



THE CITY OF
CALGARY

Utilities & Environmental
Protection

Recycling Trends in Calgary

**SWANA Northern Lights Chapter Conference
May 2015**

Background

- Goal: 80 per cent less waste to our landfills.
- In 2009, we began the Blue Cart Recycling Program providing single-stream curbside recycling services to single family households up to 4-plexes.
- 240 L size carts are used and picked-up by side loader trucks.
- There are no excess materials accepted at the curb.
- There are currently 47 Community Recycling Depots (CRDs) located throughout the city.

Background cont'd

- Materials collected are sent to a third party Materials Recovery Facility (MRF) for processing and marketing.
- 2010 – 2012, the amounts of material recycled were relatively steady.
- In 2013, tonnages started to decline, with the effect continuing into 2014.
- This decline occurred despite the fact that the program has gained ~5,000 participating households annually since 2009.

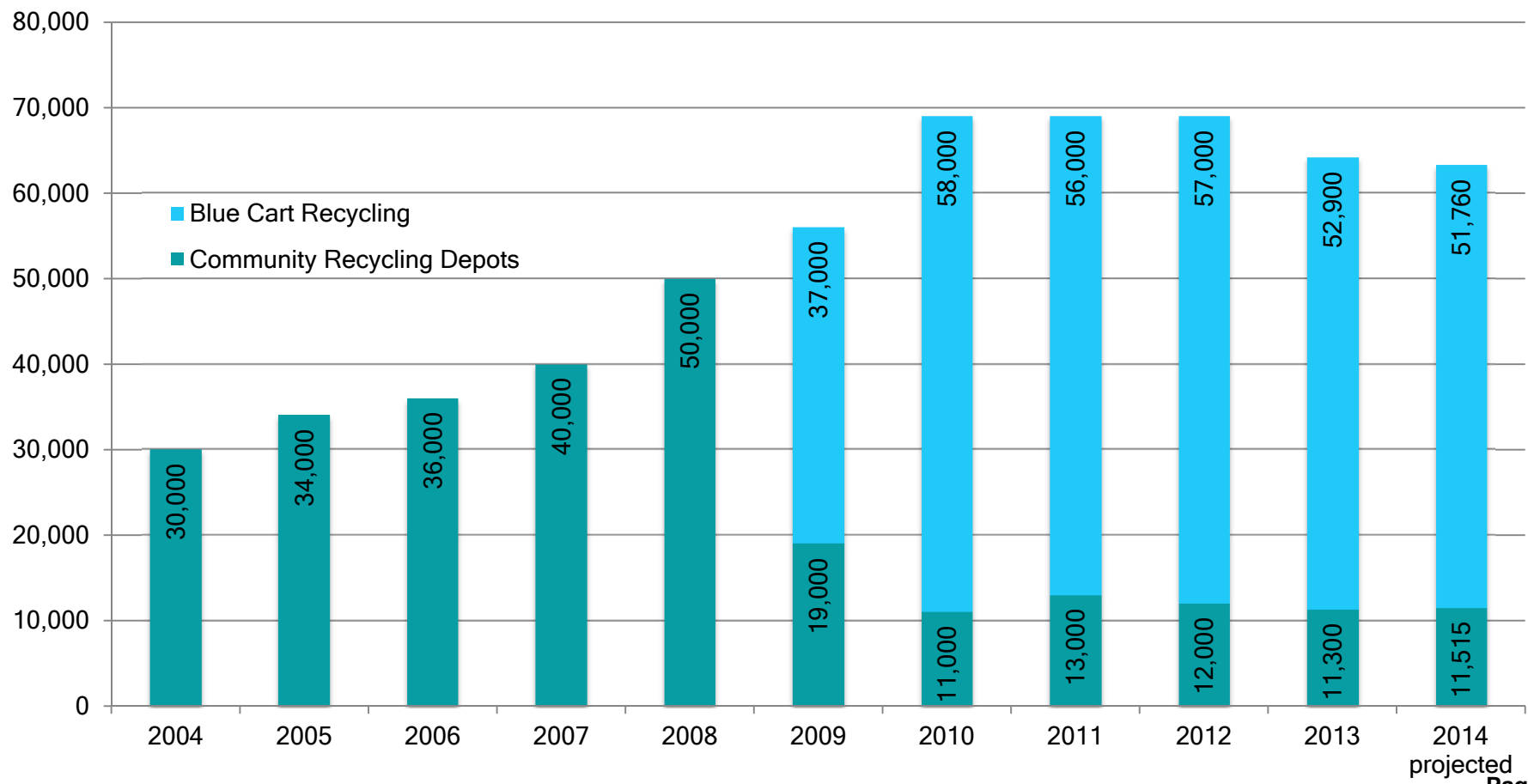
Calgary Blue Cart Program

- Number of Single-Family Households Served by Calgary's Blue Cart Program (as of December of each year)

