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September 17, 2013

Chairman John Keenan
Joint Committee on Telecommunications, Utilities and Energy
State House, Room 473B
Boston, MA 02133

Chairman Ben Downing
Joint Committee on Telecommunications, Utilities and Energy
State House, Room 413F
Boston, MA 02133

Re: Testimony in Support of H.2943/S.1588, An Act Updating the Bottle Bill; and in opposition to S.1605, which would repeal the existing Bottle Bill.

Dear Chairman Downing, Chairman Keenan, and Honorable Members of the Committee,

Thank you for providing this opportunity to offer our comments on H.2943/S.1588, An Act Updating the Bottle Bill. The Sierra Club wishes to express our strong support in favor of this important proposed legislation. We also wish to express our opposition to S.1605, which would repeal the existing Bottle Bill.

The Sierra Club is the oldest and largest non-profit, non-partisan organization environmental organization in the country. With over a forty year history in this chapter, the Massachusetts Sierra Club represents about 22,000 members throughout the state and over one million nationwide. We fight for clean air, clean water, the preservation of the Commonwealth's most precious natural spaces, and healthy, vibrant communities.

Introduction

The Massachusetts Bottle Bill is the state's most effective recycling program. Since its inception in 1983, over 35 *Billion* beverage containers have been redeemed,¹ contributing to a healthier environment, cleaner and safer communities, and a stronger economy. It is the most effective program ever devised to PREVENT litter.

- As a result of the bottle bill and other recycling efforts, 80% of DEPOSIT beverage containers are recycled compared to only 23% that curbside captures of non-covered containers.²
- It stops valuable petroleum-based plastics from going to our state's disappearing landfills.
- It dramatically cuts litter – litter that burdens our state and municipalities to clean up.
- It saves communities up to \$7 million in trash disposal costs³
- It provides the feedstock for Massachusetts-based recycled materials such as upholstery, carpeting, and Polartec-type fleece.

- Is an important component of the state's booming recycling economy, which is \$498 Million in annual payroll, and an estimated \$95 million in state tax revenue.⁴
- It reaches on-the-go beverages, which are out of the reach of curbside programs.

Not only has our bottle bill been a huge success, it has become a model for other states, Canadian Provinces, and nations throughout the world.

Unfortunately, because of huge changes in consumer tastes, now 1/3 of beverages sold—over a billion bottles and cans in Massachusetts – are unintentionally outside the deposit system.

This proposed legislation would expand the current Bottle Bill to include non-carbonated beverages, would reestablish the Clean Environment Fund, and would increase the handling fee paid by bottlers to redemption centers.

Why update the bottle bill now? In 1983, non-carbonated beverages in single-serve containers were virtually non-existent. Deposits covered just about every on-the-go beverage sold. Nobody even dreamed of bottled water, Gatorade, or flavored iced teas. But now these ubiquitous beverages comprise about one-third of the entire beverage market. National bottled water sales alone have grown from under 2 billion units in 1993 to over 20 Billion units today--surpassing even beer sales.

Meanwhile, our streets, parks, and ball fields are once again becoming litter-strewn, our landfills are reaching capacity, and non-deposit beverage containers are clogging our storm drains.

Seven states currently include non-carbonated beverages in their bottle bills: Maine and California, Connecticut, Hawaii, Oregon, New York, and Michigan. These states have successfully integrated non-carbonated bottle and can collection into their deposit system. Other states are also looking to implement deposit systems, including New Hampshire, Arkansas, Colorado, Illinois, Indiana, Minnesota, Nevada, Tennessee, Texas, Washington, West Virginia, and Wisconsin.

Public Support

In 2011, a survey conducted by *MassInc Polling* showed that 77% of Massachusetts residents support an update to the Bottle Bill.⁵ This support was consistent across gender, race, age, and party affiliation. Of the 351 municipalities in Massachusetts, 208 have asked their representatives in the Massachusetts legislature to support the updated Bottle Bill.⁶

Keeping Current with Consumer Habits

When the Bottle Bill was enacted in 1982, it put deposits on carbonated soft drinks, mineral water, beer, and malt beverages. Since that time, non-deposit beverages like bottled water, fruit juices, and sports drinks have significantly expanded their share of the beverage market, increasing from 27% to 41% of beverage sales nationwide between 2000 and 2010.⁷ The Bottle Bill was never meant to be unresponsive to changes in consumer behavior. Former State Senator Lois Pines, author of the original Bottle Bill, said,

“Had anyone the slightest inkling that in a few years containers filled with water, iced tea and juice would compose [40%] of the beverage market, I would have absolutely drafted the law to place deposits on these containers as well. At the time of passage of the Bottle Bill, the only other drinks were small cans of pineapple and tomato juice which needed to be opened at home with a can opener!”

