Testimony of Kevin Dietly[1] Before Senate Committee on Natural Resources and Energy February 21, 2014

Good Morning, Chair Hartwell, Vice-Chair Snelling, and Committee members. I appreciate the invitation to meet with you this morning and provide additional background on the public space recycling proposal described by Andrew MacLean and to address related issues on litter and the deposit law.

I have had nearly 30 years of experience with the economic and financial aspects of waste management – from hazardous wastes to ordinary household materials and everything in-between. My consulting experience ranges from US EPA, state agencies, trade associations, Fortune 100 companies, and small start-ups. I have particular expertise with the design, implementation, and operation of beverage container deposit laws, having conducted primary research in every US deposit jurisdiction and provided testimony on this issue across the country. I am also the Manager of the Vermont Commingling Group, LLC which operates the commingled collection component of Vermont's deposit law and I fill the same role with a similar group in Maine.

Public Space Recycling

Among the areas addressed by Act 148, the mandate to provide public space recycling (PSR) statewide falls somewhat between the cracks with regard to identifying a responsible party for fund the requirements. Communities and the state have obligations, but taking a coordinated approach to the issue would like lead to much more successful recycling and permit scale economies in promotion, bin acquisition, and strategy.

As you just heard from Andrew Maclean, the Beverage Association of Vermont (BAV) is exploring options for taking responsibility for implementing such a program statewide along with coalition partners. BAV has examined the possible parameters of PSR for Vermont and Attachment 1 summarizes the key aspects of such a program. The Beverage-led coalition would conduct a planning phase to identify partners at the state and in communities, conduct market research, and identify appropriate bin designs. Then the coalition would begin acquiring bins and provide them at no cost to partners, once plans were in place to manage collected materials. Partners would arrange for the management of the material and revenues from recyclables collected along with avoided disposal costs would be used to defray any expenses. Experience in other jurisdictions indicates that bin servicing costs do not change much since crews already empty trash barrels and recycling bins would be co-located with them. An important component of the program would be a statewide promotion and education effort that would not only raise awareness of the public space program but would also address other recycling as well.

[1] Principal, Northbridge Environmental Management Consulting, Westford, MA, on behalf of the Beverage Association of Vermont.

As shown the program would roll out over several years but by the statutory deadline would place about 2,000 bins statewide or one per 300 residents. The ultimate coverage of roughly one bin per 120 residents reflects a very high level of coverage compared to other similar programs. Public space recycling is a key strategy to reducing litter and providing broader recycling access outside the home. A program like this would be part of the strategy to eliminate the container deposit law and achieve the economic advantages highlighted in the Systems Analysis of Act 148 – namely to achieve most of the recycling and waste diversion advantage of the Act while avoiding the highest cost aspect of the current system – the bottle bill.

Litter

Research on litter in northern New England indicates that Vermont should not be too comfortable with its current litter control strategy. When compared to New Hampshire (no deposits) and Maine (the most comprehensive deposit law in the US), Vermont has the most overall litter. On a standardized basis (adjusting for demographic, traffic, and weather differences between the states), New Hampshire has 32 percent less litter per mile on its roadsides and Maine has 21 percent less. The data are described in more detail in Attachment 2.

Maine and Vermont both rely on the deposit law as part of their litter control strategies, but that is not enough since beverage containers typically represent only about seven percent of litter. A more comprehensive approach is required to target the entire litter problem, not just a small part of it. Combine that with the fact that at least one-half of all litter is typically unintentional (it blows out of unsecured loads, out of over-full trash bins, etc.) and a comprehensive cleanup program is clearly needed to manage litter effectively. New Hampshire appears to do the best job of that among the northern New England states.

Even if we look solely at beverage containers on roadsides, Vermont still has the most beverage container litter on average followed by New Hampshire and then Maine.

I believe it is inappropriate to view the deposit law as a necessary component of litter control for Vermont. A program to provide public space recycling access along with enhanced litter control efforts targeted at all litter (not just the 6.4 percent that is beverage containers) would be more effective and efficient.

One clear benefit of public space recycling is the associated beneficial effect on litter. Because PSR would include multiple materials, the bins would provide another way to manage material in public where it is more likely to become litter. Attachment 3 documents litter reduction in association with public space recycling efforts.

In Manitoba, which has a comprehensive, province-wide PSR program, litter has gone down markedly for both overall materials and beverage containers since the launch of the program in 2011. Litter in the capital, Winnipeg, is down 37 percent with beverage container litter down 23 percent.

In a beverage industry-funded pilot in Palm Beach County, Florida, litter near bin locations (within 10 meters) was reduced 75 percent after the pilot with beverage container litter down 87 percent.