Year	Number of Households with Blue Cart Service	Number of Households Added To Program Each Year
2010	285,401	
2011	290,862	5,462
2012	295,818	4,956
2013	301,025	5,207
2014 (Average Jan-Sept)	305,830	4,805

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Tonnes of Residential Materials Recycled through the City of Calgary's Blue Cart Program and CRDs (2004 – 2014 projected)



projected
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Recycling Trends Analysis Study

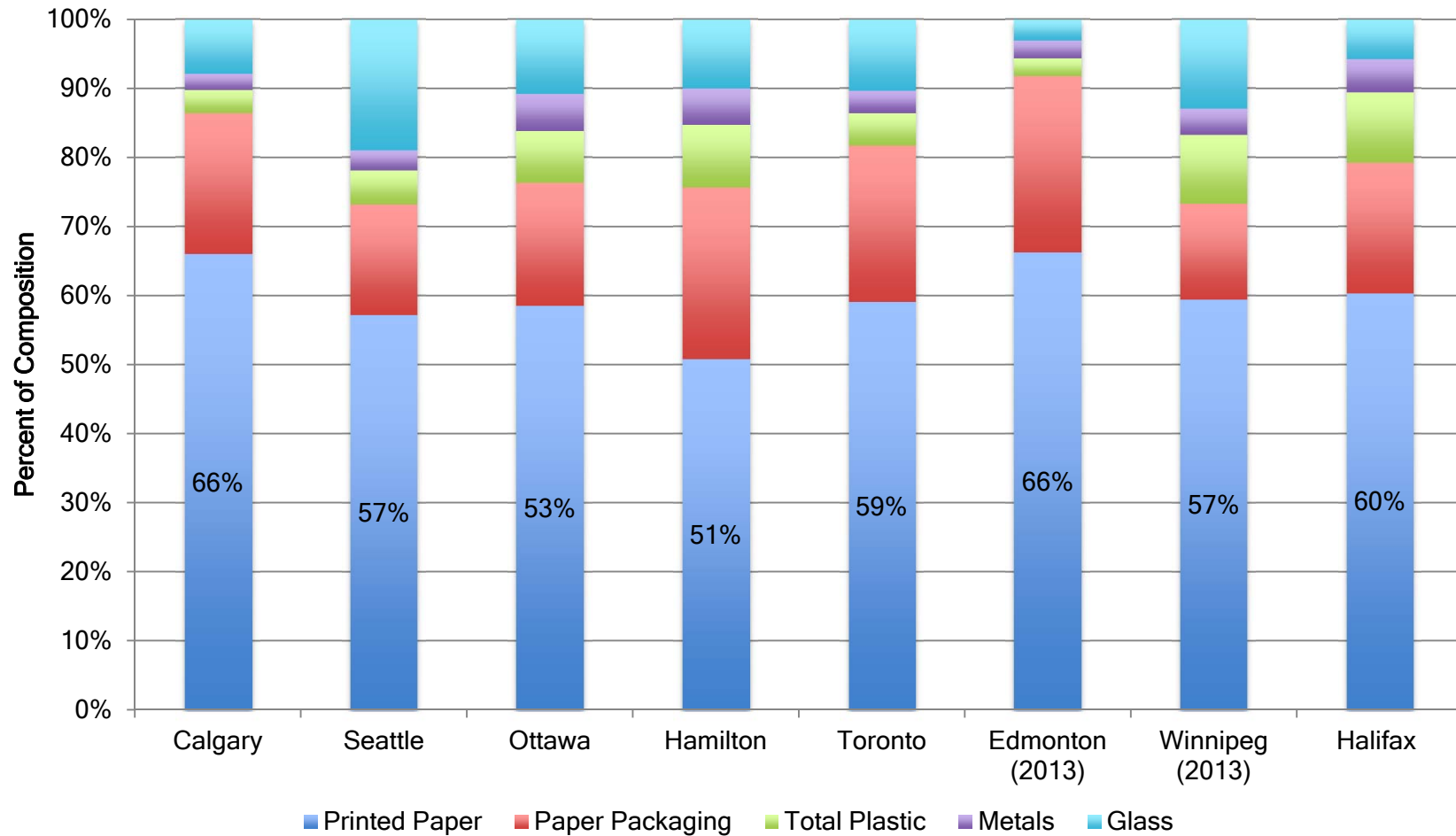
- The City of Calgary commissioned a study.
 - To further understand the factors influencing the downward trend in recyclables collected
 - To better forecast and prepare for future tonnages
 - To target communication and education for the Blue Cart Program.
- A final report was prepared and submitted by CM Consulting, Kelleher Environmental and Sound Resource Management, with support from ChemInfo Services Inc.

