

7. Annual Municipal Blue Box Program Cost Calculations

7.1 Calculation of Year One Net Costs

Funding of the net cost of municipal Blue Box waste program, under Section 25 (5) of the *Waste Diversion Act*, and as directed in the Minister's Program Request Letter to the WDO is expected to commence in calendar year 2003. A large majority of Steward's fees will go toward the obligation to pay the 50% net cost calculation of municipal costs.

The gross costs and gross revenue for 2002 will not be known until audited financial statements from municipalities are completed and submitted to the MMAH in June 2003. As such, it has been determined that the first year total net cost calculations would be based on a "best estimate" of 2001 costs. The AMO/Stewardship Ontario Task Group reached agreement on the net costs of municipal Blue Box recycling programs for Year One of the WDO's Blue Box Funding Program.

For the first year, given the absence of a current, comprehensive data set that would capture all municipal Blue Box costs for 2002, AMO and Stewardship Ontario instead used the best available information available to them to determine the most accurate estimate of current Blue Box costs possible.

In agreeing to Year One total net costs, AMO and Stewardship Ontario included similar components, as outlined below, to estimate total net costs:

Direct Service Delivery Costs

- This includes the collection and processing costs of residential Blue Box wastes, whether the service is contracted to the private sector, delivered by the public sector, or a combination thereof. If the service is contracted to the private sector, the direct service delivery cost is the collection and processing fees charged by the contractor to the municipality. If the service is delivered by the municipality, direct service delivery costs include:
 - Payroll costs of recycling collection truck drivers and sorters at a material recovery facility;
 - Services such as utilities, insurance, equipment repair and maintenance;
 - Supplies such as fuel, baling wire, Blue Boxes;
 - Rent or lease costs for buildings, equipment or vehicles;
 - Taxes and payments-in-lieu of taxes;
 - Interest on debt to acquire buildings, equipment or vehicles; and
 - The non-refundable portion of the GST and PST where applicable.

Amortized Capital Costs

- This includes the amortized capital cost of municipally owned collection vehicles, material recovery facilities, fixed and mobile equipment within the material collection facility, and collection containers other than Blue Boxes, where the capital costs do not form part of the contract service price from a private sector contractor. Grants for capital improvements will be subtracted from the amortized capital costs determined

for the program. The AMO–Stewardship Ontario Task Group also agreed that land costs would not be included in the calculation.

Public Awareness and Public Education Costs

- Regulation 101/94 to the *Environmental Protection Act* requires that municipal Blue Box wastes management systems include public awareness and education programs. Examples of costs in this category include: graphic design, production costs, printing, postage, linage rates, air time, etc.

Indirect Administrative Costs

- These are costs incurred by municipalities in support of the direct service delivery. Examples of indirect administrative costs include:
 - Financial, including accounts payable and receivable, purchasing, payroll, and audit;
 - Human Resources, including health and safety, labour and employee relations, training and development;
 - Information Technology, including electronic data bases to record and track Blue Box tonnage information; and
 - Legal, only for legal costs directly related to direct service delivery issues such as review of tender documents or contract disputes.
- Specifically excluded from indirect costs are costs associated with elected officials and corporate governance.

Also excluded from the gross cost calculation is the 50% contribution a municipality is required to make as part of any study or program carried out under the Effectiveness and Efficiency Fund (Section 6.6).

The gross revenue from Blue Box programs includes the following components:

Revenue from the Sale of Blue Box Wastes

- This is the revenue from the sale of Blue Box wastes as they appear on the municipal general ledger. It excludes revenue retained by private sector contractors under revenue sharing agreements with municipalities on the basis that this risk sharing arrangement reduces direct service delivery costs. The revenue from the sale of Blue Box wastes varies significantly from year to year. As such, AMO and Stewardship Ontario have agreed that a three year rolling average revenue should be used in order to attempt to balance the overall revenue a municipality will receive in any given year and to allow more control in budgeting both by municipalities and by Blue Box Stewards. The years used to calculate the three-year rolling average for the first year of funding are 2001, 2000, and 1999.

Processing Fees

- This includes the processing fees charged at municipal MRFs for processing residential Blue Box wastes from other municipalities. The costs presented and the revenues received must reflect the management of residential Blue Box wastes. No IC&I costs or revenues have been included.

