

Caught NaPPing

A look at the National Packaging Protocol's data shows the program failed to reduce post-consumer packaging waste

by Clarissa Morawski

"Celebration is called for!" declared a Canadian packaging newsletter in reference to the National Packaging Protocol's (NaPP) early success in diverting 51 per cent of packaging waste from disposal by 1996 — four years ahead of schedule. However, a close look at the actual NaPP data reveals there may be little cause for celebration, at least for consumers and ratepayers. The data shows that post-industrial packaging was greatly reduced via things like greater reuse of wooden pallets and other reusable containers (*See sidebar, page 12*). This achievement is good news for the environment and the companies that will save money. But there was little advancement in the reduction of post-consumer packaging — the ubiquitous aluminum cans, plastic containers, bags and so on that people thought were targeted. NaPP press releases didn't draw attention to this serious shortcoming.

NaPP's obfuscation over reductions in post-industrial packaging waste versus post-consumer waste has created a dilemma for provincial and municipal governments as well as environment and consumer groups. Since NaPP supposedly "dealt with the problem," national pressure for packaging reduction has all but disappeared.

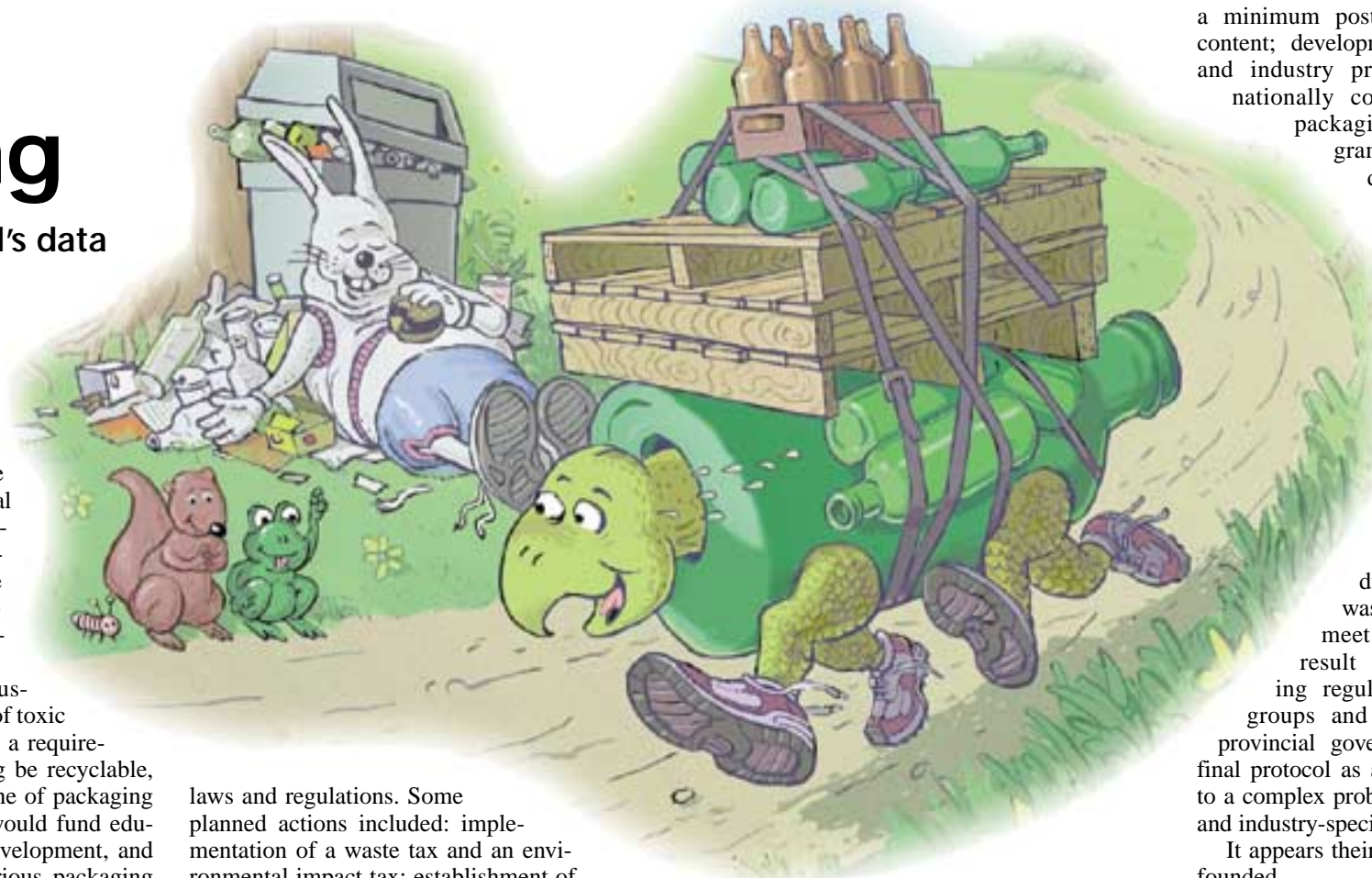
The original plan

NaPP was coordinated through the Canadian Council of Ministers of the Environment (CCME) initially to respond to the demands of municipalities and the public over the proliferation of disposable consumer packaging and increasing municipal waste management costs. The CCME called for the development of a voluntary initiative by a multi-stakeholder group of various industry, government, consumer and environment organizations (the National Packaging Take Force)

