British Columbia, California, and Maine Bottle Bills

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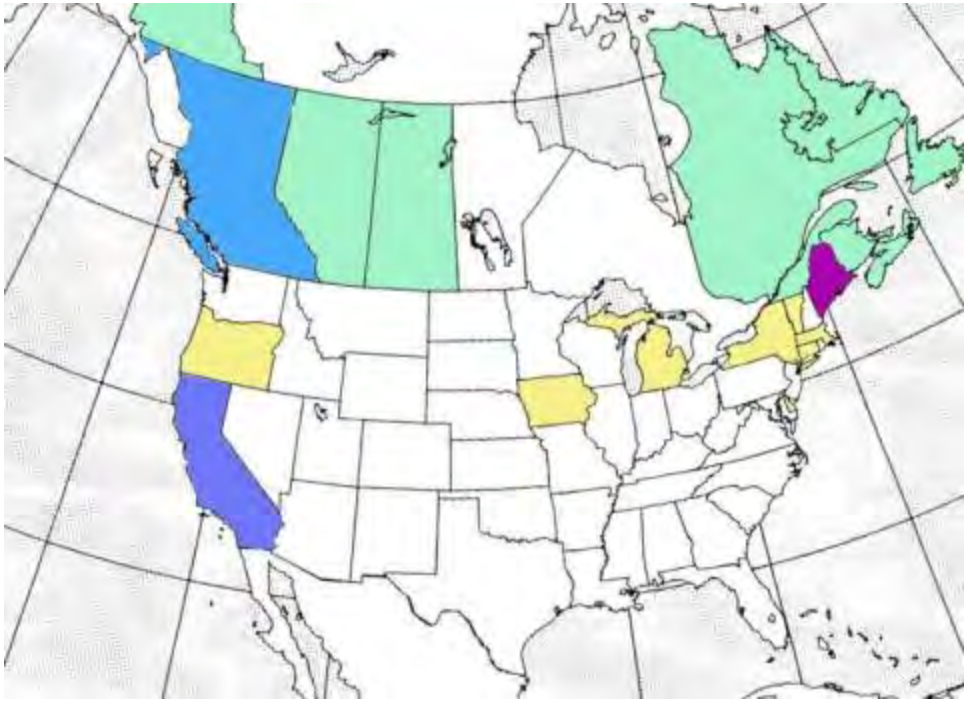


Choices made by states and provinces

- 10 US States and most Canadian provinces have some sort of deposit/return system
- Many have made different choices
- Some choices are independent of each other – can “mix and match”

Redemption Locations

- **Return to retail (Oregon, Michigan)**
- **Return to redemption centers (Alberta, Hawaii)**
- **Combination of redemption centers and retail (all others)**

How are Redemption Centers Sited?

- **Free market (Maine)**
- **Effectively controlled or franchised (Alberta, BC)**
- **Free market with regulatory/financial incentives (California)**

Accounting Systems

- **Centralized – 1 entity handles all deposits and redemptions**
- **Uncentralized – each beverage company has to redeem its own containers**
- **Hybrid – beverage companies can get together to implement joint return systems**

- **If centralized, is system run by government or by the beverage companies?**

Efficiency of Redemption Process

- **How many sorts are necessary?**
- **How many sorts are just for accounting purposes**
- **Are all returns by count or can weight be used?**

Level of deposits

- **5 cents for all containers (Oregon, Maine)**
- **10 cents for all containers (Michigan)**
- **10 cents or higher for larger containers (BC, California, others)**

British Columbia

- Original law enacted in 1970 – before Oregon
- Was similar to Oregon's law
- Major changes enacted in 1998
- Now covers all beverages except dairy, milk substitutes
- Deposits 5 cents for non-alcoholic containers and 10 cents for alcoholic containers up to 1 liter, 20 cents for all over 1 liter

