

# Container Regulations – PEI Perspective

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# Prince Edward Island – A Model for Others

- PEI is the only jurisdiction in North America with comprehensive refillable beverage container regulations
- Prince Edward Island is a model for other jurisdictions contemplating a redesign of their packaging systems

# General Background



- In 1962 soft drink manufacturers used refillable containers for their beverages
- By 1965 aluminum cans and disposable glass were grabbing market share
- Disposable containers meant manufacturers didn't have to collect their empty containers
- Marketing focused on mobility and convenience

# PEI Regulatory Background

- Between 1966 and 1973 a 40% increase in number of non-refillable containers sold
- Dumping of canned soft drinks at supermarkets at low prices during the summer
- As a result littered containers became an issue
- Garbage left for Islanders to clean up
- Farmers complained about damage to agricultural implements.
- Roadside cleanup began in 1973 by Women's Institute

# Beverage Container Regulations

- PEI Liquor Control Commission voluntarily stopped selling canned beer in 1973
- Regulations introduced to prohibit beer sales in non-refillables in 1977.
- Non-refillable soft drink bottles also banned in 1977
- Sale of soft drinks in cans banned in 1984.
- Beverage Container Regs replaced by Litter Control Regs in 1991.

# Deposits

<b>Container</b>	<b>Deposit</b>	<b>Min. Refund</b>
<500ml pop	20 cents	17 cents
<1 L pop	40 cents	34 cents
>1 L pop	80 cents	70 cents
Beer bottle	10 cents	7 cents

# Containers Sold & Reused

Product	Quantity Sold	# Reused (@98%)
Soft Drinks (1984-2001)	382,000,000	374,360,000
Beer (1980- 2001)	756,000,000	740,880,000
Totals	1,138,000,000	1,115,240,000

# Reduce Container Production

<b># of Servings Sold</b>	<b># of Refillable Containers Required (/17)</b>	<b># Wasted</b>	<b># of New Refillables Required</b>
1,138,000,000	65,760,000	22,760,000	88,362,000

**Approximately 1,049,638,000 less containers required versus a non- refillable system.**

# User Pay System

- The system to recover containers is not subsidized by government at any level
- The system is maintained by the manufacturers, retailers and depots
- Containers are refilled or recycled by industry

# How the System Works

- Consumer purchases beer or soft drink at retail outlet
- Deposit paid upon purchase
- Unredeemed deposits stay with the retailer
- No government revenue except tax on product
- Deposit rates

# Container Return

- Soft drink containers can be returned to retail store or bottle depot
- 65% of containers to retail and 35% to depots
- Beer containers can be returned to bottle depots (100%)
- 14 bottle depots in the province

# Typical Bottle Depot



# Bottles Sorted



# Beer Containers to Breweries



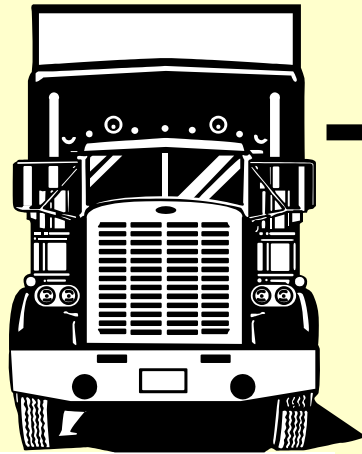
# Return to Retail

- Any retail outlet selling pop is required to accept empty containers which they sell
- Major retail outlets offer a full refund of the deposit
- Small retailers generally pay the minimum refund

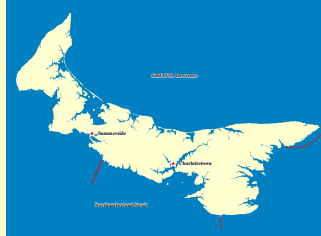
# Automated Bottle Return



At Retail Outlet



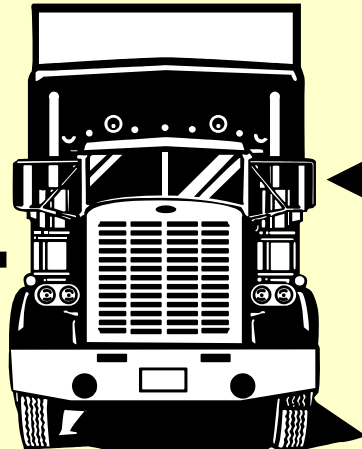
Reduce  
**REUSE**  
Recycle



**ReUse**

17 times

Then  
recycled



# Pollution Prevention Benefits



**Refillable container reused 17 times then recycled.  
Approximately 1,049,638,000 less containers required  
versus a non- refillable system.**

# P<sup>2</sup> Benefits



98% of beer and soft drink containers are returned

# Reuse in the Home



Dishes, flatware and accessories are an excellent example of Reuse.

