League of Women Voters of Minnesota Records

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League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota 55102
April, 1973

TO: Local League Presidents, Legislative Action Chairmen,
and Environmental Quality Chairmen
FROM: Mary Watson, Environmental Quality Chairman
April 9, 1973
RE: H.F. 673 companion S.F. 634 - Requires deposit and refund on all beverage containers sold in state.

League Background:
Our 1973 consensus to support measures to reduce the generation of solid waste through a ban on non-returnable beverage containers.

Legislative Action 1973 Session:
House
H.F. 673 - Chief Author James Ulland; other authors John Boland, Fred Norton, Ken Nelson, Gary Laidig. It is presently in subcommittee. It provides for a deposit and refund on all beverage containers sold in the state. No refunds would be given for throwaways so it would discourage their use.
Senate
S.F. 634 - Chief Author Winston Borden; other authors, Robert Brown, David Schaaf. Passed favorably out of subcommittee; will go to full committee.

Information in support of the bill

Necessity to reduce the volume of solid waste
In 1973, in Minnesota alone, it is estimated 840 million throwaway beverage containers will be consumed--enough to circle the earth at the equator twice.
Necessity to save energy
Returnables would save the energy equivalent of 23 million gallons of oil--enough to heat homes in a city the size of St. Cloud for one year.
Necessity to save natural resources
47% of all cans produced were for non-returnables. Throwaways provide convenience to the consumer and additional profits to manufacturers.
Employment Concerns
The lobbyist for the bottlers and canners claims many jobs would be lost and that sales would decrease.
A study done by Hugh Folk, Center for Advanced Computation at the U. of Illinois, shows that employment would be increased.
The Research Triangle Institute of N. Carolina indicated no significant effect on employment.
Oregon has recently enacted legislation similar to this bill; their experience is that sales of soft drinks has not decreased and that beer sales have increased.
Three distributors located out of the metropolitan area have supported the legislation. Glenn Stevens, Coca Cola Bottling, Bemidji, said "I do agree that the returnable bottle use should be encouraged. This would create more jobs in the rural areas."
United Auto Workers said in testimony, "Continuing the use of throwaways is nothing more than a very expensive subsidy of the container manufacturing industry."
A group called Citizens Against Throwaways has a slogan - 90% Say Yes. This was the result of a poll taken in the Metro area in June 1972. Remind your legislator that this is a strong indication that the consumer wants a return to returnables!

What to do
1. Send official League letters to all your legislators now.
2. Alert League members and other citizens to contact their legislators now. Explain your support for the bills. It is important that we have general acceptance of this concept when it comes to both houses for a vote.

RE: House File 33 and Senate File 15

INFORMATION ON THE PROPOSED DEPOSIT/BAN
LEGISLATION FROM THE GLASS CONTAINER INDUSTRY

The container deposit/ban issue has generated numerous studies and position papers and the wealth of information is often very confusing. However, in Minnesota we do have one official source that can be used as a point of reference in weighing the pros and cons of the issue.

In February of 1973, Governor Wendell Anderson directed the Minnesota Council of Economic Advisors and the Minnesota State Planning Agency to study the impact of a ban or mandatory deposit on non-returnable beverage containers. In January of 1974 after months of intensive study, the 140-page report titled Impacts of Beverage Container Regulation in Minnesota was submitted to the Legislature. One of the findings of that report was that "THE BEVERAGE CONTAINER PROJECT IS NOT A MAJOR AREA OF IMPORTANCE IN ITSELF TO KNOWLEDGEABLE ENVIRONMENTALISTS, BUT IT IS AN EASILY UNDERSTOOD RALLYING POINT FOR THE MOVEMENT." (page 92)

One can readily understand why the issue is not a major area of concern to knowledgeable environmentalists when he examines the other findings of this same impartial report.

Resources

Conservation of mineral resources and energy is a primary motive of proponents of the legislation. Chapter 3 of the Governor's report reduced the resource energy saving to BTU's and found that if Minnesota alone adopted the legislation, the savings in BTU's which would accrue to Minnesota, stated as a percentage of the state's total annual energy use, would be 1/250ths of 1%. (Page 34 and 43)

Litter

A second major issue raised by proponents is reduction of litter. The report points out that "the open bottle law will continue to motivate littering of beer containers from automobiles." Litter reduction is estimated at "perhaps 15% by piece count and 22% by volume." Thus, we see that this legislation would have a limited effect on the litter problem.

Solid Waste

On the issue of solid waste reduction, the report found that the legislation would reduce the total volume of waste slightly, however, this reduction of the metal and glass in the

waste stream would also reduce the incentive to establish an effective overall waste recovery system. In view of the various offsetting considerations, the report states, "our estimates lead us to conclude that reduction in solid waste generation is not a significant factor in the beverage container decision."

Consumer Savings

The fourth and final major point raised in support of this legislation involves alleged consumer savings. The report found that if this legislation is adopted the capital expense in conversion to an all returnable system will result in an increase in the price of beer sold in returnable containers of 12% and a like increase of 8% for soft drinks. (page 67)

Economic Effects on Glass Industry

On pages 114 and 115 the report projects that "between 14% and 26% of Minnesota's glass industry output would be affected." These figures were "obtained by weighing the possibilities of sales losses out of state, possible gains in refillable volume, and the possibility of one of the plants becoming unprofitable and shutting down."

CURRENT FACTS AND FIGURES FROM THE GLASS INDUSTRY

In Minnesota we have two glass container manufacturing plants, namely, the Midland Glass Company, located east of Shakopee and the Brockway Glass Company, located north of Rosemount, Minnesota. The following current data has been supplied by the respective two plants:

	Midland	Brockway	Combined
Number of full time employees as of 12-1-74	395	336	731
Total dollars of 1974 payroll			7,845,927.00
Total Minnesota state income tax withheld in 1974			431,702.00
Minnesota real estate taxes paid in 1974 to Scott and Dakota Counties			225,521.00
Estimated reproduction cost of plant facilities			40,000,000.00

	Midland	Brockway	Combined
Out of entire 1974 production of containers the percentage of non-returnable beer and soft drink containers in numbers of containers was as follows:	82 1/2%	61%	
Tons of post consumer glass purchased: (glass recycled)			
1974			7,477
1973			6,670
1972			5,795
1971			3,932
1970			346

ECONOMIC IMPACT OF BAN/DEPOSIT LEGISLATION

As noted above in the report to the Governor the projected economic impact of a Minnesota ban/deposit law in the two local glass plants would be between 14 and 26%. The Glass Container Manufacturers Institute, Inc. does not dispute this projection, however in and of itself the projection presents an incomplete picture of the true impact. The report assumes that export to other states of non-returnable containers would continue and no attempt was made to evaluate the economic impact of a regional or national ban/deposit law. As pointed out on page 4 of the report "Minnesota is a net exporter of non-returnable beverage containers" and in the case of the two Minnesota glass plants the report states "that only 14 to 25% of the beverage bottles produced in Minnesota are consumed here." (Page 80) From these figures, which are substantially correct,

we see that a major portion of all the glass produced in state is shipped out state. From an economic standpoint a glass plant can ship the containers within approximately a five-hundred mile range. If Minnesota does adopt a ban/deposit law then we can expect some or all of our neighboring states to follow suit which will in turn curtail the export of containers and the economic impact on the two local plants will dramatically accelerate.

The glass industry urges the Legislature to carefully weigh the ecological considerations and the economic implications and we sincerely believe that you will conclude that ban/deposit legislation should be rejected.

THE GLASS CONTAINER MANUFACTURERS
INSTITUTE, INC.
and its member companies
BROCKWAY GLASS COMPANY
MIDLAND GLASS COMPANY

WHAT YOU HAVE ALWAYS WANTED TO KNOW ABOUT

THROWAWAY BEVERAGE CONTAINERS

A. Legislative History and Status

Bills have been introduced in the Minnesota legislature for the past four sessions attempting to regulate throwaway beverage containers (pop and beer cans and bottles). The bills called for a "ban" on throwaways. These bills have always been killed by the special interests (can companies, etc.).

Recently Oregon and Vermont passed laws (similar to those in several Canadian provinces) placing a 5¢ deposit on throwaway pop and beer cans and bottles. Due to the success of these new laws, bills have been introduced in the Minnesota legislature to create a law similar to what Oregon and Vermont have.

The bill in the Senate (referred to as S.F. 634) escaped out of committee by a narrow vote despite the efforts of the special interest groups. It will be voted on in the Senate shortly after the legislature reconvenes on January 15, 1974.

The bill in the House of Representatives (referred to as H.F. 673) still must pass the Environmental Preservation and Natural Resources Committee before it reaches the floor of the House.

If the bills are to pass, it's up to people like you to take the time to learn some important facts about throwaways and write to your legislators at the State capitol in St. Paul.

B. Who Supports Placing a Deposit on Throwaways?

1. Nine out of ten people according to a June, 1972, Metro Poll. These results are similar to a 1970 Metro Poll, National polls, Canadian polls, and polls done by Minnesota legislators.

2. The bills before the Minnesota Legislature (S.F. 634 and H.F. 673) are supported by a number of groups and organizations including:
   1. The League of Women Voters
   2. The State Jaycees
   3. The Izaak Walton League
   4. Council of Community Councils
   5. The Northern Environmental Council
   6. The Minnesota Public Interest Research Group (MPIRG)
   7. The St. Cloud Area Environmental Council
   8. Minnesota Environmental Control Citizens Association (MECCA)
   9. The Minnesota Conservation Federation
   10. The Fargo-Moorhead Ecological Coordinating Committee
   11. Joint Religious Legislative Committee
   12. Minnesota Association of High School Student Councils
   13. Housewives Alert to Pollution in Northfield
   14. Students for Environmental Defense at North Hennepin State Junior College
   15. The Sierra Club
   16. The United Auto Workers
   17. The Greater Metropolitan Federation
   18. Save Lake Superior Association

C. Magnitude of the Problem

1. In 1973 Minnesotans will consume over 800 million throwaway pop and beer containers. If placed end to end they would circle the earth twice at the equator with some left over--or make 100 lines from Iowa to the Canadian border.

2. The U.S. will consume 45 billion throwaways in 1973 or enough to make a line three million miles long--a line long enough to stretch to the moon 10 times.

D. Energy Savings

1. Returnables use less energy than throwaways. In the March 1972 edition of Environment magazine, Dr. Bruce M. Hannon of the Center for Advanced Computation at the University of Illinois published the results of a study which he did. His findings indicated that throwaway bottles use 4.4 times more energy than returnable bottles and 12 oz. beer and pop cans use 2.9 times more energy than 12 oz. returnable bottles.

2. Use of a 100% returnable system would save the energy equivalent of 23 million gallons of oil in Minnesota each year--or enough fuel to heat the homes of a town the size of St. Cloud for an entire year.

E. Litter

1. Litter is both unsightly and costly. A March 29, 1973 news release by the Minnesota Highway Department stated that:

> Highway de-littering costs are at a record high. Cleaning up after litter bugs on Minnesota highways in 1972 cost

road users $580,563.00--a new high.
Frank W. Kuhfeld of the Minnesota Highway Department indicated that "9,431 truckloads of litter were picked up. This litter would cover a mile of two lane highway to a height of 6 feet--that's a lot of carelessly thrown trash."

2. The October 4, 1973 report of the Oregon Environmental Council entitled Oregon's "Bottle Bill"--One Year Later found that the litter caused by throwaway pop and beer cans and bottles has been reduced by 90% since the Oregon law went into effect on October 1, 1972. In addition the volume of all litter was reduced 23%. Hopefully, we could achieve similar results in Minnesota.

F. Consumer Savings
In a study done for the Minnesota Pollution Control Agency, economist Dr. Hugh Folk predicted that Minnesota consumers would save about $18 million per year as a result of the bill as returnables generally cost less than throwaways.

G. Solid Waste
A ban or deposit on throwaway beverage containers would reduce the number of beverage units entering Minnesota landfills from over 800 million to 90 million. This would be the equivalent of 12,258 truck loads of cans and bottles (15 cubic yards each).
These trucks if placed end to end would stretch approximately 51 miles or about from Minneapolis to St. Cloud.

Source: The Realities of Recycling, published by the Minnesota Pollution Control Agency (1972).

H. Natural Resource Depletion
1. In 1971, 5.6 million tons of steel were consumed in the manufacture of steel cans, while steel for the manufacture of all home appliances for the same year was approximately 6.1 million tons.

2. In 1968, approximately 10% of the world's tin production was used in the manufacture of cans in this country. Known global reserves at the current rate will last about 17 years.

3. In 1968, 2.75 times more aluminum was used in the manufacture of cans and other packaging than was used in the manufacture of aircraft and parts.

4. The packaging industry consumed 60,000 tons of lead in 1968, most of it was used to solder seams in timplate cans. Known global reserves of lead will last about 17 years.

*5. At the present time the U.S. imports 12% of the steel it consumes. Within 30 years it is estimated that the U.S. will be importing 61% of the steel it consumes.

I. Employment Effects
A study done for the Pollution Control Agency indicated that converting to a returnable system would mean a net increase of 669 jobs in Minnesota, even though these would be a shift from one type of job to another.

J. Recycling
Voluntary recycling has proved to be a total flop. At this time approximately 1% of the beverage containers make it to a recycling center in the Minneapolis-St. Paul area. In addition, recycling wastes energy as noted in the previous section on energy.

K. Effect on Beer Sales
According to the Oregon Liquor Control Commission, beer sales in Oregon were up 2.9% during the first year the Oregon deposit law was in effect--in spite of the prediction by industry of an 8% decrease.

You Can Help:
Write your legislators at the State capitol in St. Paul and urge him/her to vote yes on the deposit bills. Also contact your friends and ask them to contact their legislators.

If you have any questions or if you need additional information contact:
Judith Ball (612) 333-6879 } Citizens Against Throwaways
Sue Mindel (612) 933-1090 }
Pauline Langsdorf (612) 544-1317 – League of Women Voters
Jerry Seck (612) 376-7554 MPIRG

Prepared by The Minnesota Public Interest Research Group (MPIRG) and Citizens Against Throwaways (CAT).

League of Women Voters of the U. S.
1730 M Street, N. W.
Washington, D. C. 20036

July 18, 1973

TESTIMONY BEFORE THE SUBCOMMITTEE ON ENVIRONMENT OF THE SENATE COMMERCE COMMITTEE ON S 1879 - "SOLID WASTE SOURCE REDUCTION AND RECYCLING INCENTIVES ACT OF 1973;" S 1122 - "INTERSTATE RECYCLING EXPANSION ACT OF 1973;" and S 1593 - "RESOURCE RECYCLING AND CONSERVATION ACT OF 1973."

by
Ruth C. Clusen
Chairman, Environmental Quality, League of Women Voters of the United States

Mr. Chairman, members of the committee and staff, I represent the League of Women Voters of the United States, a volunteer citizens' organization of 1350 Leagues with approximately 150,000 members in the 50 states, the District of Columbia, Puerto Rico and the Virgin Islands. We are pleased to have this opportunity to present the views of our members on three bills now being considered by this committee: S 1879, S 1593, and S 1122.

Americans have been described as "the people of plenty." From frontier days to the present, we have possessed unparalleled riches both in natural resources and in productive capability. Our habits of consumption and our attitudes toward material goods have been molded by this abundance. We have always had the luxury of being able to choose convenience and quantity over conservation. We have erected a market of throwaway products because we had ample resources to make more of what we wanted and we had the open space to get rid of what we did not want. As a result, we became not only the first consumer society in history but also the leading wasteland.

We are now facing the consequences of having been the people of plenty. We are finding that our supplies are not unlimited -- that we are rapidly depleting our natural resources and destroying our environment. We are also finding that our open space is not unlimited -- that we are in the uncomfortable, unsightly, and unhealthy situation of living amidst our own waste.

Two years ago, the League of Women Voters recognized that solid waste was becoming a pollutant comparable in magnitude to air and water pollution. Because we recognized the urgency to take action on this problem, League members undertook an extensive study of solid waste management and resource recovery. More than 1,000 local Leagues participated in this study by examining first hand in their own communities the many aspects of solid waste management and then studying and discussing problems and possibilities of resource recovery. The responses we received from local Leagues expressing members' views on public policy alternatives were remarkably uniform regardless of differences among Leagues in their geographic location or size of community. It is on the basis of their findings that I would like to comment on solid waste legislation today.

The Federal Role in Solid Waste Management

The League believes that the role of the federal government should be expanded, although the major responsibility for solid waste management should remain with

state and local governments. We think that solid waste in general, not hazardous wastes alone, is a problem of national scope and therefore must be the concern of every level of government.

We do not expect the federal government to solve all our solid waste problems, but we do expect it to take a leading role in establishing policies and programs to increase the demand for recyclables. We also want the federal government to encourage recycling of post-industrial and post-consumer wastes and to encourage reduction in generation of solid wastes. The goals of national recycling policies should be to forestall the depletion of nonrenewable resources, to reduce the volume of wastes and to recover part of the costs of present waste disposal.

There is no single key for opening up the market to recyclables. Instead, there are a variety of means -- as suggested in S 1879, S 1593 and S 1122 -- for dealing with different aspects of the problem.

Transportation Rates

One way to increase demand for recyclables is to make them more competitive by equalizing transportation rates between secondary and virgin materials. We support the provision in all three bills requiring the examination of all rates charged for recycled and recyclable materials, the repeal of discriminatory rates, and their replacement with non-discriminatory ones.

We question, however, whether the Interstate Commerce Commission and the Federal Maritime Commission are the appropriate agencies to undertake this task. Given the position the ICC has taken for so long on the transportation requirements of virgin and secondary materials, can we really rely on it to take an objective look at the present rate structure? We doubt it. Of course, any biases the ICC may have in favor of virgin materials could be overcome in part by the provision that a carrier's rates shall be presumed unreasonable and discriminatory if rates for recycled materials are equal to or higher than rates for like transportation of like quantity of competing virgin materials. Another check on possible bias could be to divide the functions of study and regulation between two agencies. For example, the Department of Transportation could make the initial studies of present rates and determine new ones. The ICC could then issue regulations on the basis of these findings.

Government Procurement

Another means by which the market for recyclables can be affected is through federal procurement policies. We support those provisions in S 1879, S 1122 and S 1593 which would revise specifications for goods purchased by the federal government. We particularly approve of the wording in S 1593 and S 1122 which makes it the policy of the Congress that all channels of federal procurement be utilized to expand the commercial movement of recyclables and to eliminate unnecessary depletion of natural resources. We also agree with the exemption in S 1879 stating that the procurement requirements shall not apply if items meeting such requirements are not available at a reasonable price. Our purpose should not be simply to force up costs but to help guarantee a market if prices can be made reasonably competitive.

Concerning this provision, we would question whether the Environmental Protection Agency should be charged with setting procurement specifications. EPA cannot

undertake so many functions, do them all adequately, and remain the detached enforcing agency it is supposed to be. Why not give the GSA or the Bureau of Standards the primary responsibility for setting specifications with EPA enforcing the regulations? We agree, however, with S 1122 and S 1593 that there should be a time limit for issuing regulations. Perhaps there should be a differentiated timetable for issuing regulations for different categories of items.

We support changes in federal procurement policy because we feel that the federal government can perform a central role in influencing the market, first by setting an example; and second, by establishing standards for what constitutes reasonable performance and reasonable price in given procurement items. In other words, the federal government can increase the demand for recyclables by setting the boundaries of what is acceptable. Finally, as a by-product of its policy, the federal government can encourage the development of flexible and innovative specifications.

Product Regulation

Section 403 of S 1879 sets up standards to regulate the manufacture and distribution of certain products in commerce in order to protect health or the environment against unreasonable burdens and risks associated with the disposal of such products. The intent of this section seems to be to regulate any products which impose an unreasonable burden on health or the environment. The bill defines unreasonable as the existence of an alternative course of action which imposes significantly less burden or risk, is of comparable benefit to society and available at reasonable cost. This definition implies to us that S 1879 aims at regulating a wide range of products, not just hazardous wastes. Moreover, it intends to regulate them on the basis of the sound philosophy that given two policy alternatives, the less risky one is preferable. We approve of this orientation.

If, however, the range of this proposal (Sec. 403 of 1879) is too great to win acceptance, we would support the more specific language of Sec. 402(a) of S 1593 which requires the Administrator, within a given time, to promulgate standards for products, containers, and packages to prevent their disposal becoming a burden on commerce or a risk to health. Our members put plastics highest on their list of the kinds of materials that should be reduced at source; paper, second; glass and bottles, third; and other packaging, fourth. Thus, we think they indicate clearly their desire for an end to the proliferation of packaging/container materials which are difficult to dispose of, potentially hazardous, and unnecessarily consume virgin materials.

Both S 1879 and S 1593 would authorize the Secretary of the Treasury to refuse entry into the United States of any product which does not conform with the standards in these bills. Our members favor the application of domestic health, safety and environmental protection regulations to imports. But they also believe that these measures should not be used as a pretext for restricting the flow of trade.

Taxation Policy

The League finds the sections dealing with the national disposal cost system in S 1879 and tax equalization for recylced materials in S 1593 the most problematic. We agree with the former in principle but feel that the specifics are troublesome. The latter we find objectionable in principle, although we think it has merits in its application.

The purpose of the disposal charge in S 1879, as we understand it, is to expand the market for recyclables and to reduce the volume of wastes by internalizing the cost of disposal and thereby influencing consumer choice. While we feel that this approach should be given serious consideration, -- especially Section 503 dealing with rebates to producers using recovered materials --, we have several reservations about it.

We question the rationale for tying disposal charges to weight. Might this requirement not result in the manufacture of lighter but more difficult to dispose products?

We realize that Section 501(2) was intended to take care of particularly odious products but why make this distinction? Would it not be more sensible and administratively more feasible to relate the disposal charge directly to the cost of disposal by taking into account the cost of resource depletion, the durability of the product, the ease of disposing of it and the degree of hazard during the disposal process? We feel that these are the important factors, not weight, in assigning disposal costs.

We think the provision setting up the Environmental Trust Fund should be more precisely formulated. There should be a definite statement of what the funds may be used for and a provision requiring public participation in deciding how the funds will be used. Furthermore, we question the wisdom of using the revenue sharing formula in the State and Local Fiscal Assistance Act of 1972 as a model for the allocation of payments to state and local governments. This formula has been criticized for favoring suburban areas at the expense of the inner city -- in the area of solid waste management this kind of allocation would be a disaster.

If the national disposal cost system were enacted, we feel that some mechanism should be established for periodically reviewing its effectiveness as a means of reduction at source. Perhaps the Commission on Environmental Charges and Disclosure -- which we support -- should specifically be assigned the task of evaluating the operation and effect of disposal cost systems.

We also have reservations about the sections in S 1593 dealing with tax equalization. League members favor both reducing exemptions for extractive industries and increasing exemptions for secondary materials industries. We are aware that granting tax benefits to secondary materials industries instead of simply eliminating existing benefits for extractive industries is tantamount to creating new vested interests and a subsidy perhaps in perpetuity. But our goal, once again, is to expand the market and increase the attractiveness of recycled materials. It is political realism, therefore, which counsels us to seek inducements for the increased utilization of recycled materials while we simultaneously support reducing exemptions for virgin materials.

General Provisions

The League supports the strong provisions of Title VII in S 1879. States should certainly be permitted to adopt and enforce regulations relating to the reduction of solid waste volume which are more stringent than federal regulations. We favored this procedure in air and water quality legislation, and we favor it here.

We support the citizen action provisions which rightly recognize the importance of injunctive relief in environmental matters. The concerned citizen is the best guarantee that government agencies will carry out the law.

We hope to work with you in the future as we have in the past, for effective environmental legislation.

LEAGUE OF WOMEN VOTERS OF MINNESOTA

555 WABASHA, ST. PAUL, MINNESOTA 55102

August 7, 1973

Mrs. Lois Jeffrey
Environmental Quality Department
League of Women Voters Education Fund
1730 M Street, N.W.
Washington, D.C. 20036

Dear Mrs. Jeffrey:

We would like to include in the report to the Environmental Protection Agency information on a recently enacted bill on regional resource recovery facilities. The Minnesota Pollution Control Agency is authorized to make grants to any region, municipality or institution for studies of or construction of resource recovery facilities and the development of programs to encourage solid waste materials conservation. Public education and encouragement of market demands for reusable or recyclable material are also included for grants. The funding will come from a user fee for solid waste deposited at a sanitary landfill. The MPCA is also authorized to review new packaging and to prohibit the sale of packaging which would be a "solid waste disposal problem". The prohibition is effective only until the end of next legislative session. We lobbied strongly in support of this bill.

Minnesota also reached a state consensus to support measures to discourage the use of the non-returnable beverage container. The legislation introduced was similar to Oregon's, requiring a deposit on all beverage containers. This bill met with strong opposition from the container industry and did not get to the floor; it will be up for consideration again in 1974. We worked with a coalition group--Citizens Against Throwaways--and will continue to support this legislation.

Sincerely yours,

Mary Watson
State Environmental Quality Chairman
League of Women Voters of Minnesota

MW:jm
cc: Mary Ann McCoy, State President
Liz Ebbott, Vice President, Program/Action
Helene Borg, Action

TELEPHONE 224-5445

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota 55102
October 1973

TIME FOR ACTION

To: LWV of New Brighton
Roseville
St. Anthony
Shoreview
Arden Hills
Owatonna
Minneapolis
Cloquet
Crystal-New Hope
Brooklyn Center
Bloomington
St. Paul
Falcon Heights
Wells
Alexandria
Silver Bay
Chaska
Westonka
Winona
St. Louis Park
St. Cloud Area
Albert Lea
Cass Lake
No. Dakota County
Duluth

From: Mary Watson, Chairman
Environmental Quality
Re: Beverage Deposit Legislation - H.F. 673
October 12, 1973

We are expecting a committee vote on House File # 673 sometime in November. We are asking those Leagues who have representatives on the Environmental Preservation Committee to please contact those representatives and urge a yes vote on this bill.

Background:

The beverage container deposit bill (H.F. 673) did not reach the floor. The bill passed out of committee by only one vote last spring. Two of the legislators who voted for the bill are no longer on the committee. This makes it urgent that we get support for the bill which will be revoted on in committee (it passed out of committee after the deadline for which bills could be placed on General Orders last spring.)

Beverage containers are no longer an insignificant component of solid waste; they have jumped from 3.5% to 7% and are expected to grow to 15% in a few years. If you wish further information refer to the fact sheet sent in October 1972.

Your representative does serve on this committee. Please contact him now and urge that he support this bill.

MEMO

TO: Mary Watson

FROM: Mary Ann McCoy

SUBJECT Letter from Gerald Meyer, Pres., Grain Belt Breweries (attached)

DATE 1-24-74

LEAGUE OF WOMEN VOTERS OF MINNESOTA
555 WABASHA
ST. PAUL, MINNESOTA 55102
PHONE: 224-5445

What kind of a reply should be sent - I feel we need to respond to his statistics - how do you feel?

cc: Liz Ebbott, Helene Borg, office

The wonderful water of Diamond Wells

GRAIN BELT BREWERIES INC.
BOX 599 GRAIN BELT PARK, MINNEAPOLIS, MINN. 55440 – 612-335-2171

GERALD N. MEYER
PRESIDENT

January 18, 1974

Ms. Mary Ann McCoy, President
League of Women Voters of Minnesota
555 Wabasha
St. Paul, Minnesota 55102

Dear Ms. McCoy:

We thank you for your letter of January 11 expressing your feelings with respect to the throwaway container issue. I might add that your letter is certainly not a surprise to us as we note your organization, through your Mary Watson, was a contributor to a letter to the Editor of our local newspapers which criticized Grain Belt on this issue.

We at Grain Belt share and appreciate all the concerns about the environment, the energy crisis and how this relates to the whole area of food and beverage packaging. However marketing our product in nonreturnable containers at this time is simply a competitive necessity. Our competitors, in particular the national brewers, have led the way in marketing throwaway cans and bottles across the country for some time and for Grain Belt to stay in business we too must provide a product demanded by consumers; we must offer a full line of packages as all our competitors do.

I think you should be aware, however, that in Minnesota over 70% of Grain Belt's business is in returnable containers. This is a substantial figure and I am certain far exceeds the amount of returnable business which our competitors do in this area. The point I am making is, this significant amount of business in returnables indicates that Grain Belt has promoted its product in returnables more so than its competition and certainly, in our opinion, we did not warrant being singled out from the rest of the Industry for public criticism as was done in recent editions of the local newspapers.

In conclusion, I appreciate receiving your letter and want you to know that Grain Belt understands your concerns about the environment and conservation, and we are doing whatever we practically can in this area and still attempting to survive and stay in business in our competitive industry.

Yours sincerely,

Gerald N. Meyer
President

BEEN A LONG TIME A-BREWING

GNM:bl

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota 55102

T I M E F O R A C T I O N

TO: Local League Presidents (2 copies)
Local League Action Chairmen (1 copy)

FROM: Mary Watson, Environmental Quality Chairman

RE: S.F. 634, authors Borden, Brown and Schaaf

January 3, 1974

Senate File 634, calling for a deposit on throwaway beverage containers in Minnesota, is expected to be voted on by the Senate during the week of January 15.

ABOUT THE BILL: This is not a bill to ban the can, but to place a minimum deposit on beverage containers presently being thrown away as litter or landfill. Consumers could return them to the store for credit. Manufacture and sale of beverage containers would still be permitted. This bill is similar to legislation now in effect in Oregon.

WHAT TO DO: Please write or call your SENATOR prior to January 15 and encourage him to vote in favor of the bill.

FACTS: The fact sheet you received in December should be revised with the following energy use figures:

"In the March 1972, edition of Environment magazine, Dr. Bruce Hannon of the University of Illinois published findings indicating that throwaway bottles use 4.4 times more energy than returnable bottles, and 12 oz. beer and pop cans use 2.9 times more energy than returnables."

Use of a 100% returnable system would save the energy equivalent to 23 million gallons of oil in Minnesota each year - or enough fuel to heat the homes of St. Cloud for an entire year.

Natural Resource Depletion: We can no longer afford to deplete our stores of iron, tin, aluminum and lead in the manufacture of throwaway containers.

Solid Waste: Industry has long used the argument that throwaways make up a small percentage of our solid waste. While that was true at one time, they currently constitute 7%, and the EPA predicts 15% between 1980-85.

At the bottom of this sheet we have circled how your Senator stands on the bill, according to our latest information. We hope that will be helpful in deciding how you approach him. Remember to send your congressional district coordinator a carbon of your letter or an action card, as well as to the state League office.

Your Senator is currently

in favor

opposed

undecided

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota 55102
November 1973
PM-T

Memo to Local Leagues
From State Environmental Quality Committee
Re: Pending Legislation: Beverage Container Deposit
November 23,1973 New Law: Resource Recovery

HF 673 SF 634 Fact Sheet-Beverage Container Deposit

What the bill does

Requires that all beverage containers have a minimum deposit; all dealers must accept from the consumer any empty beverage containers of the brand sold by the dealer and must pay the refund to the consumer. In turn, the distributor or bottler shall accept the empty containers from the dealer and pay the dealer the refund.

It does not ban the can or the non-returnable; it merely makes the consumer pay a deposit on something they previously discarded. The use of the throwaway is thus discouraged.

Magnitude of the Solid Waste Factor

Presently, throwaways constitute 7% of solid waste and, according to the Environmental Protection Agency, it will increase to 15% between 1980-85.

Minnesota will consume over 800 million throwaways in 1973.

Natural Resource Depletion

Oil-Use of only returnables in Minnesota would save 23 million gallons of oil--enough to heat 11,000 homes for a year (about the size of St. Cloud).

Tin- Known global reserves at current usage rate will last about 17 years.

Lead- Known global reserves at current usage rate will last about 17 years.

Steel- U. S. presently imports 12% of the steel it consumes; in 30 years it is estimated U. S. will be importing 61% of its steel.

Why Not Recycle?

Most beverage cans contain four metals and there is no cheap and efficient way to separate the metals for re-use.

* Recycling bottles requires large amounts of energy.
Throwaway bottles (without recycling) require 468 BTU's in manufacture.
Throwaway bottles (with recycling) require 6,451 BTU's.

Cost to the consumer
The purchase price of soft drinks in throwawy glass is 30% more than returnables.

Oregon's Experience

In a report by Don Waggoner, President of Oregon's Environmental Council, it is shown that in the year since their similar bill took effect:
Use of returnable beer bottles has jumped from 50% to 95%.
Use of beer cans has dropped from 35-40% down to 5%.
Soft drink throwaways estimated drop from 25% down to 5%.
Beer sales have increased 2.9%; industry had predicted decrease of 8%.

Employment Factor

A study for the Pollution Control Agency showed conversion to returnables would result in an increase of 669 jobs in Minnesota.

Two container manufacturers did close in Oregon, but both companies had just retooled to manufacture non-returnables.

* Bottles, Cans, Energy by Bruce M. Hannon Environment Magazine March 1972

Information on Beverage Container Deposit legislation HF 673 SF 634

The bill is on general orders in the Senate and will be up for action very early in January '74. In the House it must go through the Environmental Preservation and Natural Resources committee. There is time to build citizens support as well as legislative support; use fact sheet for newspaper articles, Letters to the Editor, as well as your bulletin. The facts will speak for themselves.

Resource Recovery Law

This bill passed the legislature and was signed into law in May of 1973. This law gives the Minnesota Pollution Control Agency regulatory authority over all new packaging in the State of Minnesota. It does not permit the Minnesota Pollution Control Agency to regulate any type of packaging being sold in Minnesota prior to May 24, 1973. Thus the present throwaway pop and beer containers are "grandfathered in".

This law also provides for grants-in-aid to regions, municipalities or institutions for:

1.) The development of feasibility studies for resource recovery systems of facilities:

2.) The construction of resource recovery facility or implementation of a resource recovery system; and

3.) The development of programs to encourage solid materials conservation and the reduction of environmental impact from solid waste, including but not limited to, public education and encouragement of market demand for reusable or recyclable materials.

High priority is to be given to applications for projects and programs designed to service more than one county or designed to service areas of the state where natural geologic conditions make sanitary landfulls undersirable.

The law sets a 15 cent per cubic yard fee for landfill and incinerator operators but exempts companies that dispose of their wastes on their own property and landfill operators that use waste heat for the production of steam or electricity. The money collected will provide $1.35 million for the program of grants.

This fee is the section that has raised the most objections; this is a user fee and League has always supported this concept.

January 11, 1974

Mr. Gerald Myer
President, Grain Belt Breweries, Inc.
1215 NE Marshall
Minneapolis, Minnesota 55413

Dear Mr. Myer:

It was with great dismay that I read the announcement that Grain Belt is now selling their Premium beer in cans.

