TRASH: A COMMENTARY ON A PROPOSAL

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FOREWORD

The requirements of this study necessitated research into the areas of litter, recycling, and waste disposal. The Bureau acknowledges with thanks all the individuals and organizations who aided us in data gathering for the preparation of this study.

The Bureau acknowledges specifically the assistance of Charles Toguchi, Department of Education; Clyde Morita, Office of Litter Control; Dave Kyle, Reynolds Aluminum; Mike Nobriga, Maui Soda Works; and the public high school principals who participated in the recycling survey.

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TABLE OF CONTENTS

Chart

Appendices

Chapter 1

INTRODUCTION

Objective of the Study

House Resolution No. 455 (see Appendix A), adopted during the 1987 Regular Session, requested the Legislative Reference Bureau to study the feasibility of establishing a statewide trash reduction program for Hawaii.

Nature and Scope of the Study

H.R. No. 455 proposed various schemes aimed at reducing litter by dealing with four separate categories of litter. The first three categories, glass bottles, plastic beverage containers, and aluminum beverage containers, would be subject to a deposit to be refunded to the consumer upon redemption. Because aluminum containers enjoy a high recycling rate, they would be subject to a lower deposit than glass or plastic to encourage their use. The resolution proposed that redemption centers, where beverage containers could be returned for refunds, be established at high schools throughout the State and operated by the schools, possibly as small business training programs. The fourth category, disposable plastic and cardboard containers from take-out food establishments, would be subject to a litter tax imposed on all take-out orders. The revenue from the tax would be used to support the trash program and would include funding of education programs, enforcement of litter laws, and incentives for litter pickup. The resolution contemplated that the Office of Litter Control, under the Department of Health, administer this trash reduction program.

Organization of the Report

This report is divided into seven chapters as follows:

Chapter 1 contains the introduction;

Chapter 2 examines the litter problem within the context of the growing trash crisis and reviews alternatives for addressing the trash crisis;

Chapter 3 discusses the feasibility of a beverage container deposit scheme and examines the role of recycling in relation to such a scheme;

Chapter 4 discusses the feasibility of school operated redemption centers and reviews survey responses on the subject from high school principals and the Department of Education;

Chapter 5 examines various litter tax schemes and summarizes litter tax provisions adopted in six other states;

Chapter 6 reviews studies that have been conducted of Hawaii's litter problem and discusses a Department of Health position paper proposing a comprehensive litter control plan;

Chapter 7 contains findings and recommendations and is followed by various appendices.

Chapter 2

STATEMENT OF THE PROBLEM

Defining the Problem: United States--A Nation of Trash

The problem of litter is symptomatic of the much larger problem of how to dispose of the nation's garbage. The United States is the world's leading garbage producer, generating 400,000 tons of trash per day, totaling 135 million tons per year.[1] The production of trash in Europe and Japan is significantly less than in the United States. For example, the average resident of Oslo, Norway produces about 1.7 pounds of trash per day, while the average Japanese, Swedish, Swiss, and West German citizen generates approximately 2.5 pounds per day. This is in sharp contrast to the United States average of 4 to 6 pounds per person a day.[2] Estimates are that by the year 2000, Americans will produce a total of 180 million tons of municipal solid waste.[3] One commentator has suggested that the amount of solid waste generated in this country has increased in direct proportion to our population, affluence, and technology.[4]

Statistics also show that the composition of our trash has been changing. The percentages of paper and plastics in the solid waste stream have been increasing, while the percentages of glass, metals, and organic wastes (i.e., food and yard waste) have been decreasing.[5] Furthermore, "packaging" accounts for one-third of all municipal waste by weight; half of this packaging is composed of paper followed by glass, plastic, and metals.[6]

While Americans continue to generate tons of trash, localities around the country have been grappling with how to dispose of it. The penchant of Americans for throwing things away has finally come face to face with the shortage of space in which to throw it. The following description is particularly telling of the extent of the garbage dilemma.

> Garbage has literally backed up in the streets, supermarkets have taken to guarding their dumpsters and Goodwill Industries reports that half of the "contributions" to its collection boxes have been...real garbage.[7]

Given the amount of garbage we produce, it should be no surprise that discarded items and trash end up as litter on our streets, parks, and beaches.

Landfilling

Presently, most municipal solid waste is disposed of in landfills, but these are rapidly being filled to capacity.[8] In fact, the Environmental Protective Agency estimates 27 states will run out of landfill capacity within 5 years.[9] Furthermore, the siting of new landfills has become extremely difficult because of increasing public concern over environmental threats associated with landfills, such as ground and surface water contamination and methane gas generation. New Jersey's Meadowsland landfill is a prime example of these threats, standing in 40 feet of toxic liquid leached out from

its contents. Similarly, Staten Island's Fresh Kills landfill in New York leaks 4 million gallons of toxic liquids a day into nearby streams, and leakage from Michigan landfills has resulted in no less than 139 cases of ground water contamination.[10] One measure of the severity of the environmental hazard posed by landfills is that 21% of the sites slated on the National Priority List for cleanup under Superfund are municipal landfills.[11]

Cities with no remaining landfill space have been forced to ship their garbage elsewhere and at increasingly higher costs. The 3-month odyssey of the garbage barge Mobro from Islip, New York that wandered unsuccessfully from port to port in the spring of 1987 is perhaps the most well-known illustration, but hardly the only one. After 18 months at sea, waste ash from Philadelphia's 1960's-vintage incinerators aboard the Khian Sea has yet to find a final resting place; the ship was refused entry by ports along the East Coast and by at least six nations, and "attempts to dispose of its payload created international problems involving Central American and Caribbean nations, Africa, international agencies, the U.S. State Department, and the U.S. Coast Guard."[12] Less extreme examples occur daily: some New England towns truck their garbage 24 hours a day to landfills in Pennsylvania and Ohio; Long Island communities have shipped garbage as far as Michigan; five New Jersey counties export nearly all their trash to Pennsylvania; and Miami has considered sending its garbage to Venezuela.[13]

The financial fallout of the landfill shortage for municipal governments and their citizens has been stiff tax increases to cover landfill costs and higher service fees for customers of private haulers. A decade ago, the average cost nationwide was less than $10 a ton to dump trash in a landfill; now it can cost as much as $60 a ton, and those municipalities shipping garbage long distances may pay as much as $150 a ton.[14] The trash hauling business has turned into "big business," generating an estimated $15 billion in revenues annually.[15]

The following description of Philadelphia's garbage dilemma illustrates the crisis facing several of the nation's cities:

> Since 1983, Philadelphia has been engaged in a multimillion-dollar brawl over where to put its garbage. As the city struggles to find new outlets for its trash, the budget for waste disposal has quadrupled and old dumping grounds have begun to turn Philadelphia's haulers away. The city is trucking garbage longer and longer distances and paying more each week for the privilege of dumping on other people's property.[16]

Hawaii, with its limited amount of land, may be more vulnerable to the landfill crisis than many mainland states. The problem is compounded for our island state, where 90% of the land is over artesian water, because federal law forbids landfills over major water sources.[17] Much of the remaining 10% of the land is urbanized and any effort to site new landfills in these areas must overcome strong community opposition.[18]

At the same time, existing landfills are reaching their capacity and several are projected to be filled within the next few years. On Oahu, where an estimated 750,000 tons of trash are produced a year, the problem is serious: the Puu Palailai landfill has already been closed; without H-Power in

operation, the Kalaheo landfill reportedly will reach capacity by fall 1990; and Kapa'a Site 1 and Waimanalo Gulch are estimated to be filled by summer 1995.[19] The landfill situation on Maui has been described as "severe for several months and is rapidly deteriorating."[20] Two of Maui's strategic landfills, Olowalu and Makani, are filled almost to capacity; they have already been closed to commercial haulers and will be closed permanently in a year. County officials have expressed concern that "residents will simply dump their garbage along roadsides or sneak down cane-haul roads at night to stash the trash."[21] Business and condominium owners deprived of the Olowalu Dump will be paying twice as much to have their trash hauled to the Central Maui dump, which is filling up faster than expected. Prospects for siting new landfills appear dismal: "There are few other available sites for landfills on Maui, partly because of strict licensing rules and also because there just isn't much more land."[22] County council members have called for a trash summit of sorts to explore other alternatives to landfilling.

With tons of trash mounting up and no place to dump it, a garbage crisis is looming on the horizon for more and more areas of the country. And, what was once considered a local problem has become a national concern. The issue has generated much discussion and debate. Conventional wisdom considers waste-to-energy incineration and recycling the most viable options to landfilling solid waste, yet each of these has its own drawbacks also.

Incineration

Incineration as a means of disposing of solid waste has been gaining support in recent years, especially among local officials because it reduces waste volume by 80% to 90% and allows continued operation of existing waste collection systems.[23] Also, despite the substantial upfront cost, incinerator plants promise to keep trash disposal budgets reasonably stable over the guaranteed life of the plant (approximately 25 years).[24] There are an estimated 111 incineration plants operating in the United States, 75 of which are waste-to-energy plants that produce steam for heating or generating electricity as they burn garbage.[25] An additional 210 incinerators are in the planning stages and it has been calculated that approximately 400 will be in operation by 1990.[26] Waste-to-energy incinerators have an additional appeal to local officials--the existence of a guaranteed market for the energy produced by these facilities. (The federal Public Utility Regulatory Policies Act of 1978 (PURPA) requires electric utility companies to purchase electricity offered for sale by private producers.[27]) However, in many cases, these incinerators have proven to be far more expensive than anticipated and revenues from electricity sales have failed to meet expectations.[28]

In addition, incinerators continue to face strong opposition due to environmental concerns over the emission of toxic air pollutants[29] and the management of residual ash.[30] A 1987 Environmental Protection Agency (EPA) study recommended a mix of control measures which, if used in combination, are estimated to be capable of removing over 99% of most pollutants from incinerator emissions.[31] The more difficult problem appears to be disposing of ash residue caused by toxic metals in trash that become concentrated during burning. Studies have shown the average concentration of lead and cadmium in ash exceeds the regulatory limit defining hazardous waste.[32] The EPA currently exempts incinerator ash from the hazardous waste laws, which

set stringent standards for hazardous waste disposal, but legislation is pending that could change that.[33] It should be recognized, however, that requiring plant operators to meet hazardous waste disposal standards for incinerator ash will substantially increase the operating cost of incinerators.[34]

It also should be noted that incineration, while diverting some of the solid waste from landfills, will not replace landfills completely. Landfills will still play an important and necessary role in solid waste disposal. Of the estimated 150 million tons of solid waste generated annually, approximately 30 million tons, including bricks, stones, concrete, construction debris, old appliances, and other materials, cannot be incinerated.[35] Even if all of the remaining 120 million tons of solid waste were incinerated, another 30 million tons would end up as incinerator ash or residue which must be landfilled.[36] Accordingly, even if the maximum amount of solid waste possible were incinerated, 60 million tons of ash and non-combustibles would still need to be landfilled annually.[37]

Recycling

Given the environmental problems associated with landfills and incinerators, many communities are looking with renewed interest at recycling. The advantages of recycling compared to other waste disposal options are that it requires the least amount of capital, provides the most flexibility, and costs the least--it costs an average of $30 a ton to recycle waste compared to $50 a ton to landfill waste and from $65 to $75 a ton to incinerate it.[38] The more commonly recycled waste products are aluminum, paper and paperboard, glass, and plastic. Although the subject of paper is beyond the scope of this study, it nevertheless is worthwhile to note that nearly half of all paper, which makes up slightly more than 40% of American garbage, is recycled, and approximately 200 paper mills rely solely on waste paper.[39] Although aluminum cans are recycled on the mainland at the rate of 25%, the rate is as high as 75% in Hawaii; glass is 100% recyclable, and glass plants presently use 30% to 35% crushed glass.[40]

Recycling of plastic has been less successful than other products. The primary constraint appears to be the collection of sufficient quantities of homogeneous plastic to make recycling economical.[41] Consequently, the only plastic products presently recycled on a wide scale appear to be polyethylene terephthalate (PET) soda bottles in states with bottle deposit laws.[42] The plastic recycling problem is complicated by the rapid growth of plastic in the solid waste stream: nearly 10 million tons of plastic were discarded in 1984, up from less than 400,000 tons in 1960.[43]

In addition to diverting materials from the waste stream, recycling saves energy and conserves natural resources by decreasing the amount of raw materials used.[44] For example, recycling saves 95% of the cost of manufacturing a new aluminum can because it takes 95% less energy to turn a used can into a new one than to refine new metal from raw bauxite.[45] Moreover, using one ton of recycled aluminum saves 4 tons of the raw material.[46] Energy drops as much as 5% for every 10% of crushed glass added to a glass plant's furnace; and up to 1.2 tons of raw materials are saved for every ton of crushed glass used in the manufacturing process.[47]

Theoretically everything discarded by consumers can be viewed as waste available for recycling. With that in mind, at least one commentator has estimated that more than half of all solid waste generated could be recycled economically.[48] Realistically, however, this rate probably could be achieved only if our society underwent a complete transformation of the methods used to collect, store, and handle solid waste.[49] Other commentators have estimated that, even under optimum conditions, recycling will eliminate at best only 20% to 25% of the garbage.[50] This estimate appears to be supported by the fact that those U.S. recycling programs considered among the best (where as many as 3 out of 4 citizens participate) have reduced waste levels by no more than 25% to 30%.[51] One commentator notes that the experience of Islip, New York is instructive on this point:

> In 1986, the town was cited as one of the nation's most successful recycling communities. But what it wants most at the moment is to start operation of a 500-ton-per-day incinerator, due to be completed in 1988.[52]

The limits of recycling also are evident from the experiences of countries where recycling has long been a key component in efforts to handle municipal waste. For example, in Japan, which has the world's most successful recycling program, experience suggests that at best recycling can take care of only 65% of the municipal solid waste.[53] The Japanese have found total recycling impossible for two key reasons: the heterogenous nature of municipal waste and the limited market for recycled goods.[54]

In the view of some commentators, the importance of markets to the success of a recycling program cannot be overstated:

> Viable markets are an indispensable component of any successful recycling endeavor. Policymakers must develop comprehensive programs that go beyond source separation and collection; they must address the market situation at the local, regional, national and international levels as well.[55]

Furthermore, unless sufficient markets are developed, a surge in recycling could inundate what market exists, driving prices to disruptively low levels.[56] Concerning the recycling goals of 50% set by Philadelphia and Berkeley and 25% set by New Jersey, one commentator writes:

> But what if higher rates are achieved?...Some observers wonder how the market will swallow so much recycled material. At the moment...the number of industries interested in salvaged waste is not growing as fast as the waste itself. "The fact is that paper mills don't open up just because we collect paper" ...The American Paper Institute actually lobbied against a recycling bill in New Jersey, arguing that the flood of recycled material would disrupt the market.[57]

These concerns underscore the need to develop and encourage sufficient markets for recycled materials.

Generally, the cost effectiveness of recycling depends upon the cost of separate collection, the existence of and distance to markets, and the value of the products made from the recycled materials. In the past the cost of recycling has been higher than the cost of disposal, but the economics of recycling are beginning to change in some areas.[58] Moreover, many localities have come to view the avoided disposal costs realized by reusing rather than burying or burning waste as the real payoff: "Every ton of garbage that is recycled is a ton a community doesn't have to pay someone to get rid of."[59] For example, Somerset County, New Jersey just built a recycling plant and expects to realize a net savings of $10 million over the next 5 years in reduced landfill disposal fees.[60]

Some states, recognizing the need to encourage markets to boost recycling rates have imposed strong measures. New Jersey, Oregon, Rhode Island, and Vermont have enacted statewide recycling programs. In Oregon, communities of more than 4,000 must arrange for curbside pickup of recycled materials. Rhode Island residents relying on the state for waste disposal must place cans, glass, and plastic bottles into separate containers for curbside pickup. In New Jersey, residents must separate materials like newspaper, glass, and metals from their household trash. Vermont provides incentives for residents to recycle and compost their trash where possible. In addition, bottle-deposit laws, although enacted mainly to prevent litter, have in some instances created a system for collecting and separating recyclable materials from other waste, thus encouraging recycling.[61]

A few states have taken even more aggressive action. For example, in Massachusetts the state's bureau of solid waste disposal is heavily involved in recycling, with the state guaranteeing markets for materials and owning processing centers. In addition, the bureau has integrated its recycling program with the state highway, agriculture, and procurement agencies.[62] Other states, recognizing that recycling is most profitable when collected and processed materials find their way into new products, are beginning to focus on programs to increase the number of factories that use recycled materials.[63]

Even in these active states, however, critics point out that more needs to be done, especially in the area of investing additional state resources in recycling to achieve a parity of investment with other waste disposal options such as landfills and incinerators. For example, in New Jersey, although state policy calls for a 25% recycling rate by 1991 and only 10% of the state's 11 million tons of municipal solid waste is presently recycled, there is no proportional share of state investment in recycling to help achieve the 25% goal. Argues one critic: "If you set a goal of 25 percent recycling, allocate 25 percent of the solid waste budget for recycling."[64]

Even with increased state assistance and encouragement, however, recycling alone is not a panacea for problems of waste disposal. Even if recycling rates of 60% or 70% could be achieved, 30% to 40% of the waste stream would still have to be disposed of either through landfill or incineration. Furthermore, "[r]ecycling programs are most effective when integrated within a city's overall solid waste management plan. If added as an afterthought, or implemented outside of the waste collection system, recycling schemes typically have lower recovery rates."[65] It should be noted that recycling has worked effectively in tandem with incineration. In fact, some municipal officials have discovered that their investments in waste-to-energy incinerator plants have increased, not diminished, the importance of

recycling because recycling helps to improve the efficiency of an incinerator by removing noncombustible bottles and metal cans that interfere with good burning.[66] If burned, these materials end up as contaminated ash which must be dumped into landfills. As a result, plant maintenance costs increase, scarce landfill space is depleted, and disposal costs are inflated.[67] The advantage of separating out such materials from the waste stream prior to incineration is readily apparent when one looks to Japan. Japanese incinerator plants, burning garbage from which bottles and cans have already been removed, generate one-half the amount of bottom ash as United States plants.[68]

Other Solid Waste Management Options

Recently, a number of state and county lawmakers have turned their attention to the problems generated by an increasing amount of plastics and packaging in the litter waste stream. The degree of interest in this area is indicated by a list prepared by the National Conference of State Legislatures of 88 bills concerning plastics and packaging introduced in 23 state legislatures during 1988. Action taken or under consideration in a number of jurisdictions generally falls into two categories: (1) legislation to tax or reduce packaging materials or to mandate use of degradable materials and (2) restrictions or bans on nondegradable or nonrecyclable products.[69] The tax on materials used to package consumer products ranges from one to five cents and typically includes a rebate or exemption if the manufacturer can demonstrate that the packaging material is made from degradable, recycled or recyclable materials. Some of these bills also exempt food packaging which represents about 50% of all packaging materials.[70] Critics contend that this reduces the impact of the tax and the projected revenues, and they also point out that the packaging taxes are likely to be passed on to the consumer.[71] Chapter 5 examines the issue of taxing disposable containers.

Some jurisdictions have banned certain types of plastic materials or are requiring that plastic packaging materials be degradable. The most dramatic action thus far has been taken by Suffolk County, New York, which banned nonbiodegradable food packaging and plastic food utensils effective July 1, 1989. Banned items include foam "clamshells" used in fast-food restaurants, plastic meat trays, plastic grocery bags, and polystyrene or polyvinyl chloride utensils or packaging.[72] Lawmakers in Rockland County, New York and Berkeley and Los Angeles, California have taken or are considering similar action.[73]

More limited action has been taken on the state level. A Massachusetts Executive Order bans state purchases of non-recyclable polystyrene products by 1989, and a Minnesota law bans state and local government purchases of products containing chlorofluorocarbons (CFC's) as of January 1, 1990.[74] At least 12 states (Alaska, California, Connecticut, Delaware, Florida, Maine, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont) have banned the use of plastic or non-biodegradable connecting devices on various beverage containers.[75] Florida recently passed and Minnesota is considering comprehensive legislation that would ban various plastic packaging materials or containers (including plastic beverage ring connectors) or require that they be degradable.[76] Maine law now prohibits the sale of foam products containing CFC's and the use of nondegradable individual food and beverage containers by food services at state or local municipality facilities or

functions.[77] Iowa recently enacted sales and use tax incentives for the use of degradable packaging materials.[78]

Furthermore, ten bills before Congress address the need for degradable plastics.[79] One bill being drafted by Rep. George Hockbrueckner (D-N.Y.) would ban the production, manufacture, distribution, sale, or delivery of any consumer goods that contain or are composed in whole or in part of material that is not degradable (as determined by the U.S. Secretary of Commerce).[80] In effect, this bill would mandate that within 10 years, all nondurable consumer goods made or sold in this country be recyclable or composed of degradable materials.[81]

In Europe, Denmark has banned nonrecyclable plastic and glass beverage containers since 1977 and is now considering legislation to ban all plastic packaging.[82] Last year, Italy passed a law requiring all plastic used in nondurable goods be degradable effective 1991.[83] Britain, Switzerland, and Austria are considering similar legislation.[84]

Summary

In summation, the litter problem is a symptom of the larger solid waste disposal problem facing a growing number of jurisdictions, and it appears no one waste disposal option will solve that problem. It is clear, however, that alternatives must be found to landfill disposal. Recycling is an environmentally sound and less expensive alternative, but efforts must be concentrated on improving markets and increasing the amount of resources devoted to recycling. Recycling apparently can be counted on to reduce only 25% to 30% of the solid waste volume for the near future. Incinerators present environmental concerns and the initial investment is costly. However, given the above-projected recycling rates, a decision not to incinerate is a decision to continue to rely on landfill dumping as the primary disposal method.[85] Other options include efforts to reduce waste by banning or taxing certain waste materials, such as plastic packaging, or changing the nature of waste, such as requiring the use of degradable plastic packaging on the theory it will degrade faster and thereby reduce litter and extend landfill life expectancy.[86]

It would appear that a combination of waste disposal options that assist and complement one another may be most effective and should be explored. For example, it has been suggested that a waste manager drawing up a 20-year plan should consider the following waste management strategy, being attentive to timing and tactics: (1) secure adequate landfill space and prepare to meet EPA's highest ground-water standards; (2) initiate a source separation program of recyclable or unburnable waste materials, especially batteries which are the major contributors of toxic heavy metals; and (3) build an advanced incinerator with the best air filtration devices if the volume of waste is sufficiently large to justify the investment and dumping fees are expected to be high.[87]

Chapter 3

THE FEASIBILITY OF A BEVERAGE CONTAINER DEPOSIT SCHEME

Introduction

House Resolution No. 455 requested a study of the "possibility of setting up a Trash Reduction Program" for Hawaii that would involve deposits levied on aluminum, glass, and plastic beverage containers and redemption centers established at state high schools where the beverage containers would be returned in exchange for a cash refund. This chapter explores the feasibility of a beverage container deposit law; school-operated redemption centers are examined in chapter 4.

Several other states have enacted beverage container deposit laws or "bottle bills"* as they are popularly called. A brief overview of the major features of these laws as well as those dealing with other litter control activities, such as recycling, is presented in Part II of this chapter to allow comparison with the deposit scheme proposed by H.R. No. 455. Before reviewing the details of these activities, however, it may be helpful to explore the feasibility and general implications of a bottle bill.

Part I. The Effect of Recycling on Bottle Bill Objectives

The feasibility or success of a beverage container deposit law depends, on one hand, on whether sufficient economic incentive exists for returning beverage containers; the amount of time and inconvenience involved for the consumers in returning containers and whether the incentive to return outweighs these factors; whether there is sufficient incentive for others, such as dealers or retailers, bottlers, manufacturers, and recyclers, to participate in and promote the program; and what happens to containers that are returned. Since the deposit scheme is envisioned as part of the "Trash Reduction Program" proposed in the resolution, it is particularly important to address this last issue because if there is no use for the returned containers, the majority will likely end up being discarded into our ever-decreasing landfill space. Under this scenario, the efforts to clean up litter could end up adversely affecting the more critical problem of solid waste management.

In a larger sense, however, feasibility or success will depend upon the purpose behind enactment of a bottle bill and upon how closely the bill achieves its purpose. There are four plausible objectives to be achieved by the proposed bottle bill. These are listed in order of increasing societal importance as follows: raising revenue through sale of returned beverage containers to recyclers; cleaning up litter; extending the life expectancy of landfills usage; and conserving resources through recycling. Raising revenue from sales to professional recyclers would be a pleasant fringe benefit, but given the changing markets for recycled goods, a profit cannot always be

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*The term bottle bill is a misnomer in the sense that the legislation to which it refers includes other types of beverage containers, such as cans.

expected, and a program based on that goal might easily falter during a periodic market swing. Decreasing litter is a worthy aesthetic goal, but one that may not be a sustaining force by itself, since litter causes no major societal damage.

A much more important goal, especially in Hawaii where available land is limited, is extending the life expectancy of sanitary landfills. Landfills are reaching their capacity and several are projected to be filled within the next few years.[1] The useful life of a landfill can be extended if solid waste is diverted from the landfill through recycling or incineration. Thus if a bottle bill is tied in with another waste management option, such as an effective recycling program, it will have the result of extending the life expectancy of landfills. If it is not, the majority of containers collected under a bottle bill will likely end up being deposited in a landfill, thus decreasing its life expectancy. And, if large volumes of beverage containers are returned under the deposit scheme, the landfill may be filled to capacity even earlier than anticipated.

Conserving our resources, both in terms of raw materials and the energy used to convert them into usable forms, has become an extremely important societal goal. This is achieved through recycling finished products by reusing them or breaking down the component materials and re-forming them. With the exception of glass,[2] most recyclable materials, including plastic and aluminum, can be recycled at a considerably lower cost than it takes to mine and process their raw components.[3] Recycling of aluminum, for example, uses only five percent of the energy needed to transform bauxite ore into virgin aluminum,[4] and recycled aluminum can be used to create new aluminum products.[5] The age of cheap, abundant energy and seemingly inexhaustible natural resources, like the passing of the passenger pigeon and the endless herds of buffalo, is over: conservation and recycling of energy and materials will become less and less a matter of choice and more a matter of economic necessity. As one analyst states:

> The economics of recycling depend largely on the costs of alternative disposal methods, the markets for the recovered products, and the expenses associated with operating the recycling program. For years, recycling has been hampered by the belief that it should make money. But recycling is a cost-effective "disposal" option so long as it requires fewer governmental subsidies than landfilling or incineration. Lower taxes, energy savings, and a cleaner environment are the real bottom lines. As landfill costs continue to rise because of space constraints and stricter environmental regulations, and as the high capital costs of incinerators and their pollution control technologies sap city budgets, the appeal of recycling will inevitably grow.[6]

An effective recycling program would facilitate all four of the previously mentioned objectives and would significantly advance the latter two by diverting solid waste from landfills and conserving resources and energy through reuse of materials. In many minds, recycling is equated with a returnable bottle scheme. It is true that, in some cases, bottle bill legislation has facilitated collection and separation of recyclable material. Indeed, some jurisdictions that have enacted bottle bill laws also have vigorously encouraged recycling. It must be recognized, however, that

recycling is influenced by many other factors and bottle bill legislation alone will not result in recycling if other factors are not present. Accordingly, it should be asked what will bottle bill legislation alone, without a recycling component, achieve? At best, it appears it may only serve to reduce litter and then only to the extent to which beverage containers are found in the litter. As noted earlier, if the materials collected under a bottle bill scheme are not recycled, they will have to be disposed of in some other manner, most typically by disposal in landfills and thus possibly interfering with critical solid waste management objectives.

Given the contribution of an effective recycling program to a successful beverage container deposit scheme, it is important to explore the physical and economic feasibility of recycling aluminum, plastic, and glass beverage containers that would be subject to the deposit scheme. The following discussion examines the physical characteristics of each of these three materials, the extent to which each is recyclable, whether a market exists for the recycled product, and accessibility to these markets.

Aluminum

Composition. Aluminum is a light, corrosion-resistant, versatile metal[7] produced in wrought and cast forms. Wrought aluminum is used to make aluminum beverage cans. Aluminum is the most abundant metal on earth, but one that is not easily separable from its matrix of bauxite ore.[8] Aluminum was not produced in measurable quantities until the 1850's, and the basic refining process, which is still used today, was not developed until 1886.[9] The aluminum processing industry has experienced one of the fastest growth rates of any industry, and aluminum is the principal nonferrous metal found in the municipal waste stream.[10]

Feasibility of Recycling Aluminum. Recycling aluminum is very cost-effective. As mentioned previously, only 5% of the energy used in extracting virgin aluminum from bauxite ore is needed to recycle postconsumer aluminum; accordingly, recycling aluminum achieves a 95% energy savings.[11] Producing virgin aluminum consumes a large amount of energy because two steps are involved. First, bauxite ore must be refined to remove impurities. The end product is alumina, a mixture of aluminum and oxygen so tightly bonded together that neither heat nor chemical reaction alone can separate them. Then, alumina must be smelted and undergo electrolysis in order to produce pure aluminum.[12] In comparison, recycling of aluminum, broadly speaking, merely involves remelting it.[13] Wrought and cast alloys are generally separated for recycling purposes, as cast alloys cannot be recycled into wrought alloys and wrought alloys can only be recycled into cast if a high economic penalty is paid.[14] The recycled aluminum, if properly cleaned before being recycled and of the right type, can be used for the same purposes as is virgin aluminum. Remelted aluminum cans, for example, may be recycled into new aluminum cans.[15]

Glass

Composition. Common glass is a transparent, supercooled liquid composed primarily of silica sand, soda ash, and lime.[16] Glass has been produced for over 2000 years.[17] As these raw materials easily combine when

they are melted, glass production is comparatively cheap and simple. Forming glass can be made even more economical by adding cullet (waste glass) to the mixture, as cullet melts at a lower temperature than the raw materials and aids in their mixing.[18] Some manufacturers use their own waste glass as cullet, but postconsumer glass also may be used as cullet.

Feasibility of Recycling Glass. The recycling process for glass is fairly simple. Most commercial glass containers come in one of three colors: flint (clear), green, or brown. For best results, the collected glass is sorted by color and transported to the recycling center where it is cleaned and remelted. Glass can be reformed many times without losing its properties, and for that reason, recycling of glass would appear to be a good idea.

Unlike aluminum, however, glass recycling is not particularly economical. As the raw materials--sand and limestone--are relatively cheap[19] and abundant, there are no great cost savings associated with reusing postconsumer glass. Additionally, since the elements in virgin glass combine readily, there are no great energy savings associated with remelting postconsumer glass as compared to creating virgin glass. According to one source, only 8% of the energy used in creating virgin glass is saved by recycling postconsumer glass.[20] Another drawback with recycling glass is that the cost of separating glass from the waste stream may be high, unless consumers separate it out themselves before it enters the waste stream. Glass is the most difficult material to recover from the waste stream because of the exacting standards of cleanliness required for its reuse.[21] Glass must be as free as possible from organic and mineral intrusions if it is to be reused.[22] Due to these considerations, the recycling of glass is not as popular as other types of recycling where more dramatic savings of materials and energy occur.

Glass containers are not merely recyclable; they are unique in that they also can be refilled and reused. One company in Hawaii uses refillable glass bottles, but has experienced strong consumer resistance and may not be able to continue. The Maui Soda & Ice Works, Ltd., in Wailuku purchases refillable bottles, which are thicker than the one-use bottles, from mainland or foreign sources. The cost of the refillable bottles is double that of the one-use bottles, 35 cents versus 17 cents; and because they are heavier, the refillable bottles cost more to ship, for a total cost of 85 cents per refillable bottle as opposed to 30 cents. Yet, the refillable bottle is more economical since it can be refilled at least sixteen times. Thus the overall cost decreases to 5 cents per use as compared to 30 cents for one-use bottles, and less breakage in shipping occurs (2% versus 8%) because the refillable bottle is thicker.[23] This reduced cost enables Maui Soda to offer soda in refillable bottles at a slightly cheaper cost ($5.25 per case of 6.5 ounce bottles, or 3.3 cents per ounce, as opposed to $9.25 per case of 10 ounce bottles, or 3.8 cents per ounce), although a $3 deposit is charged which increases the initial price to the consumer.[24] The bottles are returnable to Maui Soda, but the current rate of return is very low--25% or less.[25] Two economic factors, the low rate of return and the fact that Maui Soda's bottle sterilizer is at the end of its useful life, may force Maui Soda to give up its use of refillable bottles.[26]

One fact pointed out by Maui Soda's experience may give pause to the proposed bottle bill scheme. Even with offering 10 cents for each returned bottle (the same amount proposed in H.R. No. 455), Maui Soda receives at

most only 25% of its bottles back. This may be an extremely accurate indicator of the return rate of glass bottles on a statewide level, and the legislature should decide whether such a limited response would be sufficient to justify imposing the program.