Revenue from the Sale of Curbside Containers

- These revenues are included where the cost of the purchase of containers is included in the gross cost calculation.

Revenue from Grants or Other Funding

- This includes the funds that are intended to offset direct service delivery or public awareness and education costs.

The result of the application of the above, for Year One is shown in Table 7.1.

Table 7.1: Year One Net Cost Calculation

Cost Category	Value
Gross Cost	\$129,200,000
Gross Revenue	\$(66,700,000)
Net Cost	\$62,500,000
Industry Funding @ 50%	\$31,250,000
In-kind Contribution of CNA/OCNA	\$1,300,000
Total Blue Box Stewards' Financial Obligation (under the assumption of a full year obligation in 2003)	\$29,950,000

7.2 Date of Industry Obligation

In correspondence dated December 3, 2002, the Minister of Environment indicated that the Stewards under this Plan will be obligated to provide funding to municipalities under Section 25 (5) of the WDA when the Regulation adopting this Plan is approved by the Minister. The Blue Box Program Plan will be submitted to the Minister on February 28, 2003. It is understood that there will be a minimum 30 day review period at the Ministry of the Environment, simultaneous with a posting of the Plan on the Environmental Bill of Rights. Following this review, a new regulation must then be passed which will enable Stewardship Ontario to implement the plan as outlined in this document. Given that the precise dates when these steps will be completed are unknown, ***for the purposes of completing this Program Plan, the date of industry obligation is assumed to be May 1, 2003.*** It is upon this projected date that the following cost estimates have been determined.

7.2.1 Year One Financial Obligation of Industry

With an obligation date of May 1, 2003, Stewardship Ontario would be responsible \$20,833,333 (Table 7.2).

Table 7.2: Year One Industry Obligation

Cost Category	Value
Net Cost	\$62,500,000
Whole Year Industry Obligation (50% of Net Cost)	\$31,250,000
2/3rds Year Industry Obligation	\$20,833,333
CNA/OCNA In-kind Contribution	\$866,667
Total Industry Cash Contribution	\$19,966,666

7.3 Calculation of Annual Municipal Blue Box Support Payments

7.3.1 Guiding Principles

The AMO/Stewardship Ontario Task Group has agreed to establish a technical working committee that will report to MIPC (made up of AMO and Stewardship Ontario representatives and/or their technical designates) to determine the methodology and procedures for calculating the total net cost of municipal Blue Box programs in subsequent years.

The net cost calculations for Ontario's Blue Box programs will be developed using the following six principles as a guideline:

(1) Accuracy

Best estimates of actual expenditures and revenues using best available information. Protocol for data collection and reporting must be agreed by AMO and Stewardship Ontario.

(2) Transparency

All parties must know the source of the data and be able to understand how the numbers were derived.

(3) Verifiability

Industry and municipalities must be able to verify how the estimate was derived. This may involve third party verification of data. Stewardship Ontario and WDO technical and/or financial auditors must also be able to verify the data.

(4) Acceptability

The fee calculation methodology reflects a reasonable fee for services provided under the Blue Box Program Plan.

(5) Consistency of Reporting

Consistency in the submission of agreed upon data, in an agreed upon format, in a timely manner.

(6) Ability to Identify Costs

The information gathered and submitted must be in sufficient detail to identify cost drivers.

7.3.2 Definition of Costs and Revenues

Costs

- In future years, all direct costs and some indirect costs to the program will be included in the net cost calculation. These definitions will be refined as the 3Rs Datacall for 2002 information is developed. The AMO/Stewardship Ontario Task Group kept the categories of costs and what is acceptable under each category consistent with the work of existing municipal benchmarking groups (e.g., CAO's Benchmarking Initiative, OMBI, etc.).

It should be noted that the costs presented by municipalities will be reflective of the cost to manage residential recyclables only. All costs associated with handling IC&I sourced tonnes of materials (e.g., from schools), even if delivered through the municipal program, will be removed and the tonnes reported as recovered not included in the information provided by municipalities.

It should be noted that 2004 levies will be based on 2002 costs submitted by municipalities.