It seems irresponsible indeed to adopt this type of container now when energy is in very short supply; according to a study by Bruce Hannon, Center for Advanced Computation at the University of Illinois, 12 ounce beer cans use 2.9% more energy than a 12 ounce returnable bottle. Why should our natural resources be depleted for a luxury type of convenience?

Oregon's experience with a mandatory beverage container deposit showed a drop of 30-35% in use of beer cans but beer sales have increased 2.9%. This should indicate that the public <u>will</u> buy returnable containers.

With everyone making sacrifices to save energy, corporations, too, should look to their practices.

Sincerely,

Mary Ann McCoy
President
League of Women Voters of Minnesota

MM/jm

INDUSTRY'S FAVORITE ARGUMENTS

1. Litter is a people problem and should be solved by education and more litter bags and other receptacles.

   answer:
   a.) the educational efforts of Keep America Beautiful (funded by all types of packaging manufacturers) have not solved the problem. This is evidenced by continually rising litter volumes and collection costs. (See FACT SHEET)

   b.) Studies in Oregon show that litter in that state from beverage containers has dropped 80% since their deposit law went into effect, Oct. 1, 1972, and all litter has dropped about 12-17%.

2. People will shop elsewhere and the local grocers will lose business.

   a.) If the people of the area are in favor of "ban-the-can" why would they shop elsewhere to buy beer and soda?

   b.) if the gas shortage continues or worsens, people will not drive long distances to buy beverages in cans.

3. Restrictions on Throwaways penalize merchants who depend on suppliers who deal only in throwaways.

   a.) All major brands of beer and soft drinks (except Brimful) are available in <u>both</u> throwaways and returnables.

4. Ban-the-Can is discriminatory. Why not pick on ketchup bottles, pickle jars, etc?

   a.) Beverage cans and bottles are nearly <u>half</u> of all the cans and bottles produced in the U.S.

   b.) How many bottles of ketchup do <u>you</u> drink in a day?

   c.) We have an alternative system of delivery for beer and soft drinks that works - the returnable system. We don't have an alternative for ketchup, pickles, etc.

5. The Public deserves freedom of choice.
   a.) Why can we not buy beer in smaller units of returnables than cases or kegs? Where is the choice for someone who wants only six or eight returnable beer bottles at a time?

6. Ban the can will cost jobs.

   a.) The only jobs which will be lost will be <u>if</u> the state enacts legislation, and the entire job loss then will be in the container manufacturing industry.

   b.) More jobs will be created at the local level to handle the returns at the grocers and other retailers, and also distributors will have to hire more truck drivers and warehouse personnell. There should be <u>more</u> jobs.

7. Ban the can will cost tax revenue.

   a.) Not very likely. If people <u>do</u> stop drinking beer, chances are they will drink some other alcoholic beverage. The liquor tax is much higher on these beverages, so the result would be <u>higher</u> tax revenue.

8. The Resource and Energy Savings will be small and go into a national pool.

   a.) The savings are not especially small (see *What Can You Do with 2.15 BTU's?) and will probably go into a national pool. But so do the savings we realize by turning down our thermostats and driving slower.

9. Why not do this on the State and National Level?

   a.) Industry fights this legislation on every level. Someone has to start and implement this legislation somewhere. Why not now?

   b.) National legislation is being heard, but hopes are not high for it being passed during this session. One of the problems is that many areas of the country have no returnable system left - everything is sold in throwaways. Minnesota presently has about a 50-50 system. The ideal time to enact the legislation is now, before more throwaways find their way into the market and while we still have the alternative returnable system.

LEAGUE OF WOMEN VOTERS OF MINNESOTA

555 WABASHA, ST. PAUL, MINNESOTA 55102

February 21, 1974

The Honorable Willard M. Munger
House Chambers
State Capitol
St. Paul, Minnesota 55155

Dear Mr. Munger:

The League of Women Voters of Minnesota gave strong support to the Regional Resource Recovery bill as an enlightened and necessary solution to the solid waste problem. We favored the user fee as a fair and appropriate method of financing the program. Since indications of inequities have emerged, we approve the amendment to have the MPCA explore ways to impose an equitable user fee.

Regardless of the method of financing, resource recovery must become a reality; financing must not become the stumbling block.

Sincerely,

Mary Watson, Chairman
Environmental Quality
League of Women Voters of Minnesota

MW:jm

TELEPHONE 224-5445

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, Minnesota, 55102 - December 1974

T I M E F O R A C T I O N

To: Local Leagues Presidents (please send on to your EQ chairman)

From: Mary Watson, State EQ Chairman

Re: Beverage container deposit

December 9, 1974

Background: In 1973 the state League reached agreement to support measures to reduce the generation of solid waste by discouraging the use of nonreturnable beverage containers.

Explanation: Efforts to pass a ban on nonreturnable beverage containers at the local level have not been successful, but several municipal councils have indicated their approval to action at the state level. As an additional tool in our lobbying efforts in the state Legislature, we would like to show the support from municipal councils. We are asking you to seek the passage of the following resolution at the December or January meeting of your municipal council: RESOLUTION TO ENCOURAGE THE MINNESOTA LEGISLATURE TO ESTABLISH A STATEWIDE POLICY REGARDING NONRETURNABLE BEVERAGE CONTAINERS.
Whereas nonreturnable beer and soft drink containers contribute to the rising cost of waste disposal, and whereas such containers are highly consumptive of energy resources and steel and aluminum, therefore, be it resolved that the Council of _____ encourage the Minnesota Legislature to adopt appropriate legislation to establish a statewide policy regarding nonreturnable bottles and cans. (This is only a sample of the kind of resolution you might introduce; change it to fit your local needs.)

What to do: If your municipal council has an advisory environmental committee, the council will probably recommend that the resolution be sent there first. Call the chairperson of the environmental committee and have this resolution placed on the agenda. Attend the meeting, bringing copies of the resolution for each member; when you have committee approval of the resolution, take it to the council. If your community does not have an environmental committee, call your city manager or the mayor directly and ask that your resolution be placed on the agenda. Every member of the council should be contacted to explain the merits of the resolution before the council meeting. Letters to the editor of the local press should appear before the meeting. Strength in numbers at the meeting is important! Good luck!

Facts to help you:

Nonreturnable bottles require 4.4 times the amount of energy of returnables
Nonreturnable cans require 2.9 times the amount of energy of returnables*
(With containers re-used 15 times)
* Dr. Bruce Hannon, Center for Advanced Computation, University of Illinois, Environment Magazine, March 1972.

Savings to the consumer - annually +
$15,000,000 - 25,000,000. Beverages in throwaways cost more.

(over)

Savings in solid waste generation - annually +
$500,000 - 860,000 saved in litter pick-up.
Oregon experienced an 80% reduction.

Savings in natural resources - annually +
21,000 tons of steel
2,500 tons of aluminum
31,000 tons of glass
Savings of these resources are worth $9.6 million

Savings of energy - annually +
Equivalent of 16,500,000 gallons gas and diesel fuel.

Employment effects +
250 job dislocations
369-715 new jobs created.

+ Above figures from State Planning Agency report Impacts of Beverage Container Legislative in Minnesota.

See below -

- tear off -

Return to state office by February 1, 1975

The LWV of _____ has introduced the resolution encouraging a statewide policy on nonreturnable bottles and cans; the results were _____

_____

The LWV of _____ has not introduced the above resolution because ___

_____

Rough draft of Time for Action

Time for Action
Re: Beverage container deposit
All local leagues

Background: Our 1973 state consensus to support measures to reduce the generation of solid waste through measures todiscourage the use of non-returnable beverage containers

Explanation: Efforts to pass a ban on non-returnable beverage containers at the local level have not been successful but local councils have indicated their approval of action at the state level. As an additional tool in our lobbying efforts we would like to quote the support from local councils. We are asking you to introduce the following resolution at the December or January meeting of your Council:

RESOLUTION TO ENCOURAGE THE MINNESOTA LEGISLATURE TO ESTABLISH
A STATE WIDE POLICY REGARDING NON RETURNABLE BEVERAGE CONTAINERS

Whereas non returnable beer and soft drink containers contribute to the rising cost of waste disposal and whereas such containers are highly consumptive of energy resources and steel and aluminum therefore, be it resolved that the Council of_____ encourage the Minnesota legislature to adopt appropriate legislation to establish a stete wide policy regarding non returnable bottles and cans.

(This is only a sample of the kind of resolution you might introduce; change it as necessary to fit your local needs).

What to do: If your Council has an advisory environmental committee, the Council will probably recommend that the resolution be sent there first. Call the chairperson of the environmental committee and have this resolution placed on the agenda. Attend the meeting, bringing copies of the resolution for each member. When you have committee approval of the resolution, take it to the Council. If your community does not have an environmental committee, call your City Manager or the Mayor directly and ask that your resolution be placed on the agenda. Every member of the Council should be contacted to explain the merits of the resolution before the Council meeting. Letters to the Editor of the local press should appear before the meeting. Strength in numbers at the meeting is most important! Good luck!

FACTS TO HELP YOU

Non returnable bottles use 4.4x the amount of energy of returnables bottle
" " cans " 2.9x
Based on Hannon's study(re-used 15 times)

Savings to the consumer (based on all retunable system)
$15,000,000 -$25,000,000 annually

Savings in solid waste generation
$500,000 to $860,000 saved annually in litter pick-up
Oregon experienced an 80% reduction

Employment effects
388 job dislocations
687-1055 new jobs created

Natural Resource Savings
21,000 tons of steel
2,500 tons of aluminum
31,000 tons of glass
Savings of $9.600,000

based on
*Minn. State Planning Agency report

[1974]

SOLID *WASTE*– IT *WON'T* GO *AWAY* UNLESS...

A SAMPLING OF WHAT CITIZEN LEADERS CAN DO

Office of Public Affairs
Environmental Protection Agency
Solid Waste Management Study
68-01-0902

Pub. No. 513 Handling Charge 25¢

Order from:
League of Women Voters of the United States
1730 M Street, N.W., Washington, D. C. 20036

League of Women Voters Education Fund

The material in this publication has been adapted and updated from the League of Women Voters Education Fund's report to the Office of Public Affairs in the Environmental Protection Agency (July 1973—in partial fulfillment of a solid waste management study contract). Though most examples presented are the work of Leagues, they have widespread applicability to the work other groups can do to improve solid waste management.

April 1974

Tackling the problem

Solid waste management is among the Number One problems in our country today, and it's literally getting bigger all the time. Though the League of Women Voters has not been alone in recognizing the seriousness of solid waste problems, League leaders have made notable contributions to local and statewide citizen efforts, following —or in some cases as part of—a nationwide League study. They have worked at two levels: on the one hand, seeking solutions to problems that are all but on the doorstep; at the same time, focusing community attention on developing an understanding of the full dimension of solid waste problems and giving citizens valuable "coping" experience for the larger and less easily resolved situations.

Since the management of solid waste concerns all of us, or soon will, it is worth looking briefly at the immediate, high-visibility problems that have been the chief targets of many state and local Leagues: dumps, landfills, and collection efforts. The examples that follow offer a closer look at how Leagues worked and what they did.

Closing dumps, upgrading landfills, sponsoring collection efforts

Because dumps, landfills and collection efforts are often seen and thought about, many Leagues have used them as a starting point to rally citizen support for tackling solid waste management problems. However, results in attempting to close dumps, upgrade landfills, and sponsor collection efforts have been mixed, and even when initially successful are sometimes shortlived.

☐ The work of the Metawan, N.J. League halted the operations of a local dump that was polluting a nearby river.

☐ In the Marion area of West Virginia, "constant complaints to the council from League members and citizens brought the closing of a burning dump and the opening of a sanitary landfill."

☐ A newspaper article written by a League member in Dover, Mass. was the catalyst that got selectmen there to close the dump. Because of public reaction to the article, the body moved to halt open burning and took immediate steps to open a sanitary landfill.

☐ In West Essex, N.J. League members moved quickly when they learned that the local landfill violated air and water pollution standards. Besides writing letters of protest, they brought evidence of violations to the attention of community groups through a film entitled "Sharkey's Farm." Not long after, the dump was closed.

☐ The Stow, Ohio League brought about closure of the city dump with complaints to the county health department, only to learn soon after that the dump gates had been unlocked and the site unofficially reopened for business.

Getting little cooperation from city officials, the League keeps an eye on the dump and continues to report violations to the county health department.

☐ In the Lewisburg area of Pennsylvania, the League reported that after getting 14 municipalities to cooperate in creating a joint landfill (quite a feat in itself), the landfill's longevity was threatened because the local paper industry and outside haulers were filling the site faster than expected.

While volunteer collection, like closing dumps and upgrading landfills, is only a temporary solution to solid waste problems, Leagues view salvage activity as a good way to stimulate public interest in waste recovery.

☐ The LWV of Hunterdon Co., N.J. attracted enthusiastic community support for salvage activity through their Christmas tree drive designed to replace the traditional "burning of the greens." In one season, over 900 trees were collected and fed into a chopper and the resulting mulch retrieved by participants for garden soil conditioning.

☐ In Gloucester, Va. League members organized the removal of 500 junked cars in an effort to clean up city streets and dramatize salvage activities.

☐ Connecticut Leagues sold "bundlars," kits to make it easy for householders to prepare newspapers for separate collection. They consist of attractive containers for newspaper storage, recyclable paper twine, and twine cutter.

☐ Leagues in Cedar Rapids and Marion, Iowa worked with the AAUW, Garden Club, the Citizens Environmental Council, Junior League, and the Citizens League for Environmental Action Now (C.L.E.A.N.) to establish a waste collection operation for both communities.

☐ In Manitowoc, Wisconsin, League members were instrumental in organizing a coalition of civic groups interested in recycling. Known as P.I.E., People for an Improved Environment, the organization planned a volunteer collection and resale center with the hope that this work would prod local and county officials into more effective solid waste management.

☐ In North Branford, Connecticut and Evanston, Illinois, the city governments took over former League collection centers, hopefully a first step toward accepting broader municipal responsibility for recycling.

☐ The LWV of Westchester Co., N.Y. reported that a collection center in Briarcliff Manor, successfully run by volunteers and later taken over by the local department of public works, handled one-fourth of the town's total solid waste tonnage at a profit. Citizen leaders participating in these projects learned not only about **problems** but also about **problem solving**. Others may profit from a look at the tactics they used, which can be adapted to strategies for the future.

Developing strategies for the future

Building leadership groups

Working together in coalition means stronger leadership, more support, and less duplication of effort. Most coalitions interested in cooperative activity on environmental issues include state and/or local Leagues; conservation groups such as the Audubon Society, Wildlife Federation, Izaak Walton League, and Sierra Club; civic organizations such as Business and Professional Women, Junior League, AAUW, and National Council of Jewish Women; and often Girl Scouts, churches, school ecology groups, and garden clubs. In some cities, planners, elected officials, members of the chamber of commerce and the junior chamber are also active in coalitions. But, as a rule, the problem of solid waste management evokes limited group participation. It seems to lack the glamour that attracts supporters to other environmental causes.

It should be added that seldom, if ever, are inner city minorities or the poor involved. In trying to analyze why inner city groups are not part of coalitions working on solid waste management, speculation has to substitute for facts. It may well be that organizations representing minorities and the city poor often feel they must concentrate their energies on the struggle for better housing, jobs, and education. Leaders may see the importance of staving off the decline in environmental quality, but most inner city residents are likely to have more immediate concerns. Some are probably suspicious of all ecology activity, seeing it as a subterfuge for keeping poor people and minorities out of the suburbs. Conversely, some environment-conscious citizens based in suburbs have little interest in making cities more liveable. Since most environmental groups have a predominantly white, middle-class membership, hostility arising from racial and socio-economic differences with inner city organizations may also inhibit cooperation. Without a doubt, citizen groups need to concentrate more on reaching out to involve all community residents in efforts to improve solid waste management.

Ways to get together

Take advantage of existing environmental coalitions. Most coalitions that work on solid waste are umbrella organizations for activities on a wide range of environmental issues, among them solid waste management.

☐ The New York State LWV reported that successful group cooperation in promoting the passage of the state environmental quality bond issue (part of which is earmarked for resource recovery) encouraged coalition members to work together at the local level.

☐ In Amherst, N.Y., groups belonging to the State Environmental Bond Coalition pressured state and local officials to resolve a sewage disposal problem posed by

planned construction of a state university and a new community of homes. Organizations such as the League, AAUW, Conservation Council, Housewives to End Pollution, and the Sierra Club found joint action effective in Amherst and hoped to continue working together on a variety of issues, including solid waste.

☐ The Texas Environmental Coalition, to which the state League belongs, supports state legislation to – among other things – "(a) encourage the reclamation and reuse of resources from solid waste; (b) foster development of markets for reclaimed materials; and (c) provide economic incentives making reclaimed materials attractive."

☐ The Columbia Environmental Coalition in Columbia, South Carolina, with a membership of 23 civic organizations and a League member as president, held a seminar on local landfill problems and promoted refuse separation and recycling efforts. Next: improved state solid waste management legislation. The group concluded that, while recycling is a popular idea in the community, voluntary individual efforts have little impact on total volume of solid waste.

Study and discuss with other groups. Conferences and study sessions bring community group leaders together and set the stage for close cooperation on worthwhile solid waste projects.

☐ As a result of a League-sponsored meeting on garbage disposal in Roselle, N.J., such civic groups as the Girl Scouts and a Catholic school's ecology club joined with the League to form the Roselle Environmental Group (REGRO). REGRO persuaded the local public works department to donate a temporary site for a glass and metal collection center organized and staffed by volunteers, hoping that successful operation would convince city and county officials of the need for a government-funded recycling center.

☐ In Rhode Island the state League worked with other environmental organizations, the Providence Chamber of Commerce, and the state Federation of Women's Clubs on a study sponsored by the Conservation Foundation and funded by a grant from EPA. The participants organized a statewide conference and published a position paper suggesting that Rhode Island's methods of handling refuse and its goals for solid waste planning be changed. The governor's Environmental Task Force found this solid waste group to be a valuable source of citizen input.

Act on community problems. Some community projects, even those begun as stop-gap measures, can lead to more permanent intergroup cooperation. Organizations join together most frequently to oppose open burning dumps, watchdog sanitary landfills, and promote voluntary waste collection centers. But in some cases, groups dig a layer deeper in getting at solid waste problems.

☐ In Minnesota Leagues worked with other environmental groups in the state for a tax on nonreturnable beverage containers.

☐ The ecology group organized by the Salinas, California Chamber of Commerce, which began by monitoring local dumping practices, also published free material designed to promote a local glass and newspaper collection facility and served as a forum for the exchange of information. Group participants included business representatives from local industries, AAUW, the Junior Chamber of Commerce, California Wildlife Federation, the Sierra Club, and the League of Women Voters.

Obstacles faced in getting together

Despite cooperative projects and broadly-based coalition activity in some places, most communities still lack leadership groups specifically focusing on long-range policies for effective solid waste management. Sometimes such coalitions have been slow in taking shape because far-sighted government officials have taken the lead, reducing the immediate need for action groups.

☐ In the Denver metropolitan area the regional council of governments funded a study of solid waste management possibilities over the next 20 years. Called Project REUSE, one aim was to determine the feasibility of regional waste recycling. Local area League and public discussion of options may lead to a cooperative group recycling effort.

But finding effective leadership is not the only obstacle groups face in getting together. More often, lack of interest in solid waste planning is the biggest problem - usually in communities having no immediate disposal crisis.

☐ The Kansas City, Missouri League of Women Voters reported that unless a dump or landfill was planned in a neighborhood, residents showed no interest in refuse questions.

☐ In Huntington, West Virginia, where residents believe they have unlimited acreage for disposal sites the local League found an out-of-sight-out-of-mind attitude to be common, with government priorities for solid waste considerably lower than conditions warranted.

In contrast to the Kansas City and Huntington examples, citizen groups in urban areas where there is little open land detected considerable public apprehension about trash pile-ups.

Part of the problem for environmental coalitions may lie in the very scope of their membership and organizational structures.

☐ In St. Joseph, Missouri the Environmental Council, focusing on solid waste management, experienced an unusual dilemma. The group's constitution did not specify whether participants voted as individuals or as representatives of groups. This flexibility in interpretation severely restricted the council's action.

In parts of the country where voters are deeply concerned about environmental quality, improved solid waste management often seems less important than air pollution standards, water resource planning, and land use policies.

☐ In Montana, League members reflect a general citizen attitude: that their state's solid waste problems are less severe than other threats to the environment. They have been concentrating, therefore, on strip-mining issues.

Consciousness raising

Solid waste suffers from public apathy. Though some citizen coalitions concentrate on its improved management, the base of citizen support remains slender. But effective solid waste management will come only when the support is there—to call for proper planning, to vote for adequate funding, and to demand enforcement of regulations. The public can be the key to workable solutions if citizens understand the problems. If this doesn't happen, out of sight will remain out of mind.

To equip citizens with the knowledge they need to make the best choices on how to manage solid waste, local and state Leagues embarked on an open-ended public education program. Publications, public meetings, radio and TV, newspaper articles, speakers bureaus, special events and community projects were among the channels used.

Print the facts. Leagues depend on publications as valuable tools for educating citizens. In 29 states Leagues have published analyses of local, state and national problems related to solid waste management, reuse, recycling, and reclamation.

☐ The LWV of Metropolitan Columbus, Ohio published information on their county's solid waste management plan in March 1973. Printed for the League by the Mid-Ohio Health Planning Federation, **Overview for Franklin County Residents**—complete with an insert chart—reviewed federal legislation and state acts. It described types of collectors, user costs, and populations served in the 17 municipalities of the county. It explained options for future planning, outlined traditional methods and alternative solutions, and answered questions such as "How can the number of transfer collection points be reduced?" and "What alternatives would reduce labor costs?"

Many Leagues have published practical information for the consumer.

☐ In Williamstown, Mass., the League published a handbook, **Ecology Begins At Home**, which showed how consumers could alter their buying habits to minimize waste and offered tips on reuse and preparation of recyclables for collection centers.

Leagues distribute their materials to libraries, banks, shopping malls, etc.

☐ Suffolk County, N.Y. League members used a shopping mall site to reach some 12,000 voters in 1972 on the state environmental bond issue (later passed) to grant, among other things, $175 million for resource recovery and alternative methods of solid waste management in New York.

Meet the public. Public meetings are another vehicle through which Leagues stimulate citizen thinking. By July 1973 more than 700 local Leagues had used this method to educate citizens on solid waste management.

At such meetings, citizens may hear from economists, spokesmen from regional EPA officies, recycling task force representatives, industry spokesmen, legislators working on resource recovery legislation, and landfill operators. The more viewpoints presented, the better preparation for sound community choices. Some of the meetings give pre-election information.

☐ In 1972 Manchester, Connecticut voters had to decide whether to allocate $1,139,000 for a new landfill or wait for state action. The League cosponsored a public forum to provide as much information as possible so that the public could make an informed decision when the issue came up for referendum. Members of the panel included a sanitary engineer, the mayor, an academician involved in conservation and the local director of public works.

Other Leagues used public meetings as a way to inform the community about new laws governing solid waste management.

☐ In LeMars, Iowa the local League held a public meeting to explain what the new state requirements were for sanitary landfills and what action the county board of supervisors was undertaking to comply with the codes.

Send a message. Local Leagues have years of experience behind them in utilizing the media to focus public attention on important issues. Many Leagues reported that they had heightened public awareness about solid waste issues by working on television programs, presenting TV commercials, and authoring newspaper columns.

☐ In Kodiak, Alaska, the League environmental quality chairman hosted three television interviews about solid waste. On the first show the state sanitarian discussed rat problems related to disposal. The second show was an interview with the city manager about garbage collection. On the final program, the local League EQ chairman reviewed plans for an approaching clean-up-the-city campaign.

☐ The LWV of Central Lane County, Oregon presented a television program on county solid waste problems. A 10-minute slide presentation on general problems was followed by a 20-minute interview segment with the county solid waste manager, a representative of the environmental quality department, and leaders of the local and state volunteer recycling groups.

Many League members have had articles published about solid waste in their local newspapers.

☐ Four articles by League members on local solid waste issues appeared in the Simsbury, Connecticut newspaper.

☐ In Camden County, N.J., the local League's environmental quality chairman wrote a 3-article series for local newspapers describing a solid waste management study done there.

Tell the story. Meeting the community need for speakers about environmental quality is not new to League members. From coast to coast they have made themselves available to speak before groups who are interested in solid waste. Members have talked with many types of groups—from students and civic groups to garden club members, senior citizens, and business representatives. Groups range in size from 5 to 500.

☐ In San Diego, California a League member briefed 300 elementary, junior and senior high school teachers on long-range solid waste goals and alternatives at a recycling conference sponsored by the Coca-Cola Company.

Often, one speaking engagement leads to another.

☐ A League member in Torrington, Connecticut discussed solid waste on a local radio program entitled "Sound Off." She was such an asset to the show that the station invited her back to participate in an interview with a representative of the department of environmental protection.

Dramatize the problems. Dramatizing environmental practices and problems is another method Leagues have used to draw attention to solid waste issues.

☐ In Marion County, West Virginia, when League-produced photo exhibits depicting solid waste problems were shown in banks and shopping malls, citizens began to see the problems created by waste.

☐ In Honolulu, Hawaii, citizens were given the opportunity to learn first hand about the complexities involved in disposing wastes. With the cooperation of the state and local Leagues, several representatives of local industry and government displayed collection and disposal equipment at the Honolulu zoo. Called "Waste Watchers' Weekend," the three-day exhibition included displays that ran the gamut from refuse trucks, large baling equipment, and an incinerator, to a collection of objet d'arts made from recycled tires. The event got substantial media coverage, and the League reports that "a start has been made to help the public understand some of the problems and possibilities for solid waste management."

Get the public involved. Making a real start in public understanding means getting people involved. Many people want to do something about the environment but often they do not know where to begin. Community projects have far-reaching potential for developing citizen understanding. Seeing and doing can change consumer habits and build a reservoir of public support for solid waste management programs.

Many Leagues involve the community through field trips —visits to local dumps or sanitary landfills—to see what actually happens to trash and garbage after leaving the consumer's home.

☐ To give members and the public an idea of the variety of existing waste management practices, the Copper Country, Michigan LWV sponsored a "go-see" tour for the public that included visits to the local sewage treatment system, a sanitary landfill, a city dump still in operation and a lagoon sewage treatment system.

☐ The Louisville-Jefferson County, Kentucky League arranged a field trip to garner support for a local bond issue, which would provide sorely needed pollution control equipment for the local incinerator. Forty persons, accompanied by the mayor, took a tour of the local landfill and the incinerator.

Another way in which Leagues involve the community is through clean-up campaigns which give participants a firsthand experience of the need for better management.

☐ Kodiak, Alaska's "Clean Up Kodiak" weekend, in which children as well as adults participated, was a great success. The League, which sponsored the campaign with the mayor's endorsement, reports that "public interest was stimulated and pressure brought to bear on the city and local sanitarian to take effective measures to correct existing garbage and sanitary landfill problems."

One of the most successful ways of getting citizens to participate in recycling projects is through personalized education campaigns. Often this activity takes League members to citizens' homes to talk with them about the importance of recycling and about participating in programs for collecting recyclable products.

☐ In Springfield Township, Pennsylvania, League efforts resulted in better citizen understanding of solid waste and increased community involvement in an experimental program for collection of glass to be recycled by the city. The League encouraged the township to consider such a program and succeeded in getting a three-month trial project started. Support for the program was sought from civic groups. The League, for its part, launched a massive education effort in an 800-home "pilot" area of the 5200-home township. Each one of 50 volunteers was assigned to contact 10-20 homes in the pilot area to explain the program to householders and give them an information flyer about it. The League reinforced the personalized campaign with posters placed on utility poles and in shopping malls. Participation by those in the pilot area was twice as high as in other areas. The township commissioners considered the experiment such a success that they decided to extend the program for a year. The League planned to expand its intensive house-to-house education program to include all the homes in the township.

Working with public officials

Some local and state governments try to ignore solid waste problems while others provide only Bandaid-size solutions to problems that need surgery-size answers. Leagues use a great many strategies to get laggard officials to recognize the importance of solid waste problems and effective management. Members supply the research and briefings officials need. They serve as advisors, create opportunities for officials to discuss solid waste problems with others, and work to get the technical assistance and funding that local agencies need to handle wastes competently.

Give officials the facts. In many places officials look to the local League as a major resource for solid waste information as they prepare for more efficient management. As governments formulate legislation, make administrative decisions, and evaluate proposals, Leagues have provided the back-up information: solid waste fact sheets, legislative histories, comparative data and the like.

☐ In Anne Arundel County, Md., as the county council and the Office of Planning and Zoning prepared sanitary

landfill legislation, they asked the League for facts on solid waste management in other counties. In response, the League reported on the size of existing and proposed landfills in surrounding counties, comparative population figures, and policies and regulations in connection with sanitary landfills. The League also relayed the concerns of citizens who opposed a sanitary landfill in their neighborhood and who wanted the legislation to require public hearings and provide for recreational use of the finished landfill.

Advise officials in decision-making. League members also counsel government officials, serve on task forces, commissions, advisory councils, etc.

☐ In Walla Walla, Washington, a League member served on a county advisory committee charged with the responsibility of recommending a solid waste management plan to the state's department of ecology. The committee, composed of officials from each municipality in the county as well as representatives of the private collection industry, advocated a regional landfill system encompassing the county.

☐ In Illinois, a League member was appointed as a technical advisor on solid waste management for the Northeastern Illinois Planning Commission.

☐ An Ohio League member who was, according to the **Ohio EPA Newsletter**, "one among many who played an important part in bringing the Ohio EPA into being," resigned her post as League environmental quality chairman to accept a position with the state's environmental protection agency as the first environmental ombudsman there.

Help officials to pass responsive legislation. In the last year or two, federal grant-in-aid legislation has stimulated state legislatures to discuss comprehensive solid waste laws governing disposal and collection. League members have taken an active part in the dialogue, hoping to contribute to better understanding of the complexities involved and to make known citizens' views on proposed legislation. League members have testified before state legislatures for stronger state leadership in solid waste management, for comprehensive state plans, for consolidated authority and for uniform plans for localities collecting and disposing of wastes.

☐ The Vermont League supported a state resource recovery bill to authorize a statewide system for management, collection, transportation and disposition of solid waste and promote, wherever possible, recycling and recovery of solid waste products. The 13 Leagues there thought that there was a great need for state management.

☐ In Florida, Leagues worked for passage of a bill requiring counties and municipalities to develop disposal plans for approval by the Department of Pollution Control.

☐ In states like West Virginia, where nearly half the residents have either no collection system or very inadequate disposal facilities, Leagues supported state measures for a solid waste authority.

Tell officials about community concerns. On the city and county levels, many governments find themselves grappling

with overstuffed landfills, burning dumps, inefficient collection systems and an angry public that feels inconvenienced by governmental inefficiency. League members have not been slow to speak out about citizen concerns. They have

—argued against sanitary landfill applications they think would not be in the best interest of their community;

—defended maintenance of air pollution standards (hoping to override proposals that would contaminate air);

—called on city councils to appoint environmental commissioners to oversee solid waste management;

—met with local public works officials to suggest landfill criteria; and

—recommended city-managed recycling centers.

While many of these actions represent support for temporary solutions, members hope that by them they can help to change attitudes of local officials and thus have a long-range effect.

☐ In Milwaukee, Wisconsin, though a city-sponsored, League-supported recycling program had only modest impact on city solid waste problems, one member there analyzed the broader effect: "Our biggest success was in helping change attitudes of city officials to be more favorable toward the idea of recycling and to demonstrate to local government officials widespread support for some type of recycling program."

Open channels of communication for officials. A communications gap often exists between governments and the private sector in the solid waste field. Few channels are available for solid waste policymakers to exchange ideas with other officials, industry and the public. League members also know that without adequate communication and public support, officials can't solve problems. It is not surprising, then, that Leagues sponsored workshops designed to begin such communication.

☐ A conference in Wilmette, Illinois, brought together over 80 officials—from mayors to city environmental chairmen—to discuss the complexities of solid waste problems, research, methods of disposal and functions of governmental agencies. Representatives of 25 communities from three adjoining counties attended, as did industry representatives. An excellent tool for discussion and cooperation in planning for the future, the conference sparked the rebirth of a regional refuse council.

Getting local leaders together to cooperate on regional methods of solid waste management is not always an easy task, in light of traditional local independence in handling solid waste. However, some Leagues have managed to bring officials together to begin discussing mutual problems and practices.

☐ In June 1972 the Connecticut state League, in cooperation with the West Hartford League, brought city and state planning officials together with industry representatives to explore ways to solve solid waste problems with minimum damage to the environment and maximum savings of tax dollars and scarce landfill space.

Since Connecticut law requires regional plans for solid waste disposal, this workshop was particularly useful in opening up communication among those who had to work together in regional management.

Support officials' efforts to get federal aid. Leagues have actively supported local and state efforts to get federal help in solving their solid waste problems. During the summer of 1972, many Leagues backed their local planning agencies' requests for federal training assistance, recommending local agencies they thought deserved federal help.

☐ In Baltimore, Maryland, the League wrote letters to EPA in support of the city's request for a solid waste recovery system. EPA granted the request with funding of $4 million.

☐ In Evanston, Illinois the League received words of appreciation from the city manager for its support of a grant for a regional solid waste management study which received $59,000 in funding.

Coming up with the answers

Solid waste won't go away. But the headaches it gives communities can go away, with the proper attention. Getting that attention isn't always easy, though.

Many Leagues and citizen groups have found that involving everyone from mayor to next door neighbor in a project is often the best way to focus community concern on solid waste management. Even a project that is stop-gap in character – as simple as taking cans and bottles to a recycling center – is a useful first step in heightening citizen awareness. Getting individuals and civic groups together in a coalition to work on more complicated projects means tougher problems solved and a solid base built for tackling the longer-range and more crucial difficulties in managing solid waste. For example, a tactic used today that gets an open burning dump closed might be helpful later in developing a strategy to pass legislation requiring that sanitary landfills replace all dumps.

League leaders and others who spearhead such efforts have found that besides getting citizens involved, they themselves are developing expertise. Other groups may find the tactics and strategies of Leagues around the country useful as they seek to involve citizens in finding solutions to their communities' solid waste management problems. Though solid waste will always be with us, effective citizen action can be a force in bringing under control many of the problems it presents. ☐

Printed on recycled paper

targets, means and impacts of source reduction

REDUCE

contents

Researched and written by Diana Wahl, staff specialist, Environmental Quality Department
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foreword

Two possible methods have emerged to alleviate the serious depletion of materials and energy caused by the amount of waste we generate. One, recycling, has been discussed in full in the companion volume to this publication, *Recycle? In Search of New Policies for Resource Recovery* (#132). The second is waste reduction or cutting down on the amount of waste created in the first place. Recycling and waste reduction are not mutually exclusive but are complementary goals for solid waste policy.

