

Continuous Improvement Fund

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Blue Box Infrastructure Optimization Strategy and Implementation Plan Report: April 8th, 2013

1. Background

In July 2011 MIPC directed the CIF to allocate funds based on the merits of regionalization projects and to develop and operate a knowledge based centre of expertise to promote best practices, to develop training and to study materials management issues with Blue Box programs in Ontario.

The July 2012 Study of the Optimization of the Blue Box Material Processing System in Ontario informed recommendations submitted by CIF to MIPC on steps to advance Blue Box system optimization and allocation of CIF funds in 2013. Those recommendations were subsequently adopted by MIPC in August of 2012.

The 2013 CIF Operations Plan carries forward these recommendations to support Blue Box standardization, optimization and cost containment. At the February 2013 CIF Committee meeting, staff were directed to prepare a strategy to help inform Committee members about immediate opportunities to act on the MIPC Optimization Study and guide funding decisions related to the 2013 CIF REOI process including possible pilot opportunities. The following Blue Box Infrastructure Optimization Strategy and Implementation Plan is provided in response to that request.

CIF staff, in presenting this document, recognizes that this is just one of four essential foundation components that staff are working on to improve the Provincial Blue Box program – the other three being a) an efficient and effective Blue Box collection infrastructure; b) best practices in operational skills and capability to achieve strong system performance; and c) improved competitive procurement processes.

This Strategy and Implementation Plan is built on the tangible outcomes of the July 2012 Study of the Optimization of the Blue Box Material Processing System in Ontario. That study developed and utilized a powerful province wide GIS based system modeling tool to examine options for optimization of provincial Blue Box transfer and processing infrastructure up to the year 2025. The model provides a basis upon which to examine and prioritize system optimization efforts.

CIF staff has extensively reviewed the study results and the model with municipal representatives and stakeholders. As expected, the differing points of view illustrate the reality of transforming the Blue Box system from:

- its legacy of smaller individual municipally led and independently developed local enterprises.
- towards a more integrated and optimized “system” of transfer and processing capacity that efficiently and effectively moves Blue Box material from generator door to market.

The system is in transition and CIF’s mission is to strategically place investments with willing public and private sector stakeholders to leverage a gradual shift from the inefficiencies and liabilities of the legacy infrastructure to the efficiencies and benefits of the system of the future.

The study results reflect the challenges facing the Blue Box system. The study methodology was built on a number of premises that shed light on how those challenges directly impact the operators of the existing system:

- Municipal borders were eliminated in the study methodology, allowing collected Blue Box material to flow to the optimum tipping floor location (transfer facility or MRF). In reality, municipalities and their contracted haulers have autonomy in choosing where to tip material – and any elimination of collection borders would need to be a voluntary and willing choice of that municipality in managing its system.
- New “greenfield” locations were identified for those optimum tipping floor locations, with a network of new transfer facilities and MRFs identified across four regions of the Province to efficiently and effectively move Blue Box material from generator door to market dock. In reality, capitalization of this optimum network would be financially prohibitive. The real solution will build on some mix of legacy facilities and voluntary and willing new investment in that infrastructure.
- Price points for transfer and processing services were assumed to be based on standardized costs plus reasonable profit, driving decisions on where Blue Box material would flow and what type of infrastructure (transfer station or MRF) would be needed at optimum locations to handle that flow. In reality, these price points are determined by open market supply and demand and those service providers that have market leverage (public or private) will price at what the market will bear. The optimized system reduced competition by eliminating processors and in the absence of competitive options there is no way to guarantee that municipalities will not face higher costs under the optimized system.
- Costs for collection of Blue Box material, from generator door to tipping floor, were not integrated into the analysis – and instead treated as a fixed model input – a collection truck was assumed to have no more than a 30-60 minute direct haul time from end of route to tipping floor (whereas depot areas could have up to a 180 min haul time to the tipping floor). These assumptions, while reasonable, do not accurately reflect the reality for each municipality – where there is the potential for additional costs if a longer haul to the tipping location were required than what they currently have – or where there is the potential for lower costs through improvements

in collection efficiency made possible by the new system. Municipalities will need this information in order to fully evaluate system rationalization opportunities.

