ESTIMATING INCREASES IN THE STEWARD OBLIGATION RESULTING FROM EXPANSION INTO THE IC&I

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Purpose

The purpose of this report is to outline the methodology used to quantify the potential economic impacts to stewards and Ontarians resulting from proposed changes to the Blue Box transition plan.

The Blue Box transition legislation is meant to transition the Ontario Blue Box Program to a 100% producer responsibility model, wherein packaging producers assume the physical and financial responsibility of managing printed paper and packaging waste.

In addition to these changes, the MOECP is currently considering expanding the steward obligation to include three additional IC&I sectors. These include: Long term care and retirement facilities, private multi-residential buildings, and elementary/secondary schools.

The rational for expanding the obligation is that municipalities contend that they are already servicing a "significant" percentage of these facilities as part of the residential Blue Box program. As such, the steward obligation should also include these three sectors.

Initial estimates by the MOECP regarding the potential increase in the steward obligation is $12 million dollars (less than a 5% increase in overall system costs). This study attempts to ground truth these estimates, and provide both stewards and the province with a better understanding

of the waste quantities, types and costs associated with waste management in these three sectors.

Data Acquisition

In order to accurately model potential changes in costs resulting from legislative change, the university utilized a number of primary and secondary sources. The following are a list of data sources used in this study:

Data Pertaining to # of IC&I Long term care and retirement facilities:

- Ontario Long Term Care Association
- Ontario Retirement Communities Association
- Long term care home directory
- Retirement Home Database https://www.rhra.ca/en/retirement-home-database/#:~:text=You%20can%20access%20information%20on,including%20those%20in%20your%20community.
- Health, Community and Residential Care Services: http://www.health.gov.on.ca/en/public/programs/ltc/home-finder.aspx
- Service Ontario
- # of FTE Staff: https://www.ontario.ca/page/long-term-care-staffing-study
- # of Long Term Care Beds: https://www.oltca.com/oltca/OLTCA/Public/LongTermCare/FactsFigures.aspx
- # of Seniors living in Retirement Homes (not requiring dedicated care): 158613 (Statistics Canada - # of Ontarians above 65 living in long term care or nursing homes, minus # of long term care patients)

Data pertaining to # of Elementary and Secondary Schools in Ontario

- Ontario Public School Boards Association
- Ontario Catholic School Trustees Association
- L'Association des conseils scolaires des ecoles publiques (Public French Language)
- L'Ecole Catholique (Catholic French Language)
- Ontario Public School Contact Directory: https://data.ontario.ca/dataset/ontario-public-school-contact-information
- Student enrollment data: http://www.edu.gov.on.ca/eng/educationfacts.html
- # of FTE Teachers: http://www.edu.gov.on.ca/eng/educationfacts.html
- # of FTE Support: http://www.edu.gov.on.ca/eng/educationfacts.html
- # of FTE Administrators: http://www.edu.gov.on.ca/eng/educationfacts.html

Data Pertaining to # of Private Multi-Residential Buildings and costs associated with multi-residential collection

- https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016005/98-200-x2016005-eng.cfm
- https://stewardshipontario.ca/wp-content/uploads/2013/03/Sustainable-Financing-Approaches-for-Multi-Family-Buildings.pdf
- https://thecif.ca/wp-content/uploads/2019/02/979-Toronto_Final_Report.pdf
- https://www.solidwastemag.com/feature/toronto-s-70-per-cent-solution/

Data pertaining to composition and quantities of waste generated by IC&I sector

All audits were conducted between 2015-2019 by team(s) of professional auditors. Audits were conducted in accordance with RPRA audit guidelines (previous WDO audit guidelines) and include 144 material categories, including 23 materials that are considered printed paper and packaging.

All audits include the relative composition of the recycling, organics and waste streams, absolute weights measured (by material type) during the audits and projected generation, diversion and disposal in a full calendar year.

Of the 101 audits included in this study, only 15 included full year seasonal audits (sampled four times in a calendar year to capture seasonality)

- 37 waste audits for schools: 21 Primary, 16 Secondary.
- 16 waste audits long term care facilities
- 8 waste audits retirement homes
- 40 waste audits multi-residential audits

The following is a geographic breakdown of where audits were conducted

- 34% Greater Toronto Area
- 72% Southern Ontario (Including GTA)
- 18% Central and Eastern Ontario (including Ottawa)
- 10% Northern Ontario

Data pertaining to costs of material management (including collection and processing)

For Blue Box materials, the Stewardship Ontario Pay in Model was used to estimate the costs of recycling printed paper and packaging materials.

