

Appendix # A

to

Report # WM2020-011

**A Review of Textile Recovery Approaches for the City  
of Kawartha Lakes**

**Submitted by – Fleming College’s Sustainable Waste  
Management Program (Section 61)**

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## 1. CKL Textile Recovery Initiative Report

The Sustainable Waste Management students were tasked to assist the City of Kawartha Lakes by providing research with respect to textile recovery for the purposes of waste diversion. The first task was to review and summarize successful textile programs offered by 10 other municipalities in Ontario (at least 2 neighbouring/adjacent municipalities). The areas of interest we were to review are as follows:

- Population of the municipality
- Number of years the program has been in place
- Type of program that is offered (curbside pick-up, depot drop off, partnership with other organizations – profit or not for profit)
- Type of materials accepted in the program
- Method for measuring diversion and participation
- Cost of operating the program
- Overall success/pros and cons

In order to fully understand the textile recovery options available within the province, and to identify any possible barriers to an effective program, students in the Sustainable Waste Management Program at Fleming College have identified twelve municipalities in Ontario that are currently running successful programs. Additional areas of interest and concern were identified, with the help of the City of Kawartha Lakes (CKL), and a list that would serve as the basis of a questionnaire was compiled. The initial research phase was conducted exclusively by way of the internet. Information that was unable to be obtained online was procured by establishing direct contact with the municipalities, either through telephone or by email. The research team focused their research efforts on the following municipalities:

The City of Kitchener

The City of Markham

The City of Oshawa

The City of Peterborough

The City of Stratford

The County of Simcoe

The County of Wellington

The Region of Niagara

The Town of Aurora

The Town of Newmarket

The Township of King

## **1.1 Demographic Comparators**

The populations and population densities of the targeted communities were recorded as the starting point for comparison with CKL. It was determined that the CKL, having a population density of 24.7 people/km<sup>2</sup>, is unique in that it has a relatively high landmass with a relatively low population. The average population density of the comparator municipalities is 920.07 people/km<sup>2</sup>, the smallest being the Township of King with a population density of 73.6 people/km<sup>2</sup>. It was determined that there were not any significant population/population density links between the targeted communities themselves; therefore, it was decided that these statistics could not be relied upon to form the basis of comparison – our investigation would be based on the merits of the individual textile programs alone.

## **1.2 Textiles Recovery Programs**

The municipal recovery programs that we identified range in age from 10 years to 1 year. 50% of the programs that we looked at have been started in the past 3 years. We attribute this to a combination of growing awareness trends in the marketplace and a push from the Canadian Diabetes Association (CDA) to garner market share. All of the municipalities in question run their diversion programs by way of collaborative partnerships, predominantly with the CDA. The Salvation Army, Goodwill, Big Brothers/Big Sisters of Canada and a few small local charities emerged as community partners as well, but their involvement has been limited, and the range of services that they are able to provide is small. We include them in this report in order to point out that such partnerships are available and may be considered as a means of maintaining goodwill relationships with the local charities currently operating in CKL. The CDA has positioned itself as the leading partnership choice, having been successful in developing a program that offers services most attractive to local governments at an attractive price (free). The services they offer will be discussed in further detail later in this report.

## **1.3 Barriers**

Implementation time, program coordination, and getting programs through the Council approval process has been indicated as the largest hurdles to implementing a program. In conversation with a representative from Wellington County, we learned that finding the proper community partner can sometimes be difficult, as there are companies that “are not ethical.” It was indicated by two municipalities that the volume of collections and resident participation rates were barriers to running a regular, monthly curbside collection. These municipalities indicated that the carbon footprint of running such a program was not viable.

## **1.4 Our Findings**

Six main areas of interest have been identified for the purposes of this study. Respondents were asked about to start up and operating budgets, to elaborate on dedicated staff time, their collection methods, if they worked with a community partner, who the partners were and to identify any issues, they may have had working with their partners, diversion rates and their level

of interest/knowledge in the textile end markets. (See Appendix A for a comprehensive table illustrating procured results)

### **Budget**

Six of the municipalities contacted indicated that there was no budget allocated to the inception or the running of these programs; one stated their investment as ‘minimal’; two municipalities did not address the issue with us.

### **Staff**

For those municipalities relying heavily on their community partners to manage these operations, staff time is limited to coordination and monitoring activities and has been identified as minimal. Those municipalities that have placed collection bins at transfer stations indicate that the depot staff maintain the bins as part of their regular duties and time dedicated exclusively to textiles has not been broken down or otherwise identified. Niagara Region ascertained that the program that they run in the multi-residential buildings requires a significant amount of time. Identifying and coordinating with property owners can sometimes be a time-consuming process. Simcoe County dedicates a significant amount of staff hours to their once yearly curbside pick-up campaign, both by way of office staff dedicated to coordination and advertising as well as collection staff and trucks on collection day.

### **Collection Methods**

The operating logistics of the programs being run vary as each municipality is unique. Few have elected to be in direct control of their programs, preferring instead to rely on the community partners.

Two of the municipalities indicated having had a regular curbside collection of textiles; they communicated that they found this method to be inefficient and abandoned them, preferring to provide collection bins and offering a ‘call for pickup’ service through their community partners instead. Simcoe County is the only municipality that offers a curbside collection. There is a specially designed collection bag provided to residents, and the collection is treated as a ‘campaign,’ complete with advertising. They offered it one day per year and indicated to us that it is extremely successful. This collection captures worn out, damaged textiles that the CDA bin collection does not allow. (See Appendix B for a list of textiles accepted by respective municipalities)

### **Partnerships**

The feedback collected indicates that, overall, the participating communities are very pleased with their decision to form partnerships with community partners. Both from a business perspective (considering cost, required manpower and increase in diversion rates) and ease of use and participant satisfaction perspective. Similar to CKL, municipalities had reservations about collection bins being placed in municipal spaces. Concerns about overflow and unsightly mess

being foremost. 100% of communities contacted indicate appreciation that the collection schedule implemented mitigates this and that if there happens to be an anomaly, and a bin is filled early, a phone call placed to the community partner results in a pickup, usually within 24 hours.