- Stranded assets and lost jobs, and their financial impact on a municipality, were not accounted for in the analysis. Compensation for these impacts was not factored in. Again, municipalities will need this information in order to voluntarily and willingly move from less efficient legacy operations to new optimized operations.

The CIF, understandably, lacks the implementation authority to de-facto eliminate the barriers represented by the above challenges. It can't eliminate borders, capitalize a completely new system of greenfields facilities, guarantee competitive pricing or compensate municipalities for legacy system impacts.

The CIF can, however, utilize the model as a tool to work through those challenges and leverage its funds to strategically invest with willing municipal partners to move the Blue Box system over time from less efficient legacy operations to new optimized operations. The model can be used to examine different scenarios and aid municipalities in projecting the cost implications of major changes in their programs. The study results can also help inform the CIF in prioritizing the disbursement of its remaining funds. It is clear that the CIF could engage with municipalities on several fronts to further optimize the Provincial Blue Box system, including:

- Moving to standardized service and development of a consistent province wide program – recognizing that the lack of consistent service across the Province is a key barrier to development of a sustainable Blue Box system.
- Moving gradually from current system infrastructure to the “next lowest cost alternative” – recognizing that the optimum solutions identified in the study results may not be available for lack of capital and logistical challenges yet the pathway towards optimization can still be pursued through “continuous improvement” system improvements.
- Moving forward with cooperative efforts amongst neighbouring municipalities, leveraging the marketplace buying power of standardized and consolidated services presented through joint tendering and development of shared infrastructure.

These positive steps forward, made possible only through voluntary initiatives of participating municipalities, are the focus of the balance of this Blue Box Infrastructure Optimization Strategy and Implementation Plan.

2. Implementation Framework

CIF implementation steps will focus on common objectives in moving from less efficient legacy operations to new optimized operations for Blue Box material transfer and processing. These common objectives center on:

- Competitive and sustainable processing capacity;
- Capable of receiving all current and future packaging;

- Organized to achieve cost efficiencies in both collection and processing and;
- Supporting strong supply channels to competitive markets.

These implementation steps will work within the real marketplace and address municipal concerns related to:

- Price escalation;
- Job loss and stranded assets;
- Flexibility to adapt to changing political landscape (e.g. IPR schemes); and
- Pro-active transition planning and management.

Key measures for success are:

- Sustained ability to process the full basket of goods and available tonnage;
- Cost competitive pricing.

These implementation steps will be carried out from the following perspective – CIF’s point of view and justification for pro-active strategic intervention with CIF funds and resources:

- Excess processing capacity does exist, but not necessarily in the right location or with the right service capabilities to be usable in the Blue Box system;
- Lack of competitive options for processing services stands in the way of municipalities that are ready to transition from legacy operations to more efficient processing solutions;
- Competing public and private sector priorities prevent alignment on the service goals of the provincial Blue Box processing infrastructure;
- Core competencies (or lack thereof) in best practice operational capabilities must be addressed concurrent with strategic investments in more efficient processing infrastructure to guarantee success for those investments; and
- Procurement approaches must be upgraded to leverage the buying power of groups of municipalities, to maximize efficient utilization of legacy assets that have a future in the updated system, to leverage required capital investment from both public and private sources, to foster competition while securing long term commitments to predictable cost sharing structures; and to bring accountability to agreed upon standards for both performance and cost.

3. Strategic Approach

CIF implementation steps will pursue voluntary reductions in the number of MRFs and optimization of the remaining infrastructure to achieve higher efficiencies and lower costs while encouraging a marketplace that creates competitive pricing and provides service options. The CIF will deploy its financial and technical assistance assets to implement a waste-shed by waste-shed approach while addressing the challenges documented above. These initiatives will rely on the willing participation by municipal partners in the Blue Box

system, phased in over time, due to contractual realities, to gradually transition from less efficient legacy operations to new optimized operations.

The following set of practical implementation steps will drive willing municipal partners into informed decision making processes that focus on technology, operational and service partner choices that can deliver higher efficiency and lower costs to their Blue Box processing systems.