Current Bottle Bill System

One issue I was asked to address today was the operational and economic aspects of the deposit program in Vermont. Having studied the program extensively since 1997 and managing the commingling system, I have a lot of experience with the program. My firm also compiled the required data from the beverage and retail companies in Vermont to support the ANR analysis of Act 148. All of the data and analysis we compiled were shared with ANR's consultants under confidentiality agreements and the information was critical to compiling an accurate picture of the current system.[2]

To review the key aspects of the system, I propose to discuss highlights from the Act 148 Systems Analysis – showing the different stakeholders in the program and the economic impact of the system on them. The underlying data are provided in Table 46 of the report and provided here as Attachment 4 to my testimony.

Distributors- $6.1 million

- Legally obligated to collect empty containers from all redemption locations and to pay the statutory handling fee of 3.5¢ (commingled) or 4¢ (brand-sorted) for every returned container in addition to reimbursing the deposit. Each return therefore represents an 8.5¢ or 9¢ expense to distributors plus the cost of picking up and processing the material.
- The available funds to offset these expenses are the deposit revenues collected and the price of scrap materials sold.
- The net annual cost in the report is $6.1 million after accounting for scrap revenue and the unclaimed deposits retained by distributors.

Vermont Liquor Control- $0.2 million

- As a monopolistic distributor, Vermont DLC also incurs costs to collect empty containers and pay handling fees. Because the bottles are expensive to manage and glass has virtually no market value, the impact on a per container basis is much higher than for other deposit products
- The impact to VLC is $191,000 per year.

Retailers and Redemption Centers- $0.3 million

- Retail or stand-alone redemption sites must have the capability to take back, count, sort, and store empties. This means having the facilities, equipment, and staff to perform these functions. The compensation for this is the handling fee of 3.5¢ or 4¢.
- The analysis estimates a net cost of $300,000 after handling fees although this assumes an unreasonably low cost for reverse vending machines at retail locations. Using actual Vermont costs would double that annual expense.

[2] While Northbridge provided extensive data for the analysis, some of the cost data in particular was passed over in favor of estimates provided by other stakeholders. Some of these assumptions were inappropriate and did not make sense (as one can discern from reading the report in detail). We believe the figures used in the report underestimate true costs of the current law by 17% or $1.9 million annually and underestimate the additional cost of expansion by 29% or $4.6 million per year.

Consumers- $5 million

- Consumers forfeit unclaimed deposits when they recycle containers at home or at dropoff centers or when they throw a container in the trash. This costs consumers $1.6 million between liquor bottles and beer and soda containers. In fact Vermont consumers forfeit much more than this in deposits because many choose to donate containers to charity or their containers are scavenged from recycling bins and redeemed.
- The more significant cost to consumers is the cost to redeem containers, measured in this analysis by the mileage driven on special trips to redeem empties or on trips "out of the way" to redeem. The research conducted in Vermont mirrors findings elsewhere – the old assumption that most people redeem as part of other trips does not hold up. And the incremental mileage driven represents a cost to consumers – one that they are effectively forced to incur in order to receive refunds back. This $3.4 million brings total consumer costs to $5 million.

Combined - $11.6 million

- The net system cost (after accounting for revenue from scrap material) is $11.6 million, making this the most expensive component of the existing recycling system in Vermont at more than $650 per ton.
- The analogous cost for the expanded deposit law would be $15.8 million (although we believe the actual cost would be more than $20 million).
- The high cost of the deposit system very simply results from the fact that it is an independent system that operates alongside and completely separately from the municipal recycling system in Vermont and manages a relatively small amount of material. It is largely duplicative and, because of the demands of the deposit law, very inefficient.
- Replacing the deposit law with the programs required in Act 148 would result in very little reduction in waste diversion, but a dramatic reduction in the overall cost of recycling in Vermont – that is what ANR's Act 148 analysis shows.

Other States

I would like to conclude my remarks with reference to two other states that have had or are having relevant policy discussions over the same issues. Delaware passed a Universal Recycling Act in 2010 that included milestones for providing universal single stream recycling access statewide to all residential, bar and restaurant, and commercial establishments by 2014. The law included a requirement that recycling costs be embedded in overall waste management service charges and that the beverage container deposit program be repealed. The law established a temporary fund for capital costs, using a consumer fee collected by retailers on the sale of containers that previously had deposits. Instead of a 5¢ deposit, consumers pay a 4¢ fee which reverts to a state fund overseen by a recycling advisory board. That fee sunsets this December.

Delaware's recycling rate has risen impressively in recent years, especially since the new law was enacted. Attachment 5 summarizes the increased recycling and some of the provisions of the law. The Delaware experience shows there is precedent for replacing a deposit law with a better, more comprehensive, better funded recycling system – building on existing infrastructure instead of continuing to pay for competing systems.

