

Processing Fee and Handling Fee Cost Surveys

Workshop Presentation



Training



Scheduling



Surveying



Analyzing



Reporting

April 29, 2008

NewPoint Group[®]
Management Consultants



Division of Recycling
Market Research Branch



Agenda



1.0 Introduction



2.0 Cost Survey Design



3.0 Cost Survey Methodology



4.0 Processing Fee Cost Survey Results



5.0 Handling Fee Cost Survey Results



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1.0 Introduction





1.0 Introduction



1.1 DOR and Contractor Team



1.2 NewPoint Group Contractor



1.3 Purpose of Processing Fee Cost Survey



1.4 Purpose of Handling Fee Cost Survey



1.5 Logistics - Processing Fee Cost Survey



1.6 Logistics - Handling Fee Cost Survey



1.1 DOR and Contractor Team



- **Stephen Bantillo**
Assistant Director for Recycling
- **Chris Goetzke**
Acting Market Research Branch Manager
- **Graham Johnson**
Cost Survey Project and Contract Manager
- **James Gibson, Ph.D.**
NewPoint Group Director
- **Wendy Pratt**
NewPoint Group Senior Consultant



1.2 NewPoint Group Contractor

- Processing fee and handling fee cost surveys performed under contract by NewPoint Group Management Consultants for DOR
- Effort required over 25 different NewPoint Group employees and subcontractors
- NewPoint Group performed 2002 and 2004 processing fee cost surveys plus other projects since the inception of beverage container recycling program



1.3 Purpose of Processing Fee Cost Survey

- Most recycling centers are required to redeem all ten beverage container material types
- Scrap values of glass, plastics, and bi-metal are not sufficient to cover their cost of recycling
- Recycling costs are subsidized by paying recyclers a processing payment (PP) equal to:

$$PP = (\text{Cost of Recycling} \times \text{Reasonable Financial Return}) - (\text{Scrap Value})$$

- Cost of recycling was determined by the processing fee (PF) cost survey



1.4 Purpose of Handling Fee Cost Survey

- State law generally requires recycling centers within one-half mile of supermarkets (convenience zones) to provide convenient redemption of beverage containers
- Mandated recycling centers subsidized by handling fees payable to eligible supermarket site recyclers, nonprofit convenience zone recyclers, and rural region recyclers
- Handling fee payment has been set in statute, currently at 1.8 cents per container, up to a maximum of \$2,300 per site, per month
- As of July 1, 2008, the handling fee (HF) will be equal to:
$$\text{HF} = (\text{Cost per Container for Handling Fee Recyclers}) - (\text{Cost per Container for Processing Fee Recyclers})$$
- The cost per container to recycle for handling fee and processing fee recycling centers is determined by the handling fee cost survey



1.5 Logistics – Processing Fee Cost Survey

- Required every two years
- Obtain statewide, weighted-average recycling costs per ton for 10 beverage container material types for recycling centers not receiving handling fees
- Sampled recycling centers surveyed in 2007 using calendar year 2006 financial statements, labor information, and recycling volumes
- Processing fee and handling fee cost surveys were conducted in parallel using the same survey methodology and survey teams
- Results used for the processing payment and processing fee calculations, effective January 1, 2008

1.6 Logistics – Handling Fee Cost Survey

- Required every two years
- Obtain the statewide, weighted-average recycling costs per container for recycling centers receiving handling fees and recycling centers not receiving handling fees
- Sampled recycling centers surveyed in 2007 using calendar year 2006 financial statements, labor information, and recycling volumes
- Processing fee and handling fee cost surveys were conducted in parallel using the same survey methodology and survey teams
- Results used for the handling fee payment per container, effective July 1, 2008



2.0 Cost Survey Design





2.0 Cost Survey Design



2.1 Sample Design - Processing Fee Cost Survey



2.2 Sample Design - Handling Fee Cost Survey



2.3 Stratification Plan – Handling Fee Cost Survey



2.4 Overall Sampling Plan - Processing Fee and Handling Fee Cost Surveys



2.1 Sample Design Processing Fee Cost Survey

- 679 recycling centers not receiving handling fees in the population, complete census not possible for the high volume materials
- All samples designed to obtain estimates with a 90% confidence level and a +/- 10 % error rate
- Aluminum, Glass, PET #1, and HDPE #2: stratified random sample of 123 sites from three strata, based on annual glass volumes
 - Strata 1 ≥ 550 tons of glass per site per year (60 sites)
 - Strata 2 ≥ 150 tons and <550 tons per site per year (44 sites)
 - Strata 3 < 150 tons per site per year (19 sites)
- Bi-metal and Plastic #7: simple random samples of 40 sites each
 - 182 sites in population reported volume for Bi-metal
 - 103 sites in population reported volume for Plastic #7
- Plastics #3-#6: complete census consisting of 26 sites



