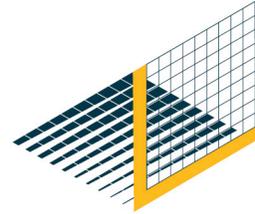


# **FINAL REPORT**



## **ECONOMIC IMPACT ANALYSIS OF THE BEVERAGE CONTAINER DEPOSIT-REFUND SYSTEM**

**Submitted to:**

**RRFB Nova Scotia**

**Submitted by:**

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# EXECUTIVE SUMMARY

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## INTRODUCTION

This study provides a comprehensive analysis of the economic impacts associated with the Beverage Container Deposit-Refund System in the Nova Scotia economy. The direct expenditures attributable to RRFB Nova Scotia include not only those related to the operations stemming from RRFB Nova Scotia, but also from the ENVIRO-DEPOT™ network that result in direct expenditures and employment in the Nova Scotia economy.

The Beverage Container Deposit-Refund System (BCDRS) also generates “spin-off” activity in the wider economy (comprised of indirect and induced impacts), commonly known as the multiplier effect. Economic impacts were estimated by the Nova Scotia Department of Finance Economics and Statistics Division using the Nova Scotia Input-Output (NSIO) model, and impacts are reported in the following categories:

- **Direct impacts** capture the economic impact from BCDRS spending on goods and services including the employment of staff, the income they earn and the taxes they pay. It also captures the increase in economic activity through the purchase of the many goods and services used to operate and deliver the services for BCDRS.
- **Spin-off impacts** are comprised of both *indirect impacts* and *induced impacts*:
  - **Indirect impacts** capture the increase in economic activity occurring elsewhere in the economy in the production of the primary and intermediate goods and services purchased as inputs by RRFB Nova Scotia and Enviro-Depots. These indirect or inter-industry effects can take weeks or months to work their way through the economy.
  - **Induced impacts** capture the increase in economic activity in the broader economy resulting from spending by those employed in direct and indirect activities.

Several indicators are commonly used to measure economic impact: Gross Domestic Product (GDP), employment, household income, and tax revenue.

## Economic Impact Highlights – Total Impacts

RRFB Nova Scotia and Enviro-Depots’ combined \$26 million in direct program spending generates the following economic benefits for the provincial economy:

- **Employment FTE – 586 to 660:** are created throughout the provincial economy as a result of direct spending that triggers activity amongst suppliers of goods and services and their suppliers, as well as all of these employees spending income to support their households. It is also important to recognize that many of the ENVIRO-DEPOT™ network jobs support rural and low-income individuals that would not have many alternatives.
- **Household Income - \$20.1 million in salaries and wages:** wages earned in the economy as a result of spending in the program.

- ❑ **GDP - \$28.8 million:** GDP is the most widely used indicator of economic activity, measuring the added-value as spending works its way through the economy.
- ❑ **Tax revenue on income earned - \$1.2 million:** total personal and indirect taxes collected (federal and provincial) based on household income earned for fiscal year 2013.<sup>1</sup>

### ***Charities and Community Organization Benefits***

The BCDRS plays a very active and important role in the fundraising efforts of a great many community organizations and charities in Nova Scotia. Many of the Enviro-Depots actually organize and facilitate contributions to such organizations by offering to forward customer refunds to groups as selected by the customer. Many youth groups and schools also access fundraising opportunities through the program by conducting bottle drives. There are many examples where this type of fundraising has been substantial and where this fundraising supports the participation of youth in activities that otherwise would be prohibitively expensive.

### ***Supplemental Income Benefits***

Many Nova Scotians utilize the BCDRS as a means to both earn and supplement their income. All Enviro-Depots contacted reported this type of activity is prevalent province-wide. Most individuals participating in the collection and return of containers for income are economically disadvantaged and in many cases are detached from the workforce. Many individuals are reported to be dependent on the income earned to meet basic needs. Loss of this income could create hardships. Many of those participating do provide a service to homeowners and they treat this activity as their job.

### ***Innovation, Research & Development, Education and Awareness Benefits***

- ❑ **Innovation:** RRFB Nova Scotia approved \$305,000 towards Value-Added Manufacturing projects in 2013 in support of companies developing new ways to divert waste from landfill. Halifax C&D Recycling Ltd. has been exploring sustainable, economical and environmentally friendly solutions to managing wallboard waste (clean and painted/coated). Innovative recycling techniques to date have included soil amendment, erosion control, environmental fuel supply and cement production. Working with ABCO Industries Limited in Lunenburg, a process was developed to separate gypsum from the paper layers. Meeting the specifications for use in new wallboard manufacturing means roughly 2,500 tonnes of wallboard can be re-captured between two locations in the Halifax Regional Municipality alone.
- ❑ **Research and Development (R&D):** RRFB Nova Scotia provided \$285,000 in support of R&D in fiscal 2013. One program within the R&D portfolio, Student Research Grants, provides funding to university students for research related to solid waste diversion. Leveraging the knowledge and capacity of local universities, the program is intended to support student research projects that will provide a commercial benefit to businesses and municipalities and/or result in increased diversion of materials from disposal. Recently funded projects include a market development project on the effects of compost applications on strawberries, and another investigates the costs of demolition versus deconstruction for renovations and re-building.

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<sup>1</sup> The tax revenue impacts do not include corporate taxes.

- ❑ **Education and awareness: RRFB Nova Scotia allocated** about \$1.6 million for education and awareness programs in 2013. Nova Scotia is recognized not only as one of the first provinces with comprehensive waste diversion programs, but one with the lowest disposal rates. A great deal of this success has resulted from the culture of recycling that has developed as a result of education and awareness programs that reach every corner of the province. In addition to this benefit of high support for recycling, education is best known for long-term effects where youth, having grown up in this context, will consider it the norm, and will be more likely to carry this behavior into their adulthood.

## Discussion

A review of nine product stewardship and waste diversion economic impact studies was completed in 2012 by Duncan Bury Consulting for the Canada-U.S. Western Product Stewardship Collaborative.<sup>2</sup> The studies included six from the U.S., two from Canada, and one from Europe. These studies compare recycling versus landfill disposal. Three major findings are:

- ❑ Landfill disposal generates a small number of jobs compared to waste recycling and waste diversion.
- ❑ Recycling and the use of secondary materials create significantly higher net value-added and jobs at higher income levels than waste disposal.
- ❑ Recycling businesses create jobs closer to home and have a smaller environmental footprint than businesses that rely on raw material extraction and manufacture.

Since recycling has now been established for many years, attention has also shifted from landfill to comparing different recycling programs. There are two primary recycling programs for beverage containers, the deposit-refund depot network approach as in Nova Scotia, and curbside recycling as in Manitoba, Ontario, and Quebec.

The 2012 annual report by CM Consulting on recycling systems across Canada titled “Who Pays What: An analysis of beverage container recovery and costs in Canada” indicates Nova Scotia is among the top three jurisdictions for return rate of beverage containers. Return rates are about double for depot network systems, which provide a customer refund compared to municipal curbside systems which do not provide refunds to residents. If curbside recycling for beverage containers was adopted in Nova Scotia, it would require less effort on the part of residents, but the curbside model requires about the same net costs to society when the difference in recyclables revenues are accounted for (Gardner Pinfeld). Compared to curbside programs there are a number of advantages overall:

- ❑ Decreased littering attributed to the financial incentive to recycle.
- ❑ Strategic investments in research and development, innovation & education.
- ❑ Avoided cost of alternative programs that would be required to collect paint, electronics and other waste.
- ❑ Charitable organizations increase revenues and/replace more traditional fund-raising methods.

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<sup>2</sup> Duncan Bury Consulting. 2012. Overview of stewardship and extended producer responsibility job and economic impact studies. For the Canada-U.S. Western Product Stewardship Collaborative.

# **I INTRODUCTION**

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## **1. OVERVIEW**

RRFB Nova Scotia is a not-for-profit corporation that works in partnership with Nova Scotians to improve the province's environment, economy, and quality of life by reducing, reusing, recycling, and recovering resources. Since its establishment in 1996, RRFB Nova Scotia has been globally recognized as an innovator in waste diversion solutions.