The other state is Minnesota, which does not have a deposit, but where two recent studies were released examining the impact of a deposit program and the impact of enhancing existing recycling infrastructure for residential and away from home recycling.

While Minnesota already has one of the highest recycling rates in the US (46 percent in 2012), a report prepared for Recycling-Reinvented, a group formed to promote producer responsibility for packaging waste, showed that residential recycling would rise by one-third if best practices were deployed statewide. More importantly, the study found that these improvements could be implemented at no net cost increase because of increased efficiencies available through the use of best practices in collection and processing of material.[3] The best practices involved increasing access to single stream collection, public space recycling, and increased promotion and education spending. The current residential system is projected to cost between $61 and $74 million per year to operate and the optimized system would produce 1/3 more recycling at a cost of $64 million per year (Exhibit 1).

At the same time, the Minnesota Pollution Control Agency released a draft report examining the costs and impact of a beverage container deposit system for Minnesota. This system would capture all beverage containers of all types and sizes and containing all beverages from baby juice to bourbon and would be the first to include dairy products.

The cost of implementing this system is nothing short of shocking, especially in comparison to the cost of the existing recycling system. The state's consultant estimated an annual cost of $179 million to operate the program.[4] If scrap revenues are deducted from these costs and consumer travel costs added back in, the net cost of the deposit scheme would be $143 million per year – ***double the cost of the entire residential recycling system in the state.***

Exhibit 1

Minnesota – A Tale of Two Studies

	Current	**Best Practices** for Households; **Public Space** Infrastructure	**Deposit Scheme**
Cost of Recycling System	$61 - $74 million	$64 million (no change)	$179 million operating + $40 million consumer travel - $76 million scrap = **$143 million additional**
Recycling Impact	46% recycling now	+34% more residential recycling + public space infrastructure	Increases share of beverage containers collected for recycling from 60+% to 80+%; adds 1% to 1.6% to overall recycling rate

Sources: see text

[3] http://marketbasedrecycling.com/marketbasedrecycling/wp-content/uploads/2014/01/RR-EPR-MN-Study-Working-Paper-2.pdf
[4] http://www.pca.state.mn.us/index.php/view-document.html?gid=20460

Conclusion

Research in other jurisdictions and experience in Delaware bears out what ANR's systems analysis shows: a deposit system is a costly, duplicative program providing minimal benefits for a small part of the waste stream and drawing needed resources and revenues away from the more convenient and effective systems that handle multiple materials.

Minnesota's studies show that adding on a deposit system in a jurisdiction with established and successful recycling infrastructure makes no sense at all. Deposit systems pre-date comprehensive recycling infrastructure in states and communities. Once that infrastructure is in place, it makes no sense to add a deposit system – that's why no state has done so. It therefore follows that in time, the implementation of comprehensive infrastructure in states with legacy deposit systems will enable those states to eliminate the deposit, reduce costs, increase convenience, and build a better, more sustainable recycling program. Delaware was the first state to do so – there will be more.

The commitment to greater investment and access to recycling in Act 148 and opportunities such as the one outlined here to close the gap on public space recycling provide the right environment to move Vermont forward to achieving the kinds of diversion increases shown in the systems analysis and to do so at a lower overall cost. That means investing in the multi-material infrastructure and eliminating beverage container deposits so the volume and value of that material can help support the overall system. That is the path forward.

Attachment 1

A Public Space Recycling Program for Vermont

Act 148 establishes a timeline for separating mandated recyclables and organics from solid waste and bans their disposal. While the Act establishes aggressive diversion goals, it leaves unanswered how to fund capital and operating costs for the infrastructure needed to achieve these goals. To address part of this gap, a coalition of stakeholders is exploring taking responsibility for funding the implementation of public space recycling (PSR) and enhanced litter control.

The Act's public space recycling requirement creates a new state and local government burden with no natural user fee basis for covering the costs, especially capital and startup costs, which are significant. Furthermore, access to public space recycling should be complemented by enhanced litter control efforts to ensure that waste in public places is reduced and properly managed.

To assess the feasibility of such a program, the Beverage Association of Vermont requested an expert in PSR to scope out a possible plan and its initial assessment is summarized below.

Objective: implement a PSR program by July 2015 to pair recycling containers with trash containers on lands and in buildings owned by state and local governments.

Materials: collect all "mandated recyclables" defined in Act 148 including cans and bottles and various types of paper using single stream collection.

Coalition: design the program; purchase containers and provide at no cost to partners; coordinate acquisition, placement, and servicing with state and local partners; manage program promotion and education; monitor program performance. Coalition is not responsible for collecting and processing material – that is the responsibility of the partners either directly or through their waste services providers. The value of commodities collected is available to the partner or hauler to defray collection and processing expenses.

