

# Community-Based Research Initiative

College of Arts and Sciences  
Northeastern University



## **Renewing the Massachusetts Bottle Bill** Constant Goals, Changing Times

Professor David A. Rochefort, Project Director  
Kaitlyn Kenney  
Christina Bertuccio  
Daniel Cabral  
Melissa Maturo  
David White

June 2003

An independent policy analysis  
in cooperation with  
Massachusetts Public Interest Research Group

## Contents

Preface and Acknowledgments	p. i
A Message from MASSPIRG	p. iii
Executive Summary	p. 1
1. Introduction	p. 5
2. A History of the Massachusetts Bottle Bill	p. 6
2.a. Origins of the Idea	p. 6
2.b. Early Legislative Activity	p. 8
2.c. The Referendum Battle of 1982	p. 9
2.d. Implementation and Revisions of the Law	p. 9
2.e. Standoff	p. 11
3. Understanding How the Bottle Bill Works	p. 11
3.a. The Deposit/Redemption Cycle	p. 11
3.b. Clean Environment Fund	p. 14
4. Impacts of the Law	p. 15
4.a. Economic Impacts	p. 17
5. Operational Issues and Problems	p. 19
5.a. Narrow Spectrum of Beverage Containers	p. 19
5.b. Declining Value of the Deposit	p. 19
5.c. Insufficient Handling Fees	p. 20
5.d. Fraudulent Redemptions	p. 20
5.e. Burdens on Business	p. 21
5.f. Improper Uses of the CEF	p. 22
5.g. Inadequate Program Administration	p. 22
6. Current Legislative Proposals	p. 23
7. Recommendations	p. 26
List of Interviews	p. 31
Sources Cited	p. 33

## Preface & Acknowledgments

This report results from a project that was undertaken as a cooperative endeavor between faculty and students at Northeastern University and the Massachusetts Public Interest Research Group.

A spirited movement has emerged in recent years to bring universities and their surrounding communities into active collaboration. Growing numbers of students are including community service as an integral part of their education, while new links are being forged between the leaders of academic institutions and neighborhood groups and agencies in planning local infrastructure development. Applied research is one of the most natural areas of town-gown collaboration, as data gathering and analysis increasingly are recognized as powerful tools for improving the quality of social problem solving and public affairs debate. As stated in a recent forum sponsored by the organization MassINC, universities seem poised on the verge of a new era of “civic engagement” in which their considerable intellectual resources are being put “in the service of the body politic.”

The project described in this report is part of a community-based research initiative (CBRI) that was established with the support of Northeastern University’s College of Arts and Sciences Distinguished Professor Program. It is the second of what is intended to be a series of studies on questions of broad public policy significance within the Boston area. Our first report, which was prepared in cooperation with the Massachusetts Association for Mental Health, Inc., was released in November of 2002 and examined the coverage of mental health topics by the *Boston Globe* and *Boston Herald* (“Good News, Bad News, and Points of View: An Analysis of Mental Health Coverage in Boston’s Two Major Newspapers”). This research focuses on the origins, development, and implementation of the Massachusetts “bottle bill,” a program that is currently under review by both the state legislature and the governor’s office. Although 2003 marks the twentieth anniversary of the bottle bill, the law remains almost as controversial as when it was first proposed, with many contending claims about its impacts. Our aim in this report is to provide a description and assessment of the law that can help clarify the issues being debated in the political arena. We also make recommendations that we believe could improve the bottle bill’s effectiveness as public policy.

This project was carried out as part of a special community research seminar in Northeastern’s Political Science Department during the spring of 2003. The efforts of five student researchers—one doctoral student and four upper-level undergraduates—were coordinated to produce an analysis based on diverse kinds of program data, including government documents, newspaper articles, scholarly studies, consultant reports, legislative testimony, and interviews. While the students each were assigned specific topics to prepare, such as the legislative history of the program, operational details of the deposit/redemption cycle, administration of the program, and so on, all of the work was reviewed and revised together. Recommendations for reforming the bottle bill were also formulated by the group as a whole.

I am grateful for having had this opportunity to work with the Massachusetts Public Interest Research Group and, particularly, for MASSPIRG’s receptivity to an independent analysis based on a fresh and comprehensive look at the bottle bill. While sympathetic at the outset to the goal of protecting the state’s environment, we could offer no promises about where an assessment of this specific law would lead us, or what kinds of recommendations we would be making. At MASSPIRG, Dan Kohler, Assistant Organizing Director, facilitated the initial contact between our group and his organization. Iris Vicencio-Garaygay, Environmental Advocate, was our principal contact with MASSPIRG throughout the project, and she was unfailingly knowledgeable and supportive. Janet S. Domenitz, Executive Director of MASSPIRG, also met with us and provided her encouragement.

For a research project like this to be grounded as it must be in political and programmatic realities, interviews are a crucial resource. I want to express my appreciation to all those who generously shared their time and expertise in talking with us. A complete listing of our interviewees appears at the end of this report. Not everyone we spoke with will agree with our conclusions and recommendations. However, we have done our best to make sure that a myriad of viewpoints—from business people, government administrators, environmentalists, recycling experts, and more—are recorded in this document. Others who also kindly assisted us with information and contacts include Peter Allison, Branch Chief, Commercial Waste Reduction, Massachusetts Department of Environmental Protection, Julie Bender, Administrator, Massachusetts Beverage Container Law, Massachusetts Department of Environmental Protection, Jennifer Gitlitz, Research Director, Container Recycling Institute, Peggy Harlow, Recycling Grant Manager, Massachusetts Department of Environmental Protection, and Tim Cahill, Senior Economist, Office of Tax Policy Analysis, Massachusetts Department of Revenue.

At Northeastern University, James Stellar, Dean of Arts and Sciences, has continued to show his enthusiasm for this community-based research initiative. Likewise, I appreciate the backing of Tim Donovan, Associate Dean of Arts and Sciences, and Denis Sullivan, chair of the Political Science Department. Michael Dukakis, Distinguished Professor of Political Science, provided valuable comments on a draft of the report. Chris Bosso, John Portz, Gordana Rabrenovic, and Kristen Simonelli, members of the CBRI Advisory Board, made helpful suggestions at a meeting to discuss this project. Amy Richey did an excellent job of formatting the report for publication. She also designed and maintains the CBRI web site ([www.cbri.neu.edu](http://www.cbri.neu.edu)). I invite all community groups and agencies in our audience to visit this site to learn about our activities and to propose future research collaborations to us.

We welcome all comments.

David A. Rochefort  
Arts & Sciences Distinguished Professor  
Department of Political Science  
Northeastern University

## A Message from MASSPIRG

This year marks the 20<sup>th</sup> anniversary of the Massachusetts Bottle Bill, which not only resulted in a recycling revolution in Massachusetts, but also sparked a group of activists to grow the organization that is MASSPIRG today – a statewide, public interest advocacy group that works on a range of environmental and consumer issues.

Since the passage of the bottle bill, MASSPIRG has tackled many different environmental issues. But for several years, a top priority has been the campaign to update the bottle bill. With the dramatic increase since the 1980s of new beverages on the market, it is high time to update the law and include a deposit on these beverages. For example, bottled water, which is not covered by the bottle bill, is projected to be the most widely consumed beverage in the U.S. by the end of 2003, ahead of beer, coffee, and milk.

When the Community-Based Research Initiative of Northeastern University approached MASSPIRG for research ideas, we asked them to focus on the bottle bill because of our interest in the issue and the lack of a current, comprehensive resource on the law. We clearly had our own agenda, but understood the independent nature of the Initiative's research protocol. Students participating in the Initiative conducted research independently of MASSPIRG, crafting their own set of questions, conducting interviews to get a holistic picture of the bottle bill and related issues, and drawing their own conclusions about the future of the law.

The ever-increasing generation of solid waste and its impact on the environment and public health, combined with dramatically dwindling resources to protect the environment, necessitates decisive action at the state level. We knew that whatever conclusions were drawn by the Initiative's research, there would be needed and relevant information brought to light. And now that the report is complete, we are pleased to recommend it as a document that provides an accurate review of bottle bill history, a balanced examination of the law's implementation, and a number of recommendations that are worthy of consideration by stakeholders and decision makers alike.

Janet S. Domenitz  
Executive Director

## Executive Summary

The Massachusetts “bottle bill,” enacted in 1982, is an anti-litter and recycling measure that encourages consumers to return their empty beer and soda containers through use of a \$.05 deposit. The program has been very successful in achieving its principal objectives, with nearly 18 billion cans and bottles being returned under the law between 1991 and 2002. Yet the bottle bill remains controversial among bottlers, distributors, and retailers. Changes in the beverage market place, as well as within the operation of the program, also indicate a need for updating the law. Some public officials, including the governor, view the program as a way of generating revenues to reduce the state’s deficit, although this would mean redirecting funds that are a mainstay of local recycling programs.

As a contribution to the political debate over the future of this program, this report traces the origins, purposes, and impacts of the Massachusetts bottle bill. Recommendations are also made for reforming the law and how it is administered.

### History of the Massachusetts Bottle Bill

The bottle bill in Massachusetts was modeled after a similar statute that was passed in Oregon in 1971. A coalition including MASSPIRG, the Massachusetts Audubon Society, League of Women Voters, and other groups began working toward a law as early as 1973, but it would take nine years before enactment. Stiff opposition had to be overcome in the form of beverage industry and retail groups who warned about the bottle bill causing widespread negative economic impacts. These groups also had a strong ally in Governor Edward King, who twice vetoed bottle bill legislation after it was passed by the Massachusetts House and Senate.

In 1982, once the legislature had overridden a veto by King, beverage industry activists

succeeded in placing a question on the state ballot requiring voters to give their approval of the new bottle law. Their hopes of repeal were disappointed, however, when the public endorsed the measure by a vote of 60 percent to 40 percent. Attempts to delay implementation of the law also failed.

An important change was made to the bottle bill in 1989. The law was amended to make unredeemed, or unclaimed, deposits the property of the state. Beer wholesalers and soft drink bottlers sued the state, but the State Supreme Court and Supreme Judicial Court ruled against them. According to legislative formula, the unclaimed bottle deposits were to be divided between the state’s general fund and a new Clean Environment Fund (CEF) between Fiscal Years 1990 and 1995; after 1995, the entire sum of the “escheat” went to the CEF.

### Understanding How the Bottle Bill Works

The Massachusetts bottle bill placed a \$.05 refundable deposit on all carbonated soft drinks and beer and malt beverages. The program centers on a cycle of deposits and redemptions that links together bottlers/distributors, retail store operators, and consumers.

In practice, most bottle bill deposits in Massachusetts are redeemed through two types of sites, redemption centers and large retail dealers. Redemption centers are specialized small businesses brought into being by the bottle bill program. They give refunds for and sort empty beverage containers before delivering them to bottlers/distributors. Centers are reimbursed the original \$.05 deposit, plus an additional \$.0225 handling fee for each return. Large retailers generally lease reverse vending machines (RVMs) to manage redemptions by their customers. RVMs read bar codes on

containers and provide refunds for all redeemable items that are brands sold in the store. After the RVMs process returned materials, the leasing company delivers the product to bottlers/distributors for payment, or it may itself sell materials that are recyclable.

Under the 1989 escheat provision, bottlers/distributors must maintain a Deposit Transaction Fund for unclaimed deposits. These funds are transferred to the Department of Revenue each month. According to law, this money goes into the Clean Environment Fund and must be used by the Massachusetts Department of Environmental Protection (DEP) for “programs and projects in the management of solid waste and for environmental protection.”

### Impacts of the Law

According to DEP data, from 1991 to 2002 an average of 1.5 billion containers per year was returned under the bottle bill. Recently, rates of return have fallen, reaching a level of 67.4 percent in 2002. As unclaimed deposits rose, so too did the CEF fund, climbing to \$35.2 million in 2002.

There is evidence that the bottle bill has significantly reduced litter on roadsides, beaches, hiking trails, riverways, and other settings around the state. One study indicates that implementation of the law has also contributed to the reduction of glass-related injuries among children. Container deposits are an effective means of encouraging the return of beverages consumed “on the go” that are unlikely to become part of curbside recycling.

CEF funds have been devoted to a variety of local recycling, composting, and solid waste programs since 1989. They have also been used to support innovative research focused on developing new end-uses for recycled products.

The question of the economic impacts of the bottle bill is a thorny and contentious one.

Bottlers/distributors and retailers cite price increases and sales losses. These findings are disputed by bottle bill proponents. A number of studies and reports are summarized here that assess the economics of deposit laws with differing conclusions. The message for policymakers is an ambiguous one.