RRFB Nova Scotia is responsible for administering the Beverage Container Deposit-Refund Program, including: collection, transportation and marketing of empty beverage containers; and operating a network of licensed and independently owned/operated Enviro-Depots across the province.

The need for an economic impact study focused on the Beverage Container Deposit-Refund System has been identified. The significance of understanding economic impacts includes: jobs, incomes, added value (GDP), tax revenues, innovation and Research and Development (R&D) in waste diversion technologies, public engagement in waste diversion, benefits to low income individuals, and support for charitable organizations.

## **2. STUDY SCOPE**

There are two main components to this study, namely:

- To analyze the economic impact of the Beverage Container Deposit-Refund System based on, but not necessarily limited to, the following:
  - Creation and Retention of Employment – direct and spin-off impacts
  - Household Income – direct and spin-off impacts
  - Gross Domestic Product – direct and spin-off impacts
  - Provincial Tax Revenues Recovered – direct and spin-off impacts
  
- To analyze the socio-economic impact of the Beverage Container Deposit-Refund System based on, but not necessarily limited to:
  - Impact on charities across Nova Scotia that benefit from the Deposit-Refund System.
  - Impact on community groups and organizations in Nova Scotia that rely on the beverage container incentive for fundraising
  - Impact on Nova Scotians who depend on the Deposit-Refund System for supplemental income.

This analysis is based on an assessment of the total direct expenditure impacts, employment impacts (job creation measured as full-time equivalents), income generated, GDP impacts, economic spin-off impacts, and overall benefit to the provincial economy. This study utilizes the Nova Scotia Input/Output (NSIO) Model to conduct the Economic Impact Analysis (EIA).

## II METHODOLOGY

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### 1. ECONOMIC IMPACT ANALYSIS

The economic impacts from the Beverage Container Deposit-Refund System start with the deposit everyone pays when they purchase a deposit-bearing beverage container. The following table outlines where that money goes and what economic impacts it triggers along the way. The first step is to look at how RRFB Nova Scotia spends the deposit revenues, and the second step is to examine the funding disbursed to the ENVIRO-DEPOT™ network to cover their costs for collecting and handling returned beverage containers.

#### **RRFB Nova Scotia expenditures - \$13.7 million**

RRFB Nova Scotia expenditures are based on actual financial statements for the year ended March 31, 2013.

**Table 1: RRFB Nova Scotia financial statement for year ended March 31, 2013**

<b>Revenues</b>	<b>Amounts</b>	<b>BCDRS Share</b>
Deposits	39,146,653	100%
Sales of recyclable materials	4,742,662	100%
Tire program	3,855,503	0%
Stewardship	363,412	0%
Rental income	182,000	0%
Investment and other income	1,022,801	0%
<b>Sub-total</b>	<b>49,313,031</b>	<b>43,889,315</b>
<b>Expenses</b>	<b>Amounts</b>	<b>BCDRS Share</b>
Operating	37,435,728	44%
Administrative	1,966,827	70%
<b>Other expenses and allocations:</b>		89%
Approved program grants	1,182,235	
Education and awareness	1,558,762	
Regional committees	325,799	
Household hazardous waste program	112,000	
Municipal solid waste diversion credits	4,357,758	
Municipal enforcement program funding	673,317	
Nova Scotia Environment	1,307,327	
Research, development and special projects	285,474	
Waste audit development	74,137	
<b>Sub-total</b>	<b>49,279,364</b>	<b>16,634,097</b>
<b>Net</b>	<b>33,667</b>	<b>26,007,898</b>

Source: RRFB Nova Scotia

Since the study focus is beverage container recycling only, each line item in the table above had to be separated to show applicable revenues and expenditures associated with the beverage container program. The results are provided in the right-hand column (BCDRS shares). For revenues this is straightforward with 100% shares for two pertinent line items, but the expenses warrant further explanation below.

The administrative BCDRS portion (70%) is based on RRFB Nova Scotia estimates from their accounting. The other expenses and allocations (89%) are based on the BCDRS share of total revenues (\$43.9 million divided by \$49.3 million). Finally the 44% for BCDRS operating expenditures is the overall BCDRS share at the bottom of the next table (\$15.9 million divided by \$37.4 million).

**Table 2: RRFB Nova Scotia beverage container operating expenses for year ended March 31, 2013**

<b>Operating Expenditures</b>	<b>Amounts</b>	<b>BCDRS Share</b>
Inventory, beginning of year	151,707	0%
Deposit refunds	16,695,606	0%
ENVIRO-DEPOT™ handling fees	12,939,015	95%
Local cartage	1,515,562	100%
Regional processing	1,239,757	100%
Freight-in	150,501	100%
Central processing expenses		
Building expenses	56,361	100%
Depreciation	146,531	100%
Insurance	667	100%
Meetings and travel	21,442	100%
Postage, delivery and office	1,870	100%
Professional fees	56,210	100%
Propane-forklift	4,389	100%
Repairs and maintenance:		
Bulk bags and containers	24,162	100%
Equipment	1,788	100%
Salaries and benefits	422,311	100%
Shipping supplies	46,129	100%
Telecommunications	7,055	100%
Vehicle expense	347	100%
Non-deposit materials	15,481	0%
Used tire management program	3,691,350	0%
Paint program	423,370	0%
Inventory, end of year	175,883	0%
<b>Total</b>	<b>37,435,728</b>	<b>15,897,146</b>

Source: RRFB Nova Scotia

Certain BCDRS share values (right-hand columns) deserve explanation below.

The top and bottom lines relating to inventory changes are not included in the economic analysis. Inventory at the beginning of the year is the result of economic activity (spending) from the previous year. Net inventory at the end of the year is the result of economic activity in the current year, but this is already captured by the economic analysis of other BCDRS expenditures in the table. In short, economic analysis is only concerned with expenditures (cash flows), not changes in value of stocks (assets).

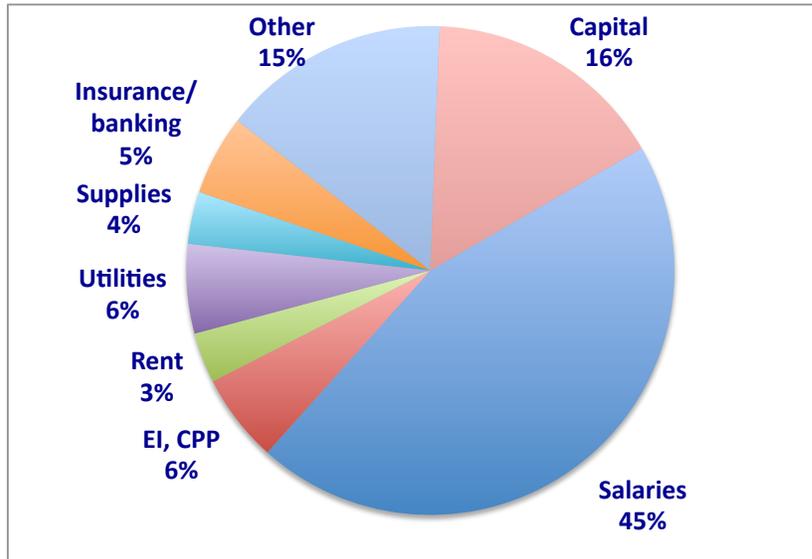
Refunds provided to people returning their containers at the Enviro-Depots also do not represent economic activity. Refund money originated from these individuals and a portion is simply being returned to them. A small amount of ENVIRO-DEPOT™ handling fees (5%) is not included as economic activity, since it relates to depreciation, and returns to capital. The remainder of the \$12,292,000 in ENVIRO-DEPOT™ handling fees (95% share) will be explained further below. Removing this ENVIRO-DEPOT™ amount from the \$26.0 million net BCDRS share (bottom of Table 1) means RRFB Nova Scotia direct expenditures resulting in economic activity are \$13.7 million (\$26.0 million minus \$12.3 million).