The CIF is committed to using the Blue Box Processing System Optimization Model developed by Resource Recycling Systems (RRS) to facilitate these decisions. The CIF has retained RRS to both train CIF staff in the model use and to work collaboratively with willing partner municipalities to integrate their local cost and performance data into the model to better inform those partners about the range of technology, operational and service partner choices that can deliver the “next lowest cost solutions” for their consideration. As well, CIF will work collaboratively with those municipalities to facilitate decision-making regarding those options, both within the pool of decision makers in a single municipality, as well as between municipalities that are considering collaborative solutions.

The CIF intends to use the following techniques as they move forward in these initiatives:

- Negotiated Cost Settlement
- Flexible Processing Solutions
- Sub-Regional Strategy Execution

The following subsections elaborate on these techniques and associated tools and tactics that would be employed to facilitate execution:

3.1 Negotiated Cost Settlement

As a possible condition of CIF and datacall funding, the CIF proposes to explore negotiated cost settlement (NCS) options with willing municipal partners as a means to drive the transition to increased efficiency and lower cost. The following tactics would be employed:

- Next Lowest Cost Alternative Process – Single Municipality Solution: The CIF/RRS team would work with willing municipal partners to apply the model and other decision support tools to specific technology, operational and service partner choices around their unique and specific Blue Box processing system challenges. The process would engage municipal staff and decision makers in documenting real system cost and performance baseline conditions, identifying all other relevant conditions (e.g. collection cost impacts, legacy facility issues, etc.), outlining the range of solutions available for consideration, applying the cost and performance modeling tools to those options, establishing a decision criteria framework to support consideration of those options and arriving at conclusions about the performance and price points available through the “next lowest cost alternative” (NLCA) to status quo. These results would then be integrated into their NCS options for Blue Box processing.
- Next Lowest Cost Alternative Process – Inter-governmental Solution – In the context of the “next lowest cost alternative” process, the CIF will encourage collaboration on a regional basis between municipalities with similar service needs and potential

common solutions – following a similar process to the single municipality solution described above – with results then integrated into their NCS options for Blue Box processing.

As these two tactics are deployed, the following tools would be used to maximize the effectiveness of the NLCA process

- Model Analysis Option – as described above, the system optimization model and its financial and performance analysis tools would be used to construct viable NLCA solutions that both parties could agree on – based on the decision maker engagement process outlined above.
- CIF Service Solution Backstop Option: As part of the model analysis, an additional service option could be introduced - CIF service solutions that were beyond the scale of a single partner municipality, but that could open up price and performance competitive options for that municipality. Such arrangements could become a backstop or default position for CIF as it moves through the negotiated cost settlement process with partner municipalities. CIF, for example, could develop a low cost best practice processing option with an existing service provider in a region and have that option available during the NLCA based negotiated cost settlement process – putting that CIF service solution option on the table at a key stage in the negotiations to document the viability of the proposed NCS price point – and provide a real NLCA option to the targeted communities should they actually be interested in the alternative solution.
- Collaborate to Access Competitive Solutions Option - In the context of the NLCA process, CIF could encourage utilization of tendering based procurement processes to specify targeted solutions (e.g. five municipalities seeking long term competitive pricing for their Blue Box processing) and move through a competitive market based solution development option that took the best of what other public and private sector solution providers could offer and compared those price points and service arrangements to the best that these municipalities could potentially develop on their own (e.g. consolidating their transfer and processing operations to feed one of the partner municipalities existing legacy facilities). This process would engage the competitive marketplace on terms that would protect the interests of the municipal partners both short term as well as long term, while potentially leveraging the resources of the service partners that may respond to the tendering offer. Again, these results would then be integrated into their NCS options for Blue Box processing.
- Leveraged Best Practices – The CIF intends to condition, on a case by case basis, the benefits of CIF funding, technical assistance and decision making support, with adoption of best practices for Blue Box processing technology, operational and service partner arrangements. For example, a MRF could be pushed to best practice levels of automation that will lower operating costs with reduced labor inputs. Or a processing services procurement process could be required to include best practice clauses and service specifications in procurements, adoption of the standard basket of goods (SBG) for the program, and other approaches as appropriate.

