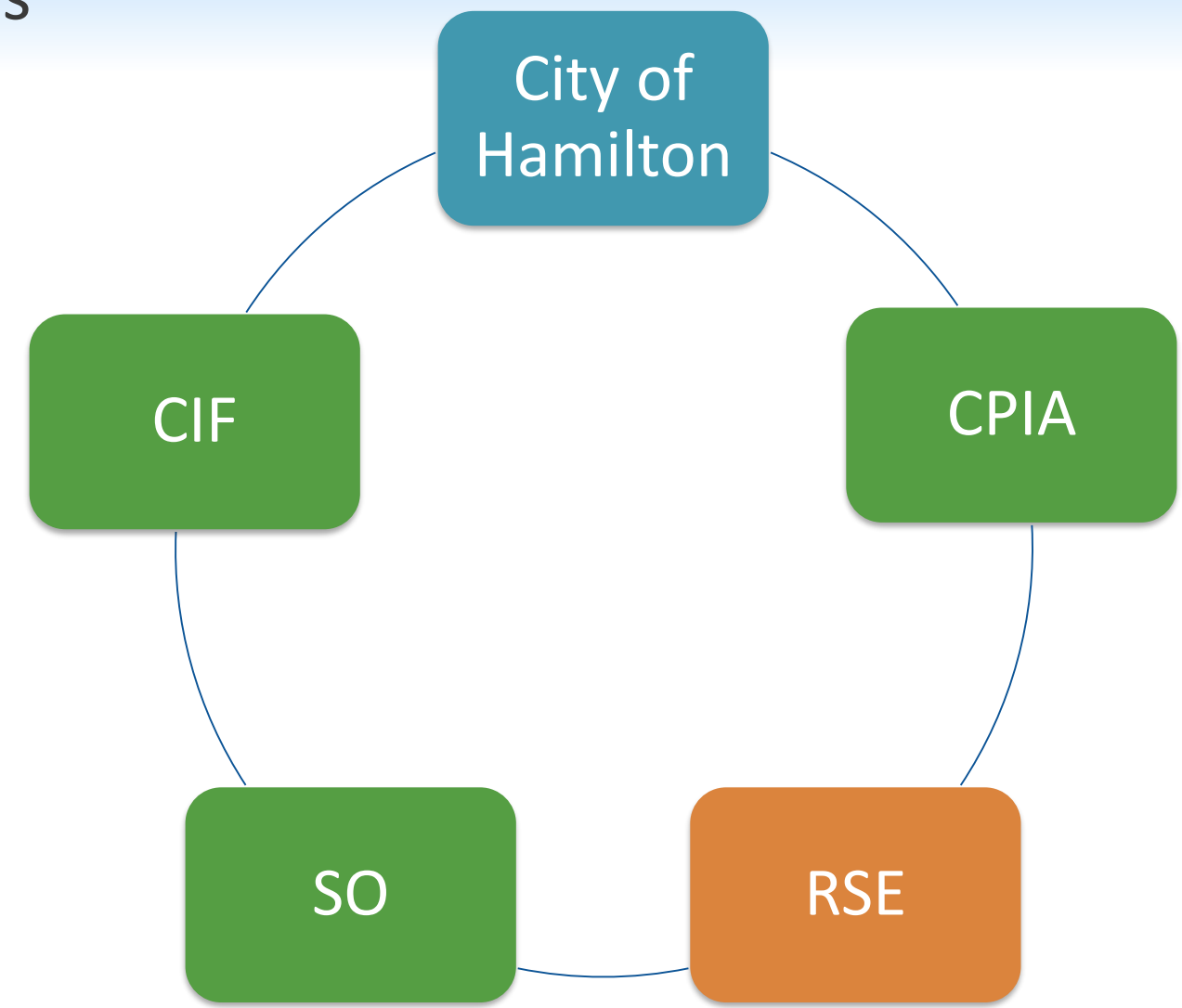
- Project goal:
  - Calculate the current cost to manage plastic film
  - Establish & calculate the cost of alternative collection options
- Impacts:
  - Reduction in sorting & disposal costs
  - Potential higher capture of plastic film & other materials
  - Increase in revenue from capture of cleaner materials
- More information:
  - nmenezes@reclaystewardedge.com
  - www.reclaystewardedge.com

Project Background

- Hamilton conducted MRF Container Line Assessment to evaluate sorting efficiency (2014)
- Identified that material capture rates for high value materials could be improved
- Estimated revenue loss for missed materials at $490K/yr.
- Film posed challenge for manual sorters & sorting equipment to sort other materials

Material Type	Capture Rate (%)
HDPE	81.2%
Aluminum food & beverage cans	84.3%
Aluminum foil, trays & aerosols	62.6%
PET	73.1%
Mixed Plastics	43.1%
Cartons	73.6%

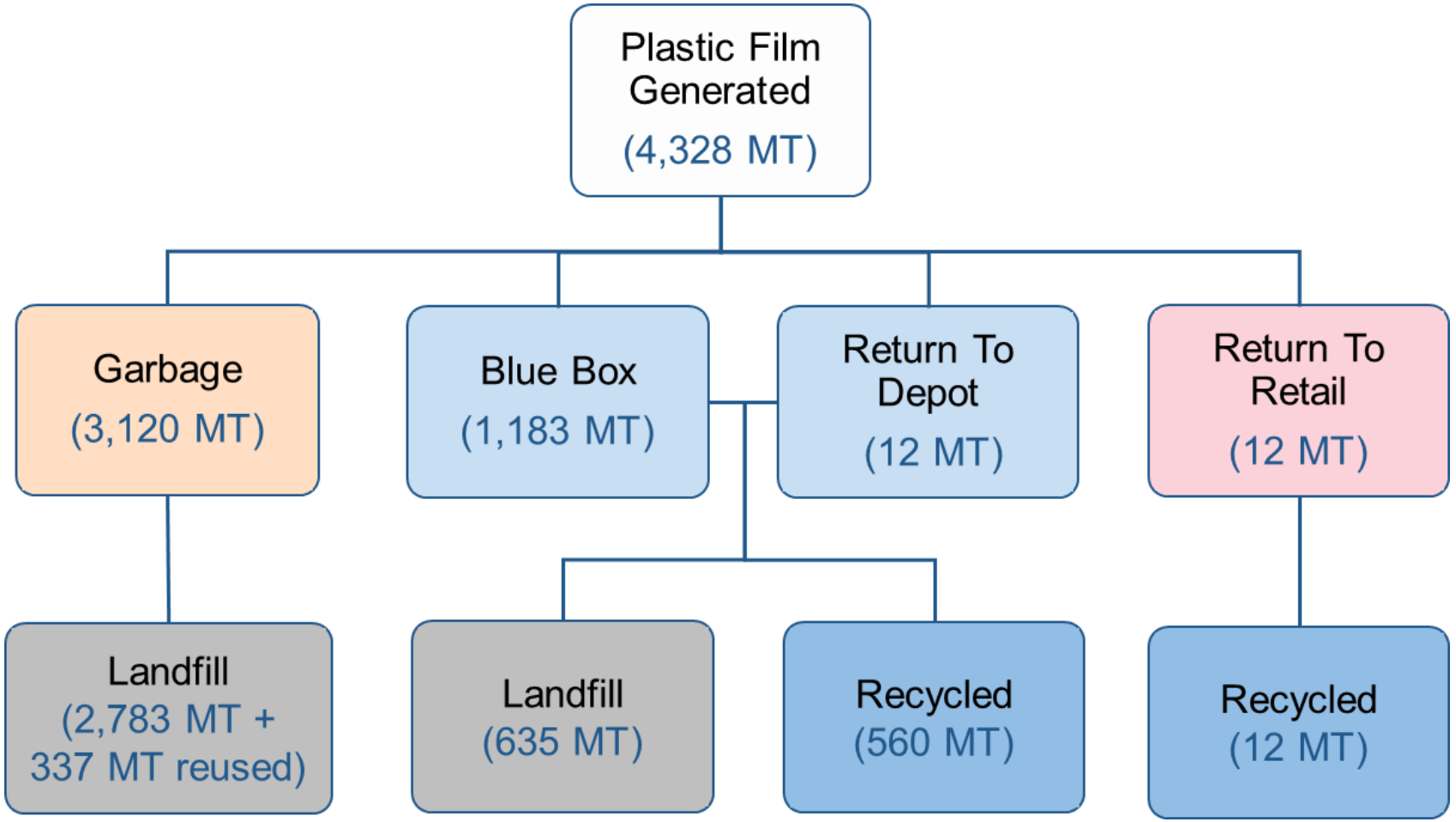
Project Partners



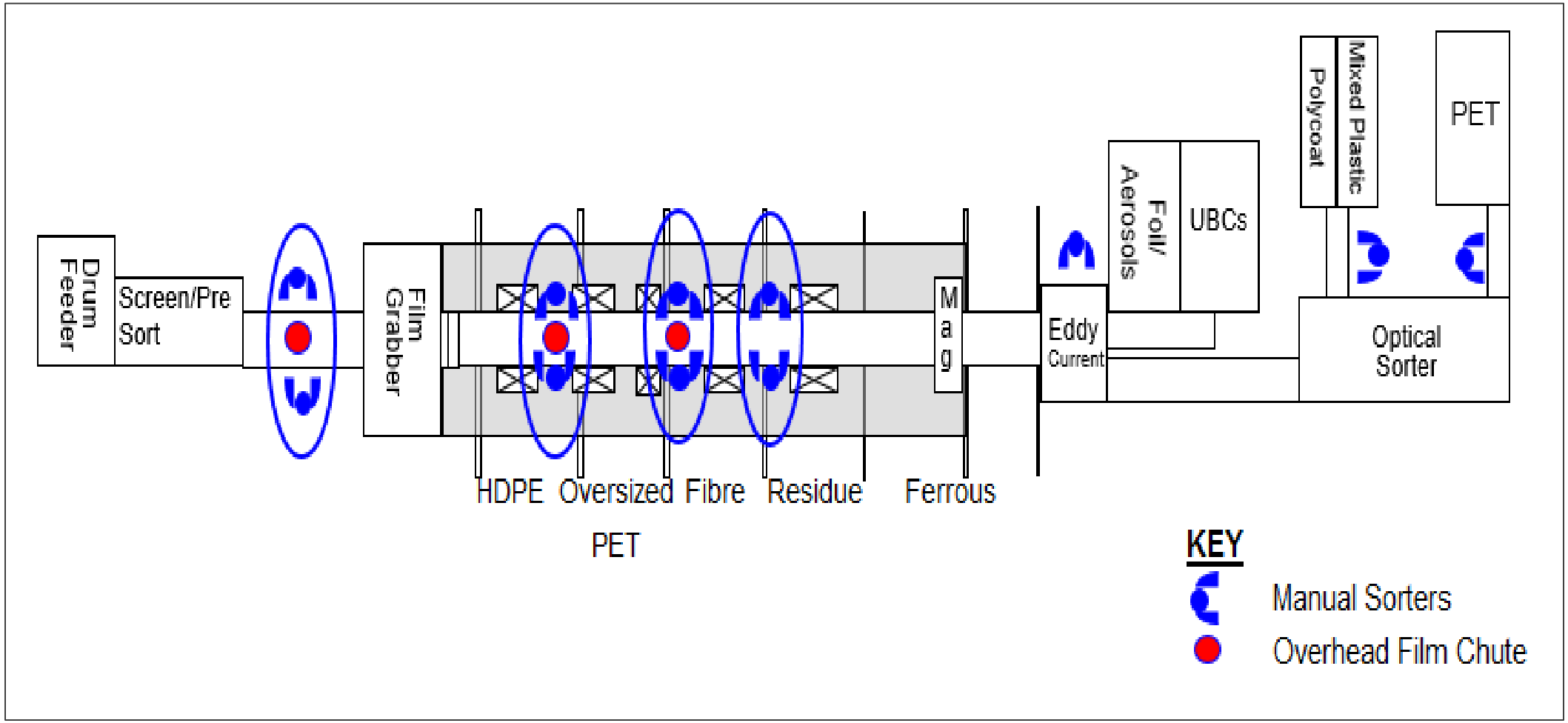
Methodology

- Study to quantify types of film received & MRF impacts
  - Loose film — polyethylene film/wrap set out for recycling
  - Container film — large clear bag used to contain recyclables
- Time & motion analysis
  - # of picks/sorted material category
  - Time spent managing film

Generation & Recovery of Plastic Film



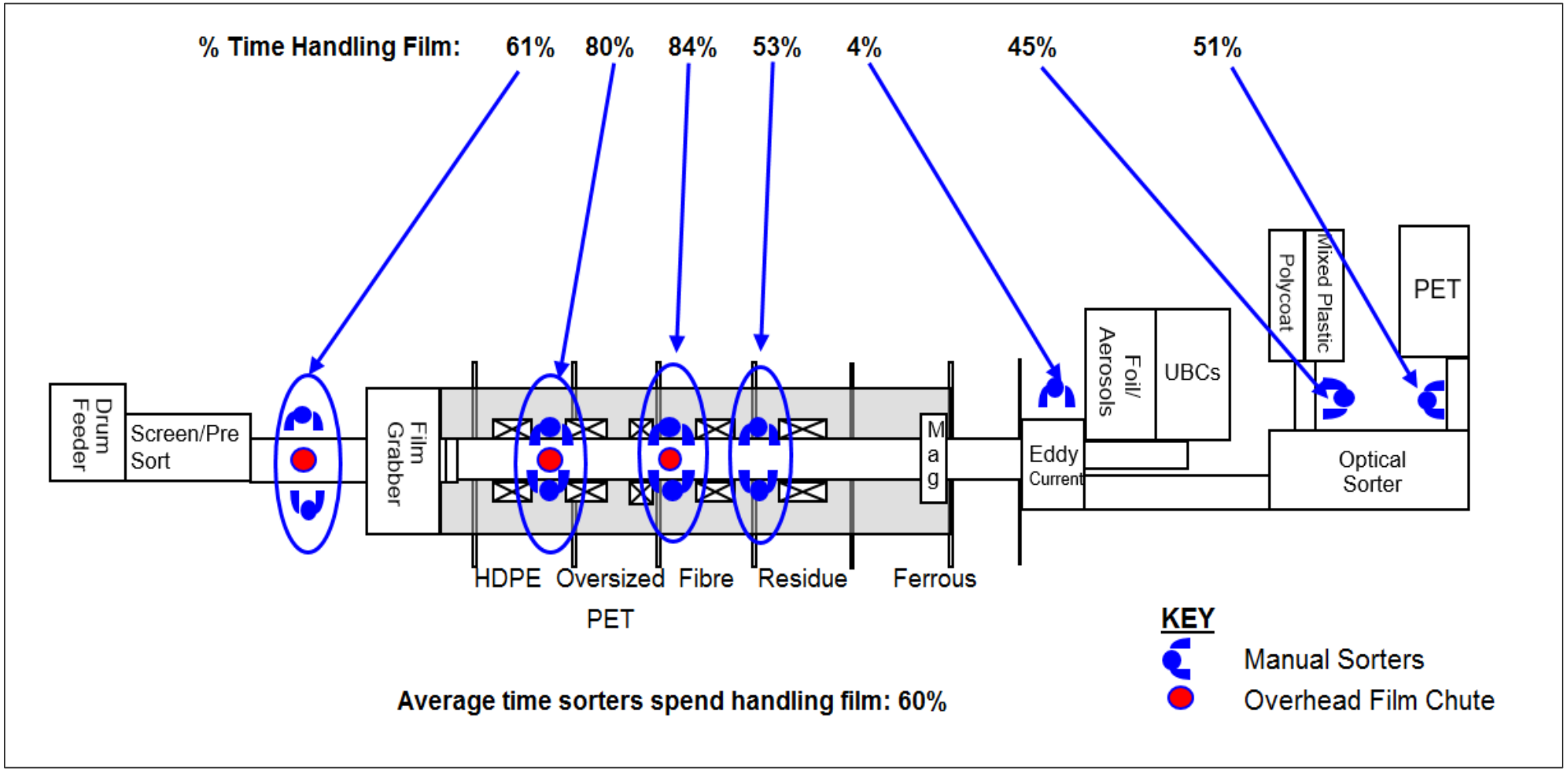
Container Line Sorters



Time & Motion Analysis

	Picks/Min.	Picks/Yr.	Time (%)	Hours/Yr.
Positions 1 & 2	36	9,175,000	61%	2,583
Positions 3 & 4	64	16,153,000	80%	3,367
Positions 5 & 6	54	13,722,000	84%	3,544
Positions 7 & 8	41	10,391,000	53%	2,239
Position 9 -- Alum QC	45	5,694,000	4%	94
Position 10 -- PET QC	67	8,448,000	51%	1,081
Position 11 -- MP/P QC	88	11,151,000	46%	966
Total on Container Line		74,733,000		14,000
Fibre Line Sorter 1	16	2,070,000	-	-
Fibre Line Sorter 2	25	3,227,000	35%	741
Fibre Line Sorter 5	12	1,504,000	21%	451
Total on Fibre Line		6,801,000		1,000
Total		81,534,000		15,000