The controversy surrounding attempts to reduce the solid waste stream—those materials and goods we use and then discard—is well illustrated by two architectural axioms. The late Mies van der Rohe, in describing the spare, clean lines of the International Style he made famous, said that "Less is more." In contradiction to Mies, Robert Venturi, a Philadelphia architect, said, "Less is a bore."

The disparity between two extremes is apparent in the way we view our consumption habits, particularly for disposable goods and packages. Either those items symbolize American affluence and one of the highest standards of living in the world, or else they are a serious symptom of our excessive and to some, indefensible use of scarce resources and energy.

No matter what view one takes, any discussion of reducing wastes and determining the impacts of waste reduction is bound to lean heavily on data collected by researchers in the public and private sectors. The U.S. Environmental Protection Agency has collected much of that data—a great deal of it from other government agencies and from industry. Its data has been attacked as biased or incomplete, but in the almost total absence of data from other and more varied sources this pamphlet relies heavily on EPA's work. The League of Women Voters Education Fund welcomes additional reliable data readers may wish to submit. Until everyone has more information, pro or con, there can be no definitive work on waste reduction—and no satisfactory resolution to the problem.

1. introduction

In 1973, Americans threw onto the discard pile over 2 million tons of major appliances. We scraped over 22 million tons of food into our garbage cans. We used once, then tossed out, nearly 10 million tons of newspaper and almost 3 million tons of paper plates, paper towels and paper napkins. We discarded over 52 million tons of bottles, cans, plastics, paper, and other containers that had no primary use at all: they were packaging for the products we *did* use. All told, almost 95 million of the 144 million tons of municipal wastes discarded that year fell into these categories—packaging, single-use convenience items, or major consumer items designed for quick obsolescence. *(1)*

That's a lot of waste, but the costs of our indulgence in a throw-away society are not confined to the price tags of the products themselves. Collecting and disposing of solid waste will cost the nation almost $45 billion between 1973 and 1982. *(2)* In order to produce the accoutrements of our "disposable" culture, we constantly extract natural resources and then process them with profligate use of energy. Nor does the sum of these outlays reveal the bottom line in our "cost accounting." The damages we wreak on the environment, at every step in this wasteful lifestyle, must also be added in—landscapes scarred, water resources abused, the air we breathe and the water we drink defiled by pollutants. All these mean losses in money and quality of life and in turn require further outlays of money and human energy to restore what we can, where we can.

The proliferation of wastes has other impacts as well: the mayors of the nation's cities report that over half of all cities will run out of disposal sites within the next five years. *(3)* The U.S. Environmental Protection Agency (EPA) reports that potential hazards associated with land disposal of solid waste, including leachate from landfills, may require us to look elsewhere for places to dump our trash. Federal and state air pollution laws mean that many municipal incinerators will have to be upgraded to meet air quality standards; that simply burning wastes can no longer be permitted. And federal laws limiting or prohibiting ocean disposal of wastes will force several

coastal cities to stop using the sea as a dump.

We have come to the point of having so much waste and so few places left to put it that government, citizens, and industry are being forced to reexamine traditional ways of using and wasting materials and energy. One possible solution is well known to most people—**recycling** (see the LWVEF's companion publication, *Recycle?*). But another answer, one fundamentally more conservative because more earth-saving, is to reduce the amount of wastes generated and materials consumed—**source reduction.**

The rationale for reducing waste at its source is that

- we will reduce the solid waste stream;
- we will reduce *raw* materials consumption;
- we will reduce energy consumption;
- we will reduce environmentally damaging resource extraction;
- we will use less land for waste disposal and will begin to eliminate waste disposal methods that damage the air, land and water.

In the eyes of some, benefits such as these make source reduction the *sine qua non* of waste management. Other ramifications of waste reduction, however, are far less objective, far less certain. Opponents—primarily, though not exclusively, from industry and organized labor—cite the economic, employment and consumer impacts of any source reducing measures and warn that the nation's already weakened economy cannot sustain further jolts.

The argument has become increasingly polarized as government activities, particularly those of the Office of Solid Waste Management Programs (OSWMP), begin to support some institutionalized source reduction programs. Controversy mounts over the consequences of implementing source reduction measures and the alternative consequences of not implementing them. Its range and rising intensity make it evident that we must hammer out—through public dialogue, careful research, well-mounted experimentation, responsible leadership from all sectors, and sophisticated controls—a variety of policies by which we can simultaneously conserve resources and energy, protect the environment, *and* maintain a healthy and productive economy.

2. the solid waste program to the present

A child was killed and her parents suffered severe brain damage when carbon monoxide from a nearby smouldering dump migrated into the crawl space of the family's home.

THE PHILADELPHIA ENQUIRER
January 9, 1973

Ten years ago, motivated by increasing knowledge about environmental damage, government policies for solid waste management focused on the need to close open dumps: upgrading open or burning dumps to sanitary landfills would minimize air pollution and aesthetic blight. Landfilling was touted as the solution to waste disposal. Landfill advocates took pictures of houses built on completed landfills, of children and golfers playing on finished sites. Despite the apparent amenity of a landfill, however, local officials faced with the task of locating a disposal site got constant and intensive opposition from area residents. As they met with a defensive turf attitude—"not in my back yard"—solid waste managers had to start looking afresh at the question of how to get rid of solid waste.

This stimulus was augmented by a growing awareness about raw materials shortages, real and potential. The depletion of domestic supplies of many nonrenewable resources, our dependence on foreign sources for those materials, and the need to protect the environment from many damaging mineral extraction processes pointed to the need for resource conservation.

The National Commission on Materials Policy, created by the 1970 Resource Recovery Act, prepared in 1973 a lengthy study of the materials use cycle and gloomily concluded that the nation faces potential shortages of 6 of the 13 basic raw materials upon which it depends for industrial production; by 1985, said the report, we can expect our reliance on imports to spread to 9 of those 13 *(1)*

resource recovery—good but not enough

These data led the commission to recommend that the nation step up activity in recycling—the recovery of waste materials from the post-consumer and industrial waste streams.

Though the secondary materials industry has for many years been recycling wastes for resale to industrial processors, the total recovery is small—only 9.5 million tons (7 percent) of post-consumer wastes and about 35 million tons (18 percent) of industrial scrap. *(2)* The secondary materials industry struggles with chronic problems, from the boom-or-bust nature of the market to the anti-scrap bias that seems to be built into many government policies, especially freight rates. *(3)*

Seeking ways to whittle the mounting waste heaps, EPA has awarded demonstration grants to six local governments for pilot projects, in cooperation with industry, to try out some new ideas about recovering materials and energy from the solid waste stream. Two projects are now in operation, a power plant in St. Louis that uses shredded waste as a supplemental fuel and a materials recovery facility in Franklin, Ohio. An energy recovery plant located in Baltimore is now in the testing stage. Other EPA-funded projects are under construction or are planned in San Diego (energy recovery), Wilmington, Delaware (energy recovery or compost), and Lowell, Massachusetts (incinerator residue recovery). Industries, too, have continued to develop energy and materials recovery systems.

The EPA pilot projects rated very few headlines until the Arab oil embargo in the winter of 1973-74 drove home to most Americans the lessons of resource and energy wastefulness. Interest in new energy sources, among them, solid waste, skyrocketed. A number of cities planned to have energy recovery systems installed. Several states passed laws authorizing the creation of recovery authorities to develop state waste management and resource recovery systems.

The more closely people looked at potential energy savings from various solid waste management programs, the more evident it became that there was yet another way to conserve materials and energy, a way that could be more effective than recycling. If we reduced the amount of products we make and discard, if we used fewer materials and less energy to manufacture the products we do make, if we redesigned products to ensure their longer life, we would conserve tremendous amounts of energy.

The interest shown in solid waste reduction programs by government, citizens, environmentalists and industry is a reflection of changing national priorities and needs. **It is increasingly apparent that the partner goals of environmental protection and resource conservation can be achieved only through policies that reduce that portion of the waste stream that can be reduced, recover its nonreducible portion, then ensure safe disposal of the rest.**

what's involved?

Because of its far-reaching impacts, waste reduction at source has caught the attention of all people involved in solid waste and materials policy. Congress and state legislatures around the country are considering source reduction measures. Several states and a few cities have passed laws attacking specific problems—promoting use of refillable beverage containers, for example. Industry is developing product manufacturing processes that reduce materials and energy use. Consumers are buying products with an eye to their reusability and durability. But the issue of whether source reduction will go beyond preliminary study and moderate public interest will depend in large part on the actions that all of us take. It is clear that there are important choices to be made—about the types of things we consume, the ways we consume, and the way in which we view materials and energy availability.

Do we believe, Malthusian fashion, that we will run out of resources if we continue to consume the way we now do? Do we believe that there will always be a technological "fix" available, so that if we run out of one resource we will be able to find a new material to substitute for it? *(4)* Or are we at the end of our "resource frontier"? If so, does this mean that we can no longer expand and develop but must conserve and make do with that we have? Are we prepared to alter established industrial processes . . . economic structure . . . lifestyles? If we opt to limit growth, who will do it, and how?

3. targets for waste reduction

Somewhere along the line, too many Americans lost the pioneer ethic of 'waste not, want not.' Today, largely because we have forsaken frugality for a carefree abandon born of affluence, the abundance of materials—and of their packaging—is taken for granted, discarded casually, and forgotten as soon as the garbage and trash are removed from the doorstep.

ENERGY IN SOLID WASTE: A CITIZEN GUIDE TO SAVING
Citizens Advisory Committee on Environmental Quality

In 1973, the people of the United States *generated* 144.2 million tons of municipal waste. (Translation: commercial and residential waste—not waste from industry, mining or agriculture.) Of that staggering total, only 9.5 million tons were *recycled. (1)* That means almost 134 million tons were lost to reuse in any form. Table 1 shows categories of municipal wastes, with the amount generated, the amount recycled and the volumes ultimately discarded in each category. Figure 1 sums up the evidence:

□ **Durable goods,** including major appliances and tires, account for over 1 of every 10 tons (almost 14.5 million tons).

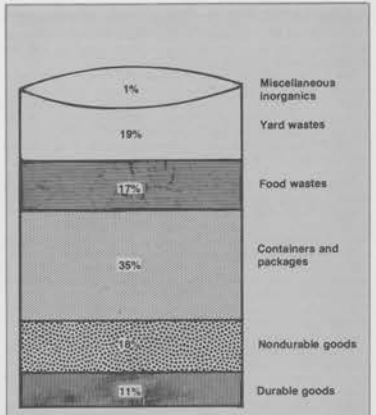
□ **Nondurable goods**—chiefly paper items such as discarded newspapers, office papers, paper plates, paper towels, etc.—make up the next largest segment, almost 2 of every 10 tons.

□ **Containers and packaging**—make up 3½ of every 10 tons in the solid waste stream. (47 million tons).

Since over 60 percent of all wastes are discarded consumer products, (the three categories above) it is these wastes that are the most inviting targets for source reduction measures.

durable goods

Durable goods consist primarily of large items that have outlived their usefulness, at least to their original owner. Large appliances



Source: F. A. Smith, Resource Recovery Division, OSWMP, 1974.

Figure 1: The Makeup of the Solid Waste Stream

(such as furniture, washing machines and television sets) that are damaged, or are too expensive to repair, or have been replaced by newer models end up in the municipal waste stream, even though many could be repaired or contain valuable scrap materials. Only a small percentage of such discards go to second-hand stores for resale.

While the aggregate weight of durables is far lower than that of other categories the bulk of individual items within this product class makes them especially hard to dispose of properly.

Tires are also included in the durables category. EPA estimates that 266 million tires were shipped within the United States in 1971. During that same year, 250 million tires were taken out of use. *(2)* Of these, only about 46 million were retreaded, 7 million recycled by the rubber reclaiming industry, and 2 million used by tire splitters (that is, split and die-cut into products such as gaskets, tail pipe insulators and door mats). The remaining 195 million tires were thrown out or left on abandoned vehicles. *(3)*

Because tires are virtually indestructible, they are especially hard to dispose of properly. If landfilled intact, they use up large amounts of landfill space, and they tend to resurface, to boot. Tire shredding before landfilling alleviates these problems, but because it is costly it is not widely practiced. Nor is incineration the answer; if tires are present in large proportion, they can damage furnace walls and require flue gas controls. *(4)*

Industry and government (particularly the U.S. Bureau of Mines) are working on recovery of materials and energy from discarded tires, but the systems under study (which include energy recovery; road building; reef building; and recovery of carbon black, used in tire manufacturing) appear to be too costly or too limited in their impact.

One possible solution, tire retreading, has been ignored in recent years, largely because of poor retread tire performance and negative consumer attitudes. Many tires are so worn and the tire carcass so weakened by the time they are discarded that retreading has been difficult and dangerous. Another solution, steel-belted radial tires, is discussed on page 18.

nondurable goods

The second major category of post-consumer waste consists of products, many of them paper-based, designed for short-term or single use—newspapers, books, magazines, paper tissues and towels, paper plates and cups. Nondurables constitute a large portion of the waste stream, and they present less complex disposal problems for solid waste managers. Papers can be shredded for landfilling; they can be incinerated. Much of this fraction of the waste stream is organic and can therefore be used as fuel in energy recovery facilities. Most paper goods are recyclable, and high-grade office papers and computer cards bring the highest prices of all paper products in the scrap market.

Nondurables are excellent candidates for source reduction programs because in many instances they have replaced items that were reusable and these reusable substitutes are still available. Disposable paper diapers have replaced cloth diapers; paper cups have replaced more permanent containers.

packaging and containers

The bottles, boxes, cans, cartons, wrappings, and the like—packages and containers in which we transport and sell food and other goods—are, by weight, the largest portion of the waste stream. *(5)* A look at some figures detailing the growth of packaging will explain why.

Table 2 shows that total consumption of materials used in packaging increased by nearly 71 percent between 1958 and 1971, with the highest growth coming from aluminum and plastics, the lightest of the materials. When we look at per capita consumption (which allows us to correct for population growth) the increase is still enormous, almost 44 percent in thirteen years. This prodigious growth rate makes materials for packaging constitute a significant percentage of materials use (see Table 3).

As Table 3 indicates, almost half of all paper production, three-fourths of all glass produced, more than 8 percent of all steel, 14

Product-Source Categories	Gross Discards	Material Recycled Quantity	Material Recycled Percent	Net Waste Disposal Quantity	Net Waste Disposal % Total Waste	Net Waste Disposal % Non-food Product
Durable Goods	14,700	300	2%	14,400	11%	17%
Major Appliances	2,200	100	4	2,100	2	2
Furniture & Furnishings	3,400	0	0	3,400	3	4
Rubber & Plastic	1,900	200	10	1,700	1	2
Miscellaneous Durables	7,100	0	0	7,100	5	8
Nondurable Goods, Exc. Food	27,930	3,770	13	24,160	18	28
Newspapers	10,400	2,450	24	7,950	6	9
Books and Magazines	3,720	330	9	3,390	3	4
Office Paper	6,390	990	15	5,400	4	6
Tissue Paper, incl. towels	2,320	0	0	2,320	2	3
Plaster Rules and Cubs	600	0	0	600	*	1
Other Non-packaging Paper	1,300	0	0	1,300	1	2
Clothing and Footwear	1,300	0	0	1,300	1	2
Other Misc. Nondurables	1,900	0	0	1,900	1	2
Containers and Packaging	52,270	5,930	10	46,940	35	55
Glass Containers	12,400	275	2	12,125	9	14
Beer & soft drink	6100	190	3	5,910	4	7
Wine & liquor	1,970	25	1	1,945	1	2
Food & other	4,330	60	1	4,270	3	5
Steel Cans	5,660	60	1	5,600	4	7
Beer & soft drink	1,550	15	1	1,535	1	2
Food	3,140	35	1	3,105	2	4
Other non-food	960	10	1	950	1	1
Aluminum	820	35	4	785	1	1
Beer & soft drink	440	30	7	410	*	*
Other cans	50	5	10	45	*	*
Aluminum foils	330	0	0	330	*	*
Paper & Paperboard	28,230	4,960	18	23,270	17	27
Corrugated	15,100	3,290	22	11,810	9	14
Other paperboard	6,985	1,045	15	5,940	4	7
Paper packaging	6,235	625	10	5,610	4	7
Plastics	3,060	0	0	3,060	2	4
Plastic containers	510	0	0	510	*	1
Other plastics packaging	2,550	0	0	2,550	2	3
Wood Packaging	1,900	0	0	1,900	1	2
Other Misc. Packaging	180	0	0	180	*	*
Total non-food product waste	94,900	9,400	10%	85,500	63%	100%
Food Waste	22,400	0	0	22,400	17	26
Yard Waste	25,000	0	0	25,000	19	29
Misc. Inorganic Wastes	1,900	0	0	1,900	1	2
Grand Total	144,200	9,400	7%	134,800	100%	156%

*Less than 0.5%.
Source: Frank A. Smith, Resource Recovery Division, Office of Solid Waste Management Programs, U.S. Environmental Protection Agency, November 1974.

Table 1: Post-consumer solid waste generation and recycling: Detailed product-source categories, 1973 (thousands of tons)

Packaging Material	Thousands of tons 1958	Thousands of tons 1971	Percent Change 1958-1971	Per Capita (in pounds) 1958	Per Capita (in pounds) 1971	Percent Change 1958-1971
Paper*	16,552	27,700	+ 67.3	193.0	271.3	+ 40.6
Glass	5,933	11,100	+ 87.1	69.2	108.7	+ 57.1
Steel	6,198	7,255	+ 17.1	72.3	71.1	− 1.7
Aluminum	97	757	+680.4	1.1	7.4	+572.7
Plastic	368	2,900	+688.0	4.3	28.4	+793.0
Wood and Miscellaneous	6,212	10,613	+ 84.2	72.4	103.9	+ 43.5
Total	35,360	60,325	+ 70.6	412.4	590.8	+ 43.3

Source: EPA, OSWMP. Second Report to Congress on Resource Recovery and Source Reduction. 1958 data from: Darnay, A., and W. E. Franklin, *The Role of Packaging in Solid Waste Management*, 1966 to 1976. Public Health Service Publication No. 1855, Washington, U.S. Government Printing Office, 1969. 1971 data from: Bureau of Domestic Commerce, U.S. Department of Commerce, 1971-1972, *Containers and Packaging*. American Paper Institute, *The Statistics of Paper*, Washington, 1972. The American Iron and Steel Institute, *Shipments of Steel Products*, Washington, D.C., 1972.

*Paper figures represent tonnage of paper packaging produced rather than tonnage of paper packaging consumed. Other material categories reflect consumption of packaging material.

Table 2: Consumption of packaging material, 1958-1971.

percent of all aluminum and 29 percent of all plastics were used for packaging and containerization.

These figures become even more revealing when we consider not just the raw resources chewed up and spit out but the energy required to transform these resources into packaging materials. In a study for EPA, Gordian Associates, a consulting firm, says that in 1971 5 percent (1,770 trillion BTUs) of all industrial energy consumed that year went to *produce* the materials that went into all forms of packaging (see Table 4). Still more energy was used to *fabricate* those materials into packages and containers. The impact of packaging both on resources and on the environment begins to strike home when we look at the ingredients of each of the basic packaging materials and the pollutants or residues resulting from production processes:

□ To make 2,000 pounds of containerboard (18 million tons were produced in 1971) takes 3,688 pounds of wood, 261 pounds of lime, 360 pounds of saltcake, and 76 pounds of soda ash—and consumes 41 million BTUs.

□ To make 2,000 pounds of glass takes 2,400 pounds of raw materials, including sand, soda ash and limestone. Manufacture takes 15.2 million BTUs, 14.5 million of which come from fossil fuel sources.

□ To make 2,000 pounds of steel takes 1,970 pounds of iron ore, 791 pounds of coke and 454 pounds of lime, and over 29 million BTUs. And along with the 2,000 pounds of steel we get 780 pounds of problems: 538 pounds of solid wastes and 242 pounds of air pollutants.

Material	Packaging (10^3 tons)	Total Packaging and Nonpackaging (10^3 tons)	Packaging Percentage
Paper	27,700	58,652	47.2
Glass	11,100	14,900	74.5
Steel	7,255	87,038	8.3
Aluminum	757	5,074	14.1
Plastic	2,900	10,000	29.0

Source: EPA. OSWMP. Second Annual Report to Congress on Resource Recovery and Source Reduction. American Paper Institute, *The Statistics of Paper*, Washington, 1972; American Iron and Steel Institute, *Shipments of Steel Products*, Washington, D.C., 1972; Arthur D. Little, *Incentives for Plastic Recycling and Reuse*, Boston, 1972; U.S. Department of Interior, *Minerals Yearbook, Aluminum Chapter Reprint, 1971*, Washington, D.C., 1973; The Aluminum Association, *Aluminum Statistical Review—1971*, New York, 1972.

Table 3: Packaging material consumption in relation to total material consumption, 1971

□ To make 2,000 pounds of aluminum takes 8,776 pounds of bauxite, 1,020 pounds of petroleum coke, 966 pounds of soda ash, 327 pounds of pitch, and 238 pounds of lime. Of the 197 million BTUs needed to make this ton, 169 million come from fossil fuels.

□ And finally, to make 2,000 pounds of plastics requires 72 gallons of refined crude oil, 338 gallons of natural gas liquids and 37.1 million BTUs, almost all from fossil fuel sources. *(5)*

Not quantified, of course, in these data are the environmental impacts of discarding packaging, nor is there an accounting of the energy needed to dispose of those wastes in an acceptable manner. Conversely, none of the potential benefits of packaging have been quantified either.

Packaging seems to have a growth dynamic of its own, independent of the growth in consumption of the product that is packaged. Between 1958 and 1970, for example, per capita packaging consumption to deliver fresh produce increased by nearly 38 percent while per capita consumption of fresh produce declined by more than 11 percent. Table 5 details three instances in which packaging of a major food category grew while per capita consumption of that same kind of food went down.

These data point to a pervasive trend throughout the food delivery system: between 1963 and 1971, U.S. per capita food consumption by weight increased overall by 2.3 percent; food packaging weight per capita increased by over 33 percent. *(7)*

Government data show that in the years 1967-1972 jobs in the food packaging industry went down 5 percent *(8)* while the number of packages used for foods and beverages increased by 32 percent *(9)* and net income in the industry went up 30 percent. *(10)*

A consultant's study for EPA concluded that the cost of all packaging (not just packaging for food and beverages) as a percentage of the cost of a consumer product has doubled since 1958. *(11)* Virtually every consumer product that Research Triangle Institute (RTI) surveyed showed significantly increased packaging costs, costs that are thought to reflect both increased use of packaging materials and new design features that enhance convenience.

why all this packaging?

The growth of packaging with its subsequent impacts on resource and energy use can be attributed to a number of factors, many of them stemming from what the packaging industry sees as requirements that the "modern" package must fulfill. A report by Arthur D. Little, Inc. (ADL) for the Ad Hoc Committee on Packaging (a consortium of packaging materials manufacturers and users) lists a number of requirements that have led to the tremendous growth of packaging: product protection, product containerization, sanitation, communication, dispensing, unitizing, prevention of pilferage. *(12)* This array reflects obvious transportation, distribution and marketing requirements but also includes more subtle marketing and labor considerations:

□ In an effort to hold down labor costs, retailers have welcomed increased self-service shopping. Individually packaged, preweighed goods facilitate the display, selection, and purchase of products, thereby reducing the need for sales clerks.

□ Packaging manufacturers are well aware of the package's roles in marketing. A product with an elaborately-designed or innovative package is far more likely to attract a buyer than is a simply-wrapped product.

□ The multitude of convenience packages, such as those with individually-wrapped portions, has led to an increase in the number of packages on store shelves, a trend which retailers welcome.

Container proliferation has accompanied industrial consolidation. The pattern in the brewing industry is illustrative. Independent beer and carbonated beverage bottlers around the country are being acquired by large national concerns, a trend reflected in the figures on numbers of breweries. U.S. Brewers Association, Inc. data show a drop from 600 in 1940 to about 100 in 1973, while beer consumption has generally remained stable. *(13)*

Industry says that the closing of local breweries has arisen from business' need to achieve economies of scale in their operations—economies that can be attained through unified national advertising campaigns, easier access to capital and lower production costs. The remaining brewers say that the disposable bottle or can is integral to this new pattern, with its large distribution regions: disposables help keep costs down by eliminating long return trips for empties. Critics of disposables ask for hard data, wondering about the economics of long-haul brewery trucks going home completely empty, instead of filled with empty bottles.

convenience packaging—saving or waste?

The proliferation of so-called convenience packaging—individually-wrapped portions, ready-to-eat foods, pop-top cans—arose ostensibly in response to consumer pressures for such packages. A

Packaging Material Produced	Material Consumption, 1971 (thousand tons)	Total Energy per Ton (1000 BTUs)	Fossil Fuel Energy per Ton (1000 BTUs)	Total Energy Consumed (million BTUs)	Air Poll. (lbs. per ton product)	Solid Waste (lbs. per ton product)
Paper	27,700	40,800	n.a.	1,130,000	84	176
Glass	11,100	15,256	14,500	169,342	n.a.	n.a.
Steel	7,255	29,590	29,000	214,675	242	538
Aluminum	757	196,632	169,000	148,850	CO-2900; particulates— 81	789; red mud— 3290
Plastics	2,900	37,088	37,000	107,557	n.a.	n.a.
Total	49,712	306,658		1,770,424		

Source: EPA.

Table 4: Energy consumption and waste generation associated with U.S. production of materials for packaging, 1971.

Product/Package	1958 (in pounds per capital)	1970	Percent Change
Dairy			
Product Consumption	398.0	354.0	−11.1
Package Consumption	10.6	13.3	+25.5
Cereals, Flour and Related Products			
Product Consumption	150.0	140.0	− 6.0
Package Consumption	0.8	0.9	+12.5
Produce			
Product Consumption	90.2	80.0	−11.3
Package Consumption	5.3	7.3	+37.7

Source: EPA: OSWMP Second Report to Congress on Resource Recovery and Source Reduction. Packaging data supplied by Research Triangle Institute under EPA Contract No. 68-01-0791; Product consumption data derived from U.S. Department of Agriculture, *Food, Consumption, Prices, Expenditures*, Washington, D.C., 1972.

Table 5: Product consumption in relation to packaging consumption, 1958-1970

former president of the Glass Container Manufacturers' Institute put it this way: "Consumers . . . want, need and demand the convenience of the nonreturnable container. . . . One result of this has been a marked increase in the per capita use of all types of packaging." *(14)* The ADL study points to changes that encouraged development of new and increased packages. *(15)*

□ **Demography** The post-World War II movement to suburbia has meant the growth of large population centers with increasingly affluent residents whose demand for more products (and hence, more packaging) has increased.

□ **Disposable income** As income levels around the country rise, more money is available for "discretionary purchases and higher quality necessities," items that generally come heavily-packaged and containerized. *(16)* The higher costs of many convenience foods would presumably be absorbed by higher incomes.

□ **Family structure** Increases in the number of women working affect packaging. As women, who have traditionally been the makers of meals and buyers of food, enter the labor market, they have less time available to prepare meals, and food packagers and processors have found a market for more ready-to-eat foods. *(17)*

Industry says consumers prefer convenience foods and packages despite their higher prices. *(18)* One reason for this preference, according to industry, is that there is less product waste with smaller packages. In the matter of package size, however, the large household may prefer large-sized packages, and the household that does prefer small quantities may have no choice except to purchase over-wrapped convenience packages.

Industry cites a second reason that convenience foods and packages are preferred: they diminish generation of solid waste. The food is already prepared and the consumer does not have to dispose of food preparation wastes (such as corn cobs, nut shells, etc.). More packaging, the companies say, means less food spoiled. One industry supplies data to support its claims: in New York City, food packaging is said to eliminate 600 million pounds of potential food wastes because prepared or frozen foods are delivered in "sanitary frozen food packaging." *(19)* As a result, New York City's disposal requirements are cut to only 30 million pounds of such packaging rather than 600 million pounds of food wastes. *(20)*

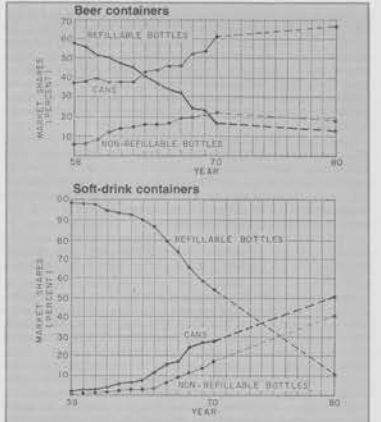
Packaging in itself does not, however, reduce food wastes but simply relocates those wastes to the factory. The former head of New York City's Environmental Protection Administration, Jerome Kretchmer, once remarked at Senate hearings on solid waste, "I will take a thousand banana stalks for every thousand plastic trays on an even up basis, one for one, any day you want to give them." He pointed out that food wastes, be they banana peels or fish heads, decompose in the land, and even add nutrients to the soil, while the plastic trays do not degrade and therefore require another form of disposal. *(21)*

beverage containers

Most discussion of source reduction eventually focuses on one particular segment of the packaging and container field—beverage containers, especially those for carbonated beverages and malt liquors. (Milk and wine bottles have only recently come under scrutiny.) As a matter of fact, interest in source reduction has almost always stemmed from the beverage container issue, because containers are one of the most conspicuous examples of trash, litter, and resource waste. And it is beverage container policy that has evoked the most bitter controversy; controversy that promises to continue as the Congress and state legislatures around the country consider returnable bottle legislation.

While returnables have been in use for years—and, indeed, until the late 1950s were the only containers in which one could purchase beer or soft drinks—their use in recent years has diminished drastically, replaced by one-way cans and bottles. Figure 2 illustrates the dramatic decline in the use of returnables for soft drinks and beer.

The proliferation of disposable containers springs from the same conditions that explain the explosive growth of "convenience" packaging: throwaways facilitate retail store convenience, make disposal easier for the consumer, and minimize bottlers' and retailers' costs by reducing container handling. But there are other, less obvious reasons as well, all of them connected with the consolidation trend in



Source: EPA; Research Triangle Institute

Figure 2: Market Shares by Container Types

the beer and carbonated beverage industries. While these industries, and breweries in particular, have been growing in size and shrinking in number, per capita consumption of beer and soft drink containers has outstripped both population growth and per capita consumption of beverages. To illustrate, between 1959 and 1969, on a per capita basis, consumption of beverages rose 29 percent while beverage container consumption rose 164 percent. In the same period, the average number of fillings per container declined from 3.7 to 1.8. *(22)*

If we break down beverages into two categories—soft drinks and beer—we see that in the soft drink market, returnable bottles have held a continually diminishing role (from 53.7 percent in 1969 to an estimated 34.9 percent in 1978), while, if present trends continue, aluminum cans alone will have increased almost tenfold during that same period, from 1.5 percent in 1969 to 10.5 percent in 1978. *(23)* By 1965 the situation will worsen: beer in returnable bottles, 27 percent of the market in 1969 will have slipped to an estimated 17.6 percent while beer in nonreturnable aluminum cans is expected to increase from 7.1 percent of the market in 1969 to 40 percent in 1985. *(24)*

The sheer volume of beverage containers has not by itself precipitated interest in returnable beverage containers; rather, this interest has come from the great impact of throwaways on the solid waste stream, on litter, and on resource consumption. EPA says that of the estimated 125 million tons of municipal wastes discarded in 1972, about 8.8 million tons (almost 7 percent) consisted of discarded beer and soft drink containers. *(25)* If they went straight into the wastebasket or garbage can, perhaps they would not be so much the target of citizen and government action as they now are. But about one container in four makes an intermediate stop, as litter on the landscape.

A number of studies document the role of different container types in litter. A Research Triangle Institute (RTI) study for EPA concluded that of the 2.2 billion littered containers in 1969, 71.3 percent were beer containers, 25.7 percent were soft drink containers, and 3 percent were liquor bottles. Furthermore, of those containers, 73.1 percent were cans, 17 percent were one-way bottles, and 9.9 percent were returnable bottles. The RTI study goes on to say that beverage containers constitute between 20 and 32 percent of all roadside litter by *item* count, while the Oregon State Highway Department states that beverage containers constitute about 62 percent of all litter by *volume* count. *(26)*

Industry complains about people zeroing in on beer and soft drink containers and suggests instead a focus on milk containers. Environmentalists, however, point to the disproportionate volume of the former in litter; milk containers (and there are 40 billion of them discarded annually) do not show up as litter and are therefore less visible to the public. *(27)*

Noisy and visible as anti-litter campaigns themselves have been, many proponents of waste reduction at its source look beyond litter abatement needs to other benefits from returnables. With continuing energy and raw materials shortages, the resource ramifications are generating most of the interest.

EPA estimates that it took 6.2 million tons of glass, 2 million tons of steel and .6 million tons of aluminum to turn out the 8.8 million tons of beer and soft drink containers used in 1972 (the low figure for aluminum can be attributed to its light weight). *(28)* EPA's data also shows that beverage containers as a whole consumed 45 percent of all glass produced in the U.S., 2 percent of all steel, and 6 percent of all aluminum. *(29)*

The environmental impacts of the five major beverage container types is shown in Table 6.

The conclusions, to be drawn are self-evident: a returnable glass bottle uses less energy (even counting in the energy needed to transport the empties back to the bottler for refilling) than any other container type; it uses less water in its manufacture; it produces less air and water pollution and produces fewer industrial solid wastes.

A later chapter will examine just how significant these savings are.

Environmental impact	10-trip† returnable glass bottle	all steel can	bi-metallic can	one-way glass bottle	one-way aluminum can
Energy (million BTUs)	24*	41	57	72	91
Virgin Raw Materials (lbs.)	1538	2029	1677	7515	578
Water Volume (1000 gals.)	11	38	34	37	16
Waterborne Wastes (manufacturing) (lbs.)	45	349	335	68	249
Atmospheric emissions (manu.) (lbs.)	111	157	234	328	381
Post-consumer solid wastes discarded (cubic feet)	12	4	3	41	3
Industrial Solid Waste (lbs.)	8	71	61	32	29

Source: EPA, OSWMP, Second Report to Congress on Resource Recovery and Source Reduction. Preliminary data prepared by Midwest Research Institute for U.S. Environmental Protection Agency, Office of Solid Waste Management Programs, under Contract No. 68-01-1848.