Predominantly, communities rely on the CDA as the primary partner and expound on the ease of working with them. They appreciate the minimal financial/time commitments required to set up this partnership. They also indicate that the monthly report provided by CDA is beneficial in tracking the effectiveness of the program and provides relevant diversion metrics.

### **Diversion**

We were not able to identify one municipality that could provide specific textile diversion numbers prior to implementing their program; all programs were started in an effort to increase overall diversion targets.

Every municipality expressed pleasure and pride in the diversion numbers that their respective programs have realized. Six municipalities were able to provide us with diversion numbers. In 2019 alone, they were collectively able to divert 251.47 T of textiles from being landfilled, an average of 41.9 T per community.

### **Textile End Markets**

Only two of the contacted communities identified end markets as a pressing concern to them prior to implementing their programs, indicating that diversion was their primary concern. We were directed to the CDA website to obtain general information on what happens to textiles that have outlived their usefulness.

## **2. Municipalities with no Textile Recovery Programs**

This section of the report will provide background for the City of Kawartha Lakes regarding the municipalities that do not have a textile recycling program and their reasoning for not having one in place. We recognized that providing information regarding the barriers that some municipalities face, while contemplating textile recovery programs, would enable the city to get ideas on the difficulties of implementing a textile recycling program.

### **2.1 Data Collection**

The data was collected from 7 municipalities with no textile recovery programs. The internet was utilized as the first source to identify municipalities that do not have textile recycling programs. This investigation was followed up with phone calls and emails to obtain information not available online. The barriers which restricted the respective municipalities from operating their own textile recovery programs are listed in Table 2.1.

The following municipalities are identified as not having a textile recovery program:

- Lambton Shores
- Haliburton
- Northumberland
- Blue Water
- Brook- Alvinston
- South Dundas
- London

### **2.2 Data Analysis**

Through our research, we found common barriers that impede the municipalities from having a textile program. Apparently, the financial barrier is the most common one which is keeping municipalities from developing a textile recovery program. In fact, lack of budget is indeed a great hindrance in municipalities' path to develop such a program, as they may require collection trucks, processing equipment and recycling facilities to deal with textiles. Some municipalities find it difficult to have service providers like contractors; for example, South Dundas, a municipality in Eastern Ontario, reported having difficulty finding contractors that could be related to the small population and the geographical location of the municipality. For other municipalities, their small population acts as an obstacle for them to develop a textile recovery program. Moreover, for the regions that really want to start up their own textile recovery program, it can be difficult to go through all the protocols of having approvals or permissions from the council to develop their textile recycling program. It is also apparent that small municipalities face more barriers to getting their recycling programs approved by council and sometimes, designated physical space to maintain collection trailers for textiles can be a constraint.

Some municipalities that were not participating in textile recovery dispose of their textiles directly to the landfill. The information that we got about the barriers from the identified municipalities, it was apparent that some of these municipalities had not fully explored the issues of textile recovery yet.

### 2.3 Conclusion

Throughout our research, we analyzed all the barriers that restrict municipalities from having textile recycling programs, and we came to the conclusion that most of those barriers are the same for all municipalities regardless of whether they are geographically large or not. Financial resources and handling of textiles are major issues that they need to look at before considering the implementation of a textile recycling program. Some municipalities overcame their barriers for budget, resources and contractors to develop textile recovery programs through partnering with charities, and this could also be a potential solution for the City of Kawartha Lakes to have a textile recovery program.

Table 2.1: Information Gathered from the Municipalities with no Textile Recovery Program

No.	Region/Municipality	Barriers/ Reasons for no Textile Program
1	Lambton Shores	<ul style="list-style-type: none"> <li>• Financial constraints on introducing the program</li> <li>• Lack of trucks for collection</li> </ul>
2	Northumberland County	<ul style="list-style-type: none"> <li>• Lack of processing equipment and facilities to deal with textiles</li> <li>• Costly process</li> <li>• Find it easy to send textile stuff to the landfill, as compared to any other alternative</li> </ul>
3	Haliburton	<ul style="list-style-type: none"> <li>• Lack of textile recovery facility, a lesser number of trucks and insufficient budget</li> </ul>
4	Bluewater	<ul style="list-style-type: none"> <li>• Council did not give permission because of a small municipality</li> <li>• Financial barriers</li> </ul>
5	Brook-Alvinston	<ul style="list-style-type: none"> <li>• The low population is restricting municipality to have a textile recovery program</li> <li>• Financial Constraints</li> </ul>
6	South Dundas	<ul style="list-style-type: none"> <li>• Small municipality</li> <li>• Financial barriers</li> <li>• Lack of contractors</li> </ul>
7	Municipality of London	<ul style="list-style-type: none"> <li>• Want to develop their textile program</li> <li>• Have not been able to get permission from the council yet</li> </ul>

### **3. Market Review of Textile Recycling**

The production of clothing has increased dramatically with an increase in consumption, making textile one of the most significant growing waste streams in the world. Factors adding to this are consumerism, fast fashion, low clothing cost, style trends and influences. In North America, 12 million tonnes of clothing are landfilled every year. 95% of which could be reused or recycled (Value Village, 2020). The average Canadian disposes of 30-35 kgs of textiles each year, which is an estimated 955,265 tonnes of textiles disposed of by Canadians annually; out of which only 15% are being reused or recycled and 85% ending up in landfill (NACTR, 2019). Fortunately, textiles are nearly 100% recyclable, and the textile recycling industry is one of the oldest and most established recycling industries (Hawley, 2006). Canada has been involved in the reuse and recycling of textiles for more than 100 years. Only recently have municipalities been focusing on diverting textile waste from landfills to save landfill space, as textiles compose 5% - 8% of the total garbage stream and to establish a circular economy (NACTR, 2019). It is critical to understand the textile recycling market when planning to implement a recovery program. There are two distinct markets in the Canadian textile waste industry: Collection and Processing.

