

A&WMA Waste Management Conference

Introduction to Waste

Peter Klaassen

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How Waste is Generated

Classification of Waste

Processing of Waste

Definitions

*Waste - simply defined as
“unwanted or useless materials”*



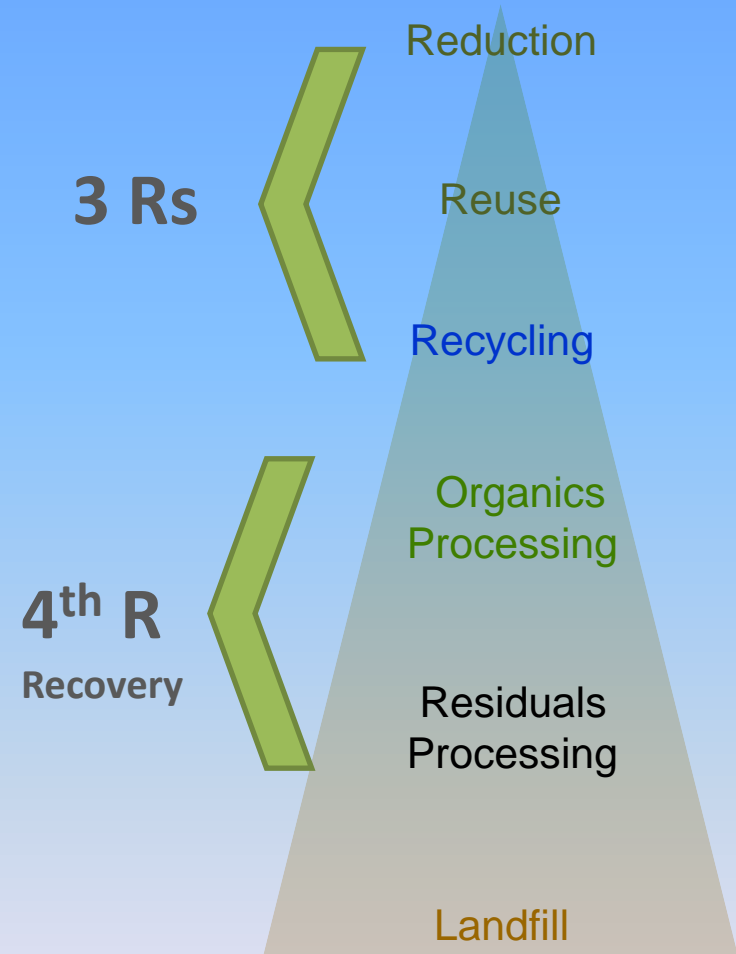
“Waste management is the collection, transport, processing, recycling or disposal, and monitoring of waste materials. The term usually relates to materials produced by human activity, and is generally undertaken to reduce their effect on health, the environment or aesthetics.”

(Wikipedia)

