

Transitioning to a Circular Economy

How Cities & Universities are Amplifying Sharing, Reuse and Repair

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Introduction

What is the Share Reuse Repair Initiative?

The Share Reuse Repair Initiative (SRRI), a project of Tides Canada¹, brings community, business and government together to identify and advance cultural, policy and market shifts in order to foster a vibrant culture and economy of sharing, reuse and repair that makes the most of things. By doing so, SRRI prevents waste, minimizes carbon and resource use, creates sustainable local economies with decent jobs and enables people to live well within ecological limits and household budgets.

The SRRI undertakes five key activities in order to achieve their mission: (1) convene cross-sectoral actors to identify common challenges and mobilize the sector to address them; (2) identify and test promising prototypes with public, private and community actors; (3) conduct applied research and mobilize the results to catalyze change; (4) conduct policy analysis and work with partners to develop supportive policy and legislation; and (5) public outreach and education to shift norms and mainstream share, reuse and repair (SRR) behaviour.

- **Share** activities involve access to goods rather than individual ownership. These activities allow individuals to exchange and access goods used by others, outside of traditional models of ownership. Sharing activities have become more prominent as advances in information technology have allowed our societies to become increasingly interconnected. Examples of sharing activities include: car and bike sharing; online rental platforms; clothing subscription businesses; lending libraries (of things); clothing swaps and furniture leasing.
- **Reuse** favours the reuse of goods and materials that already exist. This includes the resale of goods in their original form without significant changes being made as well as goods made from ‘waste’ materials versus virgin resources. Reuse business models can extend the life cycle of consumer products, thereby allowing businesses to maximize the economic return on their inputs. Reuse also minimizes the carbon and materials needed to produce, remanufacture or recycle goods and materials, and minimizes waste. Examples of reuse include: second hand stores; university move-out/in programs to resell used student goods; municipal zero waste centres that divert goods for reuse; businesses that made products from waste such as furniture from used lumber or clothing from used items or scraps; refill stores with reusable containers; businesses with take-back programs to reuse materials for new products.

¹ Tides Canada’s shared platform provides governance, human resources, financial, and grant management for leading environmental and social projects across Canada, enabling projects to achieve greater impact. Tides Canada is a national Canadian charity dedicated to a healthy environment, social equity, and economic prosperity.

- **Repair** activities extend the life cycle of products and help to move the economy away from planned obsolescence². Repair may be needed in order to facilitate both reuse and share activities. Repair is undertaken by grassroot and non-profit entities, cities and businesses for a variety of goods including clothing, electronics, furniture, bikes, toys and a variety of household goods and appliances. Examples include: repair cafes where members of the public can bring items to be repaired and/or learn to repair them and online fixing platforms that provide repair information, access to parts and training. Cities are increasingly involved in hosting repair cafes on their own or in conjunction with external organizations. Repair in the private sector includes that undertaken by independent repair businesses, as well as some corporate entities that offer repair services and/or provide access to the tools and instructions necessary for self-repair. The design of more durable and repairable goods by companies is needed to shift the system in order to stem the volume of goods needing repair and is at a fairly early stage of development.

What is the Circular Economy and its Inner Loops?

SRR activities fit within the inner loop of the circular economy, wherein products and materials are kept in use for as long as possible in order to extract their maximum value and then are repurposed at the end of their service life, ideally creating entirely new products. The circular economy presents itself as the sustainable alternative to the traditional linear “take make waste” economic model that requires too much carbon and resources to make consumer goods that create a great deal of waste when they break, go out of style, or are disposed of too quickly. In an age of hyperconsumerism and planned obsolescence, the circular economy provides us an opportunity to develop a new economic model that supports sustainable ways of doing business and living within earth’s finite limits.

What Role can Cities and Universities Play in Sharing, Reuse and Repair?

Municipal governments are increasingly engaged in SRR activities because they provide an opportunity to achieve a variety of municipal goals, including climate action, zero waste or waste reduction, sustainability, affordability and economic development. Cities currently consume over 75 percent of natural resources, produce over 50 percent of global waste and emit between 60-80 percent of greenhouse gases (Ellen MacArthur Foundation, 2019). Furthermore, with over two thirds of the world’s population projected to reside in cities by 2050, the negative impacts of a linear economy will be highly visible and critical to address at the municipal level. It is therefore easy to understand why more municipalities are starting to develop circular economy plans and strategies.

² A policy of producing consumer goods that rapidly become obsolete and so require replacing, achieved by frequent changes in design, termination of the supply of spare parts, and the use of nondurable materials.

Similarly, universities are increasingly participating in the circular economy, serving as sites of rapid innovation and helping to shift consumer behaviour. Today's universities can closely resemble miniature cities, as many students choose not only to take classes but also to live, work and spend their money on campus. The coffee that a student holds when walking into their morning lecture is often purchased at a campus coffeehouse. The beer nursed by that same student on a Friday afternoon in celebration of the end of another week may have been purchased at a campus pub. Furthermore, the coffee shops, restaurants, pubs, grocery stores, bookstores, pharmacies etc. increasingly found on university campuses tend to employ the very students who most utilize their services. As a result, many of the same motivations that have led municipalities to become involved in the circular economy are applicable to universities.

What is the Purpose of this Report?

The purpose of this report is to identify the role that cities and universities can play in the inner loops of the emerging circular economy and to provide an overview of best practices pursued within Canada and abroad. In January 2020, an online survey was sent out to municipalities and universities located in British Columbia on behalf of the Share Reuse Repair Initiative in order to gain an understanding of municipal and university involvement in share, repair and reuse (SRR) and other circular economy projects. In the months following, a portion of the municipalities and universities who completed the online survey also participated in follow-up interviews. As a result, the first section of this report will engage in a summary and subsequent analysis of these results in the hopes that the lessons learned are transferable to other institutions outside of British Columbia. While many municipalities and universities are increasingly becoming involved with the circular economy, there remains little knowledge of what is being accomplished within other jurisdictions.

As a complement to the information provided by the survey and interviews, the remaining sections of this report comprise a series of case studies that examine some of the more innovative ways that municipalities and universities are encouraging SRR behaviour. Section II is dedicated to municipal case studies and Section III is dedicated to university case studies. Each individual case study includes a brief overview of relevant SRR initiatives pursued by the municipality/university in order to provide insights into what is possible in those contexts. While it has become more common for municipalities and universities to adopt the mantra of reduce, reuse, recycle in an attempt to divert the amount of waste collected by landfills, the transition to the circular economy will require a far more radical transformation in consumer behaviour and circular innovation. For this reason, all case studies included in this report are those that aim to provide individuals with an alternative means of consumption, demonstrate the potential of circular business models or serve to support innovative start-ups at the local level.