Timeline: *Start-up: now to July 2015*

- 4 month planning phase to engage with state and local partners, conduct market research, develop messaging and branding, refine budget
- 6 month pre-launch to open website for partners to select and order bins, produce promotional materials, begin purchasing bins, hire program staff
- 8 month launch to begin placing bins and implementing media campaign and outreach

Ongoing Operations: Continue placing bins for next two years; bin replacements; modify messaging and outreach

Preliminary Parameters:

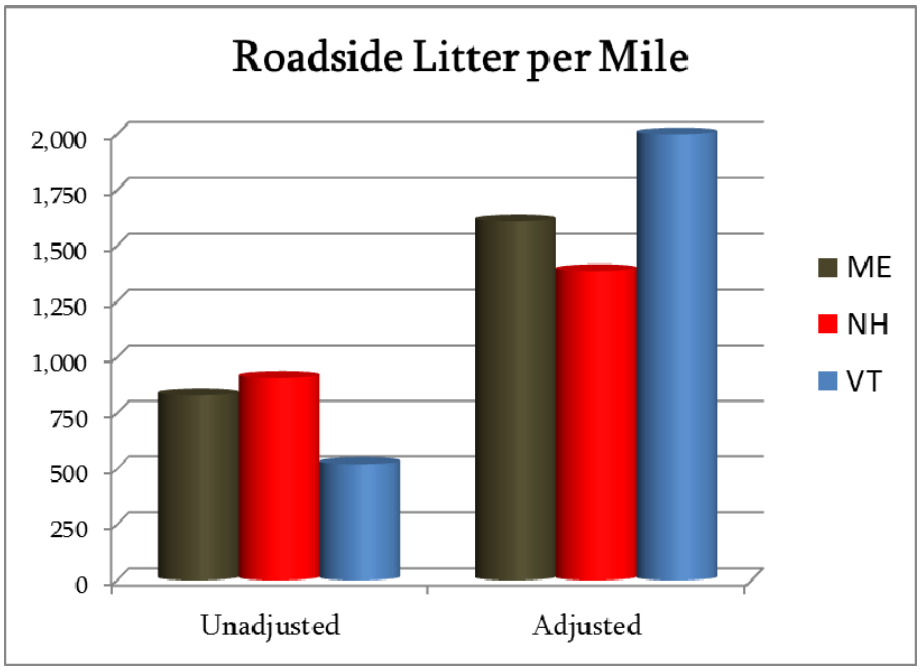
- By 7/1/15 place 2,100 bins (1/300 residents)
- By 7/1/16 have 3,600 bins in place (1/170 residents)
- By 7/1/17 have 5,200 bins in place (1/120 residents)
- Project 3,600 to 4,700 tons of marketable recyclables per year (very rough estimates)

2010 Litter Survey of Northern New England

In the summer of 2010, Environmental Resources Planning LLC (ER Planning) conducted three separate litter surveys in the states of Maine, New Hampshire, and Vermont in order to compare the types and quantities of litter in each of the three states. ER Planning employed the Visible Litter Survey (VLS) methodology, used previously for characterizing and analyzing litter in more than 70 statewide litter surveys. This approach allows comparison of the results of this survey with those from other state surveys utilizing the same methodology. These include the most recent surveys conducted in New Jersey (2004), Georgia (2006), and Tennessee (2006). Sites for the survey were chosen using stratified random sampling across eight categories of roadways. A total of 288 sites were studied (96 per state) along more than 27 miles of roadway covering approximately 2.2 square feet of roadside area.

Results – Overall Litter

On the basis of unadjusted data from the three states, Vermont had the least litter per mile on average at 521 items per mile followed by Maine at 830 items and New Hampshire at 907 items (see figure – "Unadjusted Results"). These differences reflect littering behavior and cleanup efforts in the states, but they also reflect differences in demographics such as population and urbanization as well as differences in weather and traffic.