Notes: —All containers are 12 ounce size.
—The bottles are capped with steel closures.
—Solid bleached sulfate paperboard carriers are included with bottles.
—Plastic ring type carriers are included with cans.

*Includes energy used to return empty bottles to store.
†The ten-trip figure was chosen by the Midwest Research Institute as the most representative number of trips for returnables today. Resource and Environmental Profile Analysis of Nine Beverage Container Alternatives. Final Report. EPA 1974, p. 2

Table 6: Comparison of five different containers for delivering 1,000 gallons of beverage

4. approaches to source reduction

We believe that the nation should not wait for a crisis before changing attitudes on effective utilization of materials. Improving the service performance of materials must be a national goal because the extension of service life of a product stretches the supply of materials, since it reduces the number of units required per year, reduces the growth in the recycling load and thereby the impact on the environment, reduces energy demand, and may reduce needs for raw material imports.

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tools for control

Any mandatory source reduction measure—whether it is directed to an old washing machine or an empty bottle—represents a form of product control, a measure that, according to EPA, is necessitated by "supposed failures of private market decisions to evolve socially optimal product designs including consideration of factors such as product durability, repairability, ease of material recovery or waste disposal costs." *(1)* Not all waste reduction measures come about through government controls; some are the individual decisions of industries—those facing resource shortages, for example. But most of the impetus for waste reduction comes from the potential for or the threat of government action in the form of laws or regulations.

What EPA is suggesting is that some form of intervention in the marketplace may be appropriate, to alter products that do not meet current environmental or other requirements. Examples of existing product controls, though not predicated on solid waste management goals, include federal regulation of pesticides and herbicides, pharmaceuticals and toys.

Assuming, then, that some product controls (defined by EPA as "any public policy to regulate the quantity or consumption characteristics of a product") *(2)* are necessary and desirable, major problems arise. Which products, durable or nondurable, should be subject to source reduction measures? How specific should such measures or regulations be? Who should answer these questions? If applied to a specific product, regulations could be construed as discriminatory because other products equally damaging or resource intensive would remain unregulated. But if controls are applied to a product class, regulation and enforcement could become an administrative nightmare and could dramatically affect major industries.

EPA has tried to eliminate some of the subjectivity surrounding targets for potential waste reduction by establishing criteria to determine the need for regulatory measures. *(3)* These include:

☐ **Materials scarcity** Are the raw materials used in a product's manufacture scarce or high-priced? Are less scarce materials available that could be used instead? If raw materials are indeed rare, some form of product control may be justified.

☐ **Materials and energy intensiveness** Does manufacturing a product consume large quantities of resources? Is it possible to substitute other processes or other materials that are less resource-consumptive?

☐ **Product disposability** Does the composition of a particular item make it hard to dispose of? Does it place a burden on disposal systems or on the environment? If so, are there substitute products or product components that would make disposal easier?

☐ **Product life and reusability** How long-lived is a product? Can it be reused? Are other longer-lived or reusable products available as adequate substitutes? Can the product be redesigned for longer life or reuse?

☐ **Pollution intensiveness** Does manufacture of the product entail disproportionate amounts of pollutants? If so, are there substitute products that generate fewer pollutants or residues?

In each of these instances, product regulation may be appropriate if there are manufacturing or design methods for an alternative product. In some instances, however, product controls may be necessary even if no readily available substitute product exists, e.g. when a product threatens health.

Assuming a need for reducing waste at the source, there are two basic routes for change: product reuse and product redesign. Each requires changes—changes in design, changes in manufacturing, changes in marketing and distribution.

In the first instance, product reuse, an item is simply refilled (in the case of a container) or resold after its initial use. Reuse implies that the item is utilized again in its original configuration; reuse makes reprocessing of the waste product unnecessary. Items that can be considered reusable include refillable beverage containers; shopping bags; cloth towels, napkins and diapers; and refillable pens, lighters and the like.

In product redesign the manufacturer changes the configuration of an item so that it uses less material or energy or to make it more easily repairable, longer lasting, or less susceptible to superficial or style changes. Examples include steel-belted radial tires . . . simplified packaging . . . screwtops, adaptable for home canning, instead of lift tops for glass jars . . . less complicated control panels on appliances . . . development of a lighter-weight returnable bottle.

Once product reuse and/or redesign—even elimination, in rare cases—is determined to be desirable or necessary, how can these changes be brought about? Government has roughly four categories of tools at its command: taxes and charges; deposits; bans; and regulation of the characteristics of a product—or a mix of these. At the volunteer level, change is possible through self-imposed decisions by citizens or by industry and through education programs instigated by government, industry or citizens. All the approaches can be applied to most components of the solid waste stream.

taxes and charges

Levies—whether taxes or charges—based either on product weight and life or on the use of a particular material in manufacturing can be used to subsidize the disposal of a waste item or to pay for pollution abatement. The rationale for levies of this sort (not to be confused with deposits and refunds) is that the environmental cost could and should be made part of the product price. Consumers would presumably choose to buy untaxed substitute products (ones that are more environmentally sound) to avoid the higher price tag on the taxed item. Anticipating this consumer decision, the manufacturer would presumably make other choices—less environmentally damaging ones—too.

The problems surrounding charges of this sort stem from the point at which the charge is levied. The pitfalls of a weight-based tax are nowhere better exemplified than in debate over the penny-a-pound tax. The suggested charge, based on an average waste disposal rate of $20 per ton, or 1¢ per pound, would in theory be levied on producers (and inevitably passed on to consumers) and would pay for expanded waste collection and disposal by the taxing authority. At the same time, however, it would prompt a manufacturer to substitute lighter materials to decrease the tax payment.

It is important to remember that the weight of an item is not an accurate indication of its potential for environmental damage or its resource intensiveness. The replacement of glass bottles, for example, by those made from polyvinyl chlorides (PVCs) might mean a lower weight-based tax on the containers, but the lower charge would do nothing to compensate for or minimize the hazards associated with use of vinyl chloride, a known carcinogen. The penny-a-pound charge might also mean increased use of lighter materials with shorter life-spans which might have an *adverse* impact on source reduction (see page 21). In those instances where taxes would encourage longer product life or increased durability, such charges might increase the initial cost though not the total-life cost of the article.

deposits

Another source reduction tool is the mandatory deposit on certain products to encourage reuse. Under this system, the consumer pays an additional fee at the time of purchase, a fee refunded when the empty or used product is returned for reuse, refill, or repair. It should be noted that a deposit system works *only* when there is a mechanism by which returnable packages or products can be efficiently collected and then accepted by the manufacturer or bottler for reuse.

Beverage containers and retreadable tires are two products suitable for a deposit system. For both, however, establishing the return system can be logistically difficult.

bans

An outright prohibition on the manufacture of certain products or on the use of certain materials in a product is a third way of reducing waste generation or materials use. But experience with government bans for health and safety reasons shows that overwhelming evidence is needed to sustain them, especially if substitutable products are not available (e.g. the government ban of DDT, with subsequent temporary modifications in the summer of 1974 due to pest infestations). Because they have tremendous impact on the industry involved, bans can only be used selectively. To the economist, a ban is appropriate only when the damage from even a small amount of one product plus the cost of regulation outweigh the benefits from the small use plus the administrative cost of implementing the ban.

design regulation

Taxes and bans are reactive measures. Regulation is a different route by which to bring about changes in product and package design. Mandatory design control means that a regulatory authority establishes specifications, in advance of manufacture, that particular products or product classes must meet. These can be aimed at increasing durability, repairability, or reuse; or the goal could be to reduce resource intensiveness or lack of disposability. Although there are few, if any, instances of design regulation based on conservation goals, such regulation could conceivably be applied to large items of waste. Requiring a manufacturer to produce a refrigerator whose doors can be replaced, for example, is a form of design control.

Many people see design control as a desirable way of regulating products because government intervention does not interfere with marketing practices but instead is limited to an action before the product is even made. For many in industry, however, design regula-

tion is a threatening prospect because it places government in a realm that has traditionally belonged to industry alone. The chairman of the board of one of the nation's largest beverage companies has termed such intervention "dictatorial." *(4)* Just as many industries have reacted negatively to regulatory actions by the Federal Trade Commission, the Food and Drug Administration, the Consumer Product Safety Commission and EPA, they can be expected vehemently to oppose federal efforts in solid waste reduction through product redesign.

voluntary measures and education

Many in government and industry say that the most desirable way of reducing waste generation and conserving materials and energy is through voluntary efforts—educating citizens and persuading and encouraging industry to redesign products.

A number of citizen organizations and industries publish hints for consumers and businesses on ways of cutting down wastes and make such publications available to the public. Voluntary efforts rely on widespread cooperation and a high level of citizen interest.

Government efforts to influence industry in terms of packaging and product design have met with some success, but the newness of such programs makes it difficult to evaluate the efficacy of "jawboning." (For further discussion about industry's voluntary efforts, see Chapter 6.)

While trends to redesign containers are a response to skyrocketing costs of raw materials and energy, some industries are also becoming somewhat sensitive to the growing interest in reduction of waste at source. The prospect of government regulation makes voluntary guidelines, drawn up by government and industry working together, appear more palatable to many manufacturers. The one difficulty arising from voluntary guidelines is that the industry that chooses to observe such guidelines may be placed at a disadvantage in terms of product prices and labor costs, disadvantages that might spell the failure of voluntary measures since no industry will knowingly undertake programs detrimental to its business.

Criticism leveled at voluntary efforts stems primarily from the belief of many economists that voluntary measures can have only limited usefulness. Critics acknowledge the successes of voluntary energy conservation programs in 1973-74 but say that a more fundamental change in consumption habits can come only when conservation programs are mandatory or when those who conserve are rewarded for doing so. In addition, most source reduction efforts are directed to citizens, who are exhorted to change their consumption habits. Many people feel that industry, too, must change its consumption pattern, but economists think substantial change will occur only when government establishes a cost environment in which business interests and social interest coincide.

policies for specific products

Virtually all waste reduction measures rely on one or more of the five approaches referred to previously. Which are most apropos in a given case depends, of course, on the product that is to be regulated. EPA estimates that source reduction measures could be applied to five product categories of the solid waste stream: containers, packaging, appliances, newspapers and miscellaneous items (including disposables and tires). Table 7 shows the volume of each waste product category and the source reduction measure that could apply. (It should be noted that although alterations in materials use and product life are considered as one item—product redesign—in this publication, they are treated separately in the chart.)

durable goods

Among the wide range of durable goods, tires and major household appliances have been identified as especially suitable targets for redesign, with source reduction as a goal.

The most obvious way to reduce the number of tires we discard is to use tires that will last at least twice as long. Steel-belted radials, which are generally guaranteed to last for at least 40,000 miles, have almost doubled the lifetime of most standard bias-ply tires, and efforts are now underway to develop a radial that will last 80,000 miles. The magazine *Environmental Action* reports that according to a researcher at the University of Pennsylvania we could eliminate 75 percent of all tires discarded each year by extending tire life to 100,000 miles. *(5)* OSWMP believes that the number of tires discarded annually could be realistically reduced by 60 percent. *(6)* It should be noted that while the initial cost of radials is higher than that of bias-ply tires, total-life cost is expected to be less (see Chapter 5).

EPA estimates that a variety of waste reduction measures (primarily those relating to product durability) could reduce discards of major appliances by 10 to 15 percent. *(7)* However, it is difficult to ascertain and quantify just what an acceptable service life for a product should be. Rising prices and reduced consumer buying power extend the life of durables: many consumers cannot afford or will not pay the high price of new goods, especially appliances. Instead of discarding them, they are having older products repaired.

Although automobiles are not included in the durable goods category, they represent an example of how waste reduction can come about through product redesign. Unlike trends of the 1950s and 1960s, when each new car season was heralded by extravagantly different models, car manufacturers have made fewer dramatic design changes in new models in recent years. The similarity from year to year has meant that consumers are less likely to base their decision to buy a new car on external cosmetic considerations.

nondurable goods

As stated previously, nondurable goods—comprising 18 percent of the municipal waste stream (see Figure 2)—present fewer problems for waste disposal than do packaging or durables. The relative ease of disposability, combined with the fact that recycling of newspaper and office waste paper is far more widespread and lucrative than are other forms of recycling (although also subject to highly volatile markets), make this waste category less likely to require institutionalized source reduction programs. Most actions directed towards these products come from consumers. Many people are returning to cloth napkins instead of paper napkins, handkerchiefs instead of tissues, cloth instead of paper towels, dishware instead of paper plates and cups, and cloth rather than paper diapers. The convenience of many disposables, however, virtually guarantees

Product	Weight in Waste (millions tons)	% Municipal Waste[1]	% Product Waste[2]	Applicable Measure: Reuse	Mat. Use	Life
I. Containers						
Beer and Soft Drink[3]	8.0	6.4	10.4	X	X	
Non-Beverage Glass[3]	6.2	5.0	8.1		X	
Non-Beverage Cans[3]	3.8	3.0	4.9		X	
Rigid Boxes[3]	2.3	1.8	3.0		X	
Prepared Beverages[4]	1.4	1.1	1.8		X	
Milk[4]	1.2	1.0	1.6	X	X	
II. Packaging						
Corrugated Shipping[5]	10.0	8.0	13.0	X	X	
Meat[5]	1.8	1.4	2.3		X	
Fast Food[5]	1.3	1.1	1.7		X	
III. Appliances[5]	2.0	1.6	2.6			X
IV. Newspapers[5]	10.3	8.2	13.4		X	
V. Other Products						
Disposable Products[5]	2.6	2.1	3.4	X		
Tires[6]	2.0	1.6	2.6	X		X
Total	52.9	42.3	68.7			

[1]Total municipal waste in 1971 was 125 million tons.
[2]Total product waste in 1971 was 77 million tons.
[3]Weight in waste for 1972 based on Midwest Research Institute, "Base Line Forecasts of Resource Recovery," Draft study.
[4]Weight in waste for 1970 based on Research Triangle Institute, "An Evaluation of the Effectiveness and Costs of Regulatory and Fiscal Policy Instruments on Product Packaging," 1974.
[5]Weight in waste for 1971 based on EPA, "Second Annual Report to Congress," 1974.
[6]Weight in waste for 1972, EPA estimate based on industry data.
Source: Resource Recovery Division, OSWMP.

Table 7: Targets for source reduction

some continued use. It appears that only high prices will divert people from purchasing throwaway goods.

packaging and containers

A variety of ways have been suggested to curtail the abundance of packaging (bottles, boxes, cans, cartons, wrapping, etc), including greater use of larger or reusable packages and less use of packaging materials. Measures to make packaging expensive or to encourage manufacturers to use less include taxes on package weight, a unit tax on rigid containers, a deposit or bounty on reusable packages or containers, and bans or taxes on disposable packages.

The greatest problem for policy-makers and legislators seeking to control proliferation of waste is determining which strategies, if any are most appropriate to a particular packaging type. Those problems echo the difficulties associated with virtually every source reduction measure: What constitutes overpackaging or excessive materials consumption? How should a package be singled out for ameliorative action? Should source reduction be applied to all packages or to a specific package type?

The entire issue of overpackaging is subject to much debate. Individual perceptions of what constitutes excessive packaging vary widely. Many people believe, for instance, that packaging of cosmetics and perfumes is a prime example of excessive packaging. Multilayer, multi-media containers (a carton *and* cellophane, for instance) are used primarily to attract consumers, to glamorize a product. Packaging, and not the product delivered, has become the "gimmick" that attracts the buyer.

Granting that industy is right in saying some multi-layered packaging is necessary for product protection, we can still assume that excessive packaging does exist. According to the guidelines issued by EPA, packaging may be considered as excessive if the materials used are in short supply, if the amount of energy required is great in relation to substitutable forms of packaging, if materials are difficult to dispose of and more satisfactory alternatives are available, or if the packaging impedes consumer use of a product (by being difficult or hazardous to open, for example).

Criticism arises when source reduction measures are directed at a particular package rather than a particular class of packages. This dilemma is nowhere better illustrated than in the continuing controversy over beverage containers. When beverage containers were singled out as almost the sole target of source reduction legislation introduced in the U.S. Congress, many in industry attacked the proposals as unfair and discriminatory; they suggest that it is ludicrous for environmentalists to ignore other forms of packaging or even other durable goods that may be just as burdensome and just as resource intensive. Nevertheless, throwaway bottles and cans still attract the most attention and evoke the strongest and most acrimonious debate.

A number of ways have been suggested to reduce packaging volumes:

Use of larger (and hence fewer) packages A trend to larger packages and containers could reduce significantly the amount of materials and energy consumed by packaging. EPA estimates, for example, that canning all tomato juice in 1971 in containers of 1 quart or larger would have reduced steel consumption for that particular container type by almost 20 percent. *(8)*

Assuming that similar savings could be achieved for other packages, what would be the impacts of reduced convenience packaging? Consumers would find that the cost per unit of delivered products would decline, but they would also be faced with more limited choices in the unit sizes available. Initially, industry would be affected. Materials suppliers would sell less; package makers would produce fewer containers. Product manufacturers would make a lower dollar volume of sales only if consumer purchasing dropped as a result of decreased product choice. Distribution and transportation industries would be affected, too, although most changes would center on methods of storing and delivering goods. Eventually, industry might benefit as consumer savings are re-spent.

Use of fewer layers and coverings in packages Proponents say that this policy would be directed to those packages that are considered truly excessive—particularly cosmetics, perfumes and luxury items. Few studies have been conducted, however, that quantify the resource or energy savings available through elimination of superfluous packaging, and many people believe that such reductions would have primarily a symbolic value. The effects of fewer packaging layers would vary: consumers would not be affected at all, except, perhaps, in terms of satisfaction accompanying the purchase of an elegant package. Materials suppliers would sell less to package manufacturers who, in turn, would produce fewer containers. It is possible that product manufacturers' sales would decline minimally.

Reuse of packaging EPA estimates that 90 percent of all packaging by weight is discarded within one year of initial purchase. *(9)* This figure suggests that reusable containers (for example, cartons and bottles) would eliminate a large amount of packaging waste and would also reduce the resource consumption and environmental impacts of much packaging. It is estimated that reusing 1,000 tons of corrugated containers five times would use 80 percent less energy, produce 57 percent less air pollution, 98 percent less water pollution, and 77 percent less solid waste than producing and using single-use corrugated containers. *(10)* Studies also indicate comparable savings with use of refillable beverage containers.

These benefits notwithstanding, the legal, technological and economic impacts of reusable packaging must also be considered. There has been little research on expanding use of returnable packages and containers except, of course, for certain beverages (beer, soft drinks and milk). Some state laws prohibit refillable containers for certain food products. Technologies to produce returnable containers that meet industrial needs as well as federal and state laws are limited, and industry is reluctant to undertake such research and development. In addition, use of returnable containers requires that some system for container return and reuse be initiated, perhaps an incentive system (such as refund of consumer's deposit) or a separation system (where the householder sets out returnables for pick-up and refilling).

Those who grew up when doorstep milk delivery in glass bottles was the norm, when returning soft-drink bottles to get the deposit refund was every youngster's idea of supplemental income, tend to think that such systems could work. Those who have grown up since these homely "separation systems" and "incentives systems" ceased to be, or who are economically tied into later arrangements, express doubts about their workability.

Economic impacts would be serious, since virtually all segments of the industrial sector, including retailers, would be affected by returnable container systems. EPA anticipates changes in production and sales volumes, in employment, in capital investment requirements, and in the precipitous obsolescence of existing plant equipment.

How can any of the three packaging shifts be implemented? What incentives or prods can be directed to consumers or industry to signal a move towards less packaging or reusable packaging? Two types of measures—fiscal and regulatory—can be considered.

☐ **Fiscal measures** Taxing packages and containers by weight (see page 16) or unit can somewhat decrease materials or energy consumption in packaging, alter materials used for packaging, or encourage reuse of packages. EPA says that the penny-a-pound tax would reduce the weight of discarded packaging by only about 4 million tons each year, a reduction of less than 6 percent in total annual packaging discarded; current energy use for all packaging could be expected to decline by 1 or 2 percent. A unit tax (i.e. a uniform tax on each package, regardless of size or configuration) is expected to have slightly greater impacts on source reduction—estimated reductions in packaging waste of 4 to 5 million tons each year, based on a 1¢-per-unit tax. *(11)*

Each approach tends to discriminate against one or another kind of package. As explained earlier (see page 16), package weight is not an accurate indicator of environmental insult. A tax on packaging weight would be higher for a returnable glass bottle than it would be for an aluminum can, despite the fact that the former is far more environmentally sound and resource-conserving than the latter. The unit tax, while it avoids the weight pitfall, ignores the dissimilar

impacts from different packaging types.

□ **Regulatory approaches** Regulating individual packages according to their specific or peculiar characteristics avoids the problems inherent in taxes but raises new problems relating to the regulatory authority and capabilities of government. The specter of a bureaucracy that must examine every single package type (and ADL estimates that there are more than 100,000 different ones available) *(12)* has tended to offset interest in any possible benefits from direct regulation of certain packages. As a later chapter will indicate, however, one state, Minnesota, is attempting to do precisely that.

beverage containers

There are essentially three ways to control the types of beverage containers used: through mandatory deposits, through bans on nonrefillables, and through litter taxes. A general discussion of the pros and cons of these three options can be found on page 00. This discussion will explore more specifically the effects of each.

In a **mandatory deposit** system, cans are not banned, but the retailer is required to charge a deposit on any beverage container purchased and to pay the consumer a refund on any returned beverage container, whether refillable or not. The retailer then gets a refund from the distributor when returning the container for possible refill. Though this system does not compel distributors or bottlers to refill containers (they could still discard the returned cans and bottles), economists say that distributors would use refillable containers because it would be unprofitable for them to pay the refund on a throwaway, dispose of the container and then buy an entirely new container.

A variation of the mandatory deposit concept, what might be termed a mandatory refund system, has been used in Oregon. The Minimum Refund Act requires that all beer and soft drink containers carry refunds, which vary in amount, depending on the container's reusability. Standardized bottles with paper labels (reusable by more than one manufacturer) have 2¢ refunds, while returnable bottles with permanent brand identification (reusable by only one manufacturer), carry 5¢ refunds. Nonrefillable beverage bottles and cans also carry a 5¢ deposit. Deposits are not required by the law, but it is assumed that they will be added to the price of a beverage to cover the cost of the refund that the retailer must pay to the purchaser and the distributor to the retailer. The law requires that the refund value be clearly marked on each container. Flip-top openings on cans are prohibited.

The Oregon law promotes returnable refillable beverage containers because the distributor—the final refunder—is unwilling to repay retailers for containers that cannot be used again. If he chooses to continue use of nonrefillables, he will eventually have to raise the price of the beverage to cover the cost of the refund he pays out. Higher prices would probably make his beverage less competitive in the market.

Banning nonrefillables prohibits use of any beer or soft-drink container that cannot be refilled. This system eliminates cans and lightweight one-way glass bottles from the market, because neither can be refilled safely, using existing technologies. Outlawing nonrefillables does not necessarily mean that a deposit/refund system must be used, but the bottler tends to levy deposits on beverages to ensure that the container is returned for refill.

Vermont enacted a mandatory deposit law in 1972 (effective 1973) differing from the Oregon law in that it requires a 5¢ deposit on all beer and soft drink containers whether refillable or not. In April 1975, the state legislature voted to strengthen the law by outlawing nonrefillable bottles, flip-top cans and plastic binders. When this law goes into effect, Vermont will become the first state to have largely banned nonrefillables.

The third approach, a **litter or packaging tax,** places a nonrefundable tax of about ½¢ on a beverage container, payable by the initial container purchaser, (bottler or canner) and probably passed on to the consumer. Taxes collected are used to finance litter cleanup. Many people consider this approach, the one used in Washington state, to be least desirable because it does nothing to curb litter or reduce the volume of solid waste generated; rather, it simply finances clean-up *after* the littering occurs. Most important, however, it does nothing to reduce the materials and energy used to make nonreturnable, nonrefillable beverage containers.

5. impacts of source reduction

Why should one segment of an industry be subsidized for maintaining a distribution system that is ecologically unsound, unnecessarily expensive to both consumers and taxpayers, and not in the best interest of the industry as a whole?

N. E Norton, President
Dr. Pepper-Royal Crown Bottling Co.
Corpus Christi, June 13, 1974

Just as other environmental considerations have come under fire in recent months because of alleged inflationary impacts, so also have source reduction programs been subject to attack. Arguments against product standards and regulation revolve around the effect of such regulation on employment, on consumer prices, and on industry investment and operations. As a result, the conservation benefits of waste reduction have been obscured by emphasis on its potential economic impacts.

The *philosophical* argument against waste reduction is based on the inadvisability of government interference in the marketplace. Such intervention is said to be acceptable *only* when there is overwhelming evidence demonstrating that a product is dangerous to society. The lengthy debate over health hazards from cigarettes is proof of the difficulties of reaching agreement about what constitutes such evidence. Since harmfulness is generally thought of in health-related terms, there is little if any precedent for enacting stringent laws or promulgating rules based on an argument that a product is a danger to society because it uses up too much of our energy or resources or because it is hard to dispose of. Spokesmen for industry say that, far from burdening society, many products, especially containers and packages, help society and are an integral part of maintaining what industrialists define as a high standard of living. Should energy or materials conservation become necessary, industry says it will take appropriate action without government interference.

What makes it ever harder to quantify the impacts of product regulation is that most studies on source reduction have addressed the resources issue; relatively little work has been completed on economic impacts. Moreover, many of the studies have focused on very specific and limited source reduction measures—on beverage containers in particular—making generalization difficult.

There are three major areas on which source reduction measures could have impact, both positive and negative: resources and energy, solid waste programs, and the economy.

resources and energy

It appears likely that product regulation programs for durable goods could produce worthwhile energy and materials savings, but little research has been carried out to demonstrate exactly what they would be. It also appears that any savings would be felt in the long run only, because the transition to use of those changed products would occur only gradually, as existing products wore out and were replaced.

More data, however, is available about packaging. It appears that if controls for packaging and containers were put into general effect, we could immediately get some significant savings: reduced use of energy and materials at both the source and the disposal ends of the consumer goods stream.

How significant? EPA estimates that a national system of returnables—to cite only one kind and category of product control—would have saved 244 trillion BTUs in 1972. *(1)* While soft drink and beer container energy consumption represents less than 1 percent of total annual U.S. energy consumption, Bruce Hannon of the Center for Advanced Computation at the University of Illinois says that the annual energy now diverted into supplying beer and soft drinks in throwaway cans and bottles would supply all of the electrical needs of Pittsburgh, Boston, Washington, D.C. and San Francisco for about 5 months, or 30 billion kilowatt hours. *(2)* And a physicist at Dickinson College, Priscilla Laws, adds that the potential energy savings from a returnable system would provide all the residential electricity for 11 million relatively affluent persons. *(3)* With the rising

consumption curve that is projected by industry, potential energy savings would hit 421 trillion BTUs in 1980 (see Tables 8 & 9). *(4)*

When it comes to packaging other than beverage containers, equally important savings are possible. If this category of packaging consumption could be whittled back to the per capita levels of 1958, we could save 16.5 million tons of raw materials and more than 753 trillion BTUs in 1980—without any paring of expected growth in use of the products packaged (see Table 10). *(5)* What would it take to get back to that 1958 level? EPA estimates that packaging would return to 1958 levels if we made the maximum possible reduction in excess packaging, still allowing for adequate product protection.

EPA estimates that had we held *all* packaging in 1971 to 1958 per capita levels, the United States would have saved more than 566 trillion BTUs, the equivalent of 267,000 barrels of oil each day—equivalent to .8 percent of total *primary energy use. (6)* EPA also says that despite an anticipated increase of 2.8 percent in packaging consumption rates between 1971 and 1980, cutting packaging back to 1958 levels will still save twice the energy that could have been saved in 1972—almost 1,200 trillion BTUs/year or 555,000 barrels/oil/day (see Table 11). *(7)*

The question that naturally arises is, Why 1958? That year is used as a baseline because it marks the start of the packaging explosion. Those who question its use as a target ask, How realistic is it to think of returning to 1958 packaging level? They say that packaging has expanded so far beyond what it was then that its use as a baseline is meaningless.

Representatives of industry say that reducing packaging would represent a step backwards from our high standard of living and in the end would cost the consumer more due to increased manpower costs for retailers, changes in plant machinery, etc. Industry suggests that its own technologies, rather than the constraints of any product regulation, will reduce energy and materials consumption. To substantiate that claim, American Can Company, pointing to its own data, states that "energy consumed by each packaging system will be significantly reduced by 1980." *(8)* Table 12 shows American Can's projections of anticipated energy use. The savings, which vary from minimal (in the case of the returnable glass bottle) to large (the aluminum 2-piece can), are attributed to a number of factors, including reduced use of raw materials per million units (15-20 percent); resource recovery systems that process 50 percent of collected wastes through recycling plants; use of new container manufacturing technologies (water-based and ultraviolet-aired coatings to minimize energy consumption); and reduced use of paperboard (through elimination of paperboard outerpackaging for metal and plastic containers). *(9)*

American Can's conclusion is that source reduction measures such as beverage container legislation are superfluous, since the energy used by one type of can (steel: drawn and ironed containers) is comparable to returnable glass bottles. The company ignores, however, the other benefits derived from use of returnables—reduced raw materials depletion, reduced air pollution and reduced solid waste generation. And, as will be discussed later, there is some doubt as to the validity of 50 percent recycling levels (see page 27).

In addition to technological developments, many industries claim that certain packages do not strain resource supplies. Those who manufacture or utilize paper packaging say that paper packages should not be targets of packaging reduction measures because forests are renewable resources. Since paper supplies are therefore not subject to the effects of geopolitical actions—embargoes, for example, or cartels of producers—they say there is simply no reason to curb paper packaging. Even if one accepts these assertions, reducing paper consumption to 1958 levels would still mean significant energy savings.

solid waste management programs

The proliferation of short-lived or disposable products has drawbacks other than consumption of resources and energy. Local governments that must collect and then discard large volumes of waste find themselves burdened with tremendous financial, manpower and equipment needs, all at costs that are continually rising. It is for this reason that the nation's cities have actively supported source reduction measures: there is simply too much waste.

municipal collection and disposal

Waste reduction measures can mean three kinds of savings for local governments

- ☐ in direct costs of collecting, transporting then disposing of wastes;
- ☐ in reduced need for pollution abatement from waste disposal; and
- ☐ from reduced litter generation.

The reasons are evident: as each household generates less waste, less trash is collected, the truck makes fewer trips to the disposal site and fewer wastes must be buried or burned. Whether these potential savings are turned into actual savings depends, however, on how effectively local government responds to changing needs in waste handling.

Consider, for example, truck pick-up routes. Even if there were less trash needing collection, trucks would still have to make all stops they presently make. And, despite the fact that trucks might then need to make fewer runs to the disposal site, it is questionable whether rerouting to optimize reduced loads would actually occur. Certainly this pessimistic prediction would come true if a local government failed to reassess its collection and routing patterns to take advantage of source reduction benefits.

Container Type	Beverage Delivered (million oz.)[1]		Energy Required Per Million Oz. (million BTU's)[2]	Energy Consumed (trillion BTU's)		Energy Saving of All Returnable System (trillion BTU's)
	Present System	*All Returnable System*		*Present System*	*All Returnable System*	
Returnable Glass Bottle	293,554	1,007,654	184	54	186	(132)
One Way Glass Bottle	260,989	—	550	144	—	144
Aluminum Can	104,336	—	747	78	—	78
Bi-Metal (Steel) Can	348,775	—	443	154	—	154
Total	1,007,654	1,007,654		430	186	244

[1] Midwest Research Institute, Draft Report, Base Line Forecasts of Resource Recovery.
[2] Midwest Research Institute, Draft Report, Profile Analysis of Nine Beverage Container Alternatives.
Source: EPA: Energy Conservation Through Improved Solid Waste Management (SW-125)

Table 8: Energy savings of reusable beer and soft drink containers, 1972

It is also clear that transportation savings would occur only if there were *significant* cuts in waste generation. For example, cutting the waste load by a third will eliminate one trip in three to the disposal site, but a cut of 10 to 20 percent might well not show up immediately in savings. *(10)* Longer-term savings appear to be realistic, as local governments adjusted their waste collection operations and found the lifespan of their handling equipment prolonged.

Reduction of waste at source can lower disposal costs in another way: with lighter use of existing facilities there would be less need to acquire new disposal sites. EPA estimates that an 8 percent reduction in municipal waste generation could save, on a national average, between $70 and $90 million in disposal costs in 1985. *(11)* It should also be noted that fewer wastes requiring disposal will mean less leachate from landfills and less air pollution from incinerators.

Litter generation is also expected to decline sharply with source reduction measures. The Oregon experience shows that can and bottle litter has been reduced by 90 percent since the Minimum Refund Act went into effect. *(12)* Although this figure is challenged by some as misleading because the state is said to have increased its litter clean-up budget, few people would deny the overall litter-reducing effects of the Oregon law.

Container Type	Beverage Delivered (million oz.)[1]		Energy Required Per Million Oz. (million BTU's)[2]	Energy Consumed (trillion BTU's)		Energy Saving of All Returnable System (trillion BTU's)
	Projected System	*All Returnable System*		*Projected System*	*All Returnable System*	
Returnable Glass Bottle	295,673	1,406,980	184	54	259	(205)
One Way Glass Bottle	385,253	—	550	212	—	212
Aluminum Can	301,998	—	747	226	—	226
Bi-Metal (Steel) Can	424,056	—	443	188	—	188
Total	1,406,980	1,406,980		680	259	421

[1] Midwest Research Institute, Draft Report, Base Line Forecasts of Resource Recovery.
[2] Midwest Research Institute, Draft Report, Profile Analysis of Nine Beverage Container Alternatives.
Source: EPA. Energy Conservation Through Improved Solid Waste Management.

Table 9: Energy savings of reusable beer and soft drink containers, 1980.

People opposed to source reduction programs say, when faced with these data and assumptions, that similar savings would occur if there were widespread recycling. We want widespread recycling, but the major monetary savings from such resource recovery come solely from lower waste *disposal* costs, because wastes still have to be collected from the household and transported to a recycling facility. Furthermore, in small communities where a resource recovery system is not economically feasible because waste generation is small, reducing the amount of waste generated may be the only way to cut waste handling costs.

resource recovery

Many industries, especially those developing sophisticated recovery systems, say that if there is adequate recycling we won't need to reduce the volume of waste and that source reduction is in fact inimical to the success of recovery systems.