Revenues

- The most significant portion of program revenues for most recycling programs in Ontario is the revenue derived from the sale of recycled materials. Because recyclables are commodities for which prices fluctuate with changes in the market, the total value of revenues received year over year vary significantly as the economy changes. This makes budgetary planning very difficult. To help alleviate the fluctuations from year to year, and to make program budgeting easier, both parties agreed to using three year rolling averages on revenues (by material). In this manner, the peaks and valleys of revenues are reduced and, for any planning period, two of the three years of revenues will be known, meaning that only one year of forward looking projections will be required. For example, to determine the net cost of recycling programs and industry funding obligation for 2004, a three year average of 2001, 2002 and 2003 revenues for the sale of recycled material would be used.

7.3.3 Net Cost Calculation Methodology – Municipal Information

The total net cost of the municipal Blue Box program will be determined through an annual cost survey. AMO, in consultation with Stewardship Ontario, will develop a Schedule to collect the gross cost and gross revenue information, as defined in Section 7.1, from each municipal Blue Box program as part of the electronic Financial Information Return (e-FIR) that every municipality in Ontario is obligated to submit to the Minister of Municipal Affairs and Housing by April 30th of each year for the prior year's financial activity. Where the Blue Box program is delivered through a municipal association, board or commission, the association, board or commission will complete the Schedule on behalf of all member municipalities. The Schedule will be in an electronic format that will automatically calculate the three year rolling average for

the sale of Blue Box wastes and the net cost of each municipal Blue Box program by subtracting gross revenue from gross costs to determine the net cost.

The municipality, association, board or commission reporting the gross cost and gross revenue information will be required to submit a confirmation in writing, signed by the Chief Financial Officer and the external auditor, verifying that the information is true and correct and reflects the program delivery costs and revenues as defined in this Plan and as reported in the general ledger.

The MIPC and the MAC, in association with the MMAH and the WDO, will oversee the municipal Blue Box cost survey (Section 5).

7.3.4 Net Cost Calculation Methodology – Future Projections

The cost of Blue Box programs is not in the direct control of industry, rather, it is determined by decisions made by municipalities based on direction from their Councils, staff and residents. Costs are also influenced by drivers such as energy, the consumer price index and the level of competition among private sector service providers. As such, the costs presented herein are based on a series of conservative assumptions and the current understanding of the direction of the recycling industry as a whole (e.g., with respect to the movement towards more single stream collection programs).

In predicting future costs, two initial points of consideration are what materials are going to be recovered and at what recovery rate. Overall, for the purposes herein, it is assumed that the quantity of recyclables available will increase proportionally with the increase in population in the province, estimated at 1.5% per year.

The quantity (and percentage) of each material that was recovered in 2001 was based on the results of the Datacall exercise). For future years, two scenarios are examined (described in Section 6.2.4):

- Natural Growth Scenario: Diversion equal to population growth (i.e., maintaining 45% diversion); and
- 50% Diversion Scenario.

The impact of the application of these approaches to the quantity of each material diverted in future years is outlined in Table 6.6. These tonnage diversion estimates were used in the determination of future program costs.

The cost per tonne managed for each material was determined using the cost allocation protocol that was established by the MPAC (Appendix IX). This cost per tonne was increased uniformly (i.e., equally across all materials) in each year of the cost projection. The gross cost per tonne for 2002 was increased by 10% to account for a number of factors including:

- Full inclusion of indirect costs across all programs in the province (accounting for a projected 7% increase); and
- An increase of 3% to account for projected general program and cost of living increases.

For 2003, the costs were increased by 3%, primarily to account for increases in the cost of living. It has been assumed for the purposes of this exercise that any potential savings that may be seen as a result of moving to lower cost systems will be offset by increases resulting from

the renewal of contracts at higher costs (e.g., York Region) when compared to previously lower cost programs that were in existence in 2001 (e.g., City of Hamilton). However, for 2004 through 2006, cost increases of 3% are assumed to be offset by cost savings of 1%, 1.5% and 2% respectively, due to the activities and successes achieved through the application of the Effectiveness and Efficiency Program. It is initially estimated that money spent through the program will result in cost savings with a five year payback period (20% ROI).

Finally, because the future of commodities pricing cannot be accurately predicted, the average of the previous five years of revenues per tonne for each material is used across all years. Also, because it is not known which municipalities work on spot markets, which on longer term contracts for the sales of materials and the status of revenue sharing arrangements with municipal contractors, the CSR Price Sheet revenue values have been discounted by 20% for the years 1997 through 2001 and discounted by 10% for the years 2002 through 2006 (as it is understood that the CSR Price Sheet is now tracking revenues received by municipalities more accurately now than in years past).