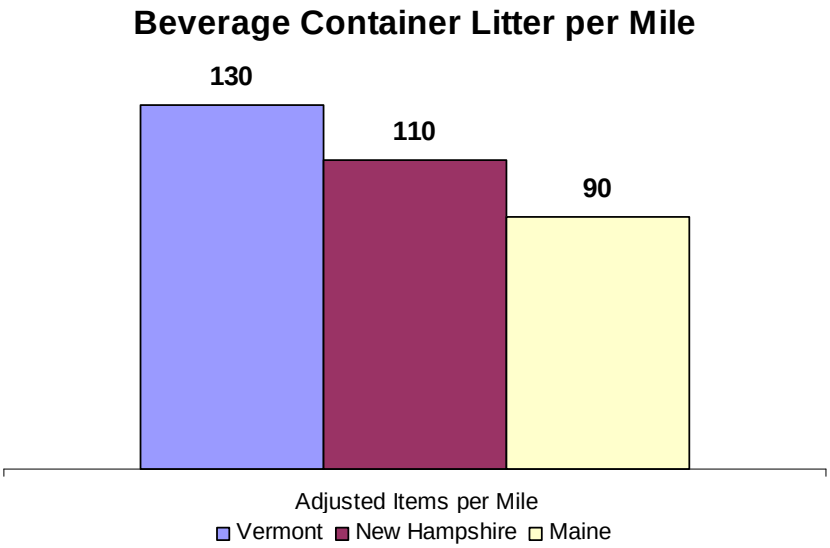
In order to correct for these differences and focus solely on litter rates and cleanup, ER Planning adjusted the results of the survey to correct to the same US average conditions of traffic, weather, income, population size, *etc.*; this adjustment eliminates the biasing effect of these factors and enables a fair comparison between states.

On an adjusted basis, the order of the states is reversed. New Hampshire had the least litter on a standardized basis at 1,387 items per mile followed by Maine at 1,609, and Vermont at 2,035. New Hampshire therefore has 32 percent less litter per mile than Vermont and 14 percent less litter per mile than Maine. For reference, a 2004 New Jersey study using the same methodology computed an adjusted litter rate of 1,746 items per mile – less litter than Vermont but more than Maine and New Hampshire.

Results – Beverage Containers in Litter

Beverage containers represented between 5.6 percent (Maine) and 7.9 percent (New Hampshire) of litter across the three states. Vermont fell in the middle of the range at 6.4 percent. These findings are consistent with other recent studies that show beverage containers representing 4.4 percent (Georgia – 2006) to 10.5 percent (Mississippi – 2000) of litter.

Beverage container litter per mile did not vary much across the states – from a low of 90 per mile in Maine (adjusted basis) to 130 in Vermont; the amount of beverage container litter in New Hampshire (110) fell exactly between the other two states.



Results – Negligent Litter

Recent surveys have suggested increases in the amount of negligent litter. Negligent litter is litter that falls, blows, or is otherwise unintentionally caused, such as loose debris blowing from an unsecured load of trash. In the study, negligent litter account for more than half of littered items in all three northern New England states. This suggests that increased monitoring and enforcement of tarping laws and similar means of controlling negligent litter could have a significant impact on roadside litter in the states.

Policy Implications

Controlling for differences in traffic, weather, and demographics, Vermont has the most roadside litter of the three states. This suggests that littering behavior and cleanup efforts are problematic in Vermont and that, relative to the other two states, New Hampshire is either producing less litter or has better cleanup efforts or a combination of the two.

From the perspective of beverage containers, the three states fell in the same range as other states when looking at litter composition; beverage containers represent a small share of overall litter. The differences in the number of beverage containers littered are relatively small.

Attachment 3

Litter Reduction from Public Space Recycling

Well-designed public space recycling programs offer parallel access to recycling and trash disposal in the same locations, so individuals have an opportunity to recycle when they are out in parks, on streets, or in other public venues. Many types of public recycling programs exist, though often the emphasis of these programs has simply been buying bins, without much regard to proper placement, management, strategy, or the critical supporting education and promotion.

A more systematic approach to public space recycling results in much more effective collection and synergies with other recycling programs offered in communities. Building out these systems requires advance planning, knowledge of what works, and adequate resources – all of which have been in short supply in the past.

Two recent programs – the largest public space program in North America operated in Manitoba and a small pilot in Palm Beach County, Florida – provide some insight into the litter benefits associated with public space recycling.

Manitoba – "Recycle Everywhere"

The Manitoba program is part of a producer responsibility system approved by the Province of Manitoba designed to reach recycling targets for a wide range of recyclables. Privately funded and operated, the program began in 2011 and now has placed 15,000 bins in 175 of the 202 communities in the province (which contains 1.2 million people spread over an area the size of Texas). Manitoba does not mandate deposits on beverage containers, although beer bottles carry a voluntary industry deposit.

In the largest city, Winnipeg (population 705,000), litter has been measured at 105 sites since 2010. Large litter (visible litter most often tracked in litter studies) has declined 37 percent overall since 2010 and beverage container litter is down 23 percent. Small litter such as cigarette butts is also down 12 percent, although it is not the target of the program since little of this material can be readily recycled.

In Brandon (population 56,000), overall litter has declined 33 percent with beverage container litter down 51 percent.