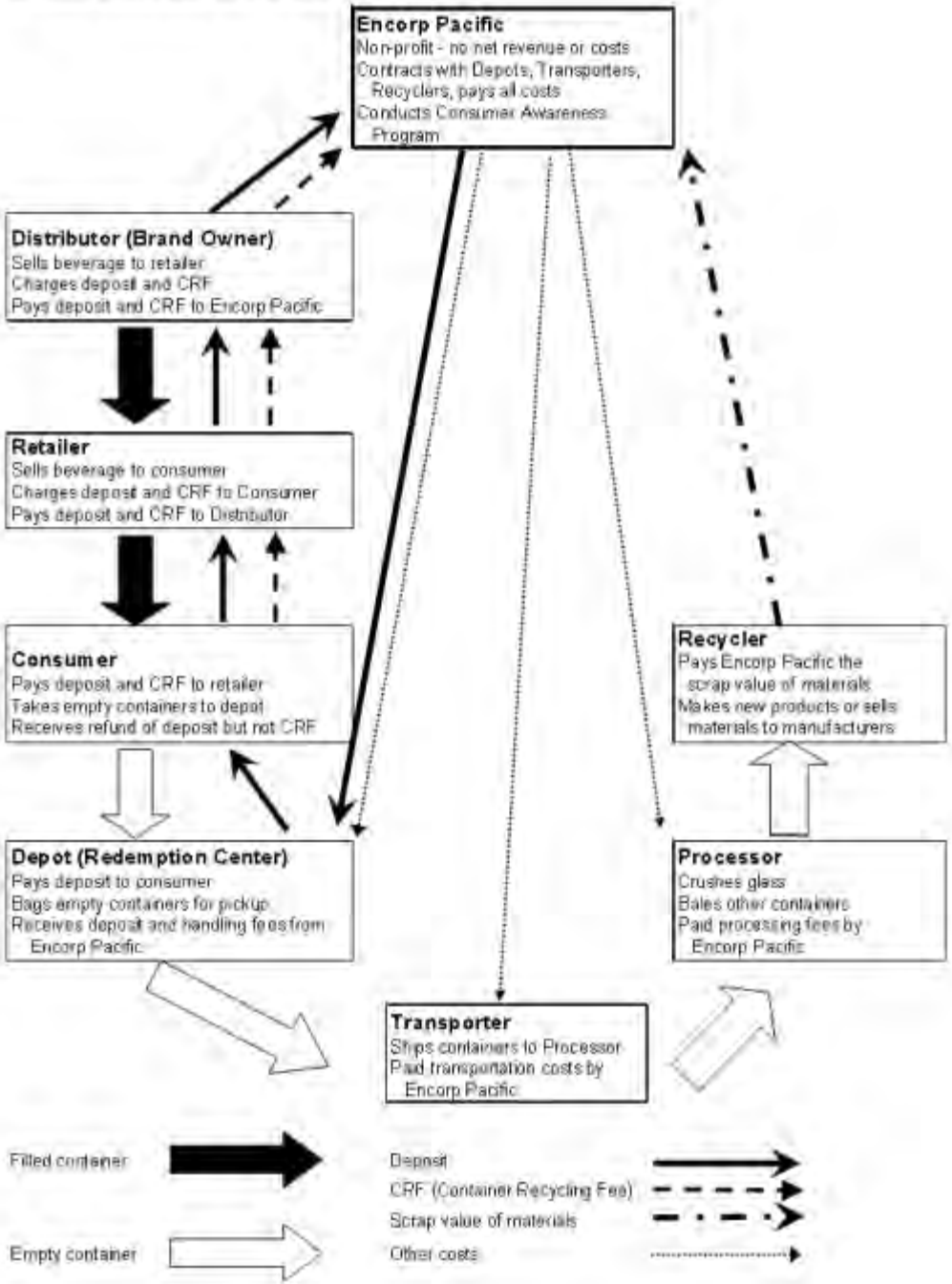
BC Responsibilities

- **Beverage producers – responsible for setting up and managing the redemption system and also reporting on results**
- **Government – sets performance standards and monitors results**
- **Retailers – still must redeem up to 24 containers per person per day**

3 ➔ 2 Stewardship Organizations

- **Encorp Pacific: All nonalcoholic beverages**
- **Brewers Distributors Limited: Domestic beer and cider in refillable bottles and all beer in aluminum cans**
- **Liquor Distribution Branch: Wine, spirits, imported beer – Now managed by Encorp Pacific**

British Columbia Bottle Bill Diagram



Funding the system

Encorp Pacific:

- **Unredeemed Deposits**
- **Value of Recycled Material**
- **Consumer “Recycling Fee” set annually**

Brewers Distributors Limited:

- **Unredeemed Deposits**
- **Value of Recycled Material**

Encorp's Recycling Fee

	Size	Deposit	Recyc Fee
Cans (Alum + bimetal)	0 to 1 liter	5 cents	none
Bimetal Can	> 1 liter	20 cents	none
Plastic Bottle	0 to 1 liter	5 cents	1 cent
Plastic Bottle	> 1 liter	20 cents	3 cents
Glass Bottle	0 to 1 liter	5 cents	4 cents
Glass Bottle	> 1 liter	20 cents	5 cents
Drink Box	0 to 500 ml	5 cents	none
Drink Box	501 ml to 1 liter	5 cents	4 cents
Gable Top Box	0 to 1 liter	5 cents	none
Drink Box & Gable Top	> 1 liter	20 cents	none
Plastic Pouch	0 to 1 liter	5 cents	none
Polystyrene Cup (sealed)		5 cents	1 cent

Aluminum Example: Revenue & Costs

(In million dollars Canadian)

Revenue	$	Expenses	$
Deposits In	23.4	Refunds Out	18.8
Sale of Aluminum	10.8	Handling Fees	11.7
Container Recycling Fee	**0.0**	Transport & Processing	2.2
Other Revenue (share)	0.3	Administration (share)	1.2
		Promotion (share)	0.4
Total Revenue	34.5	Total Expenses	34.3
Amount to Reserves	0.2		

BC: Who Pays What?