#### **3.1 Collection Market**

Conventionally, textiles are collected by for-profit organizations that privately benefit from the collection, processing, grading, thrift and export of textiles and non-profit charities who sell these collected items to charity-affiliated for-profit thrift stores like Value Village, which utilize the revenue generated to fund their missions. Value Village is partners with 21 not for profit organizations, AiMHi, The Arc, Big Brothers Big Sisters, Epilepsy Foundation, Candlelighters, and developmental disability associations to name a few (NACTR, 2019). In Canada, there are over 100 registered non-profit charities involving in the collection, and charitable redistribution of textiles and the annual combined gross revenue from these activities exceeds \$472 million benefiting various areas of the society, including the health industry, animal welfare, etc. (NACTR, 2020). The collection channels usually include donation bins, direct drop-off to thrift stores, curbside offered to every home, residential door pick up delivered to selected homes via phone lobbying or flyer drops, at events with limited time and location and, through retail returns at point of sale (NACTR, 2019).

#### **3.2 Processing Market**

Textiles have a higher re-use value than being recycled into fibre state. The majority of the post-consumer material is reused as second-hand clothes, and only 7% of the total content is used as reprocessing fibre (Yavari, 2019). According to the National Association for Charitable Textile Recycling, textiles travel through well-established re-use and recycling systems. The collected donations are typically delivered to thrift stores and secondary market warehouses with processing facilities where they are sorted and graded. Clothing with the highest quality is selected for reselling in retail, including both for-profit and non-profit organizations or sent to clothing provider charities who distribute them directly to people in need (Metro Vancouver, 2020).

Approximately 40% - 50% of the sorted textiles enter the domestic thrift market. However, a mere 20% - 25% are sold through to have a second life. The remaining 75% - 80% of the clothing which is unsuitable for reuse due to imperfections such as stains, tears, broken zippers, missing buttons etc. and those which did not sell within 4-5 weeks is either compressed into bails or packed into bags and are sold to clothing graders and rag dealers (Metro Vancouver, 2020). These types of used clothing are termed as mixed rags or institutional rags. Second-hand stores dispose of 5% of the donated textiles to the landfills.

Clothing graders consolidate the material collected from different streams and sort them into approximately 400 various categories based on the material type, condition, fibre blend, and other end market-specific criteria (Metro Vancouver, 2020). 50% of the processed textiles enter the global reuse market, primarily sold in countries from Central America, Africa, Asia and, Europe. 20% are cut into wiping rags and sold for use in industrial markets, including automotive, home improvement and manufacturing. The other 20% of the mixed rags are downcycled into fibres through shredding and processing to be used as carpet padding, home insulation, emergency blankets, etc. The remaining 10% is disposed of at landfills due to chemical contamination or water damage (Metro Vancouver, 2020).

**(a) Thrift and Secondary Markets:** There is a significant increase in the secondary market over the last decade by providing a destination for more than 70% of the post-consumer textiles (Yavari, 2019). In 2017, a reported 2.3 billion items were reused, with the most significant category being clothing, shoes and, accessories; these comprise 49% of the \$20 billion resale market (Durif F, 2018). These used textiles, shoes and accessories, deemed to be in excellent condition are also termed as ‘credential clothing’. These types of used quality clothing have a high value and high demand in both developed and developing countries. In Canada, the market has increased by over 27% since 2018 (RAGDAY, 2019).

**(b) Third Market – Graders and Rag Dealers:** There are over 300 companies listed as participants in Canadian used clothing markets with recycleexchange.com. It is Canada’s waste recycling marketplace to sell and buy used products. These textile recovery facilities will assign a “grade” based on the quality of the material and resell some of the graded product within Canada and the USA, but mostly in developing countries like Asia, Africa, Europe, Central or South America (SMART - Frequently Asked Questions, 2020). Different markets have different demands. Grade ‘A’ is usually brand-new clothing. For instance, a Nike T-shirt or Prada bags, which generally have a considerable market in North American countries like Mexico and South American countries like Chile, where the public prefers branded clothes that they can obtain for a lesser price. Grade B are borderline quality goods, which are wearable and less expensive, usually preferred by African countries. Typically, graders generate 5% of waste (Recycler,2020).

**(c) Fourth Market – True Recycling:** This is the deconstruction of textiles into virgin fibres for using them to create recycled textiles. All the materials can be shredded, but the market for shredded material is minimal due to a reduction in quality and fibre length of natural fibre. Most

of the natural and synthetic fibres can be reused as rags. Few synthetic fibres produced in a spinning process can be recycled in a closed loop through re-spinning. Mixing reclaimed natural fibres with virgin fibres can provide quality products. However, in Canada, less than 1% of the post-consumer textile waste is entering this market of true recycling (NACTR, 2019).

### 3.3 Instability in Global Markets

Although the international market for textiles is lucrative for graders and exporters, there is potential instability. First, when the market is flooded, many countries often impose a temporary ban on used clothing to prevent excess clothing pile up. This is when the international exporters are prohibited from selling the second-hand clothing in these countries. Another reason for the ban is political unrest. China sees Africa as a viable market and pressurizes the African government to impose the ban. Secondly, the used clothing affects the cotton industry in countries like Malawi, Tanzania and Kenya and possess a threat to local business owners (The Guardian, 2015) and thirdly, there have been events where excess clothing ends up in the landfills of these developing countries (Recycler, 2020).