Plastic

Composition. Plastics are synthetic materials whose chief source is petroleum.[27] Plastics can be formed in a myriad of ways, creating products with diverse chemical and physical characteristics. For example, plastics are used in styrofoam cups, nylon stockings, melamine dinnerware, and soda bottles. The variety of types of plastics depends on the chemical composition and processing used by the manufacturer. The wide range of characteristics found in plastics is impressive: from the softness of styrofoam, easily crumbled by hand, to the toughness of "unbreakable" melamine; from the easy stretchability of nylon stockings to the rigidity of formica; and from the transparency of lucite to the opacity of PVC pipe.

There are two main categories of plastics: thermoplastics and thermosets. Thermosets contain polymer molecules that are bound to each other. Common thermosets include epoxy and melamine. While this chemical bond creates a very stable, solid material, it also means that thermosets cannot be remelted and reformed into new thermoset materials. Heating destroys the chemical composition of the thermosets.

Thermoplastics, on the other hand, are composed of polymer molecules that are not attached to other molecules. Common thermoplastics are nylon, polystyrene, and polyethylene terephthalate (PET) used in beverage bottles. Due to this lack of internal bonding, thermoplastics, once formed, may be softened and rehardened into a new shape by subsequent heating and cooling with few chemical changes.

Feasibility of Recycling Plastics. The success rate of plastic recycling depends upon how one defines recycling. If recycling is defined as finding an alternate use for a product once it has outlived its original function, then plastics can be recycled. However, if recycling is defined as the ability to re-form a product for reuse for the same or a similar function, then most plastics currently[28] are not recyclable.[29] The same factor that makes plastic so versatile--the wide range of characteristics caused by different formulas and processes--makes it impossible to melt down a mixed batch of plastics and end up with a substance with characteristics identical to its original components. One source has stated that different plastic resins can vary in characteristics and properties as much as wood differs from steel,[30] and just as those two materials cannot be combined in random amounts to approximate the characteristics of either, random batches of plastics cannot be combined and remelted into a predictable material resembling virgin plastic.[31] Thermosets cannot be melted at all without destroying their integrity, and thermoplastics vary widely in their physical characteristics; some melting at 150 degrees Fahrenheit and others melting at over 500 degrees, for example.

This is not to say that plastics can never be reformed to approximate their original characteristics, as can glass and aluminum. But only a reprocessed batch of the same kind of thermoplastic will result in a recycled product similar to the original material. The difficulty for the recycler in

implementing this type of recycling lies in separating out each different type of plastic.

Reprocessing of plastics is divided into four categories: primary, secondary, tertiary, and quaternary.[32] In primary recycling, waste plastic is processed into a product with characteristics similar to the original product. However, this recycling can only be done if the plastics are of the same type and if there is no significant waste contamination, which generally rules out all used (postconsumer) plastics.[33] For these reasons, primary recycling generally is done only by plastic manufacturers with the scrap left over from processing one particular type of plastic,[34] although one mainland recycler has experienced success with the primary recycling of HDPE (high density polyethylene) beverage bottle bases.[35]

The highest[36] form of recycling that most postconsumer plastic can reach at present is secondary recycling, which involves the processing of plastics separated from other types of waste, but not from each other. This reprocessing of mixed plastics results in products with characteristics inferior to those possessed by the original product. These recycled products are typically used to make items such as drainage pipes and construction materials that function similar to products usually made from wood such as fenceposts.[37] The constraint on secondary recycling lies in the need of the recycler to separate the plastic from the rest of the waste stream. Secondary recycling, at best, is only a stop-gap measure because items formed from this process will eventually deteriorate and need to be recycled in tertiary or quaternary fashion or disposed of otherwise.[38]

Tertiary recycling breaks the plastic down by processes such as pyrolysis and hydrolysis.[39] This results in retrieval of its basic components, chemicals and fuel. Pyrolysis is not yet being used successfully in a commercial setting.[40]

Quaternary recycling is the extraction of the heat content of the plastic by incineration. Depending on the type of plastic involved, incineration of plastic can retrieve as much heat as an equivalent amount of coal.[41] This type of processing will be accomplished at the planned City and County of Honolulu H-POWER plant.

Both tertiary and quaternary recycling can be done without separating the plastic from the waste stream, making them easier and cheaper than other reprocessing methods. However, public concern has been expressed in Hawaii about the environmental impact of incineration of plastics.[42]

If plastic is not reprocessed by one of these four methods, it normally is disposed of in landfills like most other waste products. This is the current practice in Hawaii with respect to plastic. The environmental impact of dumping plastics in landfills versus the impact of incinerating plastic also has been debated.[43]

One alternative to traditional plastics are degradable plastics, of which there are two types: photodegradable plastics (broken down by sunlight) and biodegradable plastics (broken down by fungi or bacteria in the presence of moisture). Conventional plastics may remain intact for up to 400 years, whereas biodegradable plastic has been developed that will decompose fully in 15 years, and the race is on to develop photodegradable plastic that will

degrade any where from 2 months to 2 years.[44]* The very durability of conventional plastic has created a massive disposal problem: when littered, plastic bottles do not degrade or even shrink in volume, as will broken glass or crushed aluminum. It is particularly a problem in the marine environment where as much as 80% of all debris found is plastic,[45] which, unlike other materials that degrade or sink to the bottom, floats on the surface where it is easily mistaken for food by creatures of the wild or, because it is transparent, it nets or entwines animals that cannot see it. Consequently, plastic is considered "the most far-reaching, man-made threat" facing many marine and wildlife species, killing and maiming tens of thousands of animals every year.[46] There are some problems with degradable plastic (such as the effect of degradable packaging on product shelf-life or the effect of degradable plastics on plastic recycling efforts), however, and until recently, the use of biodegradable plastic largely has been limited to plastic rings connecting beverage cans in those states that require them.[47]

Current Markets in Hawaii for Recycled Materials

Presently, recycling of aluminum is highly successful: currently over 70% of Hawaii's beverage cans are recycled,[48] and the price of scrap aluminum has never been higher.[49] Only one company accepts glass for recycling, however, and it does so only at a loss.[50] Even in this case, the manufacturer merely sends the glass to a mainland market and does not refabricate the glass within the State.

As noted previously, no recycling market exists in the State for plastics. No business in Hawaii either reprocesses used plastics itself or collects plastic for shipment to a recycler; used plastic ultimately ends up as part of the landfill. Shipping and labor costs, the lack of a mainland market, and low volume on the neighbor islands were cited in a Bureau survey of the State's recyclers as the most common reasons why plastic is not recycled here.[51]

The Bureau surveyed established recyclers[52] in the State to discover if and the extent to which glass, aluminum, and plastic currently are being recycled and, if they are not, the reasons why. Seven of the eleven businesses surveyed responded, for a response rate of 63%. All indicated they recycle aluminum, in amounts ranging from 37.5 to 3200 tons to "40% of volume." Only Reynolds Aluminum redeems glass, at a loss of $27 per ton, as a type of loss leader to attract the more valuable recyclable materials.[53] Last year, Reynolds recycled 15 tons of glass. Of the other six centers, two indicated that they had never considered recycling glass. The four that have considered recycling glass rejected it because the high costs of labor and shipping would leave them with no margin of profit and thus provide no economic incentive.

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*As this report was being readied for printing, it was reported that researchers in Japan have developed a new biodegradable plastic that dissolves within three months. "Biodegradable plastic developed by Japanese," Star-Bulletin, September 6, 1988, A-9.

None of the centers recycle plastic. Two indicated that they have never considered recycling it. The five that have considered and rejected the idea, cited reasons similar to those for not recycling glass: the high costs of labor and shipping make it unprofitable. Additional problems with plastic recycling were noted, including: the difficulty of cleaning and baling (packaging) the plastic, the poor mainland market for plastics; the fact that only a limited percentage of plastic is recyclable; and, for Maui and Kauai, the fact that the volume would be too low (presumably, to make it economical).

When asked what effect the statewide redemption scheme contemplated in H.R. No. 455 would have on their business, all centers stated that their businesses would suffer a negative impact if redemption centers were set up in the schools. Three stated that there would be some mild, manageable impact on profits; one indicated a severe impact on profits; and three indicated a great impact on profits to the extent that the centers could be forced to shut down. Yet when asked if they would want to participate in the proposed redemption scheme, only three gave an unqualified yes. The other four expressed concern over the economics of the program and disposal of the glass and plastic, stating:

> yes - if it can be set up to receive aluminum only,
>
> yes - reluctantly and warily,
>
> yes - [but if there is no] shipping charge to help pay the freight, the only product that would not end up in the dump is aluminum cans, which is exactly the current situation,
>
> no - Hawaii currently has one of the highest recycle rates for aluminum cans in [the] nation. Shipping cost[s] restrict profitability of plastics and paper [sic].

Of the three centers that expressed an unqualified interest in participating in the program, one had never considered recycling glass or plastic and the other two had previously rejected recycling glass and plastic due to high costs, low volume, and handling problems. It is unclear whether any potential profit from the redemption program would adequately address these problems.

The concerns expressed by the recycling centers about the proposed redemption scheme exist regardless of whether the recycling centers are allowed to participate. If they are not allowed to participate, their concerns focus on the damage to their businesses if their functions are replaced by school or non-profit centers. If they are required to participate, they are concerned over how to dispose of the glass and plastic collected by the centers. All program participants in this scheme will have to grapple with this latter problem. Although shipping glass and plastic to the mainland for recycling seems the more appealing choice, rather than sending them to the landfill or incinerating them in H-POWER, it appears no one can afford to do so without further economic incentives.

The survey responses seem to indicate that two factors are necessary before any recycling program in the State can be viable. First, there needs to be a market for the recyclable materials. Second, there needs to be an

economically viable method of getting the materials to the market. The following sections will explore the current status of mainland markets and some rationales for government subsidies to cover transportation to the market.

Mainland Markets

Recycling ultimately will succeed only if a market exists for the collected recyclable material, and the existence of that market in turn depends on the existence of a demand for goods made from recycled materials. Except in the case of aluminum, which enjoys a strong demand for goods from the recycled product, Hawaii is on the seller's end of this economic linkage. Consequently, without a mainland market for goods, recycling will not be profitable. And even if mainland buyers exist, shipping costs to the mainland may discourage private sector recyclers. The mere existence of a mainland market does not automatically mean that it is economically feasible for Hawaii recyclers to access it.

Glass. The experience of Reynolds Aluminum indicates that, at present, it is not economically feasible to ship glass to the mainland for recycling. Reynolds pays consumers 1/2 cent per pound ($10 per ton) for glass delivered to its Halawa facility. The glass is separated by color, but it is not cleaned or crushed. Eight tons of glass fit into a twenty-foot shipping container. The cost of labor to load the container is $42, the cost to shuttle the glass to the dock is $122, and the cost to ship the container is $468. This breaks down into $10 per ton paid to the consumer: $5.25 per ton to load the glass, $15.25 per ton to shuttle it to the docks, and $58.50 per ton to ship the container. The total cost of getting the glass to the west coast buyer adds up to $89 per ton, but the payment for the shipment is only $62 per ton, for a net loss of $27 per ton.[54]

Plastic. A potential mainland market does exist for one type of plastic.[55] PET (polyethylene terephthalate) beverage bottles, which are the type targeted by the bottle bill proposed in H.R. No. 455, are easily separable from the waste stream and are the primary target of plastic recycling organizations. A recent publication from the plastics industry indicates there are currently 42 PET plastic processors and 13 PET plastic end-manufacturers on the mainland.[56] Approximately 140-150 million pounds of PET were recycled in 1986.[57] It is uncertain whether Hawaii recyclers have considered this market; if not, it is possible that PET bottles collected under a redemption program might be profitably recycled on the mainland, but this will also depend upon the shipping costs.[58]

The Bureau sent inquiries to seven West Coast plastic recycling facilities to ascertain specific information about their PET recycling requirements. Two companies, Pacific Plastics Engineering Corp. of San Lorenzo, California, and Independent Paper Stock Co. of Oakland, California, responded. Pacific Plastic indicated that PET bottles will only be accepted if in "very heavy bales" (minimum of 950 pounds), 14 metric ton minimum per forty-foot container. Clear bottles will be paid for at 7 cents per pound, and "green-mixed" (clear with no more than 30% green bottles) will receive 5 cents per pound. Pacific Plastic has paid as low as 3 cents per pound for clear bottles in the past, but thinks that the price might rise to 9 cents per pound in the near future.[59] Independent Paper Stock stated that they will accept any

quantity delivered to their plant, but if the material is sold at point of shipment, the minimum quantity accepted is 30,000 pounds. If a full forty-foot sea container is sent that weighs less than 30,000 pounds, the shipment will be accepted but the seller will be charged the freight differential. The current price for mixed color baled bottles delivered to the dock is 7 cents per pound. Smaller quantities, loose or baled, delivered to the plant will be paid for at 3 cents per pound. The company could not guarantee that prices will rise, but stated that their "educated guess is that plastic recycling is now just beginning in earnest and the markets should remain strong."[60] Both companies indicated that they preferred a steady supply rather than sporadic shipments.

Even if these markets for plastic do not prove feasible, it is not suggested that plastic containers be exempt should a bottle bill be enacted. On the contrary, there are cogent reasons to include deposits on plastic containers, regardless of whether they are recyclable. As mentioned above, aluminum is highly recyclable in Hawaii, and some glass is being recycled. Accordingly, from a waste management point of view, use of aluminum and glass beverage containers would be preferable to using nonrecycled, nondegradable plastic containers. But if the deposit requirement is applied only to glass and aluminum, beverages in comparably sized plastic containers will underprice beverages in these other containers. Although the consumer who recycles ultimately would pay the same price once the refund is received, many people would buy the plastic containers to save paying the deposit in the first place and to avoid the inconvenience of cleaning and returning the containers to the redemption center.[61] Exempting plastic beverage containers from the deposit would have the effect of encouraging the use of a nonreusable resource over reusable resources. This would seem to be poor public policy. On the other hand, the opposite approach of placing a higher deposit on plastic would appear to have at least some merit as it would encourage reusable containers over conventional plastic and, by discouraging plastic's use, may help to solve the environmental problems that its disposal entails. Although this approach would raise questions of fairness, it may be worth exploring.

State Subsidy of Shipping Costs

Markets for recycling glass and some types of plastic exist on the mainland. Shipping recyclable material to mainland markets will have the effect of extending the useful lives of landfills in Hawaii and ultimately may be less expensive than creating new landfills or shipping accumulated solid waste to mainland or Pacific disposal sites. The major stumbling block, however, is the high cost of shipping to the mainland. If the State deems it desirable to promote the recycling of glass and plastic, the State seriously should consider either absorbing the shipping cost or creating a subsidy sufficient to encourage Hawaii recyclers to collect and ship glass and plastic to the mainland. State participation may be critical in establishing a workable recycling scheme because the State can help buffer local recyclers from sharp dips in price:

> The biggest disadvantage of source separation schemes is that they are small enterprises that can be wildly buffeted by the dramatic price changes that often occur in raw materials markets.... Most of the world's mineral companies are either huge, transnational

> enterprises or government owned firms; in either case, they are able to tighten their belts and wait out tight periods. Community recycling centers do not, unfortunately, have such flexibility.[62]

The feasibility for governmental subsidies must not be considered solely in terms of the expenditure: the total state benefit is the real bottom line. In terms of overall societal costs, a subsidy actually may be less expensive than landfill and air pollution emission control costs. If recycling helps to reduce litter, conserve resources and energy, and extend the useful lives of our landfills at less cost than other waste disposal options, then it is a cost-effective means of achieving waste reduction goals. Unless the State is willing to provide Hawaii's recyclers with a subsidy to cover the gap between the shipping costs and the revenue from the mainland recycling firms, it appears that there is no economically viable market for Hawaii's recyclable plastic and only a limited market for glass. Cost-effectiveness may weigh in favor of a subsidy when all of the hidden costs to the environment and to our resources are considered. The Department of Health also has taken the position that some kind of governmental subsidy should be established to encourage recycling industries.[63]

Another approach adopted in some states has been to grant recyclers a tax credit to encourage the local recycling industry. However, one analyst indicates that there are "relatively few takers" for such credits, that the credits increase business profits without significantly advancing recycling, and that they are relatively inefficient and not cost effective.[64]

In recapitulation, without a subsidy there currently is no economically viable means of accessing recycling markets for glass and plastic; consequently, there is no incentive for recyclers to purchase these materials, and even with a bottle bill, they probably will end up in our decreasing landfill space.[65] Thus, economics holds the key to encouraging recycling, not bottle bill legislation alone. Bottle bills may result in facilitating the separation of recyclable materials, but that also can be achieved, perhaps more effectively and on a wider scale, through mandatory source separation of household garbage as required in several states. The only objective that a bottle bill without a recycling program can achieve, then, is litter reduction. A recycling program is critical to achieving any further benefit, and for the recycling of glass and plastic in Hawaii, that requires help in accessing mainland recycling markets.

Part II. Summary of Other States' "Bottle Bills" and Other Recycling Activities

The "bottle bill" concept, in which consumers are required to pay a deposit to be refunded on return of the beverage container in order to alleviate litter and encourage recycling, is not new: Oregon's bottle bill, for example, is entering its fifteenth year. The Bureau has examined bottle bills and other recycling laws from nine states, which are briefly reviewed here to provide a context against which the proposed Hawaii scheme can be assessed. A chart comparing selected features of the respective laws is included at the end of this chapter.

California

California's relatively new plan seeks to solve the litter problem through recycling of beverage containers. The California Beverage Center Recycling and Litter Reduction Act[66] is unique among the bottle bills in that it does not require an initial deposit by the consumer. Rather, the consumer pays the regular price for the beverage and can receive a "free" penny per container by returning the bottles at a redemption center.[67]

The statute applies to certain specified beverages only. Beverages are narrowly defined as beer, malt beverages, carbonated mineral and soda waters, or carbonated soft drinks.[68] The definition excludes liquor. The statute sets a minimum redemption value for nonrefillable containers,[69] which must be marked with the phrase "California (or CA) Redemption Value."[70]

The Act establishes a minimum 1-cent redemption value for every non-refillable beverage container sold in the state, and aims at a recycling goal of 80% of all containers.[71] There are extensive reporting requirements by beverage distributors and container processors (recyclers) to determine the recycling rate.[72] If the recycling rate for any one type of container falls below 65% of volume of sales, the redemption rate rises to 2 cents, and if it still does not meet the 65% goal, to 3 cents.[73] If the recycling rate increases to over 80% of volume, the redemption rate will decrease.[74]

The implementation of the bill is detailed and complex. Briefly, the 1-cent refund value is paid by each distributor to the state, minus 1% of the value for the distributor's administrative costs.[75] The state also collects a processing fee from the beverage and container manufacturers for those recyclable materials that are not cost-effective to recycle on their own. The fee is meant to encourage recyclers to recycle these otherwise economically unattractive materials,[76] and amounts to a state-required private industry subsidy of recycling by the manufacturers. The state passes on the refund value, the processing fee, a redemption bonus, and 2% of the redemption value for administrative costs to the processor (recycler).[77] The processor, who receives the containers from the recycling center, passes on the redemption value, the redemption bonus, 1% of the redemption value for administrative costs, and as much of the processing fee as represents the actual cost and financial return incurred by the recycling center.[78] The recycling center, upon receipt of acceptable containers by the consumer, pays the redemption value (or deposit for refillable containers) and any applicable redemption bonus.[79]

The bill requires there to be at least one certified recycling center in a "convenience zone," which is defined as either the area within a one-half mile radius of a supermarket or a zone designated by the department in under-served areas that is within one mile of a dealer selling beverage containers to consumers.[80] In addition, the containers also may be returned at curbside[81] and drop-off programs,[82] and, under certain limited circumstances, to dealers.[83] This redemption scheme does not apply to beverage containers sold on trains, vessels, and airplanes.[84]

California's program has been in place for too short a time to be able to state with assurance whether it has been successful or not. However, early reports indicate that it has experienced troubles: after only nine months, it has been reported that at least 10% of the redemption centers will have to be

closed because redemption rebates are too low and returns of containers by consumers are lagging.[85] The Act's author, Assemblyman Burt Margolin, stated that the program has the potential to collapse completely and is seeking to increase the refund value to 5 cents for every two cans.[86] The recycling companies agree that there is a problem, but argue that rather than increasing the redemption rate, the state should increase its subsidies of the centers.[87]

Delaware

Delaware's beverage container law[88] follows a more typical bottle bill format. The law defines beverage as any mineral water except naturally sparkling mineral water, any carbonated soft drink, and beer and other malt beverages.[89] A deposit is required for all non-aluminum[90] beverage containers with a capacity of less than 64 ounces.[91] Each beverage container must be marked with its refund value, unless the container is refillable and has deposit information permanently printed or embossed on it.[92] However, a deposit is not required for on-premises sales if the empty containers are returned to the distributor.[93]

The manufacturer or distributor sets the amount of the deposit, with a minimum of 5 cents per container.[94] The deposit is paid by the consumer at the retail level and refunded to the consumer upon return of the bottle to the dealer or to a redemption center.[95] The dealer may refuse to accept the returns if there is a redemption center in the vicinity, if the bottles are broken or unclean, or if a person attempts to return more than 120 bottles during a one-week period.[96] The manufacturer will reimburse the dealer or center for the refund, plus at least 20% of the amount of the consumer deposit.[97]

Three types of containers may not be sold in the state: metal containers with detachable metals openers, beverage containers attached with non-biodegradable or non-photodegradable plastic rings, and non-refillable glass containers.[98]

Iowa

Iowa's beverage container statute[99] is one of the few that applies to liquor bottles. The definition of "beverage" includes wine, alcohol, beer, mineral water, mixed wine drinks, carbonated soft drinks, and, as of January 1, 1990, liquor.[100] Each bottle must be marked with its refund value, which for non-liquor bottles is 5 cents, and for liquor bottles over 50 milliliters will be 15 cents.[101] Bottles need not be marked if they are specified refillable beverage containers or if they are to be sold on airplanes and trains for on-premises consumption.[102]

The consumer returns the bottle to the dealer or to a redemption center[103] and receives reimbursement for the refund value.[104] The dealer or center makes the container available to the distributor, who will pick up the container[105] and reimburses the dealer or center 1 cent per container in addition to the refund value.[106] Dealers may refuse to accept and redeem an empty container of the kind, size, and brand sold by the dealer for only very limited reasons.[107] The statute provides that each beer distributor in the state, individually or collectively, must provide at least one facility in each county seat (or per 25,000 people in a city) that will accept otherwise

unacceptable containers, as long as they have a readable refund value.[108] There is no state-sponsored recycling scheme, although recycling of the collected materials is "encouraged."[109]

Iowa also prohibits the use of metal beverage containers with detachable openers.[110]

Maine

The Maine law was enacted with the intent of stimulating manufacturers, distributors, dealers, and consumers to reuse or recycle beverage containers.[111] The term "beverages" encompasses malt beverages, wine coolers, and other nonalcoholic carbonated drinks.[112] Every beverage container holding one gallon or less has a designated refund value. The distributor sets the amount of the deposit for each type, size, and kind of container, and the label must clearly indicate this refund value, with certain exceptions for permanently marked glass bottles.[113] Whether the container is refillable or the single-use type, the refund value must be at least 5 cents.[114]

The consumer pays the deposit on the container and can obtain a refund by returning it to the dealer or a redemption center. All dealers must accept empty, unbroken, and reasonably clean beverage containers of the kind, size, and type sold by the dealer subject to certain limitations, including number of containers and hours for acceptance.[115] In the alternative, the consumer can return the bottles to a redemption center.[116] The distributor must accept the containers and reimburse the dealer for the refund value paid out to the consumer, plus at least an additional 2 cents per container.[117]

Maine outlaws non-degradable plastic rings used to connect beverage containers and metal containers with detachable openers.[118] Maine also has an exception for beverage containers sold for consumption on aircraft flights in interstate or foreign commerce.[119]

Massachusetts

The Massachusetts law focuses on "beverage bottles," which include bottles containing carbonated drinks, malt beverages, dairy products, and fruit juices.[120] The definition specifically excludes other alcoholic beverages.[121] The refund value is at least 5 cents for bottles under 32 ounces and at least 10 cents for bottles 32 ounces and larger.

The consumer may turn in the bottles either at a redemption center or to any dealer who sells beverage containers of the same type, size, and brand.[122] The dealer or redemption center returns the bottles to the beverage distributor and is reimbursed for the amount paid out plus at least 1 cent per bottle. If the bottle is a reusable type, the bottle may be returned to the bottler, who will pay the dealer or distributor.[123] The refund scheme also applies to bottles sold in vending machines: the vending machine operator is required to post a notice stating the location where bottles can be returned and the refund obtained.[124] Bottles may be rejected if they are not reasonably clean, if they contain a significant amount of liquid, or if they are not reasonably intact.[125] A dealer also may refuse to accept metal cans substantially altered from their original shape or more than 120 cans per twenty-four hour period from any one person.[126]

Other anti-litter provisions include a one-time, one-tenth of 1% tax credit for bottlers for each reusable beverage container sold[127] and a requirement that if beverage cans are linked together by plastic rings, those rings must be made of biodegradable plastic.[128]

New Jersey

New Jersey has enacted a comprehensive "New Jersey Statewide Mandatory Source-Separation and Recycling Act"[129] that is designed to tackle both litter and recycling problems. It does not include a bottle bill, as the state has a litter tax instead. The law provides that if the state were to adopt a bottle bill, the litter tax provision would be suspended.[130] The heart of the program is the requirement that each county prepare and adopt a district recycling plan that designates at least four different types of waste (one of which must be leaves) to be separated out by the consumer and collected and marketed by the county.[131] This source-separated recyclable material must equal at least 15% of the prior year's (benchmark year) total municipal waste during the first year of the program and at least 25% of the benchmark year's total waste during the second year.[132] Only if no market exists for the materials can a county become exempt from the program.[133] To ensure local compliance, municipalities are also to design and provide a collection system for, and enact ordinances to enforce, recycling of the designated recyclable materials if their collection is not provided for otherwise.[134] Commercial and institutional enterprises may be exempted if they otherwise provide for the recycling of recyclable materials.[135]

The requirement of a viable market is critical to New Jersey's scheme: "expeditious identification of local, national, and international markets and distributions networks for recyclable materials is a necessary prerequisite to the orderly development of mandatory, State-wide county and municipal recycling programs[.]"[136] "Market" is specifically defined to mean the disposition of recyclable materials at a cost less than that of transporting and disposing of them as solid waste.[137] A state subsidy to make recycling economically feasible is not contemplated by the statute. For example, plastic and bi-metal cans are specifically exempted from consideration as recyclable materials unless state officials determine that a convenient and economically feasible mechanism for their recycling and marketing exists.[138] New Jersey, although avoiding a direct state subsidy, has created markets for recycled paper and recycled asphalt paving materials by requiring governmental bodies to procure them where economically feasible.[139]

New York

New York's bottle bill law, "the New York State Returnable Container Act,"[140] applies to containers of one gallon or less, containing carbonated soft drinks, mineral water, soda water, or malt beverages.[141] The bottles must be clearly marked with the refund value which must be at least 5 cents.[142]

The consumer pays the deposit upon purchase of the beverage and may return the bottle to the dealer who sold the beverage. The dealer must accept containers of the same design, size, shape, color, composition, and brand as those sold by the dealer.[143] The bottles also may be returned to a redemption center. A dealer or redemption center may refuse to accept containers only if the container is not marked with the refund value, if it is

broken, corroded or dismembered, or if it contains a "significant amount" of foreign material.[144] A distributor must accept containers from a dealer or redemption center, unless the container is not marked with the refund value.[145] In addition to reimbursing the dealer or redemption center for the amount of the refund paid to the consumer, the distributor must pay 1-1/2 cents per container.[146] New York further provides that, as among distributors, a distributor who initiates a deposit on a beverage container *must reimburse the distributor* who actually pays out the refund upon the return of the container. The payee distributor has a civil right of action to enforce this reimbursement scheme.[147]

The commissioner of environmental conservation is empowered to promulgate rules and regulations concerning the circumstances under which dealers and distributors are required to accept and pay the refund on the containers, any sorting which the distributors might require, the pick-up of containers by the distributors, the dealers' rules of redemption, the initiation of the deposits, sale of beverages through vending machines and for on-premises consumption, and refunding for refillable containers.[148]

Although mandatory state recycling is not a part of this particular statute, New York has enacted a statute requiring the state to design and implement a local resource reuse and development program to promote the collection, processing, and marketing of waste materials.[149] The state will accept grant applications from municipalities in furtherance of this goal.[150]

New York also forbids use of any metal beverage container with a detachable opener, unless the opener is photodegradable or biodegradable.[151] Plastic devices which connect beverage containers to each other (plastic rings) also are forbidden unless photodegradable or biodegradable.[152]

Oregon

Oregon's bottle bill calls for a mandatory refund value on all beer and soda containers sold in the state after September 1972.[153] It provides that reusable beverage containers have a minimum deposit/refund value of 2 cents and that every other beverage container sold in Oregon have a minimum deposit/refund value of at least 5 cents.[154] The two-tier system demonstrates Oregon's encouragement of the use of refillable containers.[155]

The distributor initially pays the deposit, which is passed on to the retailer and, ultimately, to the consumer.[156] The deposit is refunded when the container is returned to the dealer at the retail store[157] or at an approved redemption center.[158] The retail dealer is required to accept empty beverage containers of the kind, size, and brand sold by the dealer, with certain exceptions for large quantities or unmarked or unsanitary containers.[159] The distributor picks up the containers from the retailer, ships the refillable containers back to the bottler, and recycles the single-use containers.[160]

The Oregon law prohibits the use of plastic rings unless they are biodegradable or chemically degradable. Metal containers with detachable openers also are forbidden.[161]

Vermont

The Vermont bottle bill[162] applies to beverage containers, which are defined as those containing beer or malt beverages, mineral waters, mixed wine drinks, soda water, carbonated soft drinks, or, as of January 1, 1990, liquor.[163] The bill requires a deposit of not less than 5 cents for all containers except liquor containers whose capacity is 50 ml. or greater.[164] Liquor containers will be assessed a 15-cent deposit for the first two and a half years. If the liquor control board finds that the percentage of bottles returned for refund is less than 60%, the refund for liquor bottles shall increase to 25 cents.[165]

All containers must be labeled with their refund value.[166] The deposit is paid by the consumer on each retail sale and refunded to the consumer upon return of the container to the retailer or redemption center.[167] The retailer or center is reimbursed by the manufacturer or distributor in an amount "which is at least the greater of two cents per container or twenty percent of the amount of the deposit returned to the customer."[168] A retailer may not refuse to accept bottles of the same type, size, and kind that the retailer sells, unless the bottles are broken or unclean or unless an exemption is officially approved.[169]

Non-refillable glass beverage bottles, except those that contain liquor, are not permitted.[170] Non-biodegradable plastic rings and metal containers with detachable openers (unless made of pressure-sensitive tape) are not permitted.[171]

Summary

Which method of litter control is best is not a topic that enjoys unanimous agreement. Bottle bills with consumer deposits, bottle bills without deposits, source-separation of recyclable materials, and taxation of litter-generating products (as will be discussed in chapter 5) all have their proponents. The differences in schemes probably arise from the unique conditions in each state, which makes it imperative for Hawaii to consider carefully any litter control program to ensure that whatever plan is adopted is the best for Hawaii, given its location and its economics. For instance, New Jersey acknowledges that a market for its source-separation materials is crucial in fully carrying out its recycling plan, but does not supply state subsidies to support recycling of those materials for which a market is available but not economical. Given New Jersey's location, perhaps that is appropriate, but given Hawaii's shipping costs, state subsidies, as discussed previously, may be essential.

Additionally, serious consideration should be given to creating the most comprehensive plan possible. Litter is not merely a problem because it is an eyesore: it is a problem because, even when collected, it is waste that must be placed in our ever-diminishing landfills. Aiming at an aesthetic effect while ignoring the disposal problem is short-sighted when, by combining litter collection with recycling or other waste disposal methods, both problems could be addressed.