Recycling Trends Analysis Study

- Collected and analyzed data (on population and growth, program changes, economic factors, tonnages and recycling rates, diversion policies, and waste composition study findings) from 14 key municipalities; 12 in Canada and 2 in the U.S.
- Data from jurisdictions were equalized to account for key differences between programs, for e.g., in the types of materials accepted and the number of single- and multi-family households served

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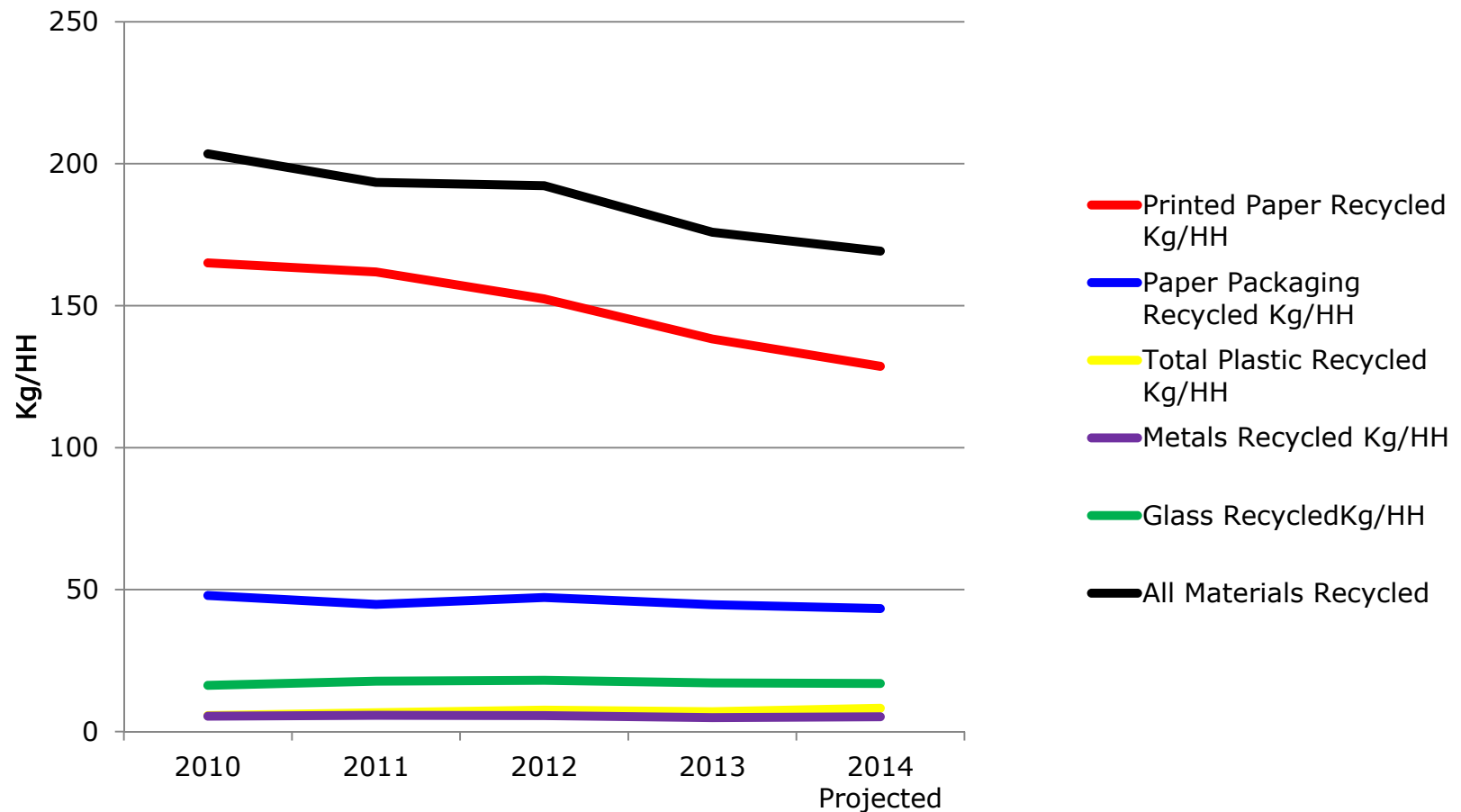
Composition of Recycling in Select Cities (2012)