### Operational Issues and Problems

Based on our research and our conversations with legislative staff, environmental advocates, bottlers, retailers, redemption center operators, municipal recycling coordinators, and other stakeholders, we have identified a number of concerns about the operation of the bottle bill program.

The narrow spectrum of beverage containers covered by the bottle bill excludes increasingly popular drinks such as fruit drinks, bottled water, iced tea, sports drinks, and wine coolers.

The value of the \$.05 deposit adopted by Massachusetts in 1982 has eroded over time, reducing the incentive for consumers to redeem their empty containers.

The \$.0225 handling fee specified in the bottle bill program is not sufficient to cover the actual costs of redemption centers and retailers.

Fraudulent redemption of containers purchased in non-bottle bill states like New Hampshire and Rhode Island costs Massachusetts government an estimated \$8.2 million and private bottlers/distributors an estimated \$3.7 million per year.

The bottle bill imposes burdens on retailers in the state in such areas as maintenance of sanitation, loss of sales space, and costly sorting requirements. Bottlers/distributors must contend with higher delivery costs and the management of recycled materials.

A substantial amount of the CEF has not been used as intended under the law, going instead to administrative costs inside DEP and other

DEP programs including Hazardous Waste Clean-Up. Nor has all of the money accruing in the CEF been appropriated by the state legislature for use by DEP and local recycling programs.

The bottle bill has also been weakened by inadequate administration. The Department of Environmental Protection, Executive Office of Environmental Affairs, Department of Revenue, and Attorney General's Office have not coordinated effectively their respective responsibilities under the law. Monitoring and enforcement of the bottle bill have also been somewhat lax.

### Current Legislative Proposals

As of April 2003, nine bills had been filed in the state legislature to revamp, or eliminate, the Massachusetts bottle bill. Governor Romney also made a proposal as a rider in his 2003-04 budget recommendations that was rejected by lawmakers. Key features of these ten alternatives are compared and contrasted in this report. Most recently, in early June, Senator Nuciforo (Democrat, Pittsfield) introduced a bill calling for expansion in the kinds of containers encompassed by the law, an increase in handling fees, and a small reimbursement to distributors for every unit redeemed.

### Recommendations

We recommend the following twelve actions be taken as legislative and administrative reforms of the bottle bill program:

- **Update the Bottle Bill To Include Bottled Water, Juice and Vegetable Drinks, Sports Beverages, Iced Tea, and Wine Coolers.**
- **Maintain the Current \$.05 Deposit, with a \$.15 Deposit for Wine and Liquor Bottles.**
- **Raise the Handling Fee from \$.0225 to \$.0275.**

- **Improve Anti-Fraud Measures.**
- **Provide Assistance to Business.**
- **Maintain the CEF but with a New Allocation Formula (1/2 local recycling programs, 1/6 DEP administrative costs, 1/6 low-interest loans to business, 1/6 general revenues).**
- **Mount a Bottle Bill Educational Effort.**
- **Encourage Innovative Recycling Experiments.**
- **Increase the State's Administrative Commitment to the Bottle Bill Program.**
- **Require an Annual Bottle Bill Report.**
- **Request a New State Auditor's Report Three Years after Bottle Bill Expansion.**
- **Encourage More Research on the Bottle Bill.**



## 1. Introduction

Twenty years ago, the Massachusetts bottle bill was adopted amid great political controversy. Despite the law's resounding success in meeting its primary objectives, today that controversy continues. Many of the original issues have persisted, with certain opponents maintaining their vehemence from one legislative session to the next. New dimensions and stakeholders have also come to the fore, a reflection of the passage of time and evolution of the program.

Although complex in some of its operational details, the design of the state's bottle bill is based on a few straightforward principles. Discarded cans and bottles are a major source of trash that defiles our communities while wasting precious natural resources and energy. Consumers can be encouraged to recycle these containers through a small monetary incentive, or deposit refund, for every beverage purchased. As the beverage industry and the public learn to conserve, new habits will take root, linking the two groups in a collaboration yielding far-reaching environmental and economic benefits.

To a remarkable extent, this is just what has happened in Massachusetts. According to the state's Department of Environmental Protection (DEP, 2003), nearly 18 billion cans and bottles were returned by consumers under the bottle bill from 1991 to 2002. Although the percentage of items redeemed has been falling in recent years, this is a staggering amount of recycled material. Simply stated, the bottle bill represents an anti-litter effort of unprecedented scope, and it provides cost savings to taxpayers through reduced container collections in local curbside recycling. It is also a boon to the environment due to the diversion of waste from public landfills and incinerators and due to the reductions in energy use, toxic releases, and greenhouse gas emissions associated with product manufacturing from virgin materials (Gitlitz, 2002; see, also, [www.container-recycling.org](http://www.container-recycling.org), 2003).

Because of a key change made in 1989, the bottle bill serves the environment in other ways as well. In that year, legislators decided that unclaimed deposits belonged to the state and should be devoted to solid waste management and environmental protection activities. Establishing a new kind of symmetry in the program, consumers who neglect to return redeemable containers became contributors to a Clean Environment Fund. Each year, millions of dollars are paid out of this fund for local recycling, educational, and clean-up projects.

In 2003, however, the Massachusetts bottle bill faces a variety of circumstances making for an uncertain future. For one thing, the law has become outdated in its focus on soda and beer containers as consumer preferences have shifted toward fruit and sport drinks, bottled water, and iced tea. Due to the effects of inflation, financial incentives in the program have also declined, both for consumers who must be motivated to reclaim their deposits and for retailers and redemption centers who receive small handling fees for facilitating the redemption process. Meanwhile, other forms of recycling have become common across the state's municipalities, giving rise to disagreement about the relationship between the bottle bill and these programs.

Perhaps most significant, today's bottle bill debate occurs against a backdrop of serious malaise in the state's finances. Following years of expenditure growth combined with repeated tax reductions, Massachusetts officials have struggled to fill a \$3 billion budget gap for fiscal year 2004 (Klein, 2003). The fact that the bottle bill is revenue-generating for the state has not gone unnoticed in this environment. A number of policymakers, including, most notably, the governor, have proposed redirecting bottle-bill dollars from environmental programs to general revenues. This elimination of CEF municipal grants at the same time that general state aid to cities and towns is being cut would hit hard on the local level.

The aim of this report is to provide a resource for understanding the origins, purposes, and impacts of the bottle bill at a time when it is undergoing legislative review and possible reformulation. Topics covered include:

- A brief history of the political conflict surrounding enactment and implementation of the bottle bill
- A description of how the bottle bill works, including the parts played by consumers, beverage manufacturers and distributors, retailers, and redemption centers
- A summary of economic and other impacts of the law
- An analysis of operational problems
- A comparison of the many bottle bill amendments and proposals now under examination in the state legislature
- A list of recommendations for reforming the bottle bill program

The proposals we are putting forward are made on behalf of no particular constituency or group. Rather, they represent conclusions developed through independent research that we believe could lead to the improvement of public policy.

At the outset, it must be asked: Is there a credible alternative to the bottle bill in Massachusetts? The answer is “yes,” on paper at least, although it would involve an ambitious reorientation of the state’s recycling system. By improving and expanding residential recycling in the state, in combination with new initiatives to collect containers of beverages consumed away from home, it should be possible to substitute a truly comprehensive program of solid waste management for a reformed bottle bill. This is the thrust, for example, of one legislative proposal backed by the Massachusetts Food Association.

Yet this plan would require a substantial increase in public and private funding for recycling during the transition period after the bottle bill has been eliminated. Also very optimistic is the scenario for how such a comprehensive program would be sustained once transition funding is no longer available. At a time when the legislature is hard-pressed to find money to support existing commitments—let alone bold new undertakings—an untested overhaul of recycling across the state seems very unrealistic politically. Thus, the question remains, how can the current bottle bill be used to its best potential?

In studying this topic, we often heard Massachusetts described as a national leader in the environmental movement. To the extent that our proposals reflect a particular set of values, it is the belief that this position of leadership is one the state should strive to preserve. Making sound decisions for the bottle bill program consistent with the constraints of current fiscal conditions is crucial for accomplishing that goal.

## 2. A History of the Massachusetts Bottle Bill

### 2.a. Origins of the Idea

The nation’s first “bottle bill” was adopted in Oregon in 1971. (An earlier law passed by Vermont in 1953 was later repealed.) The act placed a refundable deposit of \$.05 on containers of carbonated soft drinks and malted beverages. How the Oregon bill became law is a true tale of the influence of the “little man” in American politics, as an eccentric outdoors enthusiast named Richard Chambers teamed with progressive governor Tom McCall to clean up the litter that was fouling their state’s beaches, hiking trails, and roadsides (Walth, 1994).

The idea for the law arose when Chambers read a newspaper item about the proposed banning of throwaway bottles and

cans in British Columbia. What followed was a three-year campaign to convince lawmakers of the seriousness of Oregon's own trash problem and the practicality of a bottle-bill solution. National bottlers and brewers had shifted to the use of nonreturnables after World War II when steel and aluminum production boomed. Throwaway containers also gave national beverage distributors an advantage over small local beverage operations by saving large companies the cost of long-distance return shipments of their bottles and

cans. The Oregon proposal sparked vigorous opposition from such groups as the Seven-Up Bottling Company, The Brewers Institute, Glass Bottle Blowers Association, and Reynolds Metals, who spent generously to defeat the legislation. When House Bill 1036 passed in Oregon in May of 1971, it was a sign of the persistence of the "ragtag" coalition of supporters put together by Chambers and McCall, as well as the emergence of a growing conservation and environmental movement in the United States.

**Table 1**  
**Massachusetts Bottle Bill Chronology**

<b>1971</b>	Oregon becomes the first state to enact bottle bill legislation.
<b>1973</b>	A coalition of bottle bill supporters, known as the Committee for a Massachusetts Bottle Bill, is formed in an attempt to establish a bottle bill in Massachusetts.
<b>1976</b>	A bottle bill initiative is placed on the Massachusetts ballot in November, but it is defeated by less than 1 percentage point.
<b>1977</b>	The bottle bill gains majority support in the Massachusetts House of Representatives, but fails in the Senate.
<b>1978</b>	As in 1977, majority support is gained in the House, but the bottle bill is once again defeated in the Senate.
<b>1979</b>	The bottle bill finally clears both houses, but is met with a veto by Governor Edward King.
<b>1981</b>	The bottle bill again succeeds in both houses but is vetoed by Governor King in October.
<b>1981</b>	An effort to override Governor King's veto develops, and the veto is ultimately overridden by both houses in November.
<b>1982</b>	A campaign to repeal the bottle bill is spearheaded by a coalition of several beverage industry-supported groups, which leads to a bottle bill referendum question being placed on the November ballot.
<b>1982</b>	Massachusetts voters approve the bottle bill by the margin of 60 percent to 40 percent.
<b>1983</b>	The bottle bill is implemented on January 17, 1983.
<b>1983</b>	Mass Container Recovery, Inc., a company formed to serve as the sole collection agent for the majority of beer containers sold in Massachusetts, is brought to court by the state for allegedly attempting to monopolize bottle collections. The Massachusetts Superior Court rules in favor of the state.
<b>1989</b>	An escheat provision added to the Massachusetts bottle bill makes unredeemed, or abandoned deposits, officially the property of the state, to be placed in an account known as the Clean Environment Fund.
<b>1990</b>	EOEA approves handling fee increase to \$.03 then rolls it back to \$.0225.
<b>1991</b>	State Supreme Court affirms escheat provision, ruling against beer wholesalers and soft drink bottlers who argued it was unconstitutional.
<b>1993</b>	Supreme Judicial Court affirms decision on escheat provision.

National beverage and retail companies who opposed Oregon's bottle bill feared it would be a catalyst inspiring similar legislation across the country (Walth, 1994). In fact, ten states to date have followed Oregon's lead by enacting their own versions of deposit-return programs, and a number of others are considering bottle bill proposals (Gitlitz, 2002, p. 25). Massachusetts was among the first to put this issue on the political agenda, although it took several years for legislation to be approved. Largely unknown or forgotten, this history of the bottle bill's adoption into Massachusetts law is worth reviewing for it identifies the forces mobilized by this issue while illustrating how perceived benefits and risks of the program have been framed. (See chronology of the law in Table 1.)

