

GETTING OUT OF THE WASTE MANAGEMENT BUSINESS

or

FROM HOW TO DISPOSE OF GARBAGE - TO HOW NOT TO

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MAKING WASTE

In his 1960 book "The Waste Makers" Vance Packard wrote about the city of the future. "Cornucopia city " would be a place dominated by the "philosophy of waste". Its residents induced to consume more and more, day by day, lest the economic machines of their society "turn and devour them".

Oblivious to his and other warnings we have in many ways become that future vision. Neither has growing public concern about environmental quality done anything to slow the pace at which we have developed and refined our skills at transforming this planet's once abundant natural resources into contaminated effluent, discharges, emissions and waste of every description.

When Vance Packard wrote about the "short sweet life of home products" he did so before the advent of disposable diapers, razors, camera's and a host of household appliances that can never be repaired as cheaply as they can be replaced. Planned obsolescence, fad and fashion continue to serve "cornucopia city" well and have now been joined by consumer packaging which is growing so quickly that it consistently surpasses our consumption of products packaged.

In fact, notwithstanding the advent of recycling programs, the trends of the last two decades are projected to continue, with the largest increases in municipal waste predicted for packaging materials.

In Canada there are approximately 35 million metric tonnes of municipal garbage generated annually. That's about 2000 tonnes every half hour. As impressive as these statistics may be, they represent only a fraction of the waste actually generated by our society.

This is so because municipal garbage includes only solid refuse from the residential, commercial and non-hazardous industrial waste streams. When we account for discharges of waste in the form of air and water pollution, hazardous and liquid industrial wastes - the quantities become truly mind-boggling.

A recent report of the U.S. Conservation Foundation estimates that 50,000 lbs. of waste per capita is generated annually for each of 240 million Americans.

While similar calculations are not available for Canada, it is unlikely that our per capita waste generation would be any more modest for at least two reasons. First, Canada has the most energy intensive economy in the world. That's an awful lot of carbon, sulphur, nitrous oxide and radioactive waste. Second, much the waste that comprises the Conservation Foundation's estimate is associated with primary resource exploitation - effluent from pulp mills, mine tailings and slag from smelting operations. We do a lot of that in Canada.

While municipal garbage represents only a small fraction of the total waste we actually generate it is however, the most visible, and the problems associated with finding some way to make it "disappear" are threatening to throw a monkey wrench into the works of our waste making machinery.

The immediate problem for many Canadian municipalities, of course, concerns the considerable difficulties associated with siting disposal facilities: landfill sites and incinerator plants. Neither type of facility does very much to improve the amenities of a community, and we have learned a great deal about the character and extent of the environmental and public health impacts, and escalating costs associated with waste disposal - the news isn't good.

However, a far more serious problem confronts us, and that concerns the impacts of our waste generating habits upon the resource base that is, at an ever increasing rate, being converted into the stuff of everyday consumption. We are approaching, so a consensus of scientific opinion advises, the very ecological limits of our planet.

The fundamental erosion of agricultural, forestry and energy resources and the decline of our atmospheric, land and water quality, are now matters beyond dispute. If there is a common denominator among these processes of environmental degradation, it must be our failure to recognize in the wastes we generate, the resources that are fundamental to the continued well-being of our society and indeed our planet.

The significance of the inter-relatedness of the ecological problems confronting us can not be overstated. For example, Environment Canada has documented an alarming decline in the subsoil structure of Canadian farmland, consistently in the order of 40% and as high as 50%. The decline is directly related to a growing dependence upon chemical fertilizers, yet the very organic material so needed to sustain the organic substructure of our agricultural lands is a waste management headache for our cities and a major cause of the environmental impacts associated with landfilling municipal wastes.

A similar erosion of Canadian forest resources has been documented as our annual harvest of wood has increased by over 50% since the 1950s in the face of clear evidence that we are over-harvesting our forests. Shortages of marketable timber are becoming a common phenomenon and we are putting at risk the sustainability of Canada's most important resource industry. It's easy to see from the growth of paper wastes where Canadian forests are going.