For costs associated with multi-residential collection, a range of values were tested. This range reflects the different per unit collection costs that could be gleaned from the broader public literature on multi-residential recycling (see sources above).

For costs associated with collecting recyclables from schools and long term care/retirement facilities, several scenarios were modeled. The first scenario assumes that the cost of servicing these facilities is comparable to the costs of servicing the multi-residential sector (as some of these sites are already being serviced as part of the Blue Box Program). Additional scenarios reflected self-reported collection costs provided by sources who were familiar with their facility operations and costs.

Supplemental data gathering

Over a four week period beginning on August the 18th 2020, a team of four researchers were asked to randomly contact various IC&I sites to ask questions pertaining to their waste and recycling operations. Specifically, sites were asked the following:

- Does your site have a recycling program for printed paper and packaging?
- If so, do you know who is responsible for collecting this material? Is it the city, or is it a private contractor?
- How often do you receive waste collection services?
- How do you store your waste? Bins, carts or trailers?

This is in addition to data that could be gathered through public sources, or in communications with industry associations. Contact was initiated via email or by phone – where enumerators explained the institution they represented and what the purpose of the exercise was. The following outlines the total number of facilities/schools/districts contacted at the end of the four week period.

- Follow up with 270 Long term care and retirement facilities located in various parts of the province
- Follow up 40 out of 72 individual school boards located in various parts of the province to have a representative sample
- Follow up 187 of 4026 individual elementary schools as a cross check
- Follow up with 87 of 920 individual high schools as a cross check

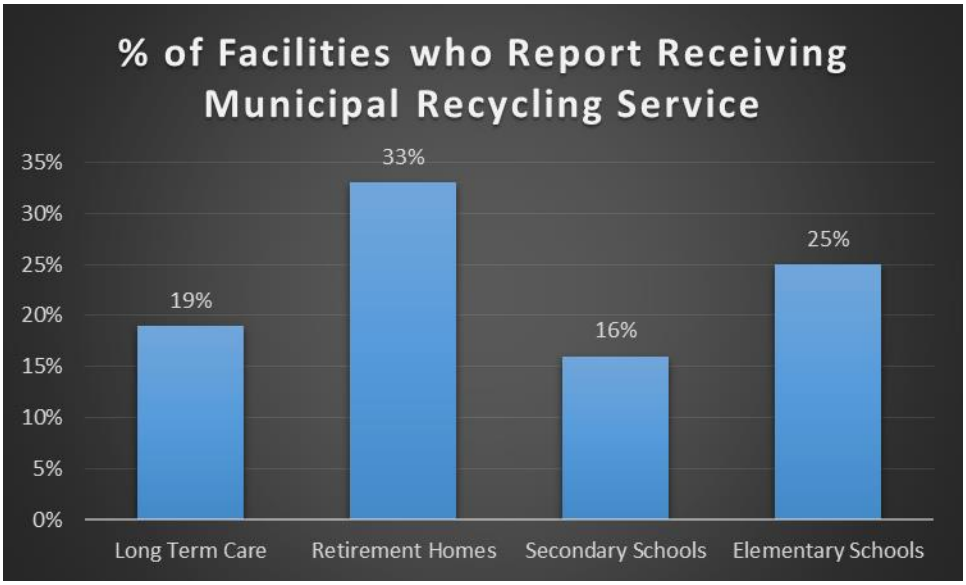
Note: Approximately 15% of all sites contacted did not know, or were unsure of how their waste was being managed.

Results: # of Facilities Serviced by the Municipal Blue Box

One of the primary purposes of this study was to better understand the % of IC&I facilities that were presently being serviced by the municipal Blue Box program. Anecdotally, MOECP staff have reported that the “majority” of sites were presently being serviced by municipal Blue Box collection, and as a result, recycling costs were already factored into the existing steward obligation. However, no source was provided to substantiate this claim, necessitating that the

university engage in a comprehensive follow up of the following IC&I sectors - long term care/retirement homes and elementary/secondary schools. Results are shown in the figure 1 below.

Figure 1: # of IC&I sites self-reporting as receiving municipal Blue Box service



When adjusted for proportional weighting (factoring in the number of students/patients/employees), the number of sites that reported being serviced by the municipality is 29% for long term care/retirement sites, and 22% for public/private schools.