Container Line Sorters (Percentage of Time Spent on Film)



Current System Costs & Impacts

Film generated: disposed, reused & recycled	4,328 tonnes
Total tonnes entering MRF	1,195 tonnes 560 tonnes marketed
Total collection cost	$287,000
Processing cost (excludes capital cost allocation)	$281,000
Gross cost to collect & process film	$568,000
Disposal cost	$76,000
Baling cost	$36,000
Estimated revenue	$17,000
ESTIMATED ANNUAL NET COST	**$663,000**
Net cost/tonne marketed	$1,183

Alternative Methods for Collecting Film (1)

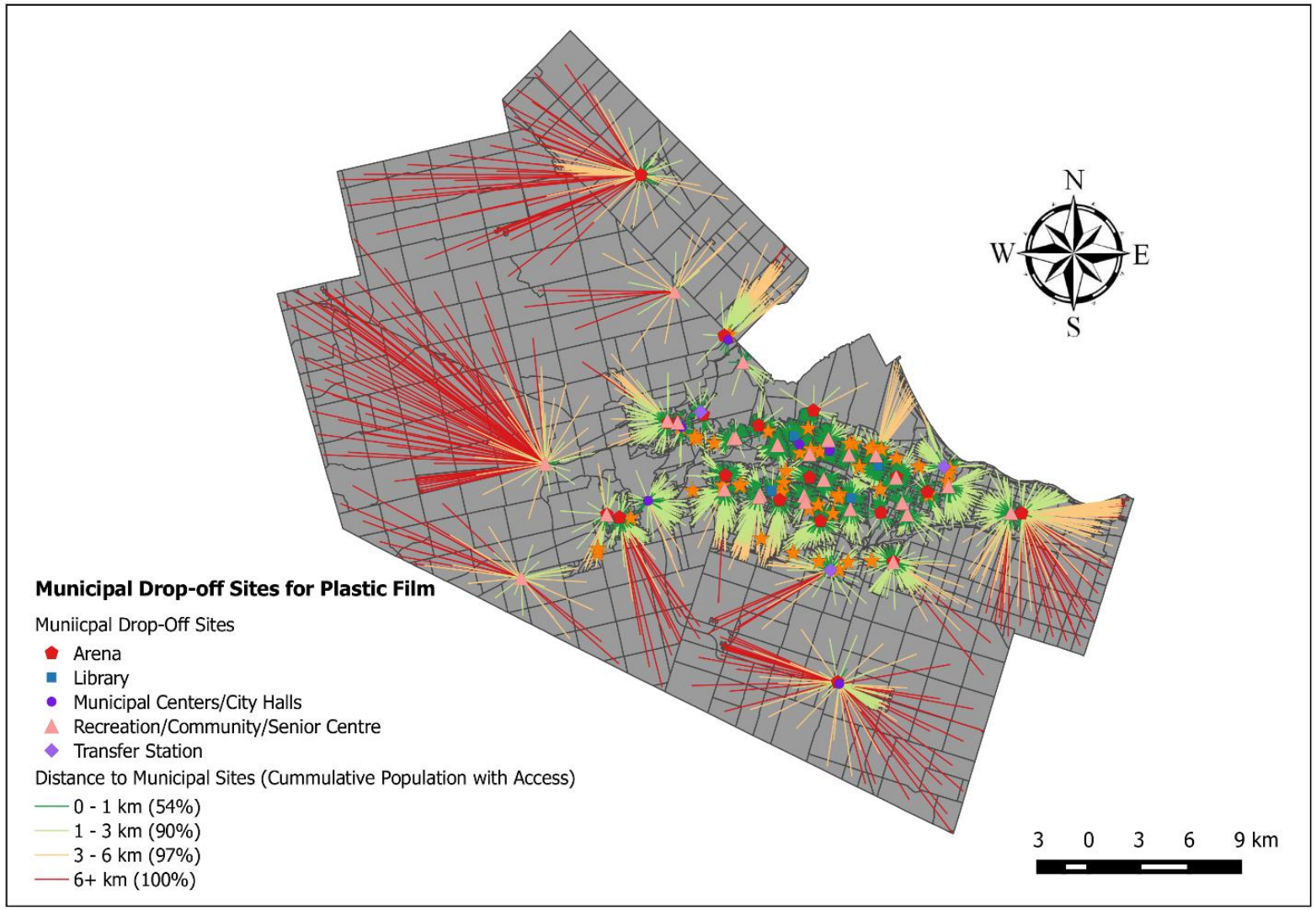
- #1: Return to municipally-owned sites with curbside collection
  - Film will be collected in branded durable bags; collected with other recyclables.
  - Bags will be delivered to MRF; separated manually; kept separate from MRF grade film
- #2: Return to municipally-owned sites & collected separately (milk-run model)
  - Collected film will be delivered to baling site
- #3: Return to retail locations
  - Collected film will be blended with back-of-store film

Alternative Methods for Collecting Film (2)

- #4: Collect bag-in-bag through fibre stream
  - Collect in clear bags; place in fibre bin at curb
  - New equipment & sorters to manage film on fibre line
- #5: Collect bag-in-bag through container stream (branded bags)
  - Residents to use branded durable bags to place plastic film in container bin at curb
  - Bags will be removed manually on container line
- #6: Combination: film collected through municipal sites & retail locations
  - Collect film in branded durable bags at municipal sites
  - Film from municipal sites to be delivered to MRF; separated manually; kept separate from other MRF grade film
  - Film collected from return to retail sites to be blended with back of store film

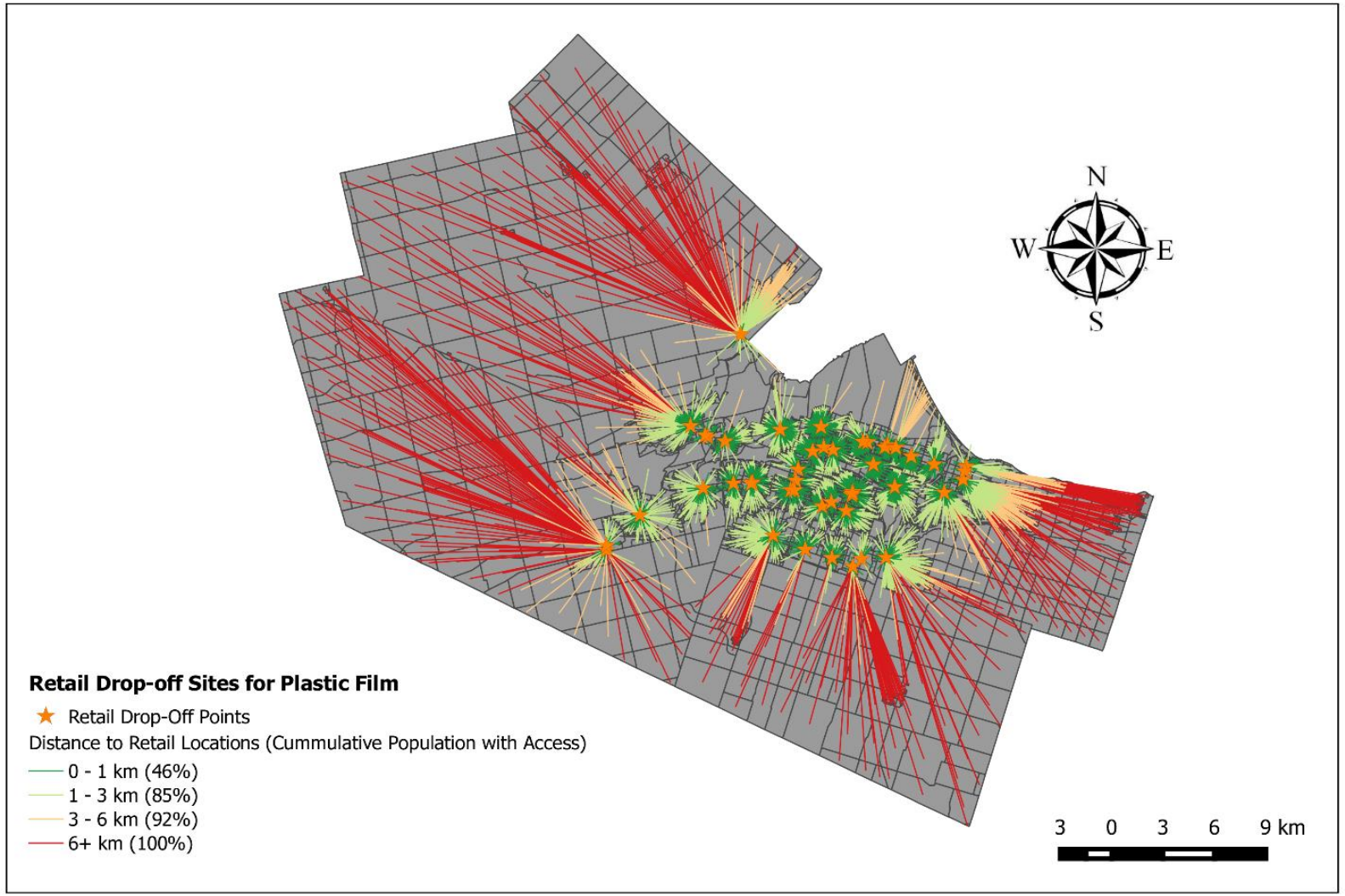
Existing Infrastructure & Service Levels

Municipally-Owned Buildings Only



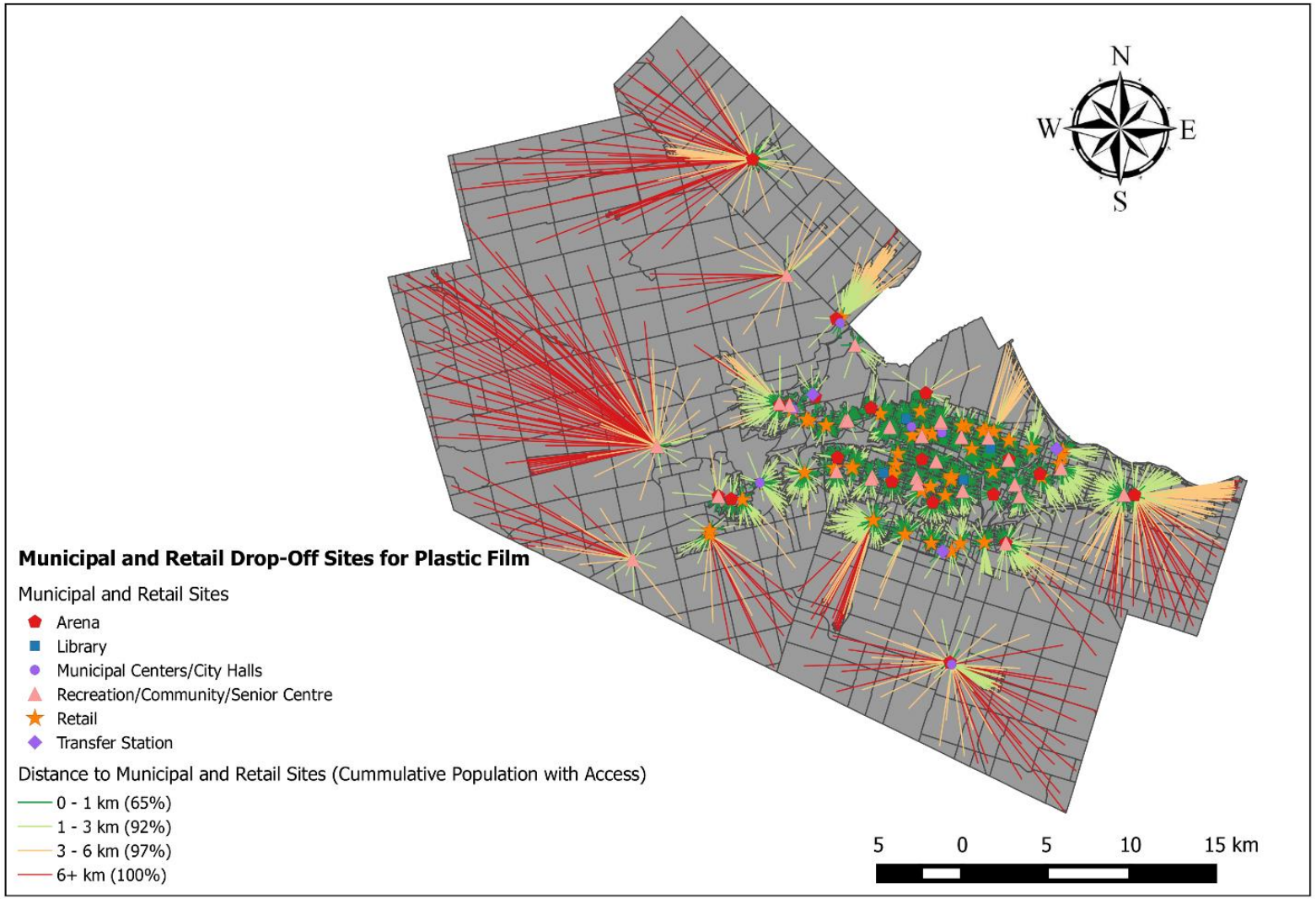
Existing Infrastructure & Service Levels

Retail Sites Only



Existing Infrastructure and Service Levels

Municipally-Owned Buildings & Retail Sites



Alternative Collection Scenarios Analysis

	1 Return to Municipal Site	2 Return to Municipal Site - Milk Run	3 Return to Retail	4 Fibre Stream	5 Containers Stream-Branded Bags	6 Combination of 1 & 3
Annual Capital & Operating Costs	$175,000	$199,000	$213,000	$0	$271,000	$287,000
Annual Transportation Costs	$0	$164,000	$0	$0	$0	$0
MRF Costs	$19,000	$18,000	$18,000	$421,000	$19,000	$19,000
Annual Cost	**$194,000**	**$380,000**	**$231,000**	**$421,000**	**$290,000**	**306,000**
Total Tonnes	598	598	598	598	598	598
Cost ($/tonne)	**$325**	**$636**	**$386**	**$704**	**$485**	**513**

Added Revenue from Other Materials

Material	Low Scenario Revenue Increase	High Scenario Revenue Increase
Aluminum (Prime)	$40,000	$141,000
Aluminum (B-Grade)	$1,000	$5,000
Cartons	$2,000	$19,000
HDPE	$27,000	$89,000
PET	$44,000	$82,000
Total	$115,000	$337,000

Cost Comparison of Current to Alternative Scenarios

Annual Net Cost of Handling Plastic Film Using Alternative Methods			
	% of Total Film Received Via Scenario ($k)		
	25%	50%	75%
Current Scenario Costs	$660k		
1: Return to Municipal Sites	$375k-$597k	$248k-$470k	$145k-$366k
2: Return to Municipal Sites - Milk Run	$479k-$701k	$434k-$656k	$413k-$634k
3: Return To Retail	$412k-$634k	$285k-$507k	$181k-$403k
4: Collection via Fibre Stream	$602k-$823k	$475-$696k	$371k-$592k
5: Collection with Branded Bags	$470k-$692k	$344k-$566k	$240k-$462k
6: Municipal Sites + Return to Retail	$487k-$709k	$360k-$582k	$257k-$478k

Note: green font denotes costs below current scenario cost

No Silver Bullet…

Scenario Evaluation						
	1	2	3	4	5	6
	Municipal Sites	Municipal Sites (milk run)	Return to Retail	Fibre Stream	Container Stream	Municipal Sites & Return to Retail
Impact on Access	Medium	Medium	Medium	Low	Medium	Medium
Impact (Negative) on Recovery	Medium - High	Medium - High	Medium	Low	Medium	Medium
Net Cost	Low	High	Low - Medium	High	Medium	Medium
Challenge to Implementation	Medium	Medium	Medium - High	Medium - High	Low	Medium - High