Recycling Facts/Findings

- Calgary has experienced declining tonnages and in particular a decline in the kg/hh/year of recycled material.
- Since 2010, the largest decline in the tonnages of materials is from printed paper (newspapers, magazines, flyers) and paper packaging (cardboard and boxboard).
- Alberta's high success in the beverage container deposit return program keeps most of these materials (glass, PET, milk jugs, aluminum cans) out of the Blue Cart Program

City of Calgary – Kilograms per Household Recycled (2010-2014 projected)

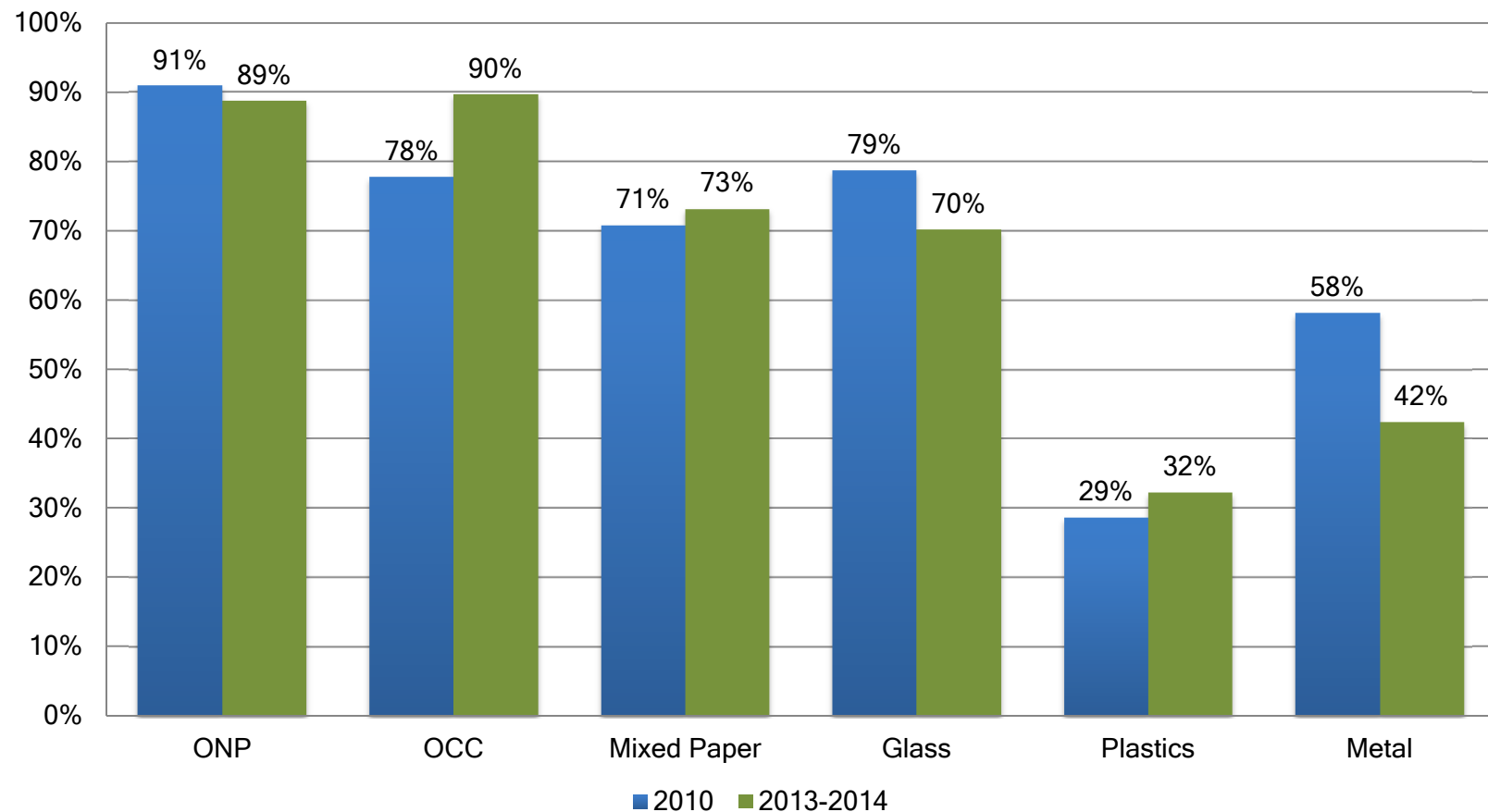


Recycling Facts/Findings cont'd