This result directly contravenes previous communications from the MOECP as described above. By any definition, none of the results shown in Figure 1 can be interpreted as "majority of sites". This is a significant issue of concern, as the potential increase in the steward obligation is a direct function of the number of sites who do/do not receive municipal recyclables collection.

Results #2 : Quantities of Blue Box Waste Generated and recovered from IC&I sectors

In order to model quantities of printed paper and packaging waste generated/recovered from these IC&I sectors, the university used a combination of waste audits (described in section 1) and data pertaining to overall employee counts and waste generated per employee that are publicly available. Table 1 below summarizes the average (as well as min/max) range for overall waste generation and printed paper and packaging generation

Table 1: Waste/Printed Paper generation per capita (Schools and Long Term Care/Retirement Facilities)

Generator Type	Average All Waste (kg/cap)	Average Printed Paper and Packaging (kg/cap)	Min Printed Paper and Packaging (kg/cap)	Max Printed Paper and Packaging (kg/cap)
Elementary Students	48.00 kg/cap	25.44 kg/cap	11.42 kg/cap	49.52 kg/cap
Primary Students	39.15 kg/cap	29.90 kg/cap	18.55 kg/cap	42.55 kg/cap
Teachers and Admin	78.00 kg/cap	64.00 kg/cap		
Waste Generated Per Bed (Long term care)	1,694.18 kg/cap	254.10 kg/cap	97.55 kg/cap	394.50 kg/cap
Waste Generated Per Resident (Retirement)	313.47 kg/cap	82.21 kg/cap	35.49 kg/cap	126.94 kg/cap
Waste Generated Per Employee	200.60 kg/cap	88.50 kg/cap	54.66 kg/cap	121.40 kg/cap

It should be noted that quantities of printed paper and packaging generated from long term care/retirement facilities vary depending on how the auditor chose to define polypropylene and LDPE film. In some instances, these materials were considered as part of the recycling stream, while in others, it was counted as medical waste. For the purposes of this report, we have classified LDPE film and PP#5 as part of the Blue Box, as they are listed as two of the 23 materials included in the program plan.

Another caveat is that waste generated by teachers/admin may be double counting paper waste generated by students (students submitting materials to teachers for evaluation). As a result, the average waste per capita and average printed paper and packaging per capita for teachers and administrators may be overstated. Unfortunately, no recommendation for how to treat this was made in the auditing notes, and as a result, we are forced to take the number as is.

Combining the results of Table 1 with publicly reported data on the number of students, teachers, employees, residents and patients, overall estimated waste generation for the two IC&I sectors is shown in Table 2 below:

Table 2: All Waste and PP&P Generated

Generator Type	All Waste (Tonnes)	Printed Paper and Packaging (Tonnes)
Elementary Students	67,633.30 T	35,845.65 T
Primary Students	24,719.51 T	18,879.01 T
Teachers and Admin	10,571.21 T	8,673.81 T
Waste Generated Per Bed (Long term care)	130,887.26 T	19,631.00 T
Waste Generated Per Resident (Retirement)	49,720.42 T	13,039.57 T
Waste Generated Per Employee	20,060.00 T	8,850.00 T
Totals	**303,591.69 T**	**104,919.05 T**

Quantifying waste generated associated with the multi-residential sector was calculated separately, using per unit waste generation rates taken from our forty audit samples.

Table 3 Summarizes the average waste generation per unit, average (as well as min/max) printed paper and packaging generated per unit, and overall generation for private multi residential buildings based on the 380,000 units presently not receiving Blue Box service.

Table 3: Multi-Residential Waste and Printed Paper and Packaging Generation

Generator Type	Average All Waste (kg/unit)	Average Printed Paper and Packaging (kg/unit)	Min Printed Paper and Packaging (kg/unit)	Max Printed Paper and Packaging (kg/unit)
Private Multi Residential	677.21 kg/unit	247.00 kg/unit	191.00 kg/unit	341.00 kg/unit

Generator Type	All Waste (Tonnes)	Printed Paper and Packaging (Tonnes)
All Non Blue Box Units (380000)	257,339.80 T	93,860.00 T

Of note, quantities and types of waste generated/diverted in multi-residential buildings is highly variable, with ownership (condo/rental), building type (seniors/mixed use/subsidized) and locality being significant predictors of waste generation and recycling participation. As an example, recyclable rates are much higher in units that are owned vs. rented.