SUMMARY OF BOTTLE BILL LAWS IN SELECTED STATES

	CALIFORNIA	CONNECTICUT	DELAWARE	IOWA	MAINE	MASSACHUSETTS	MICHIGAN	NEW JERSEY	NEW YORK	OREGON	RHODE ISLAND	VERMONT	WASHINGTON
1. SUBJECT OF DEPOSIT													
Metal cans	Yes	--	Yes	Yes	Yes	Yes	--	--	--	Yes	No	Yes	--
Glass bottles of any kind	No	--	No	Yes	No	No	--	--	--	No	No	No	--
Plastic containers	Yes	--	?	Yes	Yes	Yes	--	--	--	No	No	Yes	--
Glass bottles of any kind except wine bottles	No	--	No	No	Yes	No	--	--	--	No	No	Yes	--
Glass bottles of any kind except wine and wine cooler and other alcohol bottles	Yes	--	Yes	No	No	Yes	--	--	--	Yes	No	No	--
2. REFUND VALUE AND HANDLING FEES													
Consumer pays retailer and dealer pays distributor not less than 5 cents deposit per container	No	--	Yes	Yes	No	Yes	--	--	--	Yes	No	Yes	--
Consumer pays retailer not less than 1 cent per nonrefillable container	Yes	--	No	No	No	No	--	--	--	No	No	No	--
Retailer also pays distributor 2 cents per container for handling (non-refillable)	No	--	No	Yes	No	No	--	--	--	No	No	No	--
Distributor also pays bottler of refillable containers 1 cent per container for handling (refillable)	No	--	No	Yes	No	No	--	--	--	No	No	No	--
Not less than 2 cents deposit per refillable container	No	--	No	No	No	No	--	--	--	Yes	No	No	--
Brewer or bottler adds 2 cents to 20 cents to the wholesale price for refillable containers	No	--	No	No	No	No	--	--	--	Yes	No	No	--
Dealer (or redemption center) pays distributor 1 cent deposit	No	--	No	Yes	No	No	--	--	--	No	No	No	--
Deposit for nonrefillable and refillable to be determined by distributor, but not to be less than 5 cents	No	--	No	No	Yes	No	--	--	--	No	No	No	--

	CALIFORNIA	CONNECTICUT	DELAWARE	IOWA	MAINE	MASSACHUSETTS	MICHIGAN	NEW JERSEY	NEW YORK	OREGON	RHODE ISLAND	VERMONT	WASHINGTON
2. REFUND VALUE AND HANDLING FEES (con't)													
Refund value must be clearly indicated on the container by means of stamp, label, or other method of secure attachment	Yes	--	Yes	Yes	Yes	Yes	--	--	--	Yes	No	Yes	--
3. REDEMPTION CENTERS													
Anyone can establish one	Yes	--	Yes	Yes	Yes	Yes	--	--	--	Yes	No	No	--
Redemption centers deal with specified dealers and must state who they deal with and also state the kinds, sizes, and brand names of empty containers it will accept	Yes	--	Yes	Yes	Yes	Yes	--	--	--	Yes	No	No	--
State agency may issue an order authorizing dealers and distributors to establish a center for the district	Yes	--	Yes	Yes	Yes	Yes	--	--	--	No	No	Yes	--
4. LIMITATIONS													
Redeemable except by those holding liquor control licenses	No	--	No	Yes	No	No	--	--	--	No	No	No	--
Dealer may limit total number of beverage containers accepted from one consumer to 240 containers/day (or any other greater number)	No	--	No	No	Yes	No	--	--	--	No	No	No	--
Dealer may refuse to accept beverage containers for no more than 3 hours/day (he must conspicuously post the times during which he will not accept containers)	No	--	No	No	Yes	No	--	--	--	No	No	No	--
No nonrefillable containers	No	--	Yes	No	No	No	--	--	--	No	No	No	--

*Note: Maine provides exception for glass beverage containers having a brand name permanently marked thereon.

Prepared by Janie Kashiwa, Legal Intern

Chapter 4

DEPARTMENT OF EDUCATION SURVEY ON REDEMPTION CENTERS

In connection with the beverage container deposit law, or bottle bill, proposed by H.R. No. 455, the Resolution suggests establishing redemption centers at high schools throughout the State where consumers can return their beverage containers in exchange for a cash refund. The proposal envisions that students would run these redemption centers, possibly as a small business training program or as an extra-curricular, money-making activity, during their scheduled free time or after school hours. The consumer would receive 80% of the original deposit, and the redemption center would keep 20% as a service charge. Those operating the redemption centers would be responsible for keeping accurate records to account for the containers returned and the funds disbursed and possibly for transporting or arranging for the transportation of the containers to recycling centers or landfills.

To effectively encourage consumers to return containers under a beverage container deposit law, redemption centers should be available and convenient to consumers during non-work hours and on a year-round basis.[1] Realistically then, school-operated redemption centers should be open at least twice a week during weekday evenings and on the weekend, year-round. Furthermore, the experiences of jurisdictions that have implemented bottle bills indicate the existence of various problems frequently associated with redemption centers, ranging from the need for adequate facilities, storage space, and security, to health and sanitation concerns, to questions of profitability.

In the majority of these jurisdictions, containers commonly are returned to retail establishments that sell food products, although private redemption centers also are allowed. In an Oregon study, a survey of sanitarians licensed to inspect retail and distribution establishments revealed that the commonly observed sanitation problems associated with returned containers included: the presence of insects or rodents; presence of dirt, debris, or syrup; personnel handling contaminated containers then handled food without washing hands; dirty shopping carts; poorly constructed container areas; and broken glass.[2] Furthermore, three of the sanitarians responding to the survey indicated they "believed there was an inherent sanitation risk in the handling of returnable containers, and all that can be expected is that the retailer or distributor 'manage' the problem."[3] The crowded conditions of backrooms where the containers are stored also was mentioned as a problem, especially in small groceries and convenience stores, because the areas are difficult to clean and spraying with insecticides and pesticides is hazardous to food stored nearby.[4] Additionally, several respondents noted that "inappropriate insecticides were being used by personnel not trained in insecticide use."[5]

Given the concerns associated with redemption centers, the Bureau attempted to determine the feasibility of establishing redemption centers on high school premises and the level of interest on the part of schools in operating these centers. Accordingly, the Bureau sent questionnaires and copies of H.R. No. 455 to the Superintendent of Education (see Appendix D for a copy of the survey sent to Mr. Charles Toguchi) and to the principal of

each of the 38 public high schools in the State (see Appendix E for a copy of the survey sent to high school principals). The questionnaire to the Superintendent concerned issues relating to insurance coverage for redemption centers, the use of teachers to supervise the centers, and specifically asked whether the Superintendent supports the establishment of school-operated redemption centers. The questionnaire to the school principals addressed issues concerning: administration, supervision, safety, and funding of the redemption center; the availability of adequate facilities to accommodate a redemption center; the recruitment of a sufficient number of students to operate the redemption center; and the need for insurance coverage. The questionnaire also specifically asked whether the principal was in favor of or opposed to establishing a redemption center at the school and, if in favor, asked the principal to indicate the level of enthusiasm for the redemption center, with the choices given as "mild," "moderate," "active," or "strong."

Mr. Charles Toguchi, Superintendent of Education, responded to the separate questionnaire sent to his office, and 24 of the 38 principals responded (a 63% response rate). Mr. Toguchi summarized the position of the Department of Education in his cover letter accompanying his survey response:

> As indicated by our responses, the Department is unable to support the establishment of school-operated redemption centers on our school campuses. The Department is already facing many problems in maintaining our school facilities at the optimum health and appearance levels. The location of recycling redemption centers on school campuses would add to our current difficulties and problems.[6]

The majority of principals responding to the Bureau's survey echoed the Department's position. Two-thirds or 16 of the 24 principals responding are opposed to a school-operated redemption center; 8 principals indicated some level of enthusiasm for a redemption center, with the breakdown as follows: 2--mild, 3--moderate, and 3--active. The following comments by principals are indicative of the opposition expressed to an additional school-administered program. These comments also hint at the frustration of the increasing demands imposed on the public schools without any corresponding increase in resources.

> I do not see how we can run a redemption site when we are scrambling to provide our students with quality education. Teachers may counter with the stance that this is something else imposed on the schools that detract from our primary business--educating students.... I am not in favor of the proposal. There must be other sources of human resources to man such sites without taxing the resources [of] the school.
>
> Every program/problem faced by society comes to the schools. Please give us a break and don't make us a center for society's garbage as well!
>
> Find another site--don't use the schools.

> [P]resently the state is having a difficult enough time trying to fund general instruction in the classroom.

In addition to comments such as these, the survey respondents noted major obstacles to a school-operated redemption center, ranging from the lack of facilities, personnel, student interest, and funds to safety and health concerns.

Even those principals whose response indicated some level of interest in a school-operated redemption center acknowledged the validity of these concerns, and some, despite their indication of interest, appeared to have mixed feelings about a school-operated redemption center. For example, one principal, whose survey sheet indicated "moderate" enthusiasm for a redemption center, registered personal disagreement with the survey answers which were based on the "input of a couple of teachers, district office staff and students and an administrator." After indicating membership in the local Outdoor Circle and prior experience with recycling centers as support for the principal's opposing position, the principal stated:

> I... know that it is a full-time volunteer job to coordinate and run a recycling center and would probably be more than students and teachers could handle. I personally don't feel that this should be the responsibility of the school.

The most notable example of mixed feelings expressed within the same survey response came from a respondent whose survey sheet indicated "mild" enthusiasm for a redemption center. However, when directly asked, "Are you in favor of or opposed to seeing a redemption center at your school?", the respondent wrote:

> Who will build a facility? Who will properly staff it? Who will be responsible for the operation?

And, at another point in the survey in response to a question about promoting the redemption center, this respondent stated:

> I feel that private industry should run this program and let them promote their business.

In a similar vein, one respondent, who indicated a "moderate" level of enthusiasm for a redemption center, nevertheless answered "don't know" when asked if in favor of or opposed to the redemption center. Finally, one respondent, whose survey sheet had indicated "active" enthusiasm for a redemption center, acknowledged a major stumbling block to an effective redemption center:

> The basic problem of our school is, it is located too far from the center of population. Very few people would travel to [the school] to redeem these products. The mileage would lessen the profit.

The remainder of this discussion is an attempt to summarize the survey responses, organized according to the following issues relative to establishing a school-operated redemption center: facilities, administration, supervision, student interest, funding, safety/security, and insurance.

Facilities

A major threshold issue in establishing school-operated redemption centers is whether sufficient space and/or facilities exist on the school campus to accommodate a redemption center. The survey to the principals asked, "Do you have a covered area available on the school premises for use as a redemption center?" The respondents unanimously indicated that their schools lacked available facilities and/or space for a redemption center; this was true even of respondents indicating an interest in establishing a redemption center. Presumably, because of absence of available facilities for a redemption center, most respondents did not bother to address the questions of whether the area could be secured and if the area would be available during after-school hours and during Christmas, spring, and summer breaks. Twenty-three of the 24 respondents indicated they did not have adequate means available to transport redeemed beverage containers to recycling centers or landfills; the remaining respondent did not answer the question.

Supervision

Supervision issues were broken down as follows: the effect of present collective bargaining agreements on the use of teachers to supervise redemption center activities (i.e., whether teachers could be assigned to such duties, whether they could volunteer for such activities, whether the subject would have to be addressed in future contract negotiations); if teachers are permitted to volunteer, whether a sufficient number would be willing to supervise redemption center activities; and, if not, whether the school could arrange for an adequate number of volunteer parents to supervise the redemption center.

Teachers. The threshold issue concerned the effect, if any, the present collective bargaining agreement would have on teacher supervision of a redemption center. Although the responses from the schools appeared somewhat conflicting, the response from the Superintendent clarified the issue. Under the current collective bargaining agreement, teachers cannot be required to supervise a redemption center. Mr. Toguchi noted that teachers could volunteer for this activity under the current agreement, but only as members of the community and not in their capacity as an employee of the Department of Education. He stated, however, the Department "would not be in favor of seeking teacher volunteers for such activities in school facilities" and further indicated that "the Union would probably object to teachers volunteering for supervision of such activities."[7] Asked whether he foresaw any problems relating to teacher supervision irrespective of the concerns related to the collective bargaining agreement, Mr. Toguchi responded:

> Yes. Past records indicate strong opposition to teacher participation in supervision of such activities during evenings,

> weekends, and vacation periods. Such supervision would be considered as falling under the category of unprofessional tasks.

Several principals appeared to agree with Mr. Toguchi's estimation, and one predicted: "this proposed project appears to be quite demanding and will meet with a lot of opposition by teachers and the union." Others noted that most teachers already are involved in a considerable number of school activities and any additional responsibilities would prove too much of a strain on their current schedules or would interfere with legitimate school-related activities. Others questioned whether a redemption center was a legitimate school-related activity.[8] A few respondents suggested that additional pay to teachers for supervising the redemption center activities might attract more volunteers. Several respondents thought the issue should be addressed in the collective bargaining agreement.

Parents. The possibility of arranging for parental supervision of a redemption center appears equally difficult. Only 16% or 4 of the respondents indicated they thought parental supervision could be arranged, in contrast to 50% who indicated parents would not volunteer to help. Another 25% or 6 of the respondents indicated they did not know if they could obtain an adequate number of parent volunteers, and 2 respondents did not answer the question. The comments of several respondents appear to portray a majority of parents as apathetic to their children's school activities:

> ...very difficult to determine whether parents in our community would get involved in this project. In the past, when parent volunteers were needed, the turn out of parents was very poor.
>
> ...difficult to arrange for reliable parent.
>
> ...it is difficult to have parent volunteers for this type of regular and time involved activity.

Administration

The major administrative issues concerned handling of and accounting for redemption center moneys. Specifically, respondents were asked whether establishing accounting procedures to administer the redemption program would cause substantial problems that could not be handled by the school. Seventy-five percent or 18 of the respondents answered this question affirmatively. A majority of these respondents pointed out that the additional responsibilities would aggravate already existing staffing and workload problems. The following comments are representative:

> School staff is already overwhelmed with the duties + responsibilities of their present jobs.
>
> Yes. It would over-burden our account clerk because of the numerous accounts she handles and the many sources of funding [the school] has.
>
> Yes, our school has only one full time account clerk that handles all of the purchasing and accounting for all departments, student

activities, etc. The individual could not possibly do any additional work at this time.

Our clerical staff is overworked and we fall below the state minimum staffing. To add another accounting program to our system would tax our personnel.

Yes--our account clerk has enough to do.

Yes--our clerical staff has enough other responsibilities already!

Yes. Unable to add to work load of account clerk.

Only 3 respondents indicated they would experience no problems, 2 stated it would depend upon the amount of work actually involved, and 1 did not answer the question.

Principals also were asked whether they thought persons handling redemption center money should be bonded. Ten or 42% of the respondents said "yes"; 4 or 17% indicated it would probably be a good idea; and 6 or 25% did not think bonding would be necessary.

Student Interest

Potentially another major obstacle to school-operated redemption centers is a lack of student participants to run the redemption center. This is a particularly valid concern given the premise that redemption centers should be open year-round and available to consumers during evenings, weekends, and holidays. Consequently, principals were asked whether they thought a sufficient number of student volunteers could be recruited to staff the redemption center regularly and on a continuing basis, including the summer months. Eighty-three percent of the respondents reported a negative answer: two-thirds, or 16, said "no," and four others indicated they were doubtful that sufficient numbers could be recruited. A number of these respondents pointed out that many of their students are busy working part-time during school and full-time during the summer months. Only 1 respondent indicated a sufficient number of student volunteers could be recruited; 1 respondent answered "don't know"; and 2 did not answer the question.

Principals were next asked: "If you do not feel that a sufficient number of students would be interested in staffing the center on a volunteer basis, do you feel that an academic credit, honorarium, stipend, or minimum wage would attract a sufficient number?" Nine or 38% of the respondents still answered "no." Seven or 29% of the respondents indicated payment might help in attracting students, depending upon the amount, but they were not sure since many students already have good paying jobs. Only 3 or 12% of the respondents thought a sufficient number of students could be attracted if paid; 1 of these also thought the granting of an academic credit might attract students. One respondent indicated uncertainty, and 4 did not answer the question. The following is representative of comments received by a number of respondents: "[S]tudents have ample opportunity to work with better

wages and most of the students who are interested in working are already employed."

Funding

In some jurisdictions with beverage container deposit laws, the redemption centers front the cost of refunds and are reimbursed from deposits paid on the containers by the distributors or retailers. In addition, the centers usually are expected to absorb the various costs of doing business, such as the purchase and maintenance of supplies and machinery which, to some extent, may be written off on their taxes. As a surplus of funds is a rarity at any school and similar tax advantages are not present for the schools, the funding of the program costs presents another potential problem to establishing school-operated redemption centers.

Accordingly, the survey asked principals whether their schools would be willing to advance moneys to the program for use in making initial refunds to consumers and for purchasing any necessary equipment and whether the school would be willing to absorb any promotional costs or would expect reimbursement for these costs. Eighteen or 75% of the respondents said they would not be able to advance funds for program costs, many of whom cited as a reason the lack of funds. One respondent gave the following explanation concerning the unavailability of funds for this purpose:

> Unless a school has funds outside of normal DOE allotment, there is no money to subsidize an effort of this nature. It does not fall into the category of educational supplies, equipment, or personnel. Therefore, no reimbursement can be made or costs absorbed.

Two respondents indicated they could advance moneys for refunds, but probably not for equipment, depending upon the cost. One respondent indicated uncertainty, and 3 did not answer the question.

Seventeen or 71% of the respondents indicated they would be unwilling to absorb any promotional costs connected with the program. One respondent indicated a willingness to absorb part of the cost, and 1 said it would depend on the costs involved. Five respondents did not answer the question.

Safety/Security

Some of the possible adverse effects generally associated with maintaining redemption centers are injuries from broken bottles, bottle crushing machinery, and torn aluminum cans and health hazards created by the storage of unsanitary beverage containers, such as infestation of roaches or rats attracted by the residue in beverage containers.[9] To explore this issue, principals were asked whether they thought students would be able to maintain the redemption center in a safe, sanitary, and responsible manner. Seventy-five percent gave a negative response: 15 or 63% of the respondents said "no," while another 3 (13%) indicated they expected to have sanitation and storage problems. A number of those responding "no" also pointed out specific problems engendered by a redemption center, such as an increase in vandalism, the lack of security, the need for constant supervision, and the

creation of health hazards. Five or 21% of the respondents answered "yes," but emphasized that proper supervision and monitoring would be required. One respondent indicated uncertainty.

Principals also were asked whether they foresaw any problems with students operating glass-crushing machinery. Twenty-three or 96% of the respondents said "yes," citing the likelihood of students sustaining injuries and the possible liability of the school for those injuries. Additionally, one of these respondents pointed out that Department of Education rules "prohibit student use of machinery unless supervised by a certified personnel and is directly related to general instruction. (In other words, the machinery would have to fit the state curriculum established by the Department of Education.)" The remaining respondent predicted no problems due to use of machinery, but stated, "proper training and guidelines must be given."

Insurance

Questions concerning whether insurance exists that would cover personal or property damage incurred as a result of the redemption center activities were addressed to the principals and the Superintendent. Although there appeared to be confusion on the part of some principals on this issue, Mr. Toguchi clarified that the public schools are not individually insured, but fall under the parameters of the State's "self-insurance." Given that schools are not insured, Mr. Toguchi was asked if he felt it would be necessary to obtain insurance to cover contingencies arising from school-operated redemption center activities (assuming they were to be established). Mr. Toguchi answered affirmatively, but pointed out that the cost of obtaining such insurance would be prohibitive. The principals were asked whether they would be willing to procure insurance to cover redemption center activities. Twenty-three or 96% of the respondents said "no;" the remaining respondent indicated a willingness to obtain insurance for the program if the amount were "reasonable." A couple of respondents noted that students have the option to purchase insurance at nominal rates to cover personal injuries incurred in the course of school-related activities; otherwise, parents are responsible for all medical expenses.

Miscellaneous

Principals also were asked whether they thought a school-operated redemption center would be successful in helping to reduce litter. Seventeen or 71% of the respondents answered "no," with 2 suggesting that litter might become more of a problem on the school campus as a result of the redemption center. Four respondents thought a redemption center could help to reduce litter, and three did not answer the question.

The principals and the Superintendent were asked if they would support a private or nonprofit-run redemption center located on school property, in lieu of a student-run redemption center. The overwhelming response was negative. Eighty-three percent, or 20, of all respondents stated "no." Mr. Toguchi stated that for the same reasons the Department does not support school-operated redemption centers on school campuses, it would "not appear to be in the best interest of the Department to have the redemption centers

located on school campuses." Only 1 respondent answered affirmatively; 1 indicated uncertainty; and 2 did not answer the question.

Based on the survey responses from the Superintendent of Education and the high school principals, it is evident that the majority of the respondents do not favor school-operated redemption centers. Such a program clearly is viewed as an additional burden on an already overly taxed school system. Moreover, it is questionable whether it is appropriate to assign responsibility for such a program to the Department of Education, whose primary goal is to provide quality education,[10] especially given that the Department of Health is statutorily responsible for litter control, which includes prevention, removal, disposal, and recycling.[11] Furthermore there are major obstacles to establishing the program, including: the lack of facilities to accommodate the redemption center; insufficient school personnel, student interest, and funds to support such a program; and health and safety concerns. In view of the foregoing, the Bureau considers school-operated redemption centers inadvisable and would recommend against their establishment.

Chapter 5

TAXATION OF DISPOSABLE CONTAINERS

House Resolution No. 455 suggests that disposable plastic and cardboard containers used in takeout fast-food establishments be taxed to raise revenues for litter education and enforcement programs.[1] This chapter first will discuss three methods of taxation that have been introduced or informally considered at the Legislature. Second, litter taxes from six states and a Hawaii bill from the 1988 Regular Session will be reviewed and compared. Last, the issue of whether an earmarked litter tax (where revenues to police a particular activity are raised by establishing a particular tax upon that activity) is appropriate will be discussed.

The Problem

While overall litter in the State has decreased,[2] litter still poses a problem. Food wrappings and containers from fast-food or takeout establishments comprise one source of litter, and a tax on them has been suggested as one means to raise revenues to combat the continued litter problem.

Proposed Methods of Taxation

House Resolution No. 455 does not specify the manner or amount of the proposed litter tax. In the past, legislators have considered three types of taxes on disposable materials; the feasibility of each will be reviewed.

The first possibility is an additional one-half percent tax on the total price of any order of the takeout food. Since these sales are already subject to a four percent general excise tax, this would bring the total tax on the transaction to four and one-half percent. The advantage of calculating the tax this way is that its implementation would be easy. As fast-food sales must include the four percent tax, establishments could simply adjust their present mechanisms, either preprinted tax tables or computer registers, to add four and one-half percent instead of the usual four percent.

The second method is a flat tax of ten cents on each takeout order. This would require, slightly more effort by the establishments, as in addition to ringing up the four percent tax, they would have to make provisions to add an extra ten cents. Also, to avoid a tax upon a tax, the litter tax would have to be added after the general excise tax has been calculated and applied to the sale.

The third method appears more finely attuned to the problem as it seeks to tax the offending article, the wrapper or container, rather than the food object it contains. This proposal would place a one penny tax on each wrapper or container.[3] This would require the greatest effort to implement, because each cashier must stop and visually count the number of wrappers in the order. For example, for a meal of a hamburger, french fries, and a soda, the tax would be four cents: one for the hamburger wrapper, one for the french fry container, one for the soda cup, and one for the soda lid. As

with the ten-cent tax, the four cents would have to be added after the four percent general excise tax is imposed to avoid the consumer paying a tax on a tax. As an alternative to passing the tax to the consumer, the establishment could absorb the cost and pay the tax on its use of wrappers and containers as based on its inventory.

Comparison of Tax Methods

Only an approximate comparison of the fiscal impacts of these methods is possible. The ten-cent tax has the least correlation to the litter problem as the flat rate applies regardless of the amount of items purchased. For example, a customer ordering a meal for a dozen people would pay the same ten-cent tax as a customer ordering a meal for one (or, for that matter, even a single item such as a cup of coffee). Accordingly, the ratio between the tax and the total purchase price could vary widely: a person purchasing a 60-cent bag of french fries would pay 70 cents, an increase of 16.6%, while a person ordering a $10 bucket of fried chicken would pay $10.10, an increase of only 1%. The first person would be paying a much higher percentage for a thin paper wrapper, which, if littered, would cause less damage to the environment than the cardboard bucket, as it would take up less space and decompose more quickly. Another concern raised with the tax method is that this disproportionately greater cost to the person buying only one or two items might discourage sales.

The one-half percent method obviously depends totally on the price of the food item. The more expensive the item, or the more items purchased, the higher the revenue. To the extent that the higher price may reflect more items in more wrappers or items in the more expensive styrofoam rather than in paper wrappers which take up litter space and decompose rapidly, this tax method has a more rational bearing on litter and thus may be more appropriate than the ten-cent tax.

The revenues derived from the one cent per wrapper tax will differ from the one-half percent tax to the extent that the more the items cost, more revenue will be brought in by the one-half percentage tax; and the less they cost, more revenue will be generated by the one cent per wrapper tax. This is easily illustrated. Both taxes--the one cent per wrapper and the one-half percent on the total--will raise one cent in revenue for every individual item sold for $2. If the price of a single wrapped item taxed is lower than $2, the amount of revenue generated by the percentage tax decreases, while remaining the same for the one cent per wrapper tax. But as prices for individual items rise, the one cent per wrapper tax remains the same, while the percentage tax increases (i.e., 1-1/2 cents for a $3 item, 2 cents for a $4 item). For example, a $10 order consisting of two giant hamburgers and a bag of fries could generate revenues of 3 cents under the wrapper method and 5 cents under the percentage method, while a $10 order consisting of five small hamburgers and five bags of french fries would generate revenues of 10 cents under the wrapper method (10 wrappers x .01 cent), and 5 cents under the percentage method.

To obtain input of local businesses on the various tax methods and to determine the effect of such a tax on existing businesses, the Bureau surveyed twenty-seven business entities operating fast-food outlets on Oahu. See Appendix F. Surveys were sent to Burger King, McDonald's, Popeye's

Fried Chicken, Kentucky Fried Chicken, Taco Bell, Jack in the Box, Zippy's, Denny's, Shiro's, Hawaii Pizza Hut, Inc., Diner's Drive Inn, Kozo Sushi, Bob's Bar-b-que, Chicken Alice, Jolly Roger Drive-In, Jumbo's, Grace's Inn, Roundtable Pizza, and Arby's Roast Beef. Responses were received only from Grace's Drive Inn, Jumbo's, Taco Bell, two Roundtable Pizza outlets, and Diner's Drive Inn. The response rate was quite low; 5 usable responses out of 28, or just under 18%.[4] This low response rate could be interpreted as acquiescence, or at least indifference, to a litter tax.

The businesses surveyed were asked to rate their preference for each tax method. The two pizza outlets that responded indicated that they preferred a one-cent tax per wrapper or container. They also pointed out that since their disposable containers were used only for takeout orders or left-overs, which normally would be consumed at home, they do not contribute to the litter stream and thus should be exempt from any litter tax. The three responses received from other fast-food establishments indicated that they preferred a one-half percent tax because it is the easiest to administer. One reply enclosed a particularly thoughtful letter[5] analyzing the taxes and concluded:

(1) The one-cent tax would be difficult to administer from an operational standpoint as the cashier would have to stop and count each wrapper on every order;

(2) The ten-cent tax would place establishments where the average transaction is small (most fast-food restaurants) at a competitive disadvantage as the additional charge would be quite noticeable, which might discourage sales; and

(3) The one-half percent is the best option as it is a small charge and can be implemented with relative ease. Additionally, from an auditor's viewpoint, this tax would be easier to check as total volume is more easily ascertainable than a tax that depends on the number of transactions or products sold.

The letter also suggested, if a tax were to be imposed, that a broader base for the tax should be considered, as other industries also contribute to the litter problem. Other comments also noted that the proposed tax would be "inequitable" because it unfairly focuses on just one source of the litter. Another indicated that it would be just one more levy on businesses already overburdened with skyrocketing costs.

These responses, while perhaps not representative of the industry as a whole, do indicate several important concepts to be considered in the imposition of a litter tax. First is the tax base: who should be targeted to pay the tax. If the tax is to be imposed on those products likely to cause litter, then the tax should be applied only to items eaten off the premises. An exception for items taken off the premises that are virtually always eaten in the home (such as pizza), where proper disposal facilities are available, might seem appropriate, however, there may be legislative and administrative difficulties in agreeing on exactly which products should be excepted. Second, as will be discussed in more detail below, instead of being too broad, the tax in fact may be too narrow, as it would not include other items whose wrappings become part of the litter stream (such as candy wrappers, cigarettes, soda cans, drugstore sundries, toys, and alcoholic beverages).

Third, in terms of general ease of application, the additional one-half percent tax seems the easiest to implement for most fast-food outlets.

To sum up, if a well-focused litter tax is sought, taxing fast-food items eaten off the premises seems the most appropriate method as those items can be consumed on the street, at the beach, in the car, or in any number of venues where proper disposal methods are not available or will not be used. On the other hand, a more broadly designed tax applicable to all litter-generating industries would be appropriate if the goal were to raise money for general litter and waste disposal. As a matter of fairness, the approach would seem sound since wrappings or containers from many other items frequently end up in the litter stream.

Litter Taxes in Other States

Six other states have litter taxes whose goals are to raise funds for litter control projects. Those taxes are outlined below as a sample of the diverse ways in which a litter tax can be imposed.

Washington. The State of Washington imposes a tax on disposable containers, and a comparison of its law is instructive. Under the Washington scheme,[6] the tax is much broader than a "fast foods" outlet tax, as it applies to every entity engaging in manufacturing, wholesaling, or selling at retail items in the following categories: human and pet food; groceries; cigarettes and tobacco products; soft drinks and carbonated water; beer and malt beverages; wine; newspapers and magazines; household paper and paper products; glass, metal, plastic, or other synthetic containers; cleaning agents; toiletries; and nondrug sundry products.[7] The amount of the tax is quite small: one and one-half hundredths of a percent (.00015), or 15 cents on every $1,000 of sales.[8] The revenues are placed into the litter control account and are used for the administration and implementation of the chapter and research and development in the areas of litter control, removal, disposal, and their implementation, as well as for public educational programs on litter.[9]

Washington reportedly has not experienced any serious difficulties with implementing the tax. Because it only applies to sales within the state,[10] it focuses only on behavior within the state, and the amount is easy to calculate, based on gross proceeds (the amount is so small that it is not passed directly on to the consumers). To simplify the reporting procedure further, drugstores may report and pay a tax on fifty percent of their total sales, rather than separating out their sundry products; and grocery stores may report and pay the tax based on ninety-five percent of their total sales in lieu of separating their sales into the specified categories.[11] The only problems experienced with administering the tax is that it is sometimes overlooked by businesses because the amount is so small and is paid only once a year.[12] In its last fiscal year, Washington took in $2.5 million from its litter tax on a sales tax base of $4 billion.

Nebraska. Nebraska's tax is similar to that of Washington's. Nebraska imposes an annual litter fee of $150 for each $1,000,000 of gross proceeds (the same rate as Washington's) on sales by manufacturers and wholesalers of human or pet food; groceries; tobacco products; soft drinks and carbonated

waters; liquor, wine, and malt beverages; household paper and paper products, excluding newspapers and magazines; glass, metal, plastic, and synthetic fiber containers; cleaning agents; and toiletries.[13] There is an exception for animal husbandry products which applies only to persons who raise the animal, bird, or insect.[14] Retailers are similarly taxed, but taxable sales are limited to sales on food, beverage, liquor, wine, and malt beverages (other than sales of these items for consumption indoor on the seller's premises), and sales of groceries.[15] If a taxpayer is both a retailer and manufacturer or wholesaler, the taxpayer need only pay the larger of the two taxes.[16]

Virginia. The Virginia litter tax applies to manufacturers, wholesalers, distributors, and retailers of specified products similar to those taxed by Washington and Nebraska.[17] Those products are: human or pet food; groceries; tobacco products; soft drinks and carbonated waters; malt beverages and wine; newspapers and magazines; paper products and household paper; glass, metal, plastic, or synthetic fiber containers; cleaning agents; toiletries; nondrug drugstore sundry products; distilled spirits; and motor vehicle parts.[18] The tax is quite minimal: all businesses pay a ten-dollar tax on each of their establishments, and those manufacturing, distributing, or selling groceries, soft drinks, carbonated waters, and malt beverages pay an additional $15 per establishment.[19] Note that since this is a flat tax, it is regressive, **i.e.**, burdens small businesses proportionally more than large businesses instead of apportioning the tax according to the amount of litter generated.