- Waste composition studies showed a decrease in recyclable materials disposed in garbage since the introduction of the Blue Cart Program.
- There are high recycling rates for old newspaper and mixed paper combined and reasonable recycling rates for glass and old corrugated cardboard.
- 90% of other municipalities (12 total) of similar size in Canada and the US (2 cities) show a decline in tonnages of recyclables on a per household basis.

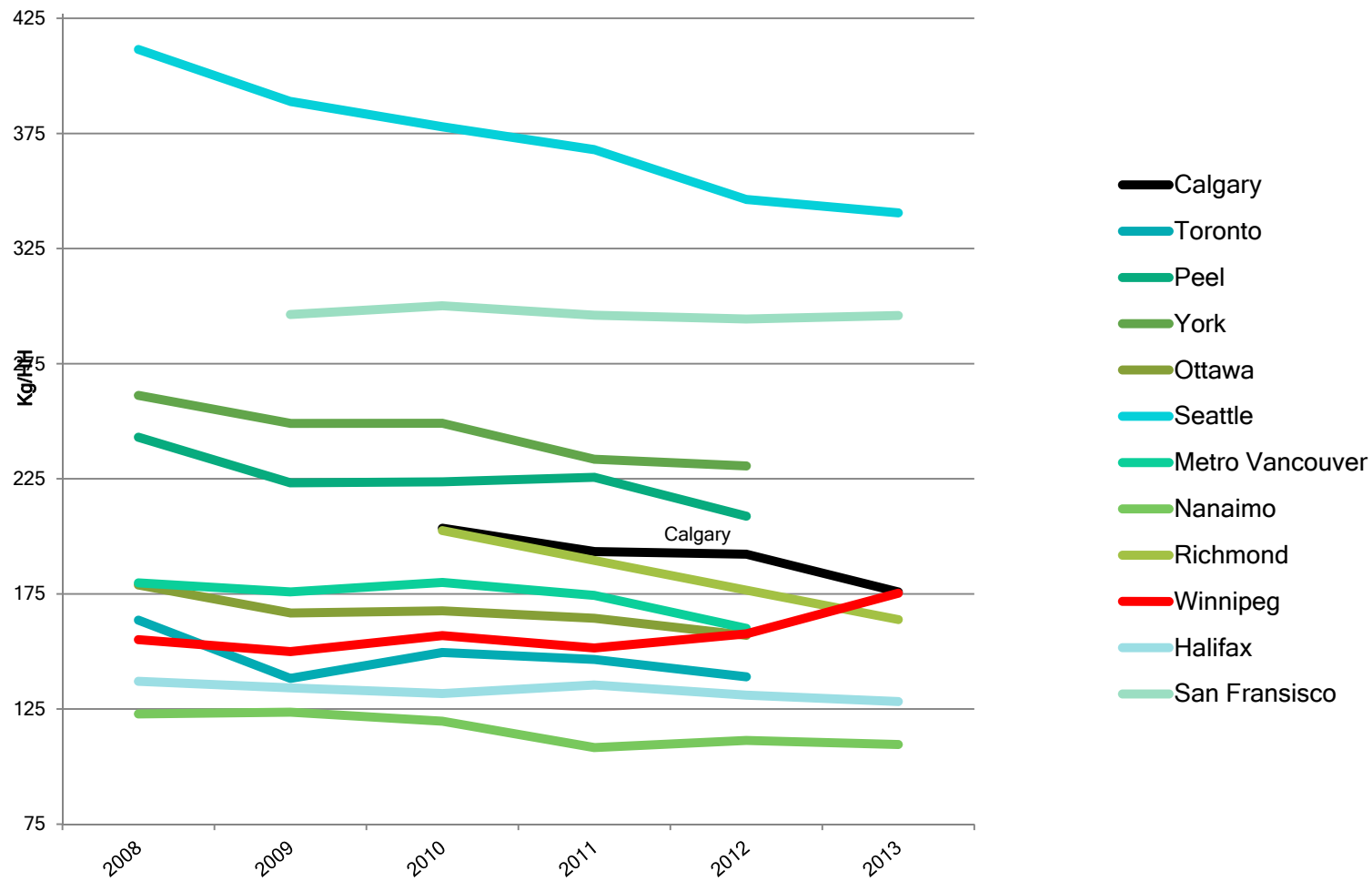
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Recycling Rates for Various Materials in City of Calgary's Residential Recycling Program (2010 vs. 2013-2014)