Increase Recycling

The Bottle Bill couples with curbside recycling programs to achieve a high recycling rate for deposit containers. While curbside recycling is useful for beverages consumed at home, the Bottle Bill improves recycling for beverages consumed on-the-go and in areas where curbside recycling is unfeasible, like inner cities, rural areas, and public places. Almost 70% of deposit beverage containers are redeemed each year under the Bottle Bill,⁸ adding to the 9-10% of containers recovered through curbside recycling.⁹ Overall, deposit containers are recycled at a rate of about 80%, while non-deposit containers are recycled at only 23%.¹⁰ The Bottle Bill works 3-4 times better in capturing bottles than the curbside program alone, making it a perfect companion to curbside recycling.

Litter and Trash

Each year, about 1.4 billion containers are littered or thrown out in Massachusetts. That's enough to fill Fenway Park to overflowing!¹¹ About 1 billion of these 1.4 billion containers are non-deposit beverage containers.¹² In Massachusetts, non-deposit bottles are about four times as likely as deposit bottles to be found as litter,¹³ and they are about nine times as likely as deposit bottles to be littered in our waterways,¹⁴ where they are a serious threat to marine life. States that have bottle bills have seen a reduction in beverage container litter between 70% and 84% and a reduction in total litter between 34% and 47%.¹⁵ An expanded bottle bill would help keep our public spaces beautiful and our wildlife safe and protected.

Who Pays for the Redemption System?

The Bottle Bill shifts responsibility for dealing with the waste from bottled beverages off of taxpayers and communities and onto the producers and consumers of the beverages. Under the updated Bottle Bill, bottlers and beverage distributors would pay an average net cost of about 1.5 cents per container.¹⁶ Since this small cost would cut into bottlers' profits, they are the largest opponents of an update to the Bottle Bill.

Forfeited Deposits

Under the updated Bottle Bill, all unclaimed deposits would go into the reestablished Clean Environment Fund to support environmental programs throughout the commonwealth. It is estimated that the government would receive about \$20 million each year through additional unclaimed deposits with an expanded Bottle Bill.¹⁷

Resources and Landfill Use

PET Plastic: A valuable resource or a waste that will burden our landfills? The vast majority of the containers that would be covered under the update are made of PET Plastic, or *polyethylene terephthalate*, which is made of 99% petroleum. Consumers like PET because it's lightweight, shatter-resistant, and re-sealable. Recycled PET plastic is primarily used for carpeting, upholstery, and Polartec-type fleece products – which are made right here in Lawrence, Lowell, Cummington, Waltham, North Attleboro, and Westport.

While beverage containers make up only 5.4% of solid waste in Massachusetts by weight, they compose 15.2% of the Massachusetts waste stream by volume.¹⁸ Most of these beverage containers are made of PET. In 2012, 3.87 billion pounds of PET bottles were thrown out as waste in the United States, and many of these bottles ended up in landfills.¹⁹ These PET bottles take up a disproportionate amount of Massachusetts landfill space, using 9.8 cubic yards per ton compared to 2.75 cubic yards for "average landfill materials",²⁰ and they never decompose.²¹ Massachusetts is already running out of landfill space, and we currently export more than 1.1 million tons of trash to other states and countries each year.²² An expanded Bottle Bill would significantly reduce the volume of waste filling up our crowded landfills.

Landfills: Beverage containers make up 5.2% of our waste stream by weight, and approximately 15% by volume, depending on the amount of compression. Despite DEP's goal of having our state balance our trash disposal habits so that we are neither an exporter

nor importer of trash²³, we are currently exporting roughly 20% of our trash to other states and countries – and this figure is growing annually. One by one, our landfills are closing – and the ones that are still open are near capacity. Every percentage point that we increase our recycling rate brings us that much closer to holding off the day when our garbage problem becomes a garbage crisis.