# Extended Producer Responsibility

- Refillable containers is one of the oldest forms of producer responsibility
- Manufacturers recover their empty containers to be refilled
- Requires manufacturers to use environmentally friendly systems
- Containers are taken back locally

# Packaging Life Cycle Analysis

- Production processes
  - Raw material supply, manufacturing, use, recycling, disposal
- Energy – supply processes
- Transportation processes
  - To recovery empty containers for reuse or recycling
  - To get recycled containers to market

# Result of 8 LCA Studies

## Refillable Vs One Way

Envir. Impact	CO	C02	CH4	S0x	N0x	Water Poll.	Solid Waste	Energy
# favoring one way	1	0	0	0	0	0	0	2
# favoring refill	3	2	2	3	4	4	5	5
# reporting	4	2	2	3	4	4	5	7

# Refill Glass Vs Al Cans– 7 LCAs

Envir. Impact	CO	C02	CH4	S0x	N0x	Water Poll.	Solid Waste	Energy
# favoring cans	0	0	0	0	0	2	1	3
# favoring refill	4	3	3	4	3	1	3	2
# reporting	4	3	3	4	3	3	4	5

Resource	Used to make	Supply years remaining
bauxite	aluminum	60*
iron ore	steel	59*
oil	plastics, synthetic fabrics	45**

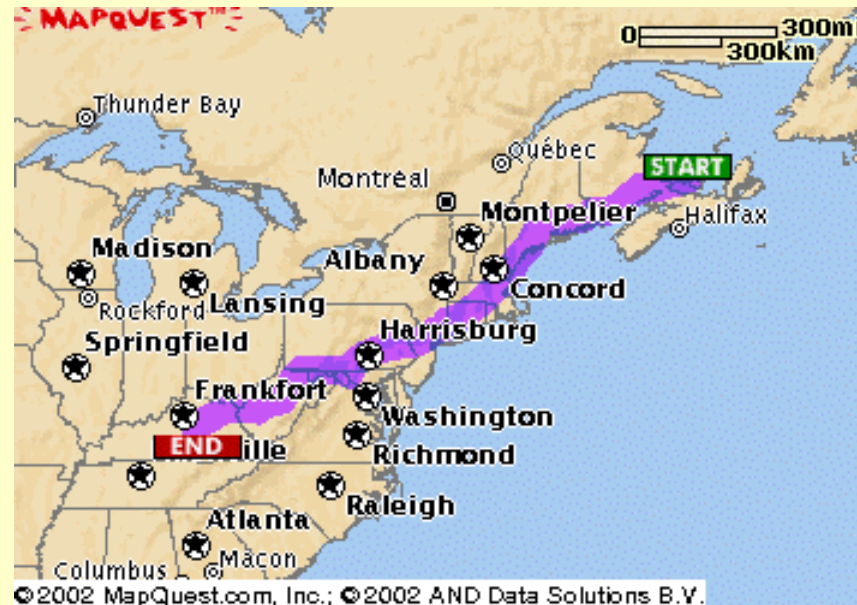
\* in existing mines \*\* in known reserves

*Most of the materials used to make products are made from natural resources. We will run out of some of these natural resources in your , or your child's, lifetime. These resources are **non-renewable.***

# Aluminium

- One pound requires 98,600 BTU's from bauxite
- It requires 4 tonnes of bauxite to yield 1 tonne of aluminum metal
- This will make 29 beverage cans
- Recycling Al cans reduces dependence upon bauxite
- 1 pound requires 5,000 BTU from recycled Al material

# Aluminum Can Recycling



Charlottetown to Berea, KY = 2445 km

# Aluminum Environmental Impact

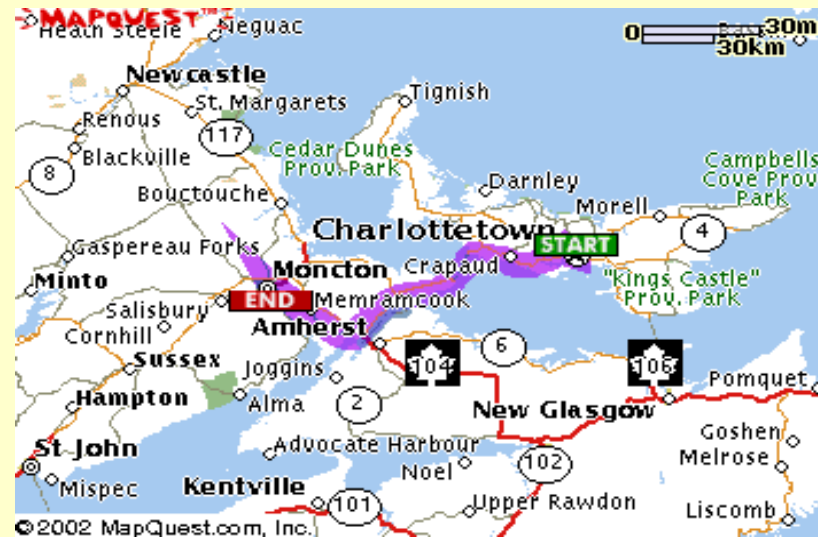
- Environmental impact from mining ore
- Energy intensive using large amounts of electricity
- Non renewable resource being depleted
- PEI system has displaced 17,040 tonnes of aluminum if all pop and beer sold in aluminum cans made from raw materials