### 3.4 List of Textile Recycling Companies

The textile recycling companies include mostly for-profit organizations but also few charitable organizations that process the donated textiles. A detailed table with the information on the companies, including company address, collection method, processing method, partnership with an exporter, end markets and contact details, is added to Appendix C.

Table 3.4 List of Textile Recycling Companies

<b>Non-profit</b>	<b>For-profit (Within Ontario)</b>	<b>For-profit (Outside Ontario)</b>
Diabetes Canada	Eco Canada Textile Recycling	Pacific Clothing Recyclers Inc.
	Value Village	Trans-Continental Textile Recycling Ltd.
	Canadian Textile Recycling Ltd	
	RAGDAY Ltd.	
	Pringle Textile	
	KB Textile International Ltd	
	Textile Waste Diversion Inc.	
	Five Star Rags	

### 3.5 Suggestions and Recommendations

The City of Kawartha Lakes should establish a chain of custody or have a contractual arrangement with the partner organization to guarantee the end market and end-use of the collected textiles in the form of either monthly, quarterly or annual reporting systems.

## 4. Overview of Local Textile Collection Companies

Overall, 16 companies in and around the City of Kawartha Lakes accept textiles for reuse. The list generated comprises of both for-profit and not-for-profit organizations. Information on the type of textiles accepted by these companies has also been included. Out of the 16 companies, only 9 could be successfully contacted to acquire further information on the barriers faced in textile recovery, potential opportunities to collaborate with the municipality and their willingness to working with a municipally sponsored textile recovery program.

Only 3 companies expressed that they face barriers when collecting textiles for reuse. Salvation Army stated that they receive garbage at their donation sites. Vicky’s Values experience a shortage of storage space for the textiles they collect. Global Village sometimes gets more textiles than they can store.

About 50% of the companies contacted said they would be willing to work with the City of Kawartha Lakes, but the companies could not identify any specific municipal support that they could benefit from.

### 4.1 Local Companies and Textiles Accepted

Online research related to Kawartha lakes textile recovery led to a broad list of local companies in and around the city. They accept a wide range of different textile materials from the residents. The companies in and around the city of Kawartha Lakes that accept textile for reuse are listed out in Table 4.1:

Table 4.1: Companies Accepting Textiles for Reuse

#	Store Name	Location
1	Salvation Army	30 Peel St, Lindsay, ON K9V 3L8
2	Humane Society	107 McLaughlin Rd, Lindsay, ON K9V 6K5
3	Vicky’s Values	50 Marry St. W, Lindsay, ON K9V 2N6
4	Textile Diversion	26 Francis Street, Lindsay, ON, K9V 5R8
5	Diabetes Canada	730 The Kingsway Unit 12, Peterborough, ON K9J6W6
6	Value Village	1101 Lansdowne street West, Peterborough, ON K9J 7M2
7	Buy and Sell Shop	31 Kent street west, Lindsay, ON, K9V 2X9
8	Goodwill Industries	30 Peel St, Lindsay, ON K9V 3L8
9	Talize	1154 Chemong Rd, Peterborough, ON K9H 7J6
10	Recycled Kids	20 Kent St W, Lindsay, ON K9V 2Y6
11	Recycled Gear	96 Queen St, Lindsay, ON K9V 1G6
12	Stretch Thrift Outlet	26602 Highway 48 Georgina, ON L0E 1R0
13	Care and Share Thrift Shop	33 Ringwood Dr, Whitchurch-Stouffville, ON L4A 8C1
14	Resource Thrift Outlet	55 Angeline St N, Lindsay, ON K9V 5B7
15	Global Village	1 William St S suite # 10, Lindsay, ON K9V 3A3
16	Mission Thrift Store	370 Kent St W, Lindsay, ON K9V 6G8

From small textile reuse/resell shops to large textile recovery companies located within the boundary of Kawartha Lakes, these businesses have different approaches and strategies to textile material requirements/acceptance with some companies or organizations accepting only specific materials, according to their individual business needs. Table 4.2 lists the companies in and around the city and includes information on the types of textiles accepted by these companies. For a more comprehensive table with information on collection services and conditions for accepting the textiles please see Appendix D.

Table 4.2: Type of Textiles Accepted by Companies

Store Name	Textiles											
	Clothing & Shoes	Accessories	Bath towels	Sheets	Blankets	Pillows	Curtains	Table cloths	Mattresses	Carpets	Furniture	Stuffed toys
Salvation Army	✓	✓		✓	✓	✓	✓	✓			✓	✓
Humane Society			✓	✓	✓	✓						
Vicky's Values	✓	✓	✓	✓	✓	✓	✓	✓		✓		
Textile Diversion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Diabetes Canada	✓	✓	✓	✓	✓		✓	✓				✓
Value Village	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Buy and Sell Shop					✓	✓			✓	✓	✓	
Goodwill Industries	✓	✓										
Talize	✓	✓	✓	✓	✓	✓	✓	✓				✓
Recycled Kids	✓	✓										
Recycled Gear	✓											
Stretch Thrift Outlet	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Care And Share Thrift Store	✓	✓	✓	✓	✓	✓	✓	✓				✓
Resource Thrift Store	✓										✓	✓
Global Village	✓	✓	✓	✓	✓			✓				
Mission Thrift Store	✓	✓	✓	✓	✓	✓		✓			✓	✓

Salvation Army and Buy and Sell Shop provide collection services depending upon the customers' needs and convenience. Also, during the process of conducting the research, some of the companies and organizations made some specifications and comments in receiving textile material from their customers. For example, Recycled Kids have limited themselves to accepting infants and kids' clothing and accessories only. Recycled Gear only accepts sports accessories and outdoor activities gears. Companies like the Salvation Army do not accept sofa beds from their clients in their furniture department. Value Village only accepts furniture that is relatively small.