The current bottle bill diverts approximately 150 thousand TONS of material from Massachusetts dumps and incinerators each year, saving energy and resources. The deposit system has recovered an estimated 2 million TONS of aluminum, glass and plastic containers since its inception in 1983, saving an estimated 13 million barrels of crude oil equivalent, and has reduced greenhouse gas emissions by 2 million tons.²⁴ It has also prevented countless of bottles and cans from being littered on the state's roads and highways, parks and beaches.²⁵

Environmental Savings and Carbon Reduction: Our bottle bill has resulted in diverting over 100,000 tons of containers from our landfills. Meanwhile beverages not covered have resulted in 60,000 tons of containers being sent to landfills. Adding these containers would save over 250,000 MMBTUs of energy, a carbon equivalent of over 46,000 MTCE. This huge savings would further allow the state to meet its carbon reduction goals.

Conserving Resources

While new PET is used to make food and beverage containers, PET can be recycled and made into carpets, fleece, filling for sleeping bags and pillows, industrial strapping, and even parts of cars.²⁶ Only 30.8% of PET bottles were recycled nationally in 2012, leaving the supply of recycled PET far short of the quantity demanded.²⁷ PET is a petroleum-based product, so increasing the recycling rate for PET bottles through an updated Bottle Bill would conserve our oil supply and reduce greenhouse gas emissions. Recycling all the PET bottles that were thrown out in the United States in 2010 would have saved the amount of energy required to meet the total energy needs of over half a million American homes for a year.²⁸

Increased Employment

The creation of a bottle redemption system in many states, including Michigan, California, Maine, and New York, has led to significant net job increases.²⁹ For every 100 jobs gained in recycling, only about 13 are lost in waste disposal and the extraction of new materials.³⁰ In 2010, Massachusetts' payroll for the recycling industry was \$498 million and included 13,905 jobs,³¹ and a 2012 report estimates that updating the Massachusetts Bottle Bill would cause a net gain of 1,500 jobs in the commonwealth.³² In particular, expanding the Bottle Bill would provide employment at the 150 redemption centers across the state.³³

Saving Public Funds

Expanding the Bottle Bill would collectively save our municipalities between \$4 million and \$7 million annually³⁴ by drastically decreasing the costs of trash collection and disposal and litter management.

Producer Responsibility

The bottle bill is a perfect example of producer responsibility. A staggering 3.3 BILLION beverages are sold annually in Massachusetts. The bottlers should be responsible for helping recycle the resulting mess, and not placing the entire burden on the state, municipalities, and taxpayers. As the producers of the problem, they should be responsible for the pennies that are required to recycle each empty bottle. But currently, over 1 billion containers go into municipal trash every year. A billion containers is hard to visualize – but if you put them in Fenway Park, it would fill Fenway to overflowing.

Public Support

At recent hearings, the members of this committee heard from environmental groups, municipal recycling directors, legislators, members of the public, redemption centers, and many others. The public support is, and has been for years, overwhelming to update our bottle bill and improve our recycling rates. Unfortunately, on the other side of this issue are those who profit from the current system. While they may raise issues about having competing recycling systems or consumer convenience, or perpetuate myths about the “failure of our existing bottle bill” or “cross-border fraud” that even the industry’s own studies discredit, the real issue here is maximizing their profit. And while profit isn’t bad, trying to squeeze the three additional pennies per bottle that they claim it will cost them – at the expense of the environment and the taxpayers – just doesn’t make sense.

In the past 8 years, there has been a marked increase in litter. Surveys of parks and interviews with park personnel and maintenance personnel in our cities and towns have determined that each year, litter is becoming more of a problem.^{35 36} There is a direct correlation between the amount of litter and the increasing share of the beverage market held by non-deposit containers. Some of the increase can be traced back to decreases in municipal and state budgets to maintain and clean our parks – and some can be traced to decreased public anti-litter campaigns.

Passage of the Bottle Bill will alleviate the problem by decreasing the amount of litter, and by using the voluntarily forfeited nickels to fund litter and recycling awareness. The CEF (Clean Environment Fund) was the vehicle that had been successfully providing funds for many projects including those that resulted in cleaner parks, annual increases to recycling rates, and litter clean ups.