The above techniques, tactics and tools represent a portfolio of strategies that the CIF will utilize on a case by case basis as it engages strategically with willing partner municipalities as they gradually transition from less efficient legacy operations to new optimized operations.

3.2 Flexible Processing Solutions

The CIF intends to explore the technical solutions for most efficient movement of material from tipping floor to market. As the system moves towards optimization, specific situations will develop where the critical mass of available material is at a tipping point for hybrid application of more efficient technology, operational and service provider solutions. A large rural area, for example, may have reached critical mass tonnage to enable a fiber/container separation and a fiber to market operation to capture value, while still remaining well below cost effective benchmarks for processing containers to market spec. The specific examples will vary by sub-region – and CIF is committed to making sure these options are presented in the context of the negotiated settlement process described above.

3.3 Sub-Regional Strategy Execution

The CIF is committed to continued progress, across the Province, towards an efficient Blue Box processing system. Intervention points in each of the four regions (eastern, central, western and northern) will vary depending on many factors – the most important of which will be the willing participation of partner municipalities. For greatest impact, CIF will target, where possible, sub-regional strategy execution – taking advantage as much as possible of potential economies of scale and combined buying power to align these partners around technology, operational and service provider solutions that meet the objectives of the program as it transitions from less efficient legacy operations to new optimized operations.

4. Regional Implementation Plans

Drilling down to implementation plans and timelines by region, potential key outcomes are identified as targets for near, mid and long term transition towards processing system optimization. These key outcomes are based on the application of the above tactics and tools in each region – building on strategic CIF interventions with willing municipal participants. Each regional breakout provides examples of how these tactics and tools would be applied in that region to enable progress towards the targeted outcomes. Note that these are examples only and service unit cost price points that are included are shown for illustration purposes. Actual deployment of tactics and tools will be based on further analysis, evaluation of the interest levels of willing municipal partners and utilization of real pricing from project participants and interested service partners.

The summary for each region begins with a chart that outlines potential targets for key outcomes in the two key performance parameters to evaluating progress towards system optimization:

- Lower Processing Costs – reducing overall processing system cost/ton
- Collection Cost Impact – net neutral or net lower collection costs

The chart shows how each of these targeted outcomes would change in near, mid and long-term time horizons – and how those outcomes compare to the model results from the optimization study.

The following terms are helpful in understanding the charts for each region:

- Current System – at the time of the Optimization Study
- Near-Term Targets - Year end 2014 outcomes
- Mid-Term Targets - Year end 2017 outcomes
- Long-Term Targets - Year end 2025 outcomes
- Model Baseline – Providing the baseline results of the various options evaluated

Each regional summary then outlines the application of the techniques, tactics and tools in specific areas of that region. The CIF motivation to deploy those resources will be driven by the following protocol sequence:

1. Processing Cost Delta: The potential for processing system cost reduction is a key to navigating the road map of system rationalization. The processing cost delta for any particular municipal partner is a combination of unit price and unit volume with current practices (from datacall and/or newly collected field data) compared to the potential – driven by the negotiated cost settlement (NCS) and next lowest cost alternative (NLCA) tactics identified above. CIF interventions and investments should, as a guiding principle, be driven by their ability to move the needle in lowering overall processing costs. The processing cost deltas shown in these regional examples are based on the application of the system model and placeholder values for the NCS and NLCA.
2. Willingness of Potential Municipal Partners: Application of these intervention points and approaches will need to be responsive to the capabilities of municipalities to actively partner with the CIF in exploring the potentials of system rationalization, whether as singular entities or groups with common interests.
3. Critical Mass Tonnage: The potential for leveraging favorable price points in the application of the NCS/NLCA approach will depend on the relative size of available tonnage, compared to the NLCA options being explored. There will need to be a critical mass of tonnage in order to tip the equation towards system rationalization. If this potential doesn't exist then it will not be worth CIF intervention.
4. Competitive Technological, Operational and/or Service Provider Opportunities: The potential processing cost delta will be driven by real world opportunities for improvements in cost based on technological upgrades, operational improvements and/or service provider offerings. CIF intervention needs to build on the presence of these opportunities and leverage them to the advantage of the municipal partners as well as the overall system.