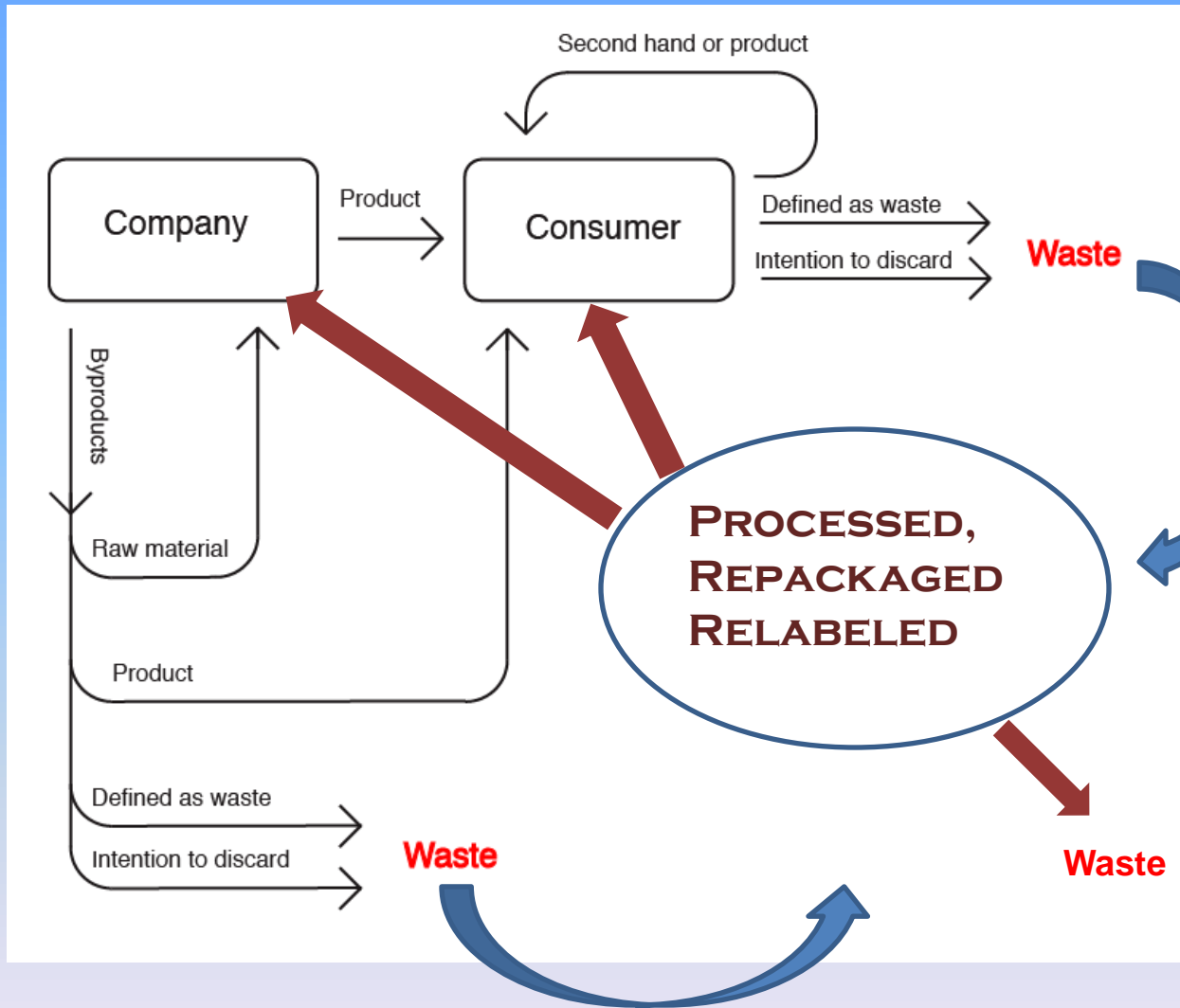
What is it?

End of Waste

- the substance or object is commonly used for specific purposes;
- there is an existing market or demand for the substance or object;
- the use is lawful (substance or object fulfills the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products);
- the use will not lead to overall adverse environmental or human health impacts.



Schematic of EU Legal Definition of Waste



Typical Waste Streams

- Municipal Solid Waste (MSW)
- Solid Industrial, Commercial, Institutional (ICI) Waste
- Liquid Waste (Sewage, Effluent)
- Hazardous Waste (Solid and Liquid)
- Specialty Wastes (i.e. Biomedical, Electronic, Pharmaceutical)
- Construction and Demolition