Film Plastic Collection: Choosing the Best Way Forward Project # 749

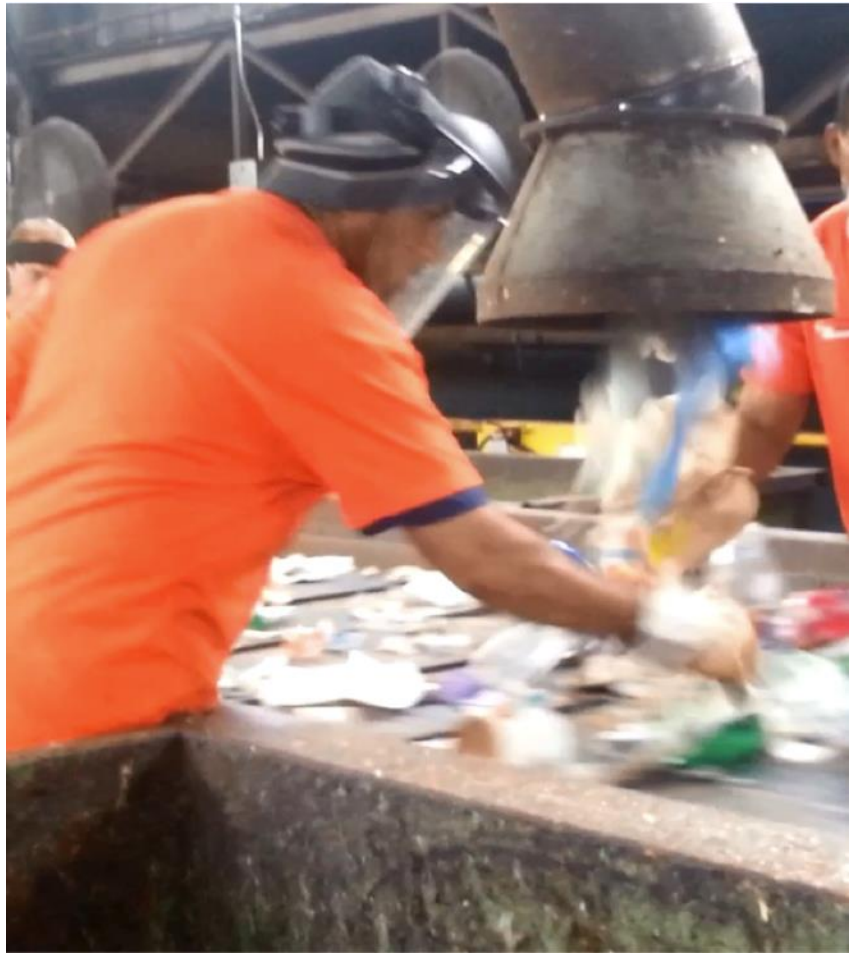
Joel McCormick

City of Hamilton

Project Highlights

- Project goal:
  - Calculate the cost of processing plastic film
  - Establish & calculate the cost of alternative collection options
  - Report/update findings to council
- Expected Outcome:
  - Higher capture of inbound plastic film & other materials
  - Increased diversion of plastic film from the landfill
- For more information:
  - Joel.Mccormick@hamilton.ca
  - https://www.hamilton.ca/garbage-recycling

Plastic Film



Why this project?

- Capture
- Cost management - including revenue generation
- Budget planning
- Future program changes?
  - in MRF or curbside?

Plastic Film: Management Options

CURRENT	FUTURE OPTIONS
Collected curbside, & managed on the container line	Status Quo
	Bag in Bag Container Side
	Bag in Bag Fibre Side
	Return to Community Centre – existing run
	Return to Community Centre – dedicated run
	Return to Retail
	Combo: Community Centre + Retail

Plastic Film: What Now?

Decision making framework:

1. Need for change?
2. Best suited option?
3. Timing/other initiatives?
4. Regulatory considerations?
5. Resident/Council acceptance/willingness?
6. Budget?

Plastic Film: What's Next

Striving for:

- Resident outreach
- Pilot

Need:

- Council approval

Timelines

- Q4 2016 – Q1 2017

Thank you!

Contact me, the project partners, or RSE for information about the study:

- Hamilton, Joel McCormick
- CIF, Carrie Nash
- SO, Sherry Arcaro
- CPIA, Krista Friesen & Joe Hruska
- RSE, Neil Menezes

Plastic Film Collection – Return to Retail/Depot

MOORE
RECYCLING ASSOCIATES INC.
Recycling Implementation Specialists

Nina Butler

nina@moorerecycling.com

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Clean, Dry Polyethylene Film

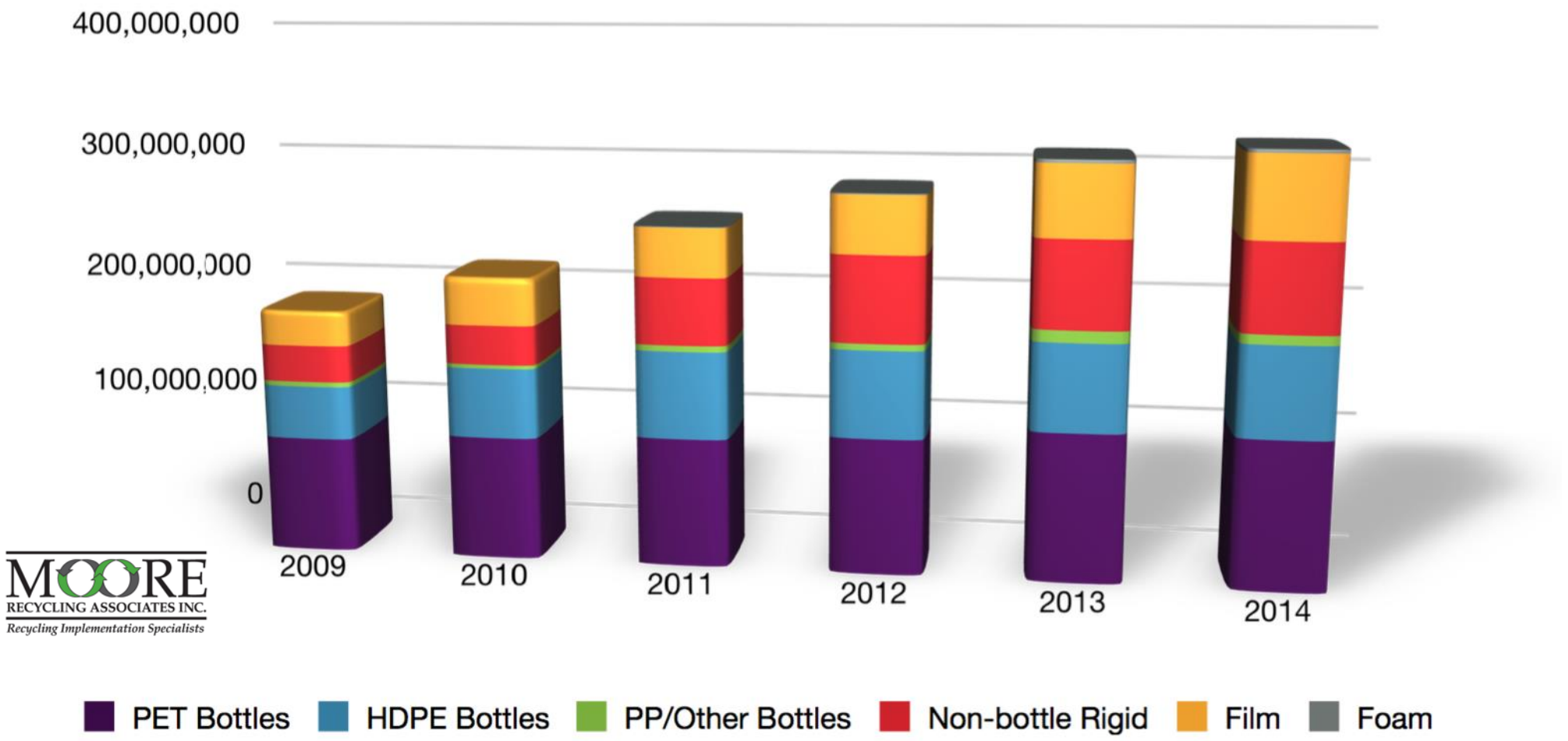
- >10B pounds of plastic film produced in North America each year
- ~ 80% of film is polyethylene
- Most is readily recyclable – IF kept clean & dry

Film Use Growing

- Protects products
- Is economical
- Is efficient in distribution

- It is found in every business

Postconsumer Plastic Collected (kg)



MOORE
RECYCLING ASSOCIATES INC.
Recycling Implementation Specialists

Flexible Film Recycling Group (FFRG) Members:

- Facilitating best practices in film recycling
- Raising awareness
- Engaging stakeholders to expand film collection programs

Web-based Resources

For the public:

- Finding Drop-off locations

For retailers:

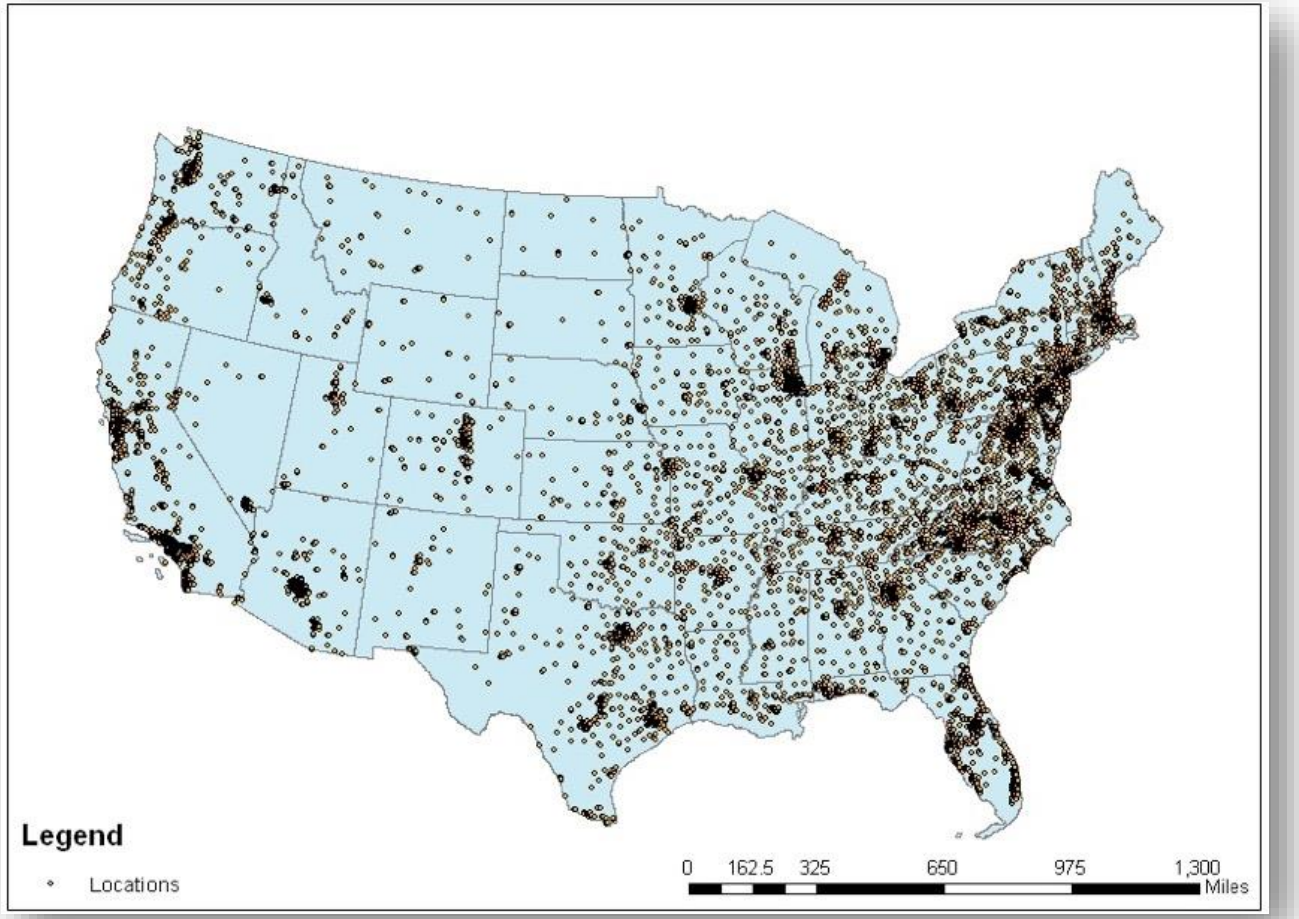
- Setting up a collection program
- Facilitating bag & film recycling

U.S. Film Drop-off Facilities

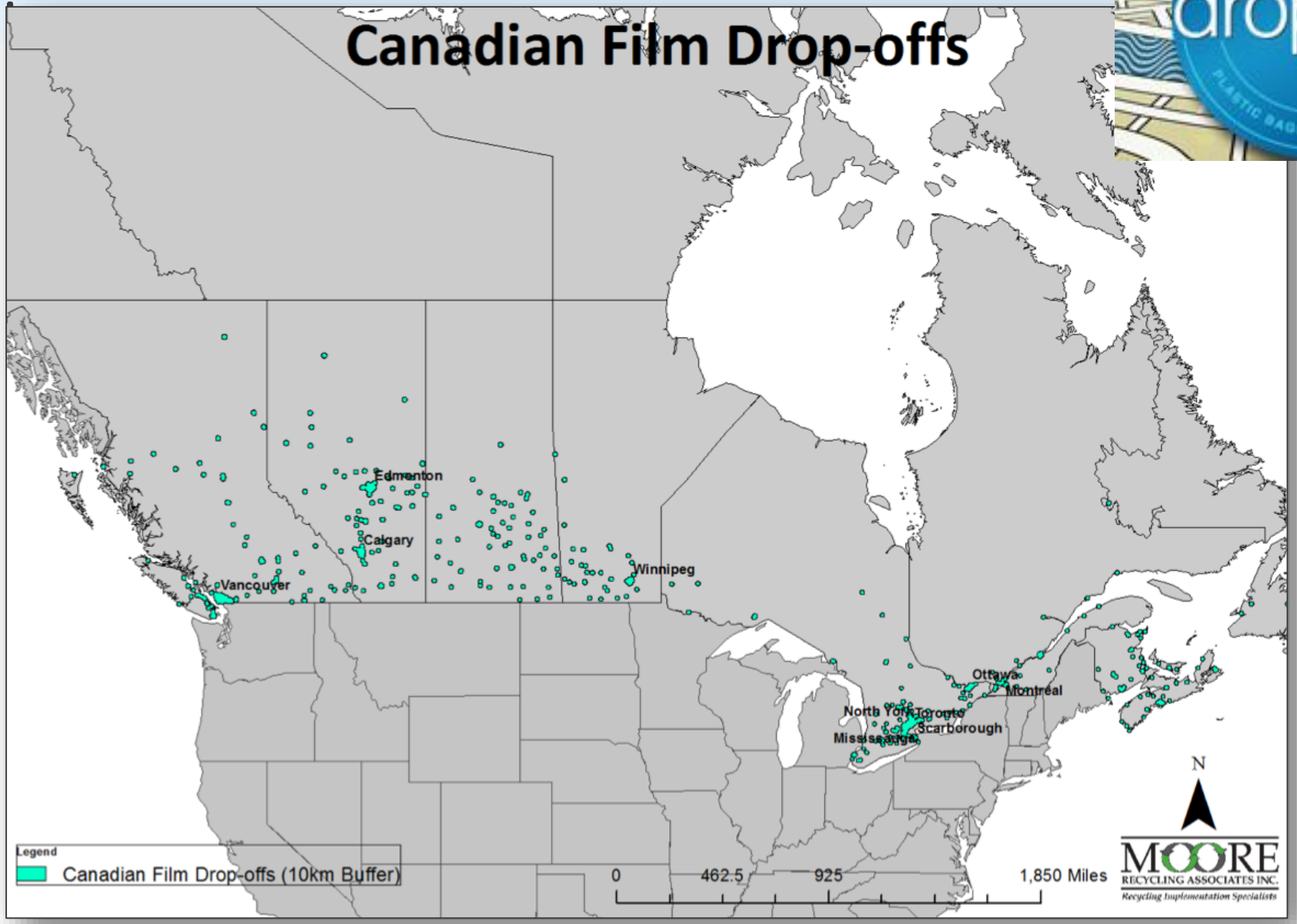
18,000 drop-off locations
>90% recycling access