### ***ENVIRO-DEPOT™ expenditures - \$12.3 million***

Gardner Pinfold conducted a survey of ENVIRO-DEPOT™ operators, asking them to breakdown how handling fees are spent. Results showed handling fees are for hiring staff, paying rent, maintenance and operation of equipment for the beverage recycling programs. Enviro-Depots do not all operate on the same financial year, so the responses are based on the most recent financial year for each respondent.

A total of 79 Enviro-Depots were invited to participate in the survey and 63 responses were collected (80%). However, respondents were not required to answer all questions and some financial information did not appear to be valid. A total of 42 respondents provided valid answers to financial questions representing a completion rate of 53%. This is considered to be an excellent survey response rate and there is no reason to believe that responses are biased.

Based on the handling fees allocated to each ENVIRO-DEPOT™, each operation was categorized into a large (over \$250,000), medium (\$100,000-\$250,000), or small operation (under \$100,000). Of the 42 respondents with valid expenditure data, 11 of 19 large Enviro-Depots responded, 11 of 30 medium Enviro-Depots responded, and 20 of 40 small Enviro-Depots responded. The survey results were used to develop average spending profiles for each size class (small, medium, and large) and these were applied to the corresponding Enviro-Depots that did not complete the survey. A summary of aggregate expenditures was calculated for all 79 Enviro-Depots and the breakdowns are shown in Figure 1.

**Figure 1: ENVIRO-DEPOT™ breakdown of beverage container expenses**

Source: Survey of Enviro-Depots by Gardner Pinfold.

Salaries and employer contributions to EI and CPP represent just over half (51%) of all expenditures. The next most important expenditures are for capital (16%), and other items (15%). The “other” category may include contractors, professional services, travel, and other miscellaneous expenses.

### **Economic Input-Output Analysis**

The two direct spending amounts (\$13.7 million and \$12.3 million) for RRFB Nova Scotia and Enviro-Depots respectively, are the starting point for an economic input-output analysis. An economic model for Nova Scotia was used to estimate the jobs, incomes, added-value, and tax revenues generated by RRFB Nova Scotia and ENVIRO-DEPOT™ spending. The Economics and Statistics Division (ESD) of the Nova Scotia Department of Finance, Economics and Statistics evaluated the direct expenditures using the 2007 Nova Scotia Input Output Model (NSIO).

There is no beverage container recycling industry specifically identified in the model, so the expenditure estimates are allocated among the 301 industry categories that are available in the model. This is done using expenditure information from RRFB Nova Scotia and the Enviro-Depots. For example, insurance expenses are allocated to the “insurance carriers” industry, and professional fees are assigned to the “legal, accounting, and tax preparation” industry.

The 2007 NSIO model simulates economic impacts according to industry “shocks”, or expenditures in one or more of the 301 industries. Economic impacts (model output results) are divided into three components: direct; spinoff; and total impacts. Direct impacts are those that result directly from the individual or company’s expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

Impacts are communicated in “household income” and “employment” terms. Household income is in current dollars, and employment is in full time equivalent (FTE), (equal to roughly 2,080 hours, or a 40-hour work week for 52 weeks) and includes all fringe benefits. Also note the expenditures classified as “retail trade” are discounted to 18% of the original estimates, to simulate the average retail margin to Nova Scotia retailers, as per the NSIO model.

## **2. QUALITATIVE AND DISTRIBUTION BENEFITS**

Although the economic input-output results represent the formal economic impact results, it is important to recognize that the spending does not always tell the whole story. Some economic impacts do not lend themselves to quantification so these are handled qualitatively with description that accompanies the spending impacts and case studies. Economic analysis is also concerned with the distribution of impacts. Small benefits to low-income individuals or under-funded organizations is considered a greater economic benefit than income flowing to high-income, wealthy individuals and very profitable enterprises.

In some cases spending supports research and development that has economic impacts extending beyond the scope of this study. For instance, a new innovation in recycling may lead to commercial spinoffs in other sectors of the Nova Scotia economy and possibly export opportunities if novel developments are applicable in other provinces or abroad. This is not quantified in the study.

### III ECONOMIC IMPACTS

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#### 1. RRFB NOVA SCOTIA & ENVIRO-DEPOTS

##### **RRFB Nova Scotia spending - \$13.7 million**

The RRFB Nova Scotia spending estimate of \$13.7 million (determined in the methodology section) was run through the NSIO model by Nova Scotia Department of Finance Economics and Statistics Division staff. This produces standard economic indicators including employment, household income, GDP, and provincial tax revenues. The resulting economic impacts are divided into three components: direct, spin-off, and total impacts.

**Table 3: Economic Impacts of \$13.7 million in RRFB Nova Scotia Beverage Container Related activities**

	<b>Direct</b>	<b>Spinoff</b>	<b>Total</b>
<b>FTE</b>	153*	81	234*
<b>Household Income (\$000s)</b>	\$5,450	\$3,863	\$9,313
<b>GDP (\$000s)</b>	\$7,034	\$6,794	\$13,828
<b>Provincial Government Revenue (\$000s)</b>	\$317	\$224	\$541

*Source: Nova Scotia Input-Output (NSIO) Model. \*Gardner Pinfold counts of RRFB Nova Scotia and related full-time and part-time employees suggests direct FTEs are about 135 and total would be 216.*

As noted below the table, estimates of employment have been revised downward (direct and total amounts marked by \*). The model uses averages for the number of employees and salaries associated with a million dollars worth of activity in applicable industries. Dividing the direct household income (salaries and wages) by the model employment (\$5.4 million divided by 153) gives an average salary of \$35,621. Information was collected from RRFB Nova Scotia and other sources regarding salaries of RRFB Nova Scotia corporate staff, trucking and warehouse staff, educators, regional coordinators, program grant recipients, enforcement officers, municipal and provincial staff. The data collected suggested average salaries are higher than reported by the model. Without changing the total household income estimate, the direct employment (FTE) might be lowered from 153 to 135 based on a salary of \$40,000 (and total employment is 216 instead of 234). The spinoff estimates for employment, as well as direct and spinoff estimates for other indicators, remain as produced by the model.

The combined direct and spinoff household income of \$9.3 million is 67% of the overall GDP reflecting the labour-intensive nature of recycling, education, research, and enforcement activities. Another observation is the total GDP estimate of \$13.8 million is almost equal to the \$13.7 million worth of spending entered into the model. Considering the extent of economic leakages from Nova Scotia, given the nature of a small economy that needs to import many goods and services, it is respectable to break-even in terms of added value (GDP) derived from the initial spending. Put more simply, \$13.7 million worth of spending on the Deposit-Refund Program for Beverage Containers buys almost exactly that amount of genuine Nova Scotia added value.

**Table 4: Top Impacted Industries Including Spinoff Impacts (RRFB Nova Scotia)**

Industry	HH Income
280 Private Households	\$1,285,000
300 Other Municipal Government Services	\$903,000
260 Waste Management and Remediation Services	\$879,000
291 Non-Profit Education Institutions	\$784,000
212 Truck Transportation	\$658,000
208 Retail Trade	\$655,000
243 Owner-Occupied Dwellings	\$478,000
301 Other Provincial and Territorial Government Services	\$339,000
255 Other Professional, Scientific and Technical Services	\$231,000

Source: Nova Scotia Input-Output (NSIO) Model.

The distribution of impacts across industries is not surprising since it generally reflects the expenditure line items discussed in the methodology section. However, it reinforces appreciation of the cross-section of Nova Scotia businesses that are linked to RRFB Nova Scotia activities and gain business from the program expenditures.

### **ENVIRO-DEPOT™ spending - \$12.3 million**

The ENVIRO-DEPOT™ spending estimate of \$12.3 million (determined in the methodology section) was also run through the NSIO model by Nova Scotia Department of Finance Economics and Statistics Division staff. The indicators for employment, household income, GDP, and provincial tax revenues are again divided into three components: direct, spin-off, and total impacts.