## 2.b. Early Legislative Activity

The history of the bottle bill in Massachusetts can be traced to 1973, when MASSPIRG, the Massachusetts Audubon Society, Friends of the Earth, and the League of Women Voters formed a coalition known as the Committee for a Massachusetts Bottle Bill ([www.bottlebill.org/usa/states-massachusetts.htm](http://www.bottlebill.org/usa/states-massachusetts.htm), 2003). After several failed legislative attempts, visible progress finally was made in 1976 when a bottle bill proposal came within one vote of clearing committee and reaching the floor of the legislature. Working in conjunction "with dozens of other statewide and local organizations," the coalition placed a bottle bill initiative on the ballot in November, 1976. Opposition was stiff, however, especially from two groups backed by the beverage industry named the Committee to Protect Jobs and Use of Convenient Containers. The two collaborated on a \$2 million campaign that succeeded in defeating the bottle bill, although by a margin of less than one percent.

In 1977 and again in 1978, bottle bill proposals garnered majority support in the state House of Representatives then failed in the Senate. In 1979, the bill finally cleared both houses but was quickly met with a veto by Governor Edward King. As an alternative to the bottle bill, King established the

Corporation for a Cleaner Commonwealth which, funded by a coalition of businesses, hired youths to pick up litter. Bottle bill proponents saw this as a diversionary tactic.

Once again in 1981, bottle bills cleared the House and the Senate. This time, Governor King hesitated before responding to the measure. A serious split developed within King's own cabinet as State Economic Affairs Secretary Geroge Kariotis and State Environmental Affairs Secretary John Bewick clashed over merits of the law. In the end, King sided with his economic advisor and exercised his veto a second time, calling the bill an embodiment of "everything that is wrong with big government" (Bradlee, 1981a, p. 1). The governor cited an increased financial burden on families and negative effects on the state's economy as reasons for his action.

Immediately following King's veto, an override effort took shape in the House of Representatives. Intense lobbying on both sides filled the short time between announcement of the governor's veto and the override vote. A call-in campaign, organized primarily by MASSPIRG, appeared to have a significant effect on the outcome of the contest and the override passed (Bradlee, 1981b). Less than a week later, the Senate followed the House's example. The bottle bill became law on November 16, 1981 (Bradlee, 1981c).

Officially titled "An Act Providing for Economic Incentives For Consumers To Return Used Beverage Containers and To Encourage the Conservation of Materials and Energy through the Recycling and Reuse of Such Containers," Chapter 571 of the Acts of 1981 added seven new sections to Chapter 94 of the General Laws of Massachusetts:

Section 321 defined specialized terms under the law.

Section 322 established the refund value of \$.05 per eligible container (\$.10 for large capacity containers but this was dropped in 1983).

Section 323 set out the process of deposit and redemption.

Section 324 prohibited plastic rings or other non-biodegradable holding devices for beverages.

Section 325 discussed labeling of refund values on containers.

Section 326 vested administrative and regulatory authority under the law to the Secretary of Environmental Affairs.

Section 327 specified civil penalties for violations of the bottle bill law.

Reflecting earlier arguments about the bill's potential harm to employment in the state, this last section also created a special category of "bottle bill impacted persons," referring to anyone who lost employment with a bottler in 1983, and made them eligible for expanded unemployment benefits and job retraining.

## 2.c. The Referendum Battle of 1982

Before most citizens of Massachusetts had a chance to become familiar with the details of their new bottle return law, beverage lobbyists began gathering signatures for a public vote to repeal the measure. Among those leading the push was the Massachusetts Beverage Industry and Labor Committee (*Boston Globe*, 1982a). After a legal skirmish over fraudulent signatures in front of the State Ballot Law Commission, a petition was placed on the ballot as Question 4 (*Boston Globe*, 1982b). Voters were asked to indicate whether they approved of the new law "regulating bottles and cans" based on a brief summary of the statute.

A heated political battle ensued. In July, soft drink manufacturers and convenience store owners announced they would form a coalition to launch an advertising campaign aimed at defeating the new law. Later, according to a *Globe* editorial writer, a bottling industry group calling itself the Voter

Education Committee was assisted by "well-paid political consultants" in mounting a mail campaign. Their message was that the bottle bill would "raise taxes, eliminate jobs, increase water use, create health hazards, and impose a burden on consumers" (*Boston Globe*, 1982c, p. 18).

In October, community leaders from different parts of Boston held a "unity conference" for the bottle bill attended by three Boston mayoral candidates and several state senators and representatives (Bradlee, 1982). Numbered among bottle bill supporters across the state were teachers, senior citizens groups, and municipal officials, in addition to environmentalists. MASSPIRG initiated a door-to-door campaign to distribute literature in the final weeks leading up to the vote. Secretary of Environmental Affairs John Bewick asked voters to support the bottle bill and "wage an all-out war on litter and change the course of our throw-away society" (*Boston Globe*, 1982d, p. 24).

On November 1, 1982, Massachusetts voters chose to keep the bottle bill by the large margin of 60 percent to 40 percent. After a struggle dating back to the early seventies, the law finally was cleared for implementation, beginning January 17, 1983.

## 2.d. Implementation and Revisions of the Law

The repeal campaign quickly gave way, however, to efforts to slow implementation of the bottle bill. Supported by Pepsi Cola and other leaders of the anti-bottle bill movement, Senate Bill 1889 was introduced to prevent the law from taking effect until October 1, 1983. One industry spokeswoman warned of "'chaos' if attempts were made to implement the law on the current schedule" (Lockman, 1982, p. 28). Another supermarket executive admitted bluntly, "We thought we were going to win. I don't think anyone in this business has done a darn thing to get ready for it" (*Boston Globe*, 1982e, p. 31). Bottle bill proponents pointed out, however, that when the law initially was passed, its

implementation date had been set 14 months ahead to allow businesses to adapt. One state representative summarized the view of many of his colleagues in saying, "Who's responsible for the claimed need for a crash program? It's the industry, who tried to delay and scuttle the program. They brought the problems on themselves" (*Boston Globe*, 1982e, p. 31). Lawmakers defeated the proposed delay, determining that the program would commence in January as planned.

Implementing regulations for the bottle bill were published by the Executive Office of Environmental Affairs on December 16, 1982 (301 CMR 4.00-4.09). The regulations hewed closely to the law, going into somewhat more detail on such matters as the labeling of refunds on containers, the obligations of dealers, distributors, and bottlers in the redemption process, and the limited circumstances under which bottle returns could be refused due to their condition. Near the end of the 1982 legislative session, a proposal was introduced in the Senate requiring distributors to return unclaimed bottle deposits to the state (*Boston Globe* 1982f). Disagreement arose, however, over use of the money, called "escheatage," with some legislators seeking to strengthen the state's student loan and scholarship program and others hoping to earmark it for elderly programs. Under intense pressure from lobbyists for the bottlers, the proposal was defeated.

Several unanticipated issues surfaced in the bottle bill's early days. A case in point was the operation of Mass CRInc., or Container Recovery Inc. (Mohl, 1983a). The company was formed in late 1982 to serve as the bottle and can collection agent for wholesalers selling approximately 63 percent of the beer in the state. Wholesalers had hoped to use Mass CRInc. to increase the efficiency of picking up empties and generate savings through bulk collections. Attorney General Francis X. Bellotti filed suit in March of 1983 charging that the company had been formed by wholesalers to "fix, raise, maintain and stabilize" the price of beer in the state (Mohl, 1983b, p. 1). The suit also stated that

formation of the company monopolized bottle collections. The Massachusetts Superior Court found for the state in all major aspects of the case, ruling that wholesalers could not force beer retailers to make their returns through Mass CRInc. (Harvey and Mohl, 1983).

Some retailers violated the bottle bill by limiting hours during which returns would be accepted or by requiring containers to be washed out by consumers (Lehman and Lockman, 1983). Numerous citizens contacted the state's Environmental Affairs Office complaining about vending machines without posted information telling customers where to return containers. State officials attributed such problems to a mix of ignorance and outright defiance of the law, and they worked to disseminate information about the program while cracking down on the worst abuses.

In 1989, Massachusetts added an escheat provision to the bottle bill. This amendment, which was implemented starting in 1990, made unredeemed, or abandoned, deposits officially the property of the state. Revenue generated from the gathering of all unclaimed deposits would now be placed in a "dedicated" account known as the Clean Environment Fund (CEF). Beer wholesalers and soft drink bottlers sued the state, attacking the escheat provision as unconstitutional and an uncompensated confiscation of their property. In 1991, the State Supreme Court decided the court case of *Massachusetts Wholesalers of Malt Beverages, Inc. vs. Commonwealth* in favor of the state. The Supreme Judicial Court affirmed the decision in 1993, writing that Malt Beverage and Soft Drink Association members were not entitled to unclaimed deposits because these funds belong to the "consumer until they escheat to the Commonwealth" (Supreme Judicial Court, 1993). According to legislative formula, unclaimed bottle deposits were to be divided between the state's general fund and the CEF between Fiscal 1990 and 1995; after 1995, the entire sum of the escheat went to the CEF.

Facing rising costs, redemption centers began calling for an increase in the \$.02 handling fee under the bottle bill during the late 1980s (Massachusetts Association of Redemption Centers, 1997). The Executive Office of Environmental Affairs agreed to a \$.03 fee in 1990 only to see bottlers and distributors launch a major protest against it. The increase was rolled back to one-quarter of \$.01, fixing the new handling fee at \$.0225 per container.

### 2.e. Standoff

Recent legislative sessions have seen continued debate over the bottle bill. Environmental groups argue for updating the bill to reflect consumers' shifting tastes toward non-carbonated beverages. Blocking such an expansion have been beverage and retail groups, who voice the familiar refrain that it will "cost jobs, create sanitary problems, push prices up, and bankrupt small businesses" (*Boston Globe*, 1997, p. A16). Yet die-hard opponents of the bottle bill have had no success in their persistent attempts to eliminate the program.

Redemption centers want to increase handling fees, saying it is unaffordable to operate with the existing allowance. Dramatizing their cause, some have withheld full refunds to consumers, returning only four out of the five cents (Mohl, 1997). Others have tried to organize a boycott by redemption centers and consumers against beverages in glass bottles, which require more labor and storage space in their operations (Kessel, 2003).

All such legislative and political maneuvering has amounted to little, however. Aside from the small increase in handling fees in 1990, the only substantial change in the bottle bill since its passage remains the escheat provision and creation of the CEF in 1989. In part, this stalemate reflects a deadlock of political forces, but it also may be attributed to a relative lack of interest in this issue among top political leaders in the state. When Governor Romney made his proposal

to revamp the program in March of 2003, that situation of inattention changed suddenly, and a coalition of bottle bill proponents has renewed its struggle to update the law with the support of a range of legislators and citizens groups.

## 3. Understanding How the Bottle Bill Works

Similar to the programs of other states, the bottle bill in Massachusetts centers around a cycle of deposits and redemptions that links consumers and various business interests. State government supervises and regulates this cycle. It is also the recipient of funds that are generated whenever the deposit/redemption cycle is not completed. Figure 1 depicts the main steps of this cycle.

### 3.a. The Deposit/Redemption Cycle

The Massachusetts bottle bill placed a \$.05 refundable deposit on all carbonated beverage containers. The process of placing deposits and later redeeming the money is used as an incentive for consumers to recycle. The principal actors involved in this process, and their legal designations under Section 321 of the bottle bill law, are as follows:

**Bottler** – any person who fills beverages to be sold to a distributor or retail dealer.

**Distributor** – any person who sells beverages to a retail dealer. This includes bottling companies who distribute their own products rather than contracting with a distributor.