2.2 Sample Design Handling Fee Cost Survey

- Two survey populations:
 - 679 recycling centers not receiving handling fees
 - 1,083 recycling centers receiving handling fees
- Both populations treated equally, in statistical terms, to provide an equivalent comparison between cost per container for the two populations
- Both samples designed to obtain an estimate with a 90% confidence level and a +/- 10 % error rate
- Number of recycling centers selected in both samples based on a stratified random sample of number beverage containers recycled in 2006
- Parallel strata definitions allowed for direct comparison between handling fee and processing fee cost per container results



2.3 Stratification Plan Handling Fee Cost Survey

- Selected 63 random recycling centers not receiving handling fees, from three strata, based on number of beverage containers recycled in 2006
 - Strata 1 ≥ 24 m containers per site, per year (21 sites)
 - Strata 2 ≥ 12 m and < 24 m containers per site, per year (13 sites)
 - Strata 3 < 12 m containers per site, per year (29 sites)
- Selected 115 random recycling centers receiving handling fees, from three strata, based on number of beverage containers recycled in 2006
 - Strata 1 ≥ 4.6 m containers per site, per year (44 sites)
 - Strata 2 ≥ 2.6 m and < 4.6 m containers per site, per year (39 sites)
 - Strata 3 < 2.6 m containers per site, per year (32 sites)

2.4 Overall Sample Plan – Processing Fee and Handling Fee Cost Surveys

- Most detailed and complex cost survey to-date, including six separate samples:
 - 123 stratified random PF sites for aluminum, glass, PET #1, and HDPE #2 cost per ton (N=679)
 - 40 simple random PF sites for bi-metal cost per ton (N=182)
 - 40 simple random PF sites for plastic #7 cost per ton (N=103)
 - 26 census PF sites for plastics #3 to #6 cost per ton (N=26)
 - 63 stratified random PF sites for cost per container (N=679)
 - 115 stratified random HF sites for cost per container (N=1,083)
- Overlap within categories resulted in a total of 385 recycling centers surveyed, as compared to 189 surveys for 2004 cost survey





3.0 Cost Survey Methodology



3.0 Cost Survey Methodology

3.1 Cost Survey Process

3.2 Site Cost Determinations

3.3 Labor Allocation Model

3.4 Indirect Cost Allocation Sub-models

3.5 Statewide, Weighted-Average Costs

3.6 Measurement of Costs per Container

3.7 Quality Control Reviews

3.1 Cost Survey Process

- Obtained financial statements and classified site costs into categories:
 - Non-allowable
 - Direct labor
 - Other labor
 - General Business Overhead
 - Transportation
 - Rent
 - Depreciation
 - Property taxes
 - Utilities
 - Supplies
 - Fuel
 - Insurance
 - Interest
 - Maintenance/repairs



3.2 Site Cost Determinations

- Reconciled labor expenses in recycler labor records to their financial statements
- Direct costs were identified and applied to each of the ten CRV material types where applicable
- Allocated indirect costs based on labor allocations and sub-models
- Summed all direct and indirect costs for each material type
- Summed costs for each material type for total CRV costs (additional step required for handling fee cost survey)



3.3 Labor Allocation Model

- The labor allocation model was developed, refined, and proven over the last 14 years
- Method for determining costs by business unit, CRV type material and other commodities, and specific CRV material types
- Interview site management to determine allocation of total labor hours per employee
- Allocate each worker's time to:
 - Recycler, or other business (including processor)
 - Direct yard labor, or all other labor
 - Non-CRV materials or specific CRV materials
 - Aluminum/bi-metal
 - Glass
 - All plastics



3.4 Indirect Cost Allocation Sub-Models

- Sub-models used to split indirect costs for Aluminum/Bi-metal and All Plastics (#1 through #7)
- Sub-models utilized four key operational/material-specific handling factors based on extensive field research and application in the 2002 and 2004 cost surveys
 - Weight factor (tonnage handled)
 - Container factor (number of containers handled)
 - Volumetric factor (average container size for the material type)
 - Commingled factor (proportion of non-CRV containers)
- The weighting of the operational/material handling factors was established based on experience in the 2002 and 2004 cost surveys, sensitivity analyses, and median cost per ton analysis using 2004 data



