

RESPONSE TO NORTHBRIDGE ENVIRONMENTAL MANAGEMENT'S ANALYSIS OF THE MSRP REPORT

Prepared by Boisson & Associates in conjunction with R.W. Beck, Inc., Franklin Associates, Ltd., the Tellus Institute, and Sound Resource Management Group, Inc.
February 7, 2002

As the research consulting team jointly hired for the Multi-Stakeholder Recovery Project (MSRP), we worked cooperatively for over six months with a task force representing the beverage and recycling industries, environmental organizations and government agencies to evaluate the costs, benefits and effectiveness of beverage container recycling programs. The effort was spearheaded by Businesses and Environmentalists Allied for Recycling (BEAR), a project of Global Green USA.¹ Task force members included: Beaulieu of America; Coca-Cola North America; Container Recycling Institute; EvCo Research, LCC; Global Green USA; GrassRoots Recycling Network; Minnesota Office of Environmental Assistance; New Value Partners; PureTech Plastics; Southeastern Container, Inc.; Tomra North America; Waste Management, Inc; and the Westchester (New York) County Department of Environmental Facilities. Considering this group's depth and the excellent working relationships established, and particularly with beverage industry leader Coca-Cola North America's clear commitment to the project, this was an unprecedented opportunity to seek consensus on an important issue.

On January 16, 2002 the task force jointly released our final report entitled, *Understanding Beverage Container Recycling: A Value Chain Assessment Prepared for the Multi-Stakeholder Recovery Project, Stage One*. Every effort was made to ensure that our results would be accepted as objective and unbiased. The Task Force actively participated through three in person meetings and numerous conference calls, helping to design the research approach, scrutinize interim results and develop language describing our findings. A 24-person Advisory Committee provided additional feedback. Draft reports were circulated for review and we took over two months to act on extensive input before releasing the final report.

Among our findings are cost estimates for beverage container recovery programs. Northbridge Environmental Management Consultants, under contract to the National Soft Drink Association, has prepared an analysis questioning three of these cost estimates and the validity of our results. We have thoroughly reviewed this analysis and discussed it with representatives of Northbridge, the National Soft Drink Association and Coca-Cola North America. Following are our main conclusions. (Detailed responses are presented in the attached tables.)

We stand firmly behind our cost estimates and the validity of our results, although we encourage continued data sharing to resolve disagreements.

The MSRP Report represents an important incremental step towards a comprehensive, objective understanding of beverage container recycling programs. While groups on various sides of the issue have attempted to "spin" the results in one way or another, the truth is that the findings do not fully support any one view. The report does not attempt to address every issue related to beverage container recycling, as clearly explained in the cover letter accompanying the report, in

¹ Created in 1994 as an affiliate of Mikhail Gorbachev's Green Cross International, Global Green USA works with individuals, industry, and government to foster a global value shift toward a sustainable and secure future.

the Executive Summary and in its main body. As a snap shot of programs in 1999, the report can and is helping to shift the debate over beverage container recycling to one over cost and effectiveness, and this is the main reason members of the MSRP Task Force chose to release it now. Because it is a snap shot, it does not project future costs or impacts related to program replication or expansion. It can, however, help inform local discussions about such actions.

We reject Northbridge's upward adjustment to our estimated 1999 operations costs for the California Redemption System.

Our report consistently uses a standard approach to estimate the 1999 operations costs for different types of programs. Northbridge suggests that our California redemption system net cost estimate should be increased from \$118/ton to \$275/ton by adding in costs or revenue mechanisms clearly unrelated to operations, or that occur in different years, arguing that these non-operations costs are essential to the system. We disagree. Much of the controversy over the California system relates to its funding mechanisms (processing fees and unclaimed deposits). As discussed in the MSRP report, they do not affect operating costs. We acknowledge the legitimate concerns over these funding mechanisms. Our results indicate the program could be fully funded through unclaimed deposits alone.

We reject Northbridge's downward adjustment to our net cost estimate for curbside programs.

We estimate revenue from material sales based on the mix of containers recovered in each program type using identical per ton market values for all programs (even though some argued strongly that market values for deposit systems should be higher). The average scrap value per container is heavily dependent on the percentage of aluminum in the mix of all beverage containers collected. Generally, curbside and drop-off programs recover a much lower percentage of aluminum than deposit systems, and this is reflected in our estimates. We strongly disagree with Northbridge's adjustment that applies container mix statistics for the California Redemption Program to curbside programs. Our assumed container mixes are documented and consistent with program experience across the nation. As a reality check, we obtained container mix data for twenty curbside programs representing a range of conditions. (See attached table.) These data further corroborate that the share of aluminum in the mix of recovered containers is far lower in curbside programs than in deposit systems.