Recycling consumer	1.2 cents
Wasting consumer	6.1 cents
Beverage company	0.0 cents
Operation agent	(-0.5 cents)- to reserves
Government	negligible

source: CM Consulting Sept. 2006: “Who Pays What: An Analysis of Beverage Contaienr Recovery and Costs in Canada 2004-2005”

British Columbia

New Return It depot in Vancouver

Street View: Return It depot in Vancouver

British Columbia

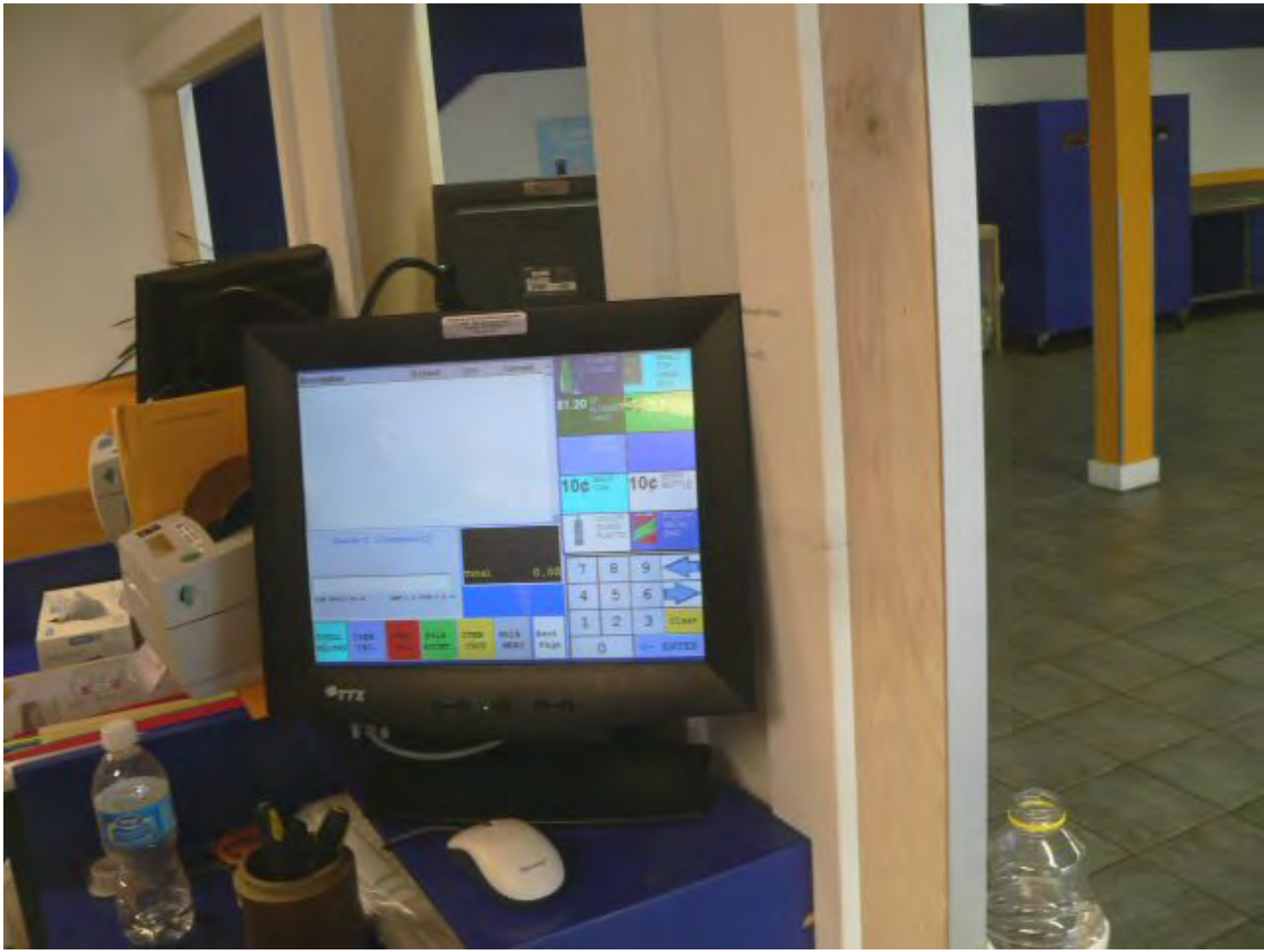
Customer area: Preparing containers for redemption

British Columbia

Counter area where customer is paid

British Columbia

Computer calculated redemption value and also keeps track of when bags should be full



British Columbia

Back room looking towards front. Staff slide containers down roller in a well-organized system

British Columbia

Back room: Cans and plastic are bagged Refillable beer is cased. Many Encorp depots discount beer redemption due to low handing fee

British Columbia

Back room: Non-refillable glass is bagged in large tote bags

Regional Recycling: Bottle depot and other recycling in an industrial area

British Columbia

“Binners” do much of the sorting and preparation of their own material

British Columbia

Counting and paying inside of the building

British Columbia

Back room sorting. Note the bags for the gabletop boxes

British Columbia

More back room sorting.