3.5 Statewide, Weighted-Average Costs

- Each material type cost per ton was based on a statewide, weighted-average calculation:
 - Statewide glass tons stratified weighted-average for aluminum, glass, PET #1, and HDPE #2
 - Statewide simple weighted-average for bi-metal and plastic #7
 - Statewide population weighted-average for plastics #3 to #6
- Each recycler type cost per container was based on a statewide, weighted-average calculation:
 - Statewide container stratified weighted-average for handling fee recyclers
 - Statewide container stratified weighted-average for processing fee recyclers
- The statewide, weighted-average calculations are required by statute



3.6 Measurement of Costs per Container

- Labor allocation model indirect and direct costs by material type were aggregated to calculate total CRV costs
- Material volumes (tons) were converted to containers based on 2006 statewide container per pound (CPP) values



3.7 Quality Control Reviews

- On-site (field) reviews
 - Field audit team verified and reviewed all data at each site
- Five levels of office reviews performed after each site visit:
 - Field audit team of two, generally including either CPAs or Recycling Experts
 - Independent Manager Review
 - Independent CPA Partner Review
 - NewPoint Group Business Analyst Review
 - NewPoint Group Project Director Review





4.0 Processing Fee Cost Survey Results



4.0 Processing Fee Cost Survey Results

- 4.1 Results - Processing Fee Cost Survey
- 4.2 Processing Fee Cost Survey Results - Aluminum
- 4.3 Processing Fee Cost Survey Results - Glass
- 4.4 Processing Fee Cost Survey Results - PET #1
- 4.5 Processing Fee Cost Survey Results - Total Population CRV Volumes (2002, 2004 and 2006)
- 4.6 2008 Processing Payments and Processing Fees per Container



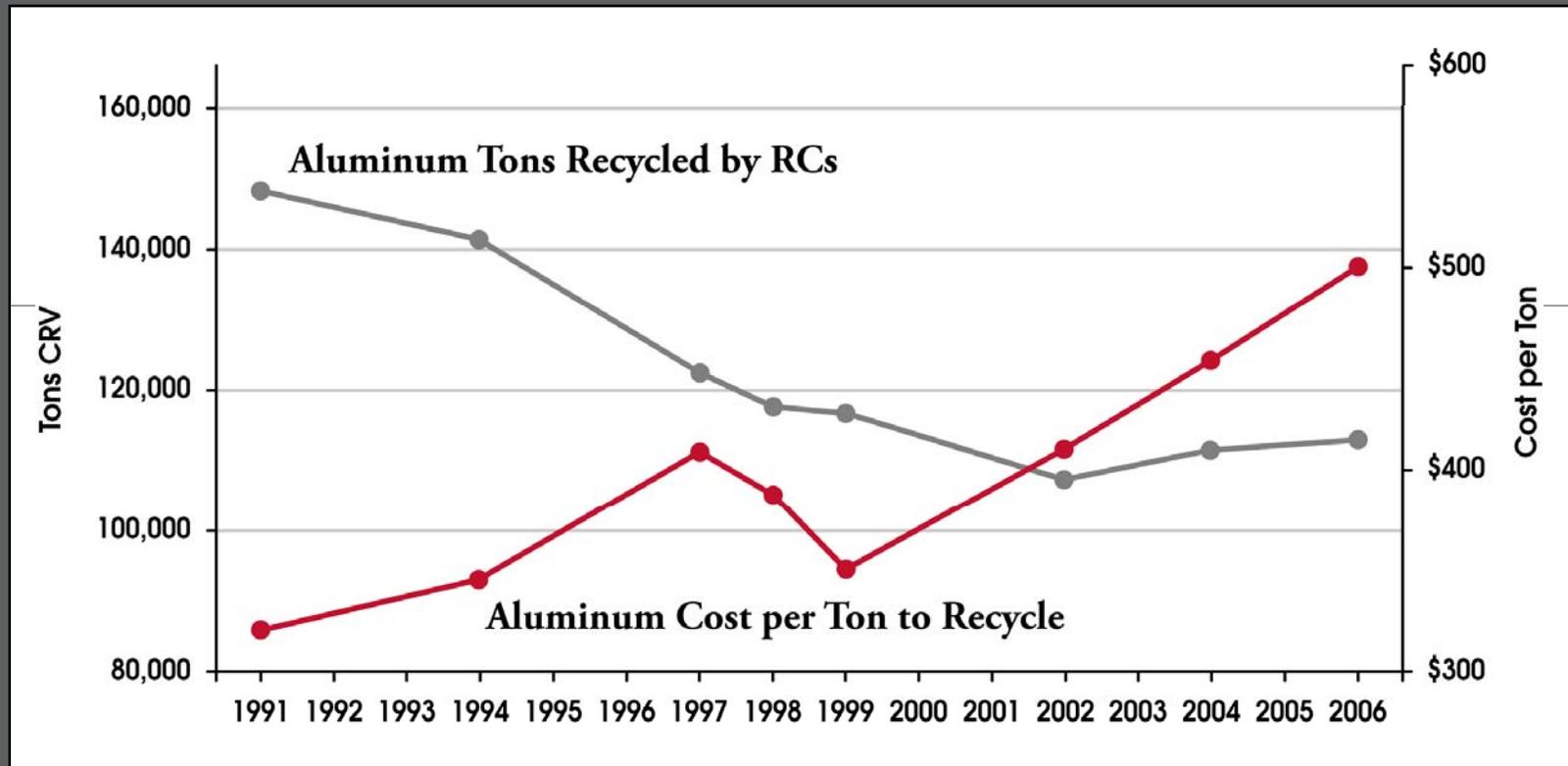
4.1 Results – Processing Fee Cost Survey