We stand behind our estimated costs for reverse vending machines, but we are open to further analysis as new data become available.

As with other programs, reverse vending machine costs were difficult to measure because there are few publicly available sources of data. Our data are from Tomra North America based on actual operations costs in the State of Michigan, adjusted for consistency by Franklin Associates Ltd. This system, operated under contract to the Michigan Soft Drink Association (an NSDA affiliate), is relatively efficient and it is possible that RVM programs in other states may operate at somewhat higher cost. Northbridge suggests we did not include all operations costs and that, based on a survey to be released this Spring, our costs should be increased from 1.13 cents per container to 1.90 cents per container. Although we stand by our estimate and we believe we have included all costs, we note that even with this adjustment, RVMs significantly reduce deposit system costs. We look forward to reviewing new Northbridge data when they become available.

DETAILED RESPONSES TO COST CRITIQUES

MSRP Report Findings²	Critique Northbridge Environmental Management Consultants ³	Response R.W. Beck, Inc., Franklin Associates, Ltd., the Tellus Institute, Sound Resource Management Group and Boisson & Associates
<p style="text-align: center;">California Redemption System Costs</p> <p style="text-align: center;"><u>Gross Cost</u> 0.55 cents per container \$352 per ton \$146.8 million total system operating costs</p> <p style="text-align: center;"><u>Net Cost</u> 0.42 cents per container \$118 per ton</p>	<p style="text-align: center;">BEAR fails to include certain 1999 expenditures as costs.</p> <p>BEAR fails to include \$9 million in grants and administrative expenses of distributors. Our calculation of recycling and processing costs using Department of Conservation data adds another \$10 million for a revised gross cost of \$166 million.</p>	<p style="text-align: center;">These items are not related to operations costs as calculated in our study.</p> <p>Grants to non-profits and local governments are not essential operating costs. And the additional \$10 million Northbridge cites is apparently due to different per-ton cost figures. We used figures provided by the California DOC and verified as the most appropriate. We do acknowledge that distributor administrative costs associated with redemption payments can be considered as operating costs, but this only increases our gross cost estimate by about one percent, and overall conclusions are not affected.</p>
	<p style="text-align: center;">The BEAR figures ignore program amendments taking effect in 2000.</p> <p>These are unrelated to expansion of the program to noncarbonated beverage containers (not analyzed in the report). These amendments were effectively put in place to spend-down the enormous surpluses built up in the program in prior years. This adds another \$46 million to gross program costs, covering increased administrative payments, grants, handling fees, recycling program subsidies and publicity.</p>	<p style="text-align: center;">This is the most crucial adjustment and we strongly disagree with including these expenditures as 1999 operations costs.</p> <p>The costs cited by Northbridge were for year 2000 expenses and do not appear to be related to operations at all. Although the MSRP report compares program costs in the study year 1999, we do discuss California's year 2000 expansion and other program concerns (e.g., on pages ES-3, ES-5, 2-13, 2-19, 3-1, and 3-12).</p>
	<p style="text-align: center;">True costs of the program may be even higher.</p> <p>This is because it is unclear how scrap price subsidies or transportation costs are factored into BEAR's analysis.</p>	<p style="text-align: center;">We reject this since we use a documented, standard methodology for comparing costs.</p> <p>Price subsidies (voluntarily instituted by industry to avoid processing fee payments) were not incorporated into this analysis as we used standardized material values for all programs. Transportation costs for collection programs to deliver containers to an intermediate processor are included but costs for consumers to deliver containers to a redemption facility are not.</p>

² As documented in Table 3-1 on page 3-2 of *Understanding Beverage Container Recycling*, available at www.globalgreen.org/bear.

³ Excerpted and edited for brevity from a *Preliminary Analysis of Beverage Container Recovery Costs in the BEAR Report* and *Revised Summary of Beverage Container Recovery Costs from the BEAR Report*, both undated.