Industry critics argue that a bottle bill expansion will not reduce litter, but the evidence contradicts this. After conducting a series of clean-ups across the Commonwealth, Mass Riverways found that “it is over twelve times more likely that a non-deposit container will end up littering our waterways than will a deposit container.”

After surveying litter along 213 miles of Maine shoreline, the Center for Marine Conservation found that bottle and can litter on state beaches dropped 30% within a year after the bottle bill was expanded to include non-carbonated beverage containers. The New York group “Scenic Hudson” has also found that 61% of the container litter collected in its annual “Great River Sweep” consists of non-carbonated, non-deposit containers, even though they comprise only 22% of total beverage sales in New York. Even in New Jersey, which has a litter tax and a “Clean Communities” program, beverage container litter is slightly higher than the national average.³⁷

States without bottle bills do a poor job of recovering bottles and cans. The multi-stakeholder BEAR report found that the average beverage container recycling rate in the non-deposit states was 22% in 1999, in contrast to the average of 70%+ in the bottle bill states. In other words, at an additional cost of just over one and half cents per six-pack, the recovery rates in bottle bill states are more than 3 times higher than in states without bottle bills.³⁸

In fact, recycling rates have fallen even as curbside program access has tripled, because of the increasing number of beverages being consumed away from home. Businesses and local government agencies simply do not have the will or the resources to fund the enormous cost of placement and servicing of recycling bins in a wide range of public places. The deposit system provides a financial incentive for recycling as well as infrastructure that would otherwise not be available.

Redemption Centers Need Support

Redemption centers accept all empty containers, regardless of the brand or where the customer bought them. Approximately one-third of container redemptions take place at redemption centers. These locally-owned businesses are an integral part of the redemption-recycling system. Redemption is a labor and space intensive business. Like every other business in the state, their labor costs have gone up. But while other stores can raise their prices, the redemption centers' are fixed. Not only have labor costs gone up, but also have rents, taxes, costs for fuel and costs now placed on them by bottlers and distributors. Redemption centers are slowly but surely being squeezed out of business - and the entire redemption center system is in danger of complete collapse. The redemption centers are only requesting a cost of living increase and they need help that doesn't come from the state or the taxpayer. It's the money the bottlers pay to make sure that their empties are properly returned and recycled, out of state's landfills, and out of the litter stream.

OPPOSITION TO S.1605

The bottling industry has proposed a so-called alternative to the bottle bill, based on the failed "Delaware" alternative. The Sierra Club notes that the industry is primarily driven by profit, not environmental concerns. Passage of S.1605 would be a blow for recycling, result in significant job losses, cause a large increase in litter and waste, and place an enormous fiscal burden on our cities and towns. The so-called data that's provided by the bottling industry is riddled with errors and misstatements. A full report is available at www.sierraclubmass.org/pdf/MASC-Report-S379.pdf

BOTTLE BILL FACTS AND MYTHS

Do we need a deposit system even though we have curbside recycling? Although curbside is a great program, it unfortunately only works with beverages consumed at home and does little for those consumed *on the go*. For example, if the ball field down the block from your house were littered with water bottles, placing more recycling bins in your living room would have no effect.

If we compare any state with a bottle bill in effect to one without, you would see that bb-covered beverage containers are redeemed/recycled at about 80%³⁹. Unfortunately, in states without bottle bills, containers are recycled only 23%⁴⁰ of the time. Curbside AND bottle bills work together – and those places where they exist together have the highest recycling rates.

The claim that one must "choose" between curbside programs and deposit systems is a myth. Despite a tripling in the number of curbside programs in the U.S. from 1990-2000, the quantity of aluminum cans wasted increased from 554,000 to 691,000 tons a year. The amount of PET beverage bottles landfilled and incinerated rose from 359,000 to 943,000 tons per year.⁴¹ States without bottle bills have only a meager 23% recycling rate⁴², while states with a bottle bill typically have a 70-90% rate. Also note that less than 6%⁴³ of the additional containers that would be captured under the updated bottle bill are aluminum cans. Plastic bottles (vs. aluminum cans) account for the greatest share, (78%) of all containers that would be captured under an updated BB.

Will the bottle bill take valuable plastic and aluminum from municipal systems?