Results # 3: Costs associated with expanding the steward obligation

Ultimately, the purpose of this exercise is to determine whether the cost estimates projected by the ministry are indicative of what producers are likely to incur under the proposed legislative changes.

Modeling costs for the IC&I sectors can be done two ways:

1) The cost estimate includes the cost of collection and sending it to a MRF that charges a fixed price per tonne of inbound material.
2) The cost estimate includes the cost of collection, as well as the per material processing costs being generated by the multi-residential/school and long term care sectors

The MOECP has stated repeatedly that the composition of material collected does not matter for the purposes of estimating the potential increase in the steward obligation. Given that the legislation does not include material specific targets or requirements, the composition of inbound material is irrelevant.

However, this assumption does not reflect reality. The cost borne by stewards (much like municipalities today) are highly sensitive to the composition of inbound material to the MRF. Blue Box processing costs range anywhere from a negative value for aluminum (it makes money being recycled), to in excess of $2200 a tonne for LDPE film and other multi-resin plastics. Contracts with MRF operators very much depend on what material is being sorted, so it is disingenuous to ignore per material costs when attempting to quantify the potential increase in the steward obligation.

This report opts to model both scenarios. Scenario 1 models a fixed processing cost per tonne of inbound material (at a range of values and recycling rates). Scenario 2 models per material costs, as provided by the Stewardship Ontario Pay in Model

Table 4 below summarizes the recycling costs (using a fixed processing cost) associated with servicing each of the IC&I sectors. For % of material recycled, we model three scenarios 25%, 50% and 75%. We also model a range of collection and processing costs, as well as the % of the program that is not being serviced under the existing Blue Box plan (29% for Long Term Care – 22% for Elementary and Secondary Schools)

Note that calculating the costs of servicing private multi-residential buildings are performed separately.

Table 4: Costs associated with expanding service to the IC&I sector using fixed cost per tonne

$250.00 $/tonne	**25%**	**50%**	**75%**
Long Term Care/Retirement Homes	$1,842,475.67	$3,684,951.34	$5,527,427.00
Elementary/Secondary Schools	$3,090,675.33	$6,181,350.65	$9,272,025.98
Totals	**$4,933,150.99**	**$9,866,301.99**	**$14,799,452.98**
$300.00 $/tonne	**25%**	**50%**	**75%**
Long Term Care/Retirement Homes	$2,210,970.80	$4,421,941.60	$6,632,912.40
Elementary/Secondary Schools	$3,708,810.39	$7,417,620.78	$11,126,431.17
Totals	**$5,919,781.19**	**$11,839,562.38**	**$17,759,343.58**
$350.00 $/tonne	**25%**	**50%**	**75%**
Long Term Care/Retirement Homes	$2,579,465.93	$5,158,931.87	$7,738,397.80
Elementary/Secondary Schools	$4,326,945.46	$8,653,890.91	$12,980,836.37
Totals	**$6,906,411.39**	**$13,812,822.78**	**$20,719,234.17**

*$/tonne figure is the combination of both processing and collection costs.

This model calculates three scenarios to reflect various levels of material management costs associated with servicing the IC&I sector (using a fixed cost per tonne). Of note, collection costs for the residential sector vary significantly depending on the municipality (upwards of $500/tonne in some instances) as locality, population density and curbside vs. depot service all affect collection costs. For reference, average collection costs per tonne for all Blue Box programs is $235/tonne. Our modeling assumes that IC&I collection is more efficient, and we assign a collection cost of $150 a tonne.

For processing costs, our model calculates three scenarios: A processing cost of $100/tonne, $150/tonne and $200/tonne. While there is very little data regarding IC&I processing costs per tonne, a review of MRF contractor quotes for the residential Blue Box program shows that processing costs can range from as little as $90/tonne to $660/tonne depending on the material mix. As far as can be ascertained, there are no contracts that offer a fixed processing price for inbound material that is independent of material composition.

For the multi-residential sector, we undertake a similar exercise, but use a per unit material management cost and apply it to all 380,000 MR units that are not currently being serviced by the Blue box. The costs associated with per unit collection have been sampled from various municipalities who have published their costs in online reports (see data sources section).