DETAILED RESPONSES TO COST CRITIQUES

MSRP Report Findings²	Critique Northbridge Environmental Management Consultants ³	Response R.W. Beck, Inc., Franklin Associates, Ltd., the Tellus Institute, Sound Resource Management Group and Boisson & Associates
<p style="text-align: center;">Curbside Program Costs</p> <p style="text-align: center;"><u>Gross Cost</u> 2.48 cents per container \$384 per ton</p> <p style="text-align: center;"><u>Net Cost</u> 1.72 per container \$266 per ton</p>	<p>BEAR minimizes scrap credit for curbside and dropoff programs, thereby increasing net costs.</p> <p>We believe a more appropriate scrap value for curbside and dropoff would fall somewhere between the \$118/ton used in the study and the \$368 cited for traditional deposits. The study's assumptions about the share of material recovered differ significantly. The percentage of aluminum in the mix is 31% in traditional deposit systems (atypically high based on our research), 26% in California and it drops to only 6% in curbside and dropoff programs. For this exercise, we chose to apply the weighted scrap value per ton used for the California analysis, thereby lowering the net cost for curbside from \$266/ton (1.72¢/ctr) to \$151/ton (1.4¢/ctr).</p>	<p>We strongly disagree with this adjustment. Our assumptions are fully documented and consistent with experience nationwide.</p> <p>We used the same per ton scrap values for all programs (although some argued strongly that deposit values should be higher). The assumed container mix in curbside programs is based on an independent R.W. Beck survey. Traditional deposit system container mixes are from Franklin Associates surveys and CA mix statistics are from the DOC. As a reality check, we obtained container mix data for twenty curbside programs representing a range of conditions (see attached table). These data further corroborate that the share of aluminum is far lower in curbside programs than in deposit systems.</p>
<p style="text-align: center;">Reverse Vending Machine Costs</p> <p style="text-align: center;"><u>Gross Cost</u> 2.53 cents per container \$661 per ton</p> <p style="text-align: center;"><u>Net Cost</u> 1.13 per container \$293 per ton</p>	<p>The assumed retailer cost for RVMs is well below actual costs if all costs are included.</p> <p>BEAR's estimate for retailer costs is 1.71¢ per container (BEAR Table 3-7). Charges from reverse vending companies (lease payments, throughput charges) are only part of the cost. Stores also dedicate space to the equipment, empty the machines, clean the space frequently, and store the materials. In a recent survey of 171 New England supermarkets, only 5 had costs below 1.7¢.⁴ Using our supermarket survey average, the net cost for this option rises from 1.13¢ in the BEAR report to 1.90¢.</p>	<p>We stand by our cost estimate although we are open to reviewing additional information as it becomes available.</p> <p>As with other programs, reverse vending machine costs were difficult to measure because there are few publicly available sources of data. Our data are from Tomra North America based on actual operations costs in the State of Michigan, as adjusted for consistency by Franklin Associates Ltd. This system, operated under contract to the Michigan Soft Drink Association (an NSDA affiliate), is relatively efficient and it is possible that RVM programs in other states may operate at a somewhat higher cost. All retailer costs listed by Northbridge are included in our estimate. We look forward to reviewing Northbridge's RVM survey data when it becomes available.</p>

⁴ Northbridge research for the Connecticut Food Association, forthcoming Winter/Spring 2002.

RESPONSES TO GENERAL CRITIQUES

Critique Northbridge Environmental Consulting ⁵	Response R.W. Beck, Inc., Franklin Associates Ltd., the Tellus Institute, Sound Resource Management Group, Boisson & Associates
<p>Unclaimed deposits are not a legitimate credit to apply against program costs.</p> <p>They are transfer payments from consumers to states or beverage distributors and manufacturers. They do not affect the cost of one recycling system versus another, but they do affect the distribution of system costs. The study confuses this issue by presenting costs both with and without unclaimed deposits as cost offsets (see, for example, BEAR Tables ES-1 and 3-1). While the magnitude of unclaimed deposits is important for examining the equity of various options (who pays), it does not affect program costs.</p>	<p>We agree that unclaimed deposits are transfer payments, but we disagree that the report confuses the issue by listing them.</p> <p>The report is very clear in identifying and distinguishing costs and revenue sources. Many stakeholders argue strongly that because unclaimed deposits are an inherent component of any deposit program they should be counted. While other Task Force members disagree with this, in keeping with the study approach the report presents the facts and allows readers to determine which measures are most appropriate for comparing programs.</p>
<p>Applying BEAR's curbside or drop off costs to evaluate policy changes will yield erroneous results.</p> <p>Limitations on using the study data are most apparent for curbside and dropoff program costs, because they are presented as if the container portion of these programs would or could operate in isolation. Policy-makers could easily misuse the study data, for example, by recommending the (apparently) inexpensive California system for recycling beverage containers, seeking to replace costly curbside collection with a less expensive system. In fact, many curbside costs attributed to beverage containers in the study would simply be shifted to other materials. Actual curbside program savings would be limited or nonexistent. Similarly, efforts to increase capture of beverage containers through curbside or dropoff programs would not come at the average costs of curbside or dropoff reported in the study, but at a much lower, marginal cost.</p>	<p>We acknowledge that policy makers should not inappropriately use our results, but we have not seen data supporting Northbridge's statements about marginal costs.</p> <p>The MSRP Report is clearly presented as a snap shot of programs in the study year 1999. The report acknowledges and explains the challenge of computing per-container figures (e.g., on page 3-16). And, as explained in the cover letter, the Executive Summary and the main body, the report does not attempt to project future costs of replicating or expanding programs. Local decision-makers should evaluate options based on local conditions. And Northbridge's unsupported and undocumented statements about likely impacts of program changes should not be used to guide local decisions. Pending resource availability, we would welcome the opportunity to review data on this point.</p>
<p>While the study defines beverage containers broadly, costs of deposit programs and the California program only relate to carbonated containers.</p> <p>Expanding these programs to include non-carbonated beverages fundamentally alters their economics. By nearly tripling the number of plastic containers included in the program, the economics of container recovery in California are much different today than is reflected in the 1999 estimate from the BEAR report. Deposit and California system costs in the report cannot be applied to non-carbonated beverage containers.</p>	<p>We agree that our deposit system costs apply only to carbonated beverage containers.</p> <p>Our cost estimates cover only the study year 1999, in which deposit systems covered primarily carbonated beer and soft drinks. (An exception is Maine, but given its relatively small population it did not affect our estimates.) This is mentioned or discussed in the MSRP Report (e.g., on pages ES-3, ES-5, 2-13, 2-19, 3-1, and 3-12).</p>