British Columbia

Regional Recycling also accepts electronics under Encorp's electronics return program

British Columbia

East Van – an older depot with only street parking

British Columbia

Encorp's signs found in many depots

British Columbia

Sorting/ counting containers at the counter

British Columbia

This depot serves Brewery Distributors Limited (BDL) also, but atypically BDL had lagged in picking up bottles

British Columbia

Victoria is underserved by depots, and a recent large depot closure creates crowds and the next nearest depot

British Columbia

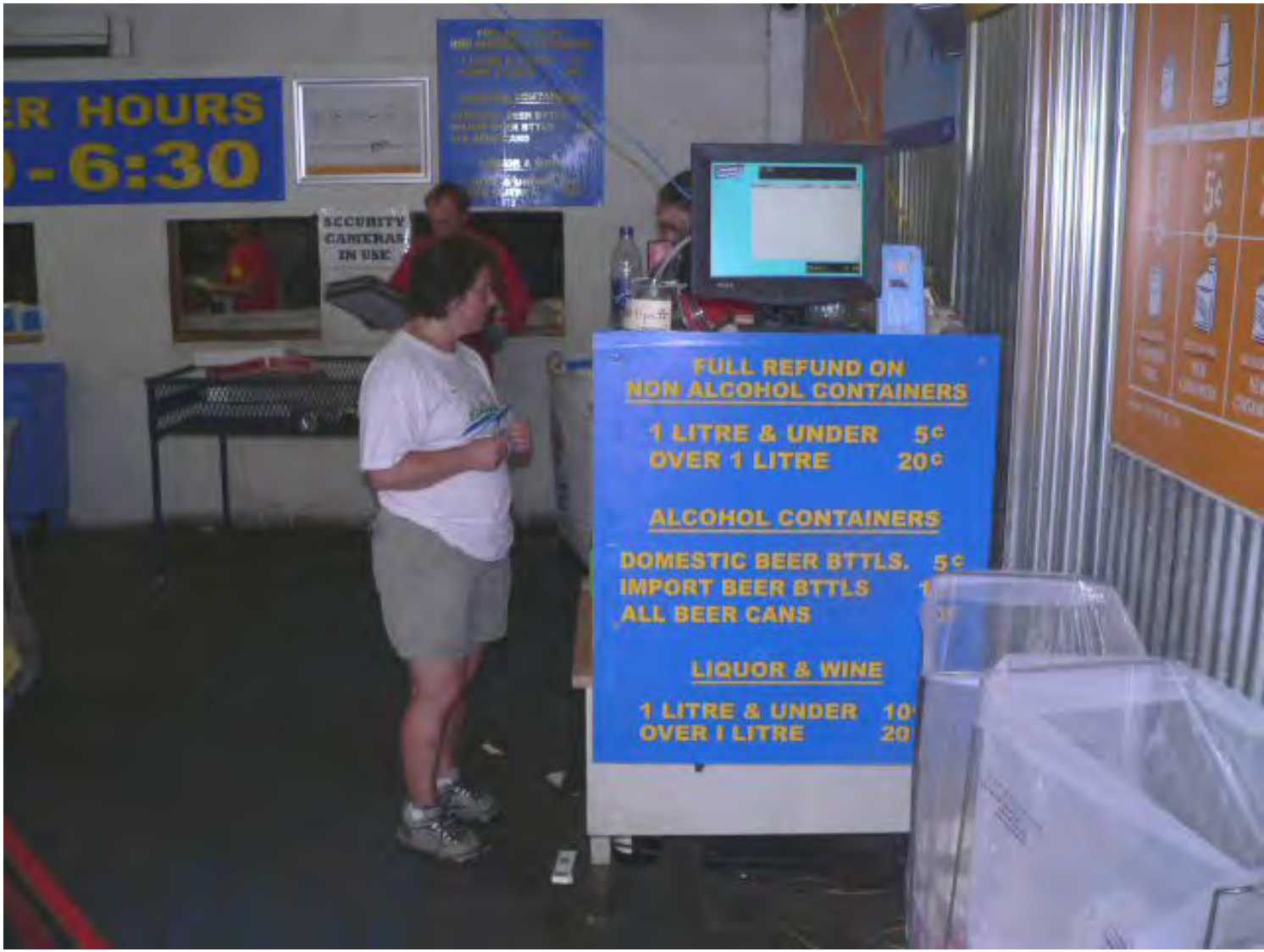
Another view of the Bottle Depot outside of Victoria