Note: Publicly reported per unit costs range from as low as $19 per unit, all the way to $140 per unit (this is heavily influenced by locality)

Tables 5 below summarizes multi-residential Blue Box costs at various recycling rates and a range of per unit costs. This is accompanied by Table 6 which lists the combined costs for multi-residential, schools and long term care/retirement facilities.

Table 5: Multi residential recycling costs

Multi Residential per unit costs	25%	50%	75%
$25.00 /unit	$2,375,000	$4,750,000	$7,125,000
$30.00 /unit	$2,850,000	$5,700,000	$8,550,000
$35.00 /unit	$3,325,000	$6,650,000	$9,975,000
$40.00 /unit	$3,800,000	$7,600,000	$11,400,000

Table 6: Combined costs for IC&I sector recycling

	25%	50%	75%
Combined Costs Scenario 1	$7,308,150.99	$14,616,301.99	$21,924,452.98
Combined Costs Scenario 2	$8,769,781.19	$17,539,562.38	$26,309,343.58
Combined Costs Scenario 3	$10,231,411.39	$20,462,822.78	$30,694,234.17
Combined Costs Scenario 4	$10,706,411.39	$21,412,822.78	$32,119,234.17

Referring to Table 6, we can see that costs range from $7.3 million on the low end (assuming that only 25% of material gets recycled), and $32.12 million (assuming 75% of material gets recycled).

Immediately, we begin to see that there are some significant discrepancies between our model and the estimated increase in the steward obligation calculated by the MOECP (unless the province's recycling rate target is 25%).

However, the above analysis paints an incomplete picture. As noted earlier, assuming a fixed collection and processing cost does not reflect the actual costs of material management, nor does it provide meaningful insight as to what the steward's obligation will be. A more accurate representation of costs would be to model our scenarios using per material management costs. Not all recycling is made equal, and neither will the bill incurred by stewards.

Using a weighted average of sector specific audit compositions, we multiply total tonnes of printed paper and packaging generated by schools, long term care and multi-residential facilities, by the material composition breakdown. At this point, we now know the quantities and composition of Blue Box materials being generated by each sector.

Combining this data with material specific costs (as per the Stewardship Ontario PIM Model), we calculate total costs of recycling by material type, by sector. Finally, we model a range of recycling rate scenarios (25%, 50% and 75%) to arrive at a final estimate of costs that would represent the increase in the steward obligation.

Figure 2 below summarizes per material costs, by IC&I sector.