A municipality public works department doesn't look at profitability as their primary responsibility. Their goal is to collect waste, recycling as much as they possibly can. Second, very few of the additional beverages would be in aluminum cans – the vast majority is in PET plastic bottles that, unfortunately, don't command a very high price in raw material. With that in mind, over 200 cities and towns have signed a resolution that supports the UBB, calling on the legislature to help them reach their mandate of increasing recycling. The DEP estimates that municipalities will save up to \$7 million annually in trash collection fees.

Is the bottle bill a tax? A tax – by definition – is money that you have to pay the government. A deposit is something that you temporarily give, typically to a merchant – and that you get back later.

***Tax:** [tæks]: n. An amount of money that you have to pay to the government so that it can pay for public services.*

***Deposit:** [di-poz'-it]: n. A sum of money that you pay when you start renting something. The money is returned to you if you do not damage it. ⁴⁴*

For example, if you rent a tool at the rental center for \$20; you need to give them a \$100 deposit. If you decide to keep the tool and forfeit the \$100 because you're just too busy, claiming that the rental cost was \$120 is erroneous. A voluntarily-forfeited deposit isn't a tax. It's the same with beverages, except that *it's just a nickel*. If someone is just too busy, the state gets the nickel. And since the state spends millions directly and indirectly for litter cleanup and waste disposal, what could be fairer?

Tax specialists and advocates have also dismissed the idea that a container deposit is a tax, including Barbara Anderson of Citizens for Limited Taxation and Michael Widmer of the Massachusetts Taxpayers Foundation.

Are container return areas in food markets a health hazard?

There are no recorded health code violations of container return areas at any of the state's supermarkets or groceries.⁴⁵ Supermarkets, grocers, and liquor stores in the state have been doing an excellent job of maintaining very high levels of cleanliness. Inspections at the facilities of Stop & Shop, Star/Shaws, Market Basket, Big Y, and liquor stores such as Martignetti's and Kappys have all shown that these firms are meticulous in maintaining the cleanliness of their facilities.

Don't beverage containers represent a tiny portion of the waste stream? According to the Environmental Protection Agency, beverage containers comprise 5.2% of the municipal solid waste stream but, when measured by weight, an estimated 15-20% ⁴⁶ of the waste stream when measured in terms of volume. Since landfills fill up by volume, not weight, wasted beverage containers consume a disproportionate amount of landfill space and should be accorded appropriate attention. Because no Massachusetts community wants to host a new landfill, or a new waste-to-energy facility, we should strive to divert as much material as possible from the waste stream. The updated bottle bill is an integral part of managing our waste.

The carbon produced by moving empty deposit bottles around DOES NOT exceed the environmental savings from recycling. Surveys show that most people who redeem their bottles are currently bringing their empties back to the place of purchase while they are shopping for groceries.^{47 48}

Will bottlers need to put fleets of trucks on the road to collect their empties, adding to vehicle exhaust pollution? No. The collection of the majority of the empties is subcontracted to TOMRA and ENVIPCO. Only the few of the very largest bottlers use their own trucks. The others can be retrieved when delivering new inventory.

Will small stores have enough space for more empties? Under H.890/S.1650, small stores under 4000 square feet can get an exemption from taking back empties. This exemption will help small stores that may not have the room to sort and store empty containers.

Is the small handling fee that bottlers pay reasonable? The additional fees incurred by the bottlers - who produce the material that becomes litter and trash - will be only a couple of

cents per container on average. However, numerous studies, including the recently released report by the DEP, show that that prices will be maintained. Those bottlers who are claiming that they are close to failing are being affected by changing consumer tastes, not the tiny cost increase created by the UBB. An example of recent year's earnings: Pepsico : \$6.2 Billion; Coca-Cola \$7.8 Billion; Nestle (bottler of Poland Spring) \$59 Billion; Ocean Spray's 2007 sales: \$1.9 Billion; Polar Beverage 2006 sales: \$250 million. It's also important to note that the beverage industry sells in excess of 3.3 Billion containers annually in Massachusetts.

Is it true that the forfeited nickels are too much for consumers? If you buy a bottle of Coke every day at work (\$1.80 average price) and discard the empty container, thus choosing to forfeit the deposit, at the end of the year, you'll have spent \$450 on Coke, and forfeited only \$12.50 in deposits.

Is cross-border redemption (“redemption fraud”) a significant problem?