The above process is similar to peeling the layers of an onion – removing inefficiency from the system over time – with near, mid and long-term movement towards the targeted outcomes.

In conjunction with the above strategies, continued progress on comparative pricing through the Datacall is imperative. Cost per tonne for processing varies from \$25 to over \$1,000. When analyzing the cost per tonne of the programs, smaller programs do not have higher costs in all or even the majority of circumstances. Thus the focus of the strategies is to bring all processing costs down to optimum levels and not necessarily implement a strict hub and spoke system. Current hub and spoke networks often have the hub community paying much higher costs than those transferring into the facility. This is in direct contrast to the modeled results and is either a function of the current competitive marketplace or of the data collection and allocation of costs. For example, Sudbury pays \$175/tonne whereas Timmins is paying only \$52/tonne. London is paying \$161/tonne whereas Sarnia is paying \$71/tonne. Understanding whether these are contracting or competition issues or cost allocation issues will help CIF target the right programs in pursuing system optimization.

4.1 Eastern Region

The following chart outlines potential targets for key outcomes for the Eastern region in the four key performance parameters.

Targeted Outcomes	Current System	Near Term Targets	Mid-Term Targets	Long-Term Targets	Model Baseline
Lower Processing Costs	\$115	\$102	\$100	\$100	\$100
Collection Costs Impact		Neutral	Neutral	Neutral	Potential Increase

Optimizing high cost programs and improving transfer infrastructure will remain a priority for Eastern Ontario.

The following protocol sequence for the Eastern Region shows how the techniques, tactics and tools will be deployed:

Processing Cost Delta: Although geographically ideal for a hub and spoke network with a central large city (Ottawa) and many smaller cities that could feed it, the majority of the program's costs are comparable with those generated by the optimization model. The following table shows examples of the current processing costs compared with those of the optimization model and the potential savings if those processing costs could be achieved. Overall savings are not as great as other regions.

Eastern (6)	Single/ Multi- Stream	Current Processing Pricing	Model Predicted	Delta	Tonnes	Gross Modeled Savings	Other Direct Haul Tonnes	Gross Modeled Savings
Ottawa	Multi	\$ 86	\$ 86	\$ -	62,961	\$ -		\$ -
North Dundas	Multi	\$ 237	\$ 144	\$ 93	580	\$ 53,824	-	\$ 53,824
Kingston	Multi	\$ 147	\$ 140	\$ 7	9,742	\$ 69,363		\$ 69,363
Ottawa Valley	Multi	\$ 224	\$ 148	\$ 76	3,331	\$ 252,157	776	\$ 310,900
Cornwall	Multi	\$ 144	\$ 143	\$ 1	2,710	\$ 2,629		\$ 2,629
North Glengary	Single	\$ 358	\$ 143	\$ 215	845	\$ 181,675	2,959	\$ 817,860
Total/Average		\$ 115	\$ 100		80,169	\$ 559,647	83,904	\$ 1,254,576

Willingness of Potential Municipal Partners: The two programs that have processing facilities with the greatest potential savings are Ottawa Valley and North Glengary. Both of these facilities serve as mini-regional hubs for their areas, servicing between 3 and 4 other neighboring programs. These mini-regions will need to be approached as a group to determine if a lower cost option would be preferable and implementable. CIF will engage in the NLCA process either with municipalities individually or as a group to determine the range of optimization solutions available. The key to this region is to secure a long-term processing deal in the hub city of Ottawa similar to the deal that Ottawa currently receives. This will allow these programs and potentially others to take advantage of a flexible transfer system. If a lower processing cost can be negotiated in conjunction with CIF then other programs including Kingston and Cornwall could potentially join as well.

Critical Mass Tonnage: If a deal similar to what Ottawa is currently receiving can be negotiated with the private MRF operator, then a critical mass tonnage is not an issue in this region. However, if that is not the case, a group procurement of a municipally owned facility would need Ottawa as a base tonnage, along with a number of the larger municipalities to make it cost effective. Based on model results, the critical mass tonnage to achieve the lower operating cost of the medium sized MRF operating at two shifts was just over 100,000 tonnes per year (tpy), which is the majority of available blue box material.