Material Type	2006 Statewide Cost per Ton ^a	Error Rate	Sample Size (number of sites)
Glass	\$94.98	8.17%	121
PET #1	477.73	8.05%	122
HDPE #2	500.64	8.97%	118
Aluminum	516.13	6.61%	123
PS #6	623.11	Census	15
PVC #3	731.37	Census	12
Other #7	741.93	9.95%	40
PP #5	787.83	Census	14
Bi-Metal	883.55	8.31%	40
LDPE #4	1,858.09	Census	13

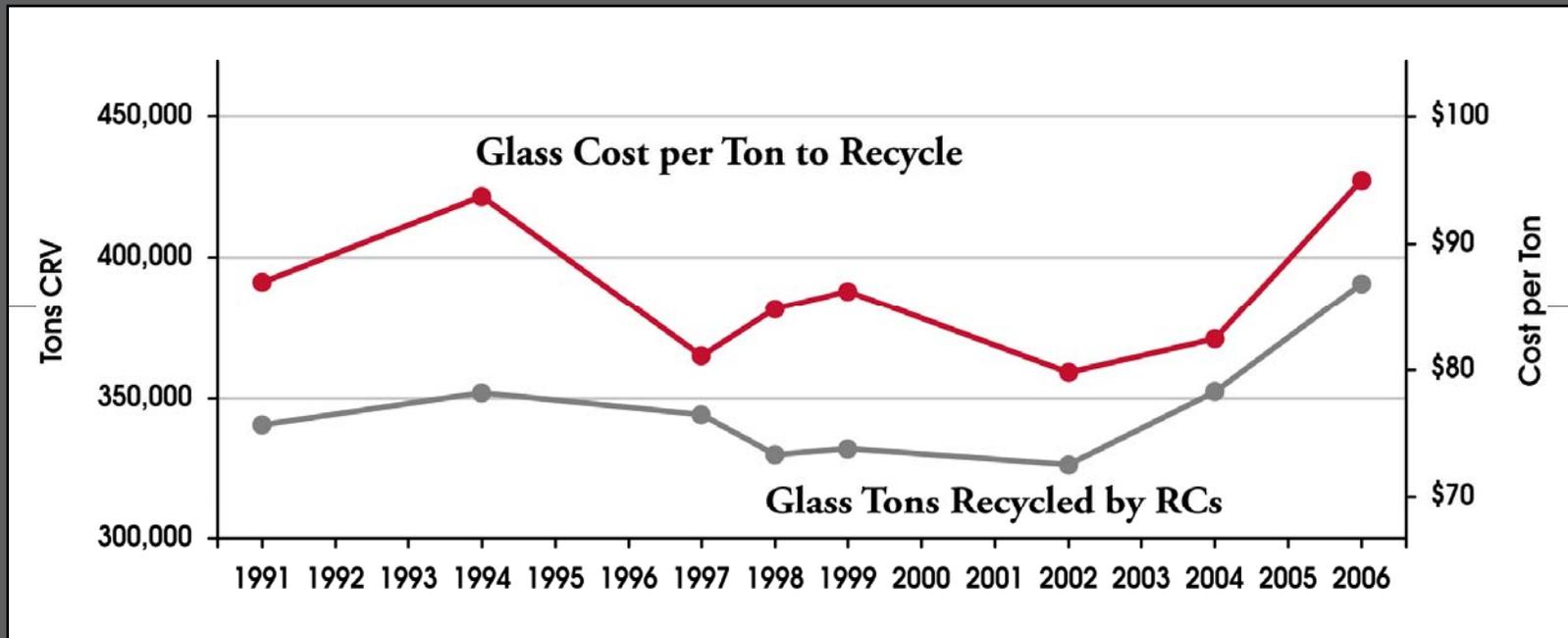
^a Without reasonable financial return (RFR)