- Most people in the U.S. don't know ….
  - Plastic wraps can be recycled
  - Plastic bags & film generally should NOT be in curbside bins

bag
plasticfilmrecycling.org
wrap

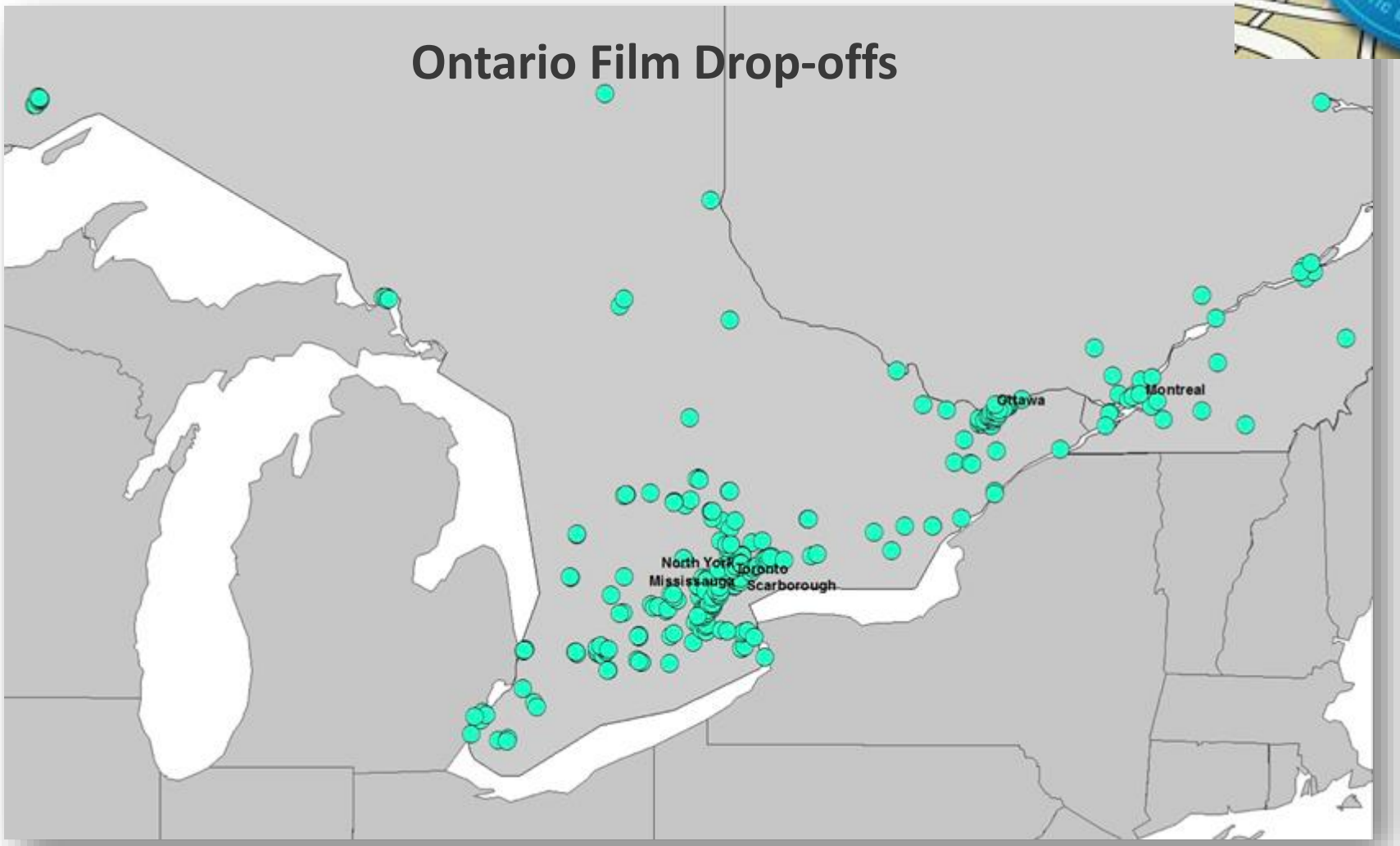


In Canada…*



**Partial list only; Canadian listings in Drop-off Directory are new*

In Ontario


Ontario Film Drop-offs
Ottawa
Montreal
North York
Toronto
Mississauga
Scarborough

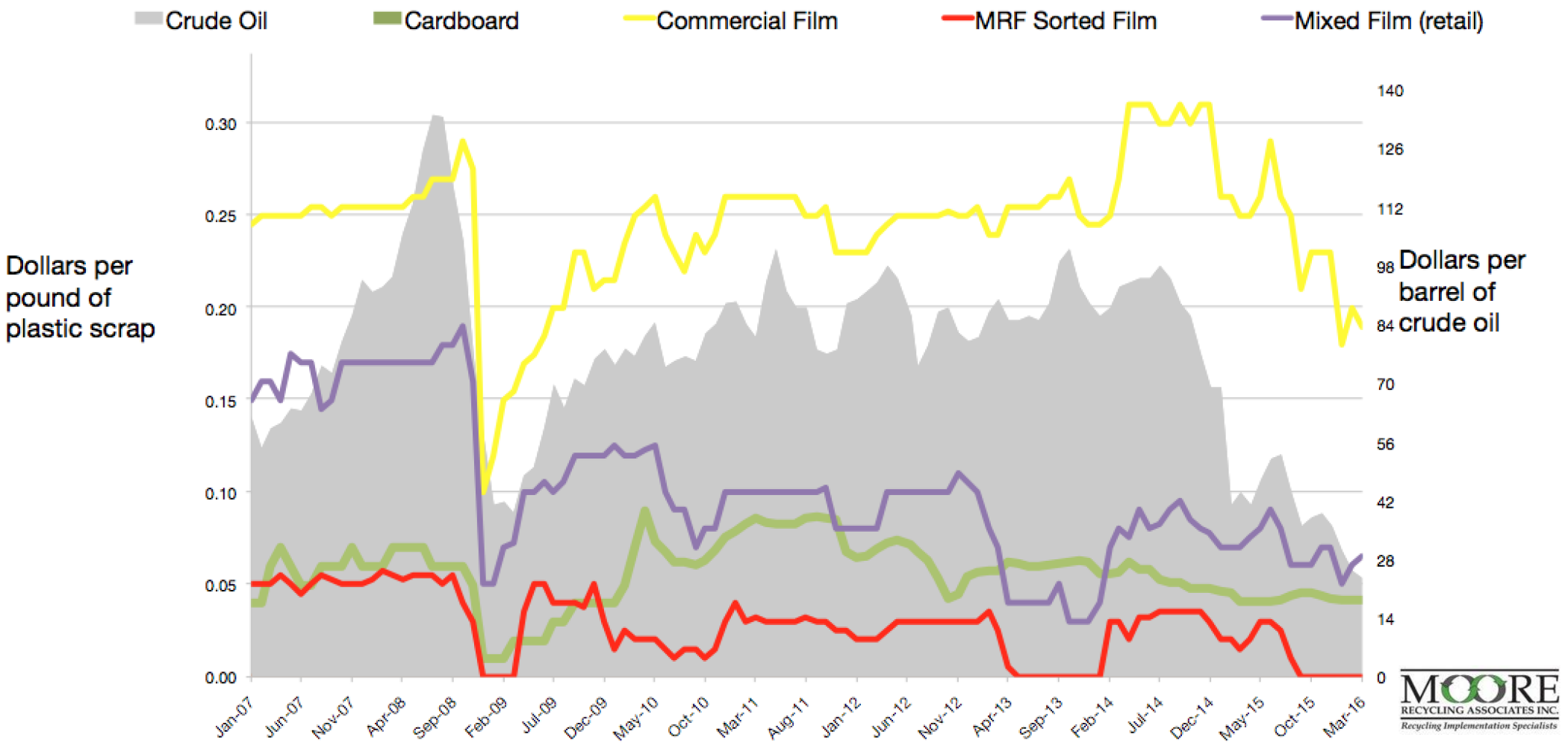

Ziploc
Kellogg's
WISCONSIN DEPT. OF NATURAL RESOURCES
CITY OF Vancouver WASHINGTON
Trex
VPI
VERDECO PLASTICS
Brands, SPC - How2Recycle Label
State & Local Gov't Outreach
WRAP & How it Works
SAFEWAY
TARGET
Recyclers, APR
Kimberly-Clark
City of Milwaukee
Retail Collection - 18,000 drop-off locations
APR DesignTM Guide for Plastics Recyclability - PE Films
Recycle if Clean & Dry
Store Drop-off
PLASTIC
BAGS / FILM / WRAP
how2recycle.info
WRAP RECYCLING
W.R.A.P.
ACTION PROGRAM
Public-Private Partnerships
Wegmans

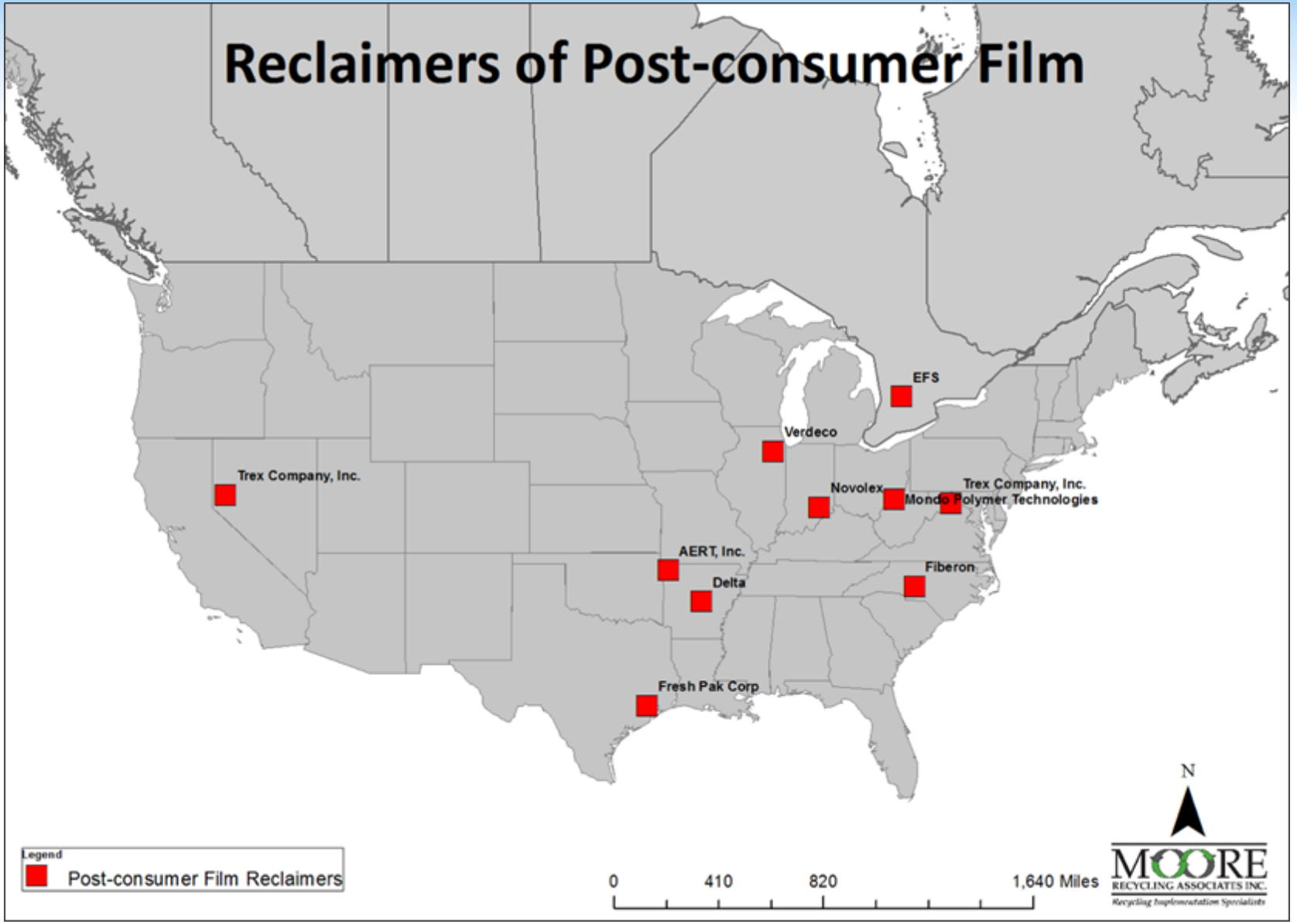
Goals & Impacts

- Program goal: double plastic film recycling to 2B lb. by 2020
- Impacts:
  - Reduce cost for communities & MRFs
  - Increase available supply of high quality film
  - Capture a resource before it's sent landfill or WtE
  - Using PCR - reduce $C0^2$ emissions & reducing energy use

Cost/Benefit of Film Recovery

Historical Pricing




Reclaimers of Post-consumer Film
EFS
Verdeco
Trex Company, Inc.
Novolex
Trex Company, Inc.
Mondo Polymer Technologies
AERT, Inc.
Fiberon
Delta
Fresh Pak Corp
N
Legend
Post-consumer Film Reclaimers
0
410
820
1,640 Miles
MOORE
RECYCLING ASSOCIATES INC.
Recycling Implementation Specialists

WRAP in Action: Public Awareness Campaign

Tools & Technical Support

Learn What's Recyclable
Identify what types of plastic you generate.

Find Recyclers
Find the right recycler to meet your collection program needs.

List In Drop Off Directory
Let consumers know you accept bags and film.

WRAP
Wrap Recycling Action Program

List in Recycler Directory
Recycling service providers that collect film should list here.

PlasticsMarkets.org
Find markets for other recyclable plastics (like bottles).

Calculator
Compare disposal costs to the benefits of recovery.

Bins and Equipment
Learn about bins and balers to meet your needs.

Bale Specifications
Sample bale specs for various grades of film.