EPA has calculated that municipal waste generation will increase to 200 million tons by 1985. *(13)* In its 1974 report to Congress, EPA suggests that resource recovery may be viable for the wastes of 20 percent of the population, a figure based on concentrations of population and availability of land for disposal sites. On this basis, EPA estimates that 60 million tons would go through the recycling process, leaving 140 million tons each year to be disposed of in other ways. *(14)* American Can Company's assumption that 50 percent of U.S. solid wastes will be recycled (which is probably high) would still leave 100 million tons to be put somewhere. Even with as much recycling as possible, waste prevention seems needed.

Industry also contends that waste reduction would make resource recovery from the municipal waste stream unfeasible: since waste reduction would remove ferrous and nonferrous metals (and glass) from the waste stream, the most lucrative aspect of resource recovery would be virtually eliminated. In addition, removal of part of the organic fraction (paper and plastics) would reduce the heat value of trash and its worth as a source of energy. This allegation has caused many municipal solid waste managers to question the desirability of waste reduction efforts, since those who are planning capital-intensive resource recovery systems obviously wish to insure economically viable systems. EPA asserts, however, that even with reductions in waste as high as the top estimate of 30 percent, the United States will still generate more waste in 1985 than it does at the present time, *(15)* so that resource recovery will not be affected.

EPA has concluded that there are "much higher overall resource and energy benefits" associated with source reduction than with recycling, so that any conflicts between recovery and reduction are illusory. *(16)* Table 13 explains the agency's conclusions. If we were to burn all solid waste projected for 1980, the energy available would equal 832 trillion BTUs. Of this (still using 1958 as a baseline) some 82.4 trillion BTUs would be removed from the municipal waste stream through source reduction of packaging. *(17)* The net energy available for recycling or burning would still total almost 750 trillion BTUs. To this figure can be added the 322 trillion BTUs saved through reduced packaging production, so that overall, conservation would exceed 1,000 trillion BTUs. *(18)*

As the Washington Post editorial of April 2, 1975 said "Well, resource recovery and recycling is a fine idea, and we don't belittle the approach. But if the efficiency of recovery centers must rely on the maintenance of high volumes of trash, taxpayers may indeed wonder where this logic gets them. Does it make sense to design systems to accommodate wasteful . . . practices, or shouldn't the amount of waste be cut first? More and more government officials—in this region, in Congress and in the administration—are concluding that the first step is source reduction, which includes legislation embracing a phased approach to a returnable-container system."

the economy

In considering source reduction policies, arguments based on savings in resource consumption and in solid waste disposal pale beside the very real concerns about the effect of such policies on the economy. No one can say accurately what these effects will be. No solid economic analysis covering all the major ramifications is avail-

able, so there is no way to substantiate the arguments on either side.

Industry forecasts severe economic dislocations; environmentalists say those dislocations are exaggerated. Industry warns of the loss of jobs; environmentalists point to far less traumatic realignments within the work force, adjustments they view as well within our American industrial mode of continuously changing technologies and hiring patterns. No one denies the potential for disruptions as manufacture of some containers, packaging and disposable products is phased out. The severity of such disruptions and the ability of the economy to absorb dislocations are subject to much debate, as they should be. The uncertainty of finding reliable answers makes resolution of the source reduction issue difficult.

dislocation

Though valid generalizations are hard to come by, one thing is certain: particular plants and particular workers, not just abstractions—the economy . . . industry . . . employment—are affected by particular measures.

Packaging Material	Total Consumption (thousand tons)[1]			Total Consumption at 1958 per capita levels (thousand tons)[2]		Potential Material Savings with consumption at 1958 levels (thousand tons)		Energy Requirement Per ton (thousand BTU's)[3]	Potential Energy Savings with consumption at 1958 levels (trillion BTU's)[4]	
	1958	1971	1980	1971	1980	1971	1980		1971	1980
Paper	16,552	27,700	39,086	21,137	25,043	6,563	14,043	40,800[4]	267.8	573.0
Glass	5,063	4,900	6,608	6,465	7,660	(1,565)	(1,052)	15,256	(23.9)	(16.0)
Steel	5,340	5,235	6,168	6,819	8,079	(1,584)	(1,911)	29,590	(46.8)	(56.5)
Aluminum	97	212	507	124	147	88	360	196,632	17.3	70.8
Plastics	368	2,900	5,607	470	557	2,430	5,050	36,000	87.5	181.8
Total	27,420	40,947	57,976	35,015	41,486	5,932	16,490		322.5	753.1

[1]Office of Solid Waste Management Programs, Second Report to Congress, Resource Recovery and Source Reduction. Environmental Protection Agency, Publication SW-122. Washington, U.S. Government Printing Office, 1974. 112 p.

[2]Assumes a return to an equivalent 1958 packaging materials mix (i.e. the percentage of each material used in packaging is assumed to be constant). Economic growth, and increased standards of living, is allowed for by increasing total packaging required by a growth factor (the rate of increase in nondurable goods purchased).

[3]Gordian Associates, Energy Consumption for Six Basic Materials Industries, EPA Draft Report.

[4]Approximately 40% of this energy value is derived from the BTU's contained in the raw material (wood), not from purchased fuels.

[4]Assuming consumption at 1958 levels.

Source: EPA, Energy Conservation Through Improved Solid Waste Management

Table 10: Energy savings from decreased packaging materials, 1971 and 1980 (excluding beverage containers)

It is probably safe to say generally that it is the makers of packages and containers (and the makers of paper and plastic disposables) that would feel a tough waste prevention program most. Makers of the product packaged are less likely to experience a loss of sales, though some predict bad effects if they were to be forced to present their product in a less "convenient" or glamorous package.

To narrow the discussion to the beverage and beverage container industries, it is easy to see that changes proposed would affect both makers of the beverage and makers of the containers, but the disruptions would not be equally shared. The makers of beverage cans and bottles—both companies and workers—would experience far greater disruptions than the makers of the beverages themselves. And it is from the former, therefore, that the opposition to this kind of waste prevention is strongest and most vocal. Their arguments, which deserve serious consideration can only be summarized here. Those wishing to pursue them in detail should inquire from the National Soft Drink Association, U.S. Brewers Association, United Steelworkers of America (AFL-CIO-CLC), and the Glass Bottle Blowers Association.

Mandatory deposits on beverage containers would significantly decrease their share of the market and thus phase out almost all steel and aluminum shipments that go to can manufacturing. Data from the U.S. Department of Commerce indicate that reducing beverage can use by 75 percent would mean a $1.1 billion decline in metals shipments for this use *(19)*, with the greatest decline in aluminum, since far more aluminum than steel goes into making cans. Use of refillables would also affect brewers who ship nationally. They would have to change their current distribution method (shipping beer long distances in one-way containers) to a regional system.

In a report contracted for by the state of Oregon, Applied Decisions Systems, Inc. (ADS) reported that pretax profits in that state declined by $7.2 million—$9.3 million during the first year the law was in effect. (These figures include losses suffered by bottlers, canners, brewers, distributors and container manufacturers.) *(20)*

	1974	1980	% change
Alum. 2-piece	7.20	3.36	−52
Steel 2-piece	3.91	2.49	−37
Glass non-returnable	4.81	4.06	−16
Glass 10-trip returnable	2.60	2.44	− 6
Plastic	4.96	3.32	−33

Source: American Can Co. "Energy and Technical Development," 1974 briefing

Table 12: Energy requirements for 12-ounce beer containers (BTUs per million containers)

Year	A. Potential Energy Savings with Reusable Beverage Container System		B. Potential Energy Savings by Reducing All Other Packaging Materials to 1958 levels		A. & B. Potential Total Energy Savings All Packaging Materials	
	(trillion Btu's)	B/DOE[1] (000)	(trillion Btu's)	B/DOE[1] (000)	(trillion Btu's)	B/DOE[1] (000)
1971	244	115	322	152	566	267
1980	421	199	753	356	1174	555

[1]Barrels of oil per day equivalent

Source: EPA, Energy Conservation Through Improved Solid Waste Management

Table 11. Energy savings from decreased packaging materials, 1971 and 1980 (all containers and packaging)

	Paper	Plastics	Total
Potential materials savings in 1971 from reduced packaging Consumption to 1958 level (million tons)[1]	6.6	2.4	9.0
less: Portion not entering the waste stream (million tons)	2.0[2]	.4[3]	2.4
Net amount of materials not available to the total waste stream	4.6	2.0	6.6
less: 28 percent, the waste generated outside of SMSA's[4]	1.3	.6	1.9
Net amount of materials not available to the SMSA waste stream[4]	3.3	1.4	4.7
BTU's per ton of combustible material (million BTU's)[5]	14.8	24.0	
BTU's not available to energy recovery systems (trillion BTU's)	48.8	33.6	82.4[6]

[1] From Table 10.

[2] It was estimated that 30 percent of the paper does not enter the municipal waste stream because of recycling and diversions into other waste streams (water, industrial waste, scrap, etc.).

[3] It was estimated that 15 percent of the plastics does not enter the municipal waste stream for the reasons stated in Note 2, above.

[4] In the estimates of energy recoverable from solid waste, it was assumed that energy recovery is feasible only in SMSA's (Standard Metropolitan Statistical Areas), where economies of scale can be realized.

[5] Assuming paper at 7,400 BTU's per pound and plastic at 12,000 BTU's per pound.

[6] This energy "loss" of 82.4 trillion BTU's is smaller than the energy savings (322.5 trillion BTU's—see Table 10) from reduced packaging consumption.

Source: EPA, Energy Conservation Through Improved Solid Waste Management

Table 13: Impact of reduced packaging consumption on potential recovery of energy from solid waste

The immediate effect of a *ban* on nonrefillables would be greater, because cans would be eliminated from the market all at once. The beverage can manufacturing industry, with $1.5 billion in shipments in 1971 *(21)* would be wiped out, as would the present form of the beverage canning industry.

On the basis of the trends suggested above, many industries say that source reduction measures must necessarily have disastrous effects on the nation's industry. A former vice president of the American Can Co. stated, in testimony before the District of Columbia City Council, that beverage container legislation alone would mean the premature obsolescence of more than $1 billion worth of equipment. *(22)* While the source of this figure is unknown, arguments like these often spell the end to efforts to reduce waste at source. EPA bases its support for control of nonrefillables on its conviction that any national legislation would provide for a gradual phase-out of cans, not an abrupt discontinuance. Some advocates point out that it might be easier for the industry to adjust to a national law with gradualist features than to state-by-state legislation.

The impact of redesigning products is even less easy to forecast. Presumably, longer-lasting products mean fewer and less frequent replacements, but it is difficult to ascertain how affluent consumers would respond to longer-lived products. Will they, for example, continue to buy new and more modern appliances before older ones have outlived their usefulness? If premature discarding by first owners does occur, it is likely to mean that a larger proportion of durable goods will reach the secondhand market because of their increased durability and repairability. Manufacturers' production levels might be lower, but the profit per unit would not necessarily go down: Better built products would command higher prices. They would also require better workmanship, which might increase employment and wages.

employment

As with disruptions in industrial output, statements about unemployment impacts are based on speculation and guessing. The specter of plant shut-downs has tended to ally many segments of organized labor with management in opposing source reduction measures.

Some employment impacts are readily visible: if a plant is shut down because a specific product is banned outright, then the jobs lost can be easily counted. If plant output is reduced, lay-offs may follow. But, looking at the work force as a whole, reduced employment in one sector may be offset by increased employment in another.

On the basis of data from the Research Triangle Institute (RTI), EPA estimates, for example that a federal law for mandatory deposits will reduce the container industry workforce by about 60,500 persons, virtually all of them skilled workers. Employment in the beverage and distribution industries is expected to *increase* simultaneously by about 60,800 workers, most of them unskilled. *(23)* These figures suggest that a shift to a mandatory deposit system may mean virtually no change, nationally, in the number of jobs. It should be noted, however, that labor income would drop, because of the change in the types of jobs—from skilled metalworkers to unskilled bottle handlers and bottle washers.

The Applied Decisions Systems, Inc. (ADS) report of the Oregon experience is inconclusive on the law's employment effects. Between 340 and 427 jobs were allegedly lost—200 to 265 in glass and 140 to 162 in cans. Between 175 and 200 new jobs were reported to have been created, resulting in a net loss of between 165 and 227 jobs. It should be noted, however, that only 19 percent of retail stores polled responded to the consultant's questionnaire, and it is in this sector that most new jobs were to have been created. Moreover, ADS did not count trucking labor, another sizable segment. *(24)*

How one feels about the controversy surrounding the jobs question depends on one's vantage point. Certain source reduction measures will indeed cause employee dislocations, but new jobs will also be created. The nuances between types of jobs lost or created has led to some disagreement among labor unions directly affected by source reduction. Steelworkers, for example, have been inalterably opposed to beverage container regulation; glass bottle blowers have been less adamant in their response. Some retail clerks' locals have supported such measures, because stores would have to add about one-half employee to handle returnables; other clerks' locals have objected.

Proponents of source reduction say that increased use of returnable packaging will actually help spur employment, because less skilled workers, among whom unemployment is high, will find new jobs available. Industry's and organized labor's arguments center around the need to maintain and hopefully increase current skilled employment levels in manufacturing. At the same time, however, industry also says that labor costs must be *cut back* in the retailing field. Both needs, industry says, can be achieved by producing and using more packaging.

tax revenues

The revenues collected by all levels of government to subsidize public service needs may be affected by certain waste reduction measures, but impacts will vary, depending largely upon the kinds of tax losses.

Industries whose equipment becomes obsolete, due to a phasing out of plant operations, after a particular waste reduction measure is implemented, will be able to depreciate that investment more quickly, thereby reducing taxable income. If wages decline, personal income tax revenues will necessarily decline as well. EPA estimates that most tax losses will occur during the period of transition following enactment of source reduction laws or policies, but the tax loss will eventually level off as new plant equipment is purchased. Should a mandatory deposit system for beverage containers be implemented, Midwest Research Institute (MRI) estimates that $803 million would be lost in revenues during the first year, assuming all beverage can production was eliminated and beverage sales declined by 8 percent. *(25)* If cans are not eliminated, and if sales remain stable, the decline will be less.

It is uncertain how much tax revenue loss would be offset by

reduced need for litter cleanup, reduced need for pollution abatement and by reduced waste collection and disposal costs.

sales volume

Source reduction policies will have differing impacts on sales, depending on the type of product and the type of regulation used. A system of mandatory deposits may lead to slightly decreased beverage sales, since there may be fewer sales outlets (i.e. fewer vending machines, or stores unwilling to handle returned containers) or consumers may switch to beverages for which there is no deposit (such as juice, wine or hard liquor). No one knows whether such a shift is likely to occur. Skyrocketing sugar prices, which drove up the cost of carbonated beverages, appear to have caused no reduction in their sales. MRI's study for EPA estimates a 4 to 8 percent decline in beverage sales. Held against an annual growth rate in the industry of 6 percent, that means no change in sales growth or one year of no growth with subsequent years growing at present rates. *(26)*

Reports differ on beverage sales in Oregon. Industry describes dire results; highly optimistic reports come from EPA, which found no change in sales volume. One of the most recent studies, by ADS, says that sales of beer and soft drinks did not grow but, on the other hand, did not decline either. *(27)* There appears to have been no impact on beverage sales in neighboring states.

Non-packaging items to which source reduction measures are applied may fare differently. If products last longer (such as tires or appliances), fewer replacements will have to be sold, but there has been little quantification of actual sales impacts. Again, higher retail price tags may offset sale of future items.

prices

How source reduction measures affect the cost of items will depend on substitute products and on industry and consumer responses. A top quality steel-belted radial tire, for example, costs $55 (plus federal tax) in Washington, D.C., while a top-of-the-line bias ply tire costs about $45 plus tax. *(28)* A $55 radial, guaranteed for 40,000 miles, ends up costing about $.0014 per mile, and with reasonable care may last well beyond the guaranteed mileage. A $45 bias ply tire, which *may* last 30,000 depending on driving habits, tire care, etc., ends up costing between $.0015 and $.0018 per mile, or about $4 to $16 more per 40,000 miles of driving than the radial. Thus while the longer-lived product is initially more expensive, its longer life—one that is guaranteed—makes it ultimately slightly-less expensive.

The probable price pattern for durable goods in a source reduction economy, then, is higher initial costs that are likely to produce savings for the consumer in the long term. In the matter of beverage containers, the case is different. Beverage in a refillable container will probably cost less than the same quantity in a throwaway.

Under a mandatory deposit system, there might be an increase at the outset, to offset the cost of new plant equipment and increased handling, but these increases would be added to the currently lower price of returnables. EPA estimates that the unit price of a beverage would still be at least half a cent lower than the current nonrefillable price. *(29)* The ADS study on the Oregon experience bears out this prediction. It indicates that the price of beer did not increase overall as a result of the law and that the cost of soft drinks went down by 5 percent. *(30)*

There are two circumstances under which consumers could conceivably pay higher prices for beverages in returnables: first, if the consumer chose not to return the empty container, thereby losing the deposit; second, if the beverage industry decided to raise prices to protest government regulation of beverage containers.

Shortly after enactment of the Vermont beverage container law, the price of beer and soft drinks rose, raising questions as to whether such a price increase was due to generally rising costs or to an industry attempt to discredit the law. Investigations by the state's attorney general have thus far indicated no such intent, but price manipulation remains a threat in a jurisdiction contemplating packaging regulation.

6. industry activity

I urge you to deal with environmentalism using the same zeal with which you market your products—or this new form of competition is going to take your market from you. Call it consumerism . . . environmentalism . . . it's basically the same for your industry. It's potentially explosive and it seems to stem from an unanalyzed dissatisfaction of a segment of American people—and much of it directly against the business community. It's a conflict business must win for the good of our country. The people who out of ignorance or possibly action in their own social conscience seek to destroy or emasculate the fundamental underpinnings of our society—our country—and thus negate all our successes since this Nation began.

Frank W. Considine, President
National Can Corporation
October 5, 1970

While discussing the severe energy shortages during winter 1973-74, one EPA official remarked that most in-plant energy conservation programs were spurred not so much by high fuel costs as by industry's uncertainty over whether adequate supplies of fuel would be available for industrial use. Industry-sponsored programs to cut resource use and product waste have also arisen from in-plant needs to minimize costs and conserve energy. The volatility of world energy and materials markets has prompted strong and effective conservation measures.

Undoubtedly, industry has also been motivated by a desire to quiet the interest of government and the environmental movement in waste reduction programs that are regulatory in nature. There is far less likelihood of federal product regulation if industry can demonstrate interest and successes in resource and energy conservation. As a result, four approaches are being developed by various industries: product and packaging redesign, resource recovery, litter prevention, and waste control programs.

redesign of products and packaging

Every American is familiar with the cardboard barrels of chicken and boxes of hamburgers that are the trademark of the fast-food industry. Because of its reliance on packaging, this industry (a big one, with sales from the two largest companies totaling $3 billion in 1973) is an obvious target for source reduction measures. Depending as it does on its ability to prepare and serve inexpensive food that can be eaten in the restaurant or carried out, its basic system of food delivery relies heavily on the use of throwaway packaging. That use is extraordinarily large. One estimate puts the 1973 discards for the fast-food industry at 1.1 billion tons of paper packaging and 72,000 tons of plastic packaging. The paper packaging wastes from fast foods now constitute 2.5 percent of all paper packaging and 1.6 percent of all plastic packaging in the municipal waste stream. And since this industry is growing at the rate of 10 percent a year, we can expect these packaging volumes to grow accordingly. *(1)*.

This kind of resource use and waste generation has led to intensified efforts to cut back on fast-foods packaging. The impetus towards conservation comes not just from government but from industry as well: as one of the largest buyers of packaging materials the industry has a strong practical interest in holding down costs. EPA and members of the fast-food industry have organized a task force to study packaging use and conservation measures, and a survey of industry programs and policies is now underway.

McDonald's, for example, has already redesigned and is now using a new container for one food it offers and is now testing a new box for other foods as well. Both containers use less paper, and one eliminates entirely the need for an outer wrapping. The company is also trying to develop a way to deliver an unboxed sandwich to the customer, and the chain has started to replace throwaway cardboard boxes with reusable pallets for delivery of food from plants to individual restaurants. *(2)* McDonald's has not estimated either the amount these programs will save in materials and energy or the cost of such

glossary

BTU British thermal Unit. A unit of heat required to raise the temperature of one pound of water one degree Fahrenheit.
1 barrel(oil = 5.8 million BTUs
1 kilowatt-hour electricity = 3,413 BTUs

BDOE Barrels of oil per day equivalent.

Durable goods Products that are designed for long-term use, including appliances, furniture and tires.

Energy recovery Any system by which waste is utilized for its fuel value. Wastes, usually the organic portion, can be burned directly or converted to fuel oil or gas.

Inorganic wastes Wastes derived from nonliving organisms, primarily minerals. Consist of metals and glass.

Leachate Liquid that filters through solid waste or other medium and has extracted materials from it. Often ends up in underground waters; may be toxic.

Municipal wastes or **post-consumer wastes** The solid waste generated by residential and commercial activities; not necessarily handled by a municipality.

Nondurable goods Products, excluding containers and packaging, that are designed for single or short-use. Include newspapers, magazines, paper plates, paper towels, etc.

Organic wastes Those wastes that are derived from plants or animals and contain carbon compounds. Consist of paper, fabric, plastics, food wastes.

Penny-a-pound Proposal for a tax, levied at the point of production, to cover collection and disposal costs of a product based on an average rate of $20 per ton (or 1¢ per pound).

Pollution intensiveness The extent to which a product or material causes pollution, because of its extraction, processing, manufacture or disposal.

Primary energy use Energy derived from basic fuels (oil, gas, coal).

Product redesign Changing the configuration of an item so that it uses less materials or energy in its manufacture or is made longer lasting, more easily repairable or less susceptible to style changes.

Product reuse Reusing a product that has been discarded without reprocessing it.

Resource intensiveness The extent of a product's or material's use of materials or energy in its extraction, processing or manufacture.

Recycling Process in which valuable materials are extracted from the solid waste stream and then utilized either in original or changed form. Most frequently recycling is returning a material into the process by which it was first formed (i.e. waste paper into paper making, crushed glass (cullet) into glass making).

Sanitary landfill Engineered method of land disposal for wastes in which trash is compacted and covered with fill dirt. Site can be used for other purposes after landfill is completed. Generally considered the best means of land disposal, although leachate may contaminate groundwater.

Scrap industry Also called the secondary materials industry. Includes purchasers, processors and users of recoverable waste materials.

Shipment value The sales value of a product being shipped from the manufacturer to the distributor or seller.

Source reduction Cutting down on materials or energy used in product manufacturing, or reducing the total amount of waste generated.

Yard wastes Plant cuttings and trimmings, including leaves, branches, etc.

programs to the company (or to the consumer). But Burger King, another large chain, estimates it has cut packaging use by 20 percent as a result of new procedures for food packages used within the restaurant. *(3)*

Most resistance to packaging changes arises because many chains' packages are their trademarks. To do away with a readily-identifiable package, no matter how materials intensive it is, seems disastrous to the company. In addition, while industries may be willing to revise some packaging forms, they claim that certain types of packages—for example, individual boxes for hamburgers—are essential to keep the food hot and fresh. EPA asserts, however, that the efficacy of the boxes for that purpose is debatable and that marketing decisions may motivate use of extraneous packages. *(4)*

It should also be noted that some packaging reduction is prohibited by law. The Food and Drug Administration, for example, will not permit Kentucky Fried Chicken to ship poultry in reusable containers. Since that chain uses 9 percent of all poultry raised for meat in the United States, *(5)* its huge packaging requirements cannot be reduced by reuse until the FDA changes the rules it now considers necessary. There appears to be no effort underway, from any direction, to convince the FDA to amend these rules.

As was noted earlier, a number of industries say that they will redesign products to meet social and environmental needs without the government requiring them to do so. American Can, for example, recently introduced a new can, Miraform II, which is said to be about 15 percent lighter than conventional two-piece seamless cans. *(6)* The can, made of aluminum or steel, is expected to save 400,000 tons of raw materials annually. *(7)* Similarly, Reynolds Metals Can Division has developed an aluminum can that is 7 percent lighter than cans now in use. According to Reynolds, energy used to produce each can would be about 5 percent less than is currently needed, and to this would be added the savings achieved through transportation of lighter cans. *(8)*

There is little information about other efforts by industries to reduce wastes through product redesign. In any case, the nation's economic downturn, with reduced capital available for industry investments, has slowed research and development generally.

resource recovery

Industry is interested in development of sophisticated systems for resource recovery from solid waste. Among the companies involved in research and development for recovery of materials and energy are some that are responding to growing pressures to reduce waste created by their own products. The rationale of these industries is that they, particularly the packaging and container sectors, will be subject to less criticism if they devise and help communities establish recycling systems. Container producers recognize that beverage containers might never have been singled out if waste management systems had been adequate.

The National Center for Resource Recovery (NCRR) was organized in 1970 by industry and labor as a nonprofit corporation to study the nation's solid waste problems and develop solutions through implementation of resource recovery. NCRR is directly supported by 17 industries and several labor unions. On NCRR's board of directors are executives of PepsiCo., Inc., the United Steelworkers, Anheuser-Busch, Inc., Procter and Gamble Co., ALCOA, U.S. Steel Corporation, B. F. Goodrich Co., and Continental Can, Inc. *(9)*

NCRR has had a major part in the planning and development of the New Orleans resource recovery facility. As a research organization, NCRR has taken a systems approach to solid waste management. Because the New Orleans project will be "a prototype facility to prove out—or disprove—various processes strung on line," NCRR "is cushioning with its own funds some of the risk of the still R&D aspects" there. *(10)*

The New Orleans plant, whose total cost is estimated at $5.7 million, is designed to process over 650 tons of waste daily (about half of the city's solid waste), from which it will recover ferrous and

nonferrous metals, glass, and some paper. The city of New Orleans will pay a dumping fee of $10.95 per ton but is expected to recoup some of that cost by sharing in the profits from the sale of recovered materials. *(11)* The city now spends more than $15.00 per ton to incinerate its waste.

The New Orleans resource recovery system will be capital intensive and privately financed. It will require a substantial investment by NCRR and by Waste Management, Inc., the company that has won the contract to build and operate the plant. The city's contract with Waste Management states that "if the quantity of recoverable resources in the solid waste delivered by the city or its delivering agent is significantly reduced as a result of laws or ordinances passed by the city . . . the city shall provide off-setting adjustments to the corporation to compensate for the corporation's loss of recovery revenue." *(12)* As NCRR explains it, the clause quoted from the contract will protect the investment in the facility by giving some assurance of the quantity of recoverable materials; "without the assurance of products through the system, amount of labor needed, cost of equipment, etc. there would be no way to formulate operating costs, revenues, etc." *(13)*

The desire of Waste Management, Inc. and NCRR, who have their money on the line, for a steady flow of solid waste is entirely understandable. The distaste of the companies and labor unions represented on NCRR's board of directors for laws and ordinances that would cut back solid waste generation is also understandable. But the contract that requires New Orleans to see that the minimum quantity of recoverable materials remains approximately the same will discourage the city from enacting waste reducing measures and, in a sense, will institutionalize waste generation.

An American Can Company subsidiary, Americology, Inc., is marketing a mechanical waste separation system that will recover ferrous metals, aluminum, paper, and glassy aggregate from mixed municipal wastes and will prepare the organic fraction of the waste for fuel. *(14)* In January 1975 the city of Milwaukee signed a $15 million contract with American Can for a 1200-ton-per-day resource recovery system whose refuse-derived fuel will be used by the Wisconsin Electric Power Company—about 600 to 700 tons per day. The entire capital investment ($18 million) will be supplied by American Can, who will own and operate the facility and sell the recovered materials. The city has the option, at the end of five years, of buying the plant and engaging American Can to operate it. The plant will handle all the city's solid waste and will reduce it 80 percent at a cost only slightly more per ton than the city now pays for landfilling. The city will share in the proceeds from sale of recoverables, and that share will be increased later if the city becomes the plant owner. The contract between American Can and Milwaukee contains a clause stating that the economics of the contract are based on present waste proportions; if changes that affect the economic situation of recovery of materials or energy are imposed by statute, the contract will be renegotiated.

Resource recovery is desirable (see *Recycle?*); about this there is no question. But the optimum approach is twofold: reduce the portion of the waste stream that can be reduced and apply resource recovery to the remainder. While technologically sound recycling systems are sorely needed, they do not guarantee that materials reuse will in fact take place. If demand for recovered materials remains low, with markets depressed, sophisticated resource recovery will be meaningless without stockpiling. Resource recovery ameliorates waste of materials and energy, but only after resources have been exploited. And the dependence on resource recovery alone creates no motivation for a company to reduce the quantity of its packaging, adopt reusable containers, or redesign its product.

litter reduction

Originally, industry's approach to waste proliferation, particularly of packaging and containers, concentrated on litter prevention and cleanup. Some industries continue to say that litter prevention is the preferable way to deal with solid waste, a way that, unlike legislation and regulation, will not affect the economy. The nuisance of litter, the prevalence of beverage containers in litter, and the fact that litter has motivated consideration of beverage container legislation have led industry to support anti-litter campaigns. A familiar one is built around the slogan, "People Start Pollution; People Can Stop It."

Keep America Beautiful, Inc. (KAB) in particular has emphasized the "people problem" associated with litter. KAB and related organizations try to teach people not to litter and to inform them about the need for proper trash disposal. KAB has also developed an Action Research Model (ARM), a means of documenting the impact of public education on littering.

In addition to public education programs, KAB points to other litter prevention weapons that it claims are more desirable than laws. In testimony before the California assembly, occasioned by a bill modeled after Oregon's Minimum Refund Act, Roger Powers, KAB's executive director, said, "we know that net annual litter visibility would be reduced by at least 50 percent by increased pickup alone, and that other measures such as financial assistance to local government for litter control officers and increased litter receptacles locations could also be expected to reduce litter up to a total amount of 78 percent." *(15)* KAB's board of directors consists of representatives from industries and public organizations. With companies having the greatest stake in the beverage and container industries (e.g. American Can Company, the Brewers Association, Continental Can Company, Reynolds Metals and Coca-Cola) among its directors, KAB's position reflects continuing defensiveness toward attempts to regulate containers.

waste control

A very limited number of businesses have undertaken voluntary programs to reduce materials and energy consumption and cut down on waste generation. Red Owl Food Stores, a chain of 130 supermarkets in Minnesota, Wisconsin, Michigan, North Dakota, South Dakota and Iowa, has initiated an experimental "waste control" program that encourages products and packaging reuse whenever possible. The "Bring 'Em Back and Save" program operating in 12 stores urges shoppers to return used shopping bags, egg cartons and milk containers for refill and reuse. The stores give customers 2¢ for every shopping bag, 3¢ for every egg carton and 4¢ for every refillable milk container returned. Red Owl estimates that an 8-week experimental program saved 5.5 tons of packaging. *(16)*

Red Owl is also encouraging less materials-consuming habits and has tried to stock items that reflect conservative use of materials and energy. The chain refused to accept bananas from one produce company because they came wrapped in plastic containers—an example of overpackaging. Red Owl has urged other food chains to do likewise. Similarly, when a food company introduced an experimental plastic salt container to replace a paper one, the chain convinced the manufacturer that the plastic container was superfluous and it was withdrawn from the market. When one dairy introduced a nonreturnable plastic milk container, Red Owl refused to carry the product until the dairy prepared an environmental impact statement outlining the new container's effect on solid waste generation, energy and materials consumption, and pollution. *(17)*

Despite their apparent success, Red Owl's programs have not been widely adopted, but one of its executives, Alan K. Greene, is hopeful that his company's awareness is slowly influencing other retail food stores. While the industry, under the umbrella of the National Association of Food Chains, continues to oppose returnable beverage container legislation, Greene believes that the trade association is becoming far more tolerant of dissenting views among its members and is far more open to implementing resource-conserving policies. *(18)*

Greene pointed out that the company's policies are based primarily on business needs; Red Owl has found it in its own best interest to develop conservation programs. Altruism, while it obviously does exist in some executive suites, is *not* a powerful motivating factor for business. But in at least some cases—perhaps in more cases than is now recognized—what is best for the consumer and the environment may also be best for business.

7. legislative approaches

Voluntary action directed at source reduction has been slow to happen and seems unlikely on a national scale. Packaging standards are a spectre to the private sector, raising basic questions about our systems of production and marketing. It is easy to say waste production ought to be controlled, but working out methods and procedures and determining the guiding criteria are highly complex and intricate assignments. Nonetheless, it must be done.

CITIES AND THE NATION'S DISPOSAL CRISIS,
National League of Cities—U.S. Conference of Mayors, 1973.

Attempts to reduce the solid waste stream through legislation have been made at every level of government, with varying degrees of success.

the federal role

Since many people believe that far-reaching waste prevention will come about only with a uniform national policy, pressure on the Congress to enact source reduction laws is increasing. During the 93rd Congress, at least a half dozen bills dealing with source reduction were introduced. The bills fell generally into two categories.

The first, the "bottle bills," were attempts to institute the use of returnable, refillable beverage containers on a nationwide basis. Most proposals were modeled after the Oregon Minimum Refund Act and, as a matter of fact, were introduced by members of Oregon's House and Senate delegations.

Hearings on one such proposal were held by a Senate subcommittee, but the bill never reached the Senate floor.

The second approach to source reduction legislation came as part of several general solid waste bills introduced in both houses. The bills, which sought to stimulate the development of markets for recovered materials and the construction of resource recovery systems, also provided for EPA to promulgate product standards and regulations to limit, if necessary, the entry of specific products and materials into the solid waste stream. EPA was to determine the suitability of regulations on packaging and other items after study of their resource consumption, disposability and potential reusability. No bill specifically outlawed a particular product or package; that action would be taken by EPA *only* after study and public comment.

The vagueness of many of the product-standard sections in this bill triggered immediate and generally negative responses, particularly from industry. As earlier discussion showed, singling out specific products or regulating entire classes of products presents so many legislative and enforcement problems that few congressmen were willing to accept *any* approach. (As a result of unresolved differences over implementing resource recovery and source reduction, the 93rd Congress ended its term by passing only an extension to the present authorization law, the Solid Waste Disposal Act.)

The demise of *all* new proposals in the 93rd Congress can be attributed to a number of factors. The nation's faltering economy made it hard for many congressmen to contemplate any legislation whose impact on employment and production was at best uncertain and possibly detrimental, a fear fueled by testimony offered at the bottle hearings that gloomily predicted economic chaos. The nation's energy shortages were also occupying congressional attention, and, despite the fact that energy savings could be realized through returnable container and other source reduction legislation, many lawmakers were intent on other more dramatic and immediate energy programs. Finally, in an effort to increase energy supplies and strengthen the economy, lawmakers attacked what they called superfluous environmental programs said to stall development of new energy sources. In this atmosphere, it is understandable that source reduction measures were ignored.