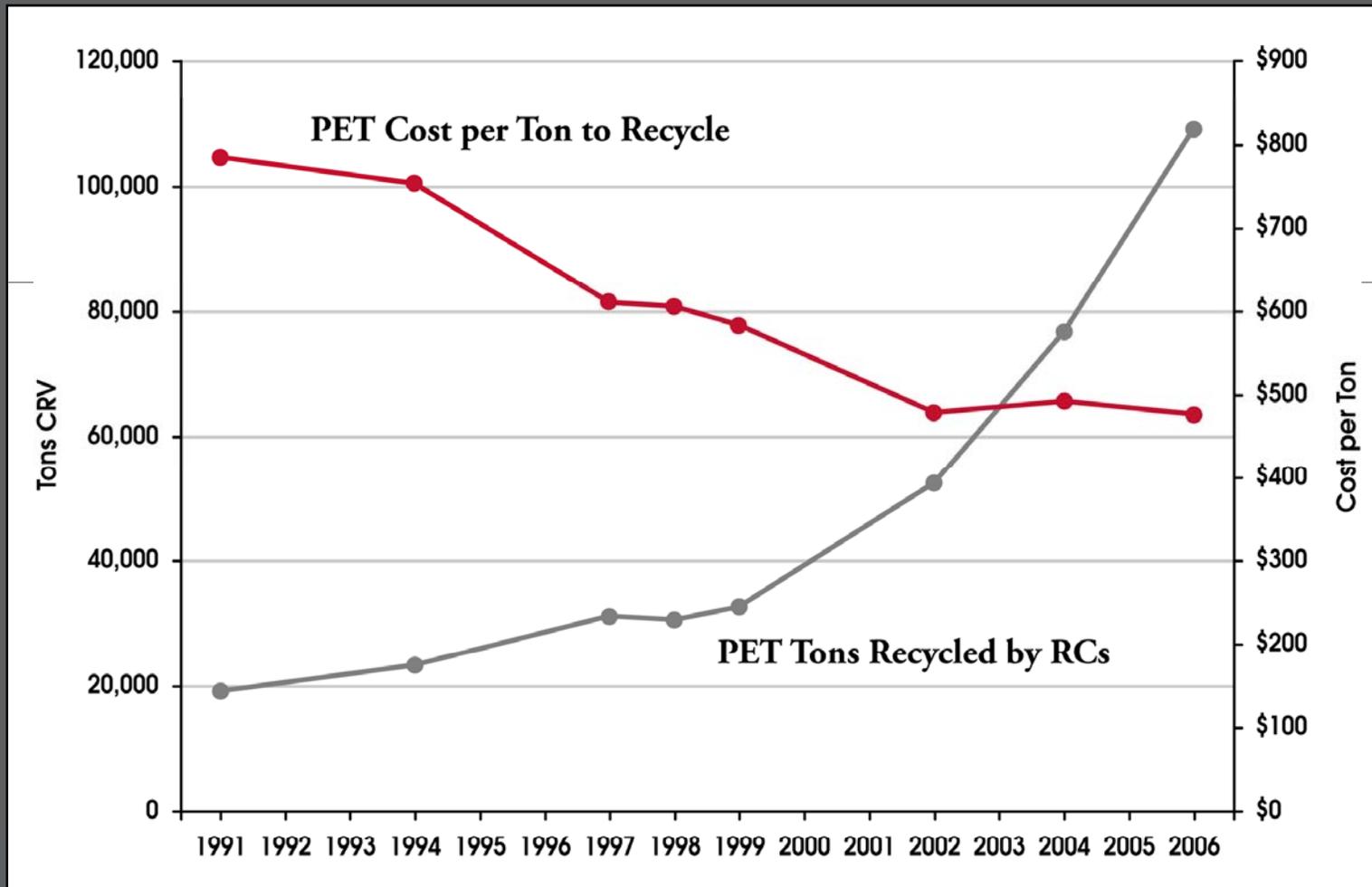
4.2 Processing Fee Cost Survey Results – Aluminum