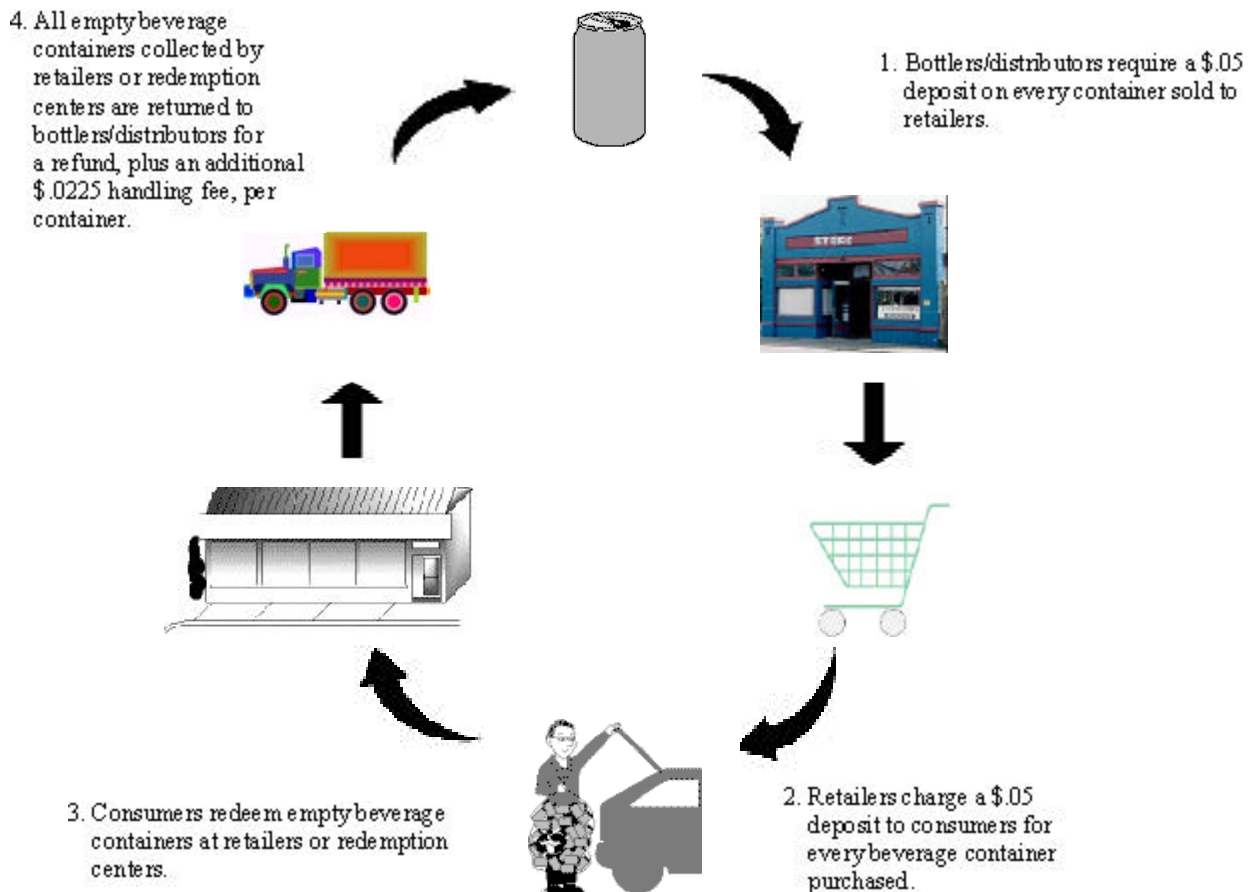
**Dealer** – any person selling beverages. This includes, for example, grocers, liquor stores, convenience stores, and vending machine operators.

**Consumer** – anyone who purchases a redeemable beverage and pays the \$.05 deposit at time of purchase.

The deposit/redemption cycle begins when a bottler/distributor places the \$.05 deposit on containers it sells to retail dealers. The dealer, or retailer, in turn, charges this \$.05 deposit to consumers for each beverage container purchased. When the consumer returns the empty beverage container, he or

she will collect the \$.05 deposit. Under the Massachusetts bottle bill, all retailers selling redeemable beverages must accept empty containers for a deposit refund. For the labor that has been put into collecting and returning their containers, bottlers/distributors must pay a “handling fee” of \$.0225 for each return received.

**Figure 1**  
**The Deposit/Redemption Cycle**



Sources: [www.nvtech.com](http://www.nvtech.com)  
[www.dnr.state.wi.us/org/cea/publications/clipart](http://www.dnr.state.wi.us/org/cea/publications/clipart)



In practice, most container deposits in Massachusetts are redeemed through two types of sites. First are “redemption centers,” or specialized small businesses defined under the bottle bill statute for the purpose of redeeming empty beverage containers. Second are large retail dealers, such as grocery markets and some liquor and convenience stores, which often give consumers access to “reverse vending machines.” The redemption process differs according to these locations.

Redemption centers may be located adjacent to liquor stores or, in many cases, exist independently. A redemption center sorts all beverage containers it receives by brand, size, color, height, and type (aluminum can or glass bottle). Once sorting is complete, the redemption center delivers empty containers to the appropriate distributor/bottler and is reimbursed the original \$.05 deposit plus an additional \$.0225 handling fee for each return. Redemption centers are required to register with the Department of Environmental Protection and must maintain monthly bookkeeping of how many beverage containers are accepted and redeemed. In order for the consumer to redeem his or her deposit at a redemption center, a beverage container must be in good shape and capable of holding liquids. This means bottles cannot be broken or chipped, and aluminum cans cannot be crushed or pierced.

Redemption centers are beneficial because they increase the ease with which consumers can return their containers. Massachusetts, unlike most states, generally does not allow beer to be sold in supermarkets. Since the law requires retailers to refund beverage deposits only for the brands they sell, opportunities are very limited for consumers to redeem beer and soda containers at a single retail site. Redemption centers accept all containers. They also place no limit on the number of containers per person. Retailers, by contrast, need not accept more than 120 cans or 5 cases of empty containers per customer.

Reverse vending machines (RVMs) offer an automated method for accepting empty

beverage containers and refunding the deposits. RVMs are generally located in supermarkets that have a large volume of returns. Under the bottle bill, dealers must accept containers “of the type, size and brand sold by the dealer within the past sixty days” (Massachusetts General Laws, chap. 94, sec. 323b). The RVMs operate by reading bar codes on containers, using special recognition technology to determine if the container is redeemable and if the beverage brand is sold in the store. If a container is accepted, the RVM refunds the consumer \$.05 per container. Inside the RVMs, empty containers are processed by color (for glass) and by brand (for the distributor). Additionally, the material is crushed, flattened, or broken to save space. All compacted material is stored in bins at the bottom of the machine, which must be emptied periodically depending on the volume of returns.

Two main companies in the Northeast, Tomra and Envipco, provide reverse vending machines. Tomra has the dominant share of the market in Massachusetts (www.tomra.no, 2003). A Norwegian-based company, Tomra began operations in Europe with the purpose of recycling refillable bottles. It then branched out to North America and South America. In Massachusetts, RVMs are leased, with Tomra providing the maintenance services. Generally, retailers use the handling fees they receive for collecting returns as the funding source to lease RVMs. RVMs offer many benefits to retailers in the deposit/redemption cycle, including exchange efficiencies, economies of space, and reduced manual labor.

RVMs play an important administrative function in processing bottle and can returns in Massachusetts by keeping computerized records of the number of containers redeemed and the amount of money refunded. Tomra also makes third-party pick-ups of empty beverage containers from retailers, processing or baling collected material on behalf of beverage distributors. Distributors pay Tomra for these services, in addition to reimbursing the company for collected items. Under some

contracts, Tomra itself sells recyclable materials and credits the distributor's account for the value.

### 3.b. Clean Environment Fund

Under the state's original bottle bill, bottlers/distributors kept all abandoned deposits. The escheat provision of 1989 directed abandoned deposits into the state's Clean Environment Fund (CEF). This fund is under the administration of the Department of Environmental Protection, with the Department of Revenue overseeing the transfer of abandoned deposits from bottlers/distributors to the CEF.

The escheat provision requires all bottlers/distributors to maintain a Deposit Transaction Fund for abandoned deposits. By the 10<sup>th</sup> day of every month, the bottler/distributor must file a report with the Commissioner of Revenue detailing the previous month's transactions regarding number of deposits issued and number of deposits redeemed. By the last day of the month, every bottler/distributor places all

abandoned deposits into the Deposit Transaction Fund.

The Department of Revenue (DOR) is responsible for completing an annual report of bottle bill activity. In particular, the department is required to maintain records of bottle distribution, returns, and abandonment, and it regulates those bottlers/distributors who do not comply with the obligation to provide monthly reports and payouts of unclaimed deposits. If a bottler/distributor fails to pay the Department of Revenue for abandoned deposits, the company must pay interest of 1.5 percent on the amount for every month it is late. For an absolute failure to pay, a bottler/distributor faces fines and penalties such as liens on property.

The primary objective in establishing the CEF was to ensure that any money generated from the bottle bill would be devoted to "programs and projects in the management of solid waste and for environmental protection" throughout the state (Massachusetts General Laws, Chap. 94, Sec. 323). Each year, CEF money must be appropriated to the Executive

Figure 2  
Trends in Bottle Bill Returns

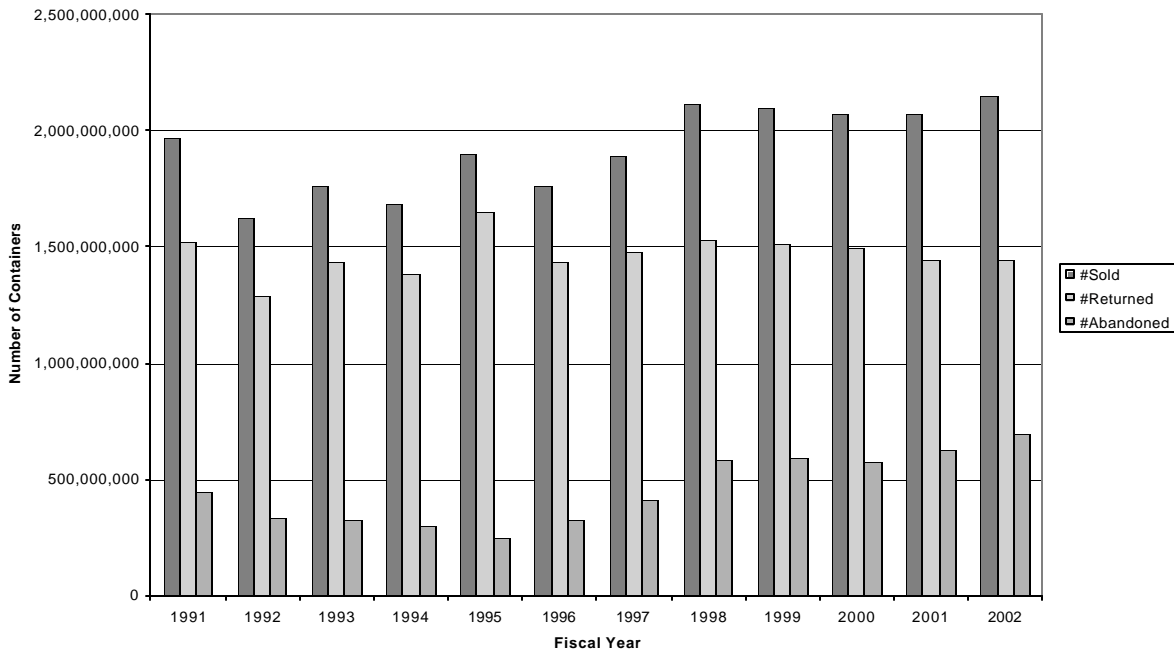
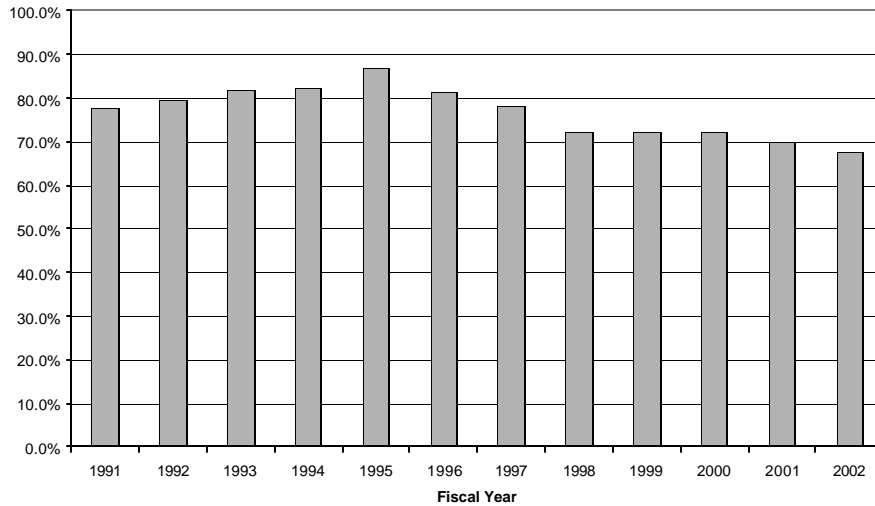


Figure 3  
Bottle Bill Return Percentages



Office of Environmental Affairs (EOEA) and the Department of Environmental Protection by the legislature when a final state budget is passed. Both EOEA and DEP must act in accordance with general specifications made by the legislature regarding allocation of CEF funds.

#### 4. Impacts of the Law

Redemption activities provide the most directly measurable impacts of the bottle bill. Figure 2 shows trends in bottle bill returns from 1991 to 2002 (Department of Environmental Protection, 2003). The number of bottles collected under the program ranged from 1.3 billion (1992) to 1.7 billion (1995) during this period, with an average of 1.5 billion containers per year.