over a ten-year time frame. The task force was to establish national objectives and actions related to packaging management, including the eventual virtual elimination of packaging disposal altogether.

Preliminary discussions considered a ban of toxic materials in packaging; a requirement that all packaging be recyclable, and a \$10 levy per tonne of packaging sent for disposal that would fund education, research and development, and enforcement of the various packaging

laws and regulations. Some planned actions included: implementation of a waste tax and an environmental impact tax; establishment of



a minimum post-secondary material content; development of government and industry procurement policies; nationally compatible provincial packaging recycling programs; packaging standardization; deposit/return systems; and, a national waste exchange.

But it was not to be. By 1990 the multi-stakeholder task force had chiseled away most of these planned actions and narrowed NaPP's scope to one objective: a 50 per cent reduction in packaging waste by 2000. Failure to meet the target would result in tough packaging regulation. Not-for-profit groups and the municipal and provincial governments viewed the final protocol as a simplistic approach to a complex problem that lacked teeth and industry-specific accountability.

It appears their skepticism was well founded.

The data

Fast-forward six years later to 1996. The CCME announced with great fanfare that NaPP had achieved the 50 per cent diversion target four years ahead of schedule. Industry groups broadcast the good news that packaging waste sent for disposal had been reduced by 2.8-million tonnes since 1988, the baseline year. This represented a reduction of 51.2 per cent overall (or 56.2 per cent per capita).

An in-depth analysis of the results and a 2000 survey requested by the task force have been cancelled, since the CCME will virtually eliminate the remaining NaPP budget by March 2000, and will remove waste from its agenda. A reserve fund of \$300,000 had been set up for the Year 2000 survey but has since been transferred to fund non-packaging, non-waste related CCME work.

This is a shame since the NaPP data and methodology (especially for 1988) are considered by some industry experts and Environment Canada officials to be full of holes. Inaccurate representations of packaging generation, reuse, recycling and disposal have been alleged. (*See "The NaPP Deception" in the Oct./Nov. 1998 edition, page 36.*) However, if one accepts NaPP's methodology a close look at performance by material type, packaging type and industry sector presents a clearer picture of which wastes have been reduced and which have not.

The winners

NaPP's greatest success is the second "R" or reuse, especially for industry. By 1996 about 45 per cent of all packaging was reused, compared to only about 7 per cent in 1988. (*See chart.*) Most reuse (58 per cent) was accomplished with secondary (or transport) packaging, including pallets, large metal containers, plastic boxes, crates and cases. The reuse of refillable beer bottles makes up an additional 19 per cent of all packaging reuse. (About 94 per cent of reuse by the brewery industry is through the refillable glass bottle alone.)

Another area of success for industry was its reduced consumption of new paper and paperboard packaging. Between 1992 and 1996 consumption of these materials dropped 34 per cent, with a subsequent decrease of material sent for disposal by 49 per cent. The capture rate for recycling of this material (after reuse) increased from 51 to 63 per cent in the same four years. →

NaPP Data: A Closer Look

General Consumption (1996)

- Per capita consumption of new packaging decreased to 163 kg/person (from 209 kg/person in 1988).
- A quarter of all packaging used was comprised of wood pallets, box pallets and other load boards.
- The "Brewery Products" sector was the largest packaging consumer — 76 per cent of this packaging was reused.
- The "Transportation Equipment" sector was the second largest packaging consumer — 69 per cent of this packaging was reused.
- Paper and paperboard packaging consumption decreased by 34 per cent (from 1992).

Post-Consumer Packaging Consumption (1992 to 1996)

- The "accommodation, food & beverage, amusement & recreational services" sector increased per capita consumption of new packaging from 1.1 to 3.9 kg/person.