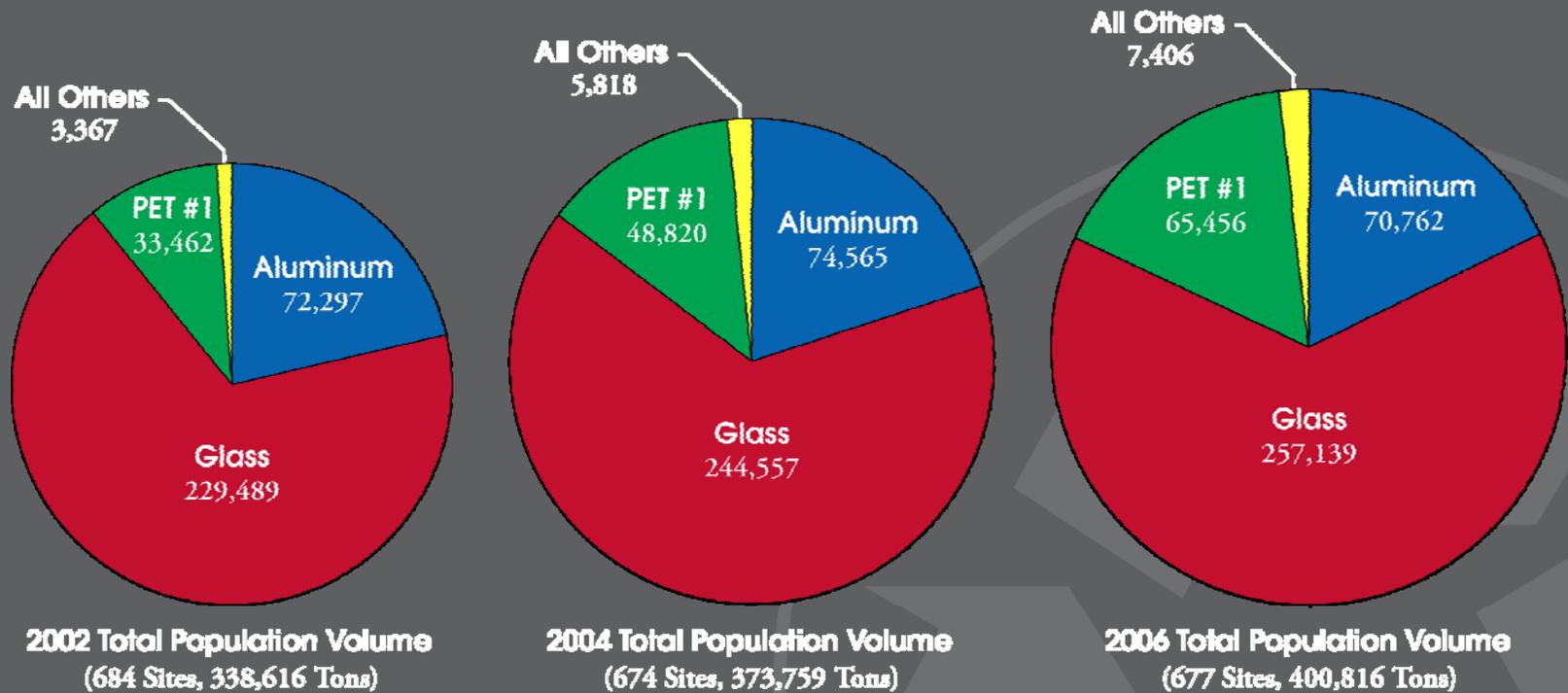
4.3 Processing Fee Cost Survey Results – Glass



4.4 Processing Fee Cost Survey Results – PET #1



4.5 Processing Fee Cost Survey Results Total Population CRV Volumes (2002, 2004, and 2006)



4.6 2008 Processing Payments and Processing Fees per Container

Material	2008 Processing Payment per Container (cents)	2008 Processing Fee per Container (cents)
1. Glass	2.461	0.240
2. PET #1	0.696	0.072
3. HDPE #2	1.803	0.216
4. PVC #3	3.855	2.525
5. LDPE #4	2.601	1.691
6. PP #5	13.866	9.013
7. PS #6	0.779	0.507
8. Other #7	6.488	4.217
9. Bi-metal	7.423	4.825