Rates of return are calculated as the percentage of all beverages with deposits turned in for a refund. As seen in Figure 3, this number rose during the early part of the period but has fallen over the past several years.

Deposits abandoned by consumers represent the surplus revenues generated by the program. Figure 4 shows that, after fluctuating in the early 1990s, the money from unclaimed deposits rose sharply during

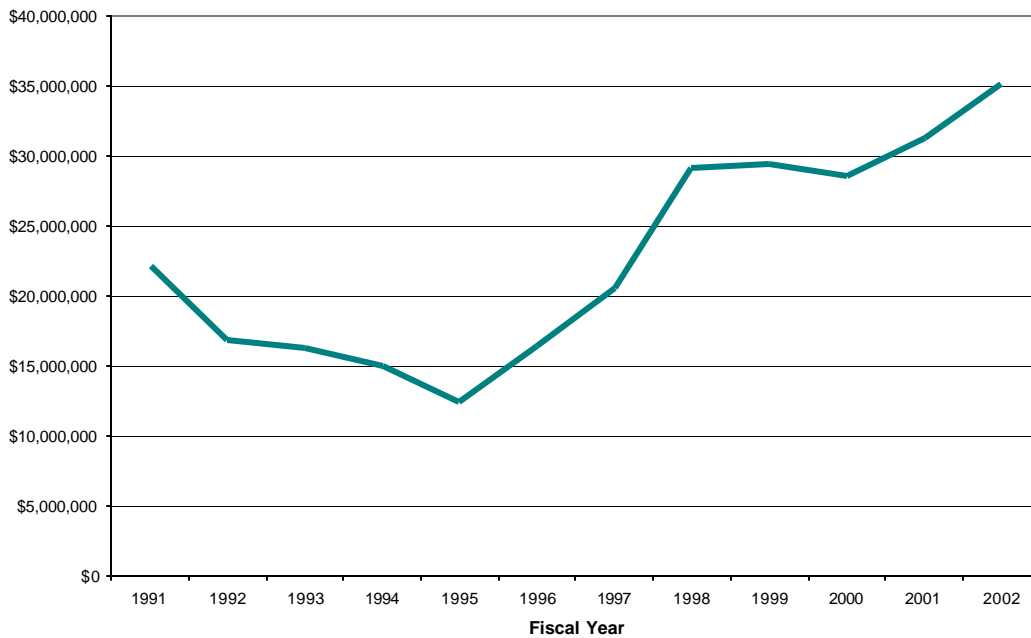
the late 1990s and early 2000s, reaching \$35.2 million by 2002.

The bottle bill is responsible for a large proportion of all container recycling in the state. According to the Department of Environmental Protection, 66 percent of the 101 thousand tons of glass, plastic, and aluminum containers recycled in 1992 was attributable to the program (cited in

Friedland and Perry, 1995, p. 1). The impact of the bottle bill is greatest in communities without curbside recycling programs and in large cities where curbside programs are costly to maintain and expand.

A variety of clean-up efforts indicate that the bottle bill has significantly reduced litter on roadsides, beaches, hiking trails, riverways, and other settings around the state (Friedland and Perry, 1995). Two recent projects are especially timely. On April 12, 2003, the Massachusetts Riverways Program organized a clean-up of Charles River near the Hatch Shell and the Metropolitan District Commission's Ice Rink in Nonantum. Volunteers removed all containers from a sample of trash collected that day and divided it into nonreturnable and returnable items. The ratio of the former to the latter was more than 4 to 1 (Cohen, 2003a). Another clean-up was undertaken on Earth Day, April 26, 2003, at four sites in Worcester (a wildlife sanctuary, large parking lot, public park, and reservoir). Again, the ratio of nonreturnable to returnable containers was slightly more than 4 to 1 (Cohen, 2003b). Given that deposit containers currently account for three-quarters of beverage market sales in Massachusetts, these data strongly suggest the bottle bill has made it much less likely for bottles and cans covered by the law to end up as trash fouling the environment.

**Figure 4**  
**Unclaimed Deposits from the Bottle Bill**



A public health effect of the bottle bill was highlighted by researchers affiliated with Harvard University who tracked emergency room visits by children with lacerations before and after the start of the program (Becker, Moore, and Wise, 1986). Glass-related lacerations occurring outside of the home declined sharply. While this was not a controlled study, the researchers concluded that, among other possible factors, the implementation of container recycling legislation was associated with the reduction of glass-related injuries.

Since the bottle bill, as amended, is responsible for the creation and maintenance of the state's Clean Environment Fund, CEF activities provide another indicator of programmatic impact. Approximately \$30 million in CEF funds have been used for local recycling, composting, and solid waste programs since 1989 (Smith, 2003). A major portion of this amount has been allocated through the Department of Environmental Protection's Municipal Recycling Incentive Program (MRIP), a performance-based grant to help cities and towns meet waste ban regulations and waste reduction goals set by the state. Another CEF grant program

subsidizes equipment and technical assistance for municipal recycling. In addition, CEF dollars have funded innovative research in Massachusetts focused on developing new end-uses for recycled products. For example, the Chelsea Center, a nationally recognized program at the University of Massachusetts devoted to research and education on the use of recyclables by manufacturers, has been supported, in large part, by CEF funds. Recent cuts in CEF appropriations, however, have jeopardized such activities. MRIP is now being funded on a half-year only basis while the Chelsea Center has announced its closure due to lack of funding ([www.chelseacenter.org](http://www.chelseacenter.org), 2003).

In the political debate surrounding bottle bill legislation, some have argued that the growth of municipal recycling makes the bottle bill unnecessary. At times, the bottle bill has been portrayed as in conflict with, or redundant of, recycling on the local level. To the contrary, our information underscores how intertwined the bottle bill and municipal recycling have become in Massachusetts. The bottle bill diverts thousands of tons of refuse from the local recycling stream. Although only a small percentage of total municipal

solid waste, this material represents the fourth largest category of products and packaging in the waste stream and approximately half of all types of litter nationally (Friedland and Perry, 1995; Container Recycling Institute, 2003).

The bottle bill also funds equipment, staff, and innovative recycling, reuse, and public education activities that are essential to municipal recycling programs. In combination, these effects are so substantial that one recycling coordinator we spoke with questioned whether cities and towns could meet future state waste reduction goals in the absence of the bottle bill. Residential curbside recycling programs do a particularly poor job of capturing beverage containers that are purchased “on the go” away from home. Thus, despite the increased number of such programs nationally, the wasting of aluminum cans has been increasing (Gitlitz, 2002). The bottle bill has been a key element of Massachusetts’ multifaceted recycling strategy for the past two decades. With state policymakers tightening funding for municipal recycling initiatives, it seems destined to continue to play this role.

#### 4.a. Economic Impacts

The question of the economic impacts of bottle bills is a notoriously thorny and contentious one. As we have seen, predictions of lost jobs, higher prices, higher taxes, and broad economic burdens have been a part of anti-bottle bill rhetoric for more than thirty years. Actual evidence related to this topic is mixed and of inconsistent quality from an evaluation-research standpoint.

Soft-drink industry representatives in Michigan have claimed that the net costs of complying with that state’s beverage container law exceeded \$20 million in the first fifteen years of the program (Dammann, 1993). Here in the Commonwealth, the Massachusetts Food Association testified to the Joint Energy Committee that bottle bill compliance “forced an increase in prices for all products being sold to the consumer” (Bottle Bill Task Force, 2000, p. 3). To our knowledge, the amount of that increase has

never been carefully documented. Part of the difficulty, explains the Massachusetts Food Association, is that bottle bill costs were “absorbed regionally” in the food industry, rather than in Massachusetts alone.

Data given to us from the Massachusetts Association of Malt Beverages do show a decline in beer sales in Massachusetts in the early 1980s, just as sales were increasing in neighboring New Hampshire (Interview with J. Stasiowski, May 13, 2003). This pair of trends may indicate a negative impact on Massachusetts beer distributors due to the adoption of the bottle bill. However, 1983 was also the year that the drinking age in Massachusetts was raised from 18 to 21. A longer view of beer sales in the two states fails to show a consistent connection since that time.

Bottle bill proponents dispute reports of widespread price increases in bottle bill states (Container Recycling Institute, 2003; Franklin, 1997). Moreover, they point to thousands of new jobs in redemption, distribution, and recycling. In Massachusetts, local redemption centers are a new category of business brought into existence by the bottle bill.

One of the most careful analyses of industry costs resulting from mandatory deposit legislation was carried out by Lesser and Madhavan (1987), academic economists who also served as members of a State Commission on Returnable Beverage Containers in New York in the mid-1980s. Reviewing available research, they found a disparate range of estimated costs for beverage distributors, with a “need for more data before any particular value, or values, can be accepted with confidence” (p. 124). Also indeterminate was the loss in profits that could be associated with consumption declines due to bottle bills, estimated to fall in a range from 0 to 8 percent. Lesser and Madhavan concluded that, to assess the “pros” and “cons” of bottle bills economically, a cost/benefit appraisal would need to factor in the value to the public of a cleaner

environment and reduced costs of garbage collection and clean-ups.

In 1997, the Department of Environmental Protection contracted with the Tellus Institute for an independent analysis of the costs and benefits of expanding the state's bottle bill (Tellus Institute, 1997). The Institute calculated that retailers would face additional costs from having to sort and store an increased number and variety of empty containers. Distributors and bottlers would also face added costs, especially if legislation required them to "pick up," rather than simply "accept," all containers from redemption centers. On the benefits side, the state's Clean Environment Fund would grow. For Massachusetts consumers, the Institute estimated a per capita cost of \$3.50 to \$4 for expanding the legislation, yet it offered no answer to the bottom-line question of whether this amount was more or less than the cost of achieving a similar rate of recycling using alternative methods.

This latter issue was addressed in a second report completed by Tellus the following year (Tellus Institute, 1998). The research group compared the costs of an expanded bottle bill against an "Alternative Recycling System" for collecting and recycling beverage containers in every workplace and in public outdoor places throughout the state. While the costs of the alternative system varied depending on operational assumptions, even the lowest estimate was several times greater than the cost of an expanded bottle bill.

Around the same time these results were released, another economic analysis of bottle-bill expansion was completed for MASSPIRG by Sound Resource Management (Morris, 1998). This study concluded that the current bottle bill generated from \$47-\$72 million in benefits for the state, while an expansion would supplement this sum by an additional \$15-\$27 million.

Industry groups such as the Massachusetts Food Association have portrayed the costs of container recycling under the bottle bill as many times higher than alternative curbside

programs (see also Northbridge Environmental Management Consultants, 1997). A group known as "BEAR," for Businesses and Environmentalists Allied for Recycling, conducted a systematic analysis of the effectiveness of beverage container recovery. Guiding this project was a unique "multi-stakeholder" task force that included environmentalists, major beverage and container producers, government representatives, recycling and waste management companies, and others involved in the "beverage container value chain." According to BEAR's (2002) final report, container deposit systems result in the highest rate of recovery of all recycling programs examined. And, although deposit programs have the highest gross cost of all programs, the comparison shifts dramatically when one counts unredeemed deposits as a revenue produced by bottle bills. Under this accounting method, the recycling cost per container is more than twice as great in curbside programs as in traditional deposit systems. Looked at another way, for just a small additional cost compared to states without bottle bills, deposit states have recovery rates of recyclable containers that are more than twice as great ([www.container-recycling.org/projects/bear/crisnsdaresponse-022002.pdf](http://www.container-recycling.org/projects/bear/crisnsdaresponse-022002.pdf), 2003).

Plainly, in Massachusetts as elsewhere, bottle bills have complicated impacts that fail to provide an unambiguous message for policymakers. How to balance private costs and public goods in a program like this is a political choice. At its inception, the bottle bill in Massachusetts was confirmed by voter referendum. Although there have not been many polls on this subject since that time, those that have been done in Massachusetts and other states continue to suggest strong public support for the program (Container Recycling Institute, 2003; MASSPIRG, 1996).

## 5. Operational Issues and Problems

The Massachusetts bottle bill has proved remarkably effective in achieving its principal goal of reducing the litter of bottles and cans through recycling. At the same time, it has generated substantial revenues for strengthening important environmental initiatives throughout the state. To say that the bottle bill has been a great success in these ways, however, is not to claim that the program is without operational problems, nor that all provisions of the original 1982 statute remain well suited to the circumstances of 2003. Our research and our conversations with legislative staff, environmental advocates, bottlers, retailers, redemption center operators, municipal recycling coordinators, and other stakeholders identified a number of concerns that must be considered in a review of this program.

