# Building a Sustainable Blue Box Supply Chain

***Michael J. Birett***
***Manager, CIF***

# Humble Origins

- Recycling is a centuries old practice, initially based on commodity economics
- Kitchener implemented the first full-scale community wide BB collection program in1981.
- Current system is driven by a mix of economic and social issues

# Humble Origins (cont)

## 1980's

Programs collected:

- newsprint, corrugated cardboard
- ferrous metals
- non-ferrous metals
- PET
- glass

# Humble Origins (cont)

- **Curbside:**
  - sorted into 5 or 6 compartment trucks
- **MRF's:**
  - hand sorting QC stations
  - overhead magnets and balers
- **Initial challenges:**
  - HDPE, boxboard and books

# Humble Origins (cont)

## 1990's

- Introduction of two stream collection
- Broader range of fibres and containers
- MRF mechanization
  - Eddy currents, ballistic separators

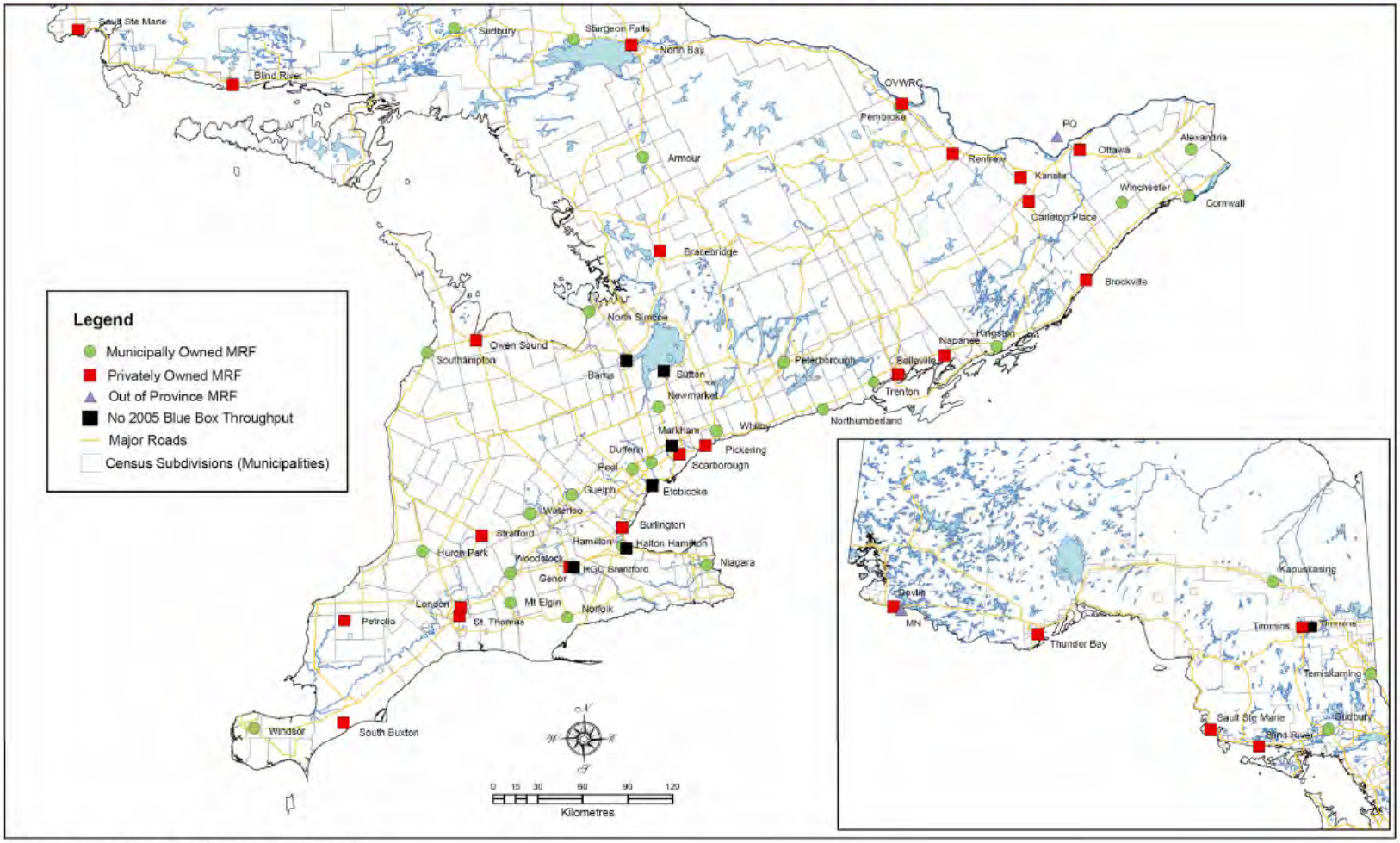
# To Present

- Single stream collection managing half the tonnage
- Fully mechanized facilities

- Many municipalities collect a full suite of plastics and containers
- Automated collection