5.0 Handling Fee Cost Survey Results



5.0 Handling Fee Cost Survey Results



5.1 Handling Fee and Processing Fee Recycler
2006 Cost per Container

5.2 Handling Fee Cost Survey Sample Sizes and Error Rates

5.1 Handling Fee Cost per Container

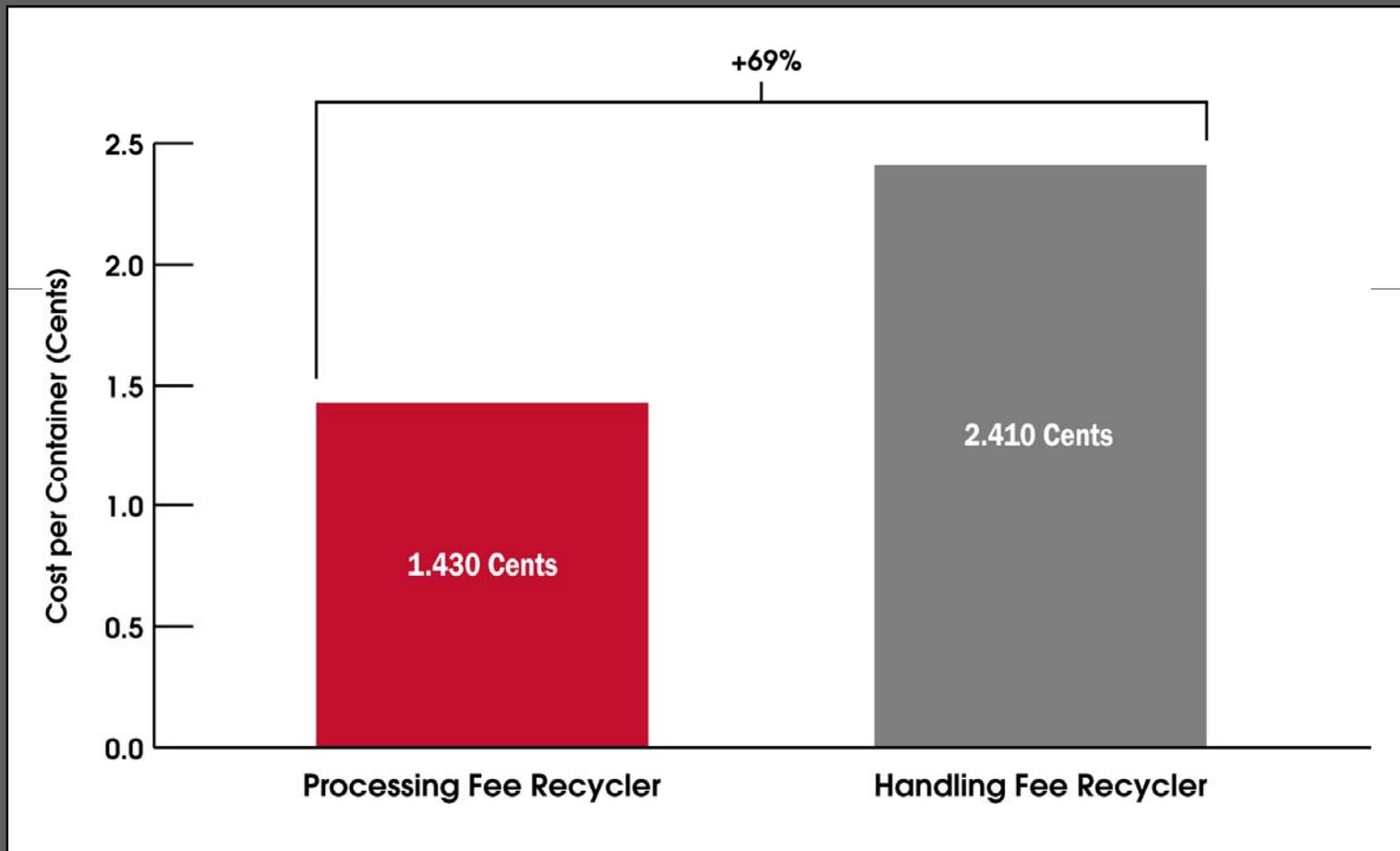
5.4 Proportion of Beverage Containers Recycled

5.5 Implications of New Handling Fee Payment

5.6 Handling Fee Expenditures



5.1 Handling Fee and Processing Fee Recycler 2006 Cost per Container



5.2 Handling Fee Cost Survey Sample Sizes and Error Rates

Recycling Center Type	Sample Size	Error Rate at 90% Confidence Interval
Receives Handling Fees (Handling Fee Recycler)	115	6.31%
Does Not Receive Handling Fees (Processing Fee Recycler)	63	6.16%