Audit Worksheet	*Current Blue Box Cost*	Long Term Care	Retirement Homes	Elementary Schools	Secondary Schools	Multi Residential
		13,039.00 T	***28,481.00 T***	***35,845.65 T***	***18,879.00 T***	***93,860.00 T***
Newsprint - Non-CNA/OCNA	$154.43 /Tonne	$ 96,049.33	$ 314,040.11	$ 244,121.89	$ 166,765.68	$ 856,642.67
Magazines and Catalogues	$164.81 /Tonne	$ 62,534.67	$ 238,922.24	$ 342,057.08	$ 158,994.99	$ 799,750.74
Telephone Books	$178.68 /Tonne	$ -	$ 17,302.55	$ -	$ -	$ 68,760.71
Other Printed Paper	$227.25 /Tonne	$ 191,417.08	$ 628,461.03	$ 1,150,204.46	$ 596,345.13	$ 1,953,799.15
Corrugated Cardboard	$414.36 /Tonne	$ 557,032.81	$ 1,125,852.34	$ 1,286,270.11	$ 618,775.76	$ 4,826,476.05
Boxboard	$276.93 /Tonne	$ 253,123.41	$ 414,869.00	$ 391,113.39	$ 232,130.37	$ 1,595,948.70
Gable Top Cartons	$1,287.21 /Tonne	$ 288,683.62	$ 773,547.69	$ 3,419,039.14	$ 1,193,190.77	$ 3,370,809.10
Paper Laminates	$1,284.17 /Tonne	$ 519,073.07	$ 1,715,341.51	$ 1,339,528.53	$ 518,818.29	$ 3,760,604.52
Aseptic Containers	$1,286.98 /Tonne	$ 604,113.56	$ 1,649,451.48	$ 3,123,179.36	$ 1,180,829.12	$ 4,723,121.36
PET Bottles	$254.87 /Tonne	$ 247,582.12	$ 579,990.30	$ 635,864.26	$ 428,721.64	$ 1,712,822.23
HDPE Bottles	$354.16 /Tonne	$ 169,014.86	$ 413,560.07	$ 196,773.98	$ 256,749.57	$ 1,728,555.80
#3 Polyvinylchloride (PVC)	$1,053.57 /Tonne	$ 192,324.99	$ 72,016.15	$ -	$ 31,824.56	$ 771,327.03
#4 Low Density Polyethylene (LDPE) Films	$2,732.62 /Tonne	$ 2,294,612.71	$ 3,011,933.93	$ 4,809,469.72	$ 2,306,034.24	$ 7,976,643.48
#5 Polypropylene (PP)	$1,053.37 /Tonne	$ 1,266,356.99	$ 1,098,037.73	$ 732,519.41	$ 254,548.12	$ 1,789,534.48
#6 Polystyrene (PS), Expanded Polystyrene (EPS)	$1,317.20 /Tonne	$ 549,599.07	$ 1,399,315.96	$ 930,153.04	$ 450,100.28	$ 3,078,446.56
#7 Other Plastics and Comingled Plastics	$2,765.65 /Tonne	$ 3,122,909.48	$ 7,041,901.90	$ 7,355,929.93	$ 4,130,025.07	$ 17,573,830.64
Steel Food & Beverage Cans	$125.70 /Tonne	$ 122,105.67	$ 195,829.37	$ 207,717.30	$ 128,858.80	$ 587,550.46
Steel Aerosols	$125.70 /Tonne	$ 20,487.53	$ 17,542.30	$ 31,991.17	$ 9,966.98	$ 199,389.61
Steel Paint Cans	$125.70 /Tonne	$ 2,786.30	$ -	$ 94,621.76	$ 33,460.57	$ 284,336.67
Aluminum Food & Beverage Cans	-$246.44 /Tonne	$ (116,001.25)	$ (169,154.47)	$ (363,952.64)	$ (240,536.36)	$ (1,128,785.89)
Other Aluminum Packaging	-$246.44 /Tonne	$ (14,138.66)	$ (74,399.89)	$ (117,489.57)	$ (100,494.88)	$ (506,565.80)
Clear Glass	$50.10 /Tonne	$ 22,210.63	$ 84,329.68	$ 115,115.08	$ 52,494.00	$ 219,601.43
Coloured Glass	$52.60 /Tonne	$ 25,856.60	$ 56,178.77	$ 36,955.43	$ 24,726.58	$ 140,211.82
	Totals	$ 10,477,734.57	$ 20,604,869.76	$ 25,961,182.83	$ 12,432,329.31	$ 56,382,811.52

Modeling our recycling rate scenarios, our final estimates are shown below:

Recycling Rate Target	**Total All Sectors**
Obligation 25%	$ 31,464,732.00
Obligation 50%	$ 62,929,464.00
Obligation 75%	$ 94,394,195.99

As shown above, if we are to calculate the steward obligation on a per material basis (as opposed to fixed cost per tonne), the potential increase is at a minimum, an order of magnitude greater than what the MOECP had estimated. While one could make the argument that using Blue Box material specific costs are not reflective of the costs associated with managing material from the IC&I sector, there is no publicly available alternative that can be used in lieu of the PIM model.

Issues Surrounding Proposed Impacts of the Blue Box Expansion into the IC&I Sector

We have no data

EPR is fundamentally premised on being able to allocate end of life management costs to the correct obligated party. In doing so, the following information is required:

- Who are the generators?

- What is the total quantity of material being generated/recovered (by sector and by generator)
- What types of material (composition) are being generated/recovered (by sector and by generator)
- How is waste currently being managed? (who is collecting it, where does it go, where does it end up etc.)
- How much does it cost to manage? (Including costs by activity type – collection/sorting/baling)

At present, there is no reliable data regarding the aforementioned data points with respect to the IC&I sector. We know neither the size nor scale of the issue, and have no ability to track how waste is managed throughout the system. In the absence of having this data, it is virtually impossible to determine what the steward obligation should be, or how to allocate those costs to individual stewards. As a result, we are forced to rely on modeling exercises that may or may not be accurately capturing the reality of the system.

We don't have the administrative infrastructure

Collecting the necessary data (including who is responsible for gathering this information, who owns it, and how this data is verified/vetted) is something that needs to be figured out before we can even begin to have conversations surrounding expanding the Blue Box into the IC&I sector.