Challenges

- Space
- Transportation
- Storage

bag plasticfilmrecycling.org wrap

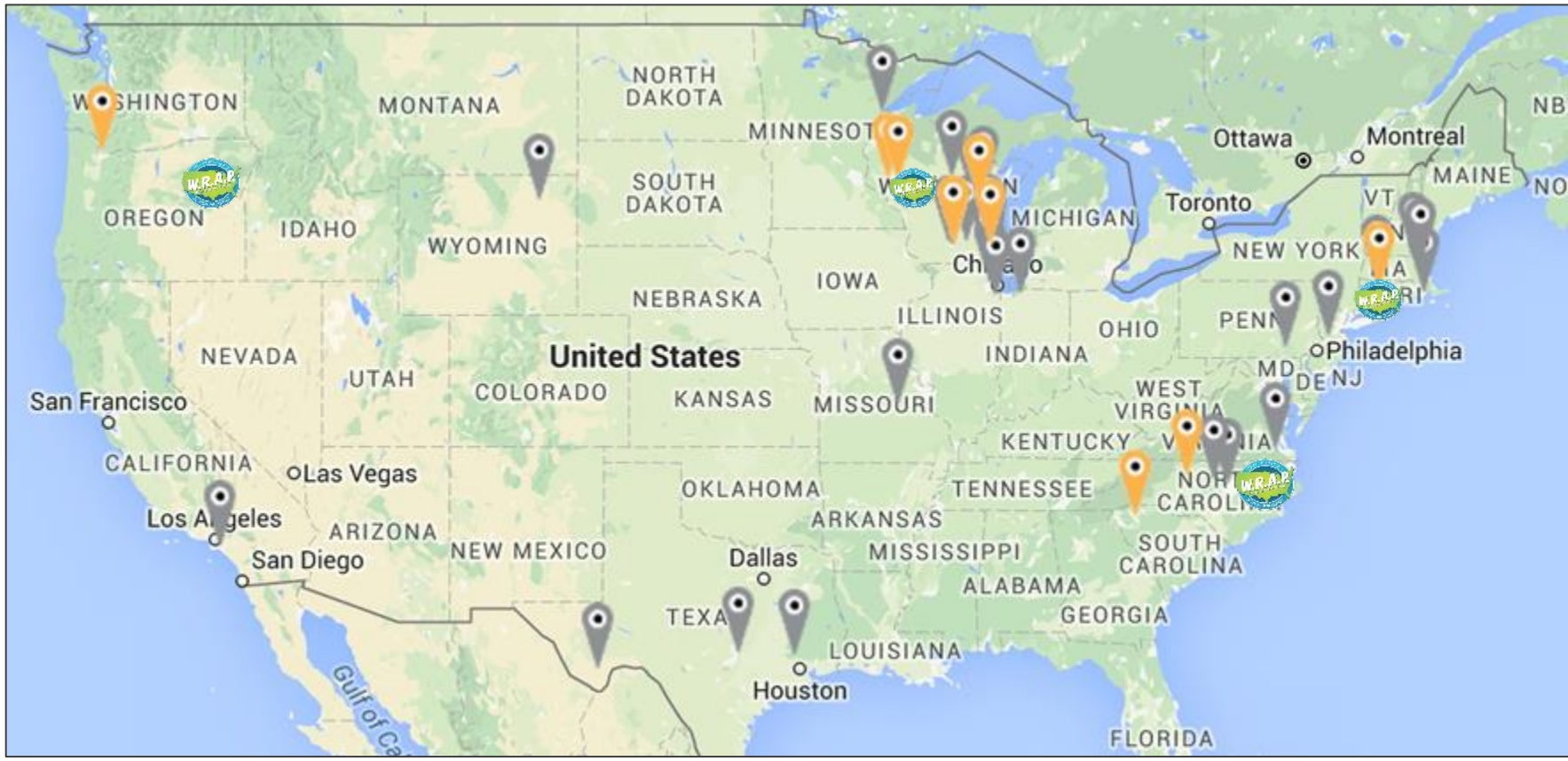
Latest Case Study: Safeway WRAP Campaign (Vancouver, WA)

- Favorable customer response:
  - 80% of customers interviewed reported positive impression of stores with bag/film recycling programs.
  - 20% said program makes them more likely to choose the store for their shopping
  - No contamination issues (i.e., food residue or vector problems)
- Reduced MRF Contamination - Local government benefitted from 75% reduction in film contamination at MRF
- Film recovery increased by 125%

Growing List of Champions!

- Retailers = 4
- Brands = 15
- State governments = 4
- Local governments= 63
- MRFs = 2

- *Other partners pending: EPA, KAB*



Conclusions

Successful plastic film recycling requires:

- Data collection & reporting
- Partnerships
- Resources & tools
- Awareness of the economics!
  - Cost to manage
  - Market availability

THANK YOU!

For more information:

Nina Butler, Managing Director
Moore Recycling Associates Inc.
nina@moorerecycling.com
707.480.0358

Questions

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Enjoy Your Break

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IMPROVEMENT FUND

Welcome Back!

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IMPROVEMENT FUND

Automated Cart Collection

What Have We Learned

Gary Everett, CIF

CIF
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Autocarts

- Carts available for >30 yrs.
- 16 municipalities (munis) in CA & 27 in USA use auto-cart collection
- ~10 munis in Ontario have switched
- CIF seeing growing interest by other munis
- Is autocart collection the next big thing?
- What have we learned so far?

Today's Presenters

- George South - Progressive Waste
  - Advocating for Change: What's to be Gained
- Trevor Barton - Peel Region
  - Case study: Why/How Peel Made the Switch
- Laurie Westaway – Wasteaway
  - CIF Project 888 – Automated Cart Recycling: A Study of Municipal Collection & Operations in Ontario

Progressive Waste Solutions | Safety. All day. Every day.

Automated Collection – Why Does it Matter?

George South - Ontario Region
Progressive Waste Solutions

CIF CONTINUOUS IMPROVEMENT FUND

Overview

- Safety is the overriding priority – Agree or Disagree?
- TRIR (Total Recordable Incident Rate)
  - Rate of injury per 200,000 operating hours
- Simcoe County vs. Peel
- Rear-load vs. Peel

How To Become Best In Class - Planning For Success

Operational model leads to:

- The right type of trucks
- Use of appropriate technology
- Labour/supervisory competency
- Maintenance standards
- Procedures leading to safety culture outcome

Priorities

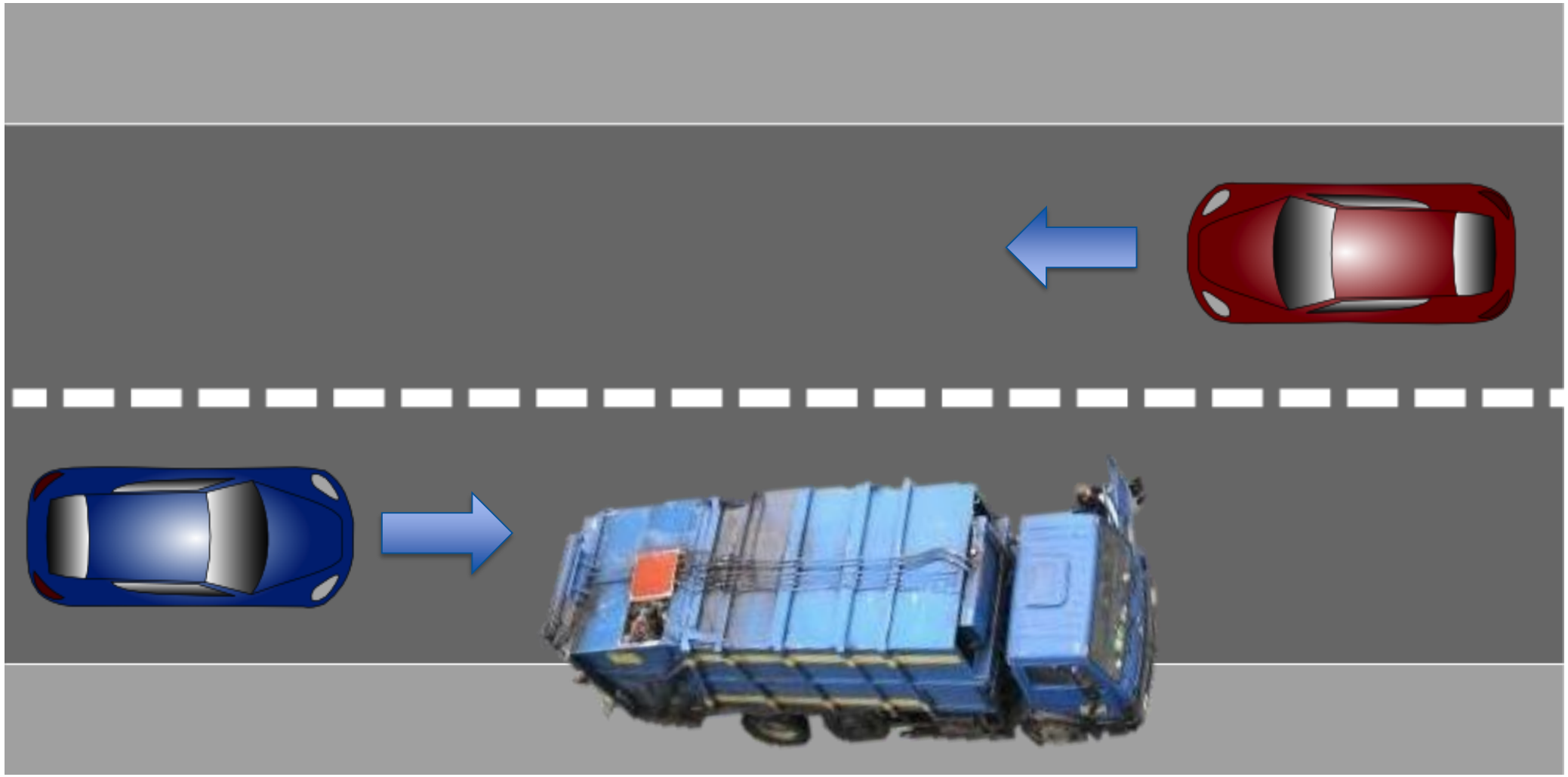
Investments in:

- Safety – essential & translates into our community & organization
- Training, role definition & responsibility
- Maintenance programs & systems

Equipment: Present & Future

- Present
  - rear-loader has been king
  - most ubiquitous & productive curbside vehicle in N.A.
- BUT…nothing has really changed since the 1960's
- Today's workforce:
  - lack of desire to work physically
  - older
  - very aware of alternatives
  - sedentary focus

Equipment: Rear-Loaders Put Drivers In Harm's Way



Why Has This Collection Model Stood For So Long?

- Pros
  - productive; dependable; fewer moving parts
  - adaptable for changing waste streams
  - capital & operating costs lower than other options

SUMMARY – ITS CHEAP!

- Considerations
  - safety issues
  - WSIB: rear-loader is a young-person's game

So, What Do We Do?

- Do we agree that manual collection is inherently dangerous?
- Do we agree that our workforce is changing?
- Do we agree that young people have far more options today than in the past – options that are far less strenuous on the body?
- What are some alternatives?

Alternatives

Automated Side-loaders: more productive but infrastructure-dependent

Automated systems for single & 2 - stream

Overview: ASL Trucks

- Pros
  - ASL comes in single or co-collection form; based on:
    - waste stream splits
    - distance to transfer/landfill/processing
    - whether multiple streams means multiple tip facilities
- Considerations
  - ergonomic constraints: driving ahead & looking behind at all times/split attention
  - little to no opportunity to handle bulky items
  - need for “chaser” truck
- There is 1 more option

Equipment: Other Automated Options – “Curotto-Can”

Single or 2-stream trucks; front box can split longitudinally to accommodate different streams

Overview: “Currotto-Can” Automation

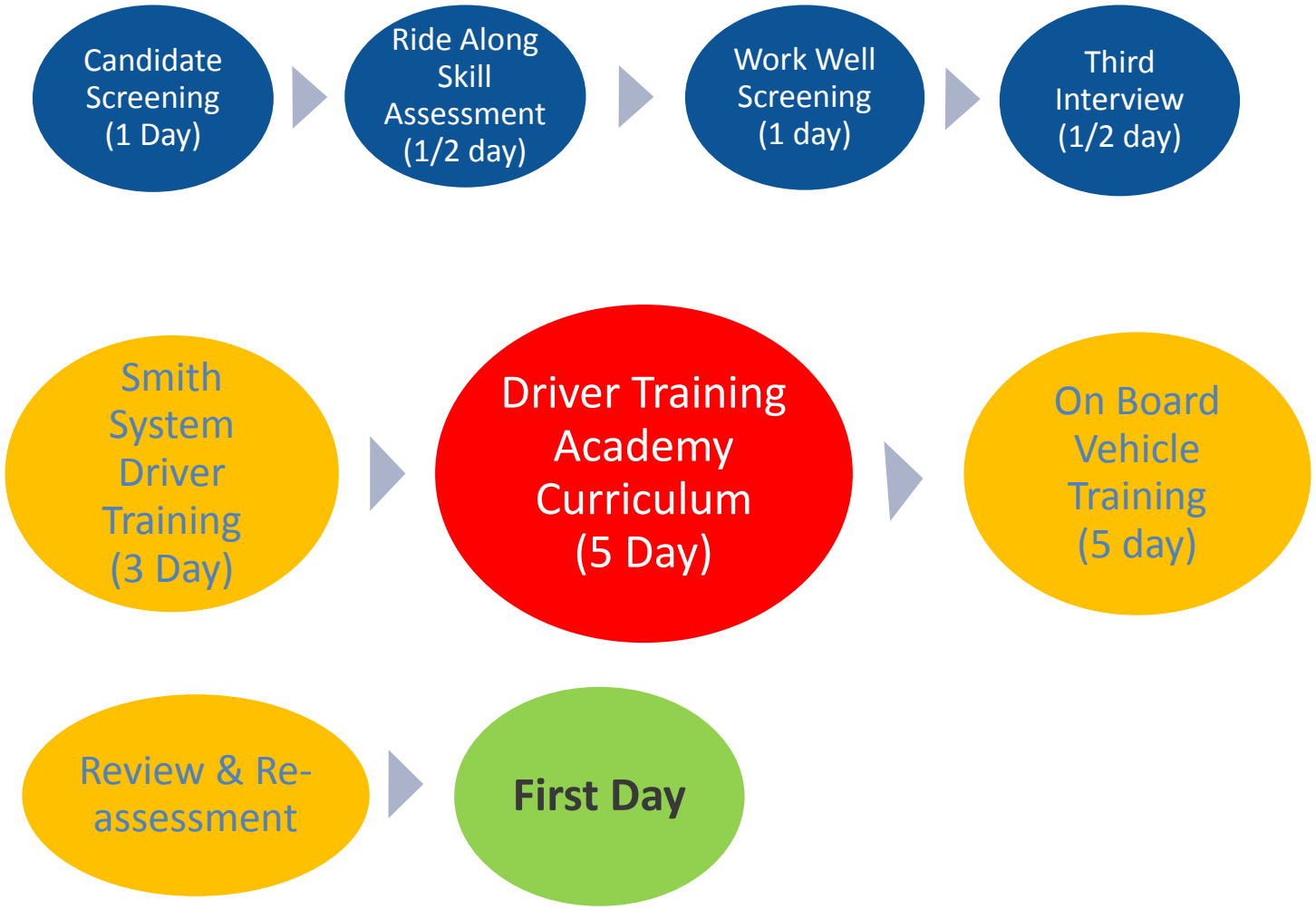
- Pros
  - High productivity
  - Can pick up carts & manual loads
  - All activity takes place in front of driver on curbside
  - Truck between public & driver
  - Driver in cab; eyes forward
  - Ease of overflow & bulky item loading
- Considerations
  - Higher capital cost

Height & Road Density Considerations

Like all equipment there is a proper application.

This unit is not meant for “416” density, but perfectly suits the “905”

Recruitment Case Study



Average lead time is 16 days for complete training

Peel Compared to Simcoe County – Small Case Study

Peel

~ 70 trucks

All CNG

121,000 HH

Simcoe

~70 trucks

All CNG

130,000 HH

Safety Performance

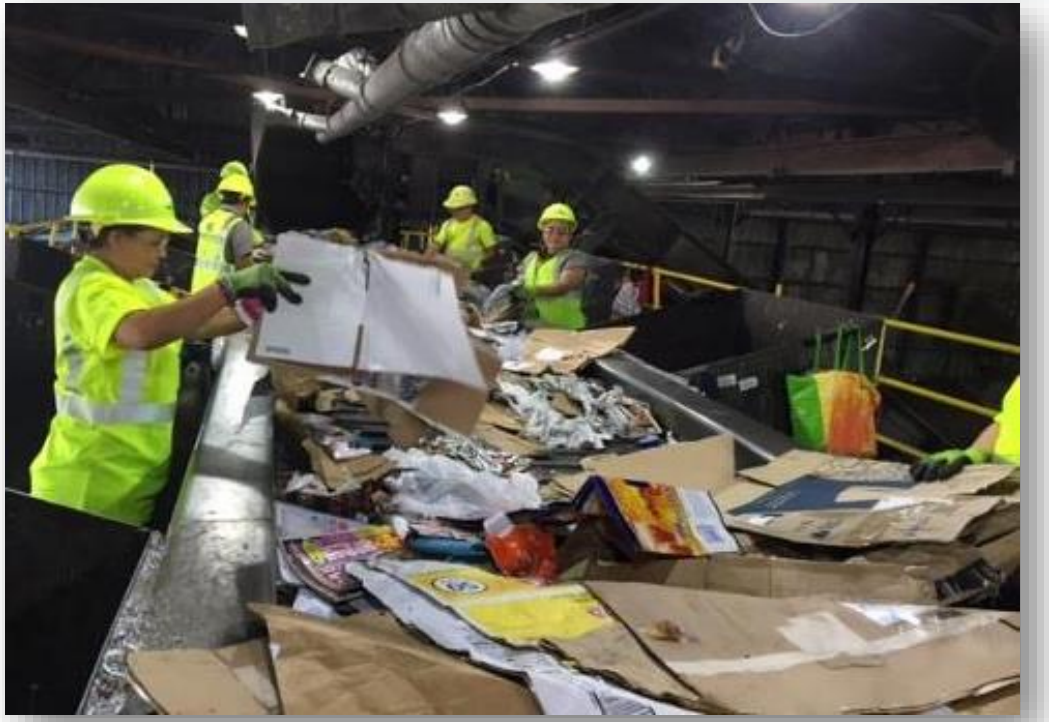
Peel	Simcoe
Total Recordable Incident Rate = 0.00	Total Recordable Incident Rate = 33.6
Most prevalent injury - None	Most prevalent injury – over exertion/sprains/strains/cuts
Safety cost/month = $15,000	Safety cost/month = $60,000+
Lost Time = 0	Lost Time = 4.97
WSIB – rebate position	WSIB – surcharge position

Productivity Performance

Peel	Simcoe
Waste – first place by 8%	Waste – second place
Recycle – first place by 12%	Recycle – second place
Organics – newly automated cart use	Organics – n/a
Bulk – mix of ASL & R/L	Bulk - same
L&Y – R/L	L&Y – R/L

MRF Quality Impacts

Material quality is a legitimate concern



Remember the concerns regarding

- 2 stream from 5 stream
- single stream from 2 stream &
- blue box to blue bag

Avoiding

As with all system changes as we move from manual sorting/collection to more mechanical options we need to maintain our ability to innovate & develop work-arounds including pre-screening & pre-sort options

Summary: Future Predictions

- Rear-loader significance will decline in our industry
- Where there are carts there will be automation
- Safety focus will drive activity in front of operator
- Older workforce will be a factor in the drive toward automation
- Efficiency will drive special collections to be combined (bulky items)
  - necessitates adaptable truck body design
- Evolution in cart systems
  - Front-load automated collection, powered by CNG where there is a local desire

Thank You!