# PET Plastic Recycling



Charlottetown to Dalton, GA = 2615 km

# Clear Glass Recycling



Charlottetown to Moncton = 171 km

# Secondary Packaging

- Refillables require no six pack holders or rings
- Reuseable pop cases eliminate extra packaging and depletion of associated resources



# Water Use

- Studies have shown refillables use less water
  - 47 to 82 % less water than required for new one-way bottles (Inform)
  - This results in less waste water to treat and associated treatment costs

# Energy Use

- Less energy use in manufacturing refillable glass or PET bottles versus one way containers
- With 8 refills, 76% less energy used for refillable 12 oz glass beer bottles versus aluminum cans

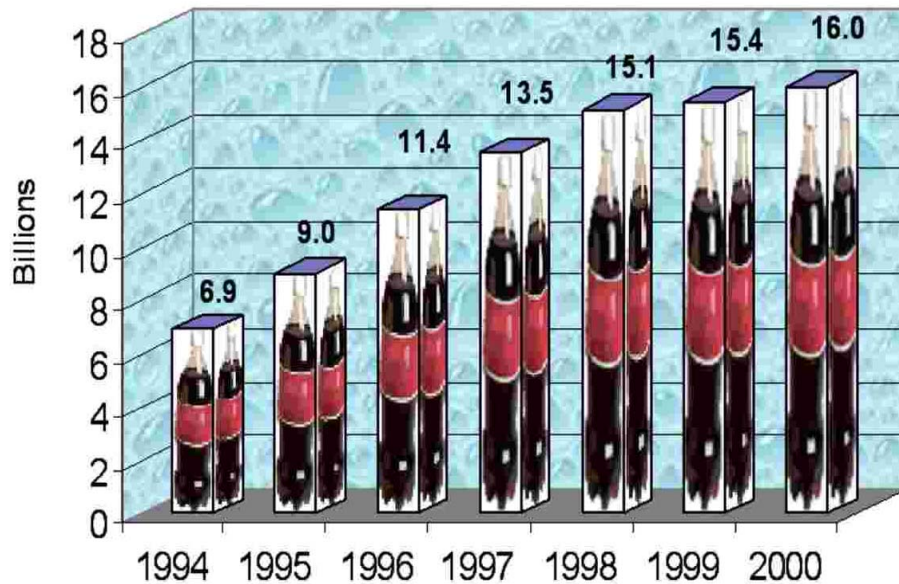
# Air Pollution

- Less air pollution from refillable versus one way bottles throughout the life cycle
- Emission of CO<sub>2</sub>, PAHs, fluorocarbons, NO<sub>x</sub>, SO<sub>x</sub>, CO into the atmosphere are reduced
- Contributes less to global warming

# Land Consumption

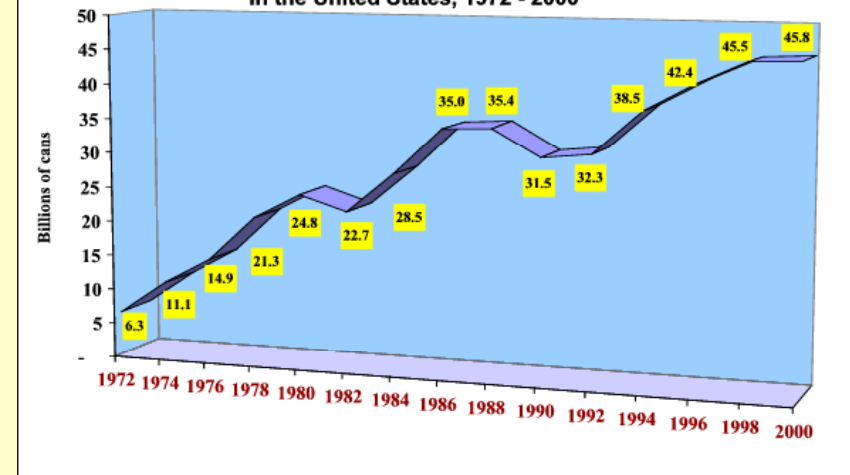
During 1999, 114.4 billion beverage containers were disposed in the USA (7.7 million tons or 407 containers per capita).

## Plastic Soda Bottles Wasted



Source: Beverage Marketing Corporation ;  
American Plastics Council

## Aluminum Beverage Cans Wasted in the United States, 1972 - 2000



# Canadian Perspective

- US container recycling rate for containers is lower than for Canada
- Over 50% of containers in Ontario still go to disposal
- Buried containers take up landfill space
- Access to market not as good as USA

# Litter Impact

- Detracts from PEIs Ecotourism image
- Shows disrespect for our environment
- Creates an unsightly image
- Can pose a treat to water, fish and wildlife
- Can damage farm equipment
- Can clog storm drains and storm sewers

# Summary

- **Refillable containers on PEI prevent pollution in a number of areas**
- **All 3 Rs are practised**
- **Nearly 100% of containers are recovered**
- **Reduces the demand for non renewable resources**
- **The system is effective and efficient**
- **It works**