Section I:

Survey and Interview Data

Survey Highlights

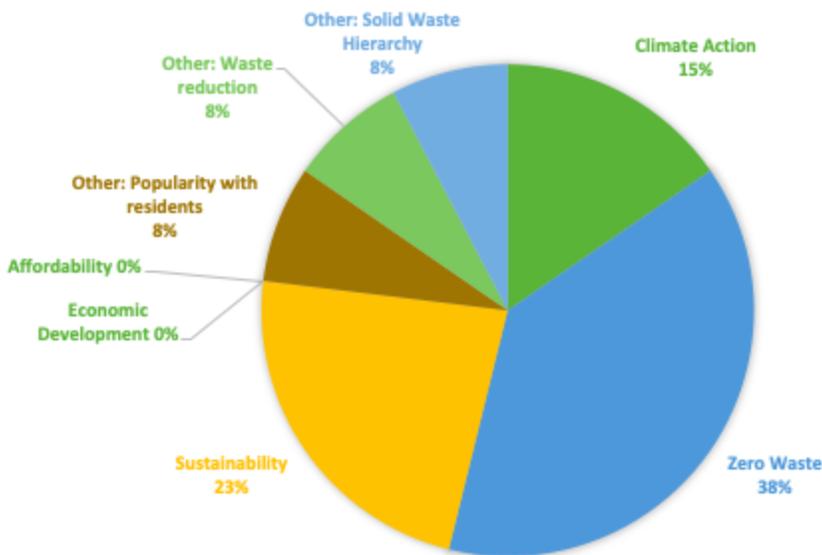
The following results were gathered through a proprietary survey aimed at understanding municipal and university involvement in share, repair and reuse (SRR) and other circular economy projects. There were fourteen survey respondents, including 13 municipalities and three universities from British Columbia. Seven municipalities and one university completed a follow-up interview aimed at gathering more detailed information about current SRR programming. Questions related to current initiatives, major barriers, municipal involvement and public awareness levels were asked in order to achieve a broad understanding of the current share, repair and reuse climate in each given region. Respondents for municipalities worked in several governmental departments including Solid Waste Management, Environmental Services and Engineering Services and represented the geographical areas of Lower Mainland, Vancouver Island and the Interior region. The following “survey highlights” refer to data collected from municipal survey responses. Findings regarding SRR programming at the university level are briefly discussed at the end of this section under the “universities” heading.

Current Municipal SRR Strategies

The most commonly indicated SRR strategy currently or previously organized and led by cities was goods swapping hosted in community centres. The second most frequently used programs are fix-it cafes and information/ educational programming. One third of respondents indicated their municipality also provided zero-waste centres that can accept used-goods drop-offs, encourage and incentivise reusing, sharing and repairing, encourage the development of smaller homes (with fewer materials), encourage and mandate building deconstruction and/or have municipal policies/plans mention SRR and/or circular economy. This information indicates that municipalities often opt to incentivize and encourage community-led initiatives in conjunction with leading events or creating municipal programming.



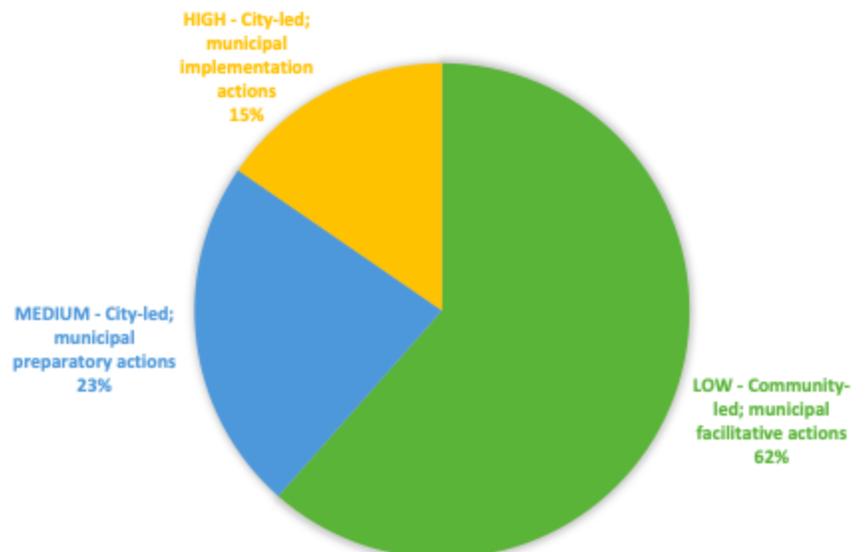
Dominant Rationale



Nearly 39% of respondents said their city's rationale for participating in SRR programming was to move towards city-held zero waste goals. The second and third most common rationales, respectively, were sustainability and climate action.

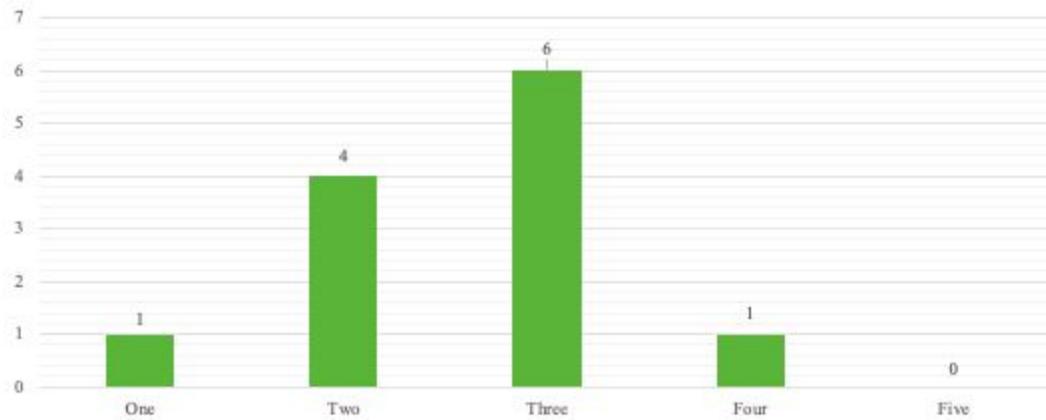
Municipal Involvement

Roughly 62% of respondents said their municipality had low involvement in SRR programming. This category means SRR events are typically community-led and municipalities only hold a facilitating role. 23% said they had medium participation which indicates most SRR initiatives are city-led with the municipality acting in a preparatory role. 15% said they had high levels of involvement indicating most SRR programs are city-led and the municipality actively participates in the implementation process.