Make the leap and go automated!

For more information:

George South, Progressive Waste Solutions
Division Vice President, Central Canada
george.south@progressivewaste.com
www.progressive.com

Progressive Waste Solutions

Automated Cart-based Collection: Is it Right for All Municipalities CIF Project #882

D. Trevor Barton

Region of Peel

Region of Peel
Working for you

CIF
CONTINUOUS IMPROVEMENT FUND

Project Highlights

- Overview
  - January 4, 2016: curbside waste collection services changed from weekly, manual collection to bi-weekly, cart-based collection
- Project Goal
  - Improve overall participation & diversion in curbside waste collection programs while keeping residue levels low
- For more information
  - Trevor.Barton@peelregion.ca
  - www.peelregion.ca/waste

Why Cart-Based Collection?

- Research & the results of a year-long pilot project were used to make an evidence-based recommendation for Regional Council's decision to move to bi-weekly, cart-based waste collection

- Main reasons for the recommendation:
  - Environment:
    - It will reduce the amount of waste sent to landfill
    - GHG emissions will decrease with fewer collection vehicles on the roads
  - Financial: It will reduce the annual waste collection costs to the Region
  - Safety: Cart-based collection programs are associated with a reduction in worker injuries

Impacts: Details & Highlights (1)

- Initial Key Impacts
  - **Environment:**
    - Reduction of waste sent to landfill: 101% increase in organics tonnes collected from January to March 2016 compared to 2015
    - Increased organics participation from 35% to 50% in January 2016
    - Fleet reduction by up to 22 vehicles deployed daily
    - Brand-new compressed natural gas (CNG) vehicles will reduce greenhouse gas emissions by approximately 25% compared to diesel
    - Focused resident education, outreach and communications about the new program helped to reiterate the importance of diversion & proper participation in the Region's waste management programs.
    - 2016 1st quarter review indicates that there are cart contamination issues at the MRF that need to be addressed immediately
  - **Financial:** Estimated annual collection savings of approximately $5.8 million

Impacts: Details & Highlights (2)

- Key Impacts Continued
  - Safety: Anticipated reduction in worker injuries from switching to automated collection
  - Aesthetics: Reduction in windblown litter from changing recycling boxes to lidded carts
  - Processing: Recycling materials are protected from rain and snow – drier & easier to process, lesser impact on equipment & lesser maintenance cost for repair & replacement, however, hidden incorrect materials in recycling carts are challenging
  - Convenience/Benefit to Resident:
    - Carts have wheels, making it easier for residents to transport waste to the curb, with less trips
    - Carts can provide increased capacity to accommodate the bi-weekly collection schedule
    - Continued weekly organic cart collection ensures that “stinky” items are collected every week
    - Carts are pest resistant

Contamination Strategy: What's Being Done?

- Based on 1st quarter results for 2016 there is an estimated 2,600 tonne increase in Residue required to be managed from the MRF for 2016 vs. 2015. This is a 2.6% increase in Non-Recyclable material received at the MRF. It also represents an urgent possible 22% increase in Residue being shipped from the MRF.
- Collection vehicle audits at the MRF.
- Short-term & long-term strategy addressing increasing amount of Home Health Care Waste & partnerships with CCAC, Peel Public Health, health teaching facilities, Canadian Diabetes & home health care (kit) retail suppliers.
- Communication support for proper use of recycling carts.
- Reallocated 6 staff to conduct curbside waste audits.

Challenges: The Anticipated

- Project size & scope
- Tight timelines:
  - To procure cart vendor, manufacture & deliver carts
  - Communications to residents
- Public awareness of the program changes & cart selection timeframe
- Digital-first communication & removal of traditional customer contact
- March of Progress marketing campaign
- Political will
- Public acceptance of changes
- Volume of resident complaints & inquiries

- Resident cart storage until 2016 start date
- Continued education support for program changes
- Siting of CNG fleet yards
- New contractors (collection & cart)
- Contamination level increase & mitigation

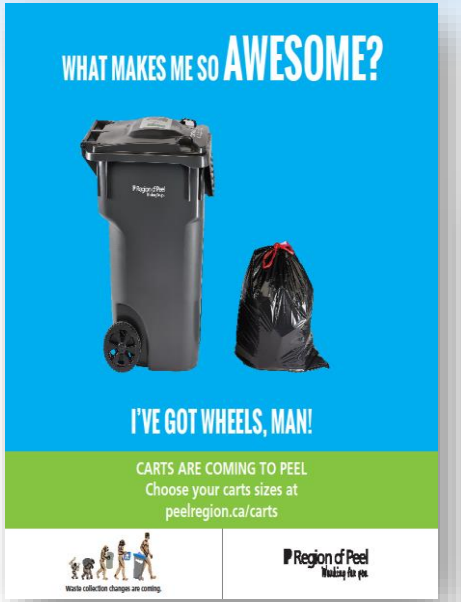
Challenges: The Unexpected

- Collection calendars (colour vs. black & white)
- New Customer Relations Management tool (Salesforce)
- Political will
- Tip trucks not all ready for the start the program
- Kitchen containers being left inside the carts during the first collection cycle
- Size of the organics cart & freezing locks
- Media popularity of vermin
  - Squirrels & the organics cart
- Contamination levels of MRF materials

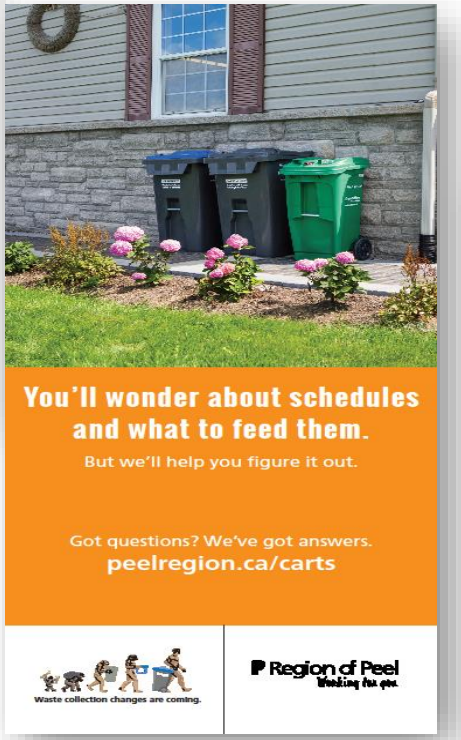
Costs to Launch to Program

- 27 contracted dedicated waste staff Support services
  - 21 Contracted Curbside Advisors+ 6 FTE dedicated staff
- Customer Contact Centre
  - Digital team; website re-launch, videos, multi-channel support
  - Education & Outreach Strategy
- Dedicated communications support
  - Print & digital content

PHASE ONE:
Cart Selection



PHASE TWO:
Cart Delivery



PHASE THREE:
Program Launch

Lessons Learned

- Manage expectations with key stakeholders
- Ensure there is a system in place to document issues/concerns to review at a later date (e.g. Salesforce)
- Ensure staffing is equipped with the proper tools to address concerns
- Ensure that you have flexibility to address high priority concerns that come in from Councilors' offices
- Ability to respond & rectify contamination issues

Wasteaway

Automated Cart Recycling: A Study of Municipal Collection & Operations in Ontario

CIF Project #888

Laurie Westaway

CIF
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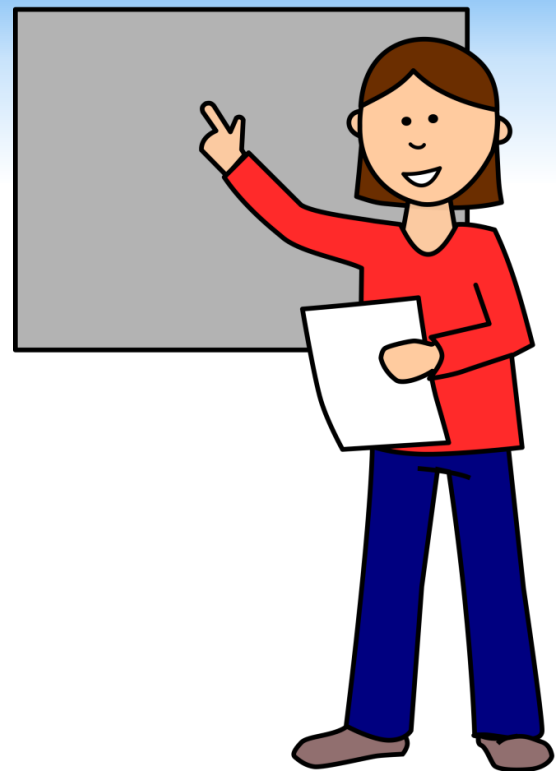
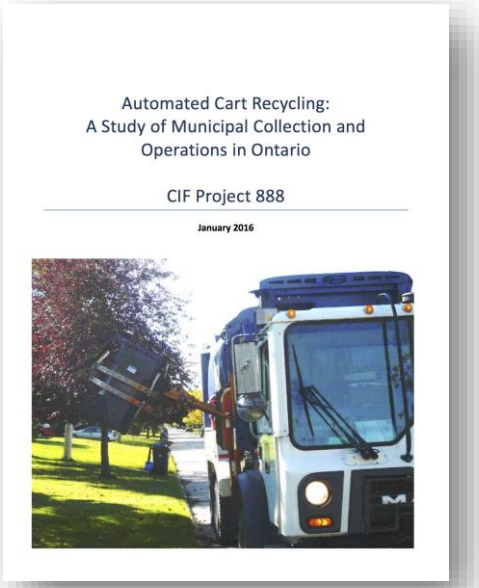
Project Highlights



- Project goal: consider if auto-cart transition benefits outweigh costs
- Impacts: evidence from 7 ON municipalities re: carts vs. manual curbside collection
- More information:
  - laurie@westaway.ca, robins.environmental@sympatico.ca
  - Download the full project report: http://cif.wdo.ca/projects

    Project #888



Purpose to Study Questions Asked?

- Collection
  - Efficiencies & costs
- Capacity
  - Recyclable materials & participation
- Health and Safety
  - Claims & costs


City of Timmins
Temiskaming Shores
Sault Ste. Marie
Region of Peel
Toronto
Bluewater Recycling Assoc.
Guelph
Kilometers
300
400
500

Report Overview

- Collection design considerations
- Operations
  - Collection efficiency & challenges
  - Processing implications
- Financial implications
- Resident feedback
- Program planning & implementation
- Promotion & education
- Recycling impact

Collection Efficiency

- Single-stream
- Co-collection
- Bi-weekly

Collection Costs - Datacall

Ontario Single Stream Municipalities 2010 – 2014 (5 years as applicable)	Average Collection Costs per Marketed Tonne
Carts – 5 Municipalities	$235.28
Non-Cart – 12 Municipalities	$272.08
Difference	**$36.80**

Capital Expenditures

- Cost/truck +30%
- Carts
  - Capacity (vol. & weight)
  - Purchase ($40-$60/hh)
  - Deploy ($3-$5/hh)
  - Promote ($3.50-$5/hh)
  - Store & replace (1-3% annually $65-$100/cart)
  - Ongoing P&E & enforcement

Labour

- Lower labour costs
- Diverse workforce
- Enhance available services?

Impact on Recycling (1)

- Marketed recycling
  - 6 out of 7 programs rates improved 1-3%
  - Region of Peel: 3 months

Recycling	**+5%**	**Organics**	**+106%**	**Garbage**	**-12%**

- Improved Participation as residents appreciate:
  - Ease of use
  - Storage capacity
  - Convenience

Impact on Recycling (2)

- Collection monitoring
  - Reduced visual/handling
  - Requires directed P&E & strong feedback
- Residue rates
  - ~5-6% increase (over 20%)
- Processing costs
  - ~27% more

Processing Costs – Datacall

Ontario Single Stream Municipalities 2010 – 2014 (5 years as applicable)	Average Processing Costs per Marketed Tonne
Carts – 5 Municipalities	$142.58
Non-Cart – 9 Municipalities	$112.12
Difference	**$-30.46**

Examples …

- Sault Ste. Marie first dual/two compartment recycling system in ON
  - Datacall – 3% increase in marketed tonnage

- City of Guelph
  - Net savings of $230,000 (crew, vehicles, & WSIB)

- Region of Peel launched January 2016
  - Reduced collection fleet by 15-20%

Key Learnings

- Recycling composition
- Jurisdiction over all waste streams
- Ability to collect/process Single Stream
- Availability of reserve monies
- Current contracts and/or fleet replacement
- Capacity to implement engaging multi-faceted communications

Evaluation List

Questions

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Morning Wrap-Up

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Enjoy Your Lunch!

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Starting Up Soon…

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Welcome Back!

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This Afternoon's Agenda

- Rising Residue Rates: Issues & Options
- *Afternoon Break*
- Bill 151 Update
- *Summary & Concluding Remarks*

The Role of Non-Obligated Materials in Rising Residue Rates

Mike Birett, Moderator

June 14, 2016

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Residue, An Evolving Concept

- Traditionally a measure of performance
  - “Process loss” vs “unsolicited materials”
- More recently, you’ve heard:
  - The term “non-obligated materials”
  - “Residue rates are rising”……or are they?
- What is it all about & why now?

It’s an Issue of Productivity vs. Net System Cost

- Moving from a 4 stream sort to single stream
  - 0.5 tonne/hr to 1.0 tonne/yr
  - Increased processing costs & residue
- Accuracy in promo and ed
  - Keeping it simple improves participation
  - Generalized P&E tends to lead to accuracy issues & increased residue
- Maximized recovery in the MRF
  - It’s all possible but at what cost?

Today's Presenters

- Alec Scott
  - The Role of Non-Obligated Materials in Rising Residue Rates
- Nathiel Egosi, PE, RRT Design & Construction
  - Managing Residue: Is Technology a Viable Long-term Solution?
- David Johnstone, Region of Waterloo
  - Curbside Controls to Manage Residue

The Role of Non-Obligated Materials in Rising Residue Rates

Alec Scott

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Residue – What do We Mean?