Cross-border redemption problems were solved by some bottlers by having different bar codes for deposit vs. non-deposit states. They evaluated their potential losses and realized that it made good business sense; all bottlers should adopt this practice. The estimate for cross border losses is less than 5%, making enforcement more costly than the potential loss. With increased education and enforcement, this amount will decrease further.

Is the deposit system “antiquated”, or tried and true? Opponents of the current deposit law on returnable bottles point to redemption rates as evidence of the declining functionality of the deposit system. *This is a misrepresentation.* While it is evident to everyone that a nickel isn't what it used to be, 5 cents *still* provides an effective financial incentive as a deposit. Our 80% redemption/recycling rate recycled.⁴⁹ for containers covered by the bottle bill is still nearly triple *the non-bottle bill state average recycling rate of 22%.*

If this is passed, retail prices will NOT go up: This is exactly what the bottlers said in 1983 – and they say in every state where bottle bills are proposed. However research shows that this claim is fiction. A wide ranging report⁵⁰ from the Massachusetts Department of Environmental Protection debunked a range of industry assertions. Their report concluded that prices are typically the same in bottle bill and non-bottle bill states. It also showed that despite industry claims that consumer choices would decrease, variety was solely dependent on store size.

Is this the right time? Will this update hurt our economy? In 1983, when the original bottle bill was passed, the industry was foretelling economic doom, and massive job losses. During this period, mortgage rates were over 20%. Unemployment was 9.7%. But – oddly – nothing bad happened! Soda prices remained the same, sales increased slightly, and people drank as much Coke and Pepsi as they did before, People LIKED the incredible effect that the bottle bill had on litter, and they were aware that the bottle bill resulted in a huge increase in recycling.

Will this hurt border communities? Will people drive across the border to save 5¢ on a *refundable deposit*? At current gas prices, it costs approximately about \$1.20 to drive 5 miles each way to another grocery store. If a shopper has unlimited spare time, and wants to throw away any savings on gas, there is a possibility that they may do this once or twice before they smarten up. They'll quickly realize that it's easier just to shop at their own store and cash in the empties. Despite this false claim, many border communities have endorsed the Bottle Bill Update.

Is there a better way?

As dedicated environmentalists, the Sierra Club wishes that there were a better way. But in countries around the world, it's 100% proven that this is – by FAR – the best way anywhere.

And if and when there is a better way to help protect our environment and preserve our resources, we'll be at the state house promoting it.

Conclusion: The existing bottle bill is a system that works. It has a huge positive impact on recycling. It drastically reduces litter. It's a system that's been working effectively for 30 years. It is appropriate now to update the bottle bill by including water and other popular non-carbonated beverages. By doing so, Massachusetts can re-establish itself as a national leader in recycling.

The Sierra Club respectfully requests that the committee report this bill favorably.

Respectfully,



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¹ MA Bottle Bill Return Rate Information FY1990-present (DEP Report from DOR)

² Container Recycling Institute, 2013.

³ Massachusetts DEP

⁴ The Massachusetts Recycling Economy (fact sheet), Mass DEP, Nov. 2010.

⁵ MassInc Survey, conducted in 2011. <http://bit.ly/ubbsurvey>

⁶ "Supporting Municipalities", Massachusetts Public Interest Research Group (MASSPIRG), 2013.

⁷ "Bottled Up: Beverage Container Recycling Stagnates (2000-2010)", Container Recycling Institute, 2013.

⁸ Sean Sylver, Massachusetts DEP, 2013. Reported redemption rate is the average of deposit container redemption rates from 2009-2013.

⁹ "Executive Summary: Understanding Beverage Container Recovery", BEAR, 2002.

¹⁰ Container Recycling Institute, 2013.

¹¹ Massachusetts Sierra Club, 2014.

¹² Massachusetts Sierra Club, 2014.

¹³ "Beverage Containers in Litter and Public Area Waste Receptacles", report prepared for Massachusetts DEP by Recycling and Resource Management Consulting, Newton, MA, 2009.

¹⁴ Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement survey, conducted at Charles River Cleanup, 2003.

¹⁵ "Litter Studies in Bottle Bill States", Container Recycling Institute.

<http://www.bottlebill.org/about/benefits/litter/bbstates.htm>

¹⁶ Massachusetts Sierra Club, 2014. Handling fees, the amount paid to dealers and redemption centers to process empty containers, would be about \$75.1M. The amount received as scrap value from these returns is estimated at about \$24.7M, so the net expense to bottlers is \$50.4M. About 3.3 billion beverage containers are sold each year, so the net average cost per container is about 1.5 cents.