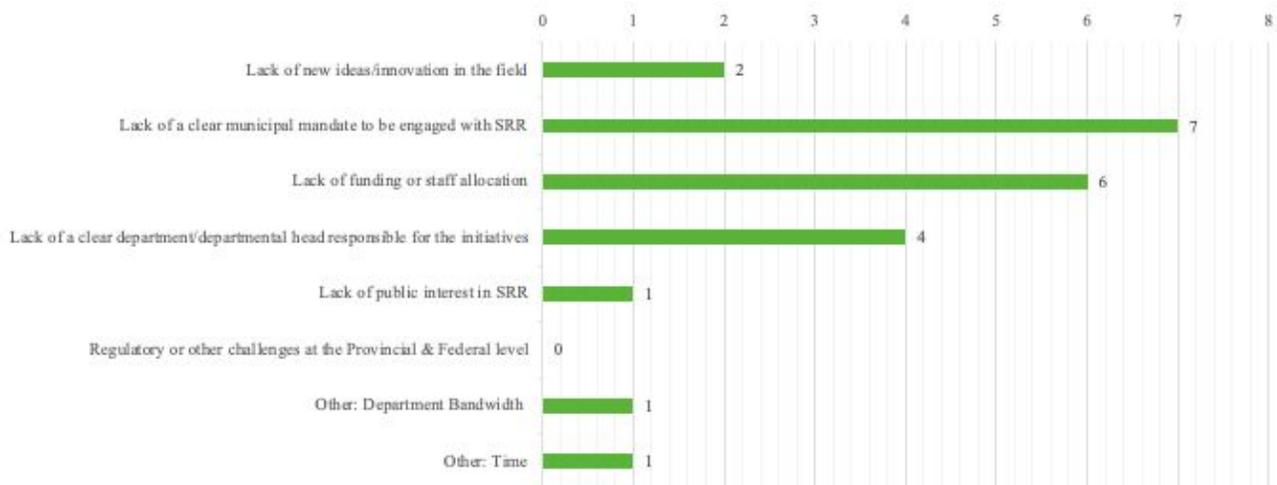
Community Awareness

The average level of public awareness as reported by survey respondents was three (3 on a scale of 1 to 5), with 50% of respondents picking this answer. No municipalities said their community had a high level of awareness. This information indicates that public information and awareness-raising campaigns may be useful tools for municipalities to gain further community support for the development of SRR policy.



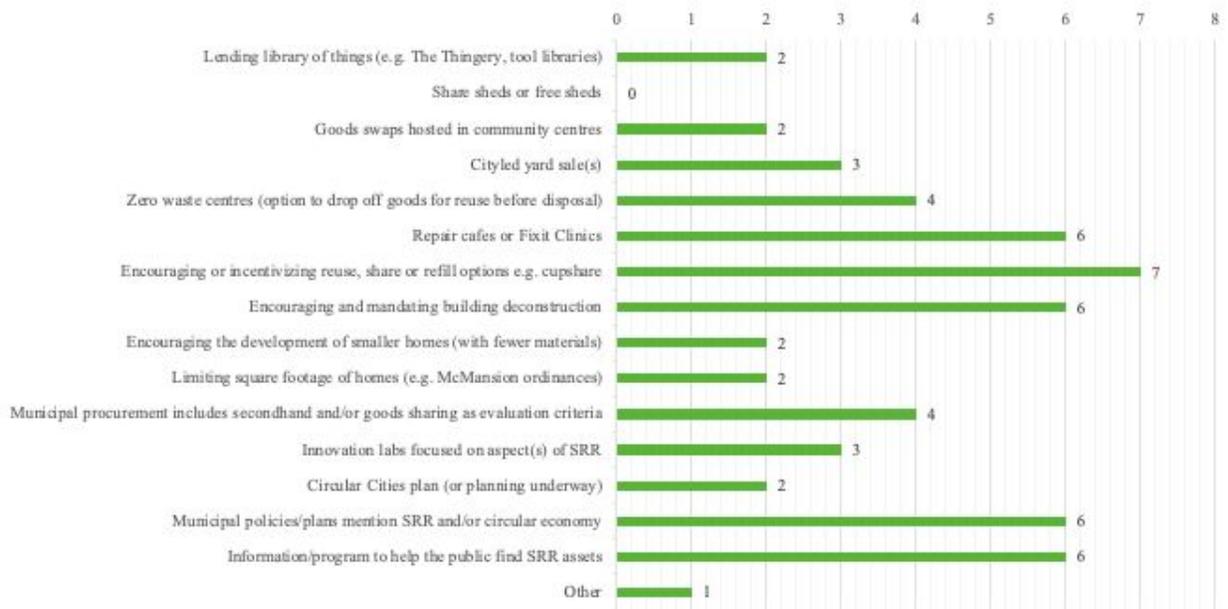
Barriers

The top three barriers to implementing SRR strategies cited were lack of a municipal mandate that requires cities to pursue SRR strategies, lack of funding or staff allocation and lack of clear departmental responsibility and leadership for SRR initiatives.



Future SRR Strategies

Encouraging reuse and refill options rather than single-use plastic items was the most popular endeavour that municipalities would be interested in pursuing in the future. Fix-it or repair cafes, encouraging and mandating building deconstruction, having municipal policies/plans mention SRR and/or circular economy and an information program to educate the public were tied as the second most popular option. Zero waste centres (option to drop off goods for reuse before disposal) and municipal procurement including secondhand and/or goods sharing as evaluation criteria were noted as the third most popular strategies.



Future Aids for Advancing SRR Strategies

12 out of 13 respondents said a guidebook/inventory of SRR best practices would be the most useful tool they could be provided with in order to incorporate more SRR programming into their city. 3 out of 3 universities echoed that sentiment. The second most popular option was to use webinars as a tool for sharing and learning about other SRR best practices. The creation of a municipal SRR innovation lab to prototype promising solutions as well as forming an SRR municipal working group to share and discuss best practices were also mentioned by a smaller group as potential tools for municipalities to advance their SRR strategies.