- ‘Residue’ means materials that we:
    1. Don’t want
        - Non obligated materials – close to BB but not steward materials
        - True garbage
    2. Won’t handle
        - BB materials not in our system
    3. Can’t Manage
        - Small or contaminated materials
- Obviously, a subjective definition

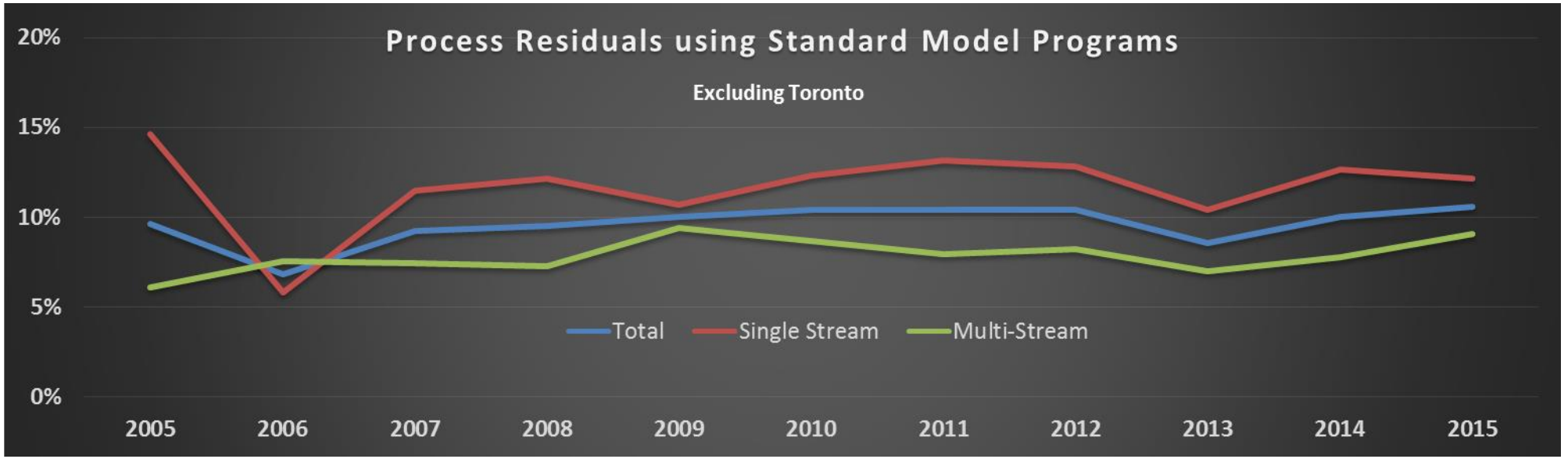
Residue Calculation

- Not all programs report Collected, Marketed & Residue tonnages
- WDO/SO & Municipal Teams agree on ‘model’ programs
  - Selection based on experience & confidence in data reported
  - Attention paid to recent program changes & process upsets
  - Single Stream & Multi Stream considered separately
- Weighted average residual rate calculated for program type
- Appropriate rate applied to reported collection tonnages for remaining programs
  - Yields calculated tonnages & calculated program residuals

How Much Do We Get?

- Of course, quantity depends on our definition of residual

Program Type	Residual
Total	9.6%
Single Stream	11.6%
Multi-Stream	7.8%



Factors Contributing to Changes

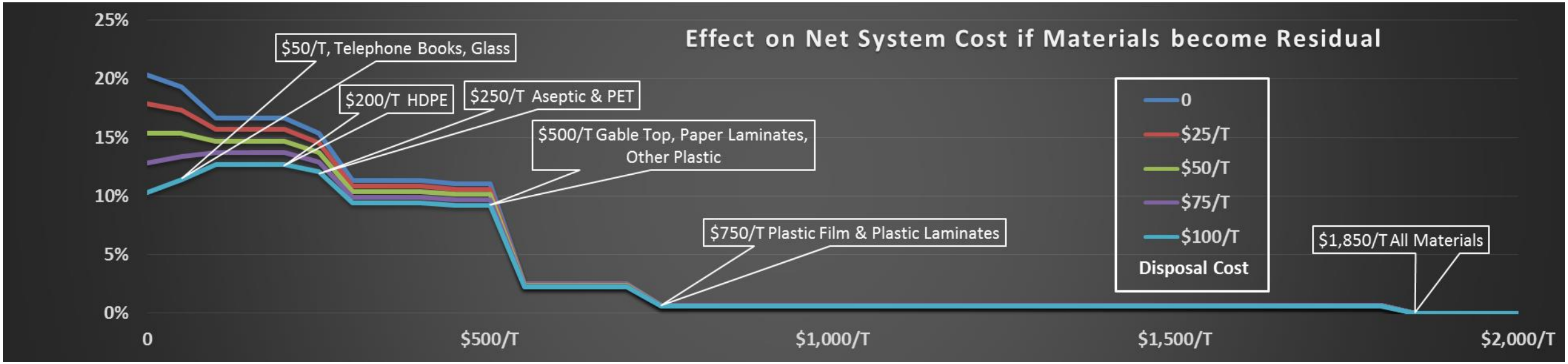
- Materials entering the system
  - Lightweight alternative packaging
  - Declining newsprint
  - Soiled or otherwise non-recyclable containers
- Consistency in material quality
  - Look-alike alternatives, i.e. ‘biodegradable’ PET
- Multi-material packaging
- Decreases in recovered materials due to scavenging

Decisions Contributing to Residual Changes

- Why sort if I can't sell the product?
- Post – processing of residual materials
  - Record shows them as products, e.g. ONP #6
  - Other records show them as residual sent for processing
  - Q. how much does the post-processor actually recover?
- Process upsets and once-off aberrations
  - MRF fires
  - Adjustments for 'questionable' contractor practices

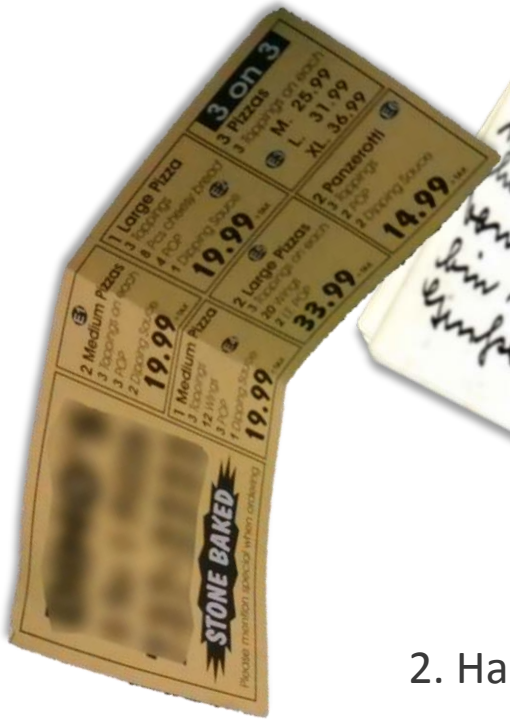
Economics of Not Processing Materials

- If it's all about ROI, what would it cost us not to process legitimate materials?
- If we declare enough materials a residual, wouldn't the "residual" begin to have commodity value?

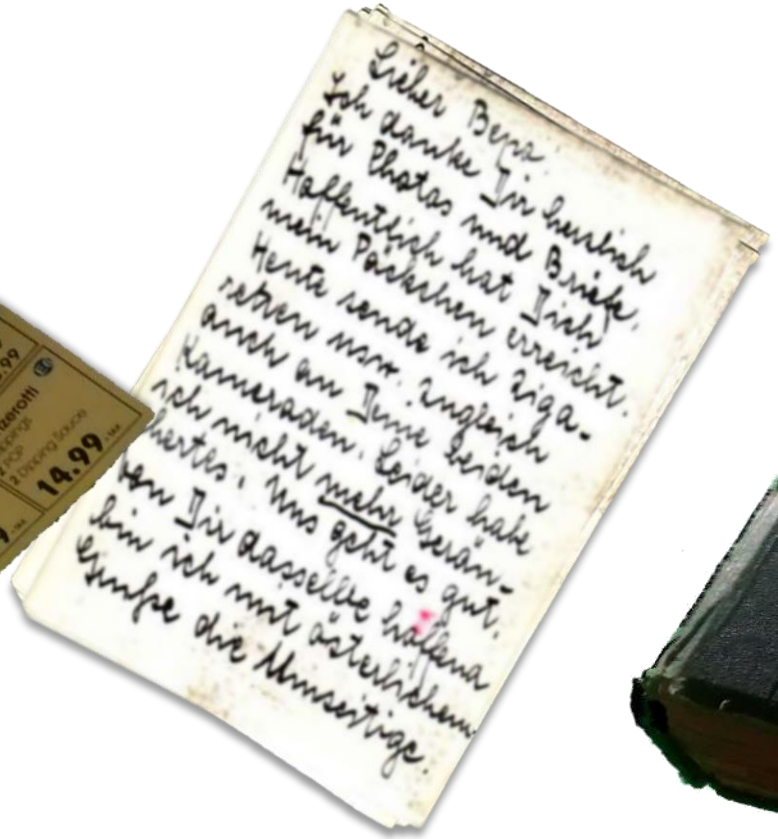


Obligated or Non-Obligated? (1)

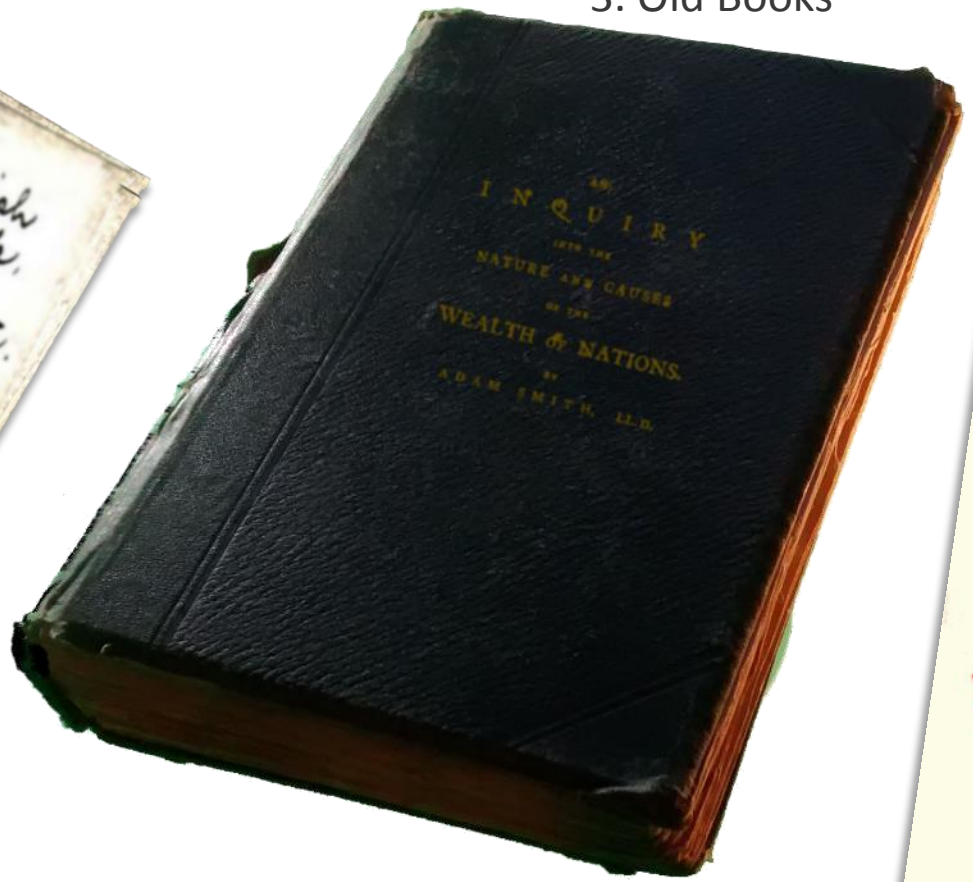
1. Fridge Magnets

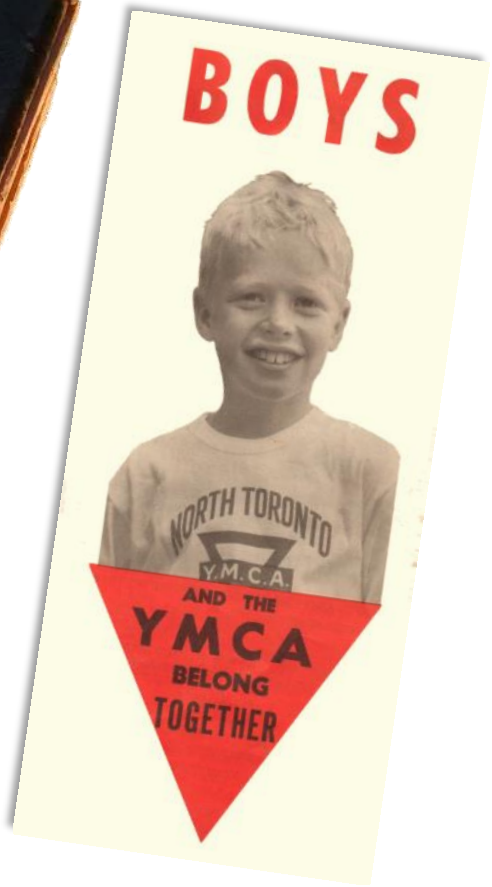


2. Handwritten Notes



3. Old Books





4. Pamphlets

Obligated or Non-Obligated? (2)

1. Plastic Pouch Container

2. Post It Notes

3. Paper Towel

4. Pots & Pans

Considerations in Reducing Residual

- Trade offs:
  - Consumer understanding/confidence vs. detail of instructions
  - Residual & Non-Obligated % vs. sorter time per household
- We could do better
  - More attention to advertising to avoid non-obligated materials
  - Programs choosing to collect non-obligated materials need to ensure WDO submission clearly identifies non-BB tonnes, costs & revenues
- System could do more to define non-obligated materials
  - WDO currently clarifying new Datacall instructions & material definitions
  - CIF/AMO/MWA could consider revisiting standard advertising

Managing Residue:
Is Technology a Viable Long-term Solution?

Nathiel Egosi, P.E.

RRT Design & Construction

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RRT Design & Construction

- We build solid waste processing & recycling businesses
- 27 years of over 400 successful plants including over 80 complete greenfield operations
- Expertise: plant operations, MRF equipment, process engineering & construction
- Lines of business: everything but landfills (MRFs, Mixed Waste MRFs & EFW)
- Clients/customers: municipalities & private companies

Ocean County, NJ
Single Stream MRF

New York, NY
MRF

Mixed Waste MRF Defined (aka “Dirty MRF”)

- Processes municipal solid waste to recover recyclables
- Uses similar equipment, processes & techniques as single-stream
- Includes special equipment unique to dealing with garbage
- Liberates, rough separation by shape and size & then more precise separation into target commodity materials
- Offers opportunity for organics recovery & alternative energy

Mixed Waste MRF vs. Single Stream MRF (1)

Mixed Waste MRF

- Facilities may be used
  - to fill the void where curbside recycling programs do not exist or are not practical –
    - examples such as rural or multi-family
  - to enhance & complement curbside recycling programs to recover more
  - to recover recyclables from commercial waste net of traditional source separation
- Promotion & education (P&E) not needed; no sorting behaviour required

Traditional MRF

- Formalized recycling program
- Source separation by the generator
- P&E needed; sorting behaviour is required

Mixed Waste MRF vs. Single Stream MRF (2)

Mixed Waste MRF

- Extensive pre-sort
- Methods to open bags
- Can achieve high recovery of hard plastics, metals & nonferrous metals – difficulty with fiber-recovery; glass is impractical
- Profitability challenges to develop these facilities: high capital (capex) & operating costs (opex) & very high amount of remaining waste to landfill
- Revenues do not offset capex & opex
- Market understands that tipping fee is required & can be fairly stable

Traditional MRF

- Extensive pre-sort
- Methods to remove film due to wrapping
- Can achieve high recovery of hard plastics, metals, nonferrous metals & fibers; glass is difficult
- Profitability challenges to existing MRF infrastructure: high opex & contamination levels; model not 100% processing-fee based
- Revenues can offset capex & opex sometimes; not always
- Confused market understanding; processing fee highly variable

Pros & Cons of Technology Based Solution

Pros

- Can result in greater recycling for a community
- Can produce streams that have beneficial use potential
- Steers waste away from haulers & disposal sites

Cons

- Capital intensive
- More prone to health & safety problems
- Diminishes recycling ethic as we know it today; sends a confusing message (i.e., everything is recyclable)
- Consumer is less connected to the impact of their consumption habits
- Steers waste away from haulers & disposal sites

The “Dirty MRF” Quandary

Are ’dirty MRF’s’ a solution to combat rising contamination issues?