Palm Beach County, Florida – "Recycle on the Go"

A pilot study in Florida funded by the beverage industry was designed to not only place recycling bins in public spaces, but to measure impacts using extensive sampling and analysis. Ultimately 126 bins were placed in eight parks, two streetscapes, and one beach around Palm Beach County in 2012. Across all the sites, the program captured about 50 percent of beverage containers, at least based on initial sampling. While there were supporting media and promotion efforts, these were far less extensive than the resources supporting the Manitoba program.

Litter within 10 meters of the bin locations was reduced by 75 percent overall (there were already disposal bins in these locations) and beverage container litter declined by 87 percent.

TABLE 46. COSTS OF THE CURRENT BOTTLE BILL AND ESTIMATED COSTS OF EXPANDED BOTTLE BILL

Parties and Cost/Revenue Components	Cost Per Container ($)	BOTTLE BILL		EXPANDED BOTTLE BILL	
		# Containers	Total Cost ($)	# Containers	Total Cost ($)
State Administrative Costs			***($21,500)***		***($150,000)***
Distributors					
Deposits collected	0.05	*270,382,907*	$13,519,145	*383,230,704*	$19,161,535
Deposits redeemed	0.05	*241,948,783*	($12,097,439)	*324,966,302*	($16,248,315)
Deposits collected, wine	0.15			*9,846,154*	$1,476,923
Deposits redeemed, wine	0.15			*7,384,616*	($1,107,692)
Handling fees paid out					
Commingled	0.035	*183,881,075*	($6,435,838)	*217,628,096*	($7,616,983)
Sorted	0.04	*58,067,708*	($2,322,708)	*117,184,360*	($4,687,374)
Collection costs (third party & owı	0.015	*241,948,783*	($3,629,232)	*334,812,456*	($6,026,624)
Materials revenue received					
Aluminum		*146,174,028*	$3,750,899	*153,765,729*	$5,564,228
Plastics		*35,946,008*	$789,228	*107,765,988*	$1,872,642
Glass		*59,809,251*	$332,129	*70,540,336*	$293,790
Liquor Glass				*7,384,616*	$110,831
Sub-Total, Distributors			***($6,093,816)***		***($7,317,871)***
Vermont Liquor Control					
Deposits collected	0.150	*3,745,035*	$561,755	*3,745,035*	$561,755
Deposits paid out	0.150	*2,860,458*	($429,069)	*2,860,458*	($429,069)
Collection Cost	0.078	*2,860,458*	($223,116)	*2,860,458*	($223,116)
Handling fees paid out	0.035	*2,860,458*	($100,116)	*2,860,458*	($100,116)
Materials revenue received	0.000				
Sub-Total, VLC			($190,545)		($190,545)
Retailers/Redemption Centers					
RVM costs	0.034	*24,194,878*	($822,626)	*48,744,945*	($1,657,328)
Manual costs	0.038	*217,753,905*	($8,239,953)	*283,605,972*	($10,647,030)
Handling fees received	0.036	*241,948,783*	$8,758,546	*332,350,917*	$12,304,358
Sub-Total, Retailers			***($304,033)***		***$0***
Consumers					
Deposit paid	0.05	*270,382,907*	($13,519,145)	*383,230,704*	($19,161,535)
Deposits received	0.05	*241,948,783*	$12,097,439	*324,966,302*	$16,248,315
Liquor deposits paid	0.15	*3,745,035*	($561,755)	*13,591,189*	($2,038,678)
Liquor deposits received	0.15	*2,860,458*	$429,069	*10,245,074*	$1,536,761
Sub-Total, Consumers			***($1,554,393)***		***($3,415,137)***
Total :			***($8,164,287)***		***($11,073,553)***
Additional Cost to Consumers					
Separate trips to redeem	0.014	244,809,241	($3,448,633)	335,211,375	($4,722,130)
Total :			($11,612,920)		($15,795,683)

(1) Under "Consumers", Special trips to redeem were counted for bottle redeemers that answered "yes" to the question "Is this a special trip to redeem bottles and cans, or are you combining it with another errand?" or no to the question "If you weren't returning containers today, would you have taken this trip?"

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quality is very good. As such the bale price differential has been dropped to 5 cents per pound from 10 cents per pound to reflect the relatively high quality of the material produced at the Rutland and Chittenden MRF's.

[108] In both cases the value of the glass represents glass FOB the glass beneficiation plant.

Delaware's Universal Recycling Law – 2013 Update

Delaware's landmark Universal Recycling Law set ambitious waste diversion goals for municipal solid waste (MSW) of 50 percent by 2015 and 60 percent by 2020. The law established a timeline to increase access to recycling, created a funding mechanism to assist with the transition to universal recycling, and eliminated the State's beverage container deposit law.