- The "retail sector" (not including food, beverage, drug and tobacco) increased per capita consumption of new packaging from 1.2 to 4.6 kg/person.
- Aluminum packaging used for food and beverage containers increased by 164 per cent, from 1.3 to 3.2 kg/person.
- Plastic expanded foam (polystyrene) used for packaging increased by 232 per cent, from 0.6 to 1.9 kg/person.
- Plastic stoppers, lids, caps and other closures used for packaging increased by 86 per cent, from 0.9 to 1.6 kg/person.
- Paper sacks and bags with a base of less than 40 cm increased by 111 per cent, from 1 to 2 kg/person.
- Clear glass containers used for packaging decreased by 40 per cent, from 17 to 10 kg/person.

Reuse (1992 to 1996)

- Reuse of packaging consumed increased by 9.2 per cent, from 36.5 to 45.7 per cent.

- In 1996, secondary (transport) packaging (wood pallets, box pallets, wood, plastic boxes, cases, crates and large metal containers) account for 58 per cent of reused packaging.
- By 1996, 94 per cent of large (>50 litres) metal containers were reused.
- In 1996, 69 per cent of wood pallets and boxes were reused.

Recycling (1992 to 1996)

- Recycling of overall packaging increased by 1.7 per cent, from 23 to 24.7 per cent.
- The capture rate of aluminum packaging for recycling (after reuse) decreased from 99 to 56 per cent.
- The capture rate of paper and paperboard packaging for recycling (after reuse) increased from 51 to 63 per cent.
- In 1996, 74 per cent of all recycling activity was post-industrial and 26 per cent was post-consumer packaging (i.e., from households).

- In 1996, recycled material from households was comprised of 36 per cent glass, 33 per cent paper and paperboard, 11 per cent metal (non-aluminum), 11 per cent plastic and 8 per cent aluminum.

Disposal (1992 to 1996)

- Disposal of all packaging decreased by 10.9 per cent, from 40.5 to 29.6 per cent.
- Disposal of paper and paperboard decreased by 49 per cent, from 53 to 26kg/person.
- Disposal of aluminum packaging increased over 170 times, from 0.01 to 1.6kg/person.

(All statistics were calculated from Environment Canada NaPP data summaries. "1988 Benchmark Estimates Packaging Project" & "1996 National Packaging Survey — Final Results" & "National Packaging Monitoring System 1996 Results.")

Consumed Packaging = In-use imports – In-use exports

Year	Total Packaging Consumed in tonnes	Total New Packaging Used in tonnes	Reuse in tonnes		Recycling in tonnes		Disposal in tonnes		Population (million)	New Packaging Used kg/person
1988	6,015,905	5,612,880	403,025	6.7%	583,119	9.7%	5,029,761	83.6%	26.895	209
1992	10,448,611	6,721,744	3,809,171	36.5%	2,403,049	23.0%	4,236,391	40.5%	28.542	236
1996	8,905,760	4,885,740	4,066,284	45.7%	2,200,640	24.7%	2,638,837	29.6%	29.969	163

All data is from Statistics Canada — "1988 Benchmark Estimates Packaging Project" and "National Packaging Monitoring System — 1996 Results" there is a slight difference between the 1988 data reported in the "1988 Benchmark Estimates Packaging Project" and the "1996 Milestone Report". The author was unable to establish why the discrepancy exists.

The losers

NaPP's greatest failure clearly concerns post-consumer packaging — the very waste stream it was initially conceived to reduce. For example, between 1992 and 1996 aluminum packaging used for food and beverage containers increased by 164 per cent even as the aluminum recycling capture rate actually dropped by 43 per cent. This led to an increase of over 170 times of disposed aluminum packaging. Plastic expanded foam (polystyrene) used for packaging increased by 232 per cent in the same time period. The NaPP data doesn't provide a recycling rate for expanded foam specifically but, given the limited recycling markets and low value of this post-consumer material, one can assume that little of this material is actually recycled. NaPP statistics also shows significant increases in packaging used for paper sacks and bags and plastic lids, stoppers, caps and closures.

There's also evidence of increased post-consumer packaging consumption based on industry-specific NaPP data. For example, the "accommodation, food & beverage, amusement & recreational services" sector increased its per capita consumption of new packaging from 1.1 kg in 1992 to 3.9 kg in 1996. The "retail sector" (not including food, beverage, drug and tobacco) also increased its per capita consumption of new packaging from 1.2 kg in 1992 to 4.6 kg in 1996. These industry sectors make up a small part of total packaging consumption but they're interesting examples of areas that require considerable improvement.

Lightweighting

Since its inception, the main criticism of NaPP has been that benchmark and monitoring measurements are weight-based. Weight-based reduction is not an indicator of environmental performance and



One only needs to look at city streets on garbage day to see the NaPP success is not as great as it sounds.

can be outright misleading. For example, the beer industry's heavy refillable glass bottles (approximately 3.43-billion in 1996) represent 876,959 tonnes of the industry's total consumption each year. If these were all converted into plastic PET containers the same number of bottles would weigh only 106,194 tonnes. A weight-based measurement would (misleadingly) suggest a reduction in consumption of 88 per cent.