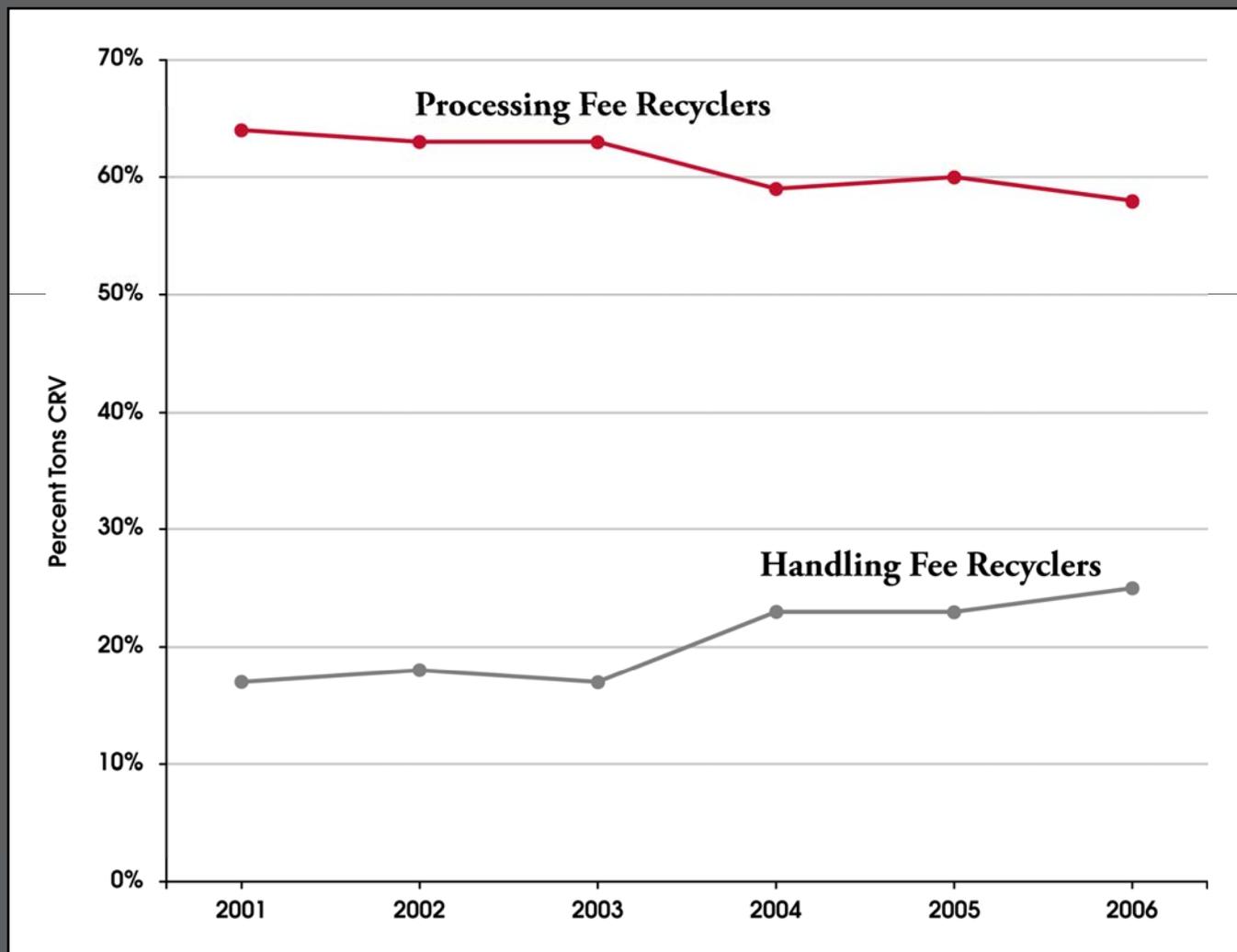


5.3 Handling Fee per Container

- The per container handling fee, effective July 1, 2008 is equal to:
 $2.410 \text{ cents} - 1.430 \text{ cents} = 0.980 \text{ cents}$



5.4 Proportion of Beverage Containers Recycled



5.5 Implications of New Handling Fee Payment

- Handling fee will be paid at 0.980 cent per beverage container
- Handling fee will be paid on all beverage containers redeemed at all eligible recycling centers
- Beverage containers of 24 ounces or more will no longer be counted as two containers for handling fee calculations
- Elimination of 60,000 monthly container minimum per recycling center
- Elimination of \$2,300 maximum monthly handling fee payment per recycling center
- New system is incentive based – those that recycle more containers will receive more handling fees
- Eligible recycling centers must redeem 2.8 million beverage containers per year to receive current maximum payment of \$27,600 ($\$2,300 \times 12$), vs. 1.5 million containers under the current system



5.6 Handling Fee Expenditures

- Actual 2007 handling fee payments, at 1.8 cents per container, were \$30.8 million
- Handling fee appropriation for Fiscal Year 2007/08 is \$35 million
- Estimated 2007 handling fee payments, at 0.980 cents per container applied to all beverage containers redeemed at eligible sites, would be \$41.3 million





6.0 Questions



■ Comments



■ Concerns



■ Suggestions