Competitive Technological, Operational and/or Service Provider Opportunities: This region is dominantly dual and multi-stream. Consideration will need to be given to standardization of programs and the potential capital implication of MRF upgrades.

4.2 Central/GTA

The following chart outlines potential targets for key outcomes for the Central/GTA region in the four key performance parameters.

Targeted Outcomes	Current System	Near Term Targets	Mid-Term Targets	Long-Term Targets	Model Baseline
Lower Processing Costs	\$ 127	\$ 122	\$ 99	\$ 98	\$ 98
Collection Costs Impact		Neutral	Neutral	Neutral	Potential Increase

CIF is currently working with a number of programs in this area including the County of Simcoe and neighbouring communities to transition their programs to a transfer operation. This and other opportunities are included in the near term targets above. Included in the Mid-Term targets are continued optimization of the Muskoka and mid-northern corridor. Optimization of Northumberland and the York/Peel MRF's is also under discussion as Long-Term opportunities.

The following protocol sequence for the Central/GTA Region shows how the techniques, tactics and tools will be deployed:

Processing Cost Delta: As can be seen in the following table, the majority of the savings potential comes from the three largest programs: Toronto, Peel and York. Based on the modeling, Peel's current tonnage could be processed at much lower rate; see opportunities section. The Muskoka program and numerous programs that utilize that MRF and the Northumberland MRF are two other areas of potential focus for cost savings.

Central (10)	Single/ Multi- Stream	Current Processing Pricing	Model Predicted	Delta	Tonnes	Gross Modeled Savings	Other Direct Haul Tonnes	Gross Modeled Savings
Toronto	Single	\$ 107	\$ 95	\$ 12	154,511	\$ 1,804,688	-	\$ 1,804,688
Peel	Single	\$ 159	\$ 71	\$ 88	92,934	\$ 8,148,453	-	\$ 8,148,453
York	Single	\$ 147	\$ 106	\$ 41	76,073	\$ 3,118,993	-	\$ 3,118,993
Bruce	Multi	\$ 130	\$ 136	\$ -	3,721	\$ -	-	\$ -
Quinte	Multi	\$ 68	\$ 167	\$ -	11,763	\$ -	-	\$ -
Durham	Multi	\$ 113	\$ 100	\$ 13	45,743	\$ 610,212	-	\$ 610,212
Peterborough (City)	Multi	\$ 100	\$ 119	\$ -	9,073	\$ -	4,749	\$ -
Northumberland	Single	\$ 266	\$ 129	\$ 137	5,719	\$ 781,330	6,078	\$ 1,611,706
Simcoe	Multi	\$ 33	\$ 111	\$ -	24,060	\$ -	-	\$ -
Muskoka	Multi	\$ 221	\$ 141	\$ 80	6,010	\$ 479,658	3,609	\$ 767,692
Total/Average		\$ 127	\$ 98		429,607	\$ 14,943,334	444,043	\$ 16,061,745

Better data needs to be collected for Simcoe, Kawartha Lakes and Barrie to fully develop options for this region. Each of those programs either has no processing cost listed in the Datacall or an unlikely low cost attributed to it.

Willingness of Potential Municipal Partners: Similar to the Eastern Region, there are a couple groups that could be engaged together to find a mutually beneficial solution including York/Peel, Muskoka area and Northumberland area. Additionally the key will be to work with Toronto, Peel and York to ensure there is a low cost processing solution for other communities to send their material to.

Critical Mass Tonnage: The Peel MRF could benefit the most from a regional processing solution to move them from a Medium to a Large 2-shift MRF. They have a strong base of over 90,000 tonnes per year.