Universities

Many of the sentiments mentioned above for municipalities were echoed in the university survey responses given by representatives from Thompson Rivers University, the University of Victoria and Simon Fraser University. The most common SRR programs between all three universities were bike-share and repair clinics and fix-it cafes that target the reuse and repair of other household goods. Survey results for other questions such as the dominant rationale for supporting SRR projects, the level of involvement from universities, and the awareness of their students varied between schools. However, all three universities stated that their largest barrier to the implementation of SRR programming is a lack of funding and staff allocation. These results indicate that even as motivation, interest and awareness levels vary, barriers to the creation of SRR programming remain consistent. When asked what resources could best support universities moving forward, 100% of respondents said a guidebook of SRR best practices would be the most helpful.

General Takeaways

Our research suggests that municipalities and universities in the province of British Columbia want to become more active in the circular economy. However, some key barriers exist that prevent the development of SRR strategies by municipalities and universities including a lack of clear mandate, staff and funding as well as average to low public awareness. Interview responses also allude to other important logistical barriers.

Liability

One major barrier to the implementation of certain SRR events is the issue of liability, particularly related to fix-it or repair cafes. As noted by several interview respondents, fix-it cafes are very appealing to municipalities because of their high community interest and the low level of municipal involvement needed. One major drawback, however, is the liability placed on municipalities when inviting volunteer community members to repair items for the public. When a city runs a repair cafe, the municipality typically becomes responsible for any damages or injuries that may occur during or after the event due to inadequate repair methods. Some interview respondents stated that their municipality refrains from fix-it events due to the high risk of legal responsibility. To address liability concerns, some municipalities have developed a waiver that participants sign before engaging in repair activities. This approach of limiting the liability risk for municipalities should be discussed with legal professionals to explore its broader application, yet, it may prove as a useful tool for municipalities looking to engage with repair events.

Sharing of Best Practices

Another theme that emerged frequently in survey and interview responses was the need for better sharing of best practices amongst municipalities. It is likely that a new SRR program that interests a municipality has already been considered or tried elsewhere. Sharing information about best practices could save municipalities valuable time and resources, and allow them to direct their efforts towards more successful approaches from the outset. Relevant best practices could include: business and organizational models for fix-it cafes; successful reuse centres linked to municipal waste management sites, citywide yard sales and effective public campaigns to motivate citizens to change their consumption behaviours. These best practices can be found in municipalities in British Columbia, across and in other countries. It is the hope that this report can inform future collaboration between municipal leaders in the circular economy with an emphasis on sharing, reuse and repair, and serve to illuminate key opportunities and barriers that can be resolved through information sharing.

Scalability

Scalability refers to the growth and expansion of an initiative. It is an important aspect of SRR programming should a city want to grow low-impact events into city-wide, permanent programming. If increasing the size and impact of a project is one of the city's ultimate goals, community leadership that can take over and expand the project is often needed due to a lack of municipal resources and funding. For example, one respondent from the City of Surrey referred to their city-led fix-it program where local professionals came together for a one-day event and offered their repair abilities to help community members fix broken household items that would normally be discarded. This event received overwhelming support and exceeded expectations, suggesting to the city that making the event permanent or more frequent would have the necessary public support. Municipal leaders involved in this event were eager to meet the public's desire for more fix-it cafe programming, however limited municipal capacity suggested expanding the project into a permanent fix-it cafe or even a monthly event would be difficult. This city's solution for a lack of funding was to turn to members of the public to take over the initiative in the hopes of facilitating its growth in the future. This issue was cited frequently by respondents and is an important barrier for municipalities to consider when moving from small to larger, more permanent initiatives, with greater potential environmental impacts.

Section II:

Municipal Case Studies

Section Overview

A growing number of municipalities across Canada and the globe have become leaders in SRR innovation. This section of the report highlights some unique examples of SRR initiatives undertaken at the municipal level, providing a roadmap for others who wish to increase their involvement within the circular economy and overcome common obstacles. Many of the initiatives highlighted in this section are less than a few years old, but have already demonstrated incredible potential. Within Canada, many of the most relevant case studies are concentrated within the province of British Columbia, where a number of municipalities have developed circular economy plans and strategies in recent years. This includes the City of Richmond with its pilot Repair Fair program and the City of Vancouver, which hosts reuse and recycling drop-off events. At the national level, the City of Edmonton in Alberta is at the forefront of SRR innovation with its comprehensive approach to both reuse and repair. Edmonton's star initiative is its Reuse Centre, which has been successfully operating since 2007. Other notable national examples include innovative online forums, such as City of Montreal's resource directory and City of Surrey's reuse website. Outside of Canada, New York City is a notable frontrunner in SRR with its DonateNYC and ReFashionNYC programs.

British Columbia Case Studies

Coquitlam, British Columbia

A unique program hosted by the City of Coquitlam are their **City-wide Garage Sales**. The City hosts these events at no cost to participants (City of Coquitlam, 2019). Registered participants receive a registration package containing tips and a list of all participating home addresses. The City also provides an online map in an effort to make the program more accessible to interested residents. The City is responsible for promoting the event and encouraging residents to participate. On average, more than 200 homes participate in the event (City of Coquitlam, 2019). The garage sales are so popular that they are now held bi-annually instead of just once a year, as was initially the case. City-wide Garage Sales encourage a sense of community collaboration and have encouraged many residents to favour secondhand goods.

Kamloops, British Columbia

For the past four years the City of Kamloops has hosted a **Green Living Expo**, which features guest speakers, workshops, and exhibitor booths, all aimed at encouraging share, reuse and repair (City of Kamloops, 2019). A number of local organizations participate in order to promote SRR initiatives. The event is well-attended and usually draws a crowd of 2,000 with increasing interest each year (Milobar, 2019). Past exhibitors at the event include various regional and provincial sustainable, energy and charitable organizations. The event usually kicks off with a day-long speaker series, covering topics such as ecosystems, circular food systems, sustainable building and engineering, solar electricity, and learning about how to enhance the local economy. The event also includes an electric landscape tool demonstration, where

residents receive hands-on experience with electric yard equipment. Another feature of the expo is the Second-Hand Glam Fashion Show, where lightly used clothing is the main showcase. Various booths at the event provide information on water conservation, active transportation, waste reduction and cultural responsibility (City of Kamloops, 2020a). The Green Living Expo is a great way to share sustainable initiatives with local residents in a fun, hands-on environment. It also gives local vendors a chance to showcase their business's efforts towards achieving sustainability.