#### 4.2 Barriers to Textile Recovery

Salvation Army stated that residents sometimes dump garbage at their donation sites (Salvation Army, 2020). This contaminates good, reusable textiles and creates a barrier in the recovery of textiles. Limitations in storage space is a barrier experienced by Vicky's Values (Vicky's Values, 2020). Global Village Thrift Shoppe also expressed similar problems of being overloaded with textiles, which forces them to send the extras and unsold items to Toronto for recycling (Global Village Thrift Shoppe, 2020).

As a rule, the companies only accept textiles that are in good condition for reuse. For-profit companies like Buy and Sell Shop simply refuse the items that residents bring to them if they do not have a market or if they are contaminated, therefore, they do not face any barriers. 70% of the companies contacted do not face any barriers to textile recovery (Diabetes Canada, Value Village, Talize, Humane Society, Recycled Kids, Recycled Gear, Buy and Sell Shop, 2020).

### **4.3 Opportunities to Collaborate**

As discussed above, there are various local companies and organizations within and around the City of Kawartha Lakes that work with textile collection and reuse. Since Kawartha Lakes wants to improve textile diversion, these local organizations were contacted to find opportunities to collaborate, and to gauge their willingness to work with the City on a municipally sponsored textile recycling program.

Sixteen organizations were looked at that provide textile recovery and reuse options in and around Kawartha Lakes. Nine of them provided information, and there were four positive responses for working with the City on a municipally sponsored textile recycling project, and one response that had an interest in working with the City but required more information. Since there is currently not a municipal textile recycling program in Kawartha Lakes, there was a challenge in explaining and getting responses on opportunities to collaborate.

The organizations that did not seem to have an initial interest in this collaboration were the Salvation Army because they felt they did not need support regarding collection (Salvation Army, 2020), the Buy and Sell Shop because their business is not catered to what this project is working on (Buy and Sell Shop, 2020), Recycled Gear because what they sell is not diverse enough for them to partner with the City (Recycled Gear, 2020), and Recycled Kids (Recycled Kids, 2020). One organization that was interested in this project, but felt they had to talk to the head office about working with the City was Value Village (Value Village, 2020). The organizations that were willing (some with great interest) in collaborating were Vicky's Values, to get more promotion (Vicky's Values, 2020), Diabetes Canada, to also receive help with promotion and education (Diabetes Canada, 2020), Talize to get promotion help and collection help (Talize, 2020), the Humane Society, to work on improving their business (Humane Society, 2020). Global Village Thrift Shoppe (Global Village Thrift Shoppe, 2020) would hope to have the City implement a fair pay scale that would depend on the weight of the textile bag instead of having a standard price so that their business would benefit by receiving a more equal pay. The focus then will be on the organizations wanting to work with CKL.

### **4.4 Willingness to Work with the Municipality**

Overall, much of the willingness to work with the municipality comes from wanting to receive more help regarding promotion and collection, as well as a fair pay scale for the textile collections. As stated, since there is currently no municipal textile recycling program, much of the conversations were based around what these organizations wanted and how they thought they

could work with the City. By having a more specific and organized structure for Kawartha Lakes and the textile organizations, the opportunities to collaborate come from having a centralized program, where clear rules are set up about what can and cannot be collected, and more resources for local organizations. Also, since the main barrier identified was receiving textiles that were of such poor quality, another area identified for collaboration could be implementing a program in the City that saves those types of poor-quality textiles and reuses them or recycles them for other uses, instead of having them being sent to landfill.

#### **4.5 Suggestions and Recommendations**

The municipality of Kawartha Lakes could set up a meeting with the local companies that accept textiles for reuse because this will help both parties better understand the needs of the other. The local companies might be more willing to talk to city officials than students.

The city could also provide multiple options of municipal support, if possible, for the companies to choose from since the companies contacted for the purpose of this research did not know what kind of municipal support, they could benefit from.

## 5. Collection Systems

Following the three R's waste hierarchy, it is very important to look for alternatives and diversion programs to support diversion strategies to achieve desired results. The fast-fashion retail model is premised on introducing new products to the stores and into the wardrobe as quickly as possible. The world has changed a lot in the past two decades, fashion brands are releasing new clothing each week, things are getting old fashioned very soon, and people do not want to wear old fashioned clothes. Unfortunately, the unused clothing is ending in landfills, and it is very important for municipalities to run a textile program so that they could divert the textiles from landfill and make most out of them. Implementing these methods and verifying public reach is an important aspect to be considered, which identifies the success of a recommended program. We have researched different municipalities and their textile diversion and collection programs.

### 5.1 Types of Collection Systems

#### 1. Curbside Collection

Households are asked to gather their textiles for reuse and leave them for collection at the curb. Some municipalities ask residents to place textiles in a clear bag with a label of 'T' on it. Municipalities will collect these bags on designated days along with their waste and recycling.

The frequency of textile collection varies depending on the population and the municipality. It has been noted that most curbside collection of textiles is done monthly.

#### 2. Collection Bins

In this type of collection system, large designated bins are installed in public spaces such as parking lots of community centers and multi-residential buildings. The bins often display the list of textiles that are accepted by municipalities; some also have the name of their local partners like Diabetes Canada on the bins. These bins are open 24 hours for the convenience of the public.



### **3. Drop Off**

Different types of bins are placed at the landfill site and transfer station for the public to come and drop off their textiles. The municipality for the initial phase keeps one bin for textile drop off. Drop off systems has no limit on frequency for households. They can visit the site during operating hours and can drop the textiles.