It should be noted that public pressure for source reduction measures was virtually nonexistent. A number of environmental and citizen organizations actively supported the programs, but, by and large, public apathy meant that congressmen felt no push for comprehensive solid waste legislation. Tom McCall, former governor of Oregon and the man who actively worked for passage of the Oregon bottle law, points to the evident need for public education: "It's a matter of raising the national consciousness." *(1)*

In what was a surprise to many, two federal agencies actively supported attempts to restrict the use of throwaways. EPA and the Federal Energy Administration testified on behalf of the measures, although both suggested the desirability of phasing in a deposit system to avoid abrupt shifts in manufacturing operations.

From the number of agency-sponsored studies cited in this report, it is evident that EPA has intensified its interest in and commitment to source reduction. Many of the conclusions reached by EPA on the basis of those studies have already provided the fuel for the 94th Congress' source reduction proposals.

state governments

In the absence of federal legislation, several states have enacted measures affecting waste generation, but, as with federal legislation, successes have been limited because legislators fear the economic impacts of source reduction. To this reluctance must be added a lack of public support and a general belief that effective source reduction programs must come from the federal government.

Oregon is, of course, the state that initiated waste reduction through its bottle law. Governor McCall, recollecting his accomplishments during his two terms in office, has called the law "a proven antidote to the national disease of overconsumption," and he views that law as *the* most important of the state's many environmental accomplishments. *(2)*

Vermont's "bottle bill" has met with less acclaim, due primarily to the language of the law and to its relative newness. (A number of challenges to the law's constitutionality delayed its implementation.) However, the law has been strengthened recently by adding a ban on throwaway bottles, flip-top cans and plastic binders. South Dakota is the only other state with a beverage container law.

Proposals before other state legislatures to reduce waste generation did not meet with the same success as those of Oregon, Vermont or South Dakota. Bottle bills were introduced in about 40 states, but none was enacted.

New attempts to pass bottle laws are expected in 1975, not only in states where there were previous efforts but in others as well.

Only one state, Minnesota, has enacted a law regulating all new or redesigned packaging introduced in the state. The state's pollution control agency (MPCA) has promulgated Regulations for Packaging Review that detail the procedures by which the acceptability of new or revised packages can be determined. The rules state that the agency will compare new packages with existing ones or with alternative packages, with an eye to maximizing "material and energy conservation while minimizing adverse environmental impact and increased economic costs to the people of the state." *(3)* All packaging subject to regulation will be viewed in light of potential toxicity or harm; energy and materials use, particularly of scarce or nonrenewable resources; recyclability; and impacts on consumers, labor and industry. If alternative forms of packaging, with fewer impacts, are available, then the agency can require that they be substituted for the proposed package. The rules were recently approved by the state attorney general and went into effect January 1, 1975, *(4)* but the agency is apparently inadequately staffed to handle all packaging review.

It is difficult to predict what actions states will take during the coming months, but a recent survey of all states' solid waste programs by *Waste Age* magazine has revealed a definite interest in source reduction. State officials were asked to list what they thought federal priorities in solid waste management should be and were given a choice of options such as financial and technical assistance. Source reduction was *not* included, but responses nonetheless ex-

pressed strong support for federal source reduction legislation and guidance. One state went so far as to say that source reduction should be the one and *only* federal solid waste priority. *(5)* Responses such as these indicate a growing awareness on the part of state governments of the need for uniform national source reduction programs.

local governments

A small number of cities and counties around the country have also enacted source reduction ordinances, all of them oriented to beverage containers. According to the International City Managers Association, of the 1,115 cities responding to an ICMA survey, 15 reported enactment of beverage container laws. *(6)* Local governments with such laws now include Bowie, Maryland, recently upheld in court; Oberlin, Ohio; Howard County, Maryland; Loudoun County, Virginia; and Cayuga County, New York. (The last three are all in litigation at the present time.) Bills that did not pass were considered in other places, including Philadelphia; Montgomery County, Maryland; Dade County, Florida; and Washington, D.C.

While it is expected that many cities will attempt to enact local bottle laws in 1975, virtually all supporters of such laws admit that local approaches are stopgaps at best and make few dents on waste generation or materials use. The greatest value of a local source reduction ordinance is its potential for raising public consciousness. Aroused public sentiment could hasten more encompassing proposals at higher levels of government.

8. EPA's role: source reduction program needs

. . . perhaps in the long run most important of all, we must seek to reduce the amount of unnecessary waste that we generate. We must begin to consider the total environmental consequences of our traditional mining, manufacturing, marketing and distribution practices and alter them as necessary in our time, rather than waiting until yet another crisis has engulfed us . . . if we continue to indulge in a 'no deposit, no return' attitude towards our earth and its resources, we will run out of energy and irretrievably ruin our environment. The earth and its resources are not simply another disposable, replaceable commodity.

Russell E. Train, Administrator, U.S. EPA
December 3, 1973

It becomes increasingly evident that some source reduction measures need further study before they are implemented, but a number, particularly those that are voluntary, appear feasible now.

At a national workshop conducted by OSWMP in Washington D.C. last April, John Quarles, deputy administrator of EPA, urged citizens and industry to cooperate, making clear the importance EPA places on voluntary efforts to reduce waste generation.

consumer education

If Governor McCall's assessment is correct, that people's environmental awareness must be heightened, then educating citizens to the choices available to them appears obligatory. Just as there have been efforts to require that electric appliances be labeled to show their energy use, so there has also been a limited attempt to convince manufacturers to advertise the energy and resource requirements of other products. Implementation of such a program appears distant, however.

How effective can such materials and energy labeling programs be? Public response is obviously dependent on many factors. We can assume that greatest demand for and attention to labeling will come from those segments of the population that are environmentally aware. Widespread changes in purchasing habits might be forthcoming, however, if the prices of items reflected their true resource and environmental impacts and costs.

"jawboning" with industry

The fast food industry's program on materials-use reduction arose as a result of joint efforts to develop source reduction approaches acceptable to government and industry. Gentle persuasion may be the most desirable strategy at the present time and indeed may be the *only* type of program foreseeable for the near future. EPA anticipates publicizing industry programs as they are developed and plans to issue fact sheets on source reduction developments in industry during the coming months.

voluntary and legislative activities

Despite EPA's belief that voluntary efforts are needed to produce viable and effective waste reduction programs, the agency does *not* rule out the need for selective legislative approaches for specific products. The most likely candidates at the present time appear to be beer and soft drink containers.

studies and policy development

The lack of comprehensive data on source reduction measures and their impacts necessitates an expanded research program, including analysis of the costs and benefits of source reduction and public receptivity to such programs. Among the studies to be undertaken by EPA will be an analysis of where source reduction programs are possible, what the specific targets of such programs should be, the feasibility of a phased deposit system for beverage containers, and the issuance of *voluntary* guidelines for source reduction pursuant to Section 209 of the Solid Waste Disposal Act.

EPA says its interest in source reduction is moving steadily from a single-target approach (beverage containers) to the more general product design level. If government intervention in the market place is to occur, it may be most feasible at the design stage rather than at the stage where external constraints must be placed on the product.

9. the role of the public

After Hiroshima it was obvious that the loyalty of science was not to humanity but to truth—its own truth—and that the law of science was not the law of the good—what humanity thinks of as good, meaning moral, decent, humane—but the law of the possible. What it is possible for science to know science must know. What it is possible for technology to do technology will have done. . . . The frustration—and it is a real and debasing frustration—in which we are mired today will not leave us until we believe in ourselves again, assume again the mastery of our lives, the management of our means.

Archibald MacLeish SATURDAY REVIEW
Oct. 14, 1967

As has been shown throughout this report, source reduction measures will affect the consumer's options by altering price, product availability and convenience. Whether manipulation of these factors is desirable or not is questionable.

Many manufacturers of nondurables, packaging and containers, point to the ways in which their products have increased consumer convenience by eliminating the need to return empties to the store or to wash soiled plates or napkins. Elimination of these chores is said to have made the consumer dependent on throwaway products, so that consumers now *demand* their continued production and any cessation of production would in effect create a hardship on the purchaser. Manufacturers thus say that there is no consumer demand for returnable or reusable products.

In an article in the *New Yorker*, Richard N. Goodwin points out the illogic of this kind of argument. The auto industry, according to Goodwin, manufactured gas-guzzling automobiles through the 1950s and 60s because there was no public demand for small cars. With the influx of small European cars into the U.S., however, that demand suddenly materialized, and the American auto industry began building smaller, more economical cars. Says Goodwin: "There can be no demand for a product that is not readily available."

(1) What has happened in terms of throwaway products is that consumers have been inculcated with a kind of throwaway value system. Having come to expect certain articles, people do not clamor for alternative products, which could be far more conserving and protective of the environment.

Recognition of our wastefulness will force us to reassess virtually all our activities and demand the end to the throwaway ethic. Under the present system each consumer imposes his individual disposal costs upon the rest of society, an act rational from the individual's viewpoint but irrational and inefficient from the social viewpoint. Energy shortages, food shortages, resource shortages, and a fragile economy will force us to redirect our priorities. Reduced convenience may be relatively painless compared to the alternative.

During congressional hearings on beverage containers, several container manufacturers hinted at the specious argument that source reduction measures are an invention of upper middle class environmentalists. Use of returnables was said to place an onerous burden on the poor of the inner city since most inner-city residents walk to stores and will therefore be forced to carry heavy bottles back and forth. In addition, container companies said that if prices for beer and soft drinks were higher, because a deposit had been added to the basic price, the inner-city resident would again be discriminated against. Warnings that source reduction measures are inherently elitist, if not racist, have deterred legislators who might otherwise support such measures.

Industry arguments such as these are difficult to substantiate. People who walk to and from stores now must carry filled cans or bottles home so that the weight of empty refillables on the trip back to the market would seem to have little effect. Most importantly, there is no logical reason why a person who is able to carry loaded shopping bags home from the store should be unable to carry empty containers to the store.

The Red Owl Supermarket experience with returnables confirms this reasoning. Alan Greene stated that the "Bring 'Em Back and Save" program was most successful in university and inner-city areas and least successful in outlying suburban areas where all shoppers drove to stores. This success can be explained by the fact that inner-city residents made frequent, often daily, trips to stores and would always carry empty bottles or used shopping bags with them. In addition, the bounty on bags, egg cartons and bottles encouraged many people, primarily children, to actively seek discarded products which they then returned for a rebate.

When consumers are able or are required to buy returnables, their response has been favorable. A report on Oregon's Minimum Refund Act by Applied Decision Systems, Inc. (ADS) said that 80 percent of all persons polled by the firm stated that Oregon's law had not inconvenienced them or else was worth the inconvenience because of reduced litter. *(2)*

It should be noted that even if a consumer wishes to buy returnable beverage containers he often is unable to do so. In a survey of Washington, D.C., Environmental Action, Inc. found that less than 15 percent of 361 liquor stores sold beer in returnable bottles, and these containers could only be purchased by the case and were not displayed on the shelves. *(3)* Similarly, many supermarkets do not carry carbonated beverages in returnables or carry only a limited selection of brands in returnables. And vending machines are increasingly dominated by beverages in cans. Disparities between the price of refillables and throwaways arise only because of the deposit that is added to returnables. Since the consumer gets a refund for all empties returned, returnables in the end cost no more than non-returnables. A switchover to reusables may actually lower beverage cost. The same Washington survey found that a case of beer in returnables costs 81¢ less than a case of throwaways. *(4)*

In the case of durable goods, potential inequities due to price differentials are harder to disprove: radial tires *are* more expensive than bias ply tires, but, as was explained earlier, they offer real savings in terms of lifetime cost. It should be noted that placing a guaranteed life-span on many other durables is not as easy as it is for tires, because there are no models of performance against which we can evaluate those products. Few manufacturers willingly guarantee their products and among those who make guarantees, some do so only to spur lagging sales.

10. a final word

In his book, *Future Shock,* Alvin Toffler characterizes the abundance of products available to consumers as "overchoice." But many people—and not just labor and industry—would disagree. Do we as a nation consume and waste too much? Must we eliminate certain practices and products because of their ramifications? These are in some respects philosophical questions requiring philosophical answers. But there are also factual answers, substantiated by data, that may indeed point to the need for reducing consumption.

The question of costs and tradeoffs, an expression that has become increasingly prevalent in recent months, obviously must arise. What are we willing to do to achieve certain goals? Will we shift employment from the manufacture of packaging and nonreturnable bottles into production of goods that helps in pollution abatement? It appears to many people concerned about the environment that, all too often, environmental considerations are considered trimmings, superfluities that must be sacrificed at times of crisis. The environment is most often traded-off; we accept dirty air or a blighted landscape because threats of joblessness and depression hang over us, because we are told that we need more energy. We do not stop to consider that including the cost of pollution and solid waste and litter collection and disposal as part of the cost of production (internalizing the cost) will go far to rationalize these trade-off decisions.

The question of how much intervention in the marketplace, if any, can occur without damaging individual freedoms and the free enterprise system grows more heated as the nation attempts to extricate itself from its economic woes. In a recent *New Yorker* article, Richard N. Goodwin made some observations about economic theory that are surprisingly relevant to issues of reducing waste generation and resource use. He pointed out that every society evolves its own system for making such economic decisions about use of factories, capital, and resources. "That system may consist of a dictator's will, of socialist managers, or of the untrammelled operation of the law of supply and demand. We have relied—at least until recently—upon a regulated market whose animating spirit is that the principle of competition . . . private conflict . . . the struggle to make money . . . will impel the most efficient and productive use of resources." *(1)*

Goodwin goes on to say that competition or the threat of competition can lead to development of desirable new technologies and products that meet changing social or resource needs; at the same time, competition can keep industry in line, ensuring that managerial decisions are predicated on actual social needs. But, according to Goodwin, this kind of competition can occur *only* when there is a regulated market, one in which the government plays a role. "Outside the regulated market, our society has no way to deter or penalize the wasteful use of resources, to compel technological innovation, or to direct production towards the satisfaction of public wants. Indeed, without competitive challenge, we cannot even measure waste, inefficiency, or technological stagnation. There is no standard by which to compare actual performance and possible performance." *(2)* The failures of the marketplace as it is now regulated indicate that new forms of economic life must emerge; the mere extension of public authority does not in itself guarantee its usefulness or efficacy. The conclusion that must be drawn, then, is the need to restructure our priorities to reflect the resource needs of the nation as a whole. Government regulation of particular products or product classes is not in itself a panacea, just as a free rein to industry to develop whatever products and packages it wishes is no solution. Changes in consumption, in attitudes, in perceptions of the world must enter in. We simply must recognize that if we do not conserve, and conserve effectively, we will damage the planet and its people and its institutions beyond repair.

suggested reading

Materials listed as printed by GPO can be ordered by writing to: Superintendent of Documents, Government Printing Office, 710 North Capitol Street, N.W., Washington, D.C 20402. GPO publications must be prepaid at the prices quoted; allow up to six weeks for delivery. Single copies of publications with one asterisk (*) are available FREE from the Solid Waste Information Materials Control Section, U.S. EPA, Cincinnati, Ohio 45268.

American Can Company. ENERGY AND TECHNICAL DEVELOPMENT. 1974. 14pp. Available from American Can Company, 1660 L Street, N.W. Washington, D.C. 20036. Discusses the development of American Can's new can manufacturing technologies, with estimates of the energy savings available through such containers. Contains data on actual materials and energy savings from a variety of container types.

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*Lowe, Robert A., Michael Loube, and Frank A. Smith. ENERGY CONSERVATION THROUGH IMPROVED SOLID WASTE MANAGEMENT. 1974. 39pp. Washington, D.C.: GPO. A report of staff in the Office of Solid Waste Management Programs, EPA, on potential energy savings from a variety of solid waste policies. Contains lengthy appendices and data.

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*National League of Cities-U.S. Conference of Mayors. CITIES AND THE NATION'S DISPOSAL CRISIS. March 1973. 46 pp. (paper). The report of a NLC-USCM task force on solid waste management which contains the results of a survey of local government needs for solid waste. It also contains recommendations for solid waste management policy at the federal, state and local level. The "definitive" survey of local government and solid waste.

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*Research Triangle Institute. AN EVALUATION OF THE EFFECTIVENESS AND COSTS OF REGULATORY AND FISCAL POLICY INSTRUMENTS ON PRODUCT PACKAGING. March 1974. 301 pp. (paper). A report prepared for EPA that assesses the feasibility of two kinds of regulation of consumer products packaging. It contains extensive data on packaging proliferation, consumption, expenditures and trends.

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FOOTNOTES

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[2]F. A. Smith, *supra*, and National Commission on Materials Policy, *supra*, p. 2-27.
[3]For a complete discussion of the impediments to recycling, see *Recycle?—In Search of New Policies for Resource Recovery*, League of Women Voters Education Fund, Pub. No. 132, 75¢, (1972).
[4]For a detailed discussion of the Malthusian vs. Cornucopian attitudes, see *MORE?*, League of Women Voters Education Fund, Pub. No. 104, 75¢, (1972).

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[1]George Hutton, *supra.*
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Chapter IX

[1]Richard N. Goodwin, "Reflections—Awaiting the Copernican Question," in *The New Yorker,* (January 6, 1975), p. 48.
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[1]R. N. Goodwin, *supra,* p. 46.
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LWVEF publications on solid waste management

RECYCLE? In Search of New Policies for Resource Recovery. Federal laws, programs, and policies impeding reuse, reclamation, and recycling of solid waste. Federal changes that might increase demand for recyclable materials and industrial and governmental initiatives to reduce generation of solid wastes. Bibliography. 1972, EF, 39 pp. #132, 75¢

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Solid Waste—It Won't Go Away (CF). Explains solid wastes—today's practices and problems in waste collection and disposal. Considers governmental responsibilities; fragmented authority vs. regional cooperation. Bibliography. Nov. 1971, EF, 12 pp. #675, 50¢

Solid Waste—It Won't Go Away Unless . . . A Sampling of What Citizen Leaders Can Do. Adapted from the LWVEF's report to the Office of Solid Waste Management Programs. 1974, EF, 16 pp. #513, 25¢.

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BEVERAGE CONTAINER FACT SHEETS
February, 1977

BREWERY EMPLOYMENT IN MINNESOTA

Since 1961, when the non-returnable container entered the Minnesota market in volume, at least 8 Minnesota breweries have gone out of business.[1]

1. Fleckenstein (Faribault) 1964
2. Gluek (Minneapolis 1964
3. Duluth (Duluth) 1966
4. Mankato (Mankato) 1967
5. Peter Pub (Winona) 1969
6. Hauenstein (New Ulm) 1970
7. Fitgers (Duluth) 1972
8. Grain Belt (Minneapolis) 1976

Brewery employment in Minnesota has dropped from 2,456 workers in 1961 to 1,445 workers in 1975, a loss of 1,011 jobs.[1]

When Grain Belt Brewery closed in 1976, an additional 351 jobs were lost.[2]

Following enactment of Oregon's Bottle Law:

Brewery employment increased by 50 to 60 skilled jobs, at average salaries of approximately $12,000.[3]

Total annual brewery payrolls increased by $614,000 to $736,000 as a result of the law.[3]

[1] MN Employment Trends and the Non-returnable Container, Dr. Don Covill Skinner, Hamline University, 1975
[2] Minneapolis Sunday TRIBUNE, January 16, 1977
[3] Study of the Effectiveness and Impact of the Oregon Minimum Deposit Law, ADS, pp. II-68, October, 1974

ENVIRONMENTAL PROFILE

A returnable beverage container system is superior to the throwaway beverage container system in 7 out of 7 environmental areas.[1]

1. Energy use
2. Raw materials
3. Water volume use
4. Industrial solid waste
5. Air pollution
6. Water pollution
7. Post-consumer solid waste

[1] Resource Recovery and Waste Reduction, 3rd Report to Congress, U.S. Environmental Protection Agency, 1975, p. 30.

(Over)

ENERGY SAVINGS

The energy savings which would occur with implementation of an all-refillable beverage container system in Minnesota would be 2.15 trillion BTUs annually.[1]

2.15 trillion BTUs will:

Heat 15,468 homes in Minnesota for 1 year. (Assuming that each home uses 1,000 gallons of #2 heating oil.)

OR

Provide all of the electrical needs for 39,815 homes in Minnesota for an entire year. (Assuming that each home uses 400 kilowatt/hours of electricity each month for a whole year.)[2]

2.15 trillion BTUs equals:

2% of all the home and business heating oil used in Minnesota in 1970.

OR

1% of all the electric energy purchased in Minnesota in 1970.[2]

[1] Impacts of Beverage Container Regulations in MN, MN State Planning Agency, January, 1974

[2] Letter from Max Malmquist, physics instructor at Anoka-Ramsey Community College, November 29, 1976

OREGON EMPLOYMENT

Oregon passed beverage container deposit legislation in 1972, which had the effect of increased employment in the following industries:

Soft Drink Industry - 82 to 98 new jobs

75 to 80 skilled jobs at salaries of $211 to $252 per week, and 5 clerical jobs at $160 per week.

Total new payroll of $872,000 to $1,050,000 additional wages in Oregon (pp. II-4,5).

Beer Wholesalers - 43 to 50 new jobs.

At the average wage of $250 per week.

Total new payroll $559,000 to $650,000 per year (pp II-134)

Brewery - 50 to 60 new skilled jobs

At average salaries of $12,000 per year.

Total annual payrolls increased by $614,000 to $736,000 (pp II-68)

"Study of the Effectiveness and Impact of the Oregon Minimum Deposit Law," ADS, 1974 for Oregon Legislative Fiscal Officer and Department of Transportation, Oregon Division of Highways

LITTER PICKUP EXPENSE

The cost of litter pickup along Minnesota state highways in 1976 was $1,018,421.[1]

That's ..... $19,585 per week (5-day week)
$ 3,917 per day (8-hour day)
$ 489 per hour

In the past, the cost of litter pickup along Minnesota state highways has been:

1971 - $ 411,951
1972 - 580,563
1973 - 742,275
1974 - 752,204
1975 - 801,849
1976 - 1,018,421

None of these figures include administrative overhead or dump fees. Nor do the figures include municipal, county, or township litter pickup costs.

Following enactment of Oregon's Bottle Law:

Beverage container little declined by 83%.[2]

[1] MN Department of Transportation, Highway Division, February, 1977.
[2] Oregon's Bottle Bill - Two Years Later, Oregon Environmental Council, Don Waggoner, 1974, p. 6.

League of Women Voters of Minnesota, 555 Wabasha, St. Paul, MN 55102 - March 29, 1977

URGENT! IMPORTANT! CRUCIAL! URGENT! IMPORTANT! CRUCIAL! URGENT! IMPORTANT!

TIME FOR ACTION

S.F. 1 - H.F. 13 - MANDATORY DEPOSITS ON BEVERAGE CONTAINERS (See p. 2, Capitol Letter)

In spite of polls showing Minnesotans in favor of deposit legislation, our legislators hear only from opponents. This bill has been around for 10 years, and if you want it passed, you have to do something now.

So write or call your Senator or Representative expressing support of SF 1 - HF 13. Encourage others to contact legislators, and use the Beverage Container Facts for background information. It's up to you!!!!!

BEVERAGE CONTAINER FACTS

ENVIRONMENTAL PROFILE

A returnable beverage container system is superior to the throwaway beverage container system in 7 out of 7 environmental areas.[1]

1. Energy use
2. Raw materials
3. Water volume use
4. Industrial solid waste
5. Air pollution
6. Water pollution
7. Post-consumer solid waste

ENERGY SAVINGS

The energy savings which would occur with implementation of an all-refillable beverage container system in Minnesota would be 2.15 trillion BTUs annually.[2]

2.15 trillion BTUs will:

Heat 15,468 homes in Minnesota for 1 year (assuming that each home uses 1,000 gallons of #2 heating oil).

OR

Provide all of the electrical needs for 39,815 homes in Minnesota for an entire year (assuming that each home uses 400 kilowatt/hours of electricity each month for a whole year).[3]

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[1] Resource Recovery and Waste Reduction, 3rd Report to Congress, U. S. Environmental Protection Agency, 1975, p. 30.

[2] Impacts of Beverage Container Regulations in MN, MN State Planning Agency, January, 1974.

[3] Letter from Max Malmquist, physics instructor at Anoka-Ramsey Community College, November 29, 1976.

LITTER PICKUP EXPENSE

The cost of litter pickup along Minnesota state highways in 1976 was $1,018,421.[1]

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Following enactment of Oregon's Bottle Law: Beverage container litter declined by 83%.[2]

BREWERY EMPLOYMENT IN MINNESOTA

Since 1961, when the non-returnable container entered the Minnesota market in volume, at least 8 Minnesota breweries have gone out of business.[3]

Brewery employment in Minnesota has dropped from 2,456 workers in 1961 to 1,445 workers in 1975, a loss of 1,011 jobs.[1]

When Grain Belt Brewery closed in 1976, an additional 351 jobs were lost.[4]

Following enactment of Oregon's Bottle Law:

Brewery employment increased by 50 to 60 skilled jobs, at average salaries of approximately $12,000.[5]

Total annual brewery payrolls increased by $614,000 to $736,000 as a result of the law.[5]

OREGON EMPLOYMENT

Oregon passed beverage container deposit legislation in 1972, which had the effect of increased employment in the following industries:

Soft Drink Industry - 82 to 98 new jobs.

75 to 80 skilled jobs at salaries of $211 to $252 per week, and 5 clerical jobs at $160 per week.

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[1] MN Department of Transportation, Highway Division, February, 1977.

[2] Oregon's Bottle Bill - Two Years Later, Oregon Environmental Council, Don Waggoner, 1974, p. 6.

[3] MN Employment Trends and the Non-returnable Container, Dr. Don Covill Skinner, Hamline University, 1975.

[4] Minneapolis Sunday TRIBUNE, January 16, 1977.

[5] Study of the Effectiveness and Impact of the Oregon Minimum Deposit Law, ADS, 1974, for Oregon Legislative Fiscal Officer and Department of Transportation, Oregon Division of Highways, October, 1974.

LEAGUE OF WOMEN VOTERS OF MINNESOTA
555 WABASHA • ST. PAUL, MINNESOTA 55102
PHONE: (612) 224-5445

MEMO

TO: Poppleton, Lake, Foley, Berkwitz, Borg, Lucas
FROM: Betty Ann
SUBJECT: Attached
DATE: December 8, 1977

This morning Senator Borden's office called Pat to tell us he is holding a meeting Monday morning, 8:00 a.m., Holiday Inn, with environmental groups -- to discuss the attached statement. He said he would expect Sally or Mary to attend.

I talked with Sally on the phone, and she said she and Mary had discussed his plan -- since it is not yet in bill form and probably won't be before Christmas, it is their feeling we should continue the stand we've taken.

DEC 8 1977

WINSTON W. BORDEN
Assistant Majority Whip
Senator 13th District
Room 208
State Capitol
St. Paul, Minnesota 55155
(612) 296-2607

KEL JOHNSON
Administrative Assistant

Senate

State of Minnesota

December 7, 1977

Sally Foley
League of Women Voters
555 Wabasha St.
St.Paul, MN 55102

Dear Sally:

As you know I have been chief author of the returnable container bill five times during the last six legislative sessions. In the 1977 Legislative Session I co-authored the bill with Senator Luther, but it was defeated as it had been in past sessions.

On November 30th of this year I made a statement to the Subcommittee on Employment (a copy is enclosed) with reference to a compromise I have been working on the last few months. At present the bill is in the Revisor's office being prepared. I send you a copy of my statement to inform you of what the bill will look like in its final form. I would like your help in refining and making it as acceptable as possible to environmental groups supporting a returnable container bill.

As I stated above I have worked on this subject since being elected to the State Legislature in 1970. I have probably spent more time on the returnable container issue than I have spent on any other issue. Because of my interest in this subject and also the environment and solid wast areas, I do want a bill that can pass. I feel I have spent as much time as anyone in the Legislature on this frustrating issue, and I feel it is time we make some progress.

After you have had a chance to review my statement and discuss it with your group, I would appreciate sitting down with you and other environmental groups to discuss this compromise in an effort to produce something that is acceptable to all.

I want to thank you for your help in the past.

Sincerely,

Winston W. Borden

WWB:lsh
Encl.

(Not for release before 12 o'clock noon on Nov. 30, 1977)

STATEMENT OF WINSTON W. BORDEN, ASSISTANT MAJORITY LEADER
NOVEMBER 30, 1977, BEFORE THE EMPLOYMENT IMPACT COMMITTEE

For five of the last six years I have been the chief Senate author of the Returnable Container Bill. During that time we in the legislature, along with citizens across the state, have spent hundreds of thousands of hours debating the merits of the bill. But no bill has passed.

For the last six months I have been working to finally resolve the returnable container issue through a compromise bill that will conserve energy, preserve natural resources, reduce litter, cut consumer costs, and preserve and create jobs. Most importantly, this effort is designed to gain enough broad based support to enact the bill into law.

The proposal has been sent to the Revisor of Statutes for drafting. I expect to be able to introduce it shortly.

The members of this committee have worked long and diligently on the issue. My purpose today is to outline the essential elements of the new bill to the committee and to say to the public that we are no longer going to simply talk about the problem. We are going to begin to resolve it.

Let me state at the outset that the bill will not please everyone. It will protect our environment as well or better than the Returnable Container Bill and it will do so without dislocating jobs. It is designed to achieve early passage and provide an immediate attack on the complex issues of litter and recycling.

The six major components of the bill are designed:

First, to insure consumer choice. Some consumers want to purchase beverages in returnable containers, but cannot always find them. The bill will require stores which sell in throw-aways to offer those items in returnable containers as well.

Second, the bill is designed to promote the use of returnable containers for on-premises consumption. Stores must use returnable containers for on-site consumption unless they purchase a special license to sell throw-away containers. The license fee will be high enough to actively discourage the use of throwaways.

Third, I am considering tax alternatives to encourage consumers to purchase items in returnables, such as exempting beer sold in returnables from the sales tax now imposed.

Fourth, the bill will establish regional centers for the recycling of glass, aluminum, and steel containers as well as all paper products, in each of the state's 13 economic development regions. It establishes a floor price for those items to reimburse the persons who bring them to the centers. The state will bear the cost of collecting the items from the centers and transporting them to the resource recovery unit. Transportation costs will no longer be a block to recycling.

Fifth, the bill sets up a comprehensive litter control and reduction program. The bill imposes a broad based single tier litter assessment at the manufacturing or wholesale level to fund these activities. Staff work on budget and revenue estimates is in process.

Sixth, the bill seeks to expedite the establishment of the total resource recovery system in Minnesota by separating the total solid waste problem from the immediate concerns of hazardous waste and proceeding to establish a solid waste recovery system for non-hazardous waste.

I am proud of my public record on behalf of the environment of our state. I carried the fight for the Returnable Container Bill for five years and I have authored and passed the Minnesota Wild and Scenic Rivers Act, the Minnesota Environmental Education Act, and the Critical Areas Act. In that process I've learned one thing. Simply stated, to protect the environment we not only need to propose good legislation, we need to pass it.

Americans are the worlds greatest consumers. Much of what we use once we throw away. The bill seeks to reduce the use of throw away items. It will rid our roadsides, lakes and streams of litter.

It is a better bill than the returnable container bill because it seeks to address all aspects of litter and resource recovery.

To my friends in the labor movement who have opposed the returnable container bill, I would only say, here is a bill that will preserve existing jobs and create new jobs. It deserves labor support.

To industry representatives who have opposed returnable container legislation, I would say here is a chance to support a bill which will not unduly disrupt your industry, but which will reduce litter, and conserve energy and natural resources.

I want to be particularly clear. I have worked hard to develop a better bill -- one that you can live with. I believe it can work. Unless we all, environmentalists, labor and industry come together this year to support this approach the public will be the loser. Our working families will continue to face job jeopardy and our environment will continue to deteriorate at an accelerating rate and we the elected leaders will have in the final analysis failed.

JUL 18 1977

League of Women Voters Education Fund •1730 M Street, N.W., Washington, D. C. 20036 Tel. (202) 659-2685

memorandum

JUL 18 1977

TO: State EQ Chairmen (copy to state presidents)

FROM: Jean Anderson, Chairman, Environmental Quality Committee

Enclosed is a videotape containing three public service announcements promoting solid waste reduction.

Under the 1975-76 solid waste grant from EPA to the League of Women Voters Education Fund, the Dade County, Florida League worked with a professional artist to develop a series of public service cartoon messages for newspapers, magazines and television. The Dade County League made additional copies of its television public service announcements for us to share with all state Leagues.

The public service TV spots are on 2-inch broadcast quality color videotape. Each tape includes three 10-second spots with "Canny" the trash can and Lester 'Les' Waste (Everyman) showing us how we can all reduce waste generation. For the exact content, refer to the enclosed copy of the cartoons and script.

The source of the public service spots is identified only as the League of Women Voters. These spots are a good opportunity for you to get public exposure for both your waste reduction message and your state or local Leagues. For suggestions on how to get these public service announcements on the air consult Breaking Into Broadcasting.

Curbing Trash

Community Guide

In more than 200 communities in the United States, residents are asked to keep certain recyclable portions of their trash separate from the rest. These recyclables are placed at curbside, collected by sanitation crews, and sold to companies that reprocess the materials into new products. Most of these programs help remove only newspaper from the solid waste stream, but a few include other papers, glass and metals as well.

Why does a community develop a curbside program to separate waste at its source? What are the benefits of separation to the community and the environment?

In many communities, the savings in landfill space is a convincing reason to separately collect newspapers and other materials. Newspapers make up six percent of the residential and commercial waste stream. Glass containers and metal cans add another twelve percent to the total.

Landfills are increasingly expensive to buy and operate. Escalating disposal costs can make recycling projects that cut down on waste reaching the landfill appealing to city officials. Because of public antipathy, the siting of landfills is extremely difficult; increased recycling can give public officials a little more time to locate desirable sites and receive approval for landfills.

The requirements under the Resource Conservation and Recovery Act (RCRA) of 1976 for stricter rules on land disposal practices could help tip the balance toward more recycling. RCRA calls for the eventual closing of all open dumps: EPA is currently in the process of developing criteria for determining which facilities will receive the open dump classification and which are sanitary landfills. To qualify as a sanitary landfill a facility must not, according to the act's definition, "have adverse effects on health or the environment" (sec. 4004). The requirement to close disposal sites, along with problems in establishing new ones, will force many communities to reassess their solid waste management practices.