7.4 Five Year Cost Projections

Shown in Figure 7.1 are preliminary Blue Box Program cost estimates for the years 2002 through 2006 based upon these planning assumptions. For years 2004 through 2006, cost assumptions equivalent with the Natural Growth and 50% recovery rate scenarios (as per Table 7.1) are shown. As outlined in the previous section, assumptions on recovery rate and on the annual cost increases vary with each year. The assumptions for increases in program costs and changes in revenues are consistent across both scenarios.

Figure 7.1: Future Cost (Net) Scenarios Under Different Recovery Rate Assumptions

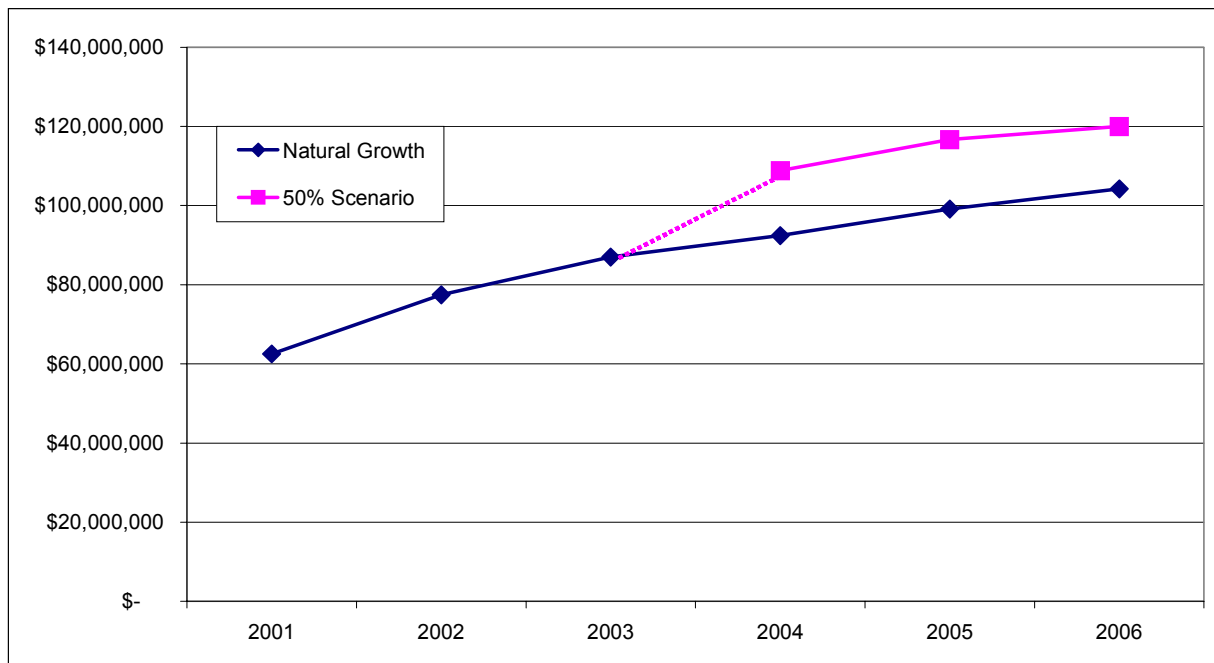


Table 7.3: Estimate of Future Program Costs

Year	Scenario	Printed Paper			Packaging		
		Gross	Revenues	Net	Gross	Revenues	Net
2001	Negotiated Final	\$ 33,271,000	\$ 32,609,000	\$ 662,000	\$ 95,929,000	\$ 34,091,000	\$ 61,838,000
2002	Estimate	\$ 37,346,000	\$ 31,387,000	\$ 5,959,000	\$ 107,146,000	\$ 35,676,000	\$ 71,470,000
2003	45% Recovery Rate	\$ 38,707,000	\$ 29,030,000	\$ 9,677,000	\$ 111,937,000	\$ 34,625,000	\$ 77,312,000
2004	50% Recovery Rate	\$ 43,267,000	\$ 33,113,000	\$ 10,154,000	\$ 138,118,000	\$ 39,465,000	\$ 98,653,000
2005	50% Recovery Rate	\$ 44,810,000	\$ 30,471,000	\$ 14,339,000	\$ 142,463,000	\$ 40,144,000	\$ 102,319,000
2006	50% Recovery Rate	\$ 45,925,000	\$ 30,920,000	\$ 15,005,000	\$ 145,797,000	\$ 40,840,000	\$ 104,957,000