Ohio. Ohio's litter tax is structured differently from those discussed previously. It applies to corporations dealing in "litter stream products," which are defined as alcoholic beverages; soft drinks; glass, metal, plastic, or fiber containers with a capacity of less than two gallons sold in conjunction with these beverages; container crowns and closures incorporated into the sale of these beverages; packaging materials transferred or intended to be transferred in conjunction with the sale of these beverages; finished packaging materials for use in the packaging or sale of takeout food or beverages consumed off the premises; and cigarettes, cigars, tobacco, matches, candy, and gum.[20] Corporations that manufacture or sell litter stream products are subject to the tax only if their sales of these products exceed five percent of their total in-state sales during the taxable year. In addition, manufacturers are liable for the tax if their total in-state sales of litter stream products during the taxable year exceed $10 million. Corporations that "transfer possession" of the packaging used for takeout foods are only subject to the tax if sales of takeout foods for off-premises consumption exceed five percent of total annual sales for the taxable year.

The tax can be calculated one of two ways: either twenty-two hundredths of one percent (.0022) of the value of the taxpayer's outstanding shares of stock in excess of $25,000; or fourteen one-hundredths of one percent (.0014) of a mill multiplied by the taxpayer's outstanding shares of stock.[21] There is a maximum tax cap of $5000 per year.[22] The tax currently is set to expire after 1991.[23]

New Jersey. New Jersey's tax is levied on manufacturers, wholesalers, and distributors of litter-generating products in the amount of three hundredths of one percent (.0003) on in-state sales, and on retailers of these products in the amount of two and one quarter hundredths of one percent (.000225) on in-state sales.[24] The definition of "retailer" explicitly includes restaurants whose principal activities include selling takeout food or beverages for off-premises consumption.[25] Litter-generating products include: malt beverages; tobacco products; cleaning agents; toiletries; distilled spirits; human and pet food; glass or metal containers sold as such and plastic or fiber containers sold as such unless sold empty, routinely used, and with a life expectancy of more than one year; groceries; motor vehicle tires; newsprint and magazine stock; drugstore sundries except drugs; paper products and household paper; soft drinks and carbonated water; and wine.[26]

Several types of transactions are exempt from this tax: sales by a wholesaler or distributor to another wholesaler or distributor, sales between wholly owned companies, sales by wholesalers or distributors owned cooperatively by retailers to those retailers, and any retailer with less than $250,000 in annual retail sales of litter-generating products.[27] The tax is currently set to expire after 1991, but will expire earlier if the state enacts a law requiring a deposit on or establishing a refund for, any litter-generating product.[28]

Rhode Island. Rhode Island's tax is the simplest to administer, albeit more limited in scope. The state imposes a four-cent tax on each case of beverage containers sold by a wholesaler to a retailer or consumer in the state. The tax is collected by the wholesaler.[29] Beverage containers are defined as any sealable bottle, can, jar, or carton which contains a soft drink, soda water, mineral water, or malt beverage.[30] There is a contingency provision nullifying this law if federal or state legislation is enacted requiring a deposit on beverage containers.[31]

Summary

This synopsis of state taxes merely presents examples of the various ways in which a litter tax could be imposed and is not intended to be exhaustive. The taxes range from simple flat taxes, such as the five cents per case tax or the ten-dollar per business enterprise tax, to complicated formulas that only apply to larger businesses. The difference between the tax methods probably arise from competing desires: ease in administration versus a well-tailored tax that places a greater proportion of the tax burden on those items generating more of the litter. While many of these taxes apply to takeout eating establishments, some are at the same time more narrow--applying only to food actually intended for off-premises consumption--and some broader--applying to the whole chain of distribution of litter-generating products--than the tax suggested in the resolution.

As noted, H.R. No. 455 proposes to tax only fast-food eating establishments, perhaps on the theory that fast-food wrappings are more likely than most items to become litter and therefore placing the burden on these items to support a special fund to combat litter is appropriate. Yet that target group may be too broad to the extent that these businesses serve

customers who eat on the premises. Under those circumstances, if the customer does not properly dispose of the wrapping, a business employee will do so. This distinction between fast food eaten on and off the premises has been recognized by some states that tax disposable containers by providing an exemption for on-premises consumption.

Another point to consider is that the targeted group may be too narrow. Although fast food eaten off the premises is one source of litter, it certainly is not the only source. An equal protection argument might be made that other sources, such as handbills, cigarettes, and alcoholic beverage containers, contribute equally to the litter problem and no rational basis exists for singling out for taxation only one source. The taxing of all possible sources of litter, as is done in some other states, would be a more equitable way to impose a litter tax burden and would be less susceptible to legal challenge.

H.B. No. 2803 and S.B. No. 2938: An Alternative?

Two companion bills introduced in 1988 (H.B. No. 2803 and S.B. No. 2938) proposed a broader litter tax than that contemplated in H.R. No. 455. These bills proposed taxing disposable containers containing any type of food or beverage sold at retail takeout food establishments, which were defined as "any restaurant, fastfood (sic) establishment, store or mobile van which sells food or drinks in nonreuseable containers intended for use or consumption off the premises." This definition greatly expands the scope of establishments subject to the tax to include virtually every establishment that sells food products in the State, with the exception of sit-down restaurants. For instance, because grocery stores sell food or drink intended for use or consumption off the premises, the tax would apply to virtually every consumable item sold in the store.

Athough this is a start toward a more comprehensive tax, it nevertheless falls short of the broad coverage of those state statutes discussed previously. Whether such broad coverage is more desirable from the State's point of view[32] may depend on the goal of the tax. If an earmarked tax is to be imposed to fund litter reduction programs, a tax placing the burden on those items much more likely to become a part of the litter stream would seem fair. It should be noted that this still would require broader coverage than that envisioned by H.R. No. 455 (i.e., cigarettes, candy wrappers, alcoholic beverage containers, etc.). On the other hand, if the purpose of the tax is to raise revenues for waste disposal in general, then imposing a tax with broad coverage that would include food and beverages sold in grocery stores, which would be less likely to enter the litter stream, would make more sense.

Desirability of a Litter Tax

As a perquisite to adopting a litter tax based on these or any other schemes, however, the legislature should evaluate whether a tax on disposable containers is a proper device for raising funds for litter control. Although the idea is an appealing one, the earmarking of revenue from certain activities to police that activity may lead to budgetary problems. For example, if the tax generates too little revenue, it will be insufficient to achieve the results intended by the tax. Conversely, the tax may generate

much more revenue than can be used for its intended purpose, leaving the State with an untouchable reserve of dedicated funds, which cannot be used for other purposes and therefore of benefit to no one.

In addition, the difficulties of administering any proposed tax should be considered. The significance of this consideration is evident by the Hawaii Department of Taxation's testimony during the 1987 Legislative Session against a bill that would have implemented a one-half percent tax scheme on retail sales of foods at a counter in restaurants, cafes, diners, teahouses, cafeterias, drive-ins, bakeries, grocery stores, supermarkets, and delicatessens. The Department opposed the bill on the following grounds: the record-keeping involved would overburden the taxpayer, the administration of the law would overburden the Department, and massive confusion would arise over defining the various categories of throwaway containers and the taxability of food products that have multiple uses.[33] As the administrators of any litter tax adopted, the Department should be consulted on the feasibility of implementing any proposed litter tax scheme.

Chapter 6

HAWAII'S LITTER PROBLEM

Studies of Hawaii's Litter

Between 1978 and 1985, the Institute for Applied Research conducted a series of studies of Hawaii's litter problem for the Department of Health, Litter Control Office. The most recent study concluded in 1985 that the visible litter rate at the original 35 sites sampled in the baseline survey conducted in 1978 had declined 41%.[1] A 1981 study added another 17 sites to the original 35. When these additional sites are included in the comparison, the 1985 study estimates that litter rates have declined 48% since 1978.[2] (See Appendix G.)

The study also reports a steep decline in beverage container litter. Comparing items per mile at all 52 sites, the study estimates that beer and soft drink litter has been reduced a total of 82% between 1978 and 1985.[3] (See Appendix H.) In addition, the number of sites found to be free of all beverage container litter has been increasing: in 1978 and 1979, only 1 site of the 35 was free; in 1981, 9 of the original 35 sites were free of any beverage containers; in 1985, 15 of the original 35 were free of visible beverage containers, including 7 of 10 commercial sites and 7 of 11 residential sites.[4] Also noteworthy is the decline in beer and soft drink litter expressed as a percentage of the total litter, dropping from an estimated 13.7% of visible street, highway, and recreation area litter in 1978 to only 4.7% in 1985.[5]

The study also notes that the composition of beverage container litter has changed, with the percentage of cans dropping from 61% of the total in 1978 to 45% in 1985.[6] The report credits this change to increased awareness of littering and recycling programs, and includes the observation that during the 1985 site surveys for the first time more people were seen picking up litter than were seen littering.[7]

Based upon the studies by the Institute for Applied Research, it would appear that the State has achieved some measure of success with its existing litter control program. Furthermore, the Bureau understands that the Department of Health has received "nationwide praise and acclaim for what is considered one of the best volunteer litter control program [sic] in the nation."[8]

Litter Control Programs

House Resolution No. 455 envisions the Trash Reduction Program, as outlined in the resolution, being administered by the Litter Control Office under the Department of Health and requests information on funding and staffing levels necessary to implement the program. On March 15, 1988, Bureau staff contacted the Litter Control Office for input concerning a litter control program and the staffing and funding needs of the Litter Control Office. (See Appendix I.) Mr. Clyde Morita of the Department's Litter Control Office responded to the Bureau's inquiry by way of letter dated April 5, 1988, advising that the Litter Control Office and the Governor's Advisory Committee on Litter Control have developed a comprehensive litter

control plan. Mr. Morita explained that the litter control plan is not written out in any detailed report, but rather consists of "a number of very successful programs that have been developed since 1977 and a number of programs which, if implemented, would solve our litter problem within five years."[9] He estimated that additional funding of $500,000 per year for a five-year period would be needed to fully implement these programs.[10] Mr. Morita offered to provide additional information, but requested that Bureau staff wait until May to contact him as April was a busy month.

Mr. Morita's response included a cover memorandum from John C. Lewin, M.D., Director of Health and a Department of Health position paper outlining the new proposed programs to address the State's litter problem. (See Appendix J for Mr. Morita's response and a copy of the position paper.) These programs address four major priority areas which are discussed briefly in the remainder of this chapter.

Prevention/Education

The first priority of Department of Health's proposed comprehensive litter control plan is to intensify litter education programs. Although education programs have been conducted in the past, the Department proposes to "institutionalize" litter education within the public and private school curricula.[11] The Department also plans to conduct anti-litter media campaigns on an ongoing basis to provide continual conscious raising for the public. The Department estimates the cost of these education programs will be $175,000 the first year and $100,000 to $125,000 annually thereafter.[12]

Enforcement

The Department proposes to increase enforcement of exisiting litter laws through the use of off-duty police officers to monitor areas, such as scenic lookouts, historic sites, and undeveloped beaches. The Department's position paper indicates that this program need not be conducted on a fulltime basis "because interim placement of enforcement officers and assessment of fines and community service assignments for violators will result in increased public awareness of a 'get tough' attitude about littering in Hawaii."[13]

Section 339-4 of the Hawaii Revised Statutes prohibits littering and section 339-8 provides that anyone convicted of littering shall be guilty of a violation and shall be fined not more than $500 for each offense and, or in the alternative, ordered to pick up and remove litter from a public place for a total of 40 hours. Under the Penal Code, section 708-829 of the Hawaii Revised Statutes defines the offense of criminal littering as a petty misdemeanor which is punishable by a fine not to exceed $1,000 and, or in the alternative, imprisonment of up to 30 days.[14] In addition, section 708-829 provides that a person convicted of littering shall spend up to 4 hours picking up litter on public property for a first offense and up to 8 hours for any subsequent offense. It is worth noting here that, although the penalties that could possibly be imposed for littering are rather stiff, in reality litter offenders, for the most part, rarely are sentenced to anything more severe than picking up litter for four hours (or eight hours, if a subsequent offense) under section 708-829.[15] Accordingly, it may be necessary, at the very least, to enlighten those imposing sentences about the

ill effects of littering before a real "get tough" attitude about litter can be translated into action.

Because of the part-time nature of this program, the Department of Health expects the cost to be rather low, at about $50,000 annually.[16]

Recycling

The Department's position paper supports strong government encouragement of the recycling industries in Hawaii as a major aspect of its comprehensive litter control plan. Although the current recycling rate of aluminum (75%) is extremely successful due to the high price of aluminum in the commodities market, there is less incentive for the private sector to initiate recycling of other products, such as glass, other metals with value (i.e., scrap cars), and plastic.[17] Therefore, the Department proposes that recycling industries be subsidized and encouraged by government resources.[18]

The Department estimates that recycling subsidies will cost $150,000 for the first two years, but that the recycling industries gradually will become self-supporting.[19]

Litter Control Revenue Production

As a means of funding the three foregoing priority areas, the Department of Health envisions legislation that would assess a special surcharge on the distributor of all glass products (other than construction glass) to deal with takeout items from fast-food restaurants, newspapers, snack shops, auto dealers, refuse companies, and other businesses whose products result in litter. The Department's position paper emphasizes the need to design this legislation so it is sufficiently broad as to cover all products that eventually result in litter, rather than singling out or focusing only on one group, such as beverage bottling distributors. The Department considers that a deposit law on bottle products would be less than 20% effective in reducing beverage container litter in the State, would be extremely labor intensive, and would be inequitable.[20] Presumably then, the Department would not favor a deposit law on bottle products. (Indeed, Dr. Lewin, in testifying before the Senate Committee on Planning and Environment in 1987 on three bills that would establish a deposit on beverage containers, indicated that, although the Department supports the intent of the bills, it did not support their enactment because of uncertainty over whether the economic costs of a bottle bill outweigh the limited impact such a bill would have on reducing Hawaii's litter. See Appendix K.) No estimates of revenues from this surcharge were available at the time of this writing.[21]

To garner wide acceptance of its litter control plan and to ensure effective legislation is drafted, the Department also proposes the convening of a statewide conference on litter control to bring together and create a partnership between government, businesses, and the public.[22]

Summary

It would appear from the studies of the Institute of Applied Research that the current activities of the Litter Control Office have been somewhat successful in reducing litter. In particular, it appears that beverage container litter currently comprises only a small portion of the litter stream (at least as of the 1985 study). Accordingly, as noted by the Department of Health, there may be some question as to the effectiveness of a beverage container deposit law in reducing litter. In addition, the Department of Health already has formulated a proposed comprehensive litter control plan, the major new programs of which are outlined in a Department interim position paper. It is estimated that additional funding of $500,000 per year for a 5-year period will be needed to implement these programs. Estimates of additional staffing needs have not been included in the position paper.

On June 9, 1988, Bureau staff again contacted Mr. Morita for follow-up information and more specific details of existing and proposed litter control programs. (See Appendix L.) A response was requested by June 24, 1988. Mr. Morita telephoned Bureau staff on September 6, 1988 to inquire whether the Bureau was still interested in a response. Bureau staff informed Mr. Morita that the Bureau would welcome any additional information from the Office of Litter Control, but since this report was in final draft, Mr. Morita was requested to respond in writing to facilitate the inclusion of his response. Mr. Morita indicated he would respond in writing by September 9, 1988. Mr. Morita's written response was hand-delivered to the Bureau on September 13, 1988. This response is contained in its entirety in Appendix M.

Chapter 7

FINDINGS AND RECOMMENDATIONS

Findings

The Bureau makes the following findings:

1. The Department of Health has achieved some measure of success with existing litter control measures, reducing the litter rate by approximately 48% at sites studied between 1978 and 1985. Nevertheless, growth in local and visitor populations may be expected to increase litter rates.

2. According to recent studies, beverage containers comprised only 4.7% of the State's total visible litter in 1985, down from 13.7% in 1978.

3. The Department of Health does not presently believe a deposit law on beverage containers would be effective or equitable.

4. The Department of Education and an overwhelming majority of principals responding to a Bureau survey are opposed to establishing school-operated redemption centers.

5. Even those principals favoring school-operated redemption centers acknowledge major obstacles ranging from safety and health concerns to the lack of facilities, personnel, student interest, and funds to ensure adequate operation.

6. School-established redemption centers could have a negative impact on existing recycling businesses, possibly forcing some to close down.

7. Hawaii has achieved a 75% recycling rate for aluminum. However, no plastic is recycled and only a small amount of glass currently is recycled at a loss to the recycler.

8. Many technological difficulties exist with recycling plastic; however, in recent years, markets have been developed on the mainland for limited types of plastic.

9. Those recyclers who have explored recycling glass and plastic have rejected the idea as unprofitable. The major obstacles to the recycling of glass and plastic appear to be the absence of local markets and the high shipping cost to existing mainland markets.

10. In the absence of viable markets locally and economically feasible transportation to mainland markets, glass and plastic collected under a deposit law scheme will likely end up in Hawaii's increasingly scarce landfills or, in the case of plastic in the City and County of Honolulu, possibly incinerated once H-POWER becomes operational.

11. The percentage of plastic materials in the solid waste stream has grown rapidly, due to its increased use in both packaging and products; and its durability has created a massive disposal problem. This increased presence of plastic litter on beaches and in waters, parks, and less inhabited

areas and the strength and durability of plastic present a life-threatening danger to various forms of marine and wildlife.

12. As a partial response to this threat, a growing number of jurisdictions have taken or are considering action to reduce or ban various non-degradable plastic products and packaging materials. A number of degradable plastic bills also are under consideration by Congress.

13. Because of the poor response rate of fast-food establishments to the Bureau's survey concerning a litter tax (less than 18%), no conclusive finding can be made on the industry's position. It may be that the major fast-food establishments are not strongly opposed to the imposition of a litter tax or it may be that, although opposed, they are resigned to the imposition of such a tax.

14. *Earmarking of tax revenues for certain activities, such as for litter* control, is not favored by the Department of Taxation and can result in too little revenue to accomplish the intended results or more revenue than needed, leaving an untouchable reserve of dedicated funds that cannot be used for other needed expenditures, such as education, highway maintenance and repair, and assistance to the elderly, that consistently seem underfunded.

15. Drawbacks to previous litter tax proposals have included burdensome record-keeping procedures for the taxpayer, difficulties for the Department of Taxation in administering the tax law, massive confusion in determining the specific objects subject to tax, and inequitable application to only select sources of litter.

Recommendations

Beverage Container Deposit Law

The Bureau recommends against adoption at this time of the beverage container deposit law as proposed in H.R. No. 455.

Apparently, the Department of Health as well as industry officials and many recyclers disfavor a deposit law for beverage containers. Critics question its effectiveness in reducing litter, especially in view of its costs, and cite its discriminatory impact, aimed at only a small segment of the litter problem. The most recent study of Hawaii's litter, in which beverage containers accounted for only 4.7% of the visible litter, would seem to support these arguments. If the primary purpose of a state deposit law is to reduce litter, the costs of imposing and implementing such a law may be disproportionate to the amount of litter further reduced.

Furthermore, the deposit law, as proposed, fails to take into account the ultimate disposal of the redeemed materials. Although aluminum is easily recycled and thus presents no disposal problem, such is not the case with glass or plastic bottles. Unless recycling of plastic and glass can be made feasible and economical, redeemed glass and plastic in all likelihood will end up in the State's already heavily used landfills. It should be recognized that, while the deposit law may result in more products being redeemed

rather than thrown on public beaches, parks, or roadways, it also may effectively shorten the life expectancy of our landfills.

Consequently, a deposit law without a viable recycling program for all materials on which a deposit is imposed may have some positive impact on the litter problem but, at the same time, may adversely affect the more pressing problem of disposing of the State's solid waste. In its position paper, the Department of Health suggests government subsidies be provided to assist recycling industries. Also, some recyclers surveyed indicated a willingness to explore recycling of glass and plastic if the State subsidizes the shipping cost to mainland markets. If the legislature decides to adopt a deposit law, the Bureau recommends that the scheme include shipping subsidies to recyclers for glass and plastic.

Comprehensive Solid Waste Management Plan

The foregoing discussion highlights the need to consider the effects of a litter control program in view of the larger picture: litter is garbage and any litter control program, such as deposit laws or recycling, will affect the larger picture of garbage, or solid waste, disposal. Except for the very real threat to our marine and wildlife caused by various nondegradable plastic products, litter is mainly an aesthetic issue, whereas solid waste disposal has become a major health and environmental concern. The problem of solid waste disposal already has reached crisis proportion in some areas of the country. In our own State, several landfills are due to reach capacity in the next few years, and several counties have experienced difficulties in siting new landfills. Without comprehensive planning now, Hawaii could experience its own garbage crisis in the near future.

Accordingly, care should be taken not to implement any litter control program that may deleteriously affect solid waste management programs or goals. For example, deposit laws, unless tied to recycling programs, may actually increase the amount of solid waste disposed of in landfills, causing the landfill to reach capacity earlier than anticipated and thereby decreasing its life expectancy. At a time when health and sanitation officials are searching for alternative methods of solid waste disposal, this type of impact on landfills may be viewed negatively. In addition, attempts to recycle plastic may result in depriving H-POWER officials of an important source of energy by removing plastic from the waste stream. For this reason, the Bureau suggests that any litter control program be implemented by the Department of Health as part of, or as a complement to, a comprehensive solid waste management program that considers all available options including recycling, landfill, and incineration.

School-Operated Redemption Centers

If the legislature decides to adopt a deposit law or "bottle bill", the Bureau does not recommend that high schools be given the responsibility for operating the redemption centers for returning deposit beverage containers; nor does the Bureau recommend that redemption centers be established on school property. The responses of the high school principals and the Superintendent of Education clearly indicate that the public schools have their hands full at present trying to fulfill their primary obligation of educating

Hawaii's youth. The many demands already placed upon them stretch their resources to the limit. Imposing the additional burden of running a redemption center for recyclable materials would require, at the least, an increase in funding to provide for additional personnel, facilities, and operating expenses. It is questionable whether sufficient numbers of teachers and students could be obtained to operate redemption centers on a year-round basis during hours convenient to consumers. The experience of other jurisdictions seems to illustrate that consumers are less likely to return containers to redemption centers unless they are convenient and accessible. Finally, health and sanitary concerns and security problems provide cogent reasons for not locating redemption centers upon school property.

Retailers constitute the primary redemption centers in nine of the ten states with deposit laws. Generally, the retailers are required to accept empty, unbroken, and reasonably clean beverage containers of the kind, size, and type sold by the retailer, subject in some states to certain limitations, such as limiting the number of containers accepted from any one person within a certain time period or the hours of acceptance. Most states also allow private redemption centers, but few apparently have been established. It appears the profit potential provides insufficient incentive, and consumers apparently prefer the convenience of returning containers to their local retailer. If a bottle bill is enacted, the Bureau recommends that retailers be required to accept empty, unbroken, and reasonably clean beverage containers of the kind, size, and type sold by the retailer. In addition, recyclers and nonprofit groups should be allowed to set up redemption centers if they so desire.

Litter Tax

House Resolution No. 455 suggests a tax be imposed upon disposable plastic and cardboard containers used in takeout fast-food establishments. Several states have already enacted litter taxes; some of these are broader in scope than that envisioned by H.R. No. 455, applying to a whole range of litter-generating products. Major issues which must be explored in structuring a litter tax include: the purpose, i.e., to raise revenue generally, to discourage the use of certain types of packaging material such as nondegradable plastic or foam products or foam products containing CFC's, or takeout packaging generally; the products targeted by the tax, which to a larger extent should be determined by the purpose of the tax; and the ease or difficulty in administering a particular tax formula. With respect to the particular tax scheme suggested by H.R. No. 455, the Bureau is of the opinion that the issues previously enumerated need to be explored more fully and considered in relation to a comprehensive waste management plan.

Also, it should be noted that previous studies of Hawaii's litter did not break out the percentage of litter composed of "takeout containers." While one might assume these materials constitute a large percentage of litter, as pointed out earlier, it is difficult to determine the degree to which particular establishments actually contribute to the litter problem. For example, a fast-food establishment that provides facilities for eating on the premises may well contribute less to the litter problem than an establishment without such facilities. Futhermore, in response to growing consumer demand, grocery stores are providing more "ready-to-eat" foods, the wrappings of which are as likely to end up as litter as are the packaging material from an

establishment selling pizza or fried chicken the food from which frequently is eaten on the premises or taken home and eaten. Accordingly, any tax imposed only upon takeout food establishments would appear discriminatory.

Moreover, the proposed tax scheme may be extremely confusing and difficult to administer. In the past, the Department of Taxation has opposed litter tax proposals on the basis of administrative and record-keeping difficulties and confusion in defining those items to be taxed. Any litter tax proposal considered by the legislature should be relatively easy to administer. The easiest and most equitable of the proposed methods appears to be a tax based upon a small percentage of the price of each litter generating product. The Department of Taxation, working in conjunction with the Department of Health, is in the best position to devise a tax scheme that is both equitable and relatively easy for the department to administer.

Degradable Plastic

Of the categories of litter specifically addressed in H.R. No. 455, plastic appears the most troublesome. This is due, in large part, to its superior qualities over other materials, resulting in its ever-increasing use in a wide variety of products and packaging and its increased presence in the waste and litter stream. The strength and durability of plastic ensure that it will remain nearly indestructible in whatever landfill, park, school ground, road, beach, ocean, river, or lake where it is deposited or thrown, immune to the forces that destroy and decompose other materials. There, the nondegradable plastic not only stains the environment, it presents a deadly threat to marine and wildlife which ingest the plastic or become hopelessly trapped in it.

Efforts to divert plastic from the waste and litter stream through recycling face difficult technological problems. An alternative is to use degradable plastics. Several European countries have taken or are considering measures to require that all plastics used in nondurable goods be degradable. Twelve states have banned the use of plastic or nondegradable connecting devices on various beverage containers, and a number of jurisdictions have taken or are considering action to reduce or ban various nondegradable plastic products or packaging materials. Also, several degradable plastic bills are pending before Congress.

Two bills concerning degradable plastic were introduced during the 1988 Regular Session of the Hawaii State Legislature. Senate Bill No. 2935, the text of which appears in Appendix N, would have prohibited plastic rings on six-pack beverage containers unless they are degradable by natural process. Senate Bill No. 2937, the text of which appears in Appendix O, would have prohibited the retail sale of food products packaged in nonbiodegradable containers if the food product is a convenience or takeout item intended for immediate consumption. Such legislation could have a significant effect on the problem of plastic litter and trash and would constitute at least a small step toward reducing the hazard posed to marine and wildlife by nondegradable plastic. Accordingly, the legislature may wish to reconsider the essential provisions of S.B. No. 2935 and S.B. No. 2937 or consider even broader ranging legislation to curb the use of nondegradable plastic in products or packaging material.

FOOTNOTES

Chapter 2

1. M. Oberst, "Everything Has to Go Someplace: The Landfill Crisis," CSG Backgrounder (Lexington: The Council of State Governments, February 1988), 1 [hereinafter cited as Oberst].

2. A. Hershkowitz "Burning Trash: How It Could Work," Technology Review (July 1987) 26, 29 [hereinafter cited as Hershkowitz].

3. J. McCarthy & R. Pannebaker, Issue Brief: Solid Waste Management (Washington, D.C.: Congressional Research Service, Environment and Natural Resources Policy Division, March 4, 1988) at 2. [hereinafter ctied as McCarthy].

4. Id. ("as population and wealth increase and as the ability to produce disposable packaging and products improves, waste volumes increase.")

5. Id. See Appendix B.

6. Id. It should be noted that measurement by weight as opposed to volume may be somewhat misleading, given the increasing use of lightweight aluminum and plastics over heavier steel and glass containers. See Id.

7. "Tons and Tons of Trash and No Place to Put It," U.S. News and World Report, May 11, 1987, 58 (emphasis in original) (contributions range from "pieces of dry wall and broken liquor bottles to dirty diapers and half a goat") [hereinafter cited as U.S. News & World Report].

8. Approximately 90% of municipal solid waste ends up in landfills. McCarthy, supra note 3, at 3.

9. Id. at 1.

10. U.S. News & World Report, supra note 7, at 58.

11. McCarthy, supra note 3, at 3; accord, Oberst, supra note 1, at 2 (180 municipal landfills are on the list).

12. In May 1988 the Khian Sea returned to anchor at Delaware Bay where it was ordered to remain by the Coast Guard because its radar and depth sounder were inoperative. On May 23, however, the ship violated these orders and left--its present location is not known and there is apprehension it will dispose of its payload at sea. "State Roundup," State Government News, The American Society of Mechanical Engineers (Washington, D.C.: July 1988), at 2.

13. Elliot L. Marshall, "America's Big Mess: After You Take Out The Trash, Where Will They Put It?" Governing (December 1987) 32, 34 [hereinafter cited as Marshall]; Oberst, supra note 1, at 1.

14. Oberst, supra note 1, at 2.

15. Id.

16. Marshall, supra note 13, at 32.

17. P. Wagner, "Taking out the trash in Hawaii: the problem is where to put it," The Star-Bulletin, July 9, 1987.

18. Id.; accord e.g., A. Yamaguchi, "Proposed dump upsets Waianae Coast residents", The Advertiser, May 5, 1987; A Yamaguchi, "Complaints closing Palailai Landfill", The Advertiser, May 28, 1988.

19. D. Lomont, "Serious Recycling: The Latest on H-Power," 5 Building Management Hawaii (March 1988) at 16.

20. K. Miller, "Maui Council issues call for 'trash summit'," The Star-Bulletin, July 7, 1988.

21. Id.

22. Id.

23. McCarthy, supra note 3, at 1; Oberst, supra note 1, at 3.

24. Marshall, supra note 13, at 35.

25. Oberst, supra note 1, at 3. Theoretically, the energy content of the nation's solid waste, if captured, could conserve an estimated 600,000 barrels of oil per day. McCarthy, supra note 3, at 2.

26. Id.

27. Pub. L. No. 95-617, 92 Stat. 3117 (1978) (codified, as amended, in scattered sections of 15, 16, 30, 42, & 43 U.S.C.).

28. For example, Tampa, Florida was forced to make up a 2-year, $7 million revenue shortfall at its new incinerator; officials in Tuscaloosa, Alabama sued the manufacturer of their incinerator (nicknamed the "Tuscaloosa Turkey" by critics) for $20 million after the plant lost money during its first 34 months of operation. "Energy From Garbage Loses Some of Promise As Wave of the Future," The Wall Street Journal June 16, 1988 at 1.

29. Pollutants already regulated by some states include: antimony, arsenic, barium, berryllium, cadmium, carbon monoxide, chlorobenzenes, chlorophenols, chromium, cobalt, copper, hydrogen chloride, hydrogen fluoride, lead, mercury, nickel, nitrogen oxides, organic compounds, particulate matter, PCBs, polynuclear aromatic hydrocarbons, selenium, sulfur dioxode, and zinc. McCarthy, supra note 3, at 6.

30. Incinerator ash contains everything that is not combustible, particularly heavy metals, as well as some organic chemicals that either were not destroyed by incineration or that formed as flue gases mixed after combustion. Currently, the disposal of incinerator ash is unregulated. Id.

31. Id. EPA regulations concerning the emissions from new waste-to-energy facilities are due out in November 1989; meantime, the EPA has issued guidance to its Regional Offices strongly encouraging the use of scrubbers and particulate collection devices at new facilities. Existing plants will remain unregulated except by states and localities. Id.

32. U.S. News & World Report, supra note 7, at 4.

33. Id. Hazardous waste must be disposed of in specially designed, secure landfills which are extremely expensive. Id.

34. McCarty, supra note 3, at 6; accord, Neil Seldman, "The Rise And Fall Of Recycling," Environmental Action (January/February 1987) 12, 16 (This could spell the demise of incinerators since the cost of using a licensed landfill for hazardous waste runs as high as $150 per ton).