- Ontario’s multi-family, depot & cart-based collection programs are challenged by high residue rates
- This compromises higher quality of incoming materials from single family homes using BB for collection

The Need for a Business Case (1)

Considerations	Mixed Waste	MRF
% Non-recyclables after processing	80-90%	10-20%
% Recyclables recovery	80-90%	95-98%
Recyclables from market area	95+%	25-50%
Sizing of plant (residential only)	3-4x	x

The Need for a Business Case (2)

The math at this time is complicated, unsupported, political & volatile

- Data is not real
- Variables from location to location is high, no standard
- This is really about garbage, not recycling. Garbage is about $
- Tipping fees & economy affect flow, commodity prices affect everything

We are years away from knowing the costs….think back to MRFs & how long it took to understand those costs…

On the Other Hand…

Mixed waste processing vs. landfill is a compelling debate

	Landfill	Mixed Waste
% Recyclables recovered	0	10%
% Organics recovered for further processing into biogas	0	25-35%
% Materials recovered for further processing into RDF	0	45-55%
Remaining work	Minimal	Need: ▪ AD plant with answers for digestate ▪ RDF plant with combustion component ▪ Landfill for residues

Additional Thoughts…

- Which is the true risk?
  - The impact of 'the evolving tonne’ or the level of contamination in the program?
- Is MWP a viable option to supplement curbside programs
  - what is value proposition of MWP for multi-family
- Health & safety of workers is important consideration
- Don’t underestimate value of effective public education on recycling
- Collection program improvements & hauler education are doable through conventional management techniques

Concluding Comments

- MWP is a high-value proposition for multi-family streams & rural communities
- MWP should not be thought of an alternative but rather as an incremental & complimentary tool for traditional source-separation, curbside recycling
- Be prepared: arguments about this subject often have little to do with recycling but rather with other institutional factors and of course, $
- MWP is effective in producing a variety of rich streams suitable as inputs to other processes; contaminated organics, mixed plastics & a refuse derived fuel (RDF)
- Planners should focus on creating realistic recycling goals
- Industry focus should be on getting contamination levels under 10% at a MRF, it can be done!

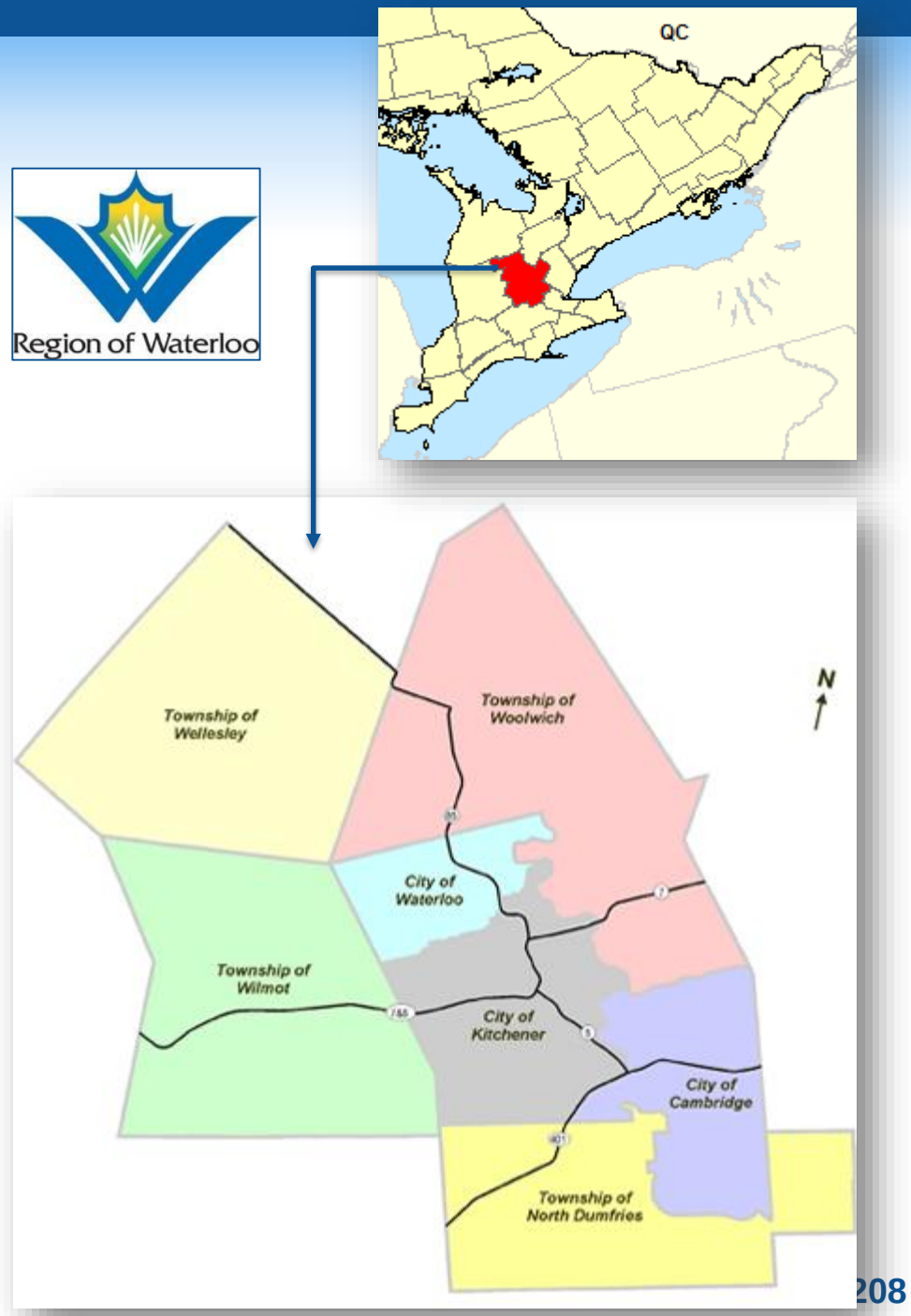
Curbside Controls to Manage Residue

David Johnstone, Region of Waterloo

Supervisor, Contracts & Service

Project Highlights

- Project goal: prevent & limit residue with introduction of new bag limit
- Impacts: maintaining processing costs of blue box material with a change in curbside service levels
- More information:
  - djohnstone@regionofwaterloo.ca
  - www.regionofwaterloo.ca/en/index.asp



Current vs. Future

Current

Curbside collection in the cities

Future

Standard Region-wide

Journey

- Waste Management Master Plan (2012)
- One operating landfill
- The Region's residential waste diversion rate has plateaued at approximately 53%
- Current contract ending March 2017

New Service Level

Garbage collection changes are coming March 2017

Starting March 6, 2017 all single family homes in Cambridge, Kitchener, Waterloo, North Dumfries, Wellesley, Wilmot and Woolwich will get:

Unlimited weekly collection

Green bin and blue box

Every two weeks

Garbage
Maximum 4 bags or cans
(23 kg/50 lbs.)

Every two weeks

Large/metal items
Maximum 3 items

Every two weeks
(spring to fall)

Yard waste
Unlimited collection
(23 kg/50 lbs.)

We're here to help!

Frequently asked questions about the changes and other information to help you get ready is available on our website.

Recycling – 2 Stream (1)

Recycling – 2 Stream (2)

Recycling – 2 Stream (3)

Reduce Contamination – Blue Box (1)

Reduce Contamination – Blue Box (2)

Reduce Contamination – Cart Recycling

New Contract Preparation

- Free BB & green bin events
- Educate people on 2-stream sort
- Customer service staff for education
- Inspectors for on-street help
- Aligning collection practices at multi-residential properties (& some businesses)

By-Laws

- Required to reflect new curbside service
- New/improved clauses
- Simple to enforce & update

  Waste Collection Guidelines
- Identifies criteria for service for locations other than single family homes
- Accessible for customers & Regional/City Planners

Expected Results

- Diversion ⬆ 5-10%
- Service & value for Regional residents (net savings 2.6M/year)

Questions

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Enjoy Your Break

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Welcome Back!

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Planning with Bill 151

Mike Birett

CIF

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Planning with Bill 151
ORW Panel Session

Rick Findlay, RFCL Innovations Inc.

Moderator

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Objectives for the Session

- Explore key elements of Bill 151 so that you - as program operators - can make informed recommendations & decisions as programs transition to the Resource Recovery and Circular Economy Act (RRCEA)

- Offer insights into how events may unfold

- Provide you with the opportunity to direct the conversation

Key Components of the Legislation

- **Bill 151 is enabling legislation** providing the government with power to establish:
  - Waste-Free Ontario strategy;
  - Policy statements to support the provincial interest;
  - Regulations

- **Programs approved under the Waste Diversion Act will continue under the Waste Diversion Transition Act** until they are wound up

- The government will issue **policy statements** - & then municipal official plans, waste management plans, & bylaws must be aligned with these policy statements

- The government's requirements, including designated products & packaging & associated service & performance targets, will be set out in **regulations**

- A Resource Productivity and Recovery Authority will be responsible for **registering obligated persons, acting as a data clearinghouse, monitoring compliance, auditing and enforcing.** The Authority recovers its cost by charging fees

When Packaging & Printed Paper (PPP) is Designated under RRCEA

- A regulation will make brand holders **responsible for collection & management** of the packaging & paper they supply to households.
- Brand holders may be able to meet their regulatory obligations individually or organize themselves into **one or more producer responsibility organizations (PROs)** to meet their obligations.
- Brand holders may be able to a large degree, **decide how they will meet their regulatory obligations**. Their approach to collection & management of PPP may differ from current systems and contractual arrangements.

When PPP Is Transitioned - Will the Regulation …

- Expand the definition of packaging to include types not currently covered by the BBPP?
- Include material that is currently not obligated but ends up in BB?
- Exempt small brand holders through a regulated de minimis, thereby excluding some portion of the PPP collected?
- Exempt newspaper publishers (as in Saskatchewan), thereby excluding newspapers?
- Include accessibility targets i.e. require that all households currently receiving collection from municipalities continue to receive collection from brand holders?
- Include performance targets? Targets for individual materials or the total BB?

How will Brand Owners Meet Their Obligations to …

- **Collect PPP?**
  - By continuing the current curbside & MF collection services?
  - By standardizing the list of PPP accepted in collection systems? At Curbside? At Depots?
  - By providing municipalities with first right of refusal to provide collection services?
  - By requiring the use of a collection operating standard?

- **Manage collected PPP?**
  - By using municipally-owned infrastructure to receive PPP from collection vehicles and/or consolidate, transfer and/or process PPP?
  - By assuming existing post-collection contracts?
  - By issuing an RFP for post-collection services?

What Are the Basis for Payments if Brand Holders Contract with Municipalities for Services?

- **For collection**
  - A collection incentive?
  - Costs incurred if operating to a defined collection operating standard?
  - A municipality uses a competitive procurement, then basis is best value? Lowest price?
  - A percentage of costs where municipalities provide services beyond those required by brand holders?

- **For post-collection**
  - If municipality uses a competitive procurement, then payments are based on best value? Lowest price?
  - Municipalities issue a reverse RFP to sell collected materials?
  - A percentage of costs where municipalities provide services beyond those required by brand holders?
  - Who bears the commodity market risk?

Operating During Transition

- Data – know your program to be ready for discussions with brand holders, …
- Costs – minimize your costs to be best positioned …
- Contracting – whether new or renewals, maximum flexibility …
- Materials – maximum flexibility to add/remove …
- Service levels – maximum flexibility to modify frequency of pick-up …
- MRFs – own and operate, own & contract management, exit …
- Asset management & capital investment …
- Possible new requirements from the Authority …

Opening Questions for the Panel

1. What is the **timing** of the PPP Regulation & other related components?

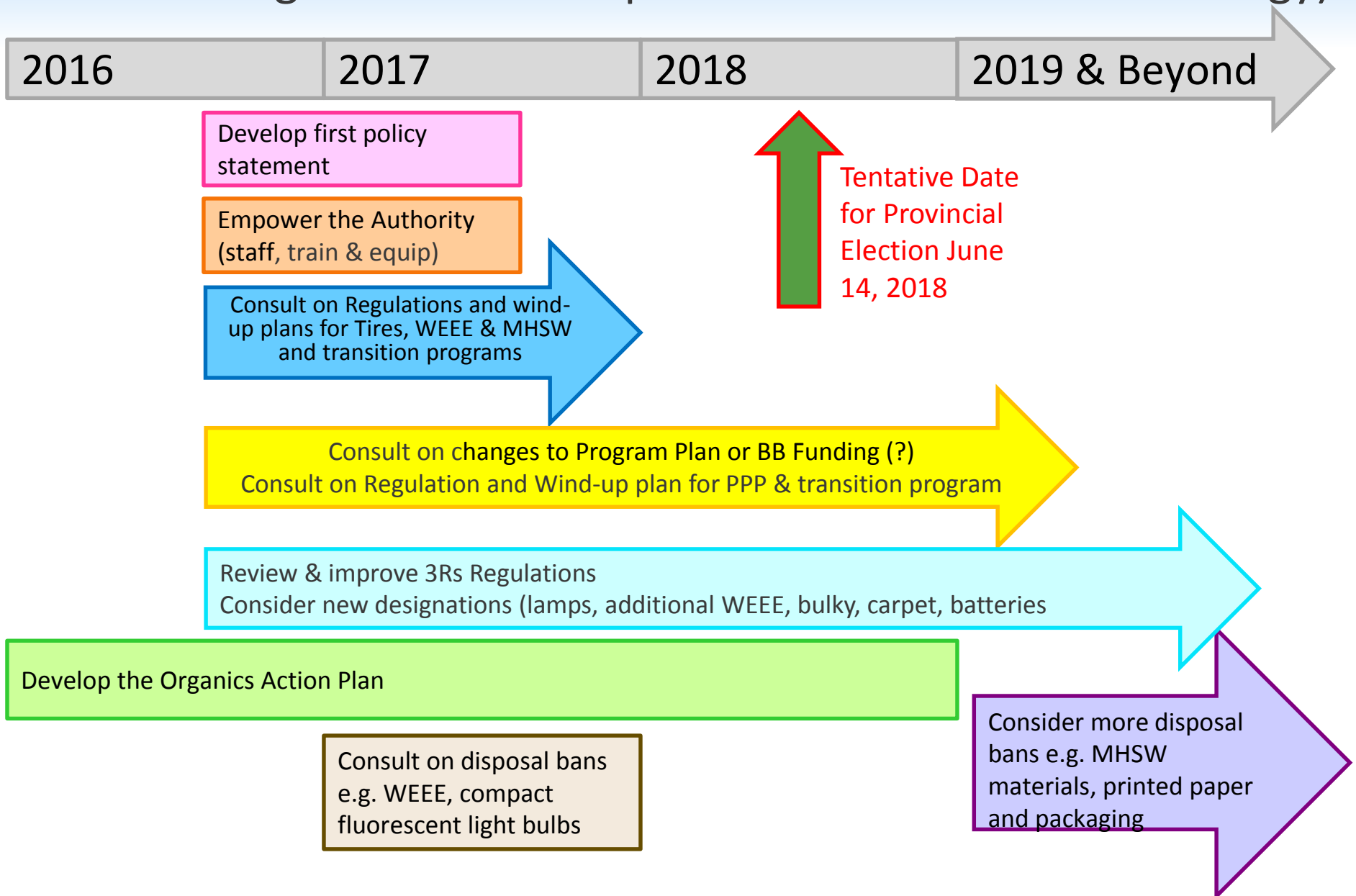
2. What are the **key elements** that should be considered in developing a PPP regulation to ensure it is effective?

3. Decisions for **municipalities**
   - If municipalities have **collection contracts** that expire in the next 2 years, should they extend or retender? Modify?
   - How should municipalities with post-collection infrastructure approach **routine repairs & maintenance** as well as minor and major **capital investments**?

4. How should brand owners:
   - Meet their obligation to **collect PPP**?
   - Meet their obligation to **manage PPP** (post-collection)?

5. What do stakeholders need to do to **prepare for a PPP regulation** under RRCEA?
   - How should municipal collection, processing, depots & program development be managed in the interim?

Potential Timeline
(Based on Act coming into force in September & current draft Strategy)



Other Questions for the Panel?

Opportunities to ask questions from the floor & online

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Session Wrap-up

- Mike Birett, CIF, Mbirett@wdo.ca
- Rick Findlay, RFCL Innovations Inc., RFindlay@RFCLInnovations.com

- Dave Gordon, AMO/York Region, DGordon@AMO.on.ca
- Peter Hargreave, Ontario Waste Management Association, PHargreave@OWMA.org
- Glenda Gies, Glenda Gies & Associates Inc., glendagies@ggies.ca

Closing Remarks

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Thank you!

Please complete ORW survey next week

See ORW slides & webcast archive:
http://cif.wdo.ca/events/orw/index.htm

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