Programs and Successes So Far

Since its enactment in 2010, Delaware's Universal Recycling Law has passed three milestones:

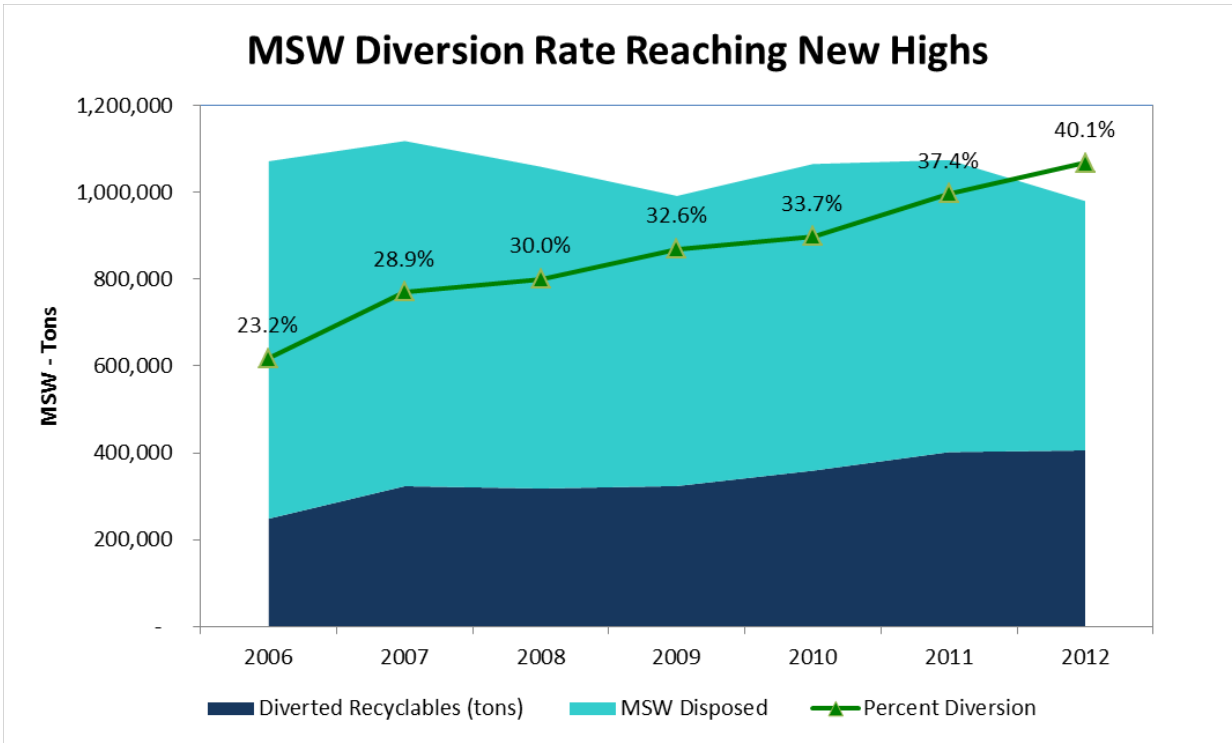
- September 15, 2011 - all single family residences provided with single-stream recycling containers and at least every other week collection by private haulers or municipalities; recycling costs are embedded in a total "waste services" charge

- September 15, 2011 – all bars and restaurants provided with single-stream recycling by their trash collection provider along with containers of sufficient size and pickup service at sufficient frequency to manage recyclables generated on site

- January 1, 2013 – multi-family residences provided with single-stream recycling containers by their waste services provider with containers centrally located, adequately sized, and located near disposal containers

Increased access to recycling has increased the amount of MSW recycled by 25 percent since 2009 (before the law was enacted) and by 63 percent since 2006. Higher tipping fees and a ban on disposal of yard waste at state landfills have also driven down disposal, so the state's MSW recycling rate now stands at an all-time high of 40 percent (see Exhibit 1).

Exhibit 1



Residential diversion rates stand at 45 percent for 2012 (new access to multi-family recycling beginning in 2013 is not yet reflected in the data). Even without the new multi-family programs, diversion of typical residential recyclables like paper and packaging has climbed 29 percent since 2009 – an unprecendented increase for any state during this period.

Commercial recycling of MSW was 34 percent in 2012 but the final program milestone affecting commercial waste does not take effect until 2014:

- January 1, 2014 all commercial customers must participate in a comprehensive recycling program following guidance developed by the Recycling Public Advisory Council

Funding

The Delaware Recycling Fund provides financial assistance to public and private entities for the transition to universal recycling. The Fund established in the law is used for grants, low-interest loans to municipalities and private haulers for costs associated with the start of universal recycling including the purchase of carts and trucks, and rebates based on recycling volume. The Fund may also be used for recycling studies, state program support and oversight, and administration of the recycling fee.