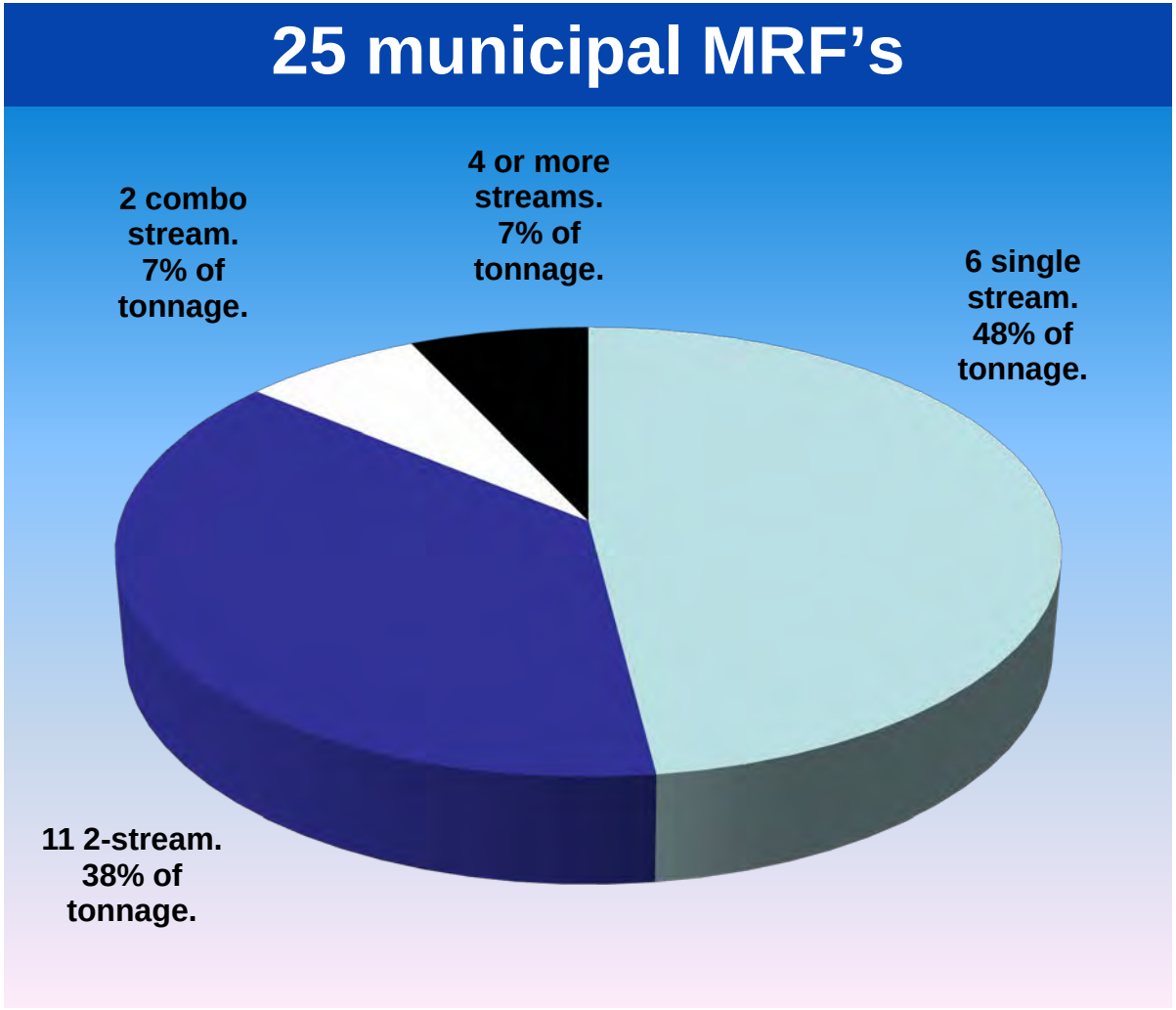
# System Assets

## Figure 3.2: 2006 Blue Box MRF Locations




Data Sources: Statistics Canada, 2001 Cartographic CSD Boundary File

# Municipal Assets



# Today's System

- 217 programs representing 370 municipalities
- Services approx 4.9 million households
- 817,214 tonnes marketed
- Gross system costs of approx. $284,577,757

Source: 2009 WDO Datacall

# The waste stream is changing

- **Fibre** losses of up to 5%/yr
- **Metal and glass** are down almost 50%
- **Coated papers** have replaced waxed products
- **Plastics** have tripled by weight and doubled by volume
- **Packaging technologies** have eclipsed processing capabilities


# Municipal Challenges

Lack financial resources

Lack of competition


Long term contracts

Lack of economies of scale

# Infrastructure Challenges


- 5 of the public MRF's are near end of life
- Efficiency ranges from 40 to 2,260 tonnes processed/FTE/yr
- Operating at 59% of overall capacity
- Inadequate rural collection and transfer systems

# Current state

- Patchwork of programs
- Residents are confused
- Introduction of new and technically complex packaging
- Processing infrastructure has varying ability to manage these materials
- Low cost materials are being replaced by expensive

# Recycling Supply Chain

# Challenges

## Building a viable supply chain requires:

Upgrading existing infrastructure

Capitalizing on regional wasteshed efficiencies

Improved communications with stewards on packaging design trends

Time to work through contractual limitations

# Current Efforts

| Improving curbside collection capacity | Improving collection efficiency | Improving hauling efficiencies |
|---|---|---|
| ▪ Larger boxes, carts<br>▪ Plastic bags for overflow | ▪ Auto cart collection<br>▪ Alternative fuel vehicles<br>▪ Route optimization | ▪ Building out depot and transfer station infrastructure with compaction |


# Current Efforts

- **Moving towards an expanded and consistent blue box**
  - Adding 3-7 plastics
  - Adding thermoforms
  - Examining film and EPS
  - Developing consistent P&E
- **Modernizing MRF's**
  - Regionalized approach to upgrades
- **Establishing best practises and training staff**

# Going Forward

- **Significant works remains**
- **System costs will continue to increase**
  - More participation = higher total costs
  - Adding more material = higher total costs
  - Light weighting = higher per unit production costs
- **Leading municipalities are seized with the need for change**
- **Effectively addressing these issues will require a redefinition of the relationship between Stewardship Ontario and municipalities**

# Contact Info

**Michael J. Birett**

**Continuous Improvement Fund**

**Tel: (905)936-5661**

**Email: mbirett@wdo.ca**