British Columbia

Customer waiting to be counted and paid

British Columbia

This is not a BDL-contracted depot, and they discount the BDL beer bottle refunds: 5 cents instead of 10 cents



British Columbia

Save-On Foods / Overwaitea developed Changes return-to-retail redemption centers – very fancy – this picture does not do it justice

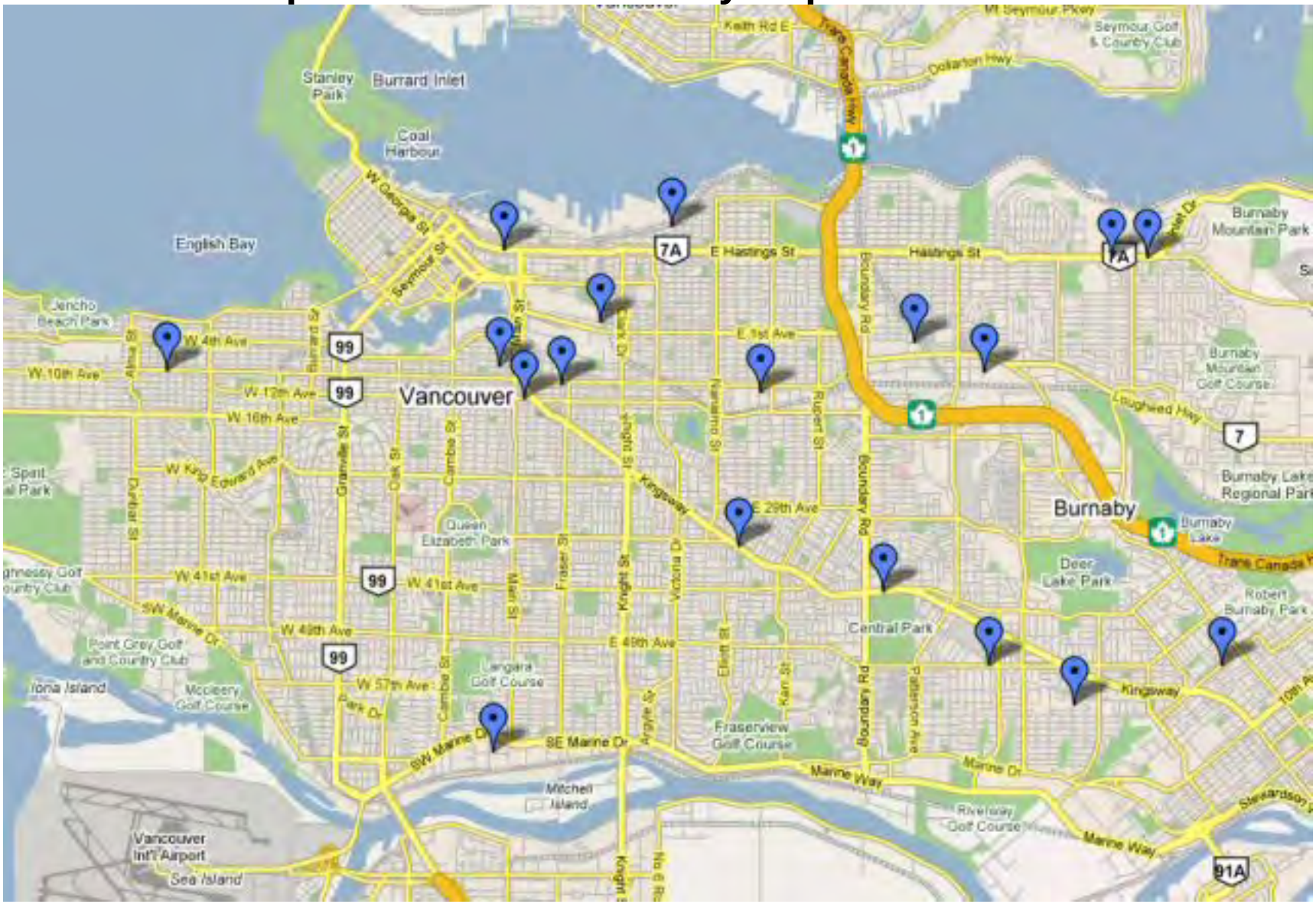
British Columbia

Choices Markets is also experimenting with customer-friendly return-to-retail

Number of Depots

- 169 depots contract with Encorp Pacific
- Some areas underserved: Encorp wants 7 more Vancouver depots, but hard to site.
- Retailers must still take back up to 24 containers per person per day.
- BDL has far fewer depots contracted – mostly return to retail