35. McCarthy, supra note 3, at 4.

36. Id.

37. Id.

38. Seldman, supra note 34, at 16.

39. Oberst, supra note 1, at 2; accord, U.S. News & World Report, supra note 7, at 60-61. The real moneymakers are cardboard boxes at $100 per ton and high quality paper like computer printouts at $200 per ton. In fact, corrugated cardboard boxes have been N.Y.'s #1 export (800,000 tons a year), much of it going to South Korea and Japan where it is recycled into new boxes for TVs stereos, and VCRs shipped to the U.S. Id.

40. Oberst, supra note 1, at 2.

41. See the discussion of plastic in chapter 3.

42. McCarthy, supra note 3, at 8.

43. Id. The high strength per pound of plastic, its ease of fabrication, and the ability to tailor-make end use materials have stimulated new product development as well as displacement of other products, resulting in the increased use of plastics in both packaging and products. Id.

44. Id.

45. Oberst, supra note 1, at 2; accord, U.S. News & World Report, supra note 7, at 61.

46. McCarthy, supra note 3, at 8.

47. Id.

48. Id. at 7.

49. Id.

50. U.S. News & World Report, supra note 7, at 61; accord, Marshall, supra note 13, at 32 (Philadelphia's goal of recycling 50% of its waste by 1989 is "widely viewed as unrealistic."

51. Marshall, supra note 13, at 29 (these programs include those in Davis, California and Camden, New Jersey).

52. Id. at 32.

53. Hershkowitz, supra note 2, at 28.

54. Id. at 29.

55. New York State, Legislative Commission on Solid Waste Management, Incentives for Recycling, January 1988, at 38 [hereinafter cited as Incentives]. But see Seldman, supra note 34, at 16 (it is a myth that markets must be found for recycled materials before a recycling program can begin).

56. U.S. News & World Report, supra note 7, at 61; "Turning Trash into Hard Cash," Newsweek, March 14, 1988, 36, 37.

57. Marshall, supra note 13, at 41.

58. McCarthy, supra note 3, at 7.

59. Id. at 60; accord, Incentives, supra note 55, at 38.

60. McCarthy, supra note 3, at 8.

61. See U.S. News & World Report, supra note 7, at 61.

62. Seldman, supra note 34, at 16.

63. Id.

64. Id. at 14.

65. C. Pollock, "Mining Urban Wastes: The Potential for Recycling," Worldwatch Paper 76 (April 1987) at 39.

66. "County Marries Recycling And Incineration, Governing (December 1987) 37; accord, Marshall, supra note 13, at 41 (incentive to keep toxic metals and unburnable material out of the furnance).

67. Hershkowitz, supra note 2, at 5.

68. Id.

69. D. Snow, "Plastics & Other Packaging Under Attack," Waste Age, July 1988, 131, 133 [hereinafter cited as Snow].

70. Id.

71. Id.

72. Id. at 131. Exempt are clear plastic used to wrap meat, fish, cheese, coldcuts, produce, or baked goods; packaging used in hospitals or nursing homes; paper or cellulose-based packaging coated with polyethylene plastic on one side only; and plastic containers, covers, lids, or utensils that are not made of polystyrene or polyvinyl chloride. Id.

73. Id. at 132; "Legislative Curbs on Plastic," Biocycle, February 1988, 56, 57.

74. Snow, supra note 69, at 132.

75. W. Voit, "America Gets Into Plastics," CSG Backgrounder (Lexington: The Council of State Governments, December 1987), at 2.

76. Florida's Senate Bill No. 1192 was signed by the governor in July 1988; "State Watch," Resource Recycling May/June 1988, 6, 8.

77. Snow, supra note 69, at 140.

78. Id.

79. J. Parr, "Degradable polymers?", Forbes, October 5, 1987, 206, 210 [hereinafter cited as Parr].

80. Snow, supra note 69, at 138.

81. Id.

82. Parr, supra note 79, at 210; A. Naj, "Big Chemical Concerns Hasten to Develop Biodegradable Plastics," The Wall Street Journal, July 21, 1988, 1.

83. Id.

84. Naj, supra note 82, at 1.

85. Marshall, supra note 13, at 34.

86. Snow, supra note 69, at 131 and 138.

87. Marshall, supra note 13, at 41.

Chapter 3

1. See notes 17-22 and accompanying text in chapter 2.

2. The raw materials in glass, silica sand and soda ash, are relatively abundant and cheap, so no great cost savings is effected by recycling as opposed to using virgin materials. Additionally, the processes used to create virgin glass (which is technically a liquid), unlike the processes used to create other materials, does not require energy-expensive chemical reactions, so the energy savings between the creation of virgin glass and the recycling of postconsumer glass is minor. However, glass containers have one great advantage over other types in that glass can be used to make refillable containers that can be used up to 30 times before being recycled (C. Pollock, "Mining Urban Wastes: The Potential for Recycling," Worldwatch Paper 76 (April 1987) at 21 [hereinafter cited as Worldwatch 76]) and can be used in tandem with recycling to keep energy costs low. (See D. Hayes, "Repairs, Reuse, Recycling--First Steps Toward a Sustainable Society," Worldwatch Paper 23 (September 1978) at 26 [hereinafter cited as Worldwatch 23]: "The benefits of recycling glass are not as great as the benefits of reusing glass containers whenever that is possible--and generally it is possible.") Reuseable bottles also can reduce the use of water needed in processing by 44%. Cointreau, et al, Recycling for Municipal Refuse: A State-of-the-Art Review and Annotated Bibliography, World Bank Technical Paper No. 30 (1984) at 4.

3. It takes 134,700 BTU/pound of energy to extract aluminum from virgin ore, but only 5000 BTU/pound to create aluminum from scrap. It takes 49,500 BTU/pound to create virgin plastic from raw materials, but only 1350 BTU/pound of energy to recreate plastic from recycled plastic, a savings of 97%. Virgin glass, on the other hand, uses 7800 BTU/pound of energy, while recycled glass uses 7200 BTU/pound, an energy saving of only 8%. Worldwatch 23, supra note 2, at 17.

4. Worldwatch 76, supra note 2, at 21. One ton of recycled aluminum eliminates the need for four tons of bauxite ore and 700 kilograms of petroleum coke and fuel. It also reduces the emission of aluminum fluoride, an air pollutant. Id.

5. Plastic also can be recycled at a much lower energy cost, but except for primary recycling of waste plastic at the manufacturer's factory, at best it can only be recycled into a lower grade of plastic.

6. Worldwatch 76, supra note 2, at 27.

7. "Industries, Extraction and Processing," The New Encyclopedia Brittanica - Macropaedia (15th edition 1987), vol. 21 at 391 [hereinafter cited as "Industries"].

8. J. Abert, "Aluminum Recovery: A Status Report," reprinted in Resource Recovery Guide, ed. J. Abert (Van Nostrand Reinhold Company, Inc., 1983) at 308 [hereinafter cited as Abert].

9. Id.

10. Id. at 308-09.

11. Ninety-five percent of the energy is saved, according to one source (Worldwatch 76 supra note 2, at 21) and 96% is saved, according to another (Worldwatch 23 supra note 2, at 17).

12. "*Industries*," *supra note* 7, at 389-390; Abert, supra note 8, at 308.

13. See general discussion of the sorting and remelting process in Abert, supra note 8, at 309-311.

14. Id. at 309.

15. Harvey Alter, Materials Recovery from Municipal Waste (Marcel Dekker, Inc., 1983) at 117 [hereinafter cited as Alter]; telephone interviews with Dave Kyle, Hawaii business manager, Reynolds Aluminum Recycling Company, March 23, 1988 and June 20, 1988 [hereinafter cited as Kyle].

16. "Glass," The New Encyclopedia Brittanica - Micropaedia (15 edition 1987), vol. 5 at 297 (sand, sodium carbonate, and limestone).

17. Id. at 297.

18. H. Stirling, "The Recovery of Waste Glass Cullet for Recycling Purposes by Means of Electro-Optical Sorters," reprinted in Abert, supra note 8, at 339; "Industrial Glass and Ceramics," The New Encyclopedia Brittanica, - Macropaedia (15th edition 1987), vol. 21 at 237 (cullet is broken glass of the same type as that being manufactured. It is added to the raw materials as it acts as a solvent).

19. Alter, supra note 15, at 178.

20. Worldwatch 23, supra note 2, at 17.

21. Alter, supra note 15, at 178.

22. Note that this problem would not be a factor under a bottle bill scheme where consumers separate out the bottles before they enter the wastestream and become intermixed with other debris.

23. Letter from Mike Nobriga, vice president of sales and marketing, Maui Soda and Ice Works, Ltd., to Susan Jaworowski, dated June 3, 1988.

24. Id.

25. Id.

26. Id. Nobriga notes that each island had at least two or more bottling plants in operation using refillable bottles up through World War II. These were discontinued because of buy-outs, machinery maturation, bottle depletion, and consumer preference for the 12-ounce can.

27. "Plastics," The New Encyclopedia Brittanica - Micropaedia (15th edition 1987), vol. 9 at 504.

28. The plastics industry is investigating a number of ways to improve plastics recycling by either finding new ways to recycle it or by finding new uses for the recycled material. See, e.g., "PET recycling technology made freely available," Modern Plastics (February 1987) at 15-16 (the Center for Recycling Research provides access to flexible, cost-effective PET bottle recycling technology at an annual return on investment of 15% - 18%); P. Shabecoff, "Trade Coalition Announces Effort to Urge Recycle of Plastic Bottles," The New York Times (January 20, 1988) at A21 (National Association for Plastic Container Recovery

established to recycle bottles: goal set of recycling 50% of PET bottles by 1992); P. Fitzell, "Giving It the Old College Try," Beverage World (June 1987) at 43-44 (Plastics Recycling Foundation proclaims success for its pilot plastics processing plant); "Commingled Plastics Focus of New Studies," Center for Plastics Recycling Research Report (December 1987), Vol. 2, No.2, at 1 (New Jersey pilot plant for recycling of mixed thermoplastic wastes).

29. The plastics industry estimates the recovery rate for postconsumer plastics as approximately 1% by weight, as compared to 7.2% for glass and 28.6% for aluminum. The Council of State Governments, "Disposing of Plastics," CSG Backgrounder (Lexington: December 1987), at 2 [hereinafter cited as CSG Backgrounder].

30. T. Randall Curlee, The Economic Feasibility of Recycling: A Case Study of Plastic Wastes (Praeger 1986) at 12 [hereinafter cited as Curlee].

31. To complicate matters, one bottle can be composed of several different types of plastics. The common PET (polyethylene terephthalate) beverage bottle frequently is attached to a HDPE (high density polyethlyene) base (Id. at 123), and a squeezable ketchup bottle is made of six separate layers of plastic, each with its own characteristic (strength, flexibility, shape, impermeability). Worldwatch 76, supra note 2, at 11.

32. Curlee, supra note 30, at 15.

33. Id. at 4.

34. Id.

35. The base cup on many plastic soda bottles is composed of HDPE plastic. One recycler, M.A. Industries of Peachtree City, Georgia is removing and recycling 10-12 million pounds of HDPE cups annually, which are used to create new HDPE cups. "Manufacturers and Bottlers Use Recycled Base Cups in New Containers," Plastic Bottle Recycling: Case Histories (The Plastic Bottle Institute of The Society of the Plastic Industry (undated)).

36. "Highest" in the sense that the plastic can be transformed into another commercial use, which in turn may be able to be recycled again before it is ultimately consumed through a lower form of recycling or by landfill. However, this term indicates a value judgment that depends on the circumstances. If, for example, another oil shortage occurs, retrieving the petrochemical heat value of plastic by *incinerating it and transforming it into* electrical energy may well be considered a "higher" use than reprocessing the plastic into construction items that can also be made from wood.

37. Secondarily recycled plastics can be made into specific items, such as fiberfill for pillows and parkas, textiles, paint brushes, lumber substitutes such as boat piers, pipes, toys, and trash cans, or can be broken down into chemical components used to produce freezer insulation, bath tubs, automotive components, audio cassette cases, and sporting goods. "Plastic Bottle Recycling Directory and Reference Guide 1988," (The Plastic Bottle Institute, *Division of the Society of the* Plastics Industry, Inc., 1988) at 17 [hereinafter cited as "Plastic Directory"].

38. Curlee, supra note 30, at 33.

39. Pyrolysis is a technique to break down wastes by heating them in the absence of oxygen. Hydrolysis involves the decomposition of wastes by chemical means. Id. at 24-25.

40. Worldwatch 23, supra note 2, at 31.

41. Id. at 5.

42. D. Lomont, "Serious Recycling: The Latest on H-POWER", Building Management Hawaii (March 1988) at 17.

43. Curlee, supra note 30, at 36-38.

44. A. Naj, "Big Chemical Concerns Hasten to Develop Biodegradable Plastics,"; The Wall Street Journal, July 21, 1988, 1; J. Parr, "Degradable polymers?" Forbes, October 5, 1987, 206, 208.

45. "A Look at the Two Degradabilities," Waste Age, July 1988, 132 [hereinafter cited as Waste Age].

46. See, e.g., "Plastic reaps a grim harvest in the oceans of the world," Smithsonian (March 1988), vol. 18 #2, 59 (hundreds of whales, sea turtles, dolphins, and porpoises, and tens of thousands of seabird, seals, sea lions, and sea otters killed or wounded by plastic which nets or entwines animals that cannot see it or is easily mistaken for food by others and ingested, causing intestinal blockage and ulceration).

47. Waste Age, supra note 45, at 133; CSG Backgrounder, supra note 29, at 1. See also Chapter 2, notes 69-84 and accompanying text.

48. Kyle, supra note 15.

49. E. Lynch, "Businesses can make a bundle with trash," Pacific Business News, May 2, 1988, at 1.

50. Reynolds Aluminum accepts glass at its main plant in Halawa and ships it to a recycler in Oregon at a loss of $27 per ton. Telephone conversations with Dave Kyle, supra note 15.

51. Plastic is particularly troublesome to ship: because of plastics low density, collection and shipping costs are comparatively higher by weight than they are for other materials. Worldwatch 76, supra note 2, at 23.

52. See Appendix C for list of those businesses surveyed and a copy of the survey sent. For the purpose of this section, "recycling centers" also include redemption centers that receive recyclable material from consumers and sells the material to recycling businesses that ultimately remanufacture the material.

53. Kyle, supra note 15.

54. Id.

55. "Companies which recycle plastics are located in California, Florida, Georgia, Idaho, Illinois, Michigan, Minnesota, New York, North Carolina, Ohio, Tennessee, Vermont, and Wisconsin. These facilities handle anywhere from 50,000 to a million tons of scrap material annually, most of which is PET (polyethylene terephthalate) and HDPE (high density polyethylene)." CSG Backgrounder, supra note 29, at 2-3.

56. "Plastic Directory", supra note 37, at 15.

57. CSG Backgrounder, supra note 29, at 2.

58. It is difficult to determine exact shipping costs for plastics. Per the researcher's telephone call to the Matson Navigation Company's customer service office on June 27, 1988, Matson has no special rate for plastics and would charge their general cargo rate of $2.40 per cubic foot for their 24-foot containers (with a cubic volume of 1415 cubic feet). This means that the shipping would cost approximately $3476, but the researcher is unable to ascertain how many bottles would fit in the container (obviously, whether they were whole or baled and whether the HDPE bottoms had been removed would be critical factors) and how much a full container would weigh.

59. Letter from Michael S. Hong, president of Pacific Plastics Engineering Corp., dated June 10, 1988, to Susan Jaworowski.

60. Letter from Melvin J. Weiss, General Manager, Independent Paper Stock Co., dated June 17, 1988, to Susan Jaworowski.

61. This is currently being demonstrated on Maui where, despite the prior payment of a deposit on a case of soda, consumers are returning at most only 25% of the bottles. See notes 18 to 25 supra and accompanying text.

62. Worldwatch 23, supra note 2, at 29. See also Worldwatch 76, supra note 2, at 29. Even with state support, materials may not be recycled if the world markets are too low: for example, in New York, two-thirds of the plastic soft drink bottles returned under the deposit system were buried in landfills due to poor scrap markets. Worldwatch 76 at 27.

63. See note 17 and accompanying text in Chapter 6.

64. J.L. Bruno, "Incentive for Recycling," (the Legislative Commission on Solid Waste Management, New York State, January 1988) at 23-23.

65. Worldwatch 23, supra note 2.

66. Cal. Pub. Res. Code section 14500 et seq.

67. The penny refund is not necessarily free: some distributors, who are ultimately responsible for paying out the refund, will pass the refund on to their customers in the form of higher prices.

68. Id. §14504.

69. Id. §14560.

70. Id. §14561.

71. Id. §14501.

72. Id. §14550.

73. Id. §14560.

74. Id.

75. Id. §14574.

76. Id. §14575.

77. Id. §14573.

78. Id. §14573.5.

79. See id. §§14572, and 14572.5 (deposit value for refillable containers is set by the manufacturer).

80. Id. §§14571, 14509.4.

81. Id. §14509.5.

82. Id. §14511.7.

83. Id. §14571.7.

84. Id. §14501.5.

85. Robert Reinhold, "California Recycling Plan is in Jeopardy," The New York Times, July 4, 1988 at 7; accord, B. Robinson, "Recycling system called fiscal flop," San Jose Mercury News, May 27, 1988, at 1A. 20/20 Recycle Centers, Inc. of Irvine California, the largest operator of the new redemption centers, reportedly is losing $1 million a month and has announced it will close 198 centers. And, unless the state increases its subsidy to the centers, the company will close its remaining 687 centers. Reinhold at 7.

86. Id.

87. Id.

88. Del. Code Ann., title 7, §§6051 et seq.

89. Id. §6052(a).

90. This aluminum exception was originally set to expire in 1984, but has been extended to 1992.

91. Id. §6052(b).

92. Id. §6055.

93. Id. §6054.

94. Id.

95. Id.

96. Id. §6057.

97. Id.

98. Id. §6059.

99. Iowa Code Ann., chapter 455C.

100. Id. §455C.1(1).

101. Id. §455C.2.

102. Id. §455C.5.

103. Id. §455C.6.

104. Id. §455C.2.

105. Id. §455C.3.

106. Id. §455C.2(2).

107. Id. §455C.4.

108. Id. §455C.14.

109. Iowa Admin. Code, r. 57-107.5.

110. Iowa Code Ann., §455C.8.

111. Me. Rev. Stat. Ann., title 32, §1861(2).

112. Id. §1862(1).

113. Id. §1865.

114. Id. §1863.

115. Id. §1866.

116. Id. §1867.

117. Id.

118. Id. §1868.

119. Id. §1870.

120. Mass. Gen L., ch. 94, §323.

121. Id.

122. Id.

123. Id.

124. Id. §325.

125. Mass. Regs. Code, title 301 §4.05.

126. Id.

127. 1983 Mass. Acts, ch. 571, §3.

128. Mass. Gen. L., ch. 94, §324.

129. Codified at N.J. Stat. Ann., §§13:1E-99.11 - .32, 40A4-45.34 -.35.

130. Id. §13:1E-99.6.

131. Id. §13:1E-99.13.

132. Id.

133. Id. §13:1E-99.14.

134. Id. §13:1E-99.15.

135. Id.

136. Id. §13:1E-99.11.

137 Id. §13:1E-99.12.

138. Id. §§13:1E-99.19 - .21.

139. Id. §§13:1E-99.27 - .31.

140. Codified at N.Y. Envtl. Conserv. Law, §§27-1001 et seq.

141. Id. §27-1003.

142. Id. §27-1005.

143. Id. §27-1007.

144. Id. §27-1009.

145. Id.

146. Id. §27-1007.

147. Id.

148. Id. §§27-1013 - 1014.

149. Id. §27-0405.

150. Id.

151. Id. §27-1011.

152. Id.

153. 1971 Ore. Laws, Chp. 745, codified as Or. Rev. Stat., §§459.810 - .890.

154. Id. §§459.820, .860.

155. Cf. id. §459.860.

156. M. Zermer, "Oregon's Bottle Bill: An Overview," Legislative Research Monograph (February 1987) at 1 [hereinafter cited as Zermer].

157. Id.

158. Or. Rev. Stat. §459.880.

159. Id. §§459.830 - .840.

160. Zermer, supra note 156, at 2.

161. Or. Rev. Stat., §459.850.

162. Vt. Stat. Ann., title 10, §§1521 et seq.

163. Id. §1521(1).

164. Id. §1522(a).

165. Id.

166. Id. §1524.

167. Id. §1522.

168. Id.

169. Id. §1523.

170. Id. §1525.

171. Id.

Chapter 4

1. See "California Recycling Plan is in Jeopardy," The New York Times, July 4, 1988, at 7, stating that California's state-operated recycling program is "collapsing of its own weight just nine months after it was begun." Reasons cited include the fact that redemption centers are hard to find, maintain limited hours, are inefficient and poorly managed, and suffer competition from established recycling centers that are not faced with startup costs. Other reasons include insufficient rebates to consumers, curbside pickups by local towns, and weak promotional efforts. Id.

2. M. Zemer, "Oregon's Bottle Bill: An Overview," Legislative Research Monograph (February 1987) at 16. Although most bottle bills permit the retailer to refuse containers filled with a substance other than the original product or water, retailers reportedly take all containers to maintain good customer relations. See id. at 14.

3. Id. at 16.

4. Id.

5. Id.

6. Letter from Superintendent of Education Charles T. Toguchi to Charlotte A. Carter-Yamauchi, June 2, 1988.

7. Expanding on this thought, Mr. Toguchi, in responding to the question "would you anticipate problems in including supervision of such activity in future collective bargaining agreements?" Wrote: "The Union would consider supervision of students for this type of activity as unprofessional, and would vehemently object to the inclusion of contractual language relating to supervision of such activities."

8. Wrote one principal: "While the litter problem is a conspicuous one, is the manning of a redemption site as proposed a priority for our main purpose--educating students?"

9. See notes 2 and 3 supra and accompanying text.

10. The provision of quality education is of such critical importance that it was designated as a priority guideline in the 1986 revision of the Hawaii State Plan. See, Hawaii Rev. Stat., sec. 226-107.

11. See, Hawaii Rev. Stat., chapter 339.

Chapter 5

1. Presumably these revenues would fund the activities of the Litter Control Office. Major programs proposed as part of a comprehensive litter control plan are discussed in Chapter 6.

2. D. Syrek, Hawaii Litter: 1985, see, A Study of Trends in Visible Litter from 1978 to 1985, The Institute for Applied Research (Sacramento: 1985), prepared for the State of Hawaii, Department of Health, Litter Control Office (1985). Syrek states that litter, as measured on Oahu, decreased between 41% to 48% from 1978 to 1985. Id. at 3. During this same time period, beer and soft drink litter decreased a dramatic 82%, from 13.7% of the litter stream to 4.7%. Id. at 5.

3. To simplify matters, the tax should not be imposed on containers used for food products that are generally free with purchase, such as salt, pepper, sugar, cream, and condiments. A flat tax would result in overkill, as the value of the small supply of the condiment would be minimal as compared to the tax. A tax on condiments also would be difficult to administer, as many takeout eating establishments have a self-serve bar for these items, and it would be impossible to predict which and how many of the items each consumer will take. As the cost of these relatively small and inexpensive items is subsumed into the general cost of the purchase food product, the litter tax should be premised on the purchased product only.

4. The survey was sent out on May 20, 1988. This response rate reflects all surveys returned as of July 1. The sixth respondent left the body of the survey blank and merely printed at the bottom, "I AM OPPOSED TO THIS TAX."

5. Letter from Henry Katsuda, Senior Supervisor, Taco Aloha, Inc. [Taco Bell] dated May 26, 1988 to Susan Jaworowski.

6. Wash. Rev. Code §§70.93.120 - .190.

7. Id. §§70.93.120 - .130. There is an exemption for growers and raisers of animals, birds, insects, and products derived from them, such as wool, eggs, and honey. Id. §70.93.170.

8. Id. §70.93.120.

9. Id. §§70-93.180 - .190.

10. Id. §70.93.150; Washington Administrative Code §458-20-243.

11. Washington Administrative Code §458-20-243.

12. Telephone conversation with Kimberly Helverson, Department of Revenue, Olympia, Washington, April 21, 1988.

13. Neb. Rev. Stat. §§81-1559 -1560.

14. Id. §81-1559.

15. Id. §§81-1560.01 -1560.02.

16. Id. §81-1560.03.

17. VA. Code Ann. §§58.1-1707 -1708.

18. Id. §58-1708.

19. Id. §58.1-1707.

20. Ohio Rev. Code Ann. §5733.065.

21. Id.

22. Id.

23. Id.

24. N.J. Stat. Ann. §13:1E-99.1.

25. Id.

26. Id. §13:1E-94(e).

27. Id. §13:1E-99.1.

28. Id. §13:1E-99.6.

29. R.I. Gen. Laws, §44-44-3.

30. Id. §44-44-2.

31. Id. §44-44-13.

32. The perceived fairness of the tax may be an important consideration in deciding whether or how to impose the tax: "Because taxes, unlike prices, are viewed as coercive, they quickly draw attention to the problem of achieving 'fair' and 'equitable' treatment of the taxpayer." Oldman & Schoettle, State and Local Taxes and Finance, at 81.

33. Testimony of the Department of Taxation on Senate Bill No. 194, Regular Session of 1987.

Chapter 6

1. Daniel B. Syrek, Hawaii Litter: 1985, A Study Of Trends In Visible Litter From 1978 To 1985, The Institute For Applied Research (Sacramento: 1985), at 3.

2. Id.

3. Id. at 5.

4. Id. at 4.

5. Id. at 5.

6. Id. at 6.

7. Id. at 7.

8. Memorandum from John C. Lewin M.D., Director of Health, to The Honorable John Waihee, Governor of Hawaii, February 11, 1988, Department of Health Interim Litter Control Position Paper, p. 1 [hereinafter cited as DOH Position Paper].

9. Letter from Clyde Morita, Litter Control Office, to Susan Ekimoto Jaworowski, Legislative Reference Bureau, April 5, 1988. The entire text of Mr. Morita's letter appears in Appendix J.

10. Id.

11. DOH Position Paper, supra note 8, at 1.

12. Id. at 2.

13. Id.

14. See Hawaii Rev. Stat., §§706-640 and 706-663.

15. The Judiciary was unable to provide Bureau staff with statistics on actual sentences imposed upon conviction for littering. The conclusion is based upon the researcher's conversations with several deputy prosecuting attorneys for the City and County of Honolulu experienced with littering cases.

16. DOH Position Paper, supra note 8, at 2.

17. Id. The position paper acknowledges that plastic can be burned effectively in the H-POWER plant planned for the City and County of Honolulu.

18. Id.

19. Id.

20. Id. at 3-4.

21. Id. at 5.

22. Id. at 5-6.

(To be made one and ten copies)

Appendix A

H.R. NO. 455

HOUSE OF REPRESENTATIVES
FOURTEENTH LEGISLATURE, 1987
STATE OF HAWAII

HOUSE RESOLUTION

PERMANENT FILE

REQUESTING THE LEGISLATIVE REFERENCE BUREAU TO STUDY THE FEASIBILITY OF ESTABLISHING A STATEWIDE LITTER REDUCTION PROGRAM FOR THE STATE OF HAWAII.

WHEREAS, litter along roadways, parks and public beaches is unattractive, unsanitary and dangerous to feet and tires as well as unpleasant to look at because it is a detraction from the scenic beauty upon which our major industry depends; and

WHEREAS, glass, plastic and aluminum beverage containers, as well as disposable plastic and cardboard containers from takeout operations account for the majority of litter on the State's public roads, parks and beaches; and

WHEREAS, the collection and disposal of such containers and the injuries related to broken glass impose a burden on the residents of the State; and

WHEREAS, effective programs can be developed to control litter that remove the primary burden from any user group; create jobs for small entrepreneurs; be a fundraiser for non-profit groups and train high school students in business; and

WHEREAS, legislation on beverage containers have been proposed but not passed because they place an unfair burden on certain segments of the community; and

WHEREAS, voluntary litter clean up campaigns provide short term relief; and

WHEREAS, the only consistently workable program in Hawaii seems to be the recycling of aluminum cans because of its financial incentives; and

WHEREAS, there are several methods to alleviate the litter problems such as: public education, extensive clean-up campaigns . . either through volunteer or paid programs, effective enforcement of existing anti-litter legislation, deposits on certain types of containers to encourage return and discourage use and an outright ban on certain types of containers; and

WHEREAS, a TRASH program for Hawaii could be developed by dealing with each category of litter as a separate case:

Category 1 - Glass Bottles: By placing a higher deposit of up to 10 cents on all beverages packaged in glass bottles (and a lower deposit on aluminum cans), the consumer will usually choose cans. In cases where there is no choice between glass and cans, consumers usually return the container to a certified redemption center. If they choose to throw the container on property, the high deposit value encourages its return.

Category 2 - Plastic Beverage Containers: Again, by placing a high deposit (8 to 10 cents) on these containers, use of these containers can be discouraged in favor of aluminum cans.

Category 3 - Aluminum Beverage Containers: To encourage its use, a lower deposit of 2-5 cents could be imposed.

Category 4 - Disposable Plastic and Cardboard Containers from Take-Out Food Establishments: Levying a litter tax on all takeout orders would enable all proceeds to be funneled into the TRASH program (to be used for education, enforcement and incentives for litter pickup).

WHEREAS, the deposits levied could be established at the distributor level, payable to the litter control program, and the distributor would in turn, pass the deposit cost along to the dealer, who in turn charges the consumer; and

WHEREAS, redemption centers could be set up at participating high schools throughout the State, and the redemption and education activities could be run as a small business training program by the high schools whereby each school would have dumpsters equipped with a lock--one each for glass, plastic and aluminum containers; and

WHEREAS, each school would design its own specific plan for running the redemption center which would be open during hours when school is not in session, or when students have scheduled free time; and

WHEREAS, in redeeming the receipts, the consumer would be refunded eighty percent of the deposit of every container returned, and the redemption center would retain twenty percent as a service charge; and

WHEREAS, each redemption center would be in charge for keeping accurate records to account for containers returned and for funds dispursed; and

WHEREAS, in disposing of the returned containers, arrangements would be made for the containers to be delivered to recycling centers or sent to sanitary landfills on a weekly basis or used for other uses, (i.e. glass containers could be crushed and used for paving material); and

WHEREAS, if a school in a particular area does not wish to establish a redemption center, then next preference would be given to nonprofit organizations or an individual or company; and

WHEREAS, a litter control assessment on disposable plastic and cardboard food and drink containers used by takeout fast-food establishments could be collected by the food establishments and remitted to the litter control fund under rules adopted by the Director of Taxation; and

WHEREAS, proceeds from the litter control assessment could be used to eliminate litter and graffiti throughout the State by allocating the funds to programs such as:

(1) Litter and graffiti cleanup projects (money could also be used to hire independent contractors or to support fundraising projects of service organizations and schools);

(2) agencies for the enforcement of litter control laws; and

(3) to fund proposals from public and private organizations for developing and implementing innovative educational projects related to litter and graffiti control; now, therefore,

BE IT RESOLVED that the House of Representatives of the Fourteenth Legislature of the State of Hawaii, Regular Session of 1987, that the Legislative Reference Bureau be requested to study the possibility of setting up a Trash Reduction Program for Hawaii, to be administered by the State Litter Control Office under the Department of Health; and

BE IT FURTHER RESOLVED that this study include staffing requirements for the litter control office, monies it would take to implement a program, such as that suggested or one developed; and

BE IT FURTHER RESOLVED that the Legislative Reference Bureau report back to the Legislature within thirty days prior to the convening of the 1988 Regular Session; and

BE IT FURTHER RESOLVED that certified copies of the Resolution be transmitted to the Director of the litter control office, the directors of the Department of Health, the Department of Taxation, the Chairman of the Board of Education, the Superintendent of Education, all District Superintendents of Education.

OFFERED BY: Virginia Isbell

Appendix B

TABLE 1. COMPOSITION OF MUNICIPAL SOLID WASTE STREAM
(by weight)

	1970 (%)	1984 (%)	2000 (%)
Paper	33.1	37.1	41.0
Yard Wastes	19.0	17.9	15.3
Plastics	2.7	7.2	9.8
Metals	12.2	9.6	9.0
Glass	11.3	9.7	7.6
Food Wastes	11.5	8.1	6.8
Wood	3.6	3.8	3.8
Rubber/Leather	2.7	2.5	2.4
Textiles	2.0	2.1	2.2
Other	0.1	0.1	0.1

Source: J. McCarthy and Pannebaker, Issue Brief: Solid Waste Management (Washington, D.C.: Congressional Research Service, Environmental and Natural Resources Policy Division, March 4, 1988), p. 2.