Another unique program by the City of Kamloops is their “**Bring Your Own**” Initiative, where residents can take a pledge to commit to using reusable bottles, mug, containers, straws, and bags (City of Kamloops, 2020b) instead of single-use items. The “Bring Your Own” map showcases the number of people who have taken the pledge within each district in the city. This is a unique and fun way to engage citizens and increase accountability within the community.

Richmond, British Columbia

To advance sustainability, promote circular economy principles and provide more options for reuse and repair, the City of Richmond launched a pilot **Repair Fair** program in 2020 with seven fairs. This initiative was initiated by staff in the Environmental Programs before receiving the support of City Council. At the Repair Fair, residents' household items are fixed for free by volunteers from Repair Matters, a Vancouver-based initiative that brings together people with different skill sets and experiences to offer their repair expertise (City of Richmond, 2020). Examples of accepted products include electrical items such as toasters, blenders, sewing machines, space heaters and lamps, as well as items like jewelry, toys and bikes.

The **Repair Fair** is different from similar programs offered in other municipalities because it includes other activities in addition to repair. For instance, program staff decided to create fun activities for individuals and families to occupy themselves while waiting in line for their items to be fixed. These include: a Kids Activity Centre where kids can have fun and learn about recycling; a Fix-it Demo that features experts providing training and tips about how to fix a seasonal item at home; and a Taking the Recycling Challenge Game. Metro Vancouver also hosts a booth to share additional materials and information about SRR with the event participants.

The City of Richmond also operates a **Demolition, Moving or Salvage Program** that started in 2017 and is co-led by the Building Approvals Department and the Environmental Program. The program offers a unique opportunity to homeowners who are able to list their properties prior to demolition on the City of Richmond website. As a direct result of the online listing, house moving and materials salvaging companies are able to contact homeowners in order to purchase and move the house or salvage reusable materials within the house. With this program, the City hopes to minimize the demolition of livable houses as well as expand on the City's Demolition Waste Recycling initiative.

Surrey, British Columbia

The City of Surrey has several initiatives to increase circular living in BC. The City sponsors the website **Surrey Reuses** (Recycling Council of British Columbia, 2020), which posts free listings of household items available for reuse. There are over 60 categories to choose from including furniture, appliances and garden and landscaping. The website is a great way to encourage circular and sustainable living as it allows residents to easily find items and their prices.

The City of Surrey also provides **environmental education** from grades two to nine and for english-as-a-second language learners (City of Surrey, 2020). Free interactive, curriculum workshops are provided on the topics of waste, energy and water conservation. Topics include ‘No Litter Zone’ (Grade 2), ‘Energy Shift’ (Grade 4), ‘Water Wise’ (Grade 4), ‘Rethink Waste’ (Grade 5&9), ‘Wise Shift: Energy and Water Conservation’ (Grade 10) and ‘Rethink Waste for Adult ESL Classrooms’. Most of the workshops incorporate SRR education into the curriculum. The program is based on the belief that it is integral to begin providing environmental education at a young age in order to increase participation in the circular economy.

Vancouver, British Columbia

Vancouver hosts several **Reuse and Recycling Drop-Off Events** (City of Vancouver, 2020a). The events provide residents with the opportunity to drop off clothes and appliances that are no longer in use. Clothing donations must be washed and dried for sanitary purposes. Items can include clothing that is “torn, ripped, full of holes, stained, worn-out or faded, missing buttons, with broken zippers, or singles of paired items.” The items will be reused, repurposed, or recycled depending on the type of item and its condition. Some of the clothing is reused in order to make rags and other textile-based products. Moreover, the City works in partnership with several nonprofits to offer repair events for residents who wish to fix their items instead of reusing. These nonprofits include BC Technology for Learning Society, Fabcycle, Frameworq, Free Geek, Repair Matters, Thingery, and the Vancouver Tools Library (City of Vancouver, 2020b). Further, the City has gone beyond reuse and recycling by including repair. By incorporating repair, more items can be dropped off instead of being discarded. The recycling drop off event and the repair cafes offer Vancouver residents a variety of ways to engage in the circular economy.

Vancouver is also currently working with Coastal Health on a **reusable container initiative** (City of Vancouver, 2020c). The program will allow residents to bring their own containers to restaurants for take-out orders. By allowing residents to increase their reusing, this will cut down on waste created by single-use plastics.

National Case Studies

Montreal, Quebec

Montreal has an extensive online **Reuse Centre Address Directory**, which provides contact information for a variety of reuse services within the City (Montreal, 2012). The directory lists the item categories that residents can bring in. This list includes household appliances, antiques, sporting goods, recording and audio-video entertainment goods, instruments, toys and games, books, magazines and documents, IT and telecommunications equipment, building materials and hardware, hand and power tools, small electrical appliances and clothes and accessories. The directory also lists the services offered by each organization ranging from repair, collection, donation and leasing. This easy-to-access directory can easily be implemented in other municipalities in order to provide residents with quick access to SRR resources.

The City of Montreal also boasts seven **Eco-Centres**, which collect a number of items for reuse including: appliances, recyclable materials (paper, cardboard, glass, plastic, metal), end of life tires, construction, renovation and demolition residues, household, hazardous waste, green residue (depending on the season), clothes still in good condition, electronic products, etc (Ville en Vert, 2020). Any items not collected as household waste can be taken to the eco-centres. Eco-centres sort items and provide an opportunity for items to be repurposed as new consumer goods. All residual materials are recycled.

Moreover, each borough in Montreal funds **Éco-Quartiers**, which are non-profit community groups working to carry out activities aimed at creating a more sustainable environment (MetroMag, 2010). Éco-Quartiers provide a variety of services to local residents including: 3Rs-V (Reduction, Reuse, Recycling and Valorization) workshops in schools and day camps, in-person meetings at multi-dwelling buildings to teach residents how to sort recyclables, beautification contests, spring-alley clean-ups, promotion of pesticide alternatives, distribution of annuals and perennials and greening of schoolyards and a responsible consumption educational campaign.

Edmonton, Alberta

Within Canada, the City of Edmonton is currently the leading municipal example due to its comprehensive approach to both reuse and repair. The City has demonstrated its commitment to promoting sustainable consumption practices through a number of initiatives.