¹⁷ Sean Sylver, Massachusetts DEP, 2013. Expanding the Bottle Bill would add 1.5 billion beverage containers to the number of deposit containers sold each year. 27.3% of these containers would not be redeemed, giving the state \$0.05 per unredeemed container.

¹⁸ "Analysis of Beverage Containers Within the Massachusetts Municipal Solid Waste Stream", report prepared by the Massachusetts Sierra Club from Massachusetts DEP studies, 2012.

¹⁹ "Report on Postconsumer PET Container Recycling Activity in 2012", National Association for PET Container Resources (NAPCOR), 2013.

²⁰ EPA Landfill Waste and Geotechnical Stability Report, BEAR, 2003.

²¹ NAPCOR

²² "Massachusetts 2010-2020 Solid Waste Master Plan: Pathway to Zero Waste", Massachusetts DEP, 2013.

²³ Massachusetts Solid Waste Master Plan: 2006 Revision, June 2006

²⁴ Container Recycling Institute, 2009

²⁵ Container Recycling Institute, Jenny Gitlitz, October 25, 2005.

²⁶ NAPCOR

²⁷ "Report on Postconsumer PET Container Recycling Activity in 2012", National Association for PET Container Resources (NAPCOR), 2013.

²⁸ "Bottled Up: Beverage Container Recycling Stagnates (2000-2010)", Container Recycling Institute, 2013.

²⁹ "Bottle Bills Create Jobs", Container Recycling Institute. <http://www.bottlebill.org/about/benefits/jobs.htm>

³⁰ "Puzzled About Recycling's Value? Look Beyond the Bin", United States Environmental Protection Agency, 1998.

³¹ "Recycling Economic Information Study Update: Delaware, Maine, Massachusetts, New York, and Pennsylvania", report prepared for Northeast Recycling Council by DSM Environmental, 2009.

³² "The Impact of the Bottle Bill Update on Jobs in the Economy", Sierra Club and MASSPIRG, 2012.

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- ³³ "Registered Redemption Centers in Massachusetts", Massachusetts DEP, 2013.
- ³⁴ "Analysis of the Impact of an Expanded Bottle Bill on Municipal Refuse and Recycling Costs and Revenues", report prepared for Massachusetts DEP by DSM Environmental, 2009.
- ³⁵ Town of Wayland, Wayland Beautification Project
- ³⁶ Waste Reduction Program Assessment and Analysis for Massachusetts, Tellus Institute, Feb 2005
- ³⁷ Steven R. Stein. "Sweating the Litter Things." *Resource Recycling*, May 2005.
- ³⁸ "Understanding Beverage Container Recovery: A Value Chain Assessment Prepared for the Multi-Stakeholder Recovery Project, Stage 1." Businesses and Environmentalists Allied for Recycling (BEAR), a Project of Global Green USA, January 16, 2002.
- ³⁹ Massachusetts Dept. of Environmental Protection estimate of 70% redeemed plus 10% recycled curbside.
- ⁴⁰ National Association for PET Container Resources (NAPCOR), Report 2008.
- ⁴¹ Container Recycling Institute website data.
- ⁴² National Association for PET Container Resources (NAPCOR), Report 2008.
- ⁴³ Container Recycling Institute's Beverage Market Survey (2005).
- ⁴⁴ Collins English Online Dictionary
- ⁴⁵ "The 10¢ Incentive to Recycle." Container Recycling Institute, Arlington, VA 2004.
- ⁴⁶ PET takes up 9.8 cubic yards per ton as opposed to 2.75 cubic yards per ton for "average" landfill materials, BEAR Report(2002); EPA Landfill Waste and Geotechnical Stability Report, Feb 2003.
- ⁴⁷ Twenty telephone calls and emails made by The Sierra Club during the week 10/19/05 to 10/23/05.
- ⁴⁸ DSM Environmental (Ascutney, VT), in a study commissioned by the Massachusetts Department of Environmental Protection.
- ⁴⁹ Container Recycling Institute, website, retrieved Aug 2009
- ⁵⁰ Available at the website of Mass DEP. <http://www.mass.gov/dep/recycle/reduce/bottleca.htm>