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Total Kilograms of Materials Recycled per Household in All Jurisdictions (2008-2013)



External Factors

- Increased Internet use, digital or electronic means lead to decrease in printed paper and increase in compact format.
- Smaller household leads to decrease in traditional recyclable materials and increase in multi-layer packaging (currently not acceptable in the Blue Cart Program).
- Busy lifestyles make convenience a priority that leads to increase take-out food (i.e. increase in multi-layer packaging or non-recyclable materials).
- Generally, there is an increase in lightweight packaging and new packaging designs (i.e. multi-layered / mixed materials), some of which are not recyclable.

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Flexible Packaging Applications



New Format Ready-to-Serve Plastic Packaging



Ready-to-Serve Roasted Chicken Plastic Packaging



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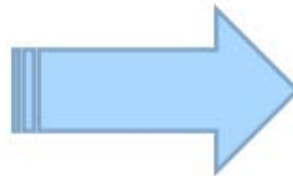
Flexible Pouch Packaging Replacing Traditional Heavier Packages



PET bottle



Pouch



Conclusions

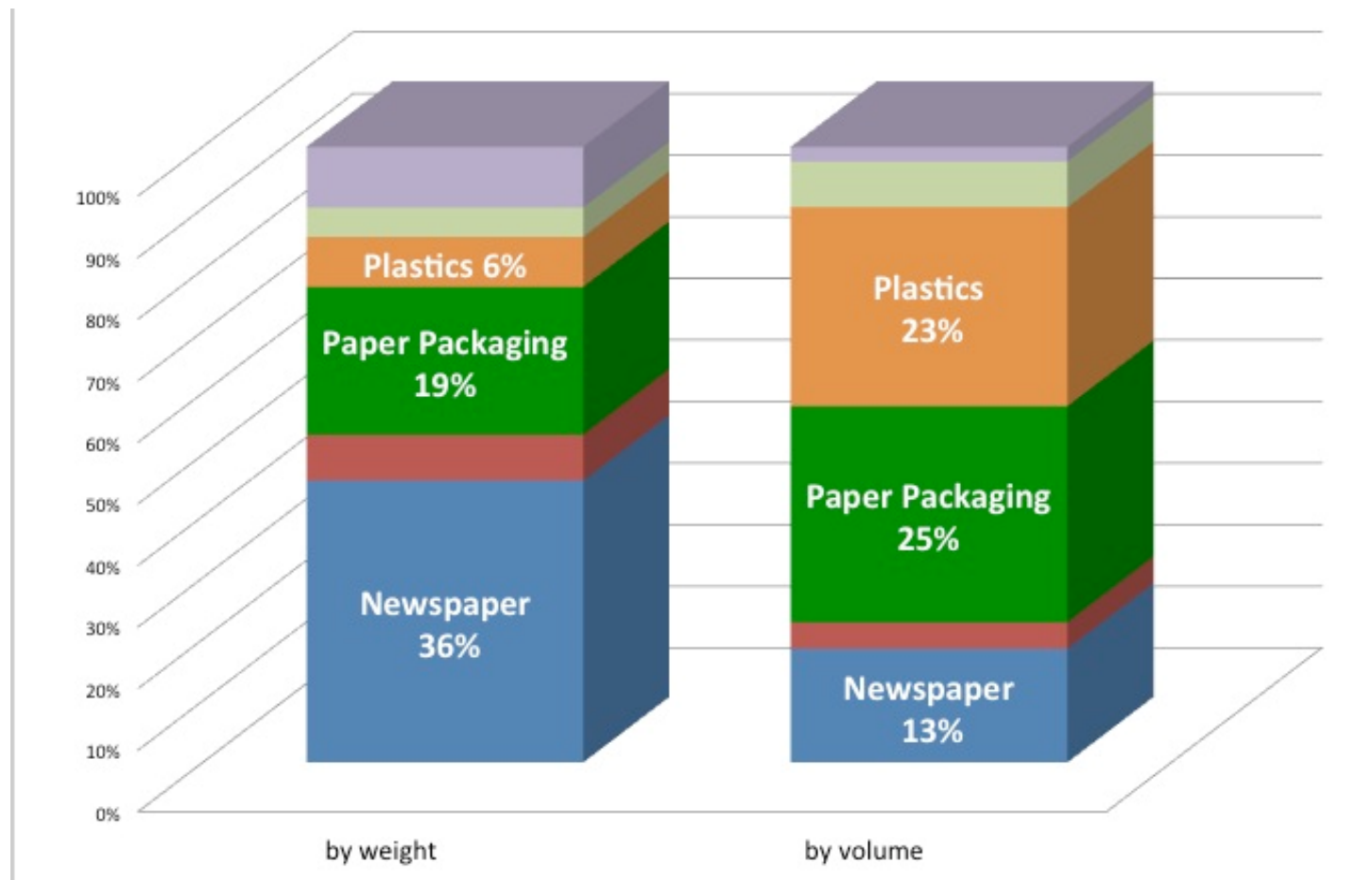
- The City of Calgary has experienced a drop in recyclables collected (total tonnage), as well as on a single-family per household basis (kg/household/year).
- These declines are primarily unavoidable, as they are a result of consumption trends, which are shifting to less newspaper and printed media, as well as lighter-weight packaging.
- Blue Cart material has greater amounts of plastic (low value) and smaller amounts of printed paper (which is easier and cheaper to collect and process, and generally can produce a reliable revenue stream).

Conclusions cont'd