The City's **Reuse Centre** can be identified as a star initiative to increase residents' access to share and reuse as well as to expand the City's capacity to educate and engage communities. In 2007, the City of Edmonton opened its Reuse Centre, a drop-off facility for household materials, as a result of the growing popularity of the volunteer-based community Reuse Fairs (Alberta Emerald Foundation, 2016). The Reuse Centre accepts many items not accepted elsewhere, which are made available for purchase by organizations and individuals for a nominal fee. It accepts items that fall under the following categories: arts & crafts supplies, needlecraft supplies, office & school supplies, paper and plastic products, home décor and media

supplies. The Reuse Centre is operated mostly by volunteers and there were more than 300 volunteers in 2016 (Alberta Emerald Foundation, 2016). The Centre has grown in popularity and in 2014, it moved to a larger location with better access and parking to accommodate the increase in customers and donations (Alberta Emerald Foundation, 2016).

Everything about the Reuse Centre is designed to divert waste from the landfill. The Centre collects items five days a week and people can drop unwanted items off at either the Reuse Centre or one of the City of Edmonton's four Eco Stations. An accurate record is kept of materials brought into the store and how much goes back out to find a new home (Martin, 2017). Items are also carefully weighed when customers check out (Martin, 2017). Organizations and individuals can purchase items at the Reuse Centre for a small fee of \$5 per purchase or pay a \$50 annual membership, (non-profit organizations only and limit of 25 trips) which allows them to take an unlimited number of items (Regional Municipality of York, 2013, p. 9). According to staff, the Reuse Centre has achieved a diverse clientele, including students, daycare teachers, artists, non-profit organizations, and so on (Martin, 2017). Over the years, the Reuse Centre has grown steadily in terms of its impact and the number of people it serves in the City. In 2010, 140 tonnes were diverted from landfill (Regional Municipality of York, 2013, p. 9). In 2015, the Centre received nearly 30,000 customer visits and accepted 243 tonnes in donation (Alberta Emerald Foundation, 2016). In 2016 and 2017, almost 295 tonnes of material were dropped off and had been diverted from landfills (Martin, 2017).

The Centre also offers many educational programs and activities, allowing for the Centre to promote the benefits of reuse as well as enhance public awareness and accessibility to its reuse-focused information, programming, and services (Alberta Emerald Foundation, 2016). Children's birthday parties are hosted year-round for a cost and group programs are available to children and youth ages 6-17. The "DIY Kids and Youth" program is one such example, where kids can learn how to repurpose reusable items and create crafts with reusable materials. There is also the "Green City Challenge," where participants can test their knowledge of waste and its environmental impacts in a fun series of mini-challenges and learn how to be more eco-conscious at home and at school.

The City also operates four **Eco Stations** across the city where people can drop off used electronics and household hazardous waste (City of Edmonton, n.d.). Eco Stations provide several services that facilitate and encourage reuse. For example, through a partnership with the Reuse Centre, residents can drop-off donations for the Reuse Centre at Eco Stations free of charge. There are also clothing donation bins on site. Eco Stations have Reuse Areas that make various items dropped off at Eco Stations available to individuals for free pickup for a limited time. These items include furniture, appliances, and electronics. People can even obtain free mulch and free used paint at Eco Stations (City of Edmonton, n.d.).

The City also supports reuse initiatives in the community by providing support to **Reuse Fairs**. Reuse Fairs are a one-day community event where reusable household items are collected and passed on to charities, non-profits, artisans, and schools that need them (City of Edmonton, n.d.). In order to encourage groups to host reuse fairs, the City not only provides a Reuse Fair guide, but it also offers Reuse Fair grants for individuals and community groups in Edmonton that are interested in hosting these events. Specifically, six grants of up to \$500 are given out each year to help cover the expenses of holding a Reuse Fair (City of

Edmonton, n.d.). Through this initiative, the City hopes to promote community and environmental stewardship, which in turn generates pride in the area (City of Edmonton, n.d.).

Besides all the highlighted initiatives mentioned above, the City has a web page titled “More Reuse Ideas” that offers additional information regarding reuse opportunities residents can find in the city (City of Edmonton, n.d.). Citizens are encouraged to share, reuse, repair, and rent goods, and the page lists locations in the City where citizens can access these services.

Toronto, Ontario

The City of Toronto is one of the leading municipalities in Canada in terms of its effort to promote a circular economy. It actively participates in circular economy related groups and organizations at the national and international levels, and has been recognized on the global stage for its efforts. The City shares its Circular Economy initiatives with the public on its website. The City’s move towards a circular economy and zero waste future is supported by its Long Term Waste Management Strategy. In 2018, the Unit for Research, Innovation & Circular Economy (UFRICE) was established within the Solid Waste Management Services Division (SWMS) with an overarching goal to make Toronto the first municipality in Ontario with a circular economy. Since its establishment, the Unit has been involved in research and planning as well as incorporating circular economy principles into new programs, policies, procurement, and processes.

Currently, the City of Toronto is hosting workshops for local agencies, municipalities and small-to-medium businesses from Toronto’s key economic sectors to identify priorities for a City-wide **Circular Economy Roadmap Strategy**. Moreover, the City of Toronto co-hosted the first Great Lakes Circular Economy Forum in June 2019 to help create a shared vision for a circular economy in the Great Lakes Region. To facilitate its efforts and to obtain input from those outside of the public sector, the City also created a **Circular Economy Working Group (CEWG)** that is made up of representatives from local businesses and community groups from various sectors across Toronto. The group meets periodically throughout the year and members have the opportunity to represent their sector or organization, provide input to the development of programs and initiatives, and share their feedback.

In July 2019, the City put together a series of **circular economy case studies** to highlight small businesses and organizations in Toronto that support the circular economy by using products and materials to their full potential. The case study report showcases those businesses and organizations in order to demonstrate the potential of SRR for businesses, community groups, and citizens. The eight highlighted cases include the Bare Market, The Bunz App, Free Geek Toronto, Furniture Bank, Material Exchange, Repair Café Toronto, Secondhand Sunday, and Tiny Toy Co.. One of the programs that the City directly supports is the Secondhand Sunday, which is a bi-annual event where residents of participating neighbourhoods are encouraged to leave items that they no longer want on their front lawns to be taken by those who need or want them. In 2018, the City of Toronto helped Secondhand Sunday roll the event out to five additional neighbourhoods.