### **4. On Request Pick up**

People can request a textile pickup by calling the phone number provided by the municipality. Municipalities make a schedule for home pickups twice or three times per month. Residents can book a pickup by calling and selecting an available date from the provided options.

In St. Catherine's- Niagara (Niagara Falls, Welland) Clothing/Textile Recycling, we found that people are also scheduling the pickup by filling a form. The city will send a reminder to the form fillers through Emails about the collection day (Waste & Resources, 2016).

## **5.2 Municipalities Running Textile Programs**

### **1. The Township of King**

The textile collection started in 2013 by the Township of King. They started the program with a drop off system. The public could drop off textiles at 3 locations. They must place the textiles in a bag and drop it at the desired locations. They did not have a successful start with this, as the public thought that disposing textiles as garbage in bins are the most convenient and low-cost option. They were unwilling to drop off clothes for re-use. Getting this feedback, the Township of King started a public awareness program for textiles and started a private pickup service. In 2016, 54639 pounds of textiles were diverted by Township of King (Township of King, 2016).

### **2. City of Markham**

The City of Markham has new textile donation bins. Conveniently located at selected city facilities and apartment buildings, these bins provide 24/7 access for recycling of all unwanted textiles. Fitted with smart technology such as volume sensors, Markham's textile donation bins send a signal when bins need servicing and make it possible to track diversion data. All donations go to Markham's registered charitable partners to create jobs and support communities in need. Markham is expecting to have 4% increase in its diversion rate with the help of a textile program (Marsales, 2016).

### **3. The Town of Aurora**

Aurora has diverted 46,000 lbs. of material from landfill in June 2016 from 3000 homes. Residents are to place clean and dry items in a clear bag and label each bag with (T) for home pick-up. The bag is to be placed curbside by 8.00 a.m. on the first Monday of each month. For large quantities, a home pickup can be scheduled through Diabetes Canada. The town of Aurora has textile bins

throughout the town, which are placed at public facilities for the collection of clean and dry textiles. The bins are available 24 hours per day and are located at 5 different locations (Persico, 2017) (Textile Waste Diversion, 2016).

#### **4. County of Wellington**

Drop off facility is available at each of Wellington's waste facilities. They have a partnership with the Canadian Diabetes Association Clothesline Program. There is no charge to drop off the old textile. The textiles should be placed in a plastic bag for an easier drop off in the bin. Cloths in good condition will be reused, and damage will be recycled. In 2018, 20.90 tons of textiles were diverted. The diversion rate has increased by 11% from the previous year.

#### **5. City of Oshawa**

The city is partnered with Diabetes Canada and York University for the collection and recycling of textiles. They also provide street bins/bring bank facilities at civic recreation complex, Donovan Recreation Complex, Legends Centre and South Oshawa Community centers for the residents of Oshawa to drop their wasted textiles into those bins. For the convenience of the public, the City has also launched a free online self-scheduling textile collection program, which is like home pickup service (City of Oshawa , 2018).

#### **6. City of Stratford**

Over 7,000 lbs of textile materials have been diverted from landfill since March through a door to door collection in Stratford. During Earth Week, the City of Stratford partnered with Diabetes Canada to offer residents door to door textile pick up. This helps to divert waste from the landfill by donating old textiles. The public can put textiles in a plastic bag and mark it with a "D." Stratford residents can also schedule a free pickup before and after Earth Week, which is done by the Diabetes Canada (Juha, 2018).

#### **7. Niagara Region**

Collection bins are located at all the five landfills in Niagara. Textiles are also acceptable at the reuse depots of Niagara. The public can schedule a pickup by filling out a form requesting a pickup, by making a phone call or by dropping off at the landfill. The municipality provides residents with specific dates for curbside pickup. For curbside collection, the used clothing should be placed in tied plastic bags with a label of "T" on it. 54000lb diverted from landfill in 2019.

#### **8. The County of Simcoe**

In May 2018- Simcoe County started once a year curbside collection program for textiles. Collection bins are also located at each of 8 Waste Management Facility for textile collection. They collect up to 20 kg in weight and materials must be in clear plastic bags, sealed, dry, clean and placed out for collection at 7:00 a.m. The municipality has designed a special bag (made after

their battery collection bags) that residents use to participate in the June event (County of Simcoe , 2018).

#### **9. The Town of Newmarket**

The municipality of New Market has partnered with Diabetes Canada for the textile program. They use the curbside collection as a collection method. Almost 71,500lbs. Textiles diverted in 2019. It helps to control contractual costs and reduction in collection costs. On the other hand, it requires more labour, and in a curbside collection or for all-in-one collection, the numbers for all types of waste can often be inflated by incorporating other technology like waste-to-energy (where garbage is incinerated instead of landfilled) (Market, 2019).

#### **10. City of Kitchener**

The Region of Waterloo provided "land/space" for a trailer to be installed onsite - Residents have free access from Monday to Saturday, 7 am to 6 pm to drop off textiles. (limited information available).

#### **5.3 Benefit for City of Kawartha Lakes**

CKL generates approximately 40,000 tonnes of waste annually, out of which 5% is predicted to be textiles that end up in a landfill. If CKL starts a Textile program, it has the potential to divert up to 2,000 tonnes of textiles from landfill, and at the rate of \$150/tonne, this could save approximately \$300,000.00 of landfill space.