- As the tonne of recyclable material evolves over time, so too do the costs of managing each tonne of recyclable materials. The materials which will likely increase in Calgary's Blue Cart program are the most expensive on a per tonne basis.
- The "Evolving Tonne" – weight-based performance measurements are becoming more difficult to predict, as each tonne continues to evolve.
- Success is not just measured based on tonnages.

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One Tonne of Residential Recyclables – Weight vs. Volume (Ontario 2012)



Possible Barriers

- Performance audits still show high participation rates and no obvious behaviour change is observed to explain the drop in the recycling tonnages in Calgary.
- There has been no increase in the amount of recyclables in the garbage based on waste composition studies.
- There is confusion about what materials can go in the blue cart especially for plastics and metal.
- There are doubts that collected materials are actually recycled.

Discussion, so what now? . . .

- Maximize recyclable materials.
- Re-evaluate how we measure success of the program.
- Explore opportunities to recycle new materials.
- Monitor program costs and explore options for managing the “Evolving Tonne”.

Recap

- 2013 – 2014 – Calgary is experiencing a decline in the total tonnages of recyclables collected and per household basis.
- Calgary is not alone compared to 14 similar-sized Canadian municipalities and 2 US cities.
- The declines have been attributed to declining supplies of materials available for recycling rather than a change in recycling behaviour.
- Into the future, tonnage may not be the best way to measure recycling and diversion performance.

Thank you.

Questions?

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