Appendix C

Copies of the letter and survey were mailed to the following:

Consolidated Fibres, Inc.
375 N. Nimitz Highway
Honolulu, HI 96817

Hawaii Environmental
Transfer, Inc.
611-A Middle Street
Honolulu, HI 96819

Honolulu Supply Co.
204 Sand Island Access Rd.
Honolulu, HI 96819

Island Recycling, Inc.
1811 Dillingham Blvd.
Honolulu, HI 96819

Okuda Metal, Inc.
1804 Kahai Street
Honolulu, HI 96819

Pacific Metal Polymer, Inc.
681 Mapunapuna Street
Honolulu, HI 96819

Reynolds Aluminum
Recycling Center
99-1160 Iwaena Street
Aiea, HI 96701

Atlas Recycling Center
Amfac Lot--Kailua Dump Road
Queen Kaahumanu Hwy.
Kailua-Kona, HI 96740

Environmental Recycling
of Hawaii
dba Pirates of the Pacific
500 Kalanianaole Ave.
Hilo, HI 96720

Hawaii Junk, Ltd.
10 Halekauila St.
Hilo, HI 96720

Kauai Salvage
4521-A Hauaala Road
Kapaa, HI 96746

Maui Scrap Metal Company
1791 Waiinu St.
Wailuku, HI 96793

Samuel B. K. Chang
Director

LEGISLATIVE REFERENCE BUREAU
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
Phone (808) 548-6237

May 20, 1988

3830-A

Dear Sir or Madam:

The House of Representatives of the Hawaii State Legislature has requested the Legislative Reference Bureau to study possible litter control methods in our State. This request comes by way of House Resolution No. 455, a copy of which is enclosed for your review. The resolution requests the Bureau to address several proposals with respect to litter control that are outlined in the resolution. One of these proposals involves high schools or nonprofit agencies serving as redemption centers for glass, aluminum, and plastic. This could mean, at a minimum, as many as 38 more redemption centers in the State.

The resolution suggests a deposit of from 2 cents to 10 cents be imposed on all glass, plastic, and aluminum beverage containers. After use, consumers could return the containers to high school or nonprofit redemption centers, which would refund 80% of the deposit to the consumer, keep the remaining 20% for its expenses, and arrange for disposal of the materials either through recyclers, such as Reynolds, or at landfills. This deposit refund provision should tend to divert most of these containers from the wastestream to these redemption centers. An alternative proposal under consideration involves the redemption of these materials by for-profit businesses like yours. As your business already serves as a redemption center for aluminum, we are very interested in your response to these various proposals. We also are interested in determining whether there are any potential in-state markets for recycling glass and plastic, as we are aware of only one in-state facility accepting glass and no facility that accepts plastic. Your experiences, if any, in this area would be helpful to us and we would appreciate if you would include your comments on the enclosed survey.

The survey is brief and contains space for your comments. Your input will assist us in making our recommendations to the Legislature; therefore, please respond by May 31, 1988. If you have any questions, please call Charlotte Carter-Yamauchi or Susan Jaworowski at 548-6237.

Very truly yours,

Charlotte A. Carter-Yamauchi
Researcher

CACY:jv
Enc.

LITTER CONTROL SURVEY

(1) Please indicate those materials your company currently accepts for recycling and the estimated volume:

_____ Aluminum

_____ amount of volume
_____ at a profit
_____ at a loss

_____ Glass

_____ amount of volume
_____ at a profit
_____ at a loss

_____ Plastic

_____ amount of volume
_____ at a profit
_____ at a loss

(2) What would be the impact of establishing statewide high school or nonprofit redemption centers on your company's operation?

_____ Great impact: could put us out of business
_____ Significant impact: would significantly cut into our profits
_____ Mild impact: some manageable loss of profits
_____ No impact
_____ Positive impact: would reduce our receipt of unprofitable material

If the impact would be negative, please explain why.

(3) If you do not currently receive glass for recycling, have you ever considered doing so?

_____ Yes _____ No

If yes, please explain why you decided against it.

(4) If you do not currently receive plastic for recycling, have you ever considered doing so?

_____ Yes _____ No

If yes, please explain why you decided against it.

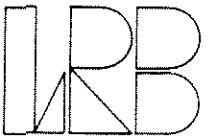
(5) If for-profit companies were allowed to participate in the proposed redemption center program (which would involve refunding 80% of the deposit to the consumer, keeping the remaining 20% for your services, and disposing of the materials) would your company be interested in participating?

_____ Yes _____ No

Your additional comments are welcome.

Samuel B. K. Chang
Director

Appendix D



LEGISLATIVE REFERENCE BUREAU
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
Phone (808) 548-6237

April 27, 1988

3830A

Mr. Charles T. Toguchi
Superintendent
Department of Education
Queen Liliuokalani Building
1390 Miller Street
Honolulu, Hawaii 96813

Dear Mr. Toguchi:

The House of Representatives has requested the Legislative Reference Bureau to study possible litter control methods in our State. This request comes by way of House Resolution No. 455, a copy of which is enclosed for your review. The resolution requests the Bureau to address several proposals with respect to litter control that are outlined in the resolution. One of these proposals involves establishing permanent, year-round recycling redemption centers for glass, aluminum, plastic, etc., at high schools throughout the State.

As envisioned by the resolution, these redemption centers would be run by students, possibly as a small business training program or as an extra-curricular, money-making activity. The redemption center would collect the recyclable material, refund deposits to consumers, keep accurate accounts of containers returned and funds dispersed, and transport or arrange for the transportation of the materials received to recycling centers or landfills on a weekly basis. The school probably would be permitted to keep 20% of the deposit on each container returned. To be effective, the redemption center would have to be run like a business. This means the center should be open at least twice a week on weekday evenings and/or on the weekend and be operated year-round including summer and other vacation periods.

As an initial step in our study, the Bureau is attempting to gauge the practicality and feasibility of, and the level of interest on the part of schools and the department of education in, establishing school-operated redemption centers. We are in the process of obtaining input from the schools themselves by surveying the principals of all public high schools, but feel there are some questions more appropriately directed to your office. Accordingly, we would appreciate your taking a few minutes to respond to the questions on the following page.

Please feel free to include any other comments or observations you care to make. Your responses will make a valuable contribution to determining whether a program establishing school-operated redemption centers is viable. Thank you for your assistance.

If you have any questions, please call me at 548-6237.

Very truly yours,

Charlotte A. Carter-Yamauchi
Researcher

CCY:mm
Enc.

(1) Under the current teachers' collective bargaining agreement, could teachers be required to supervise the type of activity a redemption center would entail?

(2) If no, under the current agreement could teachers volunteer to supervise this type of activity?

(3) If no to #1 or 2, would you anticipate problems in including supervision of such activity in future collective bargaining agreements? If yes, please specify.

(4) Irrespective of concerns related to the collective bargaining agreement, do you foresee any problems with obtaining teacher supervision of such activity?

(5) Are state schools individually insured or are they covered under the parameters of the State's self-insurance?

(6) If schools are individually insured, does this insurance cover personal injuries or property damage arising from activities such as may be involved by the operation of a redemption center, including the transportation of materials to a recycling center or a landfill? If yes, please specify the type and coverage of the insurance.

(7) If schools are not insured, do you feel it would be necessary to obtain insurance to cover contingencies arising from these activities, assuming school-operated redemption centers were to be established?

(8) If yes, who would be responsible for obtaining this insurance, the individual school or the department?

(9) Would obtaining this insurance present any problems to the schools or to the department? If yes, please specify.

(10) Can the department estimate the cost of this additional insurance?

(11) As the superintendent of education, do you support the establishment of school-operated redemption centers as set forth in the resolution? Please specify why or why not.

(12) As an alternative to school-operated redemption centers, it has been suggested that the redemption centers be operated by nonprofit groups but the centers be located on school campuses. Would you support the use of school property for redemption centers run by private or nonprofit groups? Please specify why or why not.

Samuel B. K. Chang
Director

Appendix E

LEGISLATIVE REFERENCE BUREAU
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
Phone (808) 548-6237

April 12, 1988

3755-A

The Legislative Reference Bureau has been asked to conduct a study of possible litter control methods in our State (see copy of H.R. No. 455, enclosed). One of the proposed methods involves instituting redemption centers for glass and aluminum, and possibly plastic and newspaper, operated by high schools throughout the State on a permanent basis. The redemption centers would collect the recyclable materials, refund deposits to consumers, and transport the containers to the recycling centers. The school probably would keep the moneys paid by the recycling centers for the collected materials. To be effective, the center would have to be open at least twice a week, on weekday evenings and/or on the weekend, and be operated year-round.

We are exploring the feasibility of and level of interest on the part of schools in establishing these redemption centers on high school premises. Accordingly, we ask that you take a few minutes to complete this survey and return it to us by May 1, 1988. Although the questions generally may be answered with a "yes" or "no," please feel free to include any comments or qualifications to each response, and to add additional comments at the end of the survey.

Very truly yours,

Samuel B.K. Chang
Director

SBKC:at
Encs.

Questionnaire

SUPERVISION

1. Does your present collective bargaining agreement allow teachers to volunteer or be assigned to supervise the type of activity a redemption center would entail?

2. If your present contract does not require teacher supervision of such activity, could your school arrange for teacher supervision, either for pay or on a volunteer basis, or would such activity have to be included in future collective bargaining agreements?

3. If your school could not arrange for teacher supervision, could your school arrange for reliable parental supervision?

ADMINISTRATION

1. Do you feel that persons handling redemption money need to be bonded? Would this present any problems for your school? (Please specify.)

2. If the program required it, would your school be willing to advance the money to the program for use in making initial refunds to consumers and purchasing any necessary equipment?

3. Would establishing accounting procedures to administer the redemption program cause substantial problems that could not be handled by your school? If yes, please specify.

SAFETY

The redemption center will involve the collection of used beverage containers. Some possible adverse effects generally associated with

maintaining redemption centers are injuries from broken bottles, bottle crushing machinery, and torn aluminum cans, and health hazards created by the storage of unsanitary beverage containers, such as vermin being attracted by the residue in the beverage containers.

1. Do you feel that your students would be able to maintain the redemption center in a safe, sanitary, and responsible manner?

2. Do you foresee any problems with students operating glass-crushing machinery? (please specify)

INSURANCE

1. Does your school presently have an insurance policy that covers liability for personal injuries arising from activities in the nature of carrying out programs such as operating a redemption center on school property?

2. Does your school presently have an insurance policy that covers property damage (e.g., fire caused by stored newspapers) arising from activities such as may occur because of the operation of an on-site redemption center?

3. Does your policy cover any accidents that might occur during the transportation of the items collected to the recycling centers?

4. If your current insurance policies do not cover these types of liability, would your school be willing to obtain such coverage? (Please estimate the yearly cost of premiums to cover these events.)

FACILITIES

1. If the recycling centers to which the materials are to be sent will not pick up the collected materials from your school, does your school have adequate facilities to transport them to the centers?

2. Do you have a covered area available on the school premises for use as a redemption center?

3. If so, can this area be locked or otherwise secured?

4. Would this area be available after school hours during the week, and/or on the weekend, on a regular basis?

5. Would this area be available during the Christmas, spring, and summer breaks?

PROMOTION

1. How would you propose to promote the redemption center and publicize its hours of operation in the community?

2. Would your school be willing to absorb the cost, if any, for this promotion, or would you expect reimbursement from the proceeds of the redemption center or from the State?

PARTICIPATION

1. As this will be a nonprofit operation, do you think that you will be able to recruit a sufficient number of students and teachers or parents to staff the center regularly and on a continuing basis, including the summer months? (The center should be open at least twice a week for two to three hours each time.)

2. If you do not feel that a sufficient number of students would be interested in staffing the center on a volunteer basis, do you feel that an academic credit, honorarium, stipend, or minimum wage would attract a sufficient number? If so, please specify.

3. Do you think that a redemption center at your school would be successful (i.e., reduce litter)?

4. If a redemption center was established at your school, how would the net proceeds, if any, from its operations be used?

5. Are you in favor of or opposed to seeing a redemption center at your school?

6. If you are in favor of seeing a redemption center at your school, please indicate the level of sustained enthusiasm that you would expect:

_____mild _____moderate _____active _____strong

7. If you are opposed to a student-run redemption center on school property, would you support a center located on school property run by private enterprise?

ADDITIONAL COMMENTS

Please let us know of any other comments or concerns that you might have concerning an on-site, year-round redemption center at your high school.

Appendix F

LITTER TAX SURVEY

The three versions of the proposed tax, which are discussed in more detail below, would assess operators of takeout eating establishments on sales of food or beverages served in "throwaway" containers. Throwaway containers would include any wrapping, covering, dish, or container used to carry out food and made of a material generally recognized to be thrown away after use, such as paper, styrofoam, plastic, foil, cardboard, or plastic wrap. It would not include containers used for food products or implements that are free with purchase, such as salt, pepper, ketchup, sugar, cream, or straws.

(1) Are all of your food and beverage products sold in throwaway containers (even if some of these products are subsequently eaten on the premises)?

_____ Yes _____ No

(2) *If all of your food and beverage products are not sold in throwaway containers, would you be able to segregate your sales into two categories: those in which throwaway containers are used and those in which they are not?*

_____ Yes _____ No

If no, why not?

_____

_____

_____

_____

_____

Two of the tax proposals were introduced in the legislature this past session, and the third has been informally discussed at the capitol. One proposal would consist of a one penny tax on every throwaway container. For example, a hamburger, french fries, and soft drink in a bag would be assessed four cents: one for the paper wrap on the hamburger, one for the french fry container, one for the soda cup, and one for the plastic lid on the soda. The second method would be a flat one-half per cent tax on the entire transaction: if the cost of the food totalled four dollars, the tax would be two cents. *The third method would involve a flat ten cent charge on any order* in which food or beverages in take-out containers were sold, regardless of cost of the items. With any of these methods, the costs can either be passed on to the consumer or absorbed by the seller. (Note: these taxes would be in addition to the 4% general excise tax that you currently pay.)

(3) Which method would be easiest for you to administer?

_____ One penny tax on each throwaway item
_____ One-half per cent tax on entire sale
_____ Ten cents charge on entire sale

(4) Which method would you prefer?

_____ One penny tax on each throwaway item
_____ One-half per cent tax on entire sale
_____ Ten cents charge on entire sale

(5) What were your total gross proceeds in the last fiscal year from the sale of food and beverages? (If you are a chain, please indicate your total sales in Hawaii.)

_____ Under $500,000
_____ $500,000 to under $1 million
_____ $1 million to under $5 million
_____ $5 million to $10 million
_____ Over $10 million

(6) Approximately how much tax liability would you have incurred last year under the one-penny-per-throwaway-item tax?

_____ Under $10,000
_____ $10,000 to under $50,000
_____ $50,000 to under $100,000
_____ $100,000 to $250,000
_____ Over $250,000

(7) Approximately how much tax liability would you have incurred last year under the one-half-per cent per transaction tax?

_____ Under $10,000
_____ $10,000 to under $50,000
_____ $50,000 to under $100,000
_____ $100,000 to $250,000
_____ Over $250,000

(8) Approximately how much tax liability would you have incurred last year under the ten-cents-per-transaction tax?

_____ Under $10,000
_____ $10,000 to under $50,000
_____ $50,000 to under $100,000
_____ $100,000 to $250,000
_____ Over $250,000

(9) Would your organization be more likely to absorb the cost of the tax or pass it on to your customers?

_____ Probably absorb
_____ Probably pass on
_____ Don't know

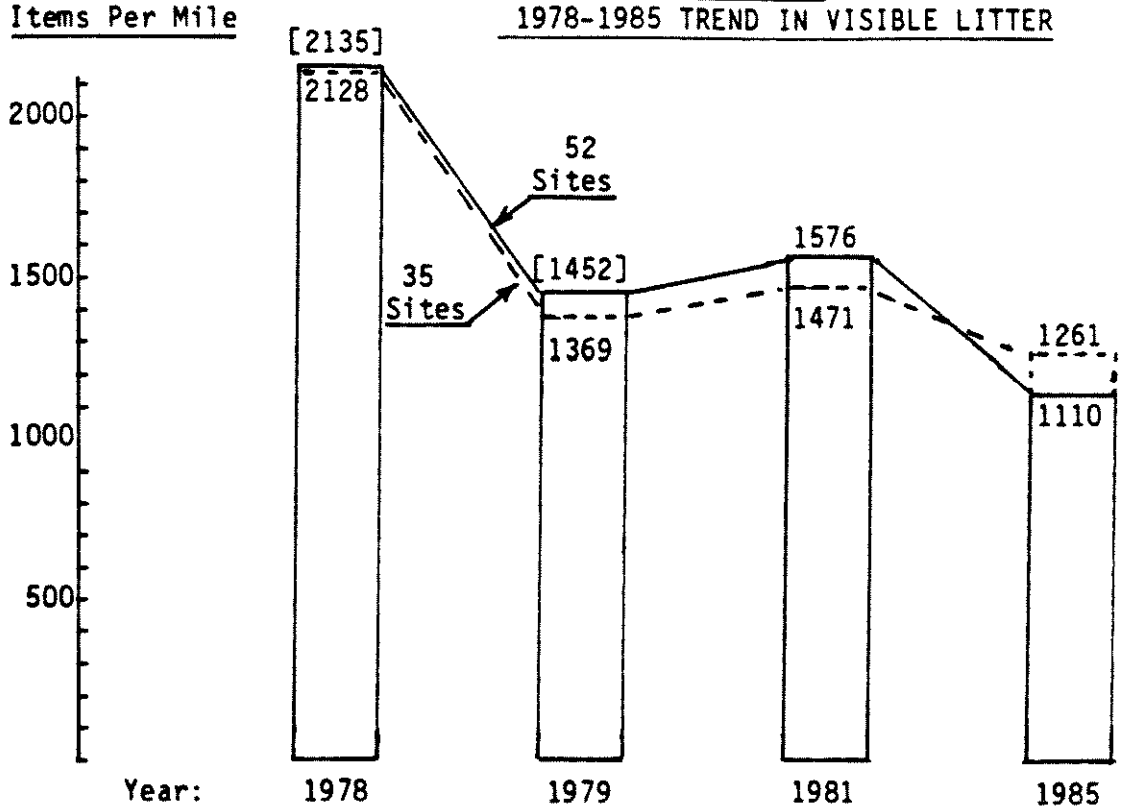
(10) What is the name of your organization?

_____

We would like to hear any additional comments you have about this proposed tax. Your comments and concerns will be taken into consideration in our recommendations. Thank you for your time.

Appendix G

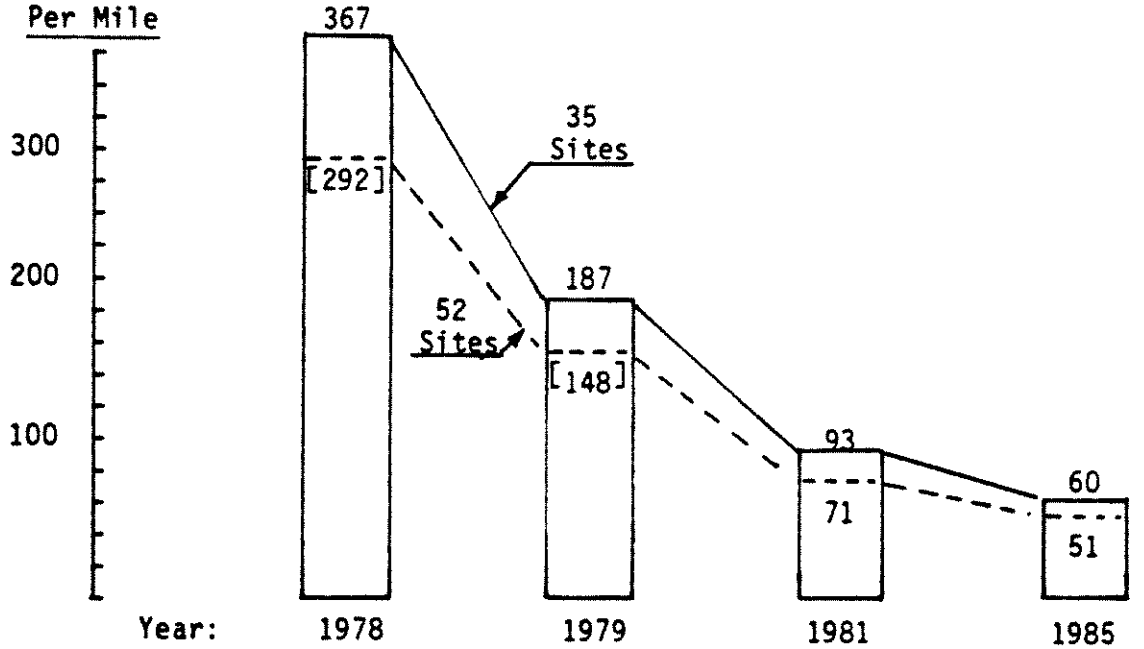
FIGURE 1
1978-1985 TREND IN VISIBLE LITTER



Source: Daniel B. Syrek, Hawaii Litter: 1985, A Study of Trends in Visible Litter From 1978 To 1985, The Institute for Applied Research (Sacramento: 1985), p. 3.

Appendix H

FIGURE 2
1978 to 1985 TREND IN BEER AND SOFT DRINK LITTER



Source: Daniel B. Syrek, Hawaii Litter: 1985, A study of Trends in Visible Litter From 1978 To 1985, The Institute for Applied Research (Sacramento: 1985), p. 5.

Samuel B. K. Chang
Director

Appendix I

LEGISLATIVE REFERENCE BUREAU
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
Phone (808) 548-6237

March 15, 1988

3755A

Mr. Clyde Morita
Litter Control Office
205 Koula Street
Honolulu, Hawaii 96813

Dear Mr. Morita:

The Legislative Reference Bureau has been requested to study the problem of litter in Hawaii. As part of our report, we are contemplating the inclusion of a proposed comprehensive litter control program. We are soliciting your advice in composing this plan. We wish to know if your office has developed or is in the process of developing a comprehensive plan, and, if so, we would like to obtain a copy of it. If you have not formulated a plan, we would still be interested in hearing from you concerning any ideas you have on this subject.

Please call me at extension 6237 if you have any questions.

Thank you for your time. We look forward to hearing from you.

Sincerely,

Susan Ekimoto Jaworowski

Susan Ekimoto Jaworowski
Researcher

SEJ:mt

Appendix J

JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
LITTER CONTROL OFFICE
205 KOULA STREET
HONOLULU, HAWAII 96813
LITTER HOTLINE, 548-3400

In reply, please refer to:
EPHSD-LC

April 5, 1988

Ms. Susan Ekimoto Jaworowski
Legislative Reference Bureau
State Capitol
Honolulu, Hawaii 96813

Dear Ms. Ekimoto:

In response to your request, please note that while the Litter Control Office and Governor's Advisory Committee on Litter Control have a comprehensive litter control plan, it is not written out in any detailed report. Rather, the plan consists of a number of very successful programs which have been developed since 1977 and a number of programs which, if implemented, would solve our litter problem within five years. This plan would, of course, need to be funded to be implemented.

Enclosed for your use is a memorandum circulated by the Director of Health which outlines the major new programs needed to impact our litter problem. Also attached is a calendar and budget adopted by the Governor's Advisory Committee on Litter Control for the period January 1988 through March 1989. The bottom line is that additional funding of $500,000 per year for a five year period would be needed to implement needed recycling, education, and enforcement programs.

Since April is our busiest month during the year, I would prefer that you contact me for further information in May. I would be happy to provide with additional leads, reports, and information that would be useful in preparing your report.

Sincerely,

Clyde Morita

Enclosures

FEB 19 1988

FEB - 1 1988

JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
File:
DO88:338

February 11, 1988

MEMORANDUM

To: The Honorable John Waihee
Governor of Hawaii

From: Director of Health

Subject: DOH Litter Control Position Paper

The Department of Health's Environmental Protection and Health Services Division staff has proposed the attached position paper and realistic budget regarding litter control.

We are interested in your suggestions, comments, and criticisms.

Thank you.

JOHN C. LEWIN, M.D.

Encl.: Position Paper

Similar letters to:
Dr. Joshua Agsalud, James Yasuda, UH Pres. Albert Simone, Hon. Edward Hirata, Hon. Yukio Takemoto, Hon. Roger Ulveling, Hon. William Paty, Hon., Richard F. Kahle, Jr., Dr. Marvin Miura,

Sen. President Richard S. H. Wong, Rep. James T. Shon, Rep. Joseph M. Souki, House Speaker Daniel T. Kihano, Sen. Bertrand Kobayashi, Rep. Les Ihara, Rep. Virginia Isbell)

Cc: Dep. Director for Environ. Health,; EPHSD: Chiefs for Division, Branches, Sections, & Key Staff Members; Joint SEC Committee

DEPARTMENT OF HEALTH INTERIM POSITION ON LITTER CONTROL

The Department of Health has enjoyed nationwide praise and acclaim for what is considered one of the best volunteer litter control program in the nation. There has been a reduction of approximately 50 percent of the litter rate since 1978 when baseline studies were first conducted. Litter has been significantly reduced in areas of scenic and public interest; however, the problem continues to persist and, in fact, is expected to increase as the population increases unless new programs are developed. Many visitors and residents continue to be outraged by the degree the public despoils the natural beauty of our environment by littering.

Therefore, the Department has initiated preliminary planning of an effort to undertake a more aggressive approach to the litter problem in Hawaii. This initiative is a four-fold proposal and is outlined as follows:

Priority 1: Prevention/Education

Although many public school and media education programs have been conducted in Hawaii, there's a great need to intensify this effort and "institutionalize it" within the workings of the public and private school curricula. In addition, a mass

media campaign on an ongoing basis would be of significant benefit in reminding citizens about the problem of littering. ($175,000 first year; then $100,000 to $125,000 annually.)

Priority 2: Enforcement

A concerted effort at increasing our enforcement activities is required. This can be accomplished using off-duty police officers to monitor areas like scenic lookouts, historic sites, and undeveloped beaches at which heavy drinking and littering is commonly done on each of our islands. The program need not be conducted fulltime because interim placement of enforcement officers and assessment of fines and community service assignments for violators will result in increased public awareness of a "get tough" attitude about littering in Hawaii. The cost of such a state-wide program is remarkably low as will be indicated by a sample budget at the end of the proposal. (Approximately $50,000 annually.)

Priority 3: Recycling

One of the most important aspects of a true litter control program is the strong encouragement of

recycling industries in Hawaii. Recycling of aluminum is presently successful due to the high price aluminum in the commodities market. Recycling recycling of paper products, glass, and other metals with value should also be undertaken but incentives for the private sector to initiate programs do not currently exist. Metals with value would include scrap cars. Plastics can be burned effectively in the H-Power plant, although these products in the waste stream may present problems for neighbor islands. Recycling industries would need to be subsidized and encouraged by government in order to be effective; therefore, this aspect of the program is an important one for Hawaii to invest in from government resources. ($150,000 years 1 and 2; then gradually self-supporting.)

Priority 4: Litter Control Revenue Production

The need to fund Priorities 1, 2 and 3 has motivated several states to enact legislation with respect to litter for purposes of generating funds. California and Michigan are among states which have recently successfully passed such legislation. The Department of Health does not presently believe that a "deposit" law on bottle products would be an effective and equitable approach. This kind of "deposit" or

"surcharge" affects all consumers and merchants and would be, at best, less than 20 percent or so effective in reducing beverage container litter in Hawaii. It is extremely labor intensive. However, legislation aimed at assessing a special surcharge on glass products, other than construction glass, may be successfully implemented and should be considered. This needs to be directed at the distributor of glass products and should not be designed to "single out" or focus on one target group such as beverage bottling distributors. Rather, the legislation should be broadly designed to cover all glass products which eventually result in litter.

Similarly, legislation can be designed to deal with take-out items from fast food restaurants, newspapers, snack foods, auto dealers, refuse companies and other businesses whose products result in litter. If the legislation is well designed, it would not penalize any one business but would be broadly distributed among all businesses. Again, both California and Michigan have developed a partnership with industry in the passage of their legislation along these lines.

The Department of Health has not had an opportunity to develop an estimate of revenues from Priority 4. However, we have developed a tentative budget for the financing of Priority 1, 2, and 3. For approximately $500,000 per year for the first two years of a proposed major litter initiative program, the Department could carry out extensive prevention and education programs, enforcement programs, and promotion of recycling industries. A budget outline is attached. After the first two years of such a program, the education budget could be reduced, and the recycling budget would be reduced or used to promote recycling of other types of products as the industry becomes self-reliant or nearly self-reliant.

In order to effect these changes, the Department feels it would be extremely valuable to have a statewide conference on litter control and bring to that conference representatives of states which have recently enacted successful legislation. Whatever program is proposed in the future, it must be a partnership of government, business, and the community if it is to succeed. The objective of the conference would be to gain wide acceptance

by all parties in the State of a proposed statewide approach to litter control which would result in powerful and effective legislation.

Further information about plans and programs regarding litter control is available from Mr. Clyde Morita, the administrator of our Litter Control Program. He can be reached at 548-3400. Other inquiries regarding suggested legislation may also be forwarded or discussed with Dr. Peter Sybinsky, Deputy Director for Planning, Legislation and Operations, and can be reached at 548-7404. Your input and interest will be greatly appreciated.

JOHN C. LEWIN, M.D.

2/11/88

Calendar and Budget
Governor's Advisory Committee on Litter Control
(Jan 88 - Mar 89)

Month	Activity	Proposed Budget
Jan :	(30) - Community Work Day #27	
Feb :	(1-29) - State Recycling Campaign	$6,600
Mar :	(1-15) - Governor's Breakfast Meeting	5,500
	(23) - Recycling Awards Luncheon.	included above
April :	(17-23) - KEEP AMERICA BEAUTIFUL WEEK (CWD # 28) for public awareness.	20,000
	(29) - National Car Litter Bag Day.	none
May :		
June		
July :	(23) - CWD #29 public awareness	5,000
Aug		
Sept		
Oct :	(15) - "Get The Drift and Bag It"(CWD # 30	20,000
Nov :	(19) - CWD #31 public awareness	3,000
-------	**1989 calendar year-----**	
Jan 89:	CWD #32 (?)	
	(late January) -Mahalo Reception one for each County	12,750
Feb :	(1-28) State Recycling Campaign	6,600
Mar :	(early in month) Governor's Breakfast Meeting	5,500
	(24) - Recycling Awards Luncheon	included above
	SUBTOTAL	84,950
	CWD Administrative, support, and computer expenses	5,000
	TOTAL	$89,950 or $90,000

Appendix K

Date of Hearing: February 23, 1987

Committee: Senate Planning and Environment

Department: Health

Person Testifying: John C. Lewin, M.D., Director of Health

Bill No. and Title: S.B. No. 618 - Relating to Beverage Containers
S.B. No. 1105 - Relating to Beverage Containers
S.B. No. 1179 - Relating to Beverage Containers

Purpose: To require refund values on beverage containers.

Department's Position: The Department supports the intent of these measures which would reduce litter in Hawaii.

While there are differences in the three bills, the basic concept is to require a minimum 5 cent refund value which dealers would be required to pay consumers who return empty beverage containers. The Department of Health would be required to adopt rules, enforce labeling and refund requirements, certify containers, approve redemption centers, and enforce violations.

Four independent litter surveys have been conducted in Hawaii over the last nine years. These surveys show that beverage container litter was reduced by 80% during this period. Nine years ago, beverage containers made up 21% of all litter; today, they make up 8%.

To illustrate, out of 100 pieces of litter seen in 1978, 21 were beverage containers. By 1985, 8 beverage containers were found in 100 pieces of litter.

Studies of the effectiveness of bottle bills in other states indicate that beverage container litter is reduced to 2% of all litter. We agree that a bottle bill in Hawaii could reduce the state's beverage container litter from 8% to 2%. What remains uncertain, however, is the economic costs of a bottle bill.

Hx. 2/23/87

Our Department is not in a position to determine whether the cost of a bottle bill is worth a 6% reduction in Hawaii's litter. We, therefore, do not support adoption of any of these measures at this time.