Year	Scenario	Total		
		Gross	Revenues	Net
2001	Negotiated Final	\$ 129,200,000	\$ 66,700,000	\$ 62,500,000
	Net Cost Per Tonne	\$ 185	\$ 95	\$ 89
2002	Estimate	\$ 144,492,000	\$ 67,063,000	\$ 77,429,000
	Net Cost Per Tonne	\$ 204	\$ 94	\$ 109
2003	45% Recovery Rate	\$ 150,644,000	\$ 63,655,000	\$ 86,989,000
	Net Cost Per Tonne	\$ 209	\$ 88	\$ 121
2004	50% Recovery Rate	\$ 181,385,000	\$ 72,578,000	\$ 108,807,000
	Net Cost Per Tonne	\$ 223	\$ 89	\$ 134
2005	50% Recovery Rate	\$ 187,273,000	\$ 70,615,000	\$ 116,658,000
	Net Cost Per Tonne	\$ 226	\$ 85	\$ 141
2006	50% Recovery Rate	\$ 191,722,000	\$ 71,760,000	\$ 119,962,000
	Net Cost Per Tonne	\$ 228	\$ 86	\$ 143

Primarily because of the inclusion of indirect municipal costs in future net cost calculations (the Year One cost was a best estimate), and also because of projected lower revenues, it is estimated that the net cost of recycling in 2002 could increase to just less than \$77.5 million (\$109/te), compared to \$62.5 million in 2001. 2002's cost reflects the first year where actual, audited municipal costs will be used. The cost for 2003 could rise to approximately \$87 million, reflecting higher costs and conservative revenue estimates and increases in the quantity recovered of 1.5% compared to 2002. These assumptions are conservative. However, it should be noted that in the spirit of continuous improvement and the 50%/50% cost sharing arrangement of the WDA, municipalities and industry both equally acknowledge a shared interest and overall intent to have the diversion performance of the Blue Box Program improve over time, while maintaining or minimizing cost increases.

Through program changes (i.e., increases in recovery rates consistent with the MOE requirement for improvements in program performance), it is expected that the cost for recycling could increase to approximately \$109 million in 2004 (50% scenario). In 2005 and 2006, if the program continues to maintain 50% diversion, with the anticipated cost savings that could accrue to the system, the net cost for recycling in the province could increase to \$116 million in 2005 and \$120 million in 2006. It should be noted however that much of the projected cost increase is a result of the projected increase in tonnes managed and the revenue assumptions used.

In 2001, 699,300 tonnes of recyclables were recovered, whereas in 2006, 839,000 tonnes are expected to be recovered; an increase of 20%. The net cost increase is 91% over the same timeframe, but the cost per tonne increase is only 61%. Every effort will be made through the overall program design to minimize program costs while increasing diversion.

It should also be noted that there is a two year time lag between when the costs are incurred by municipalities and when 50% of the cost has to be covered by industry (e.g., levies submitted in 2003 are based on 2001 municipal program costs).

7.4.1 Risk in the Costs Shown

As industry does not have control over the programs implemented by municipalities, the cost for the management of those programs cannot be controlled or accurately projected for future years. As municipalities do not necessarily have direct control over the cost of their programs (i.e., contract prices are based on the conditions of the bidding marketplace at the time of the release of the tender), this further complicates the ability to accurately estimate future program costs. A principle objective of the WDA is to increase waste diversion in Ontario, as well as to stabilize municipal Blue Box program funding. Increasing the tonnes managed will, with the exception of aluminum cans which create excess revenues, increase the overall cost of the program as recovery rates increase. The higher the diversion rate is pushed, the more likely that higher cost materials will be included in municipal programs resulting in higher costs per tonne managed compared to the current rate.

While municipalities and industry maintain a focus on recovering lower cost materials as a first priority, there is a financial benefit to both municipalities and to Stewards. Finally, because commodity prices fluctuate on a worldwide basis and because the Ontario marketplace is relatively small, predicting future material revenues is tenuous at best. Therefore, the costs for the future programs presented herein are gross estimates only, with potential fluctuations of plus or minus 25% not considered unreasonable. The cost projections shown are for general guidance and trend analysis purposes only. The market development program outlined in Section 6.4 is also designed to address barriers to increasing revenues, with a specific focus on glass markets in the initial year of the program.