The last illustration concerns energy and the dire implications of ignoring the ecological imperatives associated with extravagant and inefficient energy use. An International Conference on Global Warming, convened in Toronto during June 1988, produced a conference statement representing a consensus of the views of 300 "world experts, leaders in science, law and the environment". That statement begins by comparing the risks presented by global warming with those posed by nuclear war and warns that if we are to avert an unprecedented ecological crisis, we must, among other things, fundamentally re-orient energy policies in favour of conservation and efficiency.

One important dimension of our inefficient use of energy concerns the use or misuse of energy resources to produce disposable products. To illustrate, a comparison between a container that is reused 5 times and one that is discarded is telling. The former uses 80% less energy, causes 57% less air pollution and decreases water pollution by over 90%.

It is clear that the imperative to reduce waste extends considerably beyond the problems, both environmental and political, that are associated with waste disposal. Happily, attacking our waste management problems with sound and environmentally conscious policies will have considerable and beneficial effects upon other pressing environmental problems.

Moreover, several waste reduction initiatives will be cost effective and relatively easy to accomplish - composting of organic wastes and recycling certain papers fall into this category. We know enough now about the impacts of landfilling or incineration to make this type of initiative likely.

However, it is not easy to be as sanguine about the prospects of achieving other needed waste reduction objectives. Far more difficult, for largely political reasons, will be doing something about the ever growing mass of packaging wastes and disposable products.

While the benefits of waste reduction are patent, they are unfortunately broadly distributed. On the other hand, the negative impacts of packaging and product regulation will be borne by a few economically and politically powerful organizations who can be expected to vigorously press their interests. As this paper will illustrate, the means are at hand to accomplish a very substantial

reduction of the waste generated in our society. The rate of our progress toward that objective will be determined predominantly by the strength of commitment, and political will, to get there.

FROM HOW TO DISPOSE OF WASTE, TO HOW NOT TO:

If we are to fundamentally re-define the waste management agenda from how to dispose of waste, to how not to, it may be useful to examine the assumptions that underlie our present approach to waste management. In this regard, there are three principles that may be regarded as defining the extent and character of traditional municipal waste management activity. Each is entirely outmoded if we are going to make waste reduction our first priority.

Obsolete Principle No. 1: Waste management is essentially a local responsibility

Traditionally, the management of municipal solid waste (MSW) was defined almost exclusively in terms of disposal. Provincial governments have assumed responsibility for developing disposal regulations, such as they are, and have mandated approval processes for licensing disposal facilities. In virtually all other respects the responsibility for managing solid wastes was left entirely to municipal or private initiative.

Waste management was regarded simply as a matter of finding sites for disposal facilities and providing for garbage collection. Those tasks fit well within areas of municipal competence: land use planning, and providing municipal services. Perceived in this way, the delegation of collection and disposal tasks to municipalities made sense.

Now that our most important waste management objective must be reduction, the present distribution of legislative authority is far less satisfactory. In many ways municipalities find themselves in the invidious position of having primary responsibility for apprehending a problem they have only limited statutory authority to address.

Obsolete Principle No. 2: we will collectively assume responsibility for disposing of all MSW without qualification or restriction as to source, quantity or character.

Stated in this manner, a patent contradiction is apparent between the assumptions that still determine current approaches to waste management on the one hand, and an emerging policy that considers disposal to be the waste management approach of last resort, on the other.

The first priorities of devising a waste management strategy must be to minimize environmental impact and conserve natural resources. To respect those priorities, municipalities must begin by rejecting the notion that they are obligated to provide disposal for wastes unless every reasonable effort has been made to reduce, re-use and recycle.

It is also significant that important analogues to this approach are being adopted in virtually all spheres of environmental regulation. For example, current air and water pollution regulatory regimes are being overhauled in many jurisdictions. The underlying objective of these reforms is to minimize environmental impact.

In the area of air pollution regulation this approach is expressed as LAER - Lowest Achievable Emission Rates. In the area of water pollution control, as BATEA - Best Available Technology, Economically Achievable. The same notional construct may be helpful in the area of waste management where it could be described as LADR - lowest achievable disposal rates, or as HAR - highest achievable reduction.

Obsolete Principle No. 3: All individuals and corporations are free to produce materials and products without having any regard to their ultimate fate.