Samuel B. K. Chang
Director

Appendix L

LEGISLATIVE REFERENCE BUREAU
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
Phone (808) 548-6237

June 9, 1988

3755-A

Mr. Clyde Morita
Litter Control Office
205 Koula Street
Honolulu, HI 96813

Dear Mr. Morita:

Thank you for your willingness to help us in our study, pursuant to H.R. No. 455, concerning litter control in Hawaii. Your letter of April 5 states that your office runs a number of successful programs now and also has developed a number of programs which, if implemented, would solve the State's litter problem within five years. The attachment to your letter indicated these programs include education, enforcement, recycling, and taxation. We are interested in the details of those programs, particularly the ones that you feel would be most effective in solving the litter problem. Specifically, we would like a more detailed description of these programs and your estimates concerning the budget and number of staff members (please indicate whether these would be existing or new staff members) each program would require for proper implementation.

In addition, we ask your input and response to the following:

(1) As part of the "get tough" attitude toward enforcing litter laws, proposed by your office, would you recommend increased penalties for those violators convicted of littering? If yes, please specify these penalties.

(2) Under your proposal for recycling, you note that because incentives for recycling products other than aluminum do not currently exist, recycling industries need to be subsidized and encouraged by government. Please describe the type of subsidies you envision under this progam (e.g., grants, loans, tax credits, etc.) and any prerequisites that businesses will have to meet to qualify for the subsidy. If you have any thoughts of the source of funding for these subsidies, if other than a litter tax, please indicate what they are. Also, please specify which materials you envision being recycled under this subsidy program.

(3) The attachment to your April 5 letter indicates that the Office of Litter Control does not favor a "deposit" law on bottle products because it would be less than twenty per cent effective in reducing beverage container litter. Instead, the Office favors a surcharge on glass products, other than construction glass. Since the idea of a deposit law is one of the issues H.R. No. 455 specifically directs us to study, please explain why a deposit law would not be considered effective and the basis on which the twenty per cent figure was obtained. Also, please include the details you would recommend be included in legislation assessing this surcharge. This information, in particular, will be most helpful to us in responding to H.R. No. 455.

(4) As I mentioned in our conversation earlier this week, another area that we have been asked to study is a tax on litter, which is also one of the major programs proposed by your office. Please explain the details of the tax plan you recommend, including but not limited to the amount or rate of tax, the products to be taxed, and the method of assessment. Also, please include estimates of the revenues from this tax and your recommendations for how these revenues should be used.

In order to include your input in our report to the Legislature, we need to receive your response by June 24. Thank you for your time and valuable assistance to us on this study.

Sincerely,

Susan Ekimoto Jaworowski
Researcher

SEJ:jv

Appendix M

JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
LITTER CONTROL OFFICE
205 KOULA STREET
HONOLULU, HAWAII 96813
LITTER HOTLINE, 548-3400

In reply, please refer to:
EPHSD-LC

September 12, 1988

Ms. Charlotte Carter-Yamauchi
Legislative Reference Bureau
State Capitol
Honolulu, Hawaii 96813

Dear Ms. Carter-Yamauchi:

As discussed, I am submitting my response to Ms. Susan Ekimoto Jaworowski's request for information on your study concerning litter control in Hawaii. Although I would prefer to meet and present various reports and proposals for your consideration rather than trying to capsulize my input as requested, I am submitting these responses under the expectation that all available and pertinent reports and data have been reviewed.

The following are specific responses to questions asked. One distinction I would make is that your reference to the Litter Control Office's position and/or recommendation is rather that of the Director of Health as specified in the "DOH Litter Control Position Paper" which was attached to my response of April 5.

1) **As part of the "get tough" attitude toward enforcing litter laws, proposed by your office, would you recommend increased penalties for those violators convicted of littering? If yes, please specify these penalties.**

   No, the present penalties of up to $500 fine, 40 hours of picking up litter, and up to 30 days in jail are adequate. The problem with enforcement is not one of adequate penalties but rather that there is insufficient enforcement of existing laws and publicizing of those actions. The Department's proposed plan calls for increased enforcement by putting money into more effective surveillance of chronic littered sites.

2) **Under your proposal for recycling, you note that because incentives for recycling products other than aluminum do not currently exist, recycling industries need to be subsidized and encouraged by government. Please describe the type of subsidies you envision under this program and any prerequisites that businesses will have to meet to qualify for the subsidy. If you have any thoughts of the source of funding for these subsidies, if other than a litter tax, please indicate what they are. Also, please specify which materials you envision being recycled under this subsidy program.**

Subsidies could range from direct grants to implement new recycling markets, to joint ventures between government and industry, to direct government operation - the main point is not the form but the commitment, backed by money, to encourage the startup and viability of new recycling industries. Funding could be from general funds, industry contributions, or combination of same.

Initially, because the presence of glass bottles at scenic sites throughout the state is a problem that could be affected by increased recycling, glass bottles would be targeted for this program. Other potential priorities are all grades of paper, rubber tires, plastics, and derelict vehicles.

3) **The attachment to your April 5 letter indicates that the Office of Litter Control does not favor a "deposit" law on bottle products because it would be less than twenty per cent effective in reducing beverage container litter. Instead, the Office favors a surcharge on glass products, other than construction glass. Since the idea of a deposit law is one of the issues H.R. No. 455 specifically directs us to study, please explain why a deposit law would not be considered effective and the basis on which the twenty per cent figure was obtained. Also, please include the details you would recommend be included in legislation assessing this surcharge. This information, in particular, will be most helpful to us in responding to H.R. No. 455.**

The attachment did not say that the Department does not favor a deposit law. The attachment stated that the"Department of Health does not presently believe that a deposit law on bottle products would be an effective and equitable approach ....." under the heading of "Litter Control Revenue Production." In terms of litter control revenue production, the Department's proposal aims at generating revenues from wholesalers of products whose products wind up in the litter stream.

(cont'd)

Our estimate that litter would be reduced in Hawaii, at best, by 20 percent if a deposit law were enacted is based on studies which show that beverage containers in Hawaii are at most 8 percent, by item count, of all litter. Nationwide in states which have enacted deposit laws, beverage container litter is reduced to approximately 2 percent of all litter by item count. If instead of item count, which is recognized as the standard for comparison in litter surveys, a comparable volume or weight basis were used, then litter, at best, could be reduced by 20 percent, on a volume or weight basis in Hawaii (Refer to published "Hawaii Litter" studies for data base).

4) **As I mentioned in our conversation earlier this week, another area that we have been asked to study is a tax on litter, which is also one of the major programs proposed by your office. Please explain the details of the tax plan you recommend, including but not limited to the amount or rate of tax, the products to be taxed, and the method of assessment. Also, please include estimates of the revenues from this tax and your recommendations of how these revenues should be used.**

Enclosed is a copy of the State of Washington litter law which established a litter assessment in 1972. A similar or revised version of this law as a means to generate funds has been established in approximately six other states throughout the U.S. The Department does not have any estimates of the amount of revenues which could be generated. Whatever form is used, however, we estimate that approximately $500,000 more, over and above present expenditures, is needed to solve the litter problem in Hawaii.

Please call me at 548-3400 if you have any questions.

Sincerely,

Clyde Morita
Administrator

Enclosure

Clyde

March 1977

A Report on Washington's Model Litter Control Act

This booklet has been prepared to provide basic information about the Model Litter Control Act: what it is, how it works and what it has accomplished in the State of Washington. The Model Litter Control Act has achieved a 66% reduction in litter and has won acceptance by government, business and the citizens of Washington. Its success in providing a practical alternative to punitive and restrictive types of legislation has caused other states to ask, "Will it work for us?" In principle the Model Law places within one state agency full responsibility for litter education, enforcement and pick-up and provides the necessary funding to do the job. This unique concept should be adaptable to meet the needs of any state.

1 Preface

The Pacific Northwest has been the testing ground and the initial battlefield for container legislation.

In the 1969 session of the Washington state legislature beverage industry lobbyists were told by legislators that if they wanted to avoid restrictive legislation—probably a refund law of some sort—they would have to come up with a litter program that would solve the increasing accumulation of roadside rubbish.

The industry responded through a special committee, "Industry for a Quality Environment" (IQE), with a proposal for a state law which would require uniform litter receptacles throughout the state, litter bags in all automobiles and boats, and provide state-directed educational, enforcement and pick-up efforts. The program was to be supported by income from fines and bail forfeitures.

While the Model Law was being introduced, the students of a history class at Western Washington State College in Bellingham filed a container refund initiative measure as a class project. With whoops of joy from the press, the students distributed petitions throughout the state and within sixty days had something in the order of 175,000 voter signatures which was far more than necessary to put the issue on the general election ballot. The public opinion survey taken in July 1970 indicated that the measure would pass with an 85% favorable majority.

After a momentary period of confusion, industry responded by forming a statewide citizens' committee to sponsor a new version of the Model Litter Control Act which now included a special assessment on the manufacture and sale of all products reasonably connected with the litter problem. The industry proposal was filed as a "Initiative to the Legislature," a little-used technique under Washington state law which would force action by the legislature at its next session. Two weeks before the 1970 general election the committee announced that it had been successful in securing the necessary signatures for its passage. With that fact established, industry and the labor unions turned their attention to the bottle deposit initiative with a short but intensive media advertising campaign and defeated the initiative.

In May 1971 the Model Litter Control Act was passed with modifications by the legislature and signed into law by the governor. In November 1972 the Model Litter Control Act as amended was overwhelmingly approved by the voters of the State of Washington.

Within its own state the Washington law has been an unqualified success. It has reduced the litter accumulation by 66%. The public has accepted the law and not only do a majority of motorists carry litter bags in their automobiles, as required, but each year an average of more than 100,000 citizens of all ages turn out to participate in Department of Ecology litter control programs. And, finally, the "litter assessment" on litter-related products is now producing as much as $1,000,000 per year with no complaints from the taxpayers.

The Washington Model Litter Control Act has been an effective alternative to any type of restrictive legislation and the public accepts the Model Litter Control Act as an effective means of controlling litter. In 1975 an environmental coalition sponsored an initiative petition to establish a container deposit ordinance in the City of Seattle. Even though only 20,000 voter signatures were required, the petition effort failed after struggling listlessly for six months.

Washington's Model Litter Control Act has survived a critical testing since it was passed in 1971. Two of its neighbors, Oregon to the south and British Columbia, Canada, to the north, have been pioneers in container deposit legislation. Despite that, the Model Law is successful in controlling litter, it enjoys the support of the public for the job it does and it provides a sensible method for government to deal with the litter problem.

Profile of the State of Washington

Population:
3,544,000

Area:
68,192 square miles (including 17,714 square miles of national parks and forests.)

Industries:
Manufacturing (aircraft, ships, chemicals, paper, machinery), Forestry, Food Processing, Agriculture (wheat, potatoes, sugar beets, apples, beef cattle, dairy products, poultry.)

Recreation Areas:
State Parks & Recreation Areas, 187; National Parks, 3; National Forests, 9; National Recreation Areas, 3.

2 The Industry Plan of Action

The challenge made to the beverage industry by members of the 1969 Washington state legislature was fairly simple, "put up or shut up—either find a solution to the litter problem or get ready for some type of restrictive container legislation."

To industry's credit, they took the challenge in all seriousness and within the next 18 months had completed five major achievements.

1. IQE—The Industry Committee: The first requirement for a successful industry effort is the formation of an industry-wide committee. Although an informal committee had previously existed, industry leaders made a determined effort to bring together top executives of all categories of the industry. Adopting the name "Industry for a Quality Environment" (IQE) the committee successfully enlisted the support of top executives of companies and trade associations related to the manufacturing, distribution and retailing of beverages. The four breweries in the State of Washington, acting through their association, provided the initial impetus. Representation for food retailers began with the Washington State Food Dealers Association and continued through the presidents of local food chains and regional officers of national chains.

Soft drink bottlers were represented by officers of the statewide soft drink association and by top management of major local and national bottling units. With the wide range of container manufacturers within the State of Washington, top representation came from glass manufacturers, can manufacturers and the major aluminum companies. Major pulp and paper manufacturing executives represented the concerns of the carton and packaging producers.

It is only fair to say that the effectiveness of IQE was the result of the unanimity of objectives of the participants and their determination to carry their share in the solution of the litter problem.

From its inception at the time of the legislative challenge, the committee has been highly unstructured. Its strength lies in the unanimous decisions of its steering committee and in their personal commitment to motivate the industries which they represent. The group is not incorporated although that action has been discussed on numerous occasions, and it has no complicated set of bylaws. It is simple in form, it meets on call of the chairman to discuss problems and to make decisions when necessary. Its first major decision was to commission a nationwide research project.

2. The Study on Litter: The first question which comes up in a meeting to solve a problem is, "Has somebody solved this problem already?"

In order to ascertain what the litter problem was and what had been done so far in attempting to solve it, IQE commissioned a Seattle consulting firm to bring together all available research and information on the subject of litter from throughout the rest of the country.

While the study report was a substantial document, it could only prove what was already known—namely, that cans and bottles are not the major element of the litter problem and that more than 50% of the litter crop was paper and paper products. It also showed that there was a great amount of effort going into litter publicity with little or nothing into a practical solution.

3. Model Litter Control Act—First Draft: The result of the study was the conception of a "model" litter control law which would bring together in one statute all state laws relating to littering and add a very significant, philosophical dimension to the battle against litter by recognizing that its chief cause is that people seldom have any place to put it. The industry recommendation proposed to solve that problem by making litter bags mandatory in cars and boats and requiring that owners or operators of any facilities open to the public be required to provide litter receptacles of standard color and design for public use.

In its first draft the model law proposed to marshal all law enforcement agencies within

the state to control littering and to support the program through fines and bail forfeitures. The law would reduce minimum fines for littering to $10 instead of the $100 minimum which was in effect at that time. It was reasoned that violators would handle littering tickets like parking tickets ...pay them without going to court.

The Model Litter Control Act was introduced at a series of VIP meetings around the state. The reception could be described as indifferent. Editorials said it was an interesting idea but an outspoken legislator said that without a tax for funding the law it was just another attempt by industry to pass its responsibilities off on the public.

4. The Study on Funding: As the Model Litter Control idea was being introduced to the news media and legislators in the spring of 1970, the entire plan was disrupted by the runaway success of the sponsors of Initiative #256 which proposed a state law making container deposits mandatory on beverage cans and bottles.

In a critical industry mass meeting, IQE decided that if the Model Law was to serve as an alternative to mandatory deposits they would have to face up to the necessity for putting a tax on litter producers. IQE voted to undertake an immediate study to review original estimates on what the law would cost to administer and to work out with the State Department of Revenue where the money would come from.

The study recommended an adaptation of the state's existing Business and Occupation Tax to the sale, manufacture and distribution of litter-related items which had been identified in the earlier study on the character of litter. The tax would be levied at every level of distribution with an assessment of .015% ($150 per million) on gross sales within the State of Washington.

5. The Economic Impact Study: With promotion of the Model Litter Control Act underway, IQE next turned its attention to defeating the Container Deposit Initiative. How many jobs were at stake? How much would it increase the consumers' cost of living? What would be the economic consequences of the deposit bill?

Once again IQE commissioned another urgent study and this time the consultants were charged with having the completed report back in time to allow the information to be used in the media advertising campaign being structured to defeat the initiative in the general election.

In an intensive, short-term study, management consultants reported a potential loss of 600 jobs in container manufacturing and an additional loss of 1,100 jobs in supporting industries which would represent an estimated $12 million in lost wages and salaries. Sales of manufacturers, wholesalers and retailers associated with the beverage industry would decline by $55 million and tax revenue to the state would be lowered by about $1,140,000.

For the citizens of the State of Washington, already caught in the 1970 recession, this was ominous news indeed. The voters turned against the container refund initiative and defeated it by a narrow margin.

4

How the Model Litter Control Act Works: in education, enforcement and taxation

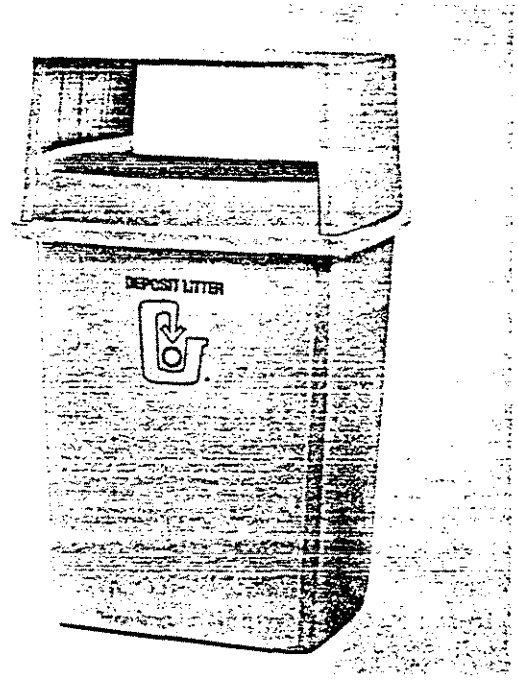
The Model Litter Control Act defines its purpose to accomplish litter control by delegating authority to the State Department of Ecology to conduct a permanent and continuous program to eliminate litter from the state. All departments of state and local government are directed to cooperate.

The Director of the Department of Ecology (DOE) is vested with police powers to enforce the law and is given authority to subcontract with local law enforcement entities for services within their jurisdictions. In addition, the state patrol, game protectors, fire wardens, forest and park rangers, sheriffs and marshals, among others, are directed to enforce the law, issue citations and, if necessary, arrest without warrant.

It is unlawful in the State of Washington to drop litter on any public or private property or waters of the state from vehicles or otherwise, including highways, parks, beaches, campgrounds, roads, streets, trailer parks or elsewhere. The only legal place to put litter is in an approved litter receptacle.

Violators are guilty of a misdemeanor and are subject to fine or bail forfeiture of not less than $10.00 (reduced from the previous and unrealistic $100.00 minimum). In the discretion of the court, the culprit may be directed to pick up his litter or any other litter within a defined area.

The law directs that receptacles of uniform color and design will be placed in all public places, whether public or private property, and designates among these service stations, campgrounds, shopping centers, grocery stores, tavern parking lots, marinas, beaches and recreation areas to name only a few.



Owners or operators of areas open to the public are responsible to provide litter receptacles at their own expense and must place them in the number and locations directed by DOE. Shopping centers, for example, require roughly one litter receptacle per 200 parking spaces.

Since the strategy of the law is to provide places for people to put their litter, all automobiles

Total enforcement contacts for litter generating violations

Year	1973	1974	1975
Verbal Warnings	6,995	15,195	8,073
Written Warnings	2,105	1,875	2,496
Arrests	1,155	1,136	1,191
Total	10,255	18,206	11,760

and boats are required to carry litter bags and the operators are subject to the $10 fine for failure. DOE passes out millions of free litter bags although any paper bag or other container will be sufficient under the law.

Removal of litter from any receptacle is the responsibility of the owner or operator of the public area concerned.

Funding for the law is provided from a "litter assessment" which is levied on industries whose products including the packages, wrappings and containers are reasonably related to the litter problem. The assessment amounts to $150.00 per $1 million of gross sales within the state. The law lists these specific categories:

Food for human or pet consumption
Groceries
Cigarettes and tobacco products
Soft drinks and carbonated waters
Beer and other malt beverages
Wine
Newspapers and magazines
Household paper and paper products
Glass containers
Metal containers
Plastic or fiber containers made of synthetic material
Cleaning agents and toiletries
Non-drug drugstore sundry products.

When the Washington law has been discussed by industries in other states it has always appeared that its tax feature was a matter of great controversy. Oddly enough, within the State of Washington the litter assessment has been accepted without opposition by all concerned including newspaper and magazine publishers who certainly would have the capability to make their dissatisfaction known. The willingness of the industries involved to accept their fair-share responsibility is a very significant reason why the Model Law concept works.

The Department of Ecology reports that it has never received a complaint from any taxpayer as a result of the litter assessment. However, at the outset of the law the state restaurant association applied for and received an exemption to eliminate "sit down" restaurants from the tax obligation intended for drive-ins.

The litter control assessment is handled through the state's Department of Revenue which administers the Business and Occupation Tax (i.e., a tax on business income) on businesses and industries. When the Model Law was passed by the legislature its tax feature was implemented simply by requesting B & O taxpayers to report their sales within the state in the selected categories.

Grocery stores are permitted to report 95% of gross sales in order to adjust for exempt items; drug stores report only 50% of their sales for the same reason. The law established a "litter control account" within the state's general fund and directed that all assessments, fines, bail forfeitures and other funds collected be used exclusively for the administration and implementation of the law.

After the typically halting start during the first year of collection, the litter account receipts have increased substantially:

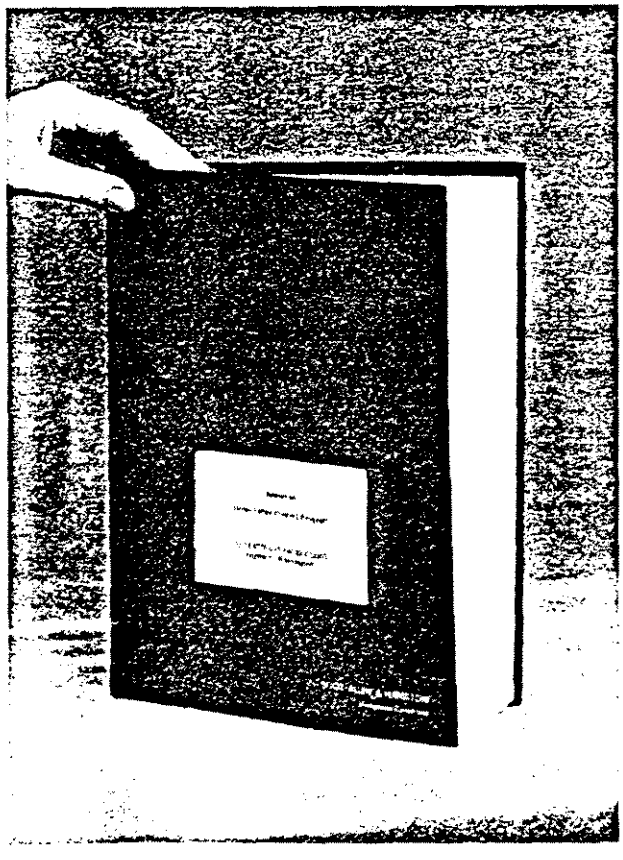
Calendar year	
1972.....	$386,476
1973.....	669,501
1974.....	701,782
1975.....	909,660

6

An Effective Five Year Performance

When the state legislature approved the Model Litter Control Act in 1971 the Washington Department of Ecology was less than one year old and over-extended in all directions attempting to get America's first coordinated state environmental agency underway. The arrival of the litter law was just one more problem to deal with. Funding for the new law was not to be forthcoming until the 1972-73 state fiscal year when the litter assessment would be available. What to do?

Industry for a Quality Environment made one more bold move to get the Model Litter Law going without delay. Since the legislature had not provided DOE with funding to do the initial planning, the committee commissioned Booz, Allen & Hamilton, national management consultants, to proceed immediately on preparing a detailed plan, timetable and budget for implementation of the law and to develop a detailed organizational structure for the administration of the program by the department. IQE donated the complete study to the state with no strings attached. In addition, it assigned its public relations agency to handle public information for the new law at no charge to the state.



In its study prepared for use by the Department of Ecology, Booz, Allen & Hamilton calculated that the State of Washington would generate 100,000 tons of litter during 1971 and that under the then existing programs it would increase to 116,000 tons annually by 1975.

In forecasting the effect of the Model Litter Control Law, the consultants said, "Booz, Allen & Hamilton estimates that the annual net litter carry-over in 1975-76 will be reduced by half."

They also said that based on this rate of litter reduction, net annual litter carry-over in the state can be expected to be reduced by 90% to 95% by 1980 to 1985.

In 1975, DOE commissioned the URS Company, a national engineering consulting firm, to develop a standard method of quantification of litter which the department could use on a continuing basis to evaluate its progress. Using a totally different technique from the earlier forecasts by Booz, Allen & Hamilton, URS reported that their study showed the litter program has achieved an overall reduction of 60% of all litter in the State of Washington since the program was initiated. A year later the 1976 URS study reported the reduction had increased to 66%, a significantly greater decrease in litter than predicted by the Booz, Allen & Hamilton report.

They also said that while achievement of further litter reduction will be at a decreasing rate, "an ultimate reduction of 80% as compared to 1971, is achievable. This translates into 20,000 tons annually statewide by 1995."

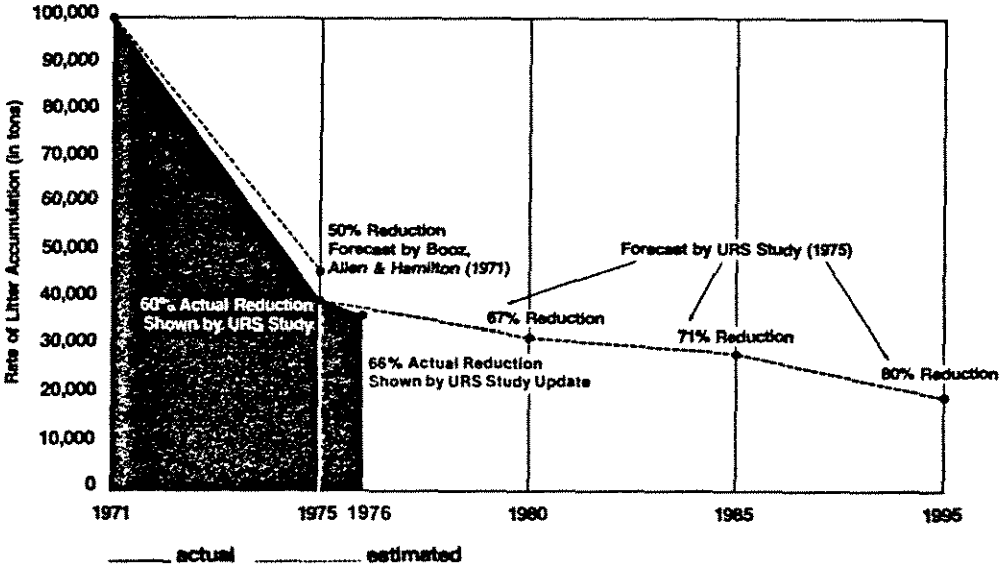
7

In its report on the impact of the DOE efforts, the URS 1975 study said:

> The most reliable measure of the quality of the efforts of the Department of Ecology is in the quantitative results of such efforts which show a 60% reduction of litter throughout the State of Washington. The survey also indicates that a large majority (95%) of those interviewed are aware of the Model Litter Control Act and its requirements and that most of them (52%) are in conformance with the requirements of the law as it applies to them. A plurality of 44% indicated that the litter problem has been improving and a very large marjority (95%) indicated that they are aware of the efforts of the Department of Ecology to increase public awareness. A plurality of 48% think the Department is expending adequate effort to reduce litter. By a large majority (79%), respondents felt littering habits are improving, while 60% have indicated that they did notice a reduction in the amount of litter. A large majority (89%) have indicated that public awareness for the need to control litter has been stimulated as a result of efforts to date.

The Litter Control Section of DOE estimates that they have achieved 70% compliance in placement of uniform litter receptacles. DOE has published regulations which cover every conceivable site including highways, parks, campgrounds, trailer parks, service stations (one per gasoline pump island), drive-ins, taverns, boat moorages, beaches and bathing areas, school grounds (one at each bus loading zone), racetracks, fairgrounds and carnivals (one at the entrance to each ride) and sidewalks in business districts (one per 800 feet of curbing). You don't have to go far in Washington to find a place to drop a popsicle stick.

One of the most innovative of DOE's efforts is the "Professor Rittel" program (which they say, is litter "spelled backwards and inside out"). This is a week-long, audio/visual presen-



Model Litter Law Performance Running Ahead of Forecasts:

The 1971 study by Booz, Allen & Hamilton predicted that implementation of the Model Litter Control Act would result in a 50% reduction in litter in the State of Washington by 1975. The URS Company study, utilizing different methods entirely, reported that an actual reduction of 60% had been achieved by 1975 and predicted a 67% reduction from the base figure by 1980. The URS study in 1976 reported that an actual 66% had already been achieved. URS Company study has projected an ultimate 80% reduction in litter by 1995.

tation using one segment each day for an individual class. DOE provides the self-contained projection unit and the teacher does the rest.

Most visible of the department's activities are the programs designed for civic and youth groups which annually turn out tens of thousands of volunteers to grub litter from the land and the lakes. The department provides all necessary materials and complete instructions for committees to "Shoot for Zero Litter," a program for hunters; "Pick Up a Mountain" for back-packers and "Shore Patrol" which on one weekend drew 5,000 volunteers to Washington's sparsely populated Pacific Ocean beaches to fill their official "Department of Ecology Volunteer" litter bags.

The department currently has nine law enforcement grants in effect with city and county governments to provide full-time police officers assigned to litter control enforcement and education. Appropriately, their official cars carry a "litter patrol" emblem.

For the past several years DOE has utilized a youth corps program for summer pick-up activities in litter hot spots such as parades, hydroplane races and other public events. For 1977 the department is planning an expanded, year around effort with its "Youth Litter Patrol." Young people will receive a maximum of six months temporary employment directly with the Litter Control Section, working full-time during the summer and weekends only when school is in session. The department says the function of the Youth Litter Patrol is to provide high visibility for litter control.

Reduction in Highway Litter Pick-Up Costs Reflects Effectiveness of Model Litter Law

Despite the strong inflationary trend of the '70s, litter pick-up costs reported by the State of Washington Department of Highways have consistently remained below the million dollar figure scored for the 1969-70 fiscal year. A 1974 report by the highway department credited a $200,000 cost saving to the Model Litter Control Act.

State of Washington
Total Highway Litter Pick-Up Expenditures
(from State Department of Highways)

Fiscal Year (ending June 30)	
1970	$1,001,493
1971	967,502
1972	863,866
1973	965,361
1974	810,695
1975	775,617
1976	832,092

The Litter Control Section of the Department of Ecology has thirteen full-time employees located in five DOE offices around the state. Four of the staff are located in the DOE headquarters office and provide planning, purchasing, grant coordination, budget tracking and other administrative support services to the regional offices.

The regional staff implements the program activities in their respective regions, dealing with government agencies, business and private citizens in promotion of litter abatement and control. They organize litter prevention and clean-up activities at public events and coordinate public involvement campaigns throughout the year.

In addition, the budget includes four composite man-years which provide clerical support services in regional offices and supervision by DOE Regional Managers and other management level staff who are at times directly involved in the program.

MODEL LITTER CONTROL ACT
1975-1977 BIENNIUM
BUDGET ALLOCATIONS

Item	Fiscal Year '76	Fiscal Year '77
Salaries & Wages	$234,574	$244,916
Goods & Services	239,978	232,608
Travel	18,741	19,190
Employee Benefits	39,877	41,636
Grants	350,000	350,000
	$883,170	$888,350
	Total Biennium	$1,771,520

Anybody Can Be A Chairman: Highly specialized program packets provided by the Department of Ecology give simple, step-by-step instructions for organizing a committee to fight litter.

No matter what your interest might be, DOE has a special set of instructions ready to help you organize your neighborhood, your community or your service club to carry out an effective litter abatement program.

Each program kit tells how to pick a chairman, how many committees to form, how to assign responsibilities, who to contact for information and what to do with the litter when you have collected it. DOE field representatives trained in organizational activities provide guidance to make sure the programs work.

DOE estimates that each year more than 100,000 Washington citizens volunteer their time to participate in litter clean-up and educational programs sponsored under the Model Litter Control Act.

10

Model Litter Control Act

Chapter 70.93 MODEL LITTER CONTROL ACT

70.93.010 Legislative findings. Recognizing the rapid population growth of the state of Washington and the ever increasing mobility of its people, as well as the fundamental need for a healthful, clean and beautiful environment; and further recognizing that the proliferation and accumulation of litter discarded throughout this state impairs this need and constitutes a public health hazard; and further recognizing that there is an imperative need to anticipate, plan for, and accomplish effective litter control, there is hereby enacted this"Model Litter Control Act". [1971 1st ex.s. c 307 § 1.]

Reviser's note: Throughout chapter 70.93, the term "this 1971 amendatory act" has been changed to "this chapter"; "this 1971 amendatory act" [1971 1st ex.s. c 307] consists of this chapter, the 1971 amendment to RCW 46.61.655 and the repeal of RCW 9.61.120, 9.66.060, 9.66.070 and 46.61.650.