Encorp's Vancouver/Burnaby Depot Locations


Stanley Park
Burrard Inlet
Coal Harbour
English Bay
Jericho Beach Park
W 4th Ave
W 10th Ave
W 12th Ave
W 16th Ave
W Kitsilano Beach Ave
W 41st Ave
W 49th Ave
W 57th Ave
SW Marine Dr
Point Grey Golf and Country Club
Iona Island
McCleery Golf Course
Vancouver
Queen Elizabeth Park
Langara Golf Course
Mitchell Island
Vancouver Int'l Airport
Sea Island
E Hastings St
Hastings St
E 1st Ave
E 29th Ave
E 49th Ave
SE Marine Dr
Fraserview Golf Course
Marine Way
Marine Dr
Riverview Golf Course
Burnaby
Deer Lake Park
Central Park
Kingsway
Burnaby Mountain Park
Burnaby Mountain Golf Course
Burnaby Lake Regional Park
Burnaby Lake
Robert Burnaby Park
Trans Canada Hwy
Lougheed Hwy
Dollarton Hwy
Keith Rd E
Mt Seymour Pkwy
Seymour Golf & Country Club
Stewardson Way
Boundary Rd
Rupert St
Nanaimo St
Victoria Dr
Knight St
Fraser St
Main St
Cambie St
Oak St
Granville St
Burrard St
Alma St
Dunbar St
Park Dr
Argyle St
Elgin St
Kerr St
Patterson Ave
Beaconsfield Ave
Seymour St
Howe St
Hornby St
Jervis St
Cardero St
Denman St
Bute St
Thurlow St
Nelson St
Robson St
Pacific Blvd
Alberni St
Pacific Blvd
Cambie St
Ontario St
Quebec St
Manitoba St
Ontario St
Cambie St
Main St
Fraser St
Knight St
Victoria Dr
Nanaimo St
Rupert St
Boundary Rd
Patterson Ave
Beaconsfield Ave
Kerr St
Elgin St
Argyle St
Park Dr
Dunbar St
Granville St
Oak St
Cambie St
Burrard St
Alma St

Maine

- Passed by referendum in 1976, effective 1978
- Originally much like Oregon's law
- 1 Cent handling fee introduced 1980
- 1989 – Law expanded to cover all the beverages. British Columbia now covers, except paper drink boxes and gable tops
- Refund 5 cents for most containers, 15 cents for wine
- Handling fee now 3.5 cents per container, or 3 cents if commingling allowed between distributors

Maine Redemption

- Handling fee leads to establishment of depots
- 204 depots are redemption-only – no retail sales
- Another 100 or so do minimal retail – mainly depot operations
- Total of 800 locations take back containers – including many grocery stores

Distributor Responsibilities

- No centralized accounting system – each distributor must collect and account for their own containers
- Distributors must collect their containers and pay refund value and handling fees to both the retailers they serve and the redemption centers in the area
- Almost all contract with one of the third party collection agents to collect their containers
  - Returnable Services / Nexcycle – largest 3rd party
  - Evergreen Environmental
  - Maine Recycling
  - National Beverage
  - United National Foods