**Table 5: Economic Impacts of \$12.3 million in ENVIRO-DEPOT™ Beverage Container Related activities**

	Direct	Spinoff	Total
FTE	283*	69	352*
Household Income (\$000s)	\$7,464	\$3,358	\$10,822
GDP (\$000s)	\$8,917	\$6,054	\$14,971
Provincial Government Revenue (\$000s)	\$433	\$195	\$628

Source: Nova Scotia Input-Output (NSIO) Model. \*Gardner Pinfold survey of Enviro-Depots suggests direct FTEs of 358 and therefore total of 444.

As mentioned previously, the model uses averages for the number of employees and salaries associated with a million dollars worth of activity in the applicable industries. Dividing the model estimated direct household income (salaries and wages) by the employment (\$7.5 million divided by 283) gave an average salary of \$26,375. The Gardner Pinfold survey of Enviro-Depots asked operators to identify the number of part-time and full-time staff, and their hourly wages. The reported wages (\$10-12 per hour) suggest lower average annual salaries than reported by the model. The survey results were also consistent in identifying more staff than the model suggests. The total household income (\$7.5 million) is not out of line, but the employment might be raised from 283 to 358 based on a salary of \$20,500 (total employment increased from 352 to 444). The model spinoff estimates for employment, as well as direct and spinoff estimates for other indicators, are reasonable.

The combined direct and spinoff household income of \$10.8 million is 72% of the overall GDP reflecting the even more labour-intensive nature of ENVIRO-DEPOT™ collection activities (compared to RRFB Nova Scotia). This underscores the local employment significance of the ENVIRO-DEPOT™ network. In this case the total GDP estimate of nearly \$15.0 million comes in well over the \$12.3 million worth of spending entered into the model. This indicates even more of the spending stays within the Nova Scotia economy as opposed to leaking out for purchases of imported goods and services. Put more simply, \$12.3 million worth of spending on ENVIRO-DEPOT™ activities generates 22% more in added value for the Nova Scotia economy.

The very large share of added value represented by ENVIRO-DEPOT™ salaries deserves further attention since this creates jobs that are typically helping low-income individuals and families. Many of these jobs are also in rural areas and the combination of these two factors makes these jobs particularly valuable. There would not be many other opportunities for these individuals, given high unemployment rates in rural areas. The dependence on these jobs should be given careful consideration.

**Table 6: Top Impacted Industries Including Spinoff Impacts (Enviro-Depots)**

<b>Industry</b>	<b>HH Income</b>
280 Private Households	\$6,292,306
208 Retail Trade	\$1,537,586
34 Repair Construction	\$1,266,831
243 Owner-Occupied Dwellings	\$1,879,486
274 Automotive Repair and Maintenance	\$531,051
240 Banking and Other Depository Credit Intermediation	\$666,059
234 Telecommunications	\$828,077
273 Food Services and Drinking Places	\$336,704
24 Electric Power Generation, Transmission and Distribution	\$1,061,172
242 Lessors of Real Estate	\$1,015,320

*Source: Nova Scotia Input-Output (NSIO) Model.*

Although a similar amount of spending flows through the Enviro-Depots, a narrower set of industries is impacted. This reflects that the more specific focus of the impacted industries are consistent with the expenditure categories for the Enviro-Depots compared to RRFB Nova Scotia's involvement in trucking and processing, research, education, enforcement and more. Nevertheless, this again reinforces appreciation of the range of Nova Scotia businesses that derive income from the ENVIRO-DEPOT™ network expenditures. The majority goes directly to households in the form of wages and salaries, but retail, repair construction, utilities, and lessors of real estate have strong linkages to the network.

### **Combined impacts**

By simply adding the impacts already presented for RRFB Nova Scotia and Enviro-Depots, the following combined results are reported for beverage container program impacts.

**Table 7: Economic Impacts of \$12.3 million in ENVIRO-DEPOT™ Beverage Container activities**

	<b>Direct</b>	<b>Spinoff</b>	<b>Total</b>
Employment FTE	436*	150	586*
Household Income (\$000s)	\$12,914	\$7,221	\$20,135
GDP (\$000s)	\$15,951	\$12,848	\$28,799
Provincial Government Revenue (\$000s)	\$750	\$419	\$1,169

*Source: Nova Scotia Input-Output (NSIO) Model. \*Gardner Pinfold counts of RRFB Nova Scotia employees and survey of Enviro-Depots indicates combined direct FTEs of 511 and total FTEs of 660.*

To summarize, the economic impacts that are triggered by combined spending of \$26 million that includes \$13.7 million from RRFB Nova Scotia and \$12.3 million from Enviro-Depots are as follows:

- ❑ **Employment FTE – 586 to 660:** created throughout the provincial economy as a result of direct spending that triggers activity amongst suppliers of goods and services and their suppliers, as well as all of these employees spending income to support their households. It is also important to recognize that many of the ENVIRO-DEPOT™ network jobs support rural and low-income individuals that would not have many alternatives and are therefore highly dependent on these positions.
- ❑ **Household Income - \$20.1 million in salaries and wages:** wages earned in the economy as a result of spending in the program.
- ❑ **GDP - \$28.8 million:** GDP is the most widely used indicator of economic activity, measuring the added-value as spending works its way through the economy.
- ❑ **Tax revenue on income earned - \$1.2 million:** total personal and indirect taxes collected (federal and provincial) based on household income earned for fiscal year 2013.<sup>3</sup>

## 2. CHARITIES AND COMMUNITY ORGANIZATIONS

Through the survey of depot operators (see Appendix B) it has been confirmed that the Beverage Container Deposit-Refund System plays an active and important role in supporting both charities and community organizations. This takes place on a proactive basis as 85% of responding Enviro-Depots operate programs that allow customers to direct their refunds to specific charities and organizations.

To gain an understanding of the types of charities supported by these formal programs, operators were asked to provide the names of three organizations to which they direct refunds. The following table summarizes the responses.

<sup>3</sup> The tax revenue impacts do not include corporate taxes.

**Table 8: Organization/ Charity Names**

<b>Organization/ Charity</b>	<b>Number</b>	<b>%</b>
<b>Large Charities:</b>	<b>16</b>	<b>19</b>
IWK		
Christmas Daddies		
Children's Wish Foundation		
Relay for Life		
Hospitals		
Special Olympics		
<b>Community Organizations:</b>	<b>31</b>	<b>37%</b>
Food banks		
SPCA		
Day cares		
Search and Rescue		
Sports facilities		
<b>Youth:</b>	<b>18</b>	<b>22%</b>
Minor hockey		
Baseball		
Scouts		
Cadets		
<b>School:</b>	<b>11</b>	<b>13%</b>
Playground fund		
Trips		
Schools (general)		
<b>Church:</b>	<b>7</b>	<b>8%</b>
Haiti Fund		
General support		
<b>Total</b>	<b>83</b>	<b>100%</b>

Bearing in mind that Enviro-Depots were only asked to provide three organization names, the table provides a sampling of the breadth of types of charities and community organizations supported by the formal ENVIRO-DEPOT™ programs.

Most of these depot-operated programs provide the option to customers to contribute their refund to one of the designated organizations. Based on the summary table, community service-type organizations and local youth organizations account for about 60% of organizations identified.

The Eastern Recyclers Association has also coordinated fundraising initiatives through the ENVIRO-DEPOT™ network. The following is a summary of donations made over the last number of years:

- **Children's Wish Foundation:**
  - 2005: \$3,462
  - 2007: \$2,948
  - 2008: \$3,120
  - 2009: \$2,289
- **Kinsmen Tabs for Wheelchairs:**
  - 2010: \$500
- **Camp Brigadoon:**
  - 2012: \$1,000
  - 2013: \$1,2221

The full extent of funds raised is not possible to estimate based on survey responses.

The Enviro-Depots also play an equally important role in fundraising efforts by community organizations, sport teams and charities by providing refunds for containers collected via fundraising bottle drives.

We understand these drives take place following various formats. Many go door-to-door on a regular basis, or they take place in association with one large dedicated effort. Others collect beverage containers at a central location and then proceed to an ENVIRO-DEPOT™ with a large volume for reimbursement.

Based on the survey, virtually all Enviro-Depots reported that this type of fundraising occurs on a regular basis. The following table summarizes the frequency of this type of fundraising activity.