### 5.a. Narrow Spectrum of Beverage Containers

When the bottle bill was written in the early 1980s, the beverages covered by the law were defined as “soda water or similar carbonated soft drinks, mineral water, and beer and other malt beverages” (Massachusetts General Laws, Chap. 94, Sec. 321). Since that time, the beverage market has changed as a result of product innovations, shifting consumer tastes, and active lifestyles characterized by a larger work force, longer working hours, and more people eating on the run (Gitlitz, 2002, p. 20). Today’s list of popular drinks includes fruit drinks, bottled water, iced tea, sports drinks, and wine coolers. According to the beverage industry, the consumption of single-serve fruit beverages alone increased 1,350 percent between 1990 and 1995 (Franklin 1997). Increasing sales of noncarbonated beverages, for the most part, do not represent a substitution for carbonated beverages, but rather an expansion of consumption, one that has been accompanied by greater use of plastic

bottles (Communication from J. Gitlitz, Container Recycling Institute, June 5, 2003).

The exclusion of a growing category of “alternative” beverages from the state’s bottle bill may be contributing to confusion among consumers as to which containers are eligible for return (*Boston Globe*, 2003, p. A10). When consumers litter these nonreturnable containers, it undermines the objectives of the original bottle bill for environmental clean-up and resource conservation. To the extent that the containers are picked up in residential recycling, it also places an increasing burden on financially strained local programs. A large proportion of the new beverages is sold in glass bottles that are especially costly for handling in curbside recycling programs. These containers present hazards to people and property when not disposed of properly.

### 5.b. Declining Value of the Deposit

Another issue in regard to updating the bottle bill concerns the \$.05 deposit. Massachusetts, like all of the other bottle bill states, enacted the deposit without making provision for its changing value over time, neglecting to link the refund amount to inflation. Yet as a financial incentive, the real value of the deposit seems to be a pivotal factor influencing consumer behavior. Ideally, consumers understand and support the goals of recycling, but this does not mean they are immune to time and cost considerations that factor in the trouble it takes to return empty beverage containers measured against the reward for doing so. The \$.05 deposit adopted by Massachusetts lawmakers in 1982 was worth only approximately \$.025 by 2001. Recall that the Massachusetts law followed the example set by an Oregon statute passed in 1971. Judged against this year as a baseline, the \$.05 deposit has dropped in value to \$.011, or by nearly 80 percent (Gitlitz, 2002, p. 24).

Does this eroding value of a nickel deposit really have an impact on recycling rates? It would be wrong to view deposits as the single

determinant of bottle and can returns, excluding other issues such as the convenience of making returns or public awareness of the bottle bill program and how it works. However, data collected by the Container Recycling Institute do show a relationship between deposit amounts and recycling among bottle bill states, as well as a general decline in recycling rates as the value of deposits has fallen (Gitlitz, 2002, p. 24). Many observers believe that Massachusetts' own falling rates of return under its bottle bill, from 87 percent in 1995 to 67 percent in 2002, may be connected to inadequate financial incentives for consumer participation.

### 5.c. Insufficient Handling Fees

The adequacy of handling fees in the bottle bill program has been an issue from as far back as the late 1980s, when redemption centers began petitioning for an increase from the Executive Office of Environmental Affairs. As already noted, although an increase was granted in 1990, the amount was limited to a quarter of one cent.

Redemption center operators maintain their costs have continued to rise such that the \$.0225 currently received for each container makes it difficult for them to stay in business. Bottlers/distributors and their intermediaries have implemented new practices that pass along "the cost of labor, transportation, and storage" in several ways (Massachusetts Association of Redemption Centers, 1997, p. 4). The original bottle bill statute gave distributors and bottlers the choice of whether or not to pick up empty containers. Following the state's decision to collect unclaimed deposits and the \$.0225 handling fee increase, many redemption centers were required to bring in the "empties." Delivery locations for empty containers are few and can involve lengthy distances depending on where a redemption center is situated. In addition, bottlers/distributors began to require centers to purchase the packaging for empty containers, to pay repeatedly for used packing material, and to sort bottles by distributor as well as color.

Redemption centers have been able to do little to resist these imposed costs, operating as they do in a closed market without leverage over those purchasing their services. Package stores, which rely on beer distributors for credit and sales products, have no greater bargaining power.

As a result of these cost increases, many redemption centers lost profitability and began to close. According to Bob Renzi of the Massachusetts Association of Redemption Centers, in 1992 there were about 180 redemption centers across the state. In 1995, the numbers started to drop, and today the total is down to 60-70 redemption centers. The result has been a decrease in the availability of sites where consumers can redeem their cans and bottles.

In 1999, DEP contracted with DSM Environmental Services, Inc., (DSM) to examine the financial operations of redemption centers in Massachusetts. This study supported the call from centers for a handling-fee increase, concluding that the "average cost per container handled by Massachusetts redemption centers is 2.57 cents" (DSM, 1999, p. 1). Redemption centers were found to be very important "in increasing the recovery rate for beverage containers. Approximately 39% of all beverage containers redeemed in Massachusetts in 1998 were redeemed by redemption centers" (DSM, 1999, p. 1).

### 5.d. Fraudulent Redemptions

"Fraudulent redemption" refers to the process by which the empty container of a beverage purchased in one state is redeemed for a deposit refund in another. This problem is most likely to occur in areas where a bottle bill state, such as Massachusetts, borders a non-bottle bill state, such as New Hampshire or Rhode Island. Each time this fraud occurs—whether by accident or intent—the state's CEF loses \$.05 that would otherwise have been counted as an unclaimed deposit while bottlers and distributors unnecessarily pay a \$.0225 handling fee. According to the



Massachusetts Office of the State Auditor (1998), anywhere between 10 and 25 percent of bottles and cans sold in Rhode Island and New Hampshire are redeemed in Massachusetts. Fraudulent returns thus deprive Massachusetts government of as much as \$8.2 million per year and private bottlers/distributors of an estimated \$3.7 million per year.

Why do fraudulent redemptions occur? There are many reasons. One is that containers sold in non-bottle bill states are seemingly marked as redeemable in Massachusetts, making it impossible to determine by visual inspection a beverage's original purchase point. Most bottlers distribute their products regionally. For reasons of space, time, or money, there is an unwillingness to separate inventory by state.

Another reason for fraudulent redemption is the insufficiency of current container identification practices, which leads to the failure of reverse vending machines to block ineligible returns. RVMs are designed to accept containers based on their bar codes. When the bar code placed on a beverage container is not state-specific, however, the machines have no means of discerning where that container was purchased. According to Tomra, in the event that bar codes were to be made state-specific, its equipment could effectively control fraudulent returns.

Two reports offer differing estimates of the possible impact of fraud if the Massachusetts bottle bill were to be expanded to include new kinds of beverage containers. The Tellus study of 1997 applied a range of fraud estimates, from 5 to 20 percent. At the low estimate, it found, fraud would not keep the CEF from growing by \$1.7 million; at the high end, fraud would reduce the CEF by about \$2 million but would not come close to depleting the fund. A second analysis, by Northbridge consultants in 2003, reached a direr conclusion. Basing the calculations, in part, on what happened in Maine after that state expanded its bottle bill, the study indicated that the CEF could suffer a decline of anywhere between 11 and 93 percent of its

funds (Dietly, 2003). Projections like these are, of course, hypothetical and no one can say which numbers have greater accuracy. Suffice it to say that improving the response to fraudulent redemption needs to be a component of any credible expansion scenario for the bottle bill in Massachusetts.

### 5.e. Burdens on Business

There is reason to believe that reports of the bottle bill causing widespread business losses in the state may have been exaggerated, judging by the economic impact data we have already reviewed. Nonetheless, there is no denying that the program imposes burdens on private businesses, specifically, retailers and bottlers/distributors. Appreciating how and why this is so is a necessary part of understanding the bottle bill.

The Massachusetts Food Association represents members of the food distribution industry in Massachusetts. The president of this group, Chris Flynn, detailed for us some of the problems created for his members by the bottle bill. Food distributors must address a variety of sanitation issues associated with the collection of redeemable containers. For large stores, this has often meant building additional storage space away from food storage facilities. Smaller stores have been forced to give up valuable retail space. Additionally, all stores face a greater threat of pest problems because of the "trash" being kept on their premises. Flynn pointed out that, according to the study of handling fees by DSM, the per-container cost of redemption is higher for retailers than for redemption centers, at anywhere between \$.034 and \$.068. (The DSM report cautions that this analysis is based on complete cost data provided by only two retailers.) Flynn predicted an expanded bottle bill would greatly increase retailers' costs because of increased sorting of different types of containers and the need for complicated third-party pick-up arrangements.

We also spoke with John Stasiowski, president of another trade association, the Massachusetts Association of Malt Beverages.

Stasiowski underscored that beer bottlers/distributors face their own hardships as a result of the bottle bill, which he described as “forcing his members into the trash business.” He said bottlers/distributors must deal with many of the same sanitation issues as retailers, which leads to increased costs. The law also creates inefficiencies in the distribution process. Delivery trucks must depart with enough empty space for the redeemed containers they pick up. According to Stasiowski, fifteen beer distributors have gone out of business in Massachusetts since the early 1980s. He views this decline as largely attributable to the bottle bill.

Louis Uva, Director of Recycling for Polar Beverages, the state’s largest independent soft drink company, provided a third perspective on business burdens under the bottle bill. He characterized the management of returned bottles and cans as “a business within a business” with costs to Polar for picking up, processing, and marketing this material for resale. This “sub-business,” which is run as a distinct unit within the larger company, has become more efficient over time, and it yields substantial revenues to help offset some of the imposed expenses of the bottle bill. Yet expenses continue to outstrip revenues gained from this internal recycling operation.

### 5.f. Improper Uses of the CEF

The initial legislative intent was that CEF revenues would be used in the following ways: not less than 50 percent for recycling, compost, or solid waste source reduction; not less than 20 percent for recycling and other solid waste projects and programs; and not more than 30 percent for other environmental programs. However, according to an analysis by Greg Smith (2003) of the Cape Cod Commission, of the \$100 million generated for CEF since 1990, only \$30 million has actually been allocated to recycling, composting, solid waste source reduction, and other innovative solid waste programs. As much as \$70 million has gone to other DEP programs, including the Hazardous Waste Site Cleanup Oversight Program.

Similarly, in October of 1998, the Massachusetts Office of the State Auditor, Division of Local Mandates (1998), completed a review of the CEF and determined that, between 1990 and 1996, only 28 percent of expenditures had supported recycling. The remaining 72 percent went toward employee compensation and other administrative costs of the DEP. This report did note an increase of CEF expenditures for municipal recycling, to 35 percent in 1998. Still, 65 percent of CEF money was being spent on other DEP programs.

Municipal recycling coordinators we spoke with are well aware of this discrepancy between intended and actual CEF appropriations. One stated that recycling rates across the state could be improved if local programs received more CEF money. Another explained this money is essential if municipalities are to maintain the existing infrastructure of recycling programs and comply with state recycling mandates and expectations. Currently, city and town officials feel they have to “jump through hoops” to acquire funds from the DEP that rightfully is theirs under the bottle bill statute.

In fact, no matter how much money is gathered in the CEF in any given year, no guarantee exists it will actually be appropriated for use. In fiscal year 2002, Governor Jane Swift implemented budget cuts that reduced CEF appropriations by more than \$8 million. Recently, the Romney Administration held up CEF expenditures for the second half of fiscal year 2003, creating tremendous uncertainty among those responsible for managing and planning recycling initiatives on the local level.

### 5.g. Inadequate Program Administration

Our research identified a number of concerns with regard to the administration of the bottle bill. Many participants believe there is a lack of coordination among the

different state agencies that are involved, as well as deficient oversight of the program.

Poor coordination would seem to result unavoidably from the diffusion of administrative responsibilities for this program. While EOEa is responsible for overall regulatory and policy implications of the bottle bill, DEP must attend to the “day to day” issues of the program, and the Attorney General (AG) takes care of legal enforcement. Each of these departments, however, has an array of other responsibilities that affects its ability to prioritize bottle bill-related problems in harmony with the other two involved agencies. For example, if DEP discovers a violation of the bottle bill (say, a retailer who is not refunding the \$.05 deposit amount), the actions it can take under current law are limited to such things as issuing warnings and notification of the Attorney General’s Office. In practice, the many competing priorities on the AG’s agenda make it unlikely for such a relatively minor breach of state law to be addressed through formal court action.