It is not uncommon in our society to impose constraints upon the production of goods and materials in order to promote product safety or consumer objectives. With the exception of soft drink and dairy container regulation however, no limits have been imposed upon the production of goods and materials for consumer use in order to reduce the costs and environmental impact associated with disposal. We have been indifferent as a society when faced with a choice between two products, both to serve the same purpose, but imposing very different resource or disposal impacts.

The producers of the environmentally costly product have been free to externalize any disproportionately greater costs associated with production and disposal. The basic fallacy of this approach is now finally recognized, and the principle of "polluter pay" is being adopted in several areas of environmental and resource management regulation. In the area of waste management, this means strategies and regulations that will shift responsibility for the ultimate fate of a product or good to its producer.

WHAT MUNICIPALITIES CAN DO

The process of reform must begin with the expression of policy objectives. That policy must, in the area of waste management, give priority to waste reduction and recognize the hierarchy of source reduction, reuse and recycling.

Only after all feasible reduction options have been exhausted should waste disposal be considered an acceptable management option.

In a communique issued by the Federation of Canadian Municipalities (FCM) in November, 1988, the federal government was called upon to take action that would reduce packaging wastes by 50% by the year 2000. The communique advocated the imposition of container fees for packaging that was not reusable or recyclable or, in the alternative, a ban on the sale of such containers.

While these initiatives deserve support and effective advocacy, it is essential that municipalities understand the active role that they must play if reduction objectives are to be realized. Perhaps the best way to underscore the importance of the municipal action is to describe several of the waste reduction initiatives that all municipalities should undertake.

SOURCE SEPARATION

There are several reasons for regarding mandatory source separation by all waste generators as one of the first priorities of a waste reduction plan:

1. Source separation has proven to be the most effective waste management tool for segregating recyclable and compostable materials from the waste stream. Extensive experience with material recovery facilities that process unseparated wastes, have failed to match the performance of source separation regimes. When wastes are not source separated, materials that can be recovered from the waste stream are often too contaminated to be recycled, even when they can be effectively segregated.
2. Source separation engages the entire community in waste reduction activity, and by making the problem visible, promotes awareness of the ultimate fate of the products and materials we use.
3. Source separation also allows for the assessment of variable collection and disposal fees.

Residential source separation programs have been established by several Canadian communities. In Ontario, for example, over 1.5 million households have "blue boxes" for materials that can be recycled. The next step is to make the programs mandatory as several Canadian and U.S. communities have already done, and then to extend them to the commercial and industrial sectors. Again there are strong arguments in favour of such action.

1. Participation rates with respect to voluntary Ontario source separation programs are approximately 65 to 70 percent. Experience with mandatory source separation programs in Ontario and Europe indicates that participation can be substantially increased to 95 percent.
2. A mandatory source separation by-law will communicate an important message about the seriousness of our commitment to waste reduction. More to the point, leaving source separation as a voluntary matter suggests indifference about the fate of materials and goods for which recycling alternatives are now in full operation.
3. Existing garbage by-laws often require waste generators to maintain suitable garbage receptacles, to place them at designated locations for removal, and to do so within time limits determined by collection schedules.
4. By sending this important signal of our commitment to recycling programs, the quality of public participation should improve and cross-contamination of waste streams diminish. As long as we remain content to sanction non-participation, we undermine the notion that every little bit helps and risk an erosion of present levels of public participation.
5. The viability of recycling industries often depends upon a reliable supply of recovered materials. Mandatory source separation may often be the necessary precondition for attracting such industries to a community.

WASTE DISPOSAL RESTRICTIONS

Another important measure that municipalities should adopt is the imposition of waste disposal surcharges or restrictions for products and materials for which alternatives to disposal exist or need to be encouraged.

Several municipalities have already taken this step and now restrict wastes that will be received for disposal. Of course, it is apparent that waste disposal restrictions will accomplish policy objectives only if implemented in conjunction with other

programs designed to insure that appropriate alternatives are available. In the absence of available waste reduction opportunities, disposal restrictions may simply divert wastes for disposal elsewhere or encourage illegal dumping.