**Table 9: Frequency of Fundraising Activity on a Monthly Basis at Enviro-Depots**

Number of Bottle Drives/Month	# Reported	%
>10	10	26%
5 – 9	2	5%
1 – 4	26	68%
<b>Total Responses</b>	<b>38</b>	<b>100%</b>

As part of the survey, Enviro-Depots were asked to identify three groups that conduct bottle drives and collect refunds. The examples provided are as follows:

**Table 10: Organization/Charity Groups that Conduct Bottle Drives**

Type of Organization/Charity	Number	%
<b>Large:</b>	<b>6</b>	<b>6%</b>
Relay for Life		
Canadian Cancer Society		
<b>Community:</b>	<b>12</b>	<b>12%</b>
Fire departments		
Food banks		
Community centres		
Service clubs		
<b>Youth:</b>	<b>58</b>	<b>59%</b>
Sport teams		
4H		
Cadets/Scouts		
Bands/Dance		
<b>School:</b>	<b>21</b>	<b>21%</b>
Trips		
Safe grads		
Teams		
<b>Church:</b>	<b>2</b>	<b>2%</b>
General		
<b>Total</b>	<b>99</b>	<b>100%</b>

Youth oriented organizations and school initiatives dominated the types of organizations that undertake bottle drives, accounting for about 80% of example groups cited by ENVIRO-DEPOT™ operators.

To supplement the information provided by the Enviro-Depots related to fundraising initiatives, an on-line survey was conducted. Three ads were placed in the Chronicle Herald inviting participation. In addition, other organizations were contacted and invited to complete the survey. In total, 22 organizations responded.

To better understand the magnitude of the importance of fundraising, estimates of proceeds derived from bottle drives were requested for 2012. On average, about \$1,400 was gained across all organizations that responded to the survey.

Some earned in the hundreds of dollars while the maximum reported was \$8,000. There is not sufficient data to project an estimate of total fundraising achieved, however the information collected does confirm that bottle drives can be an important contributor to overall fundraising initiatives.

Through the online survey, organizations were asked to estimate the percentage of the total fundraising accounted for through bottle drives. Of the 14 groups that responded to the question, about 30% said bottle drives accounted for over half of their total fundraising efforts. About 35% reported bottle drives account for less than 5%.

Respondents to the survey were invited to provide additional comments on the importance of the deposit-refund system. The following table summarizes several of the comments offered that demonstrate the significance of the program in assisting community groups and organizations in meeting their mandates.

**Table 11: Comments Regarding Organization/Charity Groups**

<b>Relevant Comments</b>
<ul style="list-style-type: none"> <li>• Deposit program provides young people important lessons related to fundraising to support their activities. They also get an opportunity to have a positive impact on the environment.</li> <li>• Provides schools and youth groups easy access to fundraising opportunities to support their various extra-curricular activities.</li> <li>• Community service groups such as fire departments and food banks benefit.</li> <li>• Education Haiti has recycled over 1 million containers with the proceeds sent to Haiti for school purposes – approximately \$1,800 is raised each year.</li> <li>• The Flowercart, a sheltered workshop, received \$1,379.05 from the program last year to support their services.</li> <li>• Bottle drives are viewed as a service to donors and a fundraiser for organizations.</li> <li>• 1<sup>st</sup> Bedford Scout Group raised \$30,000 over several years to send 25 youths and 8 leaders to the National Scouting Jamboree in Alberta this year.</li> </ul>

## **Conclusions**

Through this analysis several themes emerged. The very largest to the very smallest of charities benefit from the Beverage Container Deposit-Refund System. The economic recession of the past number of years has impacted organizations and charities in various ways including

government cutbacks, reduced availability of corporate donations, and more need for community-based services like food banks. Disadvantaged youth benefit, as well as families that have been impacted by economic circumstances.

Another important theme is related to the lessons youth learn through their participation in bottle drives to support their activities. Lessons at this age will benefit society for years to come.

### 3. SUPPLEMENTAL INCOME

Many individuals in Nova Scotia utilize the Beverage Container Deposit-Refund System as a means to earn income. This type of income-earning activity takes many forms ranging from those in urban areas where containers are collected from public garbage bins and other industrial bins. Others earning income actually operate collection services for homeowners or business establishments, and in turn deliver beverage containers by the truckload to Enviro-Depots.

To gauge the scale to which the program plays in providing income, a number of questions were asked in the survey of ENVIRO-DEPOT™ operators.

The following table summarizes the estimated number of individuals who delivered containers to Enviro-Depots by various time intervals.

**Table 12: Estimate of Individuals Who Delivered Containers by Various Time Intervals**

	Daily	2-4 times per week	Every 2 weeks	Every 3- 4 weeks
Number of Survey Responses	33	31	25	30
Total reported in survey	340	355	686	1,824

The table shows the survey responses to this question. On a daily basis for the 33 responding Enviro-Depots, 340 individuals delivered containers for income. In addition, respondents reported as many as 1,824 individuals returned containers ever 3-4 weeks.

The survey also requested respondents to estimate the level of income earned by these individuals. The results are as follows:

**Table 13: Estimate of Level of Income Earned**

(\$) Range High	Daily	2-4 times per week	Every 2 weeks	Every 3-4 weeks
> \$100	3	9	12	21
\$50 - \$99	10	7	6	5
\$25 - \$49	5	5	1	2
\$10 - \$24	13	7	2	1
(\$) Most mentions for low range	\$2 - 5	< \$50	\$20 - 50	\$20 - 50

Several ENVIRO-DEPOT™ operators offered comments (Table 14) on the topic of the role the Depot-Refund System plays in providing supplemental income opportunities.

**Table 14: Comments Regarding Supplemental Income**

<b>Relevant Comments</b>
<ul style="list-style-type: none"> <li>• Individuals earning supplemental income are dependent on this income to survive.</li> <li>• Replacement of this income would likely increase illegal activities or increase demand for social assistance.</li> <li>• The tough economic times has contributed to the number of individuals that rely on the depots for income.</li> <li>• This group does provide a bottle collection service to many residents.</li> <li>• Individuals treat this work as their job.</li> <li>• Income is needed to pay for basic living expenses.</li> <li>• Several comments related to the theme of people using the income to assist with unexpected expenses associated with medical treatments.</li> </ul>

## **Conclusion**

The Beverage Container Deposit-Refund Program does play a significant role in providing income to disadvantaged persons, which in many cases is supplemental to other income sources. The ENVIRO-DEPOT™ operators observe that this income does play a positive role in the community. It is a reward for those who are willing to engage in what is “hard work” and the income is needed to meet the basic needs of those undertaking the work. Alternative work is not available for many of the participants who are often disengaged from the more formal workplace.

## **4. INNOVATION, RESEARCH & DEVELOPMENT, EDUCATION AND AWARENESS**

These are three areas in particular where the formal economic impacts do not tell the whole story. RRFB Nova Scotia spending in the areas of innovation, research and development and education and awareness produces economic effects that are beyond just the jobs, incomes, added value, and taxes generated. Case studies help to understand where the spending goes and serves to illustrate other economic benefits that arise.

### **Innovation**

Nearly \$305,000 was allocated for Value-Added Manufacturing projects in 2013, some of which support companies developing new ways to divert waste from landfill. An example of a project that was supported is described briefly below.

**Equipment designed to divert waste gypsum wallboard:** Construction and demolition (C&D) waste includes materials normally used in the construction of buildings, structures, roadways, and landscaping. C&D waste accounts for 25 to 30 per cent of Nova Scotia’s total waste.<sup>4</sup> While some C&D waste is currently diverted from disposal, there is significant potential to increase recycling of these materials into value-added products.

<sup>4</sup> Our Path Forward - BUILDING ON THE SUCCESS OF NOVA SCOTIA’S SOLID WASTE RESOURCE MANAGEMENT STRATEGY – September 2011 – Nova Scotia Environment

Gypsum wallboard, also commonly known as sheetrock, drywall, gypsum board or wallboard, is generally composed of 85 - 90% gypsum and 7 - 15% paper. Wallboard is the principal interior wall material used in new construction and remodelling.<sup>5</sup> When disposed of in a landfill, drywall waste can release harmful hydrogen sulphite gases that create odour issues and/or become dangerous if not managed properly.