⁵ Excerpted and edited for brevity from a *Preliminary Analysis of Beverage Container Recovery Costs in the BEAR Report and Revised Summary of Beverage Container Recovery Costs from the BEAR Report*, both undated.

MIX OF BEVERAGE CONTAINERS RECOVERED IN MUNICIPAL CURBSIDE PROGRAMS

LOCATION	MIX OF RECOVERED BEVERAGE CONTAINERS*			
Non-Deposit States	Glass	UBC	Total Plastic	All Three
¹ Boulder, CO	84.5%	4.5%	11.1%	100.0%
² Lewisville, NC	68.6%	10.6%	20.8%	100.0%
² Kernersville, NC	66.6%	11.3%	22.1%	100.0%
² Salisbury, NC	69.2%	3.1%	27.7%	100.0%
² Asheville, NC	71.3%	10.9%	17.7%	100.0%
² Craven County, NC	65.4%	11.9%	22.6%	100.0%
² Cary, NC	72.1%	8.4%	19.6%	100.0%
² Raleigh, NC	81.4%	8.6%	10.0%	100.0%
³ Orange County, NC	64.8%	2.2%	33.0%	100.0%
⁴ Winston-Salem, NC	66.4%	9.9%	23.7%	100.0%
North Carolina Average	69.6%	8.5%	21.9%	100.0%
⁵ Sarasota, FL	58.1%	14.4%	27.6%	100.0%
⁵ Palm Beach, FL	56.2%	12.0%	31.7%	100.0%
⁵ Broward, FL	73.8%	13.9%	12.3%	100.0%
⁵ Pinellas, FL	76.0%	5.6%	18.4%	100.0%
⁵ Hillsborough, FL	68.6%	16.8%	14.6%	100.0%
⁵ Lee, FL	64.5%	16.3%	19.2%	100.0%
⁵ Orange, FL	65.6%	9.6%	24.8%	100.0%
Florida Average	66.1%	12.7%	21.2%	100.0%
Average (Non-Deposit States)	73.4%	8.6%	18.1%	100.0%
Deposit States	Glass	UBC	Total Plastic	All Three
⁶ Westchester County, NY	86.3%	1.8%	11.9%	100.0%
⁷ Oakland, CA	74.4%	3.2%	22.4%	100.0%
⁸ Arcata, CA	96.4%	3.6%	0.0%	100.0%
⁹ Del Norte County, CA	92.5%	2.2%	5.3%	100.0%
California Average	87.7%	3.0%	9.2%	100.0%
Average (Deposit States)	87.0%	2.4%	10.6%	100.0%
** Average (Deposit & Non-Deposit)	80.2%	5.5%	14.3%	100.0%

* Curbside data for all containers were adjusted to reflect beverage containers using assumptions from the MSRP report, Table 2-3, page 2-6.

** State averages are based on the available city and county data listed. Overall averages for deposit, non-deposit and all states are based on the available city/county data and state averages. These data do not necessarily represent a valid statistical sample.

¹ City of Boulder, CO

² NC Solid Waste Management Annual Report, July 1, 2000 - June 30, 2001

³ Orange County, NC 2001

⁴ City of Winston-Salem, Utilities Division, 2001

⁵ RW Beck Survey

⁶ Westchester County, NY, 2000 data

⁷ Oakland, CA - Waste Management of Alameda County and California Waste Solutions, 2000

⁸ Arcata CA - Community Recycling Center, 2001

⁹ Del Norte County, CA, Solid Waste Management Authority