There is a future policy issue that will require the attention of municipalities, Stewardship Ontario and the WDO. At what point in time does it make more sense to stop pushing the limits of the Blue Box recycling program, where costs would accrue at a disproportional rate compared to the environmental benefit (i.e., higher increases in costs than in recovery of materials) and, instead, promote other diversion systems (e.g., full organics collection), where the money spent will proportionally provide greater diversion performance?

7.4.2 Cost Containment Strategies

Given the potential for Blue Box Program costs to double within five years it is in the interests of Stewards and municipalities to pursue all possible strategies for containing costs. Furthermore, environmental performance of the system should also be considered along with cost performance when considering expanding programs to add materials with little potential to significantly increase diversion but with higher than average management costs (e.g., plastic film). At some point, it is more economically and environmentally beneficial to focus on other waste diversion programs (e.g., organics) where the cost per unit of diversion achieved will be much lower.

In principle, all stakeholders in the province's recycling system (i.e., municipalities, Stewards, WDO, the provincial government and citizens) benefit from promoting a self-sustaining blue box system, i.e., a system where it is increasingly more cost effective (and environmentally preferred) to divert materials from disposal through increased recycling, reuse and waste reduction. Stewardship Ontario will continue to work, in partnership with other stakeholders, toward the goal of a self-sustaining system. The province, which has passed the *Waste Diversion Act*, has a key ongoing role to play in supporting efforts toward this goal.

Stewardship Ontario will continue to investigate options by which Stewards costs and overall program costs can be contained and introduce them for adoption by municipalities. These efforts may include, but are not limited to, the following:

(1) Identification of True Market Value of Materials

Through arrangements made by municipalities with their contractors, end markets, or both, it has become apparent that some municipalities are not currently receiving the true market value for many of their recovered materials. Stewardship Ontario will identify where these shortfalls in revenues exist and then, working in cooperation with municipalities, investigate and develop alternatives to increase revenues to municipalities and to reduce Blue Box Program costs. For example, the steel industry is exploring the option of acting as the end market for all recovered steel packaging. Over time, this could allow municipalities to send their materials to selected brokers who will then be paid a fee to clean and densify the material prior to shipping it to the steel end market. This is expected to result in significantly higher revenues to municipalities, which will, in turn, reduce industry's required financial contribution. Similar approaches are being considered for a number of other recyclables.

(2) Opportunities to Amalgamate Programs

Through the use of program funds, Stewardship Ontario will look to work with municipalities to identify where excess program capacity exists and then, through financial incentives, provide alternative opportunities to eliminate unnecessary infrastructure to the benefit of all parties. This may not necessarily mean that existing facilities in municipalities will close. For example, one municipality may choose to receive and sort a fibres stream from its own municipality and its neighbouring municipality, while its neighbour's facility processes all containers from the two municipalities, using a backhauling transportation system. Two facilities would still be used, but they would be smaller, specialized systems (e.g., as is now done in the City of Ottawa), where economies of scale can be realized and overall costs reduced.

(3) Development of Program Benchmarks

By identifying key program benchmarks (e.g., dollars spent per percentage point of diversion achieved in a municipality), and taking into consideration site and situation factors, Stewards and municipalities will be able to identify those programs that have costs in excess of program averages. From this information, they will be able to focus attention on those programs, identify the underlying cost drivers and then work to develop specific solutions for those municipalities. Possible solutions could include implementing program changes, modifications to contract language for future service agreements, or other means identified over the course of the program reviews.

(4) Examination of New and Emerging Recycling Technologies

Stewardship Ontario will investigate new and emerging technologies that will help increase program efficiencies and/or increase market value for materials. Investments in capital infrastructure, supported by industry sectors, could provide opportunities to introduce better systems to Ontario that will reduce program costs. Municipalities will be encouraged to send their materials to specific locations for testing. Stewardship Ontario will then work with municipalities to incorporate system changes into their programs, where these changes can reduce program costs.

(5) Other Opportunities

As industry becomes more aware of the specific cost drivers within specific municipal recycling programs, other opportunities to reduce these costs will be investigated.