Number of Sorts

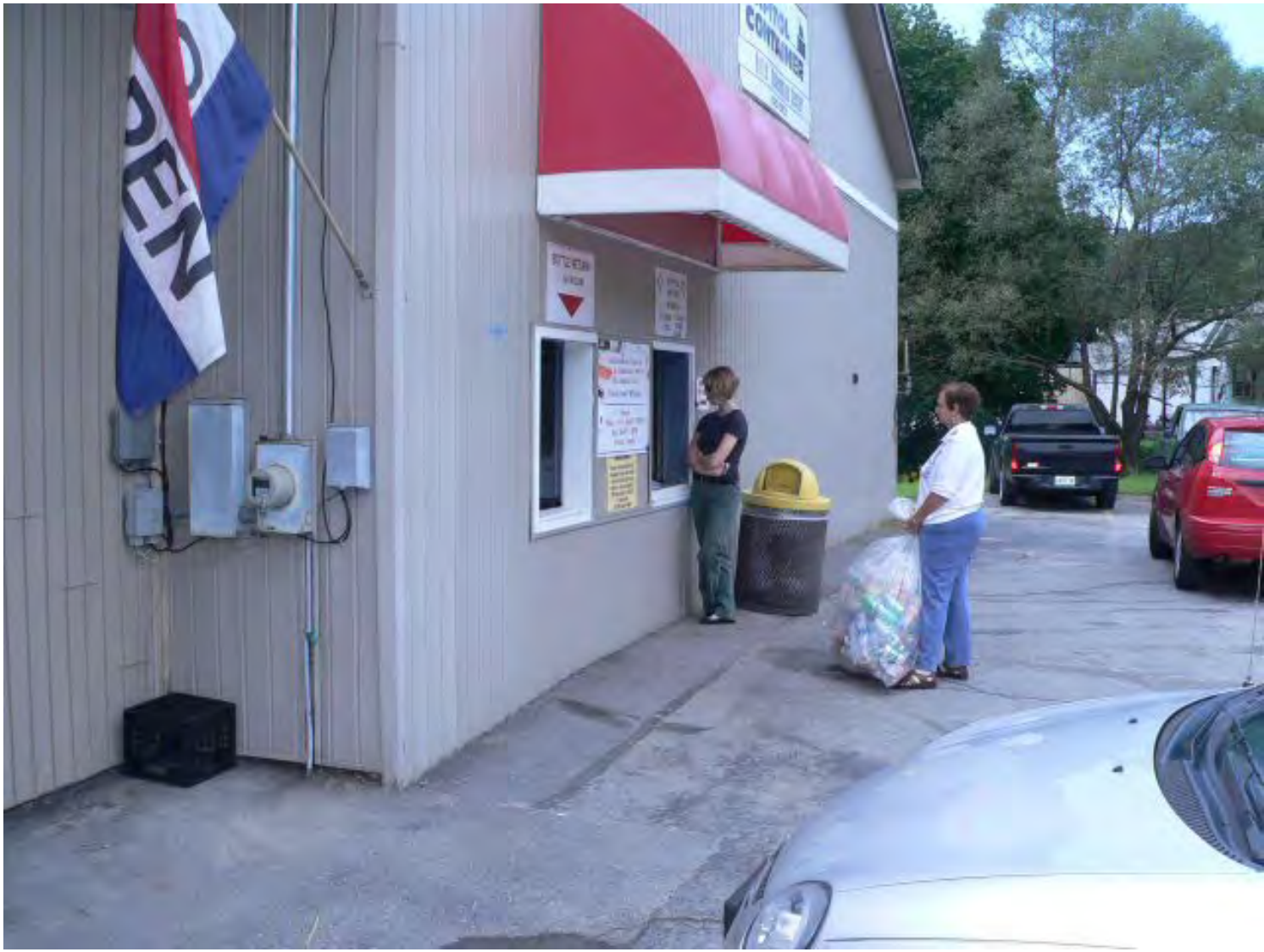
- Third party collection agents like Environmental Services must generally keep distributor/container types separate for accounting purposes
- Capitol Recycling in Augusta (owned by Nexcycle) sorts containers into 280 categories
- Biddleford Bottle and Can sorts containers into more than 400 categories.
- Gatorade wants their containers sorted into 9 categories – by type/size.

Maine

Capitol Container owned by Nexcycle

Maine

Customers at the window generally with unsorted containers



Maine

Staff count and sort containers into about 18 categories on first touch

Maine

About 75-80% of containers sorted with one touch

Maine

20-25% of containers taken to back area for further sorting

Maine

More sorting and storage

Maine

Third sort necessary for rarer containers

Maine

Eventually containers are taken away or loaded out for processing

Maine

Sorting by distributor can lead to distintive bales

Maine

Aluminum ready to be sold

Maine

Rolando's Recycling – a small redemption center

Maine

Customer with unsorted containers in plastic bags

Maine

Sorting (first sort) and counting containers

Maine

Customer gets paid

Maine

Don Cook, Manager of Rolandos, sorts rarer containers into smaller containers

Maine

Grocers not served by depots must take back containers

Maine

High handling fees make it more economical for grocer

Maine

RSVP Redemption Center uses reverse vending machines – rare for a depot

Maine

But some containers do not fit in the machines and must be sorted by hand into bags

Maine

CLYNK Drop & Go valet recycling?

Maine

Customer drops of bag with personal bar code even after hours. CLYNK runs containers through machine and credits customer's account

Maine

Machine must be fed by hand 1 container at a time – handles 2000 containers per hour

Maine

Machine scans bar codes, records count by container type, credits customer account, drops containers in appropriate bin

California

- Enacted in 1986 by Legislature
- Updated in 2000 to include all non-alcoholic beverages except milk
- Redemption value went from 1 cent originally to 2.5 cents, to 4 cents, and now to 5 cents
- Redemption value doubled for containers larger than 24 oz