## 5.4 Table of Pros and Cons of Textile Collection Systems

Collection Systems	Pros	Cons
<b>Collection Bins</b>	<ul style="list-style-type: none"> <li>• Low operating cost</li> <li>• Accessible at all hours for public and municipality</li> <li>• Support co-partners with banners.</li> <li>• The printed list on the bin provides the public with what is accepted.</li> <li>• Supports less carbon emissions.</li> </ul>	<ul style="list-style-type: none"> <li>• A good network of banks in a well-managed route is required.</li> <li>• Popular bins will fill up quickly and require frequent emptying. Basic bins will not signal when they are full</li> <li>• Sometimes over dumped and textile flow on roads.</li> <li>• Not convenient for people without cars</li> <li>• Banks could be stolen and damaged</li> <li>• People could get locked inside</li> </ul>
<b>Curbside Collection</b>	<ul style="list-style-type: none"> <li>• Expands the range of materials collected at curbside, capture rates increase.</li> <li>• Will result in the maximum collection and increase diversion and will provide income.</li> <li>• Most convenient and accessible for residents</li> <li>• In some cases, it can be added to the existing collection system.</li> </ul>	<ul style="list-style-type: none"> <li>• The need to consider how it fits the existing curbside recycling provisions.</li> <li>• Odour can be an issue when using the same trucks truck for textile collection</li> <li>• Textiles can be stolen if people keep them out the night before collection day.</li> <li>• It can impact other textile donation centres.</li> </ul>
<b>Drop Off</b>	<ul style="list-style-type: none"> <li>• Benefit for small municipality those don't have a curbside collection.</li> <li>• Convenient for the public to drop waste, recyclables, textiles at one place</li> <li>• Eliminates collection cost</li> </ul>	<ul style="list-style-type: none"> <li>• Contamination depends upon the way textiles are brought to the site.</li> </ul>
<b>Call for Pickup</b>	<ul style="list-style-type: none"> <li>• Accessible for all residents</li> <li>• Less contamination, especially calling for pickup service, will affect the way people usually perform.</li> </ul>	<ul style="list-style-type: none"> <li>• Will not benefit if on collection day only a few booked the pickup</li> <li>• The public can forget the day of collection and will not keep it curbside</li> </ul>



APPENDIX B

Acceptable Items:	Markham	Aurora	Oshawa	Niagara	Stratford	Kitchener	Simcoe	Newmarket	Wellington	King	Durham	Peterborough
Active wear			X					X			X	
Aprons	X		X					X				
Athletic shoes			X								X	
Backpacks			X				X				X	
Bags				X							X	
Bathing Suits			X					X			X	
Bathrobes			X					X			X	
Bedding		X	X	X	X			X	X	X	X	X
Belts		X	X	X				X	X	X	X	
Bibs	X		X	X				X	X	X	X	
Blankets	X	X	X	X				X	X	X	X	X
Boots			X	X				X	X	X	X	
Cleats			X	X				X	X	X	X	
Clothing		X	X	X	X	X		X	X	X	X	X
Coats	X		X					X	X	X	X	
Comforters	X		X					X	X	X	X	
Curtains, Drapes	X	X	X	X	X			X	X	X	X	X
Cushions	X		X					X	X	X	X	
Dress shoes			X					X	X	X	X	X
Dresses			X					X	X	X	X	X
Fabric scraps	X		X			X		X	X	X	X	
Footwear		X		X	X			X	X	X	X	X
Gloves			X					X	X	X	X	
Hats, Toques			X	X	X			X	X	X	X	
High heels			X					X	X	X	X	
Jackets		X					X				X	X
Jeans			X	X				X	X	X	X	X
Jewellery			X					X	X	X	X	X
Liners		X									X	X
Loafers			X									X
Mats	X		X	X							X	
Mittens			X	X				X	X	X	X	
Old rags	X		X	X				X	X	X	X	
Oven mitts			X					X	X	X	X	
Outerwear			X		X			X	X	X	X	X
Pants			X	X			X	X	X	X	X	X
Parkas			X					X	X	X	X	X
Pet clothing and beds			X					X			X	
Pillows	X		X	X				X	X	X	X	X
Purses			X	X			X					X
Reading Glasses			X									X
Running shoes				X				X				
Sandals				X							X	
Scarves, Ties			X					X			X	
Sheets		X						X			X	X
Shirts			X				X	X	X	X	X	X
Shoes							X	X	X	X	X	X
SKirts			X					X	X	X	X	X
Sleeping bags	X	X	X					X	X	X	X	
Slip-ons			X					X	X	X	X	
Slippers			X					X			X	
Small Appliances					X							
Sneakers			X	X							X	
Socks (single or pairs)			X				X	X			X	X
Sports Equipment		X										
Stuffed toys	X	X	X					X	X	X	X	
Sweaters			X					X			X	
Textiles				X		X					X	
Ties		X						X	X	X	X	
Towels	X	X	X	X	X			X	X	X	X	X
Toys		X			X						X	X
T-Shirts			X					X			X	X
Undergarments			X		X			X			X	X
Uniforms								X			X	X
Wash cloths	X	X	X	X				X			X	X