Halifax C&D Recycling Ltd. has been exploring sustainable, economical and environmentally friendly solutions to managing wallboard waste (clean and painted/coated). Innovative recycling techniques to date have included soil amendment, erosion control, environmental fuel supply and cement production.

Recently, Halifax C&D has been using its own traditional processing equipment (best suited for screening and chipping wood-based materials) to process small quantities of wallboard. Through the process, they turn waste wallboard into a gypsum powder that drywall manufacturers can use when making new wallboard. Halifax C&D has shipped several loads to CertainTeed Gypsum Canada Inc in McAdam, New Brunswick. Small quantities of wallboard have been produced over the course of a one-year trial period to determine if it was possible to process post consumer wallboard to CertainTeed specifications.

The level of purity required by CertainTeed is difficult to achieve with traditional processing equipment. Some of the new equipment was built by ABCO Industries Limited in Lunenburg. Halifax C&D estimates that roughly 2,500 tonnes of wallboard can be captured between two locations in the Halifax Regional Municipality alone.

Diverting C&D material from landfills has all of the benefits of avoiding landfill-related costs. Replacement of virgin (mined) gypsum materials with recycled content will avoid any associated environmental costs. However, replacement of virgin material may hinder local gypsum mining jobs and income, but likely to a very small extent as a large share of gypsum board products are imported from outside the province. Finally, if a unique recycling process is developed here in Nova Scotia there may be some technology export opportunities to other jurisdictions seeking methods to divert C&D materials from their waste streams.

## ***Research and Development (R&D)***

Support for R&D was \$285,000 for 2013. RRFB Nova Scotia provides Student Research Grants for research related to solid waste diversion. Leveraging the knowledge and capacity of our universities, the program is intended to support student research projects that will provide a commercial benefit to businesses and municipalities and/or result in the increased diversion of materials from disposal. While funding is directed to students, the program is also leveraged by academic advisors and businesses that need assistance with research services relating to solid waste diversion.

The program provides grants to Honours Undergraduate students and Graduate thesis research that will investigate, design and develop:

- ❑ Materials or products that incorporate solid waste-resources (See Appendix A of the SRG Guidelines below);
- ❑ Technologies that facilitate the separation and recovery of solid waste-resources; and,

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<sup>5</sup> [http://www.nerc.org/documents/gypsum\\_wallboard\\_waste\\_management\\_fact\\_sheet\\_2006.html](http://www.nerc.org/documents/gypsum_wallboard_waste_management_fact_sheet_2006.html)

- ❑ Enhanced market opportunities for solid waste-resources and/or recycled materials.

Three examples of student research projects supported by this funding are described briefly here:

- ❑ **Effects of Compost Application on Strawberries:** While Nova Scotians are diverting a significant amount of organics from landfills, there is an effort to increase the value of processed organics and develop new markets for the product. Ben Thomas, a Dalhousie University student, explored the combination of municipal food waste and fertigation to help identify the best fertilizer regimen for day-neutral strawberries. Ben's research will help local compost operations develop new markets for their product and help reduce costs to farmers.
- ❑ **Evaluation of compost effect on wine grape yield, soil quality, and nitrate leaching:** Kyle Gallant at the Nova Scotia Agricultural College is investigating the use of municipal solid food waste compost, industrial wood ash waste, and mussel sediment waste as a valuable soil amendment for use in Nova Scotia's wine grape industry. The use of these products can aid in creating an optimal pH, increase soil organic matter, improve soil quality and supply nutrients to crops. The research will enhance the competitive position of the Nova Scotia wine industry, and provide potential value added options for municipal industry derived composts/wastes.
- ❑ **Costs of demolition versus deconstruction:** Colin Jeffrey, a Dalhousie University student, researched strategies for better diversion of construction and demolition waste produced at the university. The project was a comparative study of demolition and deconstruction processes of four campus houses scheduled for removal. Colin's research will help Nova Scotia better understand the costs and benefits of demolition versus deconstruction.

An average of seven projects were funded each year since the program began in 2010/11. Promising research and new developments change the way businesses operate to create new markets or become more cost-effective. These benefits are not accounted for in the formal economic impacts, but nevertheless contribute significantly to Nova Scotia's economy.

Although just two R&D projects are briefly described here from among the dozens completed in recent years, they point to new market development and determining feasible/optimal business options. New product or market development typically expands revenues without increasing many of the fixed business costs, so this makes companies more profitable. Diversifying into new product lines and markets also adds stability that mitigates fluctuation risks that are especially common in agriculture. Determining the most cost-effective options for demolition or deconstruction will capture new revenue streams and/or decrease costs, both of which contribute to the bottom line. Overall, doing more with existing resources in businesses we are already familiar with is the easiest and quickest way to add value (GDP) to the Nova Scotia economy.

## ***Education and Awareness***

Approximately \$1.6 million was allocated for education and awareness programs in fiscal 2013. From this allocation, RRFB Nova Scotia provided a total of \$635,000 to the seven waste management regions across the province through education contracts. Municipalities and waste management regions in turn provided education to schools, businesses, and community groups. This is a very integrated approach whereby residents of Nova Scotia receive information on provincial and municipal programs. The remainder of the \$1.6 million in funding supports

education and awareness initiatives, regional advertising, resources, and other operational expenditures. There are approximately 18 waste reduction educators employed through the education contracts across NS.

In addition, there are eight regional coordinators across the province that assist in the delivery of education, but also provide other administrative roles within the region. RRFB Nova Scotia provides a separate contribution of approximately \$280,000 to support the cost of those salaries.

Under the regional education contracts, regions commit to performing a set number of hours in specific target sectors, including the following:

- ❑ Offices
- ❑ Apartments
- ❑ Food Services
- ❑ Institutions

The types of educational activities that are funded through the contracts include presentations, waste audits, green team meetings, special events, needs assessments, and compliance promotion activities.

Nova Scotia is recognized not only as one of the first jurisdictions with comprehensive waste diversion programs, but one with the lowest disposal rates. A great deal of this success is owed to the recycling culture of residents that has been propelled by education and awareness programs that reach every corner of the province. The effectiveness of today's education and awareness programs, and specifically different approaches to educational messages (loss and gain oriented) for improving recycling participation, was also confirmed in Canadian research at the University of British Columbia.<sup>6</sup>

In addition to the benefit of high support for recycling, education is best known for long-term effects where youth having grown up in this context will consider it the norm, and will be more likely to carry this behavior into adulthood. The long-term effects of education and awareness programs are well-documented in research focused on the inter-generational effects on parents, as well as the increased recycling and conservation behavior once today's youth become the primary consumers upon earning incomes in the workforce.<sup>7</sup> Future advances of this nature and avoided costs due to program compliance and waste diversion are additional to the benefits captured in this study.

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<sup>6</sup> White, K., R. MacDonnell, and D. Dahl. 2011. It's the mindset that matters: The role of construal level and message framing in influencing consumer efficacy and conservation behaviours.

<sup>7</sup> Maddox, P. C. Doran, I. Williams, and M. Kus. 2011. The role of intergenerational influence in waste education programmes. *Journal of Waste Management*.

## **IV DISCUSSION**

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### **Landfill comparison**

It is useful to set results in the context of similar studies completed elsewhere. A review of nine product stewardship and waste diversion economic impact studies was completed in 2012 by Duncan Bury Consulting for the Canada-U.S. Western Product Stewardship Collaborative.<sup>8</sup> The studies included six from the U.S., two from Canada, and one from Europe. These studies typically compared the economic impacts of recycling versus landfill disposal. The three major findings are:

- ❑ Landfill disposal is not job intensive and generates a small number of jobs compared to waste recycling and waste diversion.
- ❑ Recycling and the use of secondary materials create significantly higher net value-added and jobs at higher income levels than waste disposal.
- ❑ Recycling businesses create jobs closer to home and have a smaller environmental footprint than businesses that rely on raw material extraction and manufacture.