An additional incentive for municipal adoption of a recycling program is that the city is paid for materials they would otherwise pay to get rid of. Cities do incur extra costs in the operation of a curbside collection program but many find that the additional costs are minimal.

Whether or not the system pays for itself depends on:

- the proximity to material markets;
- the market value of recyclables;
- the contract provisions between the municipality and the buyer;
- the disposal costs if the material is not reclaimed;
- the design and cost of the collection system;
- the public participation rate.

These will be discussed more fully below.

The environmental reasons are also compelling. First, recycling saves energy. The figures vary, but experts generally concur that appreciable energy savings can be realized. Aluminum, according to most estimates, can be recycled using less than five percent of the energy needed to make it in the first place.

A second advantage is that recycling reduces the need to use virgin material resources, thus extending domestic and global supplies of raw materials like bauxite or iron ore. In the case of paper production from trees this advantage is less clear cut since trees are a renewable resource. There is, however, the possibility that the demand for wood products could increase since products made from other materials are more energy-intensive. This may make paper recycling even more attractive.

Thirdly, the reprocessing of scrap materials usually causes less pollution than does the processing of virgin materials. For example, when fresh newsprint is produced from old newspapers there is less air pollution and water consumption than with production from new materials. The processing of recycled paper can, in some cases, increase water pollution as a result of de-inking used papers. But when the end product is a lower grade paper or paperboard, where color is not important, using old paper results in less water consumption, air pollution and water pollution.

Even if a local government concludes that recycling of resources can benefit the community as well as the environment, there can still be disagreement on the method. Voluntary recycling centers or high-technology waste-processing centers may be proposed as alternatives to curbside separation. These options should not be considered mutually exclusive since one approach won't solve all solid waste problems.

Recycling centers, for example, are not as convenient as curbside collection programs. The process of locating a center, and then transporting the collected recyclables will discourage many would-be participants. The most important advantage of centers over curbside collection is that more kinds of materials can be accepted with little or no additional effort by the city. Waste oil or color-sorted glass are examples of materials that can be collected more easily at a center than by a separate collection program.

Resource recovery plants — facilities that mechanically separate refuse into its component parts — are not a substitute for all forms of source separation. Each portion of the waste stream is more valuable when it is uncontaminated by other elements. It is easier to prevent contamination by separation at the source than it is to remove extraneous materials. In most high-technology recovery facilities the organic fraction — which includes paper fiber — is directly burned or converted into a transportable fuel. It seems reasonable to prevent easily recyclable papers like newspaper from reaching the recovery plant since newspaper is worth more as a material than it is an energy source.

If the economic and environmental arguments have convinced you or your organization of the value of a separate collection program for your community, your first step will be to persuade local officials to adopt such a program. You'll need hard facts about the costs and benefits to your fellow taxpayers and suggestions on how the program can be run. You'll also need to win the support of the sanitation department and persons in your communi-

League of Women Voters
Education Fund
1730 M Street, N.W.
Washington, D.C. 20036

ty's public affairs or public information offices, their commitment to a residential recovery program is vital. And, perhaps most importantly, you'll need to awaken public interest in the program.

How should your community's program be organized? You might want to make a checklist of the topics that need consideration, including the following:

Economic factors
- How much material do you expect to recover?
- How marketable are your recyclables?
- What contract provisions are best for your community?
- What are the disposal costs if the material is not reclaimed?

Collection systems
- What materials can be collected?
- Should a special rack for recyclables or a separate truck be used?
- How often should recyclables be collected?
- How can you devise a collection system that will encourage public participation?

Local ordinances
- Should your community pass an anti-scavenging ordinance?
- What are the pros and cons of making a program mandatory?

Sanitation workers
- Does your system take into consideration the concerns of sanitation workers?
- Are there benefits to offset any additional work required?

Key local officials
- Have you consulted with the Department of Sanitation?
- What are local officials' concerns and/or suggestions?
- How can your community's public affairs office help?

Publicizing the program
- Will the city earmark funds for publicity?
- What community organizations might help?
- What are the alternatives for "getting the message out" in your community?

Economic factors

The financial pluses and minuses will determine whether a curbside separation program sinks or swims. And for the pluses to add up, there must be accessible buyers for recycled materials (see Resources).

From curbside to market

From the earliest planning stages it is important to determine the marketability of recyclables. Among the questions you'll have to answer:
- How far is your community from potential markets?
- What is the going price for scrap materials in your part of the country? How much does it fluctuate?
- Will your "product" meet the specifications of the potential buyers?
- Are potential buyers interested in signing a contract to buy your product? What floor prices will buyers guarantee in writing?

Transportation costs are an important factor in determining marketability. Isolated communities have a special problem; the closest markets may be hundreds of miles away. Solutions are possible but they require some ingenuity. Salt Lake City, for example, sends its collected newspapers to Pomona, California, via an intermediary called the Newspaper Agency. This company needs to send its trucks to California anyway to pick up Sunday magazines, comics and fresh newsprint for the local papers. Transporting old newspapers from Salt Lake City to Pomona is, therefore, not as expensive as it might appear at first glance.

How much material will you collect?

Before community representatives have serious discussions with potential buyers, an estimate of the *quantity* of material the community expects to have for sale is necessary. Be sure to take into consideration:
- per-person national averages for waste generation and composition;
- your community's population;
- a projected participation rate.

(See pp. 5-6 of *Residential Paper Recovery: A Municipal Guide*, listed in Resources section.)

To get a more accurate fix on your community's potential you will also need to factor in other variables. The actual composition of your community's waste stream, for instance, may differ considerably from national averages; you may want to work with your Sanitation Department to answer questions on the composition of refuse in your area.

One of the most important factors affecting your calculations is the projected participation rate, the estimated percentage of residents who will separate material for collection. Participation rates do vary considerably from community to community. The design of the collection system, the public education program, and residents' commitment to the program will affect the final result — tonnage collected.

You shouldn't expect that all, or even most, of the available materials will be recycled. If you can, for example, recycle fifty percent of your community's newspapers your program is doing very well. Such a high rate may not be possible at first — studies have shown that longer-lived programs usually enjoy better participation. Newspaper separation at curbside is easier to achieve than glass and metal separation; some residents are not willing to take the extra time and effort needed to separate several types of trash.

Learning from nearby programs

One way to find out about potential markets, means of transportation, and the general economics of curbside collection in your area is to contact nearby communities with ongoing programs, if there are any in your area. Although each community should have a program tailored to its own needs, certain information and ideas can easily be shared. Take advantage of the experience of others.

Contracts

A contract with a buyer provides the city with a semi-permanent market for its recyclables. It also benefits the buyer to have a constant, or near constant, source of materials. Without a contract a community may not be able to weather the ups and downs in materials markets. The contract should include a floor price, a minimum price level that the buyer will pay regardless of market conditions. The price paid to the city may go above this floor price; it is usually tied to the going price in a specified materials market.

What about smaller communities?

Can small communities justify a residential source separation program? Cities like Ridgewood, New Jersey (pop. 28,000) and Indian Hill, Ohio (pop. 7,000) must think so; both have ongoing collection programs. Smallness can actually be an advantage. In smaller cities, for instance, a strong sense of community may make it easier to mobilize support.

The questions that need to be asked are the same whether your community is small or large. Where can we sell recyclables? What are the transportation costs? Can we justify the program on the basis of money saved and spent? Or, are the environmental and energy benefits worth the extra costs that might result from the program?

Collection systems

The kind of collection system used will, of course, affect the economics of a program. Some communities have trucks with a special rack or compartment for recyclables, which can collect recyclables and trash at the same time. Other communities use a separate truck collection system for recyclables.

Collecting recyclables at the same time as other trash can save on personnel and equipment costs. But some local officials feel that separate truck collection systems work better for them. Communities that use a separate truck may set aside one day of the week solely for collecting recyclables. On that day, they may be able to draw from the same personnel and equipment used for trash pick-up the other four days of the week.

Multi-material separation

In 1975, EPA chose two Massachusetts cities for demonstration projects. Somerville and Marblehead each received federal funds to establish multi-material curbside collection programs. In both cities, glass, metal cans, aluminum foil and pie pans, and flat paper have been separately collected by sanitation crews for almost two years. Although such systems are not as common as simple newspaper collection, a number of communities, especially in New England, do collect metal and glass.

To collect a number of materials, the community must either run extra collection routes for the same neighborhoods or buy or devise special compartmentalized collection trucks. Either of these options will cost the city money — money that may not be offset by the sale of collected materials.

Most communities with multi-material programs collect glass and metal cans together. This makes it easier for the resident (few containers to put at curbside) and less expensive for the city to collect both materials. The biggest problem with this approach, however, is that the product collected is not worth much to potential buyers. Industry finds the separation process expensive, and the materials may be contaminated.

Making it easy

The collection scheme must also consider the potential participants, since a higher participation rate will obviously make the program more successful. Communities with frequent collections generally find it easier to get a higher percentage of the targeted material, since residents are often unwilling to store recyclables for a month as some programs require. Weekly or biweekly collection schedules will spur greater participation.

University City, Missouri's unique way of making it easier to participate is to provide residences with yellow plastic containers for newspaper storage. These containers are then placed at curbside on collection day. The container is designed to keep newspapers dry on rainy days and to store a little more than a two-week supply of a daily paper.

A demonstration project

Newton, Massachusetts separately collects paper, metals and glass. However, the Newton League of Women Voters found, in talking with residents, that many did not participate in the program because they felt that they did not have enough recyclables to make it worth the effort. The League decided to demonstrate that the volume of recyclables a family generates is enough to justify the effort needed to recycle.

Ten families, most of whom had not recycled before, volunteered to be part of the experiment. The families, for a one-month period, separated bottles, cans and paper from their trash, and closely monitored volume and time spent recycling.

At the end of the month the results of the experiment were compiled and released to the press, with a number of feature articles as a result. Newcomers to recycling found their only inconvenience was in establishing a system in the kitchen. Once this initial adjustment was made, the time estimated for recycling ranged from 1 to 20 minutes per week, with 15 minutes as the average time investment. In all, the ten families recycled approximately 1,189 glass and can items (roughly 500-600 pounds) and 295 inches of newspaper (about 690 pounds) during the one-month period. All those involved planned to continue to participate as a result of the experiment.

Local ordinances

To implement your community's curbside collection program some local ordinance changes or additions may be considered. There are two kinds of ordinances that may receive special attention in connection with such a program: "anti-scavenging ordinances" and ordinances that *require* residents to separate their trash.

Anti-scavenging ordinances

Perhaps one of the best proofs that newspapers and other materials are valuable commodities is the fact that they are often removed from curbside by someone other than the community's collection service. This may be an especially obvious problem when market prices are high and individuals can realize a good return for their efforts.

To prevent a few people from reaping the profits of a communitywide service, many communities have enacted anti-scavenging ordinances. These ordinances clarify the city's ownership of materials placed at curbside for pick-up but do not prevent residents from saving recyclables for volunteer groups.

Voluntary vs. mandatory participation

Most curbside separation programs are voluntary, depending totally on the interest and concern of the citizenry. But in a few communities, ordinances require residents to segregate newspapers from the rest of the trash.

The effects of such ordinances are uncertain. They commonly go unenforced, and at least one study's findings indicated that participation rates do not differ between voluntary and mandatory programs. Some residents may feel an added sense of responsibility to separate their trash because of the "mandatory" nature of the program, while others may respond negatively to being forced to participate.

Sanitation workers

It's good to keep in mind that a recycling program at curbside may not be appealing from the sanitation workers' viewpoint. They may feel that they are being required to do additional work without additional pay, something no one would be very happy about. In recognition for providing this extra service, therefore, some communities funnel a portion of the revenues generated by recycling back to services for the sanitation workers, in the form of bonuses, new uniforms, or a spruced-up workplace.

If residents don't understand how the system works, they may even unknowingly make it hard on workers — by tying bundles too heavy to be thrown onto an overhead rack, for example. Clearly written explanations of the "rules of the game" acceptable to both workers and local government officials and provided to every household should minimize this difficulty.

It is ideal if a system for city/worker/resident communication is devised before the program gets off the ground. Some cities have developed "Hotlines" to receive residents' comments and questions. Salt Lake City uses stickers to explain to residents why a particular bundle of newspaper was not collected. These stickers are affixed to uncollected bundles and an explanation is checked: "too heavy," "improperly tied," "wet," and "the hopper is full, workers will return later to pick up newspapers." Without this information a resident has no way of knowing whether to be angry (that the recyclables were ignored), contrite (that they were improperly prepared), or patient (until the truck comes back).

Communicating with key local officials

The attitude of the community's director of sanitation will affect both residents' and workers' perspectives, so try to impress the director with the merits of a recycling program. Involve him or her in all the steps of the decision-making, enactment and publicity processes. The sanitation director and the program itself will benefit from close cooperation.

Also remember that you'll need to work closely with public affairs or public information offices. Their job, after all, is to provide information to your community's residents on local programs and activities. Failing to coordinate your efforts could result in a duplication of effort or conflicting publicity messages.

Publicizing the program

Determining the logistics of a program — scheduling routes, passing anti-scavenging ordinances, signing contracts with buyers, etc. — is only a first step. A *continuing* effort to publicize the program and encourage participation is needed. A portion of the city's budget should be allotted to a public information program on the hows and whys of source separation.

But in many cases the community does not allocate adequate funds for publicity. To make the program work, concerned citizens need to get the recycling message out.

Organizing a team

A coalition of concerned organizations is one way of organizing a campaign. Try contacting a wide range of organizations: Scouts, the Junior League, Kiwanis, the Chamber of Commerce, religious and environmental groups, and others. The San Diego League of Women Voters in its efforts to promote that city's program even enlisted the help of the U.S. Navy! If an organization doesn't want a major responsibility for publicizing the waste collection program, it may still be willing to help out; it might, for example, include recycling reminders in its newsletters or schedule a slide show on the collection of recyclables for one of its meetings.

One community organization, with or without the help of other groups, *can* effectively run a publicity campaign. In seven communities across the country (Newton, Massachusetts; Ridgewood, New Jersey; University City, Missouri; Salt Lake City, Utah; El Paso, Texas; Tucson, Arizona; and San Diego, California) during 1976 and 1977, local Leagues of Women Voters successfully took on the major responsibility for publicizing their communities' collection of recyclables. They received funds for their programs through a U.S. Environmental Protection Agency grant to the League of Women Voters Education Fund.

Measuring public awareness

To help gauge the effectiveness of a publicity campaign, before-and-after surveys may be worthwhile. How you phrase questions can influence the answers, so your questions must be well thought out. Try to be as clear and objective as possible. Do people know that their community has residential recovery of recyclables? How did they find out about the program? In finding out whether residents participate in the program, it is important to determine whether they participate regularly or sporadically and why. If they don't participate, find out why not. The reasons residents give can help you understand what needs to be done in the way of publicity. Misinformation may be discouraging would-be participants.

Some of the local Leagues that chose to conduct surveys found that the personal touch of talking with people about the program was a boon to their effort; after the interviews, residents were better informed and more willing to help the recycling program. Sometimes this help was even in the form of volunteering to help with publicity. Conducting surveys is time-consuming however, so be sure you have thought through all the activities your group might devote its time and efforts to before deciding to go this route.

Selecting your approach

Each community is unique — communication methods which would work well in a small town in New England might not be transferable to a large city on the West Coast. Still, it is possible to identify some general principles to follow.
- Explain the "nuts and bolts" of recycling — not just the *why* but the *how*.
- Use a number of communications media.
- Appeal to various interest groups within the community and to the unaffiliated resident as well.
- Find ways to reach new residents.
- Continue to remind the public — the process never stops.

Knowing — and telling — the facts

To effectively promote your community's curbside collection of recyclables you will not only need to get your facts straight — you'll need to convey them to the public. As noted earlier, each community's requirements will differ. Local waste authority officials will probably be your best source of information.

These are some questions you should be answering in your promotional material:
- How often are recyclables collected?
- Is the program mandatory or voluntary?
- Will the city make money from this program?
- What about rainy days, should I still put my newspapers out?
- Do I have to bundle my newspapers? Can I put them in a paper bag or plastic bag instead?

Also be prepared to answer:
- What should I do if an unauthorized individual (someone other than the city or a citypaid collection service) is collecting recyclables from curbside?
- What companies are buying the recyclables?
- What happens to the recyclables once they leave curbside? What new products are being made from them?

Getting your message out

Because of the usual constraints of personnel and budget, it will probably not be possible to try all publicity approaches. Also, some approaches may not work as well in your community. For example, some suburbs of large cities don't have their own local paper, so that residents depend on the central city paper for news. Such a situation makes it hard for the suburban community to get its message across this way, since large city papers are unlikely to cover the program in the same way that a local newspaper will. Mix and match the methods below for your own community and resources.

Newspapers. For those communities that do have a local paper, this can be a valuable way of publicizing a separate collection program. And it is only fitting that the people who read newspapers should be made aware of how to recycle them!

Encourage publication of feature articles about the program and recycling in general — a well written article is an effective way of getting your message across. You may need to develop your own set of contacts within the newspaper staff. Be sure to keep them informed about recycling "events" in the community. How about preparing press releases for their use or providing them with photographs that illustrate some aspect of the program? (For additional hints on working with the press, see LWVUS publication #491, *Getting Into Print*, 25¢.)

Advertisements in the local newspaper can be worthwhile investments. You need to catch the public's eye, so ads should be visually appealing. Both straightforward explanations of when and how to recycle or cartoon approaches can be tried.

Handouts or mailings. A letter signed by community leaders and sent to each household can be an effective way to get the public's attention. The EPA studies done in Somerville and Marblehead, Massachusetts showed that a letter can be an important motivator. Such a letter is often used at the beginning of the program to introduce the public to the changes in the waste pick-up system.

Some smaller communities have municipal calendars which are distributed free to each household. In Ridgewood, New Jersey and

The big picture

What are the options in solid waste management?

Reduction

- Mandatory deposits on beverage containers
- Disposal taxes
- Product design regulations
- Selective buying habits

Our wastefulness costs municipal treasuries and the environment. Reducing the waste stream cuts collection and transportation costs, as well as disposal costs — an advantage over recycling. It is even more "conservative" than recycling, in benefits to energy and material conservation and in pollution reduction.

Source separation

- Collection centers
- Curbside collection programs
- Office paper separation

Separating at the waste-source prevents contamination of recyclables. It requires the cooperation of people to take the time to set aside reusable materials for recycling. It can help save resources and cut down on pollution.

Resource recovery facilities

- Materials recovery
- Energy recovery

Resource recovery facilities mechanically separate mixed refuse into materials, like glass, ferrous metals and burnable organics. Such facilities make it possible to recover a high proportion of municipal refuse. The major problems with this method are that the technology is new (making results uncertain) and the initial capital costs are high.

Disposal

- Land disposal
- Incineration

Even with a concerted effort to reduce waste and promote recycling, some material will need to be disposed of, ideally through methods that cause the least damage to the environment. For example, the replacement of dumps with well-sited, designed and managed sanitary landfills is a positive step — one that should cut down on nuisance problems and ground water pollution that can be caused by unmanaged dumps.

University City, Missouri collection dates for recyclables are printed on these calendars, to serve as a constant reminder to residents.

In any community, residents need some kind of basic explanation of how and when to recycle, something they can refer to if they want to get into the recycling habit. Such recycling instructions are often sent along with other city mailings, such as water bills, to defray costs. In your town, you might reach people best by handing out materials in other settings as well. An attractive flyer explaining the collection system could be given to children in school, passed out at fairs or meetings, or distributed door-to-door.

The San Diego League of Women Voters passed out balls of string (newspapers must be bundled in San Diego) with flyers designed so that they slipped neatly into the center of the string. Since the city program's slogan is "Bundle It — Curb It," this idea was especially well suited to promoting recycling there.

Radio and television. Nonprofit organizations devoted to the improvement of the community are eligible for Public Service Announcement time (PSAs) on radio and television (see LWVUS publication #586, *Breaking Into Broadcasting*, 25¢, for ideas on using PSAs). In other words, you may be able to air free announcements for your recycling program. The number of requests for PSAs may be more than your stations can handle though, so you'll have to do some checking to find out if you'll have access to the airwaves. Try approaching a number of stations with a printed copy of what you'd like to say.

The El Paso, Texas, League developed a news event that caught the interest of local broadcasters. They held a Trash Bash, where recyclables were collected for a specific purpose — to raise money for a bird sanctuary. Radio stations covered the event. The League's chief spokeswoman was later able to talk on the air about the importance of recycling on El Paso's News Magazine program.

Contests. Contests serve a number of purposes, not the least of which is the creation of a "newsworthy event" — the announcement of winners — that may get media coverage.

A contest can take many forms: inventing a citywide recycling slogan or logo, or designing a poster advertising the separate collection or recycling message, for example. An advantage of poster contests is that the entries of a number of contestants can be displayed throughout the town even after the selection of winners. Parallel competitions can be held for different age groups, with appropriate prizes for each.

Working through the schools. The local school system can serve as a good channel for various publicity techniques, including contests. You'll want to get children enthused about the program. In many families they're the ones that put the trash out, so their commitment to the curbside collection program can make a big difference.

One long-term "publicity" approach is to incorporate the concept of recycling into school curricula. In Ridgewood, New Jersey, League efforts helped formalize an emphasis on recycling in the seventh grade curriculum. In University City, Missouri, elementary art and music teachers developed lessons that used University City's collection of recyclables as a theme. They plan to share their experiences with other art and music teachers in the hope that they will become standard lessons.

Also, don't neglect the high school, community college or adult education programs when considering whether schools could help you spread the word.

Display materials. Contests, school programs, commercial graphics firms — and *you* — can create display items to promote the recycling program. The materials can take the form of posters, bumper stickers, and two- and three-dimensional displays. Bumper stickers have an obvious destination, although they may be used for general display purposes as well. Posters and other displays can be set up in schools, public libraries, stores, shopping malls, or wherever people gather. To distribute a large number of posters, enlist the help of many hands; young people's groups like the Scouts or high school environmental clubs might be good sources of help.

Many communities use their garbage trucks as permanent traveling reminders of the curbside collection of recyclables. Brightly colored lettering and logos proclaim that Salt Lake City, Utah and Ridgewood, New Jersey recycle.

Slide shows or movies. Audiovisual materials about your community can be developed for presentations at schools and meetings of community groups. (See LWVUS publication #296, *Projecting Your Image: How to Produce a Slide Show*, 30¢.) You may also want to borrow movies or slide shows about curbside collection programs, recycling in general or why new ways of dealing with the solid waste problem are necessary, e.g., the problem of rapidly filling landfills. (See *The Solid Waste Resource Guide* listed under Resources for more information.)

One on one

Personal contact can have a major impact in spreading your message. The public gets a chance to ask questions and air gripes, and you get a better idea of the problems with the day-to-day working of the program and possibly some ideas for improving it.

City records may be able to tell you which neighborhoods are recycling comparatively lower volumes of materials. Try to find out why. In some sections of a community fewer people may subscribe to newspapers; it is reasonable in this case to expect less newspaper would be recycled. Make a concerted effort to reach people in target neighborhoods that "should" have a greater volume of recyclables. You might visit homes or have speakers explain the program at club and neighborhood association meetings in low participation areas.

Appealing to various interests

Special groups within a community may need a tailored approach in the same way that different cities may need different publicity approaches.

In areas with sizeable Latino or Chicano population, try using Spanish in your publicity. In Tucson, the League-sponsored contest included prizes for both English and Spanish language slogans about the recycling program. One of the judges was a local Spanish language columnist who later decided to devote her Sunday column and weekly talk show to the curbside collection program.

If proceeds from recycling are kept separate from general revenues, community residents can see tangible results from their efforts. The money could help pay for tennis courts, historical preservation, services for the elderly, etc. — the possibilities are endless. This may be an effective way to inspire people with various interests.

Reaching new residents

In our highly mobile society newcomers may be a high proportion of your community. If left to chance, it could take months before a new resident accidently finds out about the source separation program. Try to establish a mechanism that ensures that they will get the word early. Make sure that information about your community's waste collection program is included in Welcome Wagon packets. Work with realtors to see if they would distribute pamphlets or make information available to new homeowners.

Perhaps the most direct way of reaching new citizens is to encourage the departing residents to pass along information on curbside collection. Many sellers of homes leave printed directions on operating and maintaining household appliances; this packet of material on "running a house" could be supplemented with residential recovery instructions. Residential recovery instructions could encourage this by suggesting that information on source separation belongs with other basic home maintenance materials.

The process never stops

One publicity blitz or even a year of concentrated effort is not enough. The process is a never-ending one.

Of course, it's hard to gear up for an endless publicity campaign. Part of the solution is to share the effort with other community organizations. Also, as the separate collection program becomes established it might also be easier to convince city officials to allocate funds for publicity.

Try to organize "semi-permanent" ways of reminding the public; the pamphlets in Welcome Wagon packets, periodic PSAs and changes in school curriculum mentioned earlier are three such approaches.

As we grow increasingly aware of the limits of land, materials, energy and local finances, recycling needs to be part of our lifestyle as well as part of our vocabulary. Residential recovery — curbing trash — is an important step toward that goal.

Resources

LWVEF. *REDUCE: Targets, Means and Impacts of Source Reduction.* 1975. Pub. #576. 47 pp. $1.00.

LWVEF. *RECYCLE: In Search of New Policies for Resource Recovery.* 1972. Pub. #132. 39 pp. 75¢. Send prepaid orders to the LWVUS, address below.

Pilcher, Kay. *Solid Waste Resource Guide.* Environmental Action Foundation, 1977. 12 pp. Free from the Foundation, 724 DuPont Circle Bldg., Washington, D.C. 20036.

EPA. Hansen, Penelope. *Residential Paper Recovery: A Municipal Implementation Guide.* 1975. 26 pp. EPA pub. #SW-155.

EPA. SCS Engineers, Inc. *Office Paper Recovery Program: An Implementation Manual.* 1977. 53 pp. EPA pub. #SW-571.

EPA. *Source Separation: The Community Awareness Program in Somerville and Marblehead, Massachusetts.* 1976. 81 pp. EPA pub. #SW-551.

EPA. Howard, Stephen E. *Market Locations for Recovered Materials.* 1976. 81 pp. EPA pub. #SW-518.

All EPA publications are available free, by pub. #, from Solid Waste Information Materials Control Section, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268.

The research and writing of this publication was made possible by a grant (T900604) from the Office of Solid Waste, U.S. Environmental Protection Agency to the League of Women Voters Education Fund. It was under this same grant that the local Leagues described in this publication received funds for their public education activities.

Researched and written by Sally J. Valdés-Cogliano, Staff Specialist, Environmental Quality Department, LWVEF.

Printed on paper recycled from 100% consumer scrap.

Order from: League of Women Voters of the United States, 1730 M Street, N.W., Washington, D.C. 20036, Pub. No. 147, 40¢.

H. B.

LEAGUE OF WOMEN VOTERS OF MINNESOTA

555 WABASHA • ST. PAUL, MINNESOTA 55102 • TELEPHONE (612) 224-5445

December 19, 1977

The Honorable Winston W. Borden
208 Capitol
St. Paul, MN 55155

Dear Senator Borden:

Since 1973 the League of Women Voters has been actively working throughout the country for legislation which would require a refundable deposit on all beer and soft drink beverage containers.

It is our understanding that the compromise proposal which you announced on November 30th is now at the Revisor's Office and will not be available in bill form for several weeks. We do not wish to comment on your proposal without the specifics of a bill before us to study.

We commend your long record of support for deposit legislation in Minnesota, and we wish to inform you that the League of Women Voters of Minnesota will continue to work for deposit legislation in the future.

Sincerely,

Helene Borg, President
League of Women Voters of Minnesota

B:M

JAN 30 1978

League of Women Voters of the United States 1730 M Street, N.W., Washington, D. C. 20036 Tel. (202) 296-1770

news release

Contact
Cynthia Kuhn
Public Relations
296-1770 ext. 264

FOR IMMEDIATE RELEASE
WEDNESDAY, JANUARY 25, 1978

Washington, D.C.--Stating that "the time has come to stem the growing tide of over 65 billion discarded cans and bottles each year," Jean Anderson, Environmental Quality Chair of the League of Women Voters of the U.S., today urged Congress to reduce litter, save vital energy and material resources and lower consumer costs by approving the Beverage Container Reuse and Recycling Act of 1977 (S 276).

In a statement prepared for delivery before the Consumer Subcommittee of the Senate Committee on Commerce, Science and Transportation, Mrs. Anderson said the League strongly believes that enactment of a national, mandatory beverage container deposit law would go a long way in reducing this costly pollution problem.

"The League believes our nation has been blighted long enough with these cast-away containers. Studies by the federal government as well as Vermont and Oregon (which now have state laws on the books concerning containers) indicate tremendous gains could result if the nation had a mandatory beverage container program." Among the benefits of such an approach, Mrs. Anderson cited:

--A 40 percent reduction in litter volume.

--A $260 million savings in solid waste collection and disposal.

--Over 40 percent savings of the energy needs of beverage container manufacturers.

--Significantly reduced consumption of raw materials such as bauxite and iron ore.

--Major reductions in air and water pollution associated with the manufacture of single-use containers.

"For the past five years the League has been pushing to reduce solid waste through recovery and recycling," Mrs. Anderson said.

MORE

Mrs. Anderson also told the Senators that the legislation would mean savings in consumer pocketbooks and result in a net increase in jobs.

"Our research shows that under a mandatory deposit law, consumer savings would range from almost half a billion to $3 billion annually because beverages are less costly when packaged in re-usable containers than in non-returnable containers.

"Moreover, all studies concluded to date found that the shift to mandatory deposit systems would result in a net increase in jobs, with estimates from 60,000 to 115,000. At a time when we are so conscious of the importance of reducing unemployment, these figures are not insignificant," Mrs. Anderson said.

"This nation has been talking long enough about crises in energy and natural resources. It is time to act. The League believes passage of this legislation would reinforce the message that in a world of finite resources, conservation, recycling and reuse can become part of our lives without disrupting our lifestyles."

Later today, Dana Duxbury, Solid Waste Chairman of the Massachusetts League of Women Voters, will testify about her state's efforts to pass mandatory beverage container laws. In addition to Vermont and Oregon, states with mandatory beverage container laws on the books are Michigan and Maine.

# # #

(Reporters please note: Full text of statement attached)

H.B.

LEAGUE OF WOMEN VOTERS OF MINNESOTA

555 WABASHA • ST. PAUL, MINNESOTA 55102 • TELEPHONE (612) 224-5445

January 12, 1978

Senator Nicholas D. Coleman
208 Capitol
St. Paul, Mn. 55155

Dear Senator Coleman:

I watched you on T.V. last night - on "Mn. Issues" with Arthur Naftalin. Of particular interest to me were your comments on Ban-the-Can.

Opponents are now willing to concede that there will be a net increase of jobs with passage of deposit legislation. Every federal and state study on the employment impacts of deposit legislation confirm that fact.

However, opponents continue to spread the myth that those new jobs would be undesireable, low-paid, minimum wage jobs. On "Mn.Issues" you appeared to believe that false argument. It is simply not true!

Information presented by Senate Research to the Senate S.C. on Employment Impacts on Sept. 6, 1977 confirmed the following.

2/3 of the new jobs would be high-paying union jobs in:
Malt Beverage Distribution
Soft Drink Distribution
Beverage Production and Filling

1/3 of the new jobs would be low-paying jobs in retailing.

The League of Women Voters strongly supports mandatory deposits on beverage containers. We support the bill introduced last year by Senator Luther (S.F.1). The League urges you, as Senate Majority Leader, to take a leadership role on this issue to assure passage of S.F.1 this year.

Sincerely,

Sally Foley

Sally Foley - Lobbyist, LWV of Mn.

LEAGUE OF WOMEN VOTERS
OF MINNESOTA
PHONE (612) 224-5445
555 WABASHA • ST PAUL, MINNESOTA 55102

action

BEVERAGE CONTAINER BILLS

To: Capitol Letter Subscribers
From: Sally Foley, Lobbyist
Re: Deposits on Beverage Containers, S.F. 1, H.F. 13
Date: February 24, 1978

Position: Support for mandatory deposits on beverage containers.

Background

Since 1973 the League of Women Voters has been working to pass legislation which would require a refundable deposit on all beer and soft drink beverage containers sold in Minnesota.

All studies on the environmental impacts of deposit legislation have shown that it would: save energy, conserve natural resources, reduce the generation of solid waste, and save consumers money.

All studies, state and federal, on the employment impacts of deposit legislation have shown that there would be a net increase of jobs. Of the new jobs created, two-thirds would be high pay, union scale jobs in breweries, soft drink bottling plants, and teamster jobs in distribution. One-third of the new jobs created would be low paid jobs in retailing.

Public opinion polls have consistently shown that 75 to 80% of Minnesotans favor deposit legislation.

The Borden "Compromise" is not a solution to the basic issue of conservation of energy and resources. See February 1 and 24 Capitol Letters.

On February 9, the Iowa Senate passed a deposit bill on a 39 to 11 vote.

WHAT TO DO: SEND CARDS AND LETTERS, OR PHONE YOUR STATE SENATORS AND REPRESENTATIVES SUPPORTING DEPOSIT LEGISLATION - H.F. 13 (K. NELSON, STANTON, NOVAK, DEAN) AND S.F. 1 (LUTHER, UELAND, DIETRICH, BORDEN, WILLET).

PLEASE DO THIS TODAY!!!!!!!!

FLOOR VOTES ARE EXPECTED SOON ON BOTH BILLS.

CMAL (continued)

of governance in the metro area." The task force appears to be charged with an enormous job. Some of the things the task force will consider are: whether the Metro Council and the four commissions are adequate to implement this policy or whether new structures are needed; whether members should be appointed, elected or represent the Legislature or political subdivisions; whether the commissions should be subordinate to the Council; whether the Administrative Procedures Act should apply; whether applications for federal and state assistance should be reviewed by these bodies; whether additional powers are needed or certain powers should be revoked.

CMAL is concerned the bill could represent an effort to start again at "square one" and develop a system for governing the metro area. We support the Metro Council as the decision-making body for metropolitan needs and as the focal point for metropolitan services.

Our study last year demonstrated the difficulty of assessing the role of the Met Council in relationship to other units of government. Perhaps this is a good time for full scale review and development of policy. The Legislature needs that kind of information before making a significant change in the Council. So, we will watch this bill and perhaps testify if the opportunity arises.

Harriette Burkhalter

For Your Information

SF 350 - LOCAL GOVERNMENT ELECTION DAY (Schaaf) - See Capitol Letter, February 1, 1978.