Further to that point, the province also needs to be able to know the roles and responsibilities of affected stakeholders regarding quantifying and allocating costs to the appropriate steward.

Given the sheer # of producers who operate in the IC&I sector, the administrative externalities associated with the above activities are enormous, and are costs that have yet to be quantified when estimating what the increase in the steward obligation may be.

We don't know if we have the infrastructural capacity

At present, the province has no way of knowing whether there is sufficient capacity within the existing system to accommodate for increases in diversion attributable to any legislative changes. With respect to material recycling facilities for printed paper and packaging, we do not even have a list of all the private and public facilities in the province, nor do we have any estimates surrounding their approved and existing capacity.

It seems entirely plausible that capturing more PP&P from the IC&I sector would require infrastructural investments to expand system capacity (for both collection and processing), which is a cost that has not been quantified.

Ministry staff have indicated that proposed changes are not intended to take effect for 6 years, and as such, it is impossible to understand what system capacity will be then, and what changes will need to be made now. This is not an adequate answer – the decision to invest in infrastructure, even if those changes are not anticipated for another 6 years, is something that needs to be planned for now. As an example, if we know that the proliferation of light weight and composite plastics is likely to increase over time, then significant changes will have to be made to existing infrastructure will be required (although I personally feel that spending money trying to capture these materials is a fools errand).

It is not good enough to say "I don't know what the future will look like, but you will have to pay that bill when it comes due".

Material from schools, long term care facilities and multi-residential sectors are heavily contaminated

According to waste audits conducted for these sectors, contamination rates are significantly higher for the recycling stream when compared to waste generated from single family homes.

Schools and long term care/retirement facilities struggle with fiber contamination in particular, which significantly impairs its value, or in some instances, makes it completely unrecyclable. As such, an expansion of the steward obligation into these sectors is likely to result in an even more acute escalation in costs (beyond what has been estimated), as revenues received from the sale of collected recyclables is likely to be depressed.

Markets for recyclables are deteriorating, and an expansion is going to make it worse

Setting aside concerns surrounding contamination and its negative effect on revenue, there is also the practical issue that collecting more printed paper and packaging from the IC&I sector is going to exacerbate already deteriorating prices for recyclables.

Beginning with the Chinese sword and further compounded by the global economic slowdown resulting from COVID, prices for most PP&P is languishing. As a result, any proposed legislative change that is likely to result in more recyclable material being marketed is going to make a bad situation even worse. With that being said, that is not necessarily an outcome that needs to be avoided - as noted earlier, allowing commodity markets to operate freely is likely to result in the most economically efficient outcome.

However, lower prices for recyclables poses significant challenges to domestic recycling brokers and re-processors, which necessitates that any legislative change that can potentially affect commodity prices is approached with caution.

Existing estimates surrounding the cost of expanding the steward obligation assumes a fixed IC&I material management cost. Current estimates by the ministry surrounding the proposed expansion of the Blue Box into the IC&I sector does not take into account the composition of material from these sectors. The general expectation is that stewards will be obligated for the total system cost of servicing these sectors, and will negotiate individual relationships with PROs for how this material gets managed.

For as much as I can understand and appreciate that the obligation does not refer to specific material categories, we cannot in good faith estimate a cost for servicing these sectors without taking into consideration what materials are generated by these sectors.Collecting uncontaminated office paper from Office Buildings is fundamentally different than collecting a mixed bale of contaminated fiber and tetrapaks from a school yard. The delta in material management costs is enormous. To say that we don't need to take that into consideration when developing our existing estimates completely ignores the reality of the situation.

No one size fits all approach

A sentiment expressed earlier is that not all materials are created equal, and neither is all recycling. So with that in mind, why should legislation treat all materials the same way?

Proposed legislative changes under the Blue Box transition has the potential to adversely affect a significant number of stewards, particularly those who manufacture light weight and composite plastics.

However, these same changes are being embraced by beverage stewards, who are looking to capture as much material as they can from both the residential and IC&I sector. Ideally, legislation should be able to allow stewards the approach that yields to most economic and environmentally sustainable outcome, while ensuring that they meet their legislative requirements.

This is why it is so critical that the goals of Blue Box legislation should be outcome based (total carbon abated) as opposed to tonnage based (recycling/diversion rates). It is possible to recycle less material in an absolute sense, but achieve a superior environmental and economic outcome by prioritizing certain materials for recovery.