On the community level, the City is also collaborating with various agencies and non-profit organizations to implement five **Community Reduce & Reuse Programs** to help build a culture of SRR in

Toronto. The Community Reduce & Reuse Programs are part of the Long Term Waste Management Strategy implementation and support the Toronto Strong Neighbourhoods Strategy. The programs help to build sustainable communities and reduce the amount of waste going to landfill. The program sites are based primarily in Neighbourhood Improvement Areas and include multi-residential buildings and community hubs. The development and implementation of the programs began in 2017 and will be complete by the end of 2020.

Three of the five Community Reduce & Reuse programs are highlighted here. The **Share and Reuse Space program** promotes the reusing, sharing, repairing and repurposing of items to prolong their life, and it enables and encourages residents to share items with others in their community. Besides this program, the City also operates two repair programs. One is the **Sewing Repair Hubs**, which provide workshop spaces to encourage the repair and reuse of clothing and other textiles with the goals of reducing the amount of textiles discarded each year. This program also provides an opportunity for residents to access tools, equipment and supplies needed to repair their own clothing. As of April 2019, nearly 1,700 kilograms of clothing and textiles have been diverted from landfill as a result of the Sewing Repair Hubs (City of Toronto, n.d.). Another noteworthy program is the **Bicycle Repair Hubs**, which provides dedicated workshop spaces to train residents in bicycle assembly, repair, maintenance, and safety. It also provides residents with access to tools, equipment, and supplies needed to repair bicycles. As of April 2019, over 1,000 bikes have been repaired/refurbished through the program (City of Toronto, n.d.).

York Region, Ontario

The Regional Municipality of York has an Integrated Waste Management Master Plan titled the “**SM4RT Living Plan**”. Developed by York Region and its local municipal partners and approved by council in 2013, the plan sets the course for waste management in the York Region for the next 25 to 40 years and aims to move York Region away from the traditional linear model of waste management to a more sustainable circular economy approach (Regional Municipality of York, 2013, p. 7). The backbone of the plan promotes reduction-based solutions that rely on the community to be engaged in making changes (Regional Municipality of York, 2013, p. 8). In addition to this comprehensive plan, York Region also developed a “Reuse, Repair and Repurpose Strategy” in 2013 that specifically outlines the development of SRR in the York Region. Since the creation of the SM4RT Living Plan, thousands of residents have helped implement priority initiatives with a focus on the 4R’s: Reduce, Reuse, Recycle, and Recover (Regional Municipality of York, 2018, p. 2). Lendery, Repair Cafés, Curbside Giveaway Days, Textile collection, and the Trash Blasters program are some of the major initiatives implemented by the York Region.

The Regional Municipality of York established a partnership with the Markham Public Library and York Region Makers to develop the first **Lendery**, which is a library of things such as household items, sporting goods and hand tools. In 2018, planning began with a donation drive to build the inventory for the Milliken Mills Lendery. In summer 2019, the first Lendery opened at Markham’s Milliken Mills Library and the second Lendery at Newmarket Public Library opened at the beginning of 2020 (Champion, 2019). Library users are able to register and receive library cards, which allow them to borrow items just like they

would borrow books and other media. They can also browse items either in-person or in the library's online catalogue (Champion, 2019). With a membership, residents can borrow a wide range of items including camping equipment, party supplies, small kitchen appliances, sports equipment, tools, toys and games, and yard/garden tools.

In collaboration with local partners including local towns, cities, and libraries, the York Region hosts **Repair Cafés**. People can bring in a variety of household items such as bicycles, jewelry, small appliances, and toys to be fixed for free, and volunteer fixers are available to assess and fix these items. Specialties at each Repair Café may differ as it is dependent on the volunteer fixers attending that day. Seven events were hosted in 2018 with 287 participants and over 200 fixed items, and 14 events were hosted in 2019 (Regional Municipality of York, 2018, p. 6).

The York Region also coordinates **Curbside Giveaway Days** in its eight municipalities, which is a low-cost program that allows residents to place items no longer needed at the curb that neighbours can then take for free. Residents can download and print a "FREE curb alert" poster to post besides their items and they can also take pictures of their items and post those on the Facebook event page. In 2018, the program promoted an app named Bunz for the first time in order to better facilitate the process. The app has become an online swapping platform where users can post and search for used goods and services to trade and earn rewards that can be redeemed at participating local businesses. In 2019, 18 Curbside Giveaway Days were hosted in eight cities and towns (Regional Municipality of York, 2018, p. 6).

Led by the Town of Aurora, the **Textile Collection** program continues to grow through locally driven programs. Textile Collection programs are offered in seven municipalities through donation bins, event days, community garage sales, and education campaigns. In 2018, Aurora, Whitchurch-Stouffville and Newmarket established a new partnership to support their programs. In 2018, 165 municipal collection bins were provided, and 2,612 tonnes of textiles were collected (Regional Municipality of York, 2018, p. 6).

Additionally, the York Region collaborates with the school system to offer programs that align with its SM4RT Living Plan. One example is the **Trash Blasters program**, which provides inspiration, tools and resources to assist elementary schools to reduce their waste and improve reuse efforts at school and at home. As part of the program, the Region developed a program guide that tailors to school settings and it shares on its program webpage numerous reuse and recycle ideas and links that are categorized based on grade levels. One example of a recommended program is to host swap and share activities in schools. Schools can also notify the York Region about their participation by registering online.

Moreover, since 2007 York Region has partnered with Goodwill and Habitat for Humanity to operate **reuse transfer facilities** at its two **Community Environmental Centres (CEC)** in McCleary Court (opened in 2009) and Elgin Mills (opened in 2011) (Regional Municipality of York, 2013, p. 29). These organizations accept a wide range of new and gently used donations, including clothing, housewares, books, textiles, electronics, and small appliances, as well as renovation and household materials such as lumber, cabinetry, windows, doors, hardware and plumbing, and lighting fixtures. Reusable items collected at the CECs are then distributed for re-sale at Goodwill and Habitat for Humanity retail locations within York Region. Between 2011 and 2012, Goodwill estimates that it collected approximately 261 tonnes of goods

from the two CECs, and Habitat for Humanity estimates that it collected 50 tonnes from both facilities (Regional Municipality of York, 2013, p. 29).