Monitoring of the bottle bill program is also lax at times. For example, although redemption center registration is supposed to be handled by DEP, the department’s list of centers is often inaccurate and incomplete due to lack of routine communication between DEP and redemption centers. The Department of Revenue’s own accounting and auditing oversight of the bottle bill program is inconsistent in regard to verification of sales, returns, and/or abandoned deposits. To help improve this situation following the State Auditor’s Report of 1998, DEP provided \$150,000 to assist DOR in auditing abandoned deposit reports, resulting in the collection of \$7.5 million in late payments and penalties and interests (Communication from P. Allison, DEP, June 11, 2003). This administrative arrangement is now jeopardized, however, by DEP budgetary cuts.

The 1998 State Auditor’s Report found that there is only one worker at DEP who spends 50 percent of his/her time on bottle bill issues and one part-time employee who

devotes an unspecified amount of time to the program. One worker at the DOR spends 50 percent of his/her time on the bottle bill (Office of the State Auditor, 1998, pp. 11-12, 17-18). (The report does not mention how many workers and how much time is devoted to the bottle bill within EOEa.) This may not be an adequate amount of administrative resources for each agency to handle its own bottle bill responsibilities while ensuring interdepartmental coordination and continuity of service. In researching this report, it proved a challenge finding detailed data on operational components of the program. Although mention was made of an annual bottle bill report, this document is not available to the public. Ultimately, data had to be compiled from numerous sources, making it difficult to develop a comprehensive picture of the program.

## 6. Current Legislative Proposals

As of April 2003, nine bills had been filed to revamp the Massachusetts bottle bill. The range of proposals is broad, from repealing the law to expansion and more detailed regulation of the program. Each of these bills faces a legislative review procedure beginning with the Joint Energy Committee, followed by the Ways and Means Committees of each chamber. Although it is highly unlikely that more than a few of these measures could make it past the first committee review, the entire group of proposals merits at least brief analysis, representing as it does the gamut of current political views on what the future of the bottle bill program should be.

**Senate No. 372 (presented by Senator Brewer, Democrat, Barre)** – The first goal of this measure is to compel redemption centers to receive crushed aluminum cans, which they are currently allowed to refuse. The second goal is to require that any aluminum can sold in the Commonwealth have a bar code on the bottom.

**Senate No. 381 (presented by Senator Panagiotakos, Democrat, Lowell) –**

This measure specifically addresses the allocation of the Clean Environment Fund. If passed, all funds in said line item could be spent only on municipal curbside programs; commercial recycling programs; recycling incentive programs; grants to public institutions; and recycling education. The measure also requires that the State Auditor's office oversee the spending of CEF funds, regulate the redemption process, including the operations of redemption centers, and combat fraudulent redemption and underreporting of escheatage. The State Auditor would file an annual report about the CEF with the Joint Energy Committee. Finally, if this bill were passed, Superfund monies would be used to offset the cost of hazardous waste cleanup and any additional monies for this purpose would be allocated from the General Fund, not the CEF.

**Senate No. 382 (presented by Senator Panagiotakos, Democrat, Lowell) –**

This bill makes many of the same restructuring changes listed in Senate No. 381. The proposal addresses fund allocations as well as specific administrative tasks of the agencies involved. Senate No. 382 would also require the Commissioner of Environmental Management and others to make yearly reports to the legislature on expenditures from the CEF.

**Senate No. 383 (presented by Senator Rosenberg, Democrat, Amherst) –**

This proposal would make changes to the handling fees that distributors pay dealers. First, the handling fee would be raised to a minimum of \$.03 per container. Second, the agency that oversees the law would be required to review annually the handling fee and adjust it in accordance with the Consumer Price Index.

**House No. 1080 (presented by Representative Petersen, Democrat, Marblehead) –**

This is one of the most comprehensive, and complicated, measures of the group. First, the proposal expands the bottle bill to include wine, spirits, and all non-alcoholic beverages with the exception of dairy products. It also specifically defines "redemption centers," requiring that the Executive Office of Environmental Affairs regulate these businesses. The measure would increase the handling fee paid to redemption centers by distributors to \$.03 per container. Additionally, the bill addresses the problem of the redemption of containers purchased out-of-state with new restrictions and administrative penalties. Under this measure, CEF monies could be spent only on recycling programs and the administration of the bottle bill. Finally, the bill gives the Secretary of Environmental Affairs administrative responsibility for bottle bill programs, including redemption centers.

**House No. 336 (presented by Representative Kujawski, Democrat, Webster) –**

This proposal requires that all new reverse vending machines in the Commonwealth be designed to identify containers that have been sold in the state and are therefore eligible for redemption. Existing RVMs would have to be refitted in order to comply with this regulation on a schedule set by the Secretary of Environmental Affairs.

**House No. 540 (presented by Representative Walrath, Democrat, Stow) –**

This measure would repeal the law requiring that all dealers accept containers of the brand and size sold at their location. Dealers would now be allowed to designate a licensed redemption center to receive containers on their behalf provided they post a sign informing the public they no longer accept containers and directing them to the redemption center.

Distributors would be obligated to pick up containers from dealers or their designated redemption center.

**House No. 2953 (presented by Representative Gary, Democrat, Dracut)** – The stated goal of this proposal is to encourage recycling within the Commonwealth. The bill proposes many changes, but the most important are the elimination of the bottle bill and redirection of CEF funds. Essentially, this bill would end the \$.05 deposit on beverage containers. CEF spending would be used to expand recycling programs, subject to appropriation by the legislature. A public/private partnership would be created to improve the state’s solid waste infrastructure. New revenues would be raised from an assessment on the beverage industry to fund the transition from the bottle bill to an expanded residential recycling program.

**House No. 3146 (presented by Representative DiMasi, Democrat, Boston)** – This proposal would end the exemption of fruit juice containers from the deposits required by the bottle bill.

In addition to these bills, Governor Romney made a proposal for reforming the bottle bill as a rider in his 2003-04 budget recommendations that was subsequently rejected by the legislature. This “Outside Section 124” would have expanded the bottle bill while eliminating the CEF. The measure required that a minimum \$.05 deposit be collected on all beverage containers including juice, water, iced tea, sport drinks, and liquor containers. Alcoholic beverages sold in containers larger than one pint would be made subject to a \$.15 deposit. Under the governor’s proposed budget, funds collected under the bottle bill would become part of general revenue, and subject to appropriation by the legislature.

Table 2 summarizes key features of these ten proposals.

As this report was being readied for publication, another bottle bill proposal was submitted by Senator Nuciforo (Democrat, Pittsfield) calling for expansion in the kinds of containers encompassed by the law, an increase in handling fees, and a small reimbursement to distributors for every unit redeemed.

**Table 2  
Comparison of Bottle Bill Legislative Proposals**

Feature	S.372	S.381	S.382	S.383	H.1080	H.336	H.540	H.2953	H.3146	Governor's
Eliminates bottle bill								•		
Expands eligible containers	•				•		•		•	•
Increases deposit										•
Increases "handling fees"				•	•					
Regulates redemption centers		•			•					
Combats false redemptions		•			•	•				
Eliminates CEF										•
Directs CEF expenditures		•	•		•			•		
Redirects CEF funds to the General Fund								•		•
Addresses oversight of bottle bill/CEF		•	•		•			•		•

## 7. Recommendations

When the bottle bill first came under consideration in Massachusetts in the late 1970s, many interest groups complained that it would be impossible to implement and could prove ruinous to businesses and the economy. Viewed from the vantage point of the law's twentieth anniversary, it is clear that those fears were unwarranted. Indeed, the dominant assessment we heard from the many stakeholders spoken with for this project—including some who are unhappy with particular facets of the program—is that the bottle bill, overall, works well.

Today, another generation of critics is warning of the dangers of attempting to extend and improve the bottle bill. Their contentions, which focus alternately on unmanageable costs and the ineffectiveness of state government, sound familiar themes.

However, this perspective neglects to recognize the tremendous amount of experience and knowledge that has been gained over the bottle bill's twenty-year history, expertise both inside and outside of government that can be used to correct deficiencies in the law and adapt it to current times. Based on our research, we are recommending the following twelve actions be taken as legislative and administrative reforms of the program.

- **Update the Bottle Bill To Include Bottled Water, Juice and Vegetable Drinks, Sports Beverages, Iced Tea, and Wine Coolers.** By revising the definition of “beverages” in the law in this manner, the bottle bill can be brought up to date with changing consumption patterns. This will support the program's anti-litter and recycling goals, reduce confusion among consumers about which beverages are eligible for redemption, and eliminate disparities in the way producers of different types of beverages who use similar containers are treated under Massachusetts law.
- **Maintain the Current \$.05 Deposit, with a \$.15 Deposit for Wine and Liquor Bottles.** A strong case can be made that a nickel isn't worth what it once was, and the time has come to increase the bottle bill deposit amount to \$.10. The reality is, however, that few stakeholders seem ready to make this change in Massachusetts at this time. Most bottlers and retailers promise it will lead to price changes (and more out-of-state consumption) at a time when the struggling Massachusetts economy cannot absorb these effects. In addition to recognizing the political downside of proposing a \$.10 deposit, supporters of the bottle bill seem uncertain of the advisability of improving the redemption rate by this method, as compared with other possible changes in the program such as more education. The danger also exists that a \$.10 deposit could increase fraudulent redemptions, particularly when combined with an expansion of containers covered by the bottle bill. A compromise position, which is consistent with what the Romney Administration has proposed, is to keep the \$.05 deposit for the majority of beverage containers while establishing a \$.15 deposit for liquor and wine bottles greater than one pint. Large glass bottles of this kind represent one of the most costly items for local recycling programs to handle, and they pose significant risks to people and property when discarded as litter. The decision as to whether the deposit should be increased to \$.10 can be re-evaluated after an expanded bottle bill has been implemented and its effectiveness assessed.
- **Raise the Handling Fee from \$.0225 to \$.0275.** An increase of \$.005 in handling fees is reasonable for the bottle bill, based on analysis of the actual costs incurred by redemption centers and retailers. A handling fee of \$.0275 is still less than the \$.03 amount approved, then rescinded, by EOEA in 1990. Maine and Vermont

specify a handling fee of \$.03 in their bottle bill programs. Providing redemption centers with a sufficient financial margin to stay in business should enhance redemption rates by giving consumers greater access to redemption services.

- **Improve Anti-Fraud Measures.**

Developing more effective measures to curb fraudulent redemptions is a critical step in limiting unnecessary handling fees for bottlers/distributors and protecting the CEF under an updated bottle bill. According to redemption industry experts such as the Tomra Corporation, use of state-specific labeling and bar codes on beverage containers would be a reliable means for moving toward this goal. Yet bottlers/distributors resist this practice, saying that it conflicts with their regional production and distribution operations. Under a compromise reached in New York, bottlers such as Pepsi and Coke agreed to put state-specific markings on their top brands only, limiting new production requirements while combating fraud for the largest group of beverages they sell. To determine the most suitable and acceptable methods of fraud control in Massachusetts, there should be a six-month implementation delay after the adoption of an expanded bottle bill. During that time, we recommend that a Task Force of experts from the beverage industry, retail sector, redemption centers, and state government be convened to formulate new fraud control practices.

- **Provide Assistance to Business.**

Bottlers/distributors and retailers make a profit from selling beverages in containers, and it is not unreasonable for them to share in the social costs of ensuring that these containers do not end up as wasted resource materials and as litter. Still, it is important that these costs to business be fair and proportionate, and that no company be driven out of the marketplace due to the bottle bill. No reform of the bottle bill that fails to take the interests of businesses and their

employees seriously would—or should—have credibility inside the political arena. To minimize negative economic impacts, we recommend that a low-interest loan program be established to assist businesses in dealing with the challenges of making the transition to an updated bottle bill in Massachusetts. The new program should be under the management of the Department of Environmental Protection, perhaps as an adjunct to the department's current Recycling Loan Fund. DEP would set participation requirements based on evidence of cost impacts and economic need. After transition, the fund can be continued to assist struggling businesses that could benefit from temporary help in meeting any bottle bill costs. We also recommend that each year, DEP provide a financial reward, such as a percentage reduction of the Deposit Transaction Fund transfer requirement, for that bottler/distributor or retailer that comes up with the best new techniques for improving the efficiency and effectiveness of the deposit redemption cycle.