## APPENDIX C

List of Recycling/Processing Companies									
S No.	Name	Address	Collection Method	Processing Method	Partnership with Exporters	End Markets	Phone number	Email	Reference
1	Diabetes Canada	Toronto	Dontion Bins, Household pickup services	25% is sold at retail in Canada, 30% is sold through retail channels in international markets, 25% is upcycled/downcycled into other textile products, eg. bags, 15% is turned into new products, eg. insulation, and 5% is sent to landfills.	Yes	Canadian Retail and international market through retail chains	Simon Langer: 9057516889	<a href="mailto:simon.langer@diabetesclothesline.ca">simon.langer@diabetesclothesline.ca</a>	<a href="file:///C:/Users/HP/Downloads/Int Declutter Goods Program InfoGraphic_new%20July2018%20(1).pdf">file:///C:/Users/HP/Downloads/Int Declutter Goods Program InfoGraphic_new%20July2018%20(1).pdf</a>
2	Value Village	All around Canada	Value Village thrift stores in partnership with local non-profits	Reusable clothing are resold at a valued price, unsold items are recycled into rags, fiber, car insulation etc. or sold to resellers in developing countries	Yes	International markets		N/A	<a href="https://www.valuevillage.com/about-us">https://www.valuevillage.com/about-us</a>
3	Ragday Limited	2967 Dundas St W, Toronto, ON M6J1Z2	Collection from thrift stores and charities	Buying and Selling of credential and mixed rag clothing	No	International markets	2897272035		<a href="https://www.ragday.com/">https://www.ragday.com/</a>
4	Eco Canada textile recycling	1420 Bayly St, Pickering, ON L1W 3R3	Household pickups for the municipalities	N/A	N/A	N/A	9058314040	N/A	
5	Canadian Textile Recycling Ltd	5385 Monroe Crt, Burlington, ON L7L 5N7	Partnerships with Clothing for Charly Ltd. for curbside collection	Sorting and grading of Credential Clothing and Mixed rags	No	Serving over 25 countries with clothing and shoes	9056321464	<a href="mailto:cdntextilerecycling@copeco.net">cdntextilerecycling@copeco.net</a>	
6	Pringle Textile	2390 Drew Rd, Mississauga, ON L5S 1B8	N/A	Sorting of mixed rags into 19 different items namely shirts, pants, skirts etc. and grading them into different categories based on the quality of the clothing.	No	N/A	905-405-8139	<a href="mailto:contact@pringletextile.com">contact@pringletextile.com</a>	<a href="http://pringletextile.com/index.html">http://pringletextile.com/index.html</a>
7	KB textile international limited	186 Bartley Dr unit 4, North York, ON M4A 1E1	Clothing donation bins in partnership with Jewish Russian Community used clothing donation program (JRCC) at sites like retail shopping centers	Collection and seeling of used clothing	No	Local retail chains like Valu Village, Goodwill thrift stores, small vintage boutiques and wholesalers all over the world.	6478857942/4163852300	<a href="mailto:mbulman@kbtexile.com">mbulman@kbtexile.com</a>	<a href="http://www.kbtexiles.com/index.html">http://www.kbtexiles.com/index.html</a>
8	Textile Waste Diversion Inc.	Etobicoke	Clothing Donation bins in partnership with Canadian Community Support Foundation (CCSF) at municipal spaces	Collection and Processing.	N/A	N/A	6477958674/8889808756	N/A	
9	Five Star Rags	7500 Kimbel St, Mississauga, ON L5S1A2	Collection from non-profit charity thrift stores and factories	Sorting and grading for clothing into used clothing, vintage and wipers, packaging and dispatch of ballers	No	Africa, South America, Eastern Europe, and Asia	9054058365	<a href="mailto:info@fivestarrags.com">info@fivestarrags.com</a>	<a href="http://www.fivestarrags.com/index.php">http://www.fivestarrags.com/index.php</a>
10	Pacific Clothing Recyclers Inc.	9710 187 St, Surrey, BC V4N 3N6	Collection from non-profit charities and suppliers	Sorting, grading, packaging and dispatching of textiles	No	International markets	6043657860/ office number: 6048887861	<a href="mailto:info@pacificclothing.ca">info@pacificclothing.ca</a>	
11	Trans-Continental Textile Recycling Ltd	13120 78a Ave, Surrey, BC V3W 1P4	Clothing bank programs in partnership with organisations and charities and through tamperproof collection bins	Collection and Processing. Usable clothing is sorted out and shipped to international market. unwearable cotton and cotton blend clothing is sorted and cut into wiping rags for industries. materials like knitted clothing such as wool, acrylics and womens materials are recycled through a process called "pulling" and are remade into threads to and reused to make new clothing.	No	Usable clothing: Shipped to Africa, wiping rags: Industries, textile recycling: used for stuffing, insulation and soundproofing in furnitures, car, houses and even in clothing.	6045922845	<a href="mailto:info@transstextile.com">info@transstextile.com</a>	<a href="http://www.transstextile.com/index.html">http://www.transstextile.com/index.html</a>
12	Green City Recycler	2817 Berry Rd, Houston, TX 77093, United States	Local Thrift Stores and municipalities	Collection and Processing. Sort the textiles into credential and institutional mixed rags	Yes	South American Market: Mexico, Chile, Colombia and more South African Market: Malawi, Kenya, and others	7136948483	N/A	

APPENDIX D

COMPANIE NAME	TYPES OF TEXTILES													Notes	Co S
	Clothing & Shoes	Accessories	Bed & bath towles	Sheets	Blankets	Pillows	Curtains	Table cloths	Mattress	Carpets	Furniture	Stuffed toys			
Salvation Army	X	X		X	X	X	X	X			X(No sofa-beds)	X			
Humane Society	X		X	X	X	X									
Vicky's Value	X	X	X	X	X	X	X	X		X			Don't accept yard sale items		
Textile Diversion	X	X	X	X	X	X	X	X	X	X					
Diabetes Canada	X	X	X	X	X		X	X				X			
Value Village	X	X	X	X	X	X	X	X			X(Small)	X			
Buy and Sell Shop					X	X			X	X	X		Unused condition only	X iter	
Goodwill Industries	X	X		X	X		X				X(no box-springs)	X	Working, free of stains, contains all parts)		
Talize	X	X	X	X	X	X	X	X				X	Good and clean only		
Recycled kids	X(Kids)	X(Kids)											Good and clean only		
Recycled Gear	X(Sports & outdoor activities)														
Stretch Thrift Outlet	X	X	X	X	X	X	X	X			X				
Care and Share Thrift Store	X	X	X	X	X	X	X	X				X			
Resource Thrift Store	X										X	X			
Global Village	X	X	X	X	X			X							
Mission Thrift	X	X	X	X	X	X		X			X	X			

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