Competitive Technological, Operational and/or Service Provider Opportunities: The Central region has the opportunity for the most cost savings of any region. It also includes the

majority of the single stream processing capacity. Most of this comes from the 3 largest programs in the Province: Toronto, Peel and York. All three of these programs have MRFs. The model predicted the entire region could be serviced with 3 MRFs, 2 in Toronto and 1 in Peel. The MRFs in these two programs need to be optimized with the latest in optical and other mechanical sorting in addition to facility layout to lower the operating costs and enable other programs to transfer material to be processed there. Alternatively, open and well-designed procurement processes can also be used to achieve the low operating costs, encouraging competition from U.S. firms and potentially lowering their barriers to entering the Ontario market. Both of these outcomes, best practice upgrades and low cost processing solutions, could be evaluated through the NLCA process with either individual municipalities or regional consortiums.

This region is also well poised for further flexible processing analysis. If large central MRFs are not constructed or not cost effective enough to entice small and medium sized programs to switch to a transfer system, these small to medium sized MRFs including York, Durham, Peterborough, Northumberland and Simcoe may benefit from central processing of plastics or other materials to maximize the value of the material and ensure that a full range of materials can be accepted. This has the potential to lower the operating costs of these MRFs without closing them down. With recent changes in China’s acceptance of mixed plastics, this may be essential in the near-term to continue accepting a wide variety of plastic packaging. A central plastics facility could take a wide range of plastics, optically sort and create flake or pellet ready for market.

4.3 Southwest

The following chart outlines potential targets for key outcomes for the Southwest region in the four key performance parameters.

Targeted Outcomes	Current System	Near Term Targets	Mid-Term Targets	Long-Term Targets	Model Results
Lower Processing Costs	\$ 127	\$122	\$99	\$ 96	\$ 96
Collection Costs Impact		Neutral	Neutral	Neutral	Potential Increase

Short term optimization has already been completed in this area with upgrades to the Niagara and Hamilton facilities. A more regional solution is under discussion as a Long-Term solution. In the Mid-Term, the focus will continue to be on the London/Windsor corridor to take advantage of the new infrastructure developed by the City and CIF. Continued focus on adding more programs to the London MRF will lower the regional cost.

The following protocol sequence for the Southwest Region shows how the techniques, tactics and tools will be deployed:

Processing Cost Delta: Although the model showed a hub MRF in both Hamilton and London, the general spread of the population and material allows the potential hub to be in any of the larger program areas including, Halton, Waterloo, or even Niagara, without major effects on hauling costs. The new Waste Management (WM) MRF in Cambridge offers a strong potential single stream option that can be pursued for the CIF backstop deal.

Based on the processing cost comparison with the model, Guelph, Halton, London, Hamilton and Bluewater are all potential opportunities for regional solutions and best practice upgrades.

	Single/ Multi- Stream	Current Processing Pricing	Model Predicted	Delta	Tonnes	Gross Modeled Savings	Other Direct Haul Tonnes	Gross Modeled Savings
Southwest (12)								
Hamilton	Multi	\$ 92	\$ 71	\$ 21	39,841	\$ 846,621	-	\$ 846,621
London	Multi	\$ 161	\$ 88	\$ 73	26,247	\$ 1,916,031	6,671	\$ 2,403,014
Essex-Windsor	Multi	\$ 109	\$ 130	\$ -	25,095	\$ -	-	\$ -
Halton*	Single	\$ 122	\$ 71	\$ 51	41,736	\$ 2,134,379	-	\$ 2,134,379
Guelph	Single	\$ 331	\$ 99	\$ 232	7,485	\$ 1,734,499	5,228	\$ 2,945,983
Waterloo	Multi	\$ 103	\$ 99	\$ 4	35,582	\$ 151,935	-	\$ 151,935
Bluewater	Single	\$ 149	\$ 135	\$ 14	12,200	\$ 165,066	1,272	\$ 182,276
Niagara	Single	\$ 111	\$ 104	\$ 7	40,429	\$ 279,769	3,108	\$ 301,276
Oxford	Multi	\$ 104	\$ 129	\$ -	7,322	\$ -	-	\$ -
Brantford	Multi	\$ 89	\$ 108	\$ -	6,829	\$ -	-	\$ -
Wellington *	Multi	\$ 111	\$ 127	\$ -	4,751	\$ -	-	\$ -
Norfolk	Multi	\$ 176	\$ 110	\$ 66	4,267	\$ 280,385	-	\$ 280,385
Total/Average		\$ 127	\$ 96		251,784	\$ 7,508,685	268,063	\$ 9,245,870

* Using 2010 Datacall Pricing

Willingness of Potential Municipal Partners: Ideally engaging a group of municipalities in the Hamilton/Halton/Niagara/Waterloo/Guelph region could produce a low-cost processing option in that area. A group procurement process that engaged not only the new WM facility, each of the current municipally owned facilities and other owner/operators could leverage significant tonnes for either a significant facility expansion and upgrade, or a long term contract with an owner operator.