- **Maintain CEF but with a New Allocation Formula (1/2 local recycling programs, 1/6 DEP administrative costs, 1/6 low-interest loans to business, 1/6 general revenues).**

Proposals to eliminate the CEF and redirect all of this money to general revenues amount to little more than a raid on environmental program resources that are needed if the state's own waste management goals are to be met. CEF is a self-sustaining account that does nothing to worsen state fiscal conditions and, in recent years, it has directly contributed to deficit reduction. We recommend maintaining the CEF, but with a new allocation formula that stabilizes how the fund is appropriated for different purposes, including local recycling programs, DEP administration, low-interest loans to business, and general revenues.

- **Mount a Bottle Bill Educational Effort.**

It has been many years since the bottle

bill was in the limelight in Massachusetts and broad public discussion of deposit and redemption procedures took place. As a means of boosting the rate of bottle and can returns and informing consumers about the meaning of bottle bill expansion, we recommend that DEP mount an educational program. Following the example of large-scale promotional efforts in such areas as public health, public transportation, and literacy improvement, the state needs to use a variety of media to communicate to consumers both the environmental benefits of the bottle bill program and the practical details of how to participate.

- **Encourage Innovative Recycling Experiments.** The recycling sector in Massachusetts is neither simple nor static. The bottle bill is one of numerous recycling activities taking place under public and private auspices, and new recycling technologies and organizational strategies are being developed all the time. We recommend that DEP encourage innovative recycling experiments that can improve the complementarity between the bottle bill and other recycling methods in the state. Polar recycling director Louis Uva outlined for us a creative plan in which his company might conceivably partner with a city or town in mobilizing local citizens to turn in their refundable containers as a charitable donation. Polar would then coordinate the redemption of these returns and share the refunds with local officials. This is but one example of a novel idea for boosting container recycling within a framework that links the bottle bill with local recycling capabilities, all under the guidance of bottling industry know-how. By using small grants and other forms of targeted assistance, state government should encourage integrative efforts of this kind across the evolving recycling sector.
- **Increase the State's Administrative Commitment to the Bottle Bill Program.** Problems in the state's current

administration of the bottle bill are documented in this report. We recommend a new interdepartmental bottle bill management group be formed under the leadership of DEP. This group should meet regularly to centralize oversight of the program. We also recommend the legislature give DEP expanded enforcement authority, such as the ability to impose fines, for dealing with infractions of bottle bill regulations. Other coordination issues might also be mitigated by the Romney Administration's confirmation of EOE and DEP as lead cabinet agencies for implementation of this law.

- **Require an Annual Bottle Bill Report.** Related to the preceding recommendation, we also call for an annual bottle bill report to be published by DEP. The document should be available to the public and designed to be responsive to the interests of diverse audiences and constituencies for the program. Included should be current data from multiple departmental sources, including deposit and redemption data, CEF expenditures, program violations, and supported local recycling activities. Benchmarks for future performance of the program in regard to rates of return, fraud control, and administrative procedures should also be discussed.
- **Request a New State Auditor's Report Three Years after Bottle Bill Expansion.** The 1998 State Auditor's report made an important contribution to the bottle bill by providing objective analysis of selected issues such as fraudulent redemption and problems in state administration. However, that report is now five years old and its focus too narrow to encompass the range of topics associated with an updated bottle bill such as is being proposed here. We recommend the legislature request another State Auditor's report be completed three years after bottle bill expansion takes place to evaluate the new program and to facilitate a process of continuous quality improvement.



- **Encourage More Research on the Bottle Bill.** Policymaking for the bottle bill suffers from a lack of information about important aspects of the program. As an example, although effective implementation of the bottle bill depends on public understanding and support, no detailed survey of public opinion on the program has ever been done in Massachusetts. Not enough is known about other nations' deposit/return laws and related container recycling efforts and their lessons for program improvements

in Massachusetts. We also learned that discrepancies exist between the bottle bill data distributed by DEP and regional sales numbers compiled by the Container Recycling Institute (Communication from J. Gitlitz, CRI, June 5, 2003). Administrators and lawmakers should reach out to researchers in universities and other independent organizations to examine such topics and disseminate their analysis and findings broadly.

## List of Interviews

Marybeth Campbell, Senior Research Analyst, Representative John Binienda's Office, April 28, 2003

Greg Cooper, Director of Waste Prevention Bureau, Department of Environmental Protection,  
May 2, 2003

Michael Costa, Legislative Aide, Senator Steven Tolman's Office, May 16, 2003

Chris Flynn, President, Massachusetts Food Association, May 13, 2003

Risa Kaplan, Senior Policy Advisor, Governor's Office, May 16, 2003

Randi Mail, Recycling Director, City of Cambridge, April 25, 2003

Bob Renzi, Massachusetts Association of Redemption Centers, April 25, 2003

Chuck Riegle, Director, Business Process Improvement/Government Affairs, Tomra North  
America, May 9, 2003

John Stasiowski, President, Massachusetts Wholesalers of Malt Beverages, May 13, 2003

Claire Sullivan, Solid Waste Planner, South Shore Recycling Co-operative/MASS Recycle,  
April 25, 2003

Louis Uva, Director of Recycling, Polar Beverages, Inc., May 21, 2003

Iris Vicencio-Garaygay, MASSPIRG Environmental Advocate, April 10 and May 30, 2003

## Sources Cited

- Baker, M. Douglas, Moore, Sally E., and Wise, Paul H. 1986. "The Impact of 'Bottle Bill' Legislation on the Incidence of Lacerations in Childhood," *American Journal of Public Health* 76 (10): 1243-1244.
- Boston Globe*. 1982a. "Another Bottle Vote Seen." February 4, p. 22.
- Boston Globe*. 1982b. "Will 3 Invalid Names Scuttle Bottle Voting?" March 3, p. 21.
- Boston Globe*. 1982c. "Yes on the Bottle Bill." October 21, p. 18.
- Boston Globe*. 1982d. "Berwick Takes Lead To save Bottle Bill." October 22, p. 24.
- Boston Globe*. 1982e. "Bottle Battle Lines Drawn." November 7, p. 31.
- Boston Globe*. 1982f. "Bottle Bill Delay Voted." December 4, p. 17.
- Boston Globe*. 1997. "A Half-Empty Bottle Law." May 12, p. A16.
- Boston Globe*. 2003. "A Bigger Bottle Bill." March 11.
- Bottle Bill Task Force. 2000. "Report of the Findings of the Legislature's 'Bottle Bill' Task Force." Boston.
- Bradlee, Ben. 1981a. "Gov. King Vetoes Bottle Bill." *Boston Globe*, October 31, p. 1.
- Bradlee, Ben. 1981b. "Bottle Bill Up To Senate as House Overrides Veto." *Boston Globe*, November 11, p. 1.
- Bradlee, Ben. 1981c. "Bottle Bill Wins After 8 Year Fight." *Boston Globe*, November 17, p. 1.
- Bradlee, Ben. 1982. "Hub Bottle Law Supporters Hold a 'Unity Conference.'" *Boston Globe*, October 10, p. 18.
- Businesses and Environmentalists Allied For Recycling. 2002. *Understanding Beverage Container Recycling*. Boston: R. W. Beck, January 16.
- Cohen, Russ. 2003a. "Report on Beverage Container Tally at the Charles River Cleanup on 4-12-03." Boston: Massachusetts Riverways Program, April.
- Cohen, Russ. 2003b. "Report on Beverage Container Tally at the 4/26/03 Worcester Earth Day Cleanup." Boston: Massachusetts Riverways Program, April.
- Container Recycling Institute. 2003. *The Ten-Cent Incentive To Recycle* Arlington, VA.
- Dammann, Sara Gay. 1993. "Recycling: A Silk Purse from A Sow's Ear," *Beverage World* 112 (1543): 28.
- Department of Environmental Protection. 2003. Bottle Bill Program Data. Boston.
- DSM Environmental Services, Inc. 1999. *Commonwealth of Massachusetts Bottle Bill Redemption Fee Study*. Ascutney, VT, July 1.
- Dietly, Kevin. 2003. "Impact of Expansion on Unclaimed Deposits." Westford, MA: Northbridge Environmental Management Consultants, March 18.
- Franklin, Pat (Container Recycling Institute). 1997. "Testimony Before the Joint House and Senate Energy Committee." Boston, May 12.
- Friedland, Sherry and Perry, Amy. 1995. *Many Happy Returns: A Retrospective of the Massachusetts Bottle Bill*. Boston: MASSPIRG, March.
- Gitlitz, Jennifer. 2002. *Trashed Cans: The Global Environmental Impact of Aluminum Can Wasting in America*. Arlington, VA: Container Recycling Institute, June 2002.
- Harvey, Joseph and Mohl, Bruce. 1983. "State Wins Injunctions in Bottle Suit." *Boston Globe*, April 30, p. 19.
- Kessel, Carolyn. 2003. "Centers Ask for Bottle Boycott." *Hudson Sun*, March 27, p. 1.
- Klein, Rick. 2003. "House Set To Begin Budget Debate." *Boston Globe*, April 30, p. B1.
- Lehman, Betsy A. and Lockman, Norman. 1983. "Action Vowed on Bottle Law Violations." *Boston Globe*, February 9, p. 19.
- Lesser William and Madhavan, Ananth. 1987. "Economic Impacts of a National Deposit Law: Cost Estimates and Policy Questions," *The Journal of Consumer Affairs* 21 (1): 122-140.
- Lockman, Norman. 1982. "Delay Sought on Bottle Law." *Boston Globe*, November 4, p. 28.

- Massachusetts Association of Redemption Centers. 1997. "Testimony Re: Senate Bill 352," Legislative Joint Committee on Energy, May 12.
- Massachusetts Public Interest Research Group. 1996. *One Good Return Deserves Another: Massachusetts Citizens Support the Expanded Bottle Bill*. Boston, May/June.
- Mohl, Bruce A. 1983a. "Bottle Law Brings A Probe." *Boston Globe*, January 12, p. 17.
- Mohl, Bruce A. 1983b. "Mass. Beer Dealers Sued Over Bottle Law." *Boston Globe*, March 8, p. 1.
- Mohl, Bruce A. 1997. "Redemption Centers Shortchange; In Battle with State, They Pay A Penny Less for Bottles, Cans." *Boston Globe*, August 15, p. B1.
- Morris, Jeffrey. 1998. *Economic and Environmental Benefits of Updating Massachusetts' Bottle Bill*. Seattle, WA: Sound Resource Management.
- Northbridge Environmental Management Consultants. 1997. "Scope and Economic Impact of Massachusetts Beverage Container Deposit Legislation: Executive Summary." Westford, MA, May 12.
- Office of the State Auditor. 1998. *State Auditor's Report on Certain Activities Regarding the Commonwealth's Bottle Bill Statute, Chapter 94 of the Massachusetts General Laws*. Boston, October.
- Office of the State Auditor. Division of Local Mandates. 1998. *A Review of the Clean Environment Fund*. Boston, October.
- Smith, Greg. 2003. "How Does the Most Recent Management of the CEF Affect Commonwealth Communities?" Barnstable, MA: Cape Cod Commission.
- Supreme Judicial Court. 1993. "Decision." *Massachusetts Wholesalers of Malt Beverages, Inc. vs. Commonwealth*, 414 Mass. 411.
- Tellus Institute. 1997. *An Analysis of the Costs and the Benefits of Expanding the Scope of the Bottle Bill in Massachusetts*. Boston.
- Tellus Institute. 1998. *An Analysis of a Recycling System as an Alternative to Expanding the Scope of the Bottle Bill in Massachusetts*. Prepared by John Stitz and Susan Williams. Boston, November 6.
- Walth, Brent. 1994. "No Deposit, No Return: Richard Chambers, Tom McCall, and the Oregon Bottle Bill," *Oregon Historical Quarterly* 95 (3): 278-299.
- [www.bottlebill.org/usa/states-massachusetts.htm](http://www.bottlebill.org/usa/states-massachusetts.htm). 2003. "Bottle Bills at a Glance: Massachusetts."
- [www.chelseacenter.org](http://www.chelseacenter.org). 2003. "Chelsea Center for Recycling and Economic Development."
- [www.container-recycling.org](http://www.container-recycling.org). 2003. "Container Recycling Institute."
- [www.container-recycling.org/projects/bear/crisnsresponse-022002.pdf](http://www.container-recycling.org/projects/bear/crisnsresponse-022002.pdf). 2003. "CRI Responds to the National Soft Drink Association's Attack on the BEAR MSRPP Report."
- [www.tomra.no](http://www.tomra.no). 2003. "TOMRA: Helping the World Recycle."

## Notes



**Northeastern**  
UNIVERSITY

**Community-Based Research Initiative**  
[www.cbri.neu.edu](http://www.cbri.neu.edu)