One useful approach for addressing this problem involves the gradual introduction of disposal restrictions in step with the establishment of practical alternatives. An important facet of this approach should involve the establishment of differential, collection, tipping or disposal charges for various categories of wastes.

As noted, with limited exceptions, those responsible for producing the bulk of the municipal solid waste stream have been able to be completely indifferent to the environmental and economic costs associated with its management. The result is that environmental costs of producing or using a particular good or material are externalized and the efficiency of economic decisions undermined. Neither does the present arrangement allow producers and users, who are inclined to more environmentally sound practices, to escape the costs of the indifferent approaches of those less ecologically minded.

Waste disposal surcharges will not only create an incentive for generators to reduce wastes, but will as well begin to more equitably and efficiently assign the costs of waste management.

PACKAGING

Packaging represents the largest single component of municipal solid waste and is expected to comprise as much as 50 percent by volume of MSW by the year 2000. So rapid has been the increase in packaging over the past 40 years that the rate of product packaging growth has actually outstripped the rate of product production growth. It also appears that North American packaging habits are extreme even by the standards of other developed nations and several European nations, with higher standards of living than our own, generate substantially less packaging waste than we do.

For these and other reasons, a great deal of attention has focused upon the need to develop initiatives that will reduce packaging waste. As you know, the FCM and others have called for vigorous federal and provincial action. Dozens of packaging related initiatives have been advanced in Canada, Europe and the U.S. that have established bans, restrictions, labelling requirements, deposit and surcharge regulations. But there is, as yet, little evidence that any have had a significant impact upon the volume of packaging waste. It seems clear that a much more concerted effort must be made by the provincial and federal governments if real progress is to be made.

However, there remains considerable scope for municipal action as well. For example, waste disposal restrictions and source separation programs for metal cans, certain plastics and corrugate, will apprehend large amounts of packaging waste.

Nevertheless, there are several other types of packaging waste that will not be abated by these measures, including laminated packaging material, certain plastics and foams. There are also problems associated with the proliferation of packaging in the fast food industry which, among other things, undermines the development of an ethic of waste reduction. Marketing packaging materials that have been recovered from the waste stream presents yet another problem.

restricting the use and sale of packaging

Not content to simply sit it out waiting for state or federal action, several municipalities in the U.S. have advanced their own packaging waste ordinances. While some of the most progressive beverage packaging legislation is Canadian, there does not appear to be any Canadian precedent for packaging waste control (apart from source separation programs) at the municipal level.

The essential thrust of the U.S. initiatives is to impose a ban or restriction upon the use or sale of certain packaging within the municipality. Attention has most often focused upon food packaging and containers with particular emphasis upon polystyrene, CFC foam and non-biodegradable containers.

There has been considerable resistance to these initiatives and several have failed to gain approval. The most far reaching of these local ordinances, enacted by the Suffolk County, N.Y., in March 1988, is not scheduled to be implemented until July 1989. There is therefore little if any reported experience from which to assess the efficacy of this approach to packaging regulation.

Concerns have also been raised about the cost effectiveness of local packaging ordinances that may be difficult to administer and enforce. There has also been an apparent aversion to aggressive regulatory intervention in the "free market" except when justified by demonstrable ecological imperatives, which may explain the relatively greater progress of CFC packaging controls. There is, as well, the underlying "irrationality" of attempting to regulate packaging of products with regional or national distribution by way of local ordinance. Also problematic is the extent of municipal authority to enact such packaging regulation.

labelling

While the scope of municipal opportunities to actually restrict the sale of packaging and other materials may be limited, there are related initiatives that may be very useful and easier to bring about.

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One of the problems that have limited the effectiveness of source separation programs is uncertainty in the mind of consumers about the appropriate waste category for a particular material or product. One obvious way to address this problem would be to label goods and materials with colour codes that would correspond to appropriate waste receptacles. Blue for those materials that are amenable to "blue box" recycling, red for those materials that should be isolated as household hazardous waste, green for designated compostables, grey or perhaps no colour for those products and materials for which no alternative to disposal exists.