The Fund has allocated just over $7 million in grants including:

- $4.8 million for residential single-stream recycling
- $0.3 million for multi-family single-stream recycling
- $1.4 million for commercial recycling

Another $5 million is expected to be available for future grants and the remaining $2 million used for outreach efforts, data collection and analysis, administration, and other expenses.

The Fund was created from a fee on beverage containers that were formerly subject to deposits. Until December 2010 consumers paid a 5¢ deposit on glass and plastic bottles containing carbonated beverages. Starting December 1, 2010 and continuing until December 1, 2014 retailers of these same beverages instead collect a 4¢ fee per container from consumers. The state now projects it will collect a total of $14 million. While less than the $22 million cap on the Fund, it appears the expected $14 million revenue will be sufficient to support the transition.

Economic Development

The legislative requirements to expand access to recycling and to restrict disposal of yard waste both had direct economic development benefits for Delaware. In addition to the greater economic multiplier associated with recycling compared to disposal, the Universal Recycling Law led to:

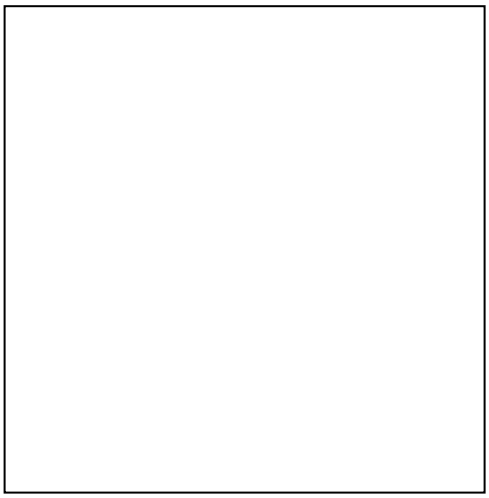
- Two new Material Recovery Facilities (MRFs) operating in 2013, creating dozens of new jobs. The ReCommunity MRF in New Castle alone represented $15 million in new capital investment in the state and is the first MRF in Delaware that is capable of separating and marketing the state's recyclables.

- Establishment and operation of large-scale composting facilities in the state

The most recent (2009) measure of recycling's impact on Delaware showed that recycling supported 1,900 jobs and generated nearly $350 million in economic activity in the state.[1] Given the significant increase in investment and diversion since then, recycling plays a much greater role in the state's economy today and that role will continue growing for years to come.

Why Delaware's Approach Was Successful

Delaware's law provided ***direction and leadership*** to bring recycling programs in the state to a certain standard, raising requirements on waste service providers, and providing the tools and resources to assist in adopting those new requirements. Residents demanded better and more convenient recycling and the state's patchwork of programs including its dated beverage container deposit law complicated recycling unnecessarily.



The comprehensive approach in the Universal Recycling Law began with ***increasing access to recycling*** statewide. The law requires providers of waste services to provide or offer collection of recyclables to all customers beginning with single family residences and moving through to finally include all commercial establishments. By ***setting single stream collection as a standard***, the law facilitated the development of a new MRF to handle recyclables, minimizing transportation distances and simplifying collection. Note that while rural residents using dropoff facilities for trash and recycling continue to use these facilities, the provision of new single stream processing capacity means that even dropoff recycling becomes simpler for residents and local governments.

The law also ***expanded incentives to recycle*** by requiring that recycling fees be embedded in waste service charges. Coupled with bans on yard waste and rising tipping fees, residents and businesses have more of an economic incentive to recycle.[2]

Third, the law ***provided for education and promotion*** of recycling. One advantage of universal access to single stream recycling is that messaging and communication about what and how to recycle is much simpler and can be done at the state level, rather than having messages differ from town to town. In addition the law ***required annual reports*** from those that collect, process, or market recyclables. Measurement and improving data quality are vital to monitor progress and provide greater accountability.

Critically, the law ***established funding for the transition*** to universal recycling. The transition not only covered the switch to single stream collection but also the elimination of the deposit system for certain glass and plastic bottles. The Delaware legislature long ago exempted aluminum cans from the scope of the deposit law, recognizing that market-driven recycling of aluminum allowed the value of the cans to be used to support other recyclables. The remaining redemption program proved itself costly and largely ineffective. In response to those concerns, the Legislature replaced the container deposit system with this universal program.

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[1] http://www.nerc.org/documents/recycling_economic_information_study_update_2009.pdf

[2] The law could have gone further and required some kind of variable rate pricing for trash so that residents who are able to reduce disposal through recycling and composting see direct savings on their disposal charges.