70.93.020 Declaration of purpose. The purpose of this chapter is to accomplish litter control throughout this state by delegating to the department of ecology the authority to conduct a permanent and continuous program to control and remove litter from this state to the maximum practical extent possible. Every other department of state government and all local governmental units and agencies of this state shall cooperate with the department of ecology in the administration and enforcement of this chapter. The intent of this chapter is to add to and to coordinate existing litter control and removal efforts and not terminate or supplant such efforts. [1971 1st ex.s. c 307 § 2.]

70.93.030 Definitions. As used in this chapter unless the context indicates otherwise:

(1) "Department" means the department of ecology;

(2) "Director" means the director of the department of ecology;

(3) "Disposable package or container" means all packages or containers defined as such by rules and regulations adopted by the department of ecology;

(4) "Litter" means all waste material including but not limited to disposable packages or containers thrown or deposited as herein prohibited but not including the wastes of the primary processes of mining, logging, sawmilling, farming, or manufacturing;

(5) "Litter bag" means a bag, sack or other container made of any material which is large enough to serve as a receptacle for litter inside the vehicle or watercraft of any person. It is not necessarily limited to the state approved litter bag but must be similar in size and capacity;

(6) "Litter receptacle" means those containers adopted by the department of ecology and which may be standardized as to size, shape, capacity, and color and which shall bear the state anti-litter symbol, as well as any other receptacles suitable for the depositing of litter;

(7) "Person" means any industry, public or private corporation, copartnership, association, firm, individual, or other entity whatsoever;

(8) "Vehicle" includes every device capable of being moved upon a public highway and in, upon, or by which any persons or property is or may be transported or drawn upon a public highway, excepting devices moved by human or animal power or used exclusively upon stationary rails or tracks;

(9) "Watercraft" means any boat, ship, vessel, barge, or other floating craft;

(10) "Public place" means any area that is used or held out for use by the public whether owned or operated by public or private interests. [1971 1st ex.s. c 307 § 3.]

70.93.040 Administrative procedure act—Application to chapter. In addition to his other powers and duties, the director shall have the power to propose and to adopt pursuant to chapter 34.04 RCW rules and regulations necessary to carry out the provisions, purposes, and intent of this chapter. [1971 1st ex.s. c 307 § 4.]

70.93.050 Enforcement of chapter. The director may designate trained employees of the department to be vested with police powers to enforce and administer the provisions of this chapter and all rules and regulations adopted thereunder. The director shall also have authority to contract with other state and local governmental agencies having law enforcement capabilities for services and personnel reasonably necessary to carry out the enforcement provisions of this chapter. In addition, state patrol officers, game protectors and deputy game protectors, fire wardens, deputy fire wardens and forest rangers, sheriffs and marshals and their deputies, and police officers, and those employees of the department of ecology and the parks and recreation commission vested with police powers all shall enforce the provisions of this chapter and all rules and regulations adopted thereunder and are hereby empowered to issue citations to and/or arrest without warrant, persons violating any provision of this chapter or any of the rules and regulations adopted hereunder. All of the foregoing enforcement officers may serve and execute all warrants, citations, and other process issued by the courts in enforcing the provisions of this chapter and rules and regulations adopted hereunder. In addition, mailing by registered mail of such warrant, citation, or other process to his last known place of residence shall be deemed as personal service upon the person charged. [1971 1st ex.s. c 307 § 5.]

70.93.060 Littering prohibited—Penalties. No person shall throw, drop, deposit, discard, or otherwise dispose of litter upon any public property in the state or upon private property in this state not owned by him or in the waters of this state whether from a vehicle or otherwise including but not limited to any public highway, public park, beach, campground, forest land, recreational area, trailer park, highway, road, street, or alley except:

(1) When such property is designated by the state or by any of its agencies or political subdivisions for the disposal of garbage and refuse, and such person is authorized to use such property for such purpose;

(2) Into a litter receptacle in such a manner that the litter will be prevented from being carried away or deposited by the elements upon any part of said private or public property or waters.

Any person violating the provisions of this section shall be guilty of a misdemeanor and the fine or bail forfeiture for such violation shall not be less than ten dollars for each offense, and, in addition thereto, in the sound discretion of any court in which conviction is obtained, such person may be directed by the judge to pick up and remove from any public place or any private property with prior permission of the legal owner upon which it is established by competent evidence that such person has deposited litter, any or all litter deposited thereon by anyone prior to the date of execution of sentence. [1971 1st ex.s. c 307 § 6.]

70.93.070 Collection of fines and forfeitures. The director shall prescribe the procedures for the collection of fines and bail forfeitures including the imposition of additional penalty charges for late payment of fines. [1971 1st ex.s. c 307 § 7.]

70.93.080 Notice to public—Contents of chapter—Required. Pertinent portions of this chapter shall be posted along

the public highways of this state and in all campgrounds and trailer parks, at all entrances to state parks, forest lands, and recreational areas, at all public beaches, and at other public places in this state where persons are likely to be informed of the existence and content of this chapter and the penalties for violating its provisions. [1971 1st ex.s. c 307 § 8.]

70.93.090 Litter receptacles—Use of anti-litter symbol—Distribution—Placement—Violations—Penalties. The department shall design and the director shall adopt by rule or regulation one or more types of litter receptacles which are reasonably uniform as to size, shape, capacity and color, for wide and extensive distribution throughout the public places of this state. Each such litter receptacle shall bear an anti-litter symbol as designed and adopted by the department. In addition, all litter receptacles shall be designed to attract attention and to encourage the depositing of litter.

Litter receptacles of the uniform design shall be placed along the public highways of this state and at all parks, campgrounds, trailer parks, drive-in restaurants, gasoline service stations, tavern parking lots, shopping centers, grocery store parking lots, parking lots of major industrial firms, marinas, boat launching areas, boat moorage and fueling stations, public and private piers, beaches and bathing areas, and such other public places within this state as specified by rule or regulation of the director adopted pursuant to chapter 34.04 RCW. The number of such receptacles required to be placed as specified herein shall be determined by a formula related to the need for such receptacles.

It shall be the responsibility of any person owning or operating any establishment or public place in which litter receptacles of the uniform design are required by this section to procure and place such receptacles at their own expense on the premises in accord with rules and regulations adopted by the department.

Any person who fails to place such litter receptacles on the premises in the numbers required by rule or regulation of the department, violating the provisions of this section or rules or regulations adopted thereunder shall be subject to a fine of ten dollars for each day of violation. [1971 1st ex.s. c 307 § 9.]

70.93.100 Litter bags—Design and distribution by department authorized—Violations—Penalties. The department may design and produce a litter bag bearing the state-wide anti-litter symbol and a statement of the penalties prescribed herein for littering in this state. As soon as possible after May 21, 1971, such litter bags may be distributed by the department of motor vehicles at no charge to the owner of every licensed vehicle in this state at the time and place of license renewal. The department of ecology may make such litter bags available to the owners of watercraft in this state and may also provide such litter bags at no charge at points of entry into this state and at visitor centers to the operators of incoming vehicles and watercraft. The owner of any vehicle or watercraft who fails to keep and use a litter bag in his vehicle or watercraft shall be guilty of a violation of this section and shall be subject to a fine as provided in this chapter. [1971 1st ex.s. c 307 § 10.]

70.93.110 Removal of litter—Responsibility. Responsibility for the removal of litter from receptacles placed at parks, beaches, campgrounds, trailer parks, and other public places shall remain upon those state and local agencies performing litter removal. Removal of litter from litter receptacles placed on private property which is used by the public shall remain the responsibility of the owner of such private property. [1971 1st ex.s. c 307 § 11.]

70.93.120 Litter assessment—Imposed—Amount—Collection. There is hereby levied and there shall be collected by the department of revenue from every person engaging within this state in business as a manufacturer and/or making sales at wholesale and/or making sales at retail, an annual litter assessment equal to the value of products manufactured and sold within this state, including by-products, multiplied by one and one-half hundredths of one percent in the case of manufacturers, and equal to the gross proceeds of the sales of the business within the state multiplied by one and one-half hundredths of one percent in the case of sales at wholesale and/or at retail. [1971 1st ex.s. c. 307 § 12.]

70.93.130 Litter assessment—Application to certain products. Because it is the express purpose of this chapter to accomplish effective litter control within the state of Washington and because it is a further purpose of this chapter to allocate a portion of the cost of administering it to those industries whose products including the packages, wrappings, and containers thereof, are reasonably related to the litter problem, in arriving at the amount upon which the assessment is to be calculated only the value of products or the gross proceeds of sales of products falling into the following categories shall be included:

(1) Food for human or pet consumption.
(2) Groceries.
(3) Cigarettes and tobacco products.
(4) Soft drinks and carbonated waters.
(5) Beer and other malt beverages.
(6) Wine.
(7) Newspapers and magazines.
(8) Household paper and paper products.
(9) Glass containers.
(10) Metal containers.
(11) Plastic or fiber containers made of synthetic material.
(12) Cleaning agents and toiletries.
(13) Nondrug drugstore sundry products. [1971 1st ex.s. c 307 § 13.]

70.93.140 Litter assessment—Powers and duties of department of revenue—Guidelines. The department of revenue by rule and regulation made pursuant to chapter 34.04 RCW may, if such is required, define the categories (1) through (13) as set forth in RCW 70.93.130. In making any such definitions, the department of revenue shall be guided by the following standards:

(1) It is the purpose of this chapter to accomplish effective control of litter within this state;

(2) It is the purpose of this chapter to allocate a portion of the cost of administration of this chapter to those industries manufacturing and/or selling products and the packages, wrappings, or containers thereof which are reasonably related to the litter problem within this state. [1971 1st ex.s. c 307 § 14.]

70.93.150 "Sold within this state"—"Sales of the business within this state"—Defined. "Sold within this state" or "sales of the business within this state" as used in RCW 70.93.120 shall mean all sales of retailers engaged in business within this state and all sales of products for use or consumption within this state in the case of manufacturers and wholesalers. [1971 1st ex.s. c 307 § 15.]

70.93.160 Application of chapters 82.04 and 82.32 RCW to chapter—Exceptions. All of the provisions of chapters 82.04 and 82.32 RCW such as they apply are incorporated herein except RCW 82.04.220 through 82.04.290, and 82.04.330. [1971 1st ex.s. c 307 § 16.]

70.93.170 Litter assessment—Exemptions. The litter assessment herein provided for shall not be applied to the value of products or gross proceeds of the sales of any animal, bird, of insect or the milk, eggs, wool, fur, meat, honey, or other substance obtained therefrom, if the person

performs only the growing or raising function of such animal, bird, or insect. In all other instances, the assessment shall be applied. [1971 1st ex.s. c 307 § 17.]

70.93.180 Litter control account—Creation—Composition. There is hereby created on account within the general fund to be known as the "litter control account". All assessments, fine, bail forfeitures, and other funds collected or received pursuant to this chapter shall be deposited in the litter control account and used for the administration and implementation of this chapter. [1971 1st ex.s. c 307 § 18.]

70.93.190 Litter control account—Distribution of funds—Authorization. The department shall allocate funds annually for the study of available research and development data in the field of the control, removal, disposal, recovery, and recycling of litter. The department is also authorized to study methods for implementation in this state of said research and development. In addition, such fund may be used for the development of public educational programs concerning the litter problem. Grants shall be made available for these purposes to those persons and local governments or agencies thereof deemed appropriate and qualified by the director. [1975-'76 2nd ex.s. c 41 § 8; 1971 ex.s. c 307 § 19.]

Severability—1975-'76 2nd ex.s. c 41: See RCW 70.95.911.

70.93.200 Department of ecology—Administration of anti-litter program—Guidelines. In addition to the foregoing, the department of ecology shall:

(1) Serve as the coordinating agency between the various industry organizations seeking to aid in the anti-litter effort;

(2) Recommend to the governing bodies of all local governments that they adopt ordinances similar to the provisions of this chapter;

(3) Cooperate with all local governments to accomplish coordination of local anti-litter efforts;

(4) Encourage, organize, and coordinate all voluntary local anti-litter campaigns seeking to focus the attention of the public on the programs of this state to control and remove litter;

(5) Investigate the availability of, and apply for funds available from any private or public source to be used in the program outlined in this chapter. [1971 1st ex.s. c 307 § 20.]

70.93.210 Anti-litter campaign—Industrial cooperation requested. To aid in the state-wide anti-litter campaign, the state legislature requests that the various industry organizations which are active in anti-litter efforts provide active cooperation with the department of ecology so that additional effect may be given to the anti-litter campaign of the state of Washington. [1971 1st ex.s. c 307 § 21.]

70.93.230 Violations of chapter—Penalties. Every person convicted of a violation of this chapter for which no penalty is specially provided for shall be punished by a fine of not more than ten dollars for each such violation. [1971 1st ex.s. c 307 § 23.]

70.93.900 Severability—1971 1st ex.s. c 307. If any provision of this 1971 amendatory act or its application to any person or circumstance is held invalid, the remainder of the act, or the application of the provisions to other persons or circumstances is not affected. [1971 1st ex.s c 307 § 25.]

70.93.910 Alternative to Initiative 40—Placement on ballot—Force and effect of chapter. This 1971 amendatory act constitutes an alternative to Initiative 40. The secretary of state is directed to place this 1971 amendatory act on the ballot in conjunction with Initiative 40 at the next general election.

This 1971 amendatory act shall continue in force and effect until the secretary of state certifies the election results on this 1971 amendatory act. If affirmatively approved at the general election, this 1971 amendatory act shall continue in effect thereafter. [1971 1st ex.s. c 307 § 27.]

Chapter 46.61
RULES OF THE ROAD

Abandoned junk motor vehicles: RCW 46.52.145 through 46.52.160.

46.61.655 Permitting escape of load materials. (Amendment Conditional, see RCW 70.93.910.) No vehicle shall be driven or moved on any public highway unless such vehicle is so constructed or loaded as to prevent any of its load from dropping, sifting, leaking or otherwise escaping therefrom, except that sand may be dropped for the purpose of securing traction, or water or other substance may be sprinkled on a roadway in the cleaning or maintaining of such roadway by public authority having jurisdiction. Any person operating a vehicle from which any glass or objects have fallen or escaped, which would constitute an obstruction or injure a vehicle or otherwise endanger travel upon such public highway shall immediately cause the public highway to be cleaned of all such glass or objects and shall pay any costs therefor. [1971 1st ex.s. c 307 § 22; 1965 ex.s. c 52 § 1; 1961 c 12 § 46.56.135. Prior: 1947 c 200 § 3, part; 1937 c 189 § 44, part; Rem. Supp. 1947 § 6360-44, part. Formerly RCW 46.56.135.]

Severability—1971 1st ex.s. c 307: RCW 70.93.900.

13

Recommendations to Consider in evaluating the Model Litter Control Act for your State

Experience in the State of Washington suggests seven modifications to make the Model Law more effective.

1. Standardization:
To be effective on a regional or national basis the litter receptacles required by the law in each state must be identical with those in all other "model law" states. This requires standardization of color, design, symbol and language to make litter receptacles instantly identifiable to visitors and local residents alike.

2. Equal Application:
The law must apply to governmental agencies and political subdivisions as well as to the private sector.

3. Local Option Pre-Emption:
The law must contain a provision pre-empting cities and counties from imposing ordinances regulating or limiting beverage containers by deposits or bans.

4. State-Owned Vehicles:
The anti-litter symbol and appropriate language must be displayed on all state-owned vehicles.

5. Adapt to Individual Tax Structure:
The assessment on litter-related industries in each state must be carefully adapted to accommodate that state's individual tax structure. Expert local advisors must be consulted. The Washington law can serve only as a guide.

6. Expenditure of Funds:
Authorization for expenditure of funds should define equal distribution between public education, enforcement and physical pick-up with priority given to employment of youth for pick-up of litter.

7. Moving Violation:
Littering from a moving vehicle shall constitute a moving traffic violation and become part of the violator's driving record.

14

Litter Receptacle Regulations

State of Washington
Department of Ecology

Litter Receptacle Regulations under Model Litter Control Act.

WAC 173-310-010 Purpose. By the provision of chapter 70.93 RCW, the department of ecology has been delegated authority to conduct a permanent and continuous program to control and remove litter from this state to the maximum practical extent possible. The purpose of this chapter is to provide minimum standards for litter receptacles and to prescribe the use, placement and distribution of litter receptacles throughout the state, pursuant to the authority set forth in RCW 70.93.040 and RCW 70.93.090.

WAC 173-310-020 Definitions. The following words and phrases as used herein shall have the following meanings, unless context clearly dictates otherwise:

(1) "Anti-litter symbol" means the standard symbol adopted herein by the department.

(2) "Department" means the Washington State department of ecology.

(3) "Litter" means all waste materials including but not limited to, disposable packages or containers susceptible to being dropped, deposited, discarded or otherwise disposed of upon any property in the state, but not including the wastes of the primary processes of mining, logging, sawmilling, farming or manufacturing.

(4) "Litter receptacle" means containers for the disposal of litter of not more than 60-gallon capacity; provided that special containers of larger capacity such as those referred to as "dumpsters," and garbage containers or other waste containers serving single or multi-family residences are not included within this definition and their use is in no way regulated or affected by this chapter.

(5) "Person" shall mean any industry, public or private corporation, copartnership, association, firm, individual, or other entity whatsoever.

(6) "Public place" means any area that is used or held out for the use of the public whether owned and operated by public or private interests, but not including indoor areas. An indoor area shall be construed to mean any enclosed area covered with a roof and protected from moisture and wind.

WAC 173-310-030 Responsibility to procure and place litter receptacle. It shall be the responsibility of any person owning or operating any establishment or public place in which litter receptacles are required by this chapter to procure, place and maintain such receptacles at their own expense on the premises in accordance with the provisions of this chapter.

WAC 173-310-040 Litter Receptacles, where required. Litter receptacles meeting the standards established by this chapter shall be placed in the following public places in the state:

(1) Along public highways lying outside the limits of incorporated cities and towns;
(2) Parks;
(3) Campgrounds;
(4) Trailer park facilities for transient habitation;
(5) Drive-in restaurants;
(6) Gasoline service stations;
(7) Tavern parking lots;
(8) Shopping centers;
(9) Grocery store parking lots;
(10) Marinas;
(11) Boat launching areas;
(12) Boat moorage and fueling stations;
(13) Public and private piers;
(14) Beaches and bathing areas;
(15) Outdoor parking lots, other than those specifically designated above, having a capacity of more than 50 automobiles;
(16) Fairgrounds;
(17) Schoolgrounds;
(18) Racetracks;
(19) Sporting event sites with seating capacity for more than 200 spectators;
(20) Sites for carnivals, festivals, circuses, shows, or events of any kind to which the public is invited;
(21) Business district sidewalks.

Litter receptacles need be placed in the above public places only during times such places or events held at them are open to the public.

Placement of litter receptacles shall be in conformance with laws, ordinances, resolutions and regulations pertaining to fire, safety, public health or welfare.

WAC 173-310-050 Number of litter receptacles required. The minimum number of receptacles meeting the standards established by this chapter required in public places listed in the preceding section is as follows:

(1) Along public highways lying outside the limits of incorporated cities and towns—one receptacle at each rest area, view point or similar turnout, officially designated as such by the primary jurisdictional authority;
(2) Parks, campgrounds and trailer park facilities for transient habitation—one receptacle at each public restroom facility, and one receptacle at each established trailhead giving access by foot, motorcycle, bicycle or similar trail for excursion or exploration out of or away from the central activity area;
(3) Gasoline service stations—one receptacle per gasoline pump island;
(4) Drive-in restaurants, tavern parking lots, shopping centers, grocery store parking lots, and outdoor parking lots having a capacity of more than 50 automobiles—one receptacle, plus one additional receptacle for each 200 parking spaces in excess of 50 spaces;
(5) Marinas, boat launching areas, boating moorage and fueling stations and public and private piers—one receptacle at each such area;
(6) Beaches and bathing areas—one receptacle at each public restroom facility, and one receptacle at each access point officially designated as such by the primary jurisdictional authority;
(7) Schoolgrounds—one receptacle at each schoolground bus loading zone officially designated as such by the primary jurisdictional authority;
(8) Racetracks and sporting event sites with seating capacity of more than 200 spectators—one receptacle, plus one additional receptacle for each 1000 seating capacity in excess of 200;
(9) Fairgrounds and sites for carnivals, festivals, circuses, shows or events of any kind to which the public is invited—one receptacle at the entrance to each ride, and one receptacle at each end of walk-through exhibit buildings;
(10) Along the sidewalks of business districts of incorporated cities and towns—one receptacle per 800 feet of sidewalk curbing.

No variance from the provisions of this section shall be allowed except upon the express permission of the Department of Ecology.

Notwithstanding the minimum requirements of this section, any public place in which litter receptacles meeting the standards of this chapter are required that is found to have an accumulation of uncontained litter under circumstances that the person responsible for placing receptacles could have reasonably anticipated the litter shall be deemed to have an insufficient number of receptacles to be in compliance with this regulation.

WAC 173-310-060 Minimum Standards. Litter receptacles procured and placed in public places as required by this chapter shall meet

15

the following minimum standards:

(1) General Specifications:

a. The body of each litter receptacle shall be constructed of a minimum of 24-gauge galvanized metal or other material of equivalent strength, that will with normal wear and tear, reasonably resist corrosion and acts of vandalism.

b. All outside edges of each litter receptacle shall be rounded.

c. Openings in covered litter receptacles shall be readily identifiable and readily accessible for the deposit of litter.

d. Construction and general configuration of litter receptacles shall be in conformance with all pertinent laws, ordinances, resolutions or regulations pertaining to fire, safety, public health or welfare.

(2) Color and Marking:

a. The entire outer surface of each litter receptacle shall be colored medium green conforming with Federal Color Standard No. 595A, Color No. 24424, or Color No. 34424.

b. Each litter receptacle shall bear the official anti-litter symbol, as adopted herein. The symbol shall be colored deep blue conforming with Federal Color Standard No. 595A, Color No. 15180. The symbol shall not be distorted as to proportion and shall not be incorporated into a commercial advertisement on the receptacle. For litter receptacles along the right-of-way of public highways, the symbol shall be of a size as to be distinguishable from a minimum distance of 75 feet.

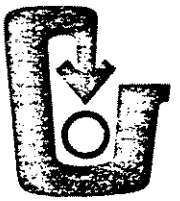
c. The words "DEPOSIT LITTER" shall be placed on the litter receptacle. Lettering used for these two words shall be Block-type capital letters to be readily legible at a distance of 30 feet.

d. No commercial advertisement shall be placed on any litter receptacle. However, the person owning any receptacle may place a single line on the receptacle identifying his ownership and a single credit line designating any donor of the litter receptacle other than the owner may also be placed on the receptacle; provided that the lettering does not exceed the size specified for the words "DEPOSIT LITTER," and does not interfere with or distract from the prominence of the anti-litter symbol.

(3) Maintenance:

Compliance with these minimum standards shall include proper upkeep, maintenance and repair of litter receptacles sufficient to permit such receptacles to serve the functions for which they were designed and to prevent the appearance of such receptacles from becoming unsightly. Inadequately maintained or unsightly litter receptacles shall be in violation of these minimum standards.

(4) Wherever litter receptacles are placed in any public place other than where required by this chapter, such receptacles shall conform to the provisions of this chapter.



WAC 173-310-070 Anti-litter symbol. The official state anti-litter symbol shall be the symbol depicted above conforming to the Federal Color Standard No. 595A, Color No. 15180, which appendix is hereby incorporated into this chapter and made part hereof. Permission to use this symbol in the manner required by this chapter has been obtained from the copyright holder and any other use without the express permission of the copyright holder is prohibited.

WAC 173-310-080 Prohibited acts.

(1) No person shall damage, deface, abuse or misuse any litter receptacle not owned by him so as to interfere with its proper function or to detract from its proper appearance.

(2) No person shall deposit leaves, clippings, prunings or gardening refuse in any litter receptacle.

(3) No person shall deposit household garbage in any litter receptacle; provided that this subsection shall not be construed to mean that wastes of food consumed on the premises at any public place may not be deposited in litter receptacles.

WAC 173-310-090 Penalties. Penalties for violation of this chapter shall be in accordance with Chapter 70.93 RCW.

WAC 173-310-100 Effective date and compliance.

(1) This chapter shall become effective on September 1, 1972.

(2) All litter receptacles in any public place designated in this chapter which are placed after the effective date hereof shall conform to the provisions of this chapter.

(3) Litter receptacles in any public place designated in this chapter which were in place prior to the effective date hereof shall be modified to conform with marking requirements of this chapter [WAC 173-310-060 (2)(b)(c)] no later than January 1, 1973.

(4) All litter receptacles in any public place designated in this chapter shall be modified or replaced so as to fully conform with all requirements of this chapter no later than July 1, 1975.

The following questions and answers are designed to explain your obligations under the Model Litter Control Act (RCW 70.93).

What is required?

The Model Litter Control Act directs the Department of Ecology to seek statewide uniformity of litter receptacles. Receptacles are to be placed throughout the public places of this state. Each litter receptacle must bear the words "DEPOSIT LITTER", bear a standard anti-litter symbol, and be of a uniform color so as to attract attention and encourage the depositing of litter. These receptacles must be placed along all specified roads, in parks, campgrounds, in parking lots open to the public, in all places offering boating activity, at the site of all outdoor sporting or recreational activities, and in all schoolgrounds and playgrounds, and at such other public, out-of-doors places within the state as specified by rule or regulation.

What deadlines apply?

All litter receptacles in use as of January 1, 1973 must conform to the law so far as marking and adding the litter symbol is concerned. It is desired (and usually wise business) that they also be painted the specific color. As of July, 1975, all litter receptacles must be uniform as to color and marking.

Who must provide these receptacles?

The owner or operator of any public place in which litter receptacles are required is obligated to procure, place, and maintain such receptacles at his or her own expense. The Department of Ecology will provide decals, free of charge, to be affixed to litter receptacles now in use. These decals bear the symbol and the specified wording and can be used to modify existing receptacles or to assist in creating new receptacles. The Department of Ecology also has available a list of names of manufacturers who produce litter receptacles for those interested in shopping. In addition, purchase of new cans for new areas, or conversions of existing cans to specified color can be aided by color number or sample chip available from the Department of Ecology and easily duplicated by any major paint manufacturer.

How many required?

Please refer to WAC 173-310-050 for the complete listing of minimum numbers of receptacles required. As examples of these requirements which are applicable to a large number of business firms the following typical groups are indicated:

Campground and Trailer Parks: One receptacle at each public restroom facility and one at each established route from the central activity area.

Service Stations: One at each pump island.

Drive-in Restaurants, Tavern Parking Lots, Shopping Centers, Grocery Store Parking Lots: One receptacle plus one for each additional 200 spaces.

Marinas, Moorages, Fueling Docks, etc.: One for each area.

Race Tracks, Sporting Events: One for first 200 seating capacity, one for each additional 1,000 seating.

Business Districts: One per 800 feet of sidewalk curbing.

What kind of receptacle may be used?

The law was designed to achieve uniformity of color and marking to provide the public with immediate identification of litter receptacles anywhere. The prime concerns of the law beyond this are that the cans offer no sharp projections to cause injury, that they be sturdy enough to hold up under wear and tear, and that they be easily cleaned and emptied. Additional goals are that they be covered, that they are designed to resist corrosion and vandalism, and that construction and configuration conform with laws pertaining to fire, safety, public health and welfare. The law specified that the entire outer surface of the receptacle be colored a neutral green and the anti-litter symbol shall be colored deep blue. Other than the prescribed wording and marking, no other wording or marking may appear on the receptacle except the name of the owner and/or donor.

Maintenance of receptacles.

Any person required to place a receptacle is also required to empty it regularly. Upkeep and maintenance must be of a level to insure that the receptacles do not become unsightly. Inadequately maintained or unsightly litter receptacles shall be in violation of the standards of the Act, (and usually at variance with local health ordinance).

Legal protection for receptacles.

Realizing that considerable value may be represented by some new receptacles, the Act provides owners with specific legal protection against vandalism and improper use of the receptacles. Any person empowered to enforce the provisions of the Model Litter Control Act, including all police officers, is empowered to take on-the-spot legal action against any person committing any prohibited act. (This gives you legal grounds for action against local residents who choose to use your litter receptacle as a replacement for their home garbage cans.)

How is the law enforced?

The Litter Act is enforced by police officers, sheriffs and deputies, state patrolmen, wildlife agents, etc.—most of the county, city and state enforcement officers vested with police powers. Officers are authorized to serve and execute warrants and citations, and notification by registered mail is specifically allowed. Failure to obtain and place such receptacles makes the person responsible for their placement subject to a penalty of ten dollars per day for each day of failure to place a receptacle in each place where they are required.

If, after reading this pamphlet, you are still unsure of your obligations, please contact the nearest office of the State Department of Ecology, or local government offices in your home city or county.

Washington State Department of Ecology
Olympia, Washington 98504

Industry for a Quality Environment
Suite 1015
1411 Fourth Avenue Building
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THE SENATE
FOURTEENTH LEGISLATURE 1988
STATE OF HAWAII

FEB 0 7 1988

S.B. NO. 2935

A BILL FOR AN ACT

RELATING TO BEVERAGE CONTAINER HOLDING DEVICES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. Section 339-7, Hawaii Revised Statutes, is amended to read as follows:

"§339-7 Beverage container requirements. (a) No person in this State shall manufacture or import for sale in this State or offer for sale at wholesale in this State after July 1, 1979, or sell for retail in this State after October 1, 1979, any beverage in metal containers so designed and constructed that a part of the container is permanently detached in opening the container. However, nothing in this subsection shall prohibit the sale or offer for sale of a container the only detachable part of which is a piece of pressure sensitive tape.

(b) No person shall sell or offer for sale at retail in this State beverage containers connected to each other by a separate holding device constructed of plastic rings or of other material which will not decompose by photobiodegradation, chemical degradation, or biodegradation within one hundred twenty days of disposal.

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Failure to comply with the provisions of this section shall constitute a violation and shall carry a fine of $250. Each day of such failure shall constitute a separate violation."

SECTION 2. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 3. This Act shall take effect one year after its approval.

INTRODUCED BY: DWL

Rids Reed

Ann Kobayashi

Donna R. Ikeda

Mildred J. Loo

Appendix O

THE SENATE
FOURTEENTH LEGISLATURE, 1988
STATE OF HAWAII

FEB 0 3 1988

S.B. NO. 2937

A BILL FOR AN ACT

RELATING TO NON-RECYCLABLE OR NON-BIODEGRADABLE PACKAGING.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. **Findings and purpose.** The legislature finds that polystyrene foam, which is usually produced with a gas called chlorofluorocarbon, or CFC, is breaking down the earth's protective ozone layer and is partly responsible for a global warming trend that is gradually raiding ocean levels. The packaging materials used for take-out convenience foods are often made from this substance because of its desirable qualities in keeping foods warm.

The legislature further finds that several European countries have taken strict measures to require that all plastics used in nondurable goods be degradable. So far, twelve states have banned or proposed bans on nondegradable plastic products ranging from egg cartons and diapers to liquor bottles and beverage rings that keep six-packs together. There are also ten degradable plastics bills and a concurrent resolution pending

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before Congress. One of those bills directs the Environmental Protection Agency to launch a study on the feasibility of requiring that all plastic products posing a threat to fish and wildlife be degradable or recyclable. This is especially relevant to our wildlife in Hawaii since a recent study of a seabird colony in Hawaii found that ninety per cent of the chicks had bits of plastic in their gullets, fed to them by parent birds who scooped it up at sea.

The purpose of this bill is to rid our environment of plastic products that constitute a growing share of the waste stream, roughly ten per cent of the packaging waste in the United States.

SECTION 2. Chapter 339, Hawaii Revised Statutes, is amended by adding a new section to be appropriately designated and to read as follows:

"§339- Retail sale of food products packaged in nonbiodegradable containers for purposes of convenience or take-out; prohibited. Retailers shall not sell food products packaged in wrappers or containers utilizing polystyrene plastic materials, or other petroleum-based, or nonbiodegradable

S.B. NO. 2937

material, excepting glass or aluminum, if the food product is a convenience or take-out item intended for immediate consumption."

SECTION 3. New statutory material is underscored.

SECTION 4 This Act shall take effect one year after approval.

INTRODUCED BY:

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