Key Features

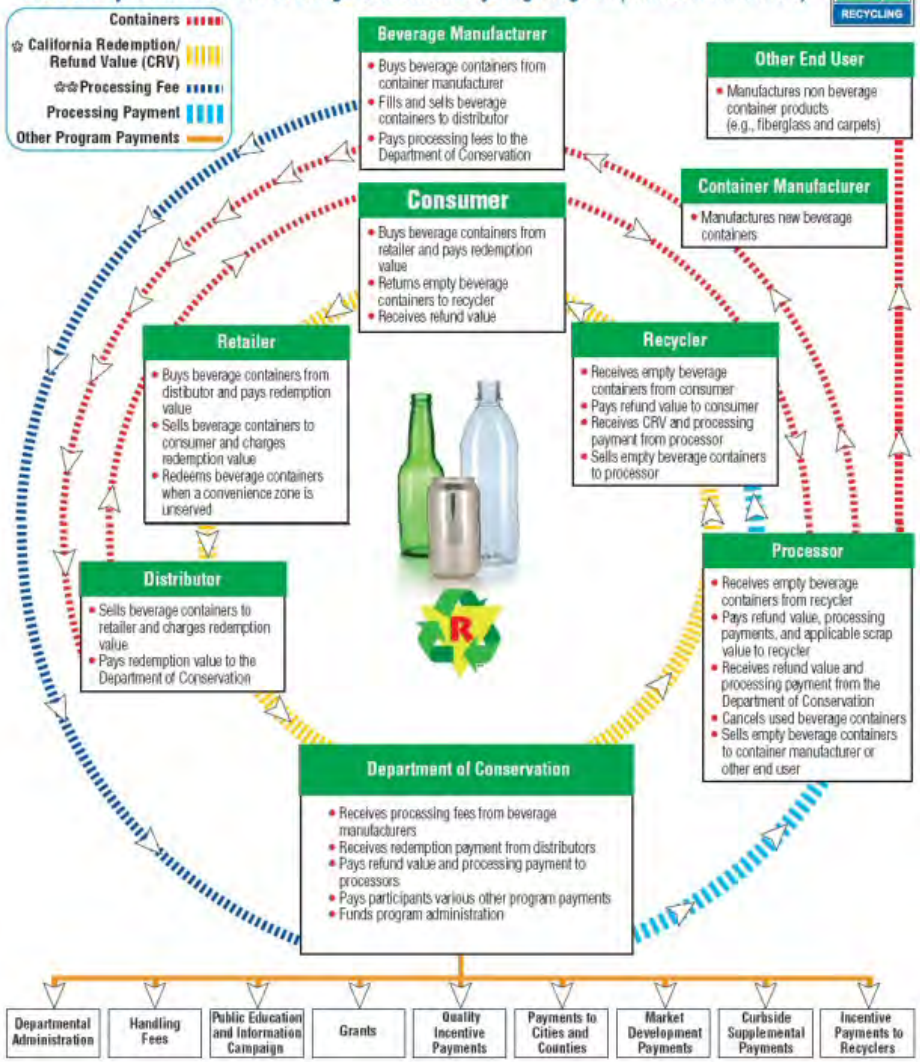
- State acts as central bank for deposits, refunds
- No sorting by distributor for accounting purposes
- Each container material is supposed to pay its own way through processing fees
- Harder to recycle materials have higher fees, payments
- Most processing fees temporarily suspended due to excess revenue

Convenience Zones

- Area within ½ mile of supermarket selling more than $2 million per year
- Rural convenience zones may have a 3-mile radius around supermarkets
- If there are no recycling centers in the convenience zone, all dealers in the zone are required to redeem containers
- If there is one (and only one) recycling center in a convenience zone, it might qualify for handling fees currently worth 1.8 cents per container up to $2,300 per month

The California Beverage Container Recycling and Litter Reduction Act

Flow of Payments under the Beverage Container Recycling Program (with Container Flow)



NOTES: California Redemption Value is paid when a beverage container is purchased. California Refund Value is received when a beverage container is returned for recycling. CRV is used to reference both terms.

Processing payments are paid to recyclers equaling the difference between the average cost to recycle and the average scrap value received. Processing fees are equal to a percentage of processing payments ranging from 10 to 65 percent.

5/07

Redemption Options

Facility or Program Type	# Registered 2006	% of CRV 2006
Traditional Recycling Center (RC)	*410*	52%
Convenience Zone RC +handling fee	1251	25%
Convenience Zone RC – no handling fee	*349*	6%
Curbside Programs	567	14%
Collection/Dropoff/Community Service	259	3%

California

Tomra Convenience Zone Recycling Center

California

Most transactions are by weight in California

California

Tomra site

California

Back side. Tomra just hauls the filled boxes away and replaces them with new boxes

California

Very small NexCycle site (not open)

California

Site takes less than 2 parking spaces and no power hookup requirement

California

NexCycle boxes in yard show small battery-operated compaction unit

California

Very small site next to store. The box is for equipment and shelter. Containers are loaded into and stored in the truck

California

Full-line recycler. These sites handle the majority of California containers

California

Limitations on redemption amounts is an anti-fraud measure

California

Cans can be inspected as they are conveyed up to the scale

California

Dense briquettes of cans. Plastic is in the large yellow box behind

California

Ming's Recycling. A larger full-line recycling center and processor

Ming's also brokers plastic out of Oregon

California

Tomra's processing site handles 30 Tomra boxes per day plus some materials from others

California

Tomra also operates a regular buy-back on their processing site

California

Davis Waste Removal operates a recycling center, drop-off center, and curbside program

California

All three get California Redemption Value funds. They also are the local garbage hauler

Return Rates 2005 Glass, Metal, Plastic

State/Province	Return Rate	
Oregon	82%	Includes, curbside, No water, juice
British Columbia	83%	
Maine	Unknown	Wide range of estimates
California	60%	