### **Curbside comparison**

Since recycling has now been established for a number of years, attention has also shifted from comparing recycling with landfill disposal to comparing different recycling systems. There are two primary recycling systems for beverage containers, the deposit-refund depot network as in Nova Scotia, and curbside recycling as in Manitoba, Ontario, and Quebec (for certain containers). Curbside programs require less effort on the part of residents and businesses and, while they have a reduced fee on beverage containers (typically half the rate), they do not offer deposit refunds. The curbside model requires the same net costs to society when the difference in recyclables revenues are accounted for<sup>9</sup>.

The two types of systems are addressed in an annual report by CM Consulting on recycling systems across Canada titled “Who Pays What: An analysis of beverage container recovery and costs in Canada”.<sup>10</sup> The report indicates Nova Scotia is among the top three jurisdictions for rate of beverage container recycling. The most striking difference observed between the curbside and deposit-refund (depot) systems is that the recovery rate for beverage containers doubles in provinces with a deposit-refund program compared to municipal curbside systems (see municipal rates in Manitoba, Ontario, and Quebec in the figure below). The refund is considered a strong incentive for diversion of beverage containers from the waste stream.

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<sup>8</sup> Duncan Bury Consulting. 2012. Overview of stewardship and extended producer responsibility job and economic impact studies. For the Canada-U.S. Western Product Stewardship Collaborative.

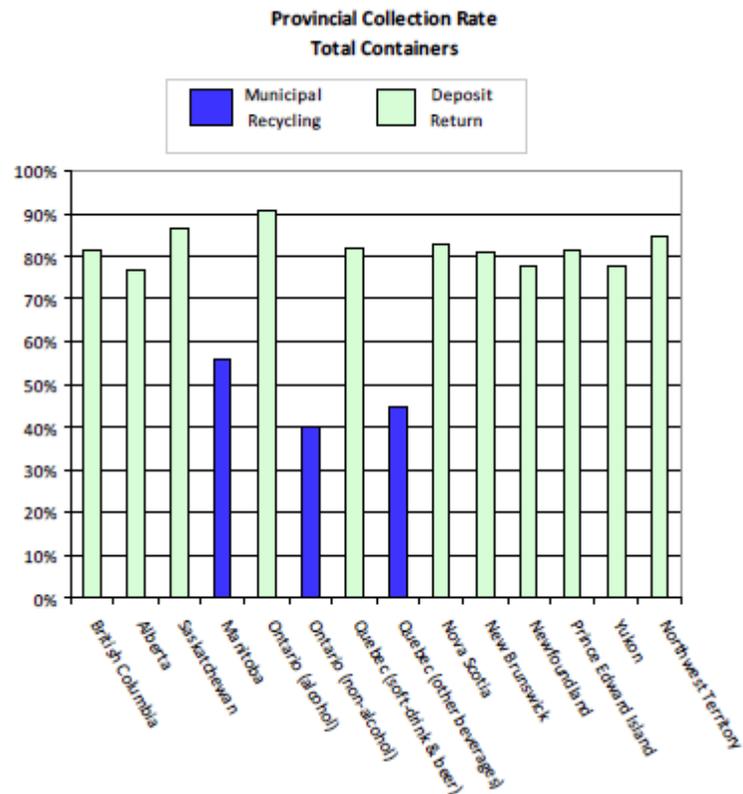
<sup>9</sup> Deposit-refund system has \$39.1 million in deposits collected, but \$16.7 million refunded and \$4.7 million in revenues for a net cost of \$17.7 million. Equivalent curbside system elsewhere in Canada would have \$19.6 million in deposits collected (half), no refunds and \$2.4 million in recyclables revenues (41% diversion from landfill instead of 81%) for a net cost of \$17.2 million. This represents 2.9% lower cost with curbside collection.

<sup>10</sup> CM Consulting, 2012. Who pays what: An analysis of beverage container recovery and costs in Canada.

The lower diversion rate for municipal curbside programs means the findings for comparison between recycling and landfill disposal are still relevant. In two of the three jurisdictions the majority of beverage containers still go to landfill, and this means fewer jobs overall, less value-added manufacturing from recycling, and fewer local jobs since raw material extraction tends to occur elsewhere (especially true for Nova Scotia).

In addition, there are a number of other benefits from the Beverage Containers Deposit-Refund System in Nova Scotia as discussed in this report:

- ❑ **Avoided landfill costs** associated with operating, siting, and environmental impacts
- ❑ **Integration of other recycling programs** to collect paint, electronics and other items, that remain viable in association with the ENVIRO-DEPOT™ network that is centered on beverage container recycling
- ❑ **Strategic investments** in the advancement of waste diversion through: research and development, innovation and commercialization of recycling technologies, education, and new stewardship programs
- ❑ **Charitable organizations** use of the refund for fundraising increases their revenue and/or reduces need for other traditional fundraising methods
- ❑ **Supplemental income** for low/no income individuals provides a service opportunity they treat as a job
- ❑ **Reduced littering** and associated cleanup costs, which have been attributed to the financial incentive to return beverage containers



*Source: CM Consulting, 2012*

Although the Beverage Container Deposit-Refund System requires effort on the part of Nova Scotians to bring recyclables to Enviro-Depots, the increased rate of recycling and numerous other RRFB Nova Scotia program benefits offer excellent value that is internationally recognized.

## APPENDIX A: NSIO INPUTS

<b>2007 Nova Scotia Input Output Model – Industry Impact Input</b>		
<b>Industry (#, Description)</b>	<b>RRFB Value (\$)</b>	<b>DEPOTS Value (\$)</b>
24 Electric Power Generation, Transmission and Distribution	97,019	726,614
34 Repair Construction	41,156	986,716
115 Plastic Bottle Manufacturing	413,252	-
123 Glass and Glass Product Manufacturing	413,252	-
145 Metal Can, Box and Other Metal Container (Light Gauge) Manufacturing	413,252	-
208 Retail Trade (Margins)	2,762	261,195
209 Air Transportation	10,721	-
212 Truck Transportation	1,666,063	-
221 Postal Service	935	-
222 Couriers and Messengers	935	-
232 Telecommunications	75,894	464,367
237 Banking and Other Depository Credit Intermediation	-	325,798
238 Insurance Carriers	667	325,798
239 Lessors of Real Estate	137,678	409,090
241 Automotive Equipment Rental and Leasing	-	464,367
248 Legal, Accounting, Tax Preparation, Bookkeeping and Payroll Services	193,888	-
252 Other Professional, Scientific and Technical Services	320,059	-
257 Waste Management and Remediation Services	2,038,916	-
268 Traveller Accommodation	224,543	-
271 Automotive Repair and Maintenance	2,368	464,367
277 Private Households	1,248,378	6,249,579
279 Office Supplies	259,951	424,287
283 Advertising and Promotion	1,387,321	-
288 Non-Profit Education Institutions	1,052,206	-
297 Other Municipal Government Services	2,538,496	-
298 Other Provincial and Territorial Government Services	1,163,540	-

# APPENDIX B: SURVEYS

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## INTRODUCTION

This survey is being conducted by Gardner Pinfold Consultants Inc. on behalf of RRFB Nova Scotia. This is part of an economic impact study of the Deposit-Refund System for Beverage Containers, and will be used to communicate the jobs, incomes, added-value, and other economic benefits of the system to a wide range of audiences.

### Survey Instructions:

- The survey is voluntary and you may contact Gardner Pinfold if you have any questions or concerns. The survey should only take 5-10 minutes to complete.
- The financial information required to respond to the survey will be contained in your business' financial statements and it may be useful to have these statements on hand as you fill out the survey.
- We would like to collect information for the 2012 operating year. If your statements do not fall within the calendar year, please use your most recent financial statement.
- You may stop the survey at anytime and come back to it using the link provided to you. Follow directions to move from one question to the next.

You may contact Ruth Collins at Gardner Pinfold with any questions: [rcollins@gardnerpinfold.ca](mailto:rcollins@gardnerpinfold.ca) or 1-800-667-1720 x 10.