Critical Mass Tonnage: With the addition of the WM facility, the requirement for critical mass tonnage is reduced. Cost reduction can be achieved through contracting of individual municipalities and upgrades to existing facilities. However, a process that engaged multiple municipalities would have the highest potential for producing a long-term low cost processing solution for the region.

Competitive Technological, Operational and/or Service Provider Opportunities: There are many MRFs in this region that can benefit from upgrading technology. Similar to the central region, a central plastics processing facility could help multiple MRFs reduce their labor for sorting all plastics grades.

4.4 Northern

The following chart outlines potential targets for key outcomes for the Northern region in the four key performance parameters.

Targeted Outcomes	Current System	Near Term Targets	Mid-Term Targets	Long-Term Targets	Model Results
Lower Processing Costs	\$127	\$127	\$118	\$118	\$144
Collection Costs Impact	Neutral	Neutral	Neutral	Neutral	Potential Increase

The Northern region is mostly multi-stream with the exception of Sudbury and the communities that haul to it. Most of the multi-stream processing is more cost-effective than the model predicted and there are likely less collection savings from a switch to single stream.

The following protocol sequence for the Northern Region shows how the techniques, tactics and tools will be deployed:

Processing Cost Delta: The model highlighted Sudbury and Thunder Bay as potential hub MRFs for the Northern Region, however, each is hampered by long haul distances and small communities and will likely struggle to achieve the tonnages for greatly improved efficiencies.

North	Single/ Multi- Stream	Current Processing Pricing	Model Predicted	Delta	Tonnes	Gross Modeled Savings	Other Direct Haul Tonnes	Gross Modeled Savings
Sudbury *	Single	\$ 175	\$ 115	\$ 60	14,358	\$ 856,885	2,975	\$ 1,034,433
Thunder Bay	Multi	\$ 40	\$ 161	\$ -	6,330	\$ -	-	\$ -
Sault Ste. Marie	Multi	\$ 117	\$ 192	\$ -	5,897	\$ -	-	\$ -
North Bay *	Multi	\$ 72	\$ 170	\$ -	3,710	\$ -	-	\$ -
Total/Average		\$ 127	\$ 144		30,295	\$ 856,885	33,270	\$ 1,034,433

* Using 2010 Datacall Pricing

Willingness of Potential Municipal Partners: CIF will work with communities to evaluate their options both in province and out-of province to either develop a regional solution for one of the areas or to find low cost options for individual municipalities.

Critical Mass Tonnage: There is not enough tonnage in the Northern region to capitalize on the efficiencies of large-scale single stream processing. However, with areas even as far north as Sudbury, a backstop option in the GTA region could provide an alternative to local processing. Additionally, a NLCA process looking at out of province MRFs including Winnipeg, Quebec, and Michigan could ensure that costs remain competitive and the full suite of materials are accepted.

Competitive Technological, Operational and/or Service Provider Opportunities: Flexible processing is key to the Northern Region. With low tonnage it will be difficult to economically sort the many grades of plastics and the long haul distances make large regional processing solutions difficult to develop. However, potential exists for marketing mixed bales of containers, plastics and paper depending on available processing equipment to create flexible processing solutions.

5. Conclusion

The Study of the Optimization of the Blue Box Material Processing System in Ontario gave a tool and a basis to analyze complex processing and transfer networks. However, optimizing the current infrastructure will require an integrated suite of analytical, contracting and market based tools. CIF staff proposes to use the model developed under the MIPC study in conjunction with the strategies and processes laid out in this Plan to evaluate and act on applications received through the 2013 CIF REOI to explore possible pilot opportunities and continue moving the Province toward an optimized system.

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