Not only would such a labelling system make source separation programs more effective, but should also influence consumer buying habits in favour of products that are reusable or that can be recycled. A study conducted in California of the effects of a symbol for recycled packaging materials, found that consumers expressed a four-to-one preference for goods with the symbol. Shoppers not only indicated a preference for the product bearing the symbol but for the company that used recycled materials as well.

In Palo Alto, Calif., this type of program has been implemented as a supermarket packaging rating program based upon recyclability and reusability. Coloured labels were placed beside price stickers on supermarket shelves in accordance with a classification scheme that identified re-usable packaging, recyclable packaging, and non-recyclable packaging. A similar colour coded scheme has been introduced in Media, Penn., by a local public interest group.

There are several reasons for regarding municipal ordinances as appropriate with respect to labelling requirements, where they might be questionable if the actual sale of a good were to be prohibited or restricted. These include:

1. Colour coding of consumer goods is a necessary element of an effective source-separation program. As those programs vary from municipality to municipality, and in the absence of universal programs and symbols, local ordinances offer the only viable option.
2. Certain products (eg. biodegradable plastics) can contaminate recyclable waste streams and interfere with processes designed to recover those materials. The particular characteristics of local waste recycling

systems, and their tolerance for different types of materials will vary. It is best therefore to accommodate these differences with local regulation designed to suit local conditions.

3. Certain materials and products (eg. household hazardous wastes) not only present disposal problems, but as well may pose a threat to worker health and safety if commingled with source-separated waste. Cross contamination can also seriously undermine the effectiveness of recycling processes.

While such a municipal initiative would be innovative, colour coded labelling requirements would not be onerous, nor require significant effort or expenditure by the retail vendor. In addition, present public interest in, and support for, waste reduction and recycling, should mean that such an initiative will meet with considerable public approval.

PROCUREMENT

The lack of secure markets for recovered "waste" materials has often been identified as an impediment to effective recycling programs. Moreover, source separated recyclables have not infrequently found their way into disposal facilities. Accordingly, the identification and development of markets for these secondary materials must be regarded as an important priority.

Primary responsibility for establishing and maintaining strong and secure markets for recovered materials should rest with the producers and distributors of those materials or the products from which they are made. However, there are two important roles for municipalities to play.

The first is to market materials that are recovered from residential curbside separation programs. The other is to establish comprehensive procurement policies stimulate demand for recovered waste materials. Government procurement of goods and services offers an excellent opportunity to stimulate markets for secondary materials because governments are frequently the largest single purchasers of those goods and services.

Several American jurisdictions at both the state and municipal level have seen fit to formalize procurement policies by enacting them as state law or local ordinance. The approach is one intended to optimize implementation by governments and their various agencies.

The essential elements of such a policy should include the following elements:

When purchasing supplies and materials a municipality should, whenever the price is reasonably competitive, purchase products and materials that contain the highest percentage of recycled, or recyclable material.

"reasonably competitive" should mean:

- a) for paper and paper products, a price within 20 percent of the price of paper or paper products made from virgin paper materials, and;
- b) for all other products, a price within 10 percent of comparable products made from virgin materials.

The municipality may also set price preferences for a specific product at higher rates.

When the municipality requires printing of stationery, documents or other material on recycled paper, the printed material should contain a statement or symbol indicating that it is printed on recycled paper.

The municipality should require the submission of annual reports on the effectiveness of its procurement programs.

A Municipality should also insist that a firm supplying or intending to supply it with goods or services, certify that:

- a) it has conducted a solid waste audit;
- b) it has implemented a solid waste reduction program, and that:
- c) it has adopted and implemented a procurement policy that substantially matches that of the municipality.

CONCLUSION

This list of municipal initiatives is not of course exhaustive and it is vital that waste reduction and other environmental objectives be integrated with virtually all municipal activities from planning to road construction. By doing so, municipal governments will do a great deal to nurture a conserver ethic that should have significant repercussions throughout the community.

The first steps have already been taken and considerable experience is available to guide further waste reduction initiatives. It is important to stress that the limits upon what can be done to reduce waste are essentially political. The practical opportunities to accomplish waste reduction goals are at hand, and many have already been demonstrated. The wisdom, ecological necessity, and economic efficiency of environmental protection and resource conservation are now undisputed. It is time that we all act on that consensus.