All information will be collected, compiled and held in confidence by Gardner Pinfold. The report provided to RRFB Nova Scotia will be a summary of the survey results and will not identify you or your employees

## DEPOT INFORMATION

Please provide the following information:

Depot name	<input type="text"/>
Depot location/community	<input type="text"/>

What recycling services does your Enviro-Depot offer?

- Beverage containers
- Beer bottles
- Paint
- Cardboard/paper
- Electronics
- Metal
- Other

Please describe your Enviro-Depot.

- My business owns its own facility.
- My business rents/leases its facility.

Approximately how many square feet is your Enviro-Depot?

**FINANCIAL INFORMATION**

Indicate the financial statements you will use to answer this survey.

- Calendar year 2012 (Jan 1, 2012 – Dec 31, 2012)
- Calendar year 2011 (Jan 1, 2011 – Dec 31, 2011)
- Other (Provide year, including beginning and end month)
- Statements not available (I will use estimates, where possible)

Move the sliders to indicate what percentage of your overall Enviro-Depot operation revenue comes from the following (*best estimate is fine*):

Please note that total must equal 100%.

	0	10	20	30	40	50	60	70	80	90	100	
Beverage containers												10
Refillable beer bottles												10
Paint												10
Cardboard/paper												10
Electronics												10
Metal												10
Other												10
<b>Total:</b>												<b>70</b>

Based on the financial statements used to answer this survey, what were your total expenses for all services? *(Best estimate is fine if financial statements are not available).*

Actual (based on financial statement):

Best estimate (financial statement not available):

Provide a breakdown of your expenses based on the financial statements related to the overall operation of your Enviro-Depot. *(If you do not have financial statements, go to next question).*

Salaries and wages

Employer contributions (CPP, EI, Worker's Compensation, Other)

Rent

Utilities (telephone, water, power), equipment

Supplies

Insurance/banking

All other expenses

Move the slider to indicate what percentage of your Enviro-Depot expenses are for each of the following *(if your financial statements are not available).*

The total cannot be more than 100%.

	0	10	20	30	40	50	60	70	80	90	100
Salaries and wages											10
Employer contributions (CPP, EI, Workers Compensation, Other)											10
Rent											10
Utilities (telephone, water, power), equipment											10
Supplies											10
Insurance/banking											10
All other expenses											10
<b>Total:</b>											<b>70</b>

Move the slider to indicate the percentage of your Enviro-Depot's total expenses related to RRFB's beverage container program.

	0	10	20	30	40	50	60	70	80	90	100
Beverage containers											

Over the past 5 years, how much has your business spent on capital items such as handling equipment, forklifts, computers, or vehicles?

Please estimate total dollar value for the 5-year period.

Move the slider to indicate what percentage of these purchases were made for your RRFB beverage container operation.

	0	10	20	30	40	50	60	70	80	90	100
Beverage container operation											

**EMPLOYEE INFORMATION**

Please provide the number of part-time and full-time staff you employ as part of your Enviro-Depot business.

	Part-time	Full-time
Number of staff employed:	<input type="text"/>	<input type="text"/>

Please provide the range of hourly wages paid to part-time and full time staff.

	Part-time	Full-time
Low (\$/hour):	<input type="text"/>	<input type="text"/>
High (\$/hour):	<input type="text"/>	<input type="text"/>

Move the slider to indicate what percentage of your staff time is spent doing work associated with RRFB's beverage container program.

	0	10	20	30	40	50	60	70	80	90	100
Part-time											
Full-time											

**CHARITIES AND COMMUNITY ORGANIZATIONS**

We understand many groups and organizations use the Deposit-Refund System as a reliable source of funding. We will contact charities and community organizations to get information on total funds raised by this method.

Does your Enviro-Depot allow customers to have their refund directed to specific charities?

- Yes
- No

How many specific charities can your customers choose to direct their refund to?

Please provide the names of three (3) of these charities.

- 1) Organization 1:
- 2) Organization 2:
- 3) Organization 3:

Are there community organizations/ sports teams/ charities that do bottle drives and collect the refunds from your Enviro-Depot?

- Yes
- No

On a monthly basis, how many different community organizations/ sports teams/ charities conduct bottle drives and collect refunds from your Enviro-Depot? (Estimate is fine).

Please provide names of three community organizations/sports teams/charities that conduct bottle drives and collect refunds from your Enviro-Depot.

- 1) Organization name:
- 2) Organization name:
- 3) Organization name:

**SUPPLEMENTAL INCOME**

Many Nova Scotians depend upon the Deposit-Refund Program as a means to supplement their personal income. These people collect containers from roadside, garbage containers, residential curb sides, businesses, etc. We would like to quantify the number of people relying on the Deposit-Refund System as a source of supplemental income.

Are you aware of individuals who deliver beverage containers to your Enviro-Depot that are dependent on the Deposit-Refund System for supplemental income?

- Yes
- No

Please provide your best estimate of the number of people who deliver beverage containers who are dependent on the Deposit-Refund System for supplemental income.

	Number of people
Daily:	<input type="text"/>
2 - 4 times per week:	<input type="text"/>
Every 2 weeks:	<input type="text"/>
Every 3 - 4 weeks:	<input type="text"/>
Other (please describe): <input type="text"/>	<input type="text"/>

What is the refund paid (low to high range) to those that deliver containers to your Enviro-Depot who are dependent on the Deposit-Refund System for supplemental income:

	(\$) low range	(\$) high range
Daily	<input type="text"/>	<input type="text"/>
2 - 4 times per week:	<input type="text"/>	<input type="text"/>
Every 2 weeks:	<input type="text"/>	<input type="text"/>
Every 2 - 4 weeks:	<input type="text"/>	<input type="text"/>
Other (please describe): <input type="text"/>	<input type="text"/>	<input type="text"/>

**SUMMARY**

Since this study is about the economic importance of the Enviro-Depot network in Nova Scotia, please provide any other thoughts you would like to share about individuals, groups, or businesses that depend on the Deposit-Refund System.

**THANK YOU!**

Thank you for participating! We look forward to completing the study in the coming months and you may contact RRFB Nova Scotia to obtain a summary of the survey results.

## INTRODUCTION

The Resource Recovery Fund Board, Inc., (RRFB) has contracted Gardner Pinfold Consultants Inc. to conduct an *Economic Impact Study of the Deposit-Refund System for Beverage Containers*.

The findings of the study will be used to communicate the economic benefits of the Deposit-Refund System including jobs, incomes, added-value, etc.

We understand many charities and organizations in Nova Scotia use the Deposit-Refund System as a means for fundraising. Through this survey, the overall importance of this type of activity will be documented.

We thank you in advance for taking the time to complete the survey. Your insights are an important component of the study. All information will be collected, compiled and held in confidence by Gardner Pinfold. The report provided to RRFB Nova Scotia will be a summary of survey results and will not identify your organization.

Please contact Ruth Collins at Gardner Pinfold at 1-800-667-1720 x 10 with any questions, or if you require assistance completing the survey.

## CHARITY OR ORGANIZATION INFORMATION

Please provide the name of your charity or organization and contact information.

Name:	<input type="text"/>
Contact Name:	<input type="text"/>
Email address:	<input type="text"/>
Phone number:	<input type="text"/>

What is the mandate of your charity or organization?

## FUNDRAISING ACTIVITIES

**Does your charity or organization conduct fundraising activities?**

- Yes  
 No (Please end survey if you selected "no")

**Does your charity or organization conduct fundraising by conducting bottle drives?**

- Yes  
 No (Please end survey if you selected "no")

**Please provide an estimate for the year 2012 of the total proceeds your charity or organization received as a result of conducting bottle drives.**

**Please provide an estimate of the percentage that bottle drives account for in your charity or organization's total annual fundraising effort.**

*(Select one only).*

- Less than 5%  
 6 - 10%  
 10 - 25%  
 26 - 50%  
 51 - 75%  
 76 - 100%  
 Not sure

## **COMMENT**

**Please provide any comments you wish to make about the importance of the Deposit-Refund System to your charity or organization.**

THANK YOU!

Thank you for participating!

We look forward to completing the study in the coming months and you may contact RRFB Nova Scotia toll free at 1-877-313-7732 to obtain a summary of the survey results