Who Process It

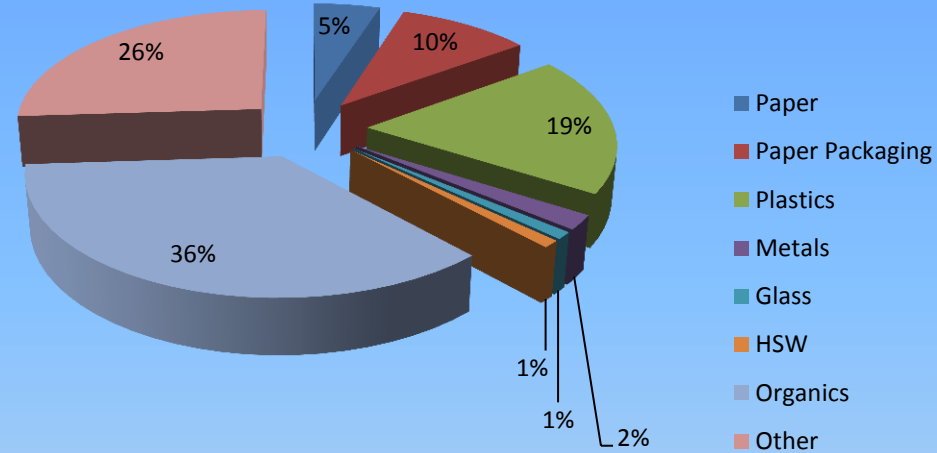
- ➔ Mostly Commercial, some Municipal (80/20)
- ➔ Mostly Commercial, small portion Municipal
- ➔ Combination Commercial, Municipal
- ➔ Commercial
- ➔ Commercial
- ➔ Commercial , some Municipal

Municipal Solid Waste - Source



- 1 tonne per capita per year
- 400 kg per capita per year from our homes

Ontario's 60% Waste Diversion Goal, A Discussion Paper, Ministry of Environment



Material	2010/2011 (kg/kk/yr)	% Change from 2006/2007
Newsprint	33.4	-33%
Mixed Paper	15.2	5%
OCC	31.5	9%
PET	14	30%
Polystyrene	4.2	23%
Steel	9.7	-3%
Glass	24.8	-34%