The NaPP data shows an overall reduction in consumption of about 46 kg per person since 1988. But much of this relates to material substitution and so-called "lightweighting" (such as lighter plastic and aluminum beverage containers). For example, per capita consumption of clear glass used for containers decreased by 40 per cent from 1992 to 1996 — 17 to 10 kg per capita. Weight-based reduction ignores volume and is useless as a measurement of *real* reduction or elimination of packaging. In fact, many environmental advocates (who represent public interests, not corporate ones) view plastic

and aluminum material substitution as having an overall negative environmental effect from a life-cycle perspective.

Still snoozing

The NaPP data reveals that when producers are directly responsible for waste management costs (i.e., their own internal pallets and packaging), great reduction and efficiency occurs in very little time. In just eight years, industry increased its reuse of secondary packaging from 7 to 45 per cent. But post-consumer packaging waste has seen little change in the same period. It's no coincidence that the handling of this material — also a product of industry — is paid for by taxpayers via municipal programs.

So, while some industries celebrate, municipalities wonder what will motivate industry to reduce post-consumer packaging, especially since the CCME is backing away from any requirement that industry reduce this kind of waste, via the threat of regulation and/or economic instruments.

Wood Pallet Reuse & Recycling

The greatest contribution to packaging diversion in Canada is wood pallet reuse and recycling. In fact, without this new industry, the early success of the National Packaging Protocol (NaPP) — 51 per cent diversion by 1996 (baseline 1998) — would have never been achieved.

With over 95 per cent of pallets reused or recycled per year (2.4-million tonnes) and an annual industry growth rate of 18 per cent, the pallet business is one of Canada's 3Rs success stories. Leading the charge is Ontario's Wood Waste Solutions (WWS) which currently operates four plants in Windsor, London, Markham and Brampton, Ontario. The company handles about 55,000 tonnes of pallets (3 million units) and 25,000 tonnes of wood waste each year.

Prompted by the supposed landfill crisis of the late 1980s, Ontario municipalities began to ban pallets from their landfills and increase tip fees. Tim McGillion, founder and president of WWS, recognized an opportunity and began to broker pallets and chip wood waste. Today, WWS generates about \$10-million in sales and employs 115 people at its four plants.

Sixty per cent of all incoming pallets are purchased for between one and ten dollars per each and are sold for reuse. Thirty per cent require fixing, refurbishing or complete disassembly and reconstruction. With modern equipment, disassembly and reconstruction of one pallet can take less than a minute and a half!

The remaining ten per cent of pallets (along with other non-pallet wood waste) is processed into wood-chip and marketed as:

particle board, paper, roofing felt, landscaping mulch, fire logs, carbon compost supplement and, most recently, livestock bedding. The principal pallet generators are the retail industry and the automotive, food and beverage, and paper manufacturers.

According to McGillion, ten years ago most of these markets used virgin wood for their applications while today the products contain between 25 and 75 per cent recycled content.

Today large manufacturers want *all* their packaging to be reusable and returnable, which is where WWS is now focusing its effort.

Under contract with a number of large car manufacturers in southern Ontario, WWS manages all reusable packaging from their auto parts suppliers. WWS collects, fixes, sorts and returns containers, sleeves, crates and other reusable packaging to the parts industry.

"With this new system of packaging management, companies can save hundreds of thousands of dollars by reducing landfill and recycling costs, labour and storage space requirements," says McGillion.

The import of pallets from the U.S. for Canadian dollars and the resale for U.S. dollars has also become a very profitable business — so much so that Canadian industries may soon find reusable/refurbished pallets hard to come by. For example, WWS imports about half a million pallets from the U.S. annually, with about 30 per cent of sales coming from south of the boarder. Gordon Hughes, executive director of the Canadian Wood Pallet and Container Association predicts that with increased demand Canadian pallet producers will soon see an increase in demand for new product. — C.M.



In less than 30 seconds, one pallet can be completely dismantled.



Even collection receptacles are experiencing increased post-consumer packaging overflow.

The provinces are starting to realize that they must implement their own packaging reduction and stewardship initiatives. Some initiatives are progressive and effective (e.g., British Columbia and Nova Scotia) while others such as Ontario lag with overall diversion rates below 30 per cent. The outcome is a patchwork of vastly different programs and regulations that lack administrative consistency and create an un-level playing field between jurisdictions.

In Europe, packaging waste reduction protocols with diversion targets of 75 per cent or more are not unusual. Canada's contentment with a 50 per

cent diversion goal is a sad comment on its environmental commitment, especially since for post-consumer packaging waste that goal has certainly not been achieved. ♻️

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