This bill appears dead as far as this legislative session is concerned. It was defeated in the Senate Governmental Operations Committee on February 21. A show of hands was 12 against and 6 in favor after the bill had appeared to lose on a voice vote.

The companion bill in the House, HF 748 (Abeln, DFL-Bloomington), is still in the General Legislation and Veterans Affairs Committee, Subcommittee on Elections. Chairman Thomas Osthoff's (DFL-St. Paul) comment on this bill was that there would be plenty of time for public testimony..."we have until 1980."

Even though further consideration of the local government election day bill appears unlikely this session, I am sure it will return in the 1979 session and, if necessary, the 1980 session. In any case, the League will be watching this bill when it comes up.

Erica Buffington

CRIMINAL JUSTICE - SF 318-McCutcheon (DFL-St. Paul) allows police to arrest and detain persons suspected of spouse or child abuse upon demonstration of probable cause. It was approved by the Judiciary Committee.

SF 1926-Lewis (DFL-St. Louis Park) amends Minnesota statute 1976 relating to inspection of correctional facilities. It says that the Commissioner of Corrections shall license correctional facilities and may revoke licenses of such facilities except county jails and lockups, where they do not conform to minimum standards or are not making progress toward substantial compliance.

SF 2016-Lewis (DFL-St. Louis Park) and companion HF 2128-Arlandson (DFL-Golden Valley) requires the Commissioner of Corrections to establish minimum standards for emergency and support services to be included in county programs for crime victims; requires review and approval of programs by the counties; provides technical assistance to counties in the design and operation of support services programs.

Betty Phelan

HOUSING - SF 1593 (Benedict) - This bill allows individuals to save for their first home mortgage by opening "individual housing accounts" at financial institutions. They may save up to $2500 per year for up to ten years (maximum total $10,000) without paying income taxes on the money saved or the interest it earns. The tax savings over the ten-year period could be nearly $2000. Stiff penalties would be imposed if the money were withdrawn for other purposes.

Verna Higson

Increase Your Popularity

VOTE FOR S.F. 1

76% of Mn. Voters
favor Deposit Legislation *

* POLL PUBLISHED BY
SENATOR WENDELL ANDERSON
WASHINGTON REPORT OCT. 1977

DISTRIBUTED BY
LEAGUE OF WOMEN VOTERS of MN.

DO YOUR BIT IN THE WAR AGAINST WASTE! Send Governor Perpich a used 12 ounce beer or soft drink can to show your support for mandatory deposit legislation. While a return to returnables involves both bottles and cans, Citizens Against Throwaways realizes that sending a bottle is not practical, so stick with a can.

1. Cut off the label along the dotted line.
2. Fill in your name and return address in bold letters.
3. Make sure that the can is clean and dry.
4. Cover the opening of the can with masking tape.
5. Attach one end of the label to the can.
6. Wind the label around the can and tape securely at the seam.
7. Put 24¢ postage on the can.
8. Drop it in the nearest mailbox.

CITIZENS AGAINST THROWAWAYS
THANKS YOU!
For further information, write to:
Citizens Against Throwaways
1045 Grand Ave.
St. Paul, Mn. 55105

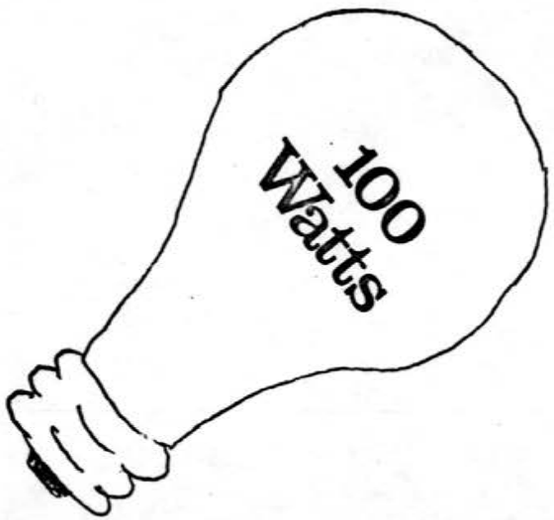
Dear Governor Perpich:

This beverage container is just one of 70 billion contributing to the trashing of America annually. While the litter and disposal of solid wastes are serious problems, we must realize that throwaway bottles and cans represent wasted energy -- 224 trillion BTUs annually. As an alternative to waste, I support a mandatory deposit on all beverage bottles and cans. Please urge the state legislature to adopt deposit legislation.

FROM:

24¢

Gov. Rudy Perpich
State Capitol
St. Paul, Mn.
55155



This throwaway container represents 2 kilowatts -- enough power to keep one 100-watt light bulb burning 20 hours.

H B

LEAGUE OF WOMEN VOTERS OF MINNESOTA

555 WABASHA • ST. PAUL, MINNESOTA 55102 • TELEPHONE (612) 224-5445

To: Members of the Minnesota Senate
From: Helene Borg, President, League of Women Voters of Minnesota H Borg
Re: SF 1
Date: February 28, 1978

Since 1973 the League of Women Voters of Minnesota has been working to pass legislation which would require a refundable deposit on all beer and soft drink beverage containers sold in Minnesota. We strongly support SF 1.

All studies - state and federal - on the employment impact of deposit legislation have shown that there would be a net increase of jobs.

- 2/3 of the new jobs would be high-pay union scale jobs in breweries, soft drink bottling plants and Teamster jobs in distribution.

- 1/3 of the new jobs would be low-pay minimum wage jobs in retailing.

The League of Women Voters of Minnesota opposes SF 1904 (Senator Borden's compromise bill) because it would increase taxes and government spending while doing little to save energy and other natural resources.

On February 9, 1978, the Iowa Senate passed a deposit bill on a 39-11 vote. In Minnesota public opinion polls have consistently shown that 75-80% of our citizens favor deposit legislation. We urge you to vote "yes" on SF 1.

APR 27 1978

League of Women Voters Education Fund •1730 M Street, N.W., Washington, D. C. 20036 Tel. (202) 659-2685

memorandum

April 24, 1978

TO: State EQ or NR Chairman (memo only to state presidents)

FROM: Jean Anderson, Chairman, Environmental Quality Committee

RE: The Resource Conservation Committee

The Resource Conservation and Recovery Act of 1976 (the most recent federal solid waste law) established an interagency Resource Conservation Committee (RCC) to conduct studies and prepare reports for the President and Congress on materials policy issues. The RCC consists of the Administrator of the U.S. Environmental Protection Agency(Chairman),the Secretaries of Commerce,Interior,Labor, and Treasury, the Chairman of the Council on Environmental Quality, and representatives from the Office of Management and Budget, Council of Economic Advisors, and the Department of Energy.

The Committee is responsible for studying a wide range of conservation topics. Included are:

- mandatory deposits on beverage containers;
- product disposal charges;
- litter taxes;
- existing tax policies and how they affect resource conservation;
- local level user fees;
- ways of providing incentives for recycling; and
- any other federal policies that affect resource conservation

The mandatory beverage container deposits issue was the first topic considered. Enclosed is a copy of Committee Findings and Staff Papers on National Beverage Container Deposits of the Resource Conservation Committee. The Committee has not, thus far, made a recommendation for or against a national mandatory deposit system.

The solid waste disposal charge is currently being studied by the Committee. I am enclosing an issue paper produced by the RCC staff that describes the rationale for a disposal charge and the different ways that such a charge could be designed.

One of the League of Women Voters Education Fund's responsibilities under our grant from the EPA's Office of Solid Waste is to increase public awareness of the existence and goals of the RCC. We are also trying to solicit comments from League members on the issues that the Committee addresses. If you would like to comment on the resource conservation options being discussed (or on others that you believe should be discussed)please pass those comments on to Sally Valdes-Cogliano, the LWVEF staff solid waste specialist,for transmission to the Committee.

Sally Valdes-Cogliano will be available during the League's National Convention to discuss the Committee and key solid waste issues. If you have some comments or questions and will not be at Convention, perhaps you could ask your League's delegate to pass them on to Sally.

Is there enough trash for everybody?

What do you do with 180 million tons of trash? That's the projected amount of municipal solid waste that will be generated by Americans in 1985. Deciding how to handle this growing trash flow is becoming an increasingly difficult problem for local governments throughout the nation. Many communities are finding that the cost of collecting and disposing of solid waste is growing faster than any other budget item.

Traditionally solid waste was either burned in an incinerator or disposed of on the land. But these old solutions are facing new realities. Neither method retrieves valuable energy and material resources. The air pollution control and energy costs of incineration are skyrocketing. Legal and political resistance to proposed landfill sites is increasing. As many cities and counties run out of appropriate disposal sites, there is growing recognition of the need to reduce the amount of material that finds its final resting place buried in a landfill or tossed in a dump.

The 1976 Resource Conservation and Recovery Act (RCRA) mandates replacing all dumps with sanitary landfills, defined as land disposal facilities that will have no "adverse effects on health or the environment." Enforcement of RCRA's standards for landfills will cost local governments money—a properly located, operated and monitored disposal site costs far more than a dump.

The increased costs of land disposal will make resource-conserving options more appealing, in the view of the U.S. Environmental Protection Agency's (EPA) Office of Solid Waste. However, no matter what other management options are used, sanitary landfills will continue to play an important role in solid waste disposal.

Waste reduction, resource recovery and source separation can together make major inroads into the municipal solid waste problem. And while no city manager will complain about having less trash to dispose of, disagreements may develop between proponents of the various approaches. Real or apparent conflicts may arise between the following management options:

- collection centers versus curbside pick-up of recyclables, both of which are options for source separation;
- all forms of source separation versus resource recovery; and
- waste reduction versus all forms of resource recovery.

Source separation: at curbside, at a collection center

Collection centers for recyclables are generally run by industrial or nonprofit groups or the local government. Residents voluntarily bring their separated wastes to the centers.

Industry often runs collection centers where contributors are paid for the materials they bring in. Aluminum can collection centers are the most common; the Aluminum Association estimates that there are 1,300 industry collection points nationwide.

Aluminum is a valuable commodity, and most of the bauxite—the raw material from which aluminum is produced—must be purchased from overseas. The industry's expansion into collection and reprocessing of aluminum cans reflects, at least in part, a trend toward greater reliance on domestic supplies of materials. Using recycled aluminum as a raw material has an added bonus—it results in more than 95 percent reduction in the amount of energy required to produce a finished product.

Civic groups may operate recycling centers or sponsor material collection "drives" to raise funds or simply to give community residents the opportunity to recycle. Materials collected may range from the more common color-sorted glass, newspaper and metals (aluminum is especially popular) to waste oil, other kinds of paper and yard wastes for composting.

Local governments may be able to set up recycling centers on city or county property and use government workers to oversee the operations. The materials solicited will vary.

In curbside collection programs, householders keep recyclable materials separate from other trash. The community or duly contracted collector picks up these materials and sells them to companies for reprocessing. For a complete explanation of residential collection programs, see the LWVEF's *Curbing Trash*.

How does a collection center approach compare to a program where recyclables—in most cases newspaper, but sometimes other materials as well—are picked up directly from residences?

Both approaches have inherent advantages and disadvantages. Curbside collection is more convenient for householders than the collection center method. For this reason, public participation, and therefore the quantity of material recovered, will almost invariably be greater. More than 200 communities throughout the United

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States currently run separate collection programs.

On the other hand, a collection center can handle a variety of materials without significant additional costs. While some curbside collection programs do collect several types of materials besides the more standard newsprint, the pick-up of these other materials requires an investment in specially designed, compartmentalized trucks or additional trips through the neighborhood. (Newspapers alone are in some cases piggy-backed onto the regular trash pick-up run.) These options can lead to higher labor and equipment costs.

Can a community justify the existence of both collection centers and a curbside collection program? The community of Ridgewood, New Jersey would say yes. Newspapers there are picked up from residences, and a collection center is maintained for other materials on the grounds of the city-owned and operated plant nursery. The two approaches seem to be viewed as complementary in Ridgewood.

Do local government-run programs that use the same portions of the waste stream impinge on industrial or civic group activities? City-run collection centers and curbside collection programs need not compete. Since some people will continue to be interested in selling their trash, industries will still get valuable recyclables. And the industries will continue to be the markets for city-run or volunteer programs, as well. Residents in the habit of saving their newspapers or aluminum cans for the Scouts or a church group can continue to do so. A city-run system ensures a constant avenue for recycling in between collection drives and for people not affiliated with an organization.

In fact, EPA studies indicated that the amount of recyclables collected by civic groups can measurably increase with the establishment of a city-run separate collection program. Perhaps the public education efforts that can, and should, accompany separate collection programs help to instill the recycling ethic.

The Resource Conservation and Recovery Act—its major provisions

☐ Hazardous wastes will be regulated from "cradle to grave."

☐ All dumps will be banned. Land disposal sites must be "sanitary landfills."

☐ Technical and financial assistance will be provided to states and local governments for the development and implementation of solid waste management plans.

☐ Citizens, industry and all levels of government must be involved in state and regional planning and implementation processes.

☐ The Department of Commerce, working through its National Bureau of Standards, is directed to stimulate broader commercialization of proven resource recovery technologies by providing accurate specifications for recovered materials and encouraging the development of markets.

☐ Federal procurement agencies are directed to procure items composed of the highest feasible percentage of recovered materials for all procurement items that cost more than $10,000.

☐ Provisions are made for citizens to file suit against any person (including the federal government), who is alleged to be in violation of any permit, standard or regulation under the act, or against the EPA Administrator for alleged failure to perform any nondiscretionary duty.

☐ EPA will conduct and encourage studies on such topics as: financing solid waste programs; health effects of waste diposal; marketing of recovered resources; production of fuel from waste; resource recovery and source separation systems; land disposal practices; sludge management; the effect of burning solid waste on air quality; and hazardous waste management.

☐ EPA is given authority to enter into contracts for construction and operation of full-scale demonstration facilities or to provide financial assistance in the form of grants for the development of new or improved technologies.

☐ A Resource Conservation Committee of executive agency officials was established to study and make recommendations to the President and Congress on possible resource conservation strategies. Its final recommendations are now expected in 1979.

Is resource recovery an option?

Another solid waste management approach is the construction of resource recovery systems—facilities that mechanically separate recyclable fractions of trash and/or recover energy. Many people are concerned about the effect of resource recovery on the various kinds of source separation, fearing that they will discourage communities and individuals from launching or maintaining such programs.

The phrase "resource recovery facility" can actually refer to a number of kinds of processing plants. In some cases energy is the only product. There are a number of different energy-producing processes, including:

■ Incineration—the simple process of burning trash to produce steam for heating or cooling.

■ Refuse-Derived Fuel (RDF)—a process that shreds and sometimes further processes the organic fraction of refuse. Experimental work by a utility company in St. Louis, Missouri indicated that RDF can be used as a supplement to coal in municipal energy production.

■ Pyrolysis—a still experimental process, which subjects the organics in refuse to high temperature and pressure in an oxygen-deficient atmosphere. The resulting product can be similar to natural gas or oil.

In many communities, economic constraints preclude developing a resource recovery system. Resource recovery facilities currently process slightly less than three percent of municipal solid waste. While this proportion will increase, its growth is likely to be limited by the substantial costs of planning and building a recovery facility and by the financial problems affecting all levels of government.

A number of factors enter into the decision on whether or not the expense is justifiable. The concept of "economies of scale" applies to solid waste; a facility must process a certain amount of waste per day to make the capital investment worthwhile. There is speculation, for example, that the $5.6 million Ames, Iowa recovery facility built in 1974 may be too ambitious and expensive a solution for the solid waste needs of its service population of just under 65,000. This waste-load requirement is especially crucial for any sort of materials separation program. Certain processes, such as modular incineration, that recover only energy, may be more practical for a smaller community.

However, the financial responsibility of developing a recovery system need not be borne solely by local governments. Private enterprise, in cooperation with local governments, can share or bear the start-up costs. For example, the $50 million plant in Saugus, Massachusetts does not cost the waste-contributing communities $50 million; it costs them $13.50 per ton of refuse, comparing favorably with the disposal costs of nearby communities that use more traditional disposal options.

Before committing a community to a resource recovery facility, either through direct financing or long-term contracts, a number of questions should be answered:

■ Are there local markets for the materials or energy that would be generated by a resource recovery plant?

■ How much will it cost to handle trash using the resource recovery option? How does that compare with current disposal costs?

■ How much waste is generated locally? Is there leeway in the system that would allow for the enactment of waste-reduction strategies or source-separation programs?

■ If the recovery facility's success is dependent on the waste streams of a number of communities, have formal agreements between local governments been worked out?

A resource recovery plant may be a practical option, if the community or group of communities acting together produce enough trash to justify the capital expenditure, if local disposal costs (economic, environmental, political) are high, and if there are dependable material and energy markets.

But those communities that meet these criteria must ask the question: Is there a serious conflict between source separation and resource recovery?

On the face of it, resource recovery systems and source separation programs *will* compete for some of the same components of the waste stream. Some mixed-waste processing plants do separate out ferrous metals (iron and steel), aluminum and glass; any program that diverts the metal and glass content of a community's waste from the facility will affect the proportion of these profitable materials available per ton of trash. Programs that remove newspaper will be siphoning off a source of combustible fuel.

The question then becomes, how serious is the conflict? The recyclable materials collected in a source separation program are less contaminated, and therefore more valuable, than the products produced by mechanical separation. In the words of Reynolds Metal Company representative, "Hand separation and recycling through consumer-oriented programs can skim off a high grade of very valuable scrap that would be less valuable were it mixed with other alloys of aluminum, other metals, or other waste products." In addition, there is a clear economic advantage to a source separation program—it costs less time and money to set up than it does to finance and build a resource recovery facility.

On the other hand, resource recovery facilities have a major advantage over source separation programs, in that a much greater portion of recyclable materials and/or energy value can be recovered. Such systems as the ones in Dade County, Florida or Hempstead, New York divert as much as 80 percent or more of the waste stream from land disposal.

What's more, their successful operation does not depend on individual citizens taking the time to make sure that portions of their trash are recycled, as is true with any source separation program. And refuse-to-energy plants recover valuable energy from the large portions of trash that are rarely recycled–plastics and paper packaging, for example.

Average composition of municipal solid waste*

Components	percent weight—wet basis (as generated)+
Paper	29.0
Glass	10.4
Ferrous	8.6
Aluminum	0.7
Other non-ferrous	0.3
Textiles	1.6
Rubber-Leather	2.6
Plastics	3.4
Wood	3.8
Food waste	17.8
Yard waste	20.2
Miscellaneous inorganics	1.5
TOTAL	100.0

Source—U.S. Environmental Protection Agency, *Fourth Report to Congress on Resource Recovery and Waste Reduction*, p. 14.

*Based on national, 1975 figures.

+"As-generated" weight basis refers to an assumed normal moisture content of material in its final use prior to discard.

Paper—a case study of the conflict

The energy produced by a resource recovery plant is, in many cases, its most valuable and marketable product. And paper, which by weight makes up approximately 29 percent of residential and commercial waste, provides a major source of combustible fuel. What happens if source separation rates are increased?

It is important to remember that not all kinds of paper can or will be recycled. In any case, most resource recovery facilities can usually compensate for a reduction of paper by processing waste from a larger service area, a move that would also increase the facility's cost-effectiveness.

According to EPA, if such a facility is able to increase its service area, the reduction in heating value is minimal even in cases of high wastepaper separation and collection rates. However, the reduction is more significant if the facility has a limited source of trash. Perhaps the key here is in planning—making allowances as a facility is conceived and constructed for changes in the waste stream. It is especially dangerous to over-build and wind up in the strange position of needing more trash.

Reduce, separate or recover?

The value of recycling, if not the practice, has become widely accepted by most Americans. But there is one other solid waste approach that results in even greater benefits—waste reduction. Reducing the total amount of waste generated cuts collection and transportation costs as well as disposal costs. And its benefits in energy and materials conservation and in pollution reduction surpass those from recycling.

Waste reduction strategies can take a number of forms, including product design regulations and selective buying habits. However, mandatory beverage container deposits have received by far the greatest share of public attention. Seven states (Connecticut, Delaware, Iowa, Maine, Michigan, Oregon and Vermont) and several local communities have passed mandatory deposit legislation so far.

Mandatory deposits and recycling programs—can they coexist?

A mandatory deposit system is defined as a "reduction strategy," because it reduces the number of containers that need to be manufactured and, therefore, eventually disposed of. "Returnable bottles" would be refilled and *reused*. Metal beverage containers cannot be reused, but they can be *recycled*. In fact, a deposit system should encourage recycling, since soft drink and beer cans would be returned

to relatively few collection points in sufficient volume to justify a comprehensive program.

Still, a major aspect of the debate on mandatory deposits concerns the effect on the use and recovery of glass, aluminum, and ferrous metals.

Aluminum and Glass. Aluminum (along with paper graded by type) is one of the best money-makers in a program; glass is less valuable, especially if it is not color-sorted. Enactment of mandatory deposits on beverage containers would reduce the amount of aluminum and glass available for recovery either by source separation or mechanical separation, making such programs less economically appealing to a local government.

Of course, the prospect of revenue from the sale of these materials is not the only rationale for source separation. Individuals, community groups and local governments often wish to encourage the conservation of resources and the removal of materials that would otherwise be disposed of on the land. In this context a mandatory deposit system would more effectively remove beverage containers from the waste stream than would a source separation program, and might, therefore, better meet the objectives of conservation of energy, materials and landfill space. And it has the added benefit of being an effective approach to litter reduction.

A mandatory deposit system would have less impact on resource recovery.

Currently few facilities separate glass and/or aluminum. Indications are that glass recovery will not pay for itself. And while aluminum is a very valuable material in pure form, as mentioned earlier, mechanically-separated aluminum is not as high quality a material as hand-separated aluminum. In reviewing existing and planned resource recovery facilities, it is apparent that in the near future only a very small portion of the population will be serviced by waste-processing centers that separate out glass and aluminum. Most of the waste-processing facilities will simply recover energy or will recover energy and ferrous metals.

The removal of glass from the waste stream through a source separation program or a deposit system may actually benefit certain kinds of energy recovery facilities. Energy recovery facilities that burn mixed refuse find that too much glass in the waste stream causes excessive wear on equipment and increases the chances of facility shutdowns. And a significant decrease in the nonburnable glass fraction should increase the energy potential of each ton of trash.

Ferrous metals. In general, steel cans and ferrous scrap have a market value somewhere between aluminum and glass. But like all the materials discussed, their value depends on such factors as market fluctuations and geographic variations. Close proximity to a detinning plant increases the value of source-separated "all steel" cans, but there are only a handful of these facilities in the country.

Magnetic separation of ferrous metals (after waste is shredded) is a simple and proven technology. Consequently, many of the heat recovery incinerators in operation (or in the planning stages) employ ferrous metal recovery. A number of transfer stations and landfill shredding sites also use this technique.

Beverage containers make up only 15 percent of the available ferrous metals in trash. Later in 1976, EPA estimated that for plants recovering ferrous metals, removal of beverage containers could reduce net revenues for the ferrous fraction by only 50¢ per ton (from an average net value of $2.45 per ton). Recovery plants will still be economically viable if the beverage containers were removed but again it will help if the supply of trash can be obtained from an expanded geographic area.

In summary

Resource recovery facilties, source separation and waste reduction can be complementary solid waste management options. Perhaps the key to making them compatible is careful planning.

The problems—and the uncertainties—that must be considered in reaching solutions are too complex for simplistic, single-track answers. Individuals as well as government officials will have to objectively analyze the pros and cons of each approach as it relates to *their community's situation.*

Areas of conflict exist among the various approaches, but they should not be viewed as overwhelming or irresolvable. A variety of techniques or even a mix of solutions will be appropriate to meet the needs of different communities. And although implementation of one strategy may affect the economics of another, the combined benefits, as well as the costs of all the programs, should be the basis for solid waste management decision making. The dimensions of our solid waste dilemma *are* overwhelming. And as the cost of disposal increases, decision makers will be forced to look for ways to cut down on the supply of trash.

Recommended reading

LWVEF publications

Curbing Trash. 1977. Pub. #147. 6 pp. 40¢.

Federal Environmental Laws and You. 1978. Pub. #564. 12 pp. 75¢.

RECYCLE: In Search of New Policies for Resource Recovery. 1972. Pub. #132. 39 pp. 75¢.

REDUCE: Targets, Means and Impacts of Source Reduction. 1975. Pub. #576. 47 pp. $1.00.

Send prepaid orders to the LWVUS, address below.

EPA

Resource Conservation and Recovery Act of 1976. P.L. 94-580. EPA Pub. #SW-1.4.

Cohen, David. *Separate Collection Programs—A National Survey.* Expected Fall 1978.

Humber, Nick. *Waste Reduction and Resource Recovery—There's Room For Both.* Reprinted from *Waste Age,* November 1975. EPA Pub. #SW-505.

Resource Recovery and Waste Reduction; Fourth Report to Congress. 142 pp. 1977. EPA Pub. #SW-600.

Skinner, John. *The Impact of Source Separation and Waste Reduction on the Economics of Resource Recovery Facilities.* Reprinted from *Resource Recovery and Energy Review.* May/April 1977. EPA Pub. #SW-632.

Solid Waste Facts. 13 pp. May 1978. EPA Pub. #SW-694.

EPA publications are available free, by pub. #, from Solid Waste Information Materials Control Section, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268.

Other sources

National Center for Resource Recovery, Inc. *Resource Recovery Activities . . . A Status Report.* 1211 Conn. Ave., N.W., Washington, D.C. 20036. Available free from the Center, published periodically.

National Wildlife Federation. Sullivan, Mark. *The ABC's About Beverage Containers.* 11 pp. 1977. Single copies free from NWF, 1412 16th Street, N.W., Washington, D.C. 20036. Additional copies, 15¢ each.

Office of Technology Assessment. *Materials and Energy From Municipal Waste.* Will be available from OTA, Congress of the United States, Washington, D.C. 20510. Expected publication date October 1978.

Researched and written by Sally J. Valdés-Cogliano, staff specialist, Environmental Quality Department, LWVEF.

Order from League of Women Voters of the United States, 1730 M Street, Washington, D.C. 20036. Pub. No. 255, 30¢

League of Women Voters of the United States 1730 M Street, N.W., Washington, D. C. 20036 Tel. (202) 296-1770

memorandum

November 3, 1978

TO: Environmental Quality or Natural Resources Chairmen (memo only to State Presidents)

FROM: Hester McNulty, Natural Resources Coordinator

RE: Proposed Regulations for Development and Implementation of State Solid Waste Management Plans

The Environmental Protection Agency (EPA) has proposed regulations containing guidelines for the development and implementation of state solid waste management plans, as required by the Resource Conservation and Recovery Act of 1976 (RCRA). As you know, RCRA requires that state plans shall:

- provide for the identification of state, local and regional responsibilities for solid waste management;
- encourage resource conservation and recovery; and
- encourage application and enforcement of environmentally sound disposal practices.

Since RCRA invests state and local governments with the primary responsibility for resolving solid waste problems, the proposed regulations should be of special interest to state Leagues. When these regulations appear in final form, they will constitute minimum criteria which states must meet in order to qualify for federal solid waste planning, technical assistance, and implementation funds. EPA will accept comments on these proposed rules (enclosed) through November 27, 1978, providing you with an opportunity to shape the solid waste problem-solving framework that will be used by state and local agencies.

The LWVUS is preparing a response to this proposal. We have identified four important issues on which to comment.

First, the League supports EPA's proposal for consolidating work program submissions for various environmental programs into a state/EPA agreement and suggests that solid waste programs be included (see: Proposed Rules, page 38536, column 2, paragraph 1). The various environmental quality programs have tended to fragment decision-making and we agree that the state/EPA agreement is a step toward integrating program planning and management. We are concerned, however, that the state/EPA agreements will become paper tigers setting forth

grand ideas that may not be implemented. In this regard, we encourage EPA, to the extent possible, to tie funding of environmental programs to implementation of state/EPA agreements.

Second, we want to be sure that sufficent emphasis is placed on implementation of state solid waste plans. Section 256.04 of the proposed regulations ties financial assistance incentives to implementation. This link is not sufficiently strong. The regulations are vague regarding what will be considered satisfactory progress in the implementation of state plans. We suggest, at a minimum, that Section 256.04 refer to criteria for assessing implementation performance found in Sections 256.02 (b), (c) and (d), which require the development of a timetable, management approach, and assessment of legal and administrative authority to carry out the plan. We recommend that goals projected in the plan be compared with actual accomplishments when plans are periodically reviewed by the Administrator. Significant differences between actual and planned events would be a visible and measurable indicator of implementation problems.

Third, hazardous waste disposal poses a serious threat to public health and the environment. This threat places a special responsibility on EPA to minimize confusion regarding regulatory requirements for disposal of these wastes.

Two sections of the regulations addressing hazardous wastes are confusing. Section 256.40(b) states that plans shall provide for adequate and appropriate recovery, storage, treatment, and disposal capacity for hazardous wastes. Section 256.43(a) states that plans should provide that facilities are available for recovery, treatment, storage or disposal of hazardous wastes. One difference between these sections is that one uses the word "shall", while the other uses the word "should". The regulations define the term "shall" as denoting a requirement, while the term "should" denotes a recommendation. The only other difference is that one section refers to capacity while the other refers to facilities. Since these two terms bring to mind identical concepts, we suggest that EPA either eliminate Section 256.43(a), or that they clarify the confusion.

Fourth, we want EPA to protect the public's right to participate in every phase of the planning and implementation process. We are concerned that subpart G of the proposed regulations emphasizes public information without simultaneously stressing the essential follow-up step of public consultation. We will encourage EPA not to slight public consultation.

If you choose to comment on these proposed regulations, we would appreciate a copy forwarded to the national office, Attention: Environmental Quality Dept. Should you have any questions, please contact Scott Nessa at (202) 296-1770, ext. 287.

LEAGUE OF WOMEN VOTERS
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action

DEPOSITS ON BEVERAGE CONTAINERS

TO: Mahtomedi Area LWV
Bloomington LWV

FROM: Sally Foley, Lobbyist

RE: Deposits on beverage containers

DATE: February 26, 1979

POSITION: Support for mandatory deposits on beverage containers.

BACKGROUND: Since 1973 when LWV completed a study on solid waste, we have supported legislation requiring mandatory deposits on beverage containers as a means to reduce the generation of solid waste.

Many state and federal studies on the impacts of deposit legislation have been published which strongly support our position and show that it would:

- reduce litter
- reduce the generation of solid waste
- reduce raw materials consumption
- save energy
- save consumers money
- result in a new job increase.

Seven states now have similar legislation: Oregon, Vermont, Michigan, Maine, Connecticut, Delaware and Iowa.

A public opinion poll taken at the Minnesota State Fair last summer by the Minnesota House of Representatives shows 73% favoring deposit legislation. The poll results were published in the Aug.-Oct. 1978 issue of "INTERIM" which is a publication of the Minnesota House of Representatives.

STATUS OF BILL: H.F. 189 (Rep. Bill Dean) requires a minimum 10¢ deposit on all beer and soft drink beverage containers sold in Minnesota. Hearings on H.F. 189 are scheduled for March 6 and 8 in the Environment and Natural Resources Committee. Your representatives (Connie Levi and Bill Peterson) serve on the committee and are crucial votes for passage of H.F. 189.

WHAT TO DO: The League and individual members should contact their representative via letters, cards or phone calls before March 8 urging support for H.F. 189.

(Please send copy of your letters to the state office.)

Borg

Testimony
by Joyce Lake, Lobbyist
League of Women Voters of Minnesota
on H.F. 189
for
House Environment and Natural Resources Committee
March 6, 1979

Mr. Chairman and members of the committee, I am Joyce Lake speaking for the League of Women Voters of Minnesota. Since 1973 when the League completed a study on solid waste, we have supported legislation requiring mandatory deposits on beverage containers as a means to reduce the generation of solid waste.

Since 1973 many state and federal studies on the impacts of deposit legislation have been published. These studies strongly support our position and show that a returnable beverage container system would:

- reduce litter
- reduce the generation of solid waste
- reduce raw materials consumption
- save energy
- save consumers money AND
- result in a net job increase.

The League of Women Voters was here supporting deposit legislation in 1974, 1975, '76, '77, '78 and here we are again in 1979. As in many other areas the League of Women Voters is persistent. We strongly recommend the passage of H.F. 189 this year.

Thank you.

Testimony
before The Minnesota Pollution Control Agency Board
by
Virginia Reiner, Lobbyist
League of Women Voters of Minnesota

April 24, 1979

I am Virginia Reiner speaking for the League of Women Voters of Minnesota.

In 1973, after two years of study on the solid waste problem, League members agreed that the best approach was to reduce the nonessential part of the waste stream, recover its nonreducible portion and ensure safe disposal of the remainder. We are committed to action to achieve these goals, and I'm here today to express our concern for the current state of uncertainty and inaction with respect to the proposed Minnesota Hazardous Waste Rules. Such indecision is not beneficial either to the citizens and the environment which the rules protect or to the industry which the rules regulate.

The State Planning Agency Report prepared for the Joint Legislative Committee on Solid and Hazardous Waste gives four reasons for immediately promulgating these rules. We concur with these reasons, and I would like to briefly review them with you.

1) The state, industry and the public have devoted much time and resources to the rules. Rehearings would be repetitious and delaying.
2) The rules will generate information which is crucial to continued hazardous waste management planning.
3) Compliance with management rules will protect the environment.
4) Responsible hazardous waste managers are at a competitive disadvantage in the absence of the rules.

In addition to the above reasons, I would also like to add the following considerations.

1) The fees generated by the rules will provide for financing the hazardous waste management and enforcement program by the Agency.

2) During the hearings on the demonstration EPA chemical landfill site, many citizens expressed opposition to the grant on the basis that there did not exist a statewide hazardous waste regulatory program in place. We need such secure disposal sites in this state and the promulgation of the hazardous waste regulations may help provide assurance to diminish citizen concerns.
3) EPA has designated to the states prime responsibility for the management of hazardous waste disposal. Last December conferees at the International Conference on Hazardous Materials Management agreed that the problems are too serious to wait for the slow and tedious process of adequate federal registration and urged the states to take the initiative in solving them. Cooperation among states was encouraged. The definitive promulgation of the hazardous waste regulations would provide a working framework to begin such cooperative coordination.

To summarize:

We have a well-scrutinized set of Hazardous Waste Rules which have been developed over the last five years with exhaustive input. We have the production of 128,000 tons of hazardous waste per year in Minnesota, and we have documented problems with irresponsible and unsafe disposal of hazardous waste here. The promulgation of the Hazardous Waste Rules is the beginning of a solution to these problems, and we urge the Board to act to see that these regulations are quickly implemented.