Changing Composition of the Blue and Grey Box Program, Niagara Region

MSW – Where it Goes



**Recycling
25%**



**Residue
50%**

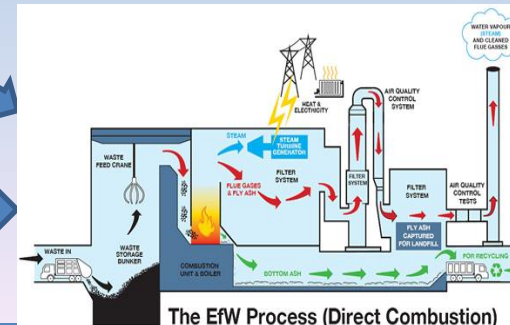


**Composting
25%**



Residue

Residue

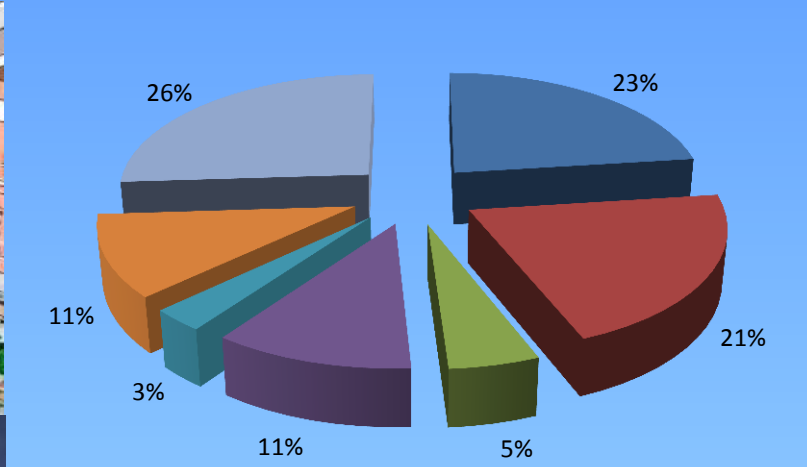


<http://www.flickr.com>

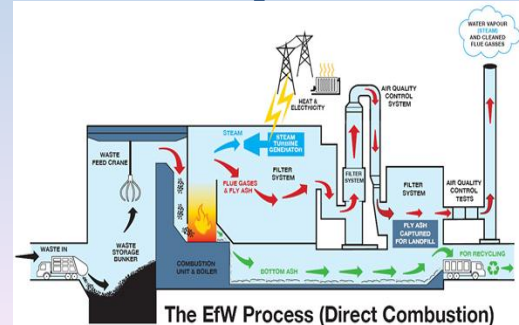
<http://consult.staffordshire.gov.uk>

<http://www.biofuelrefineries.co.uk/biomass.htm>

ICI Solid Waste Processing

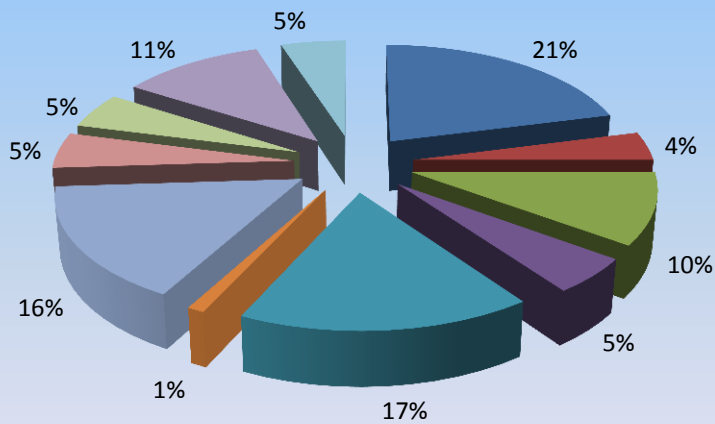


- Paper
- Wood
- Glass
- Metal
- Plastic
- Organic
- Other

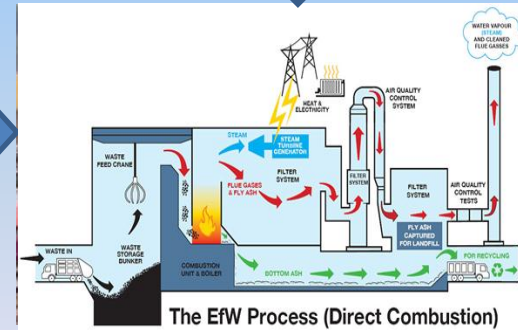


Ontario's 60% Waste Diversion Goal, A Discussion Paper, Ministry of Environment

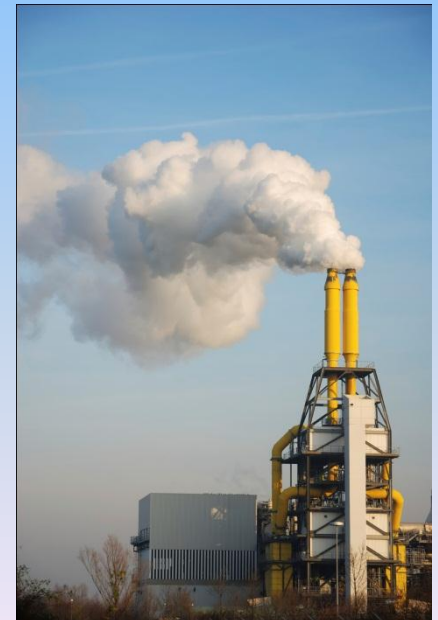
Construction and Demolition



- Paper
- Glass
- Metal
- Plastic
- Organics
- Concrete
- Wood
- Gypsum
- Aggregate
- Composite



- Incineration
- RDF (Refuse Derived Fuel)
- MBT (Mechanical Biological Treatment)
- Gasification & Plasmification
- AD (Anaerobic Digestion)



- Aerobic
 - Compost
- Anaerobic
 - Methane
 - Digestate



- Many Factors:
 - Diversion Mandate
 - End Markets
 - Tipping Fees
 - Cost of Energy/Thermal Customer
 - Regulatory/Environmental Issues
 - Bans
 - Public Issues

CONTACT INFORMATION

Peter Klaassen

Phone: (519) 823-1311

Peter.Klaassen@rwdi.com

RWDI

www.rwdi.com