Guelph, Ontario

Twice a year, the City of Guelph hosts **Goods Exchange Weekends** where residents can come together and exchange reusable household items, such as furniture, appliances, and toys (City of Guelph, 2020b). Goods Exchange Weekends take place from Friday to Sunday on a weekend in May and September. Residents can leave goods labelled 'free' by their curb and can explore neighbours' curbs for great deals. The Goods Exchange Weekends allow goods to have a second life in someone else's home and preserve the circular economy. Reused products are also incorporated into **Guelph's Paint+ Reuse Program**, which has been running for the past 9 years (City of Guelph, 2011). In this program individuals are able to bring in and/or take any of the following items: paint/stains, aerosols, car care products (waxes, soaps, etc.), new motor oil, new antifreeze, cleaning products, grout, drywall compound, and cement. Reusing old items allows residents to refresh their home without having to purchase new materials. Furthermore, reusing materials prevents residents from inappropriately disposing of hazardous materials. The Goods Exchange Weekend and Paint+ Reuse Program can both be implemented in other cities with little overall costs to the city.

Ottawa, Ontario

The City's **Take it Back!** program encourages local businesses to "take back" many of the household materials that they sell, and to ensure they are reused, recycled or disposed of properly. This program provides a convenient and safe way for residents to return household items that should not go in the garbage to participating retailers and charitable organizations. The list of acceptable products includes several main categories: automotive, garden supplies, health, electronics, and household. The City encourages local businesses to participate by emphasizing several benefits. One such benefit is increased consumer traffic as Take it Back! businesses are featured on the City's Waste Explorer.

To complement the Take it Back! program, the City also established partnerships with other organizations such as the Ontario Tire Stewardship (OTS) and the Ontario Electronics Stewardship (OES), which target tires and electronics in the province respectively. Since its inception, the Take it Back! program has grown from three automotive products taken back by 16 automotive retailers in 1997, to more than 100 different products taken back by over 500 retailers and charitable organizations in 2017 (City of Ottawa, n.d.). Each year Take It Back! members divert over 500 tonnes of material from the municipal landfill (City of Ottawa, n.d.).

In addition, the City also hosts a **Give Away Weekend** program. This program helps residents get rid of gently used items that they no longer need and share those items with others. Residents can simply place their items at the curb on Give Away Weekend and place stickers or signs that can be downloaded from the program's webpage on their items. The City also advertises several other online platforms such as UsedOttawa and Full Circles Ottawa where residents can share and reuse items.

International Case Studies

Eskilstuna, Sweden

ReTuna

In August 2015, the City of Eskilstuna established ReTuna, the world's first circular shopping centre. ReTuna is dedicated to the promotion of sustainable shopping and is home to 13 different stores, including clothing stores, a flower shop, a bookstore, an electronics store, furniture stores and a great deal more. All items sold within these stores are made of reused and up-cycled products. The shopping centre provides the world with a model for sustainable business practices and encourages individuals to think more critically about their consumption practices. ReTuna receives an average of approximately 700 visitors per day and 300 tour groups per year (Kalia, 2019).

The shopping centre is located on the site of reuse and recycle park and, in addition to the shopping centre, the park features a recycling station, a hazardous waste disposal unit and a facility called Returen. At Returen, residents are encouraged to drop off goods and materials that they no longer need, but could still be of use to others. Common items include reusable toys, furniture, clothes, decorative items, and electronic devices. Staff sort through the items in order to determine what can be repaired and refurbished for subsequent purchase within one of ReTuna's many stores. It is estimated that the value of the waste diverted by the park stood at a value of 20 million Swedish kronor as of 2018 (Aggesund, 2018).

While the park is run by Eskilstuna Energi och Miljö, an energy company owned by the municipality, but the project is no longer dependent upon continued economic support. In order to get ReTuna on its feet, the municipality invested approximately 5 million Swedish kronor (698,000 CAD) directly and another 75 million Swedish kronor (10 million CAD) indirectly through Eskilstuna Energi och Miljö ("Municipality-led circular economy case studies," 2018). This covered construction costs and the provision of subsidies to shop owners ("Municipality-led circular economy case studies," 2018). However, ReTuna was designed with the intention of creating a shopping centre that is both sustainable and profitable. In 2018, the shopping centre operated without the benefit of municipal subsidies and broke even (Kalia, 2019).

Gothenburg, Sweden

Fixotek & the Digital Smart Map

The Fixotek project began in June 2017 and aimed to create recycling centres that not only facilitate reuse and repair, but also engage with the community in order to encourage sustainable consumption. The term Fixotek refers to four unique recycling centres created as part of a municipal pilot project. These Fixoteks allowed residents to fix, lend, swap and recycle consumer products. The pilot project was developed in collaboration with two public housing companies, the Tenant Association and Chalmers University of Technology (Ordenez & Hagy, 2019). During the pilot, the municipality ran all four Fixoteks

(Ordonez & Hagy, 2019). For their part, the two housing companies provided the necessary commercial space to establish these Fixoteks within residential neighbourhoods where they may be readily accessible (Ordonez & Hagy, 2019). Due to their success, three out of four Fixotek continued to run after the pilot was concluded in 2019.

One of the most encouraging outcomes of the pilot was the degree to which particular Fixoteks were able to integrate themselves into the social fabric of their communities. Individuals' experiences at these Fixoteks were social; akin to visiting one's local community centre. This design allowed the municipality to have a more meaningful influence on consumer behaviour. A report by the Chalmers University of Technology concluded that residents were often primarily interested in their community's Fixotek due to its role as a "social meeting place," while interest based on SRR was often a secondary motivation (Ordonez & Hagy, 2019, p. 8). These findings have significant implications for future strategies aimed at revolutionizing consumer culture.

Smart Map, by comparison, helps to connect Gothenburg residents with the sustainable consumption options already active within the city. A survey demonstrated that residents are interested in the circular economy, but often lack practical knowledge ("Gothenburg's smart map," 2017). In response, the Smart Map identifies businesses where residents can go to hire, borrow, share and swap various goods and services ("Gothenburg's smart map," 2017). In addition to supporting small sustainable businesses, the Smart Map aims to take advantage of civil society initiatives that pop up around the city ("Gothenburg's smart map," 2017). Within its first six months more than 10,000 people visited Smart Map ("Gothenburg's smart map," 2017).

New York, New York, United States

DonateNYC & ReFashionNYC

DonateNYC represents the City of New York's principle reuse program, which encourages residents to participate in the circular economy. The DonateNYC website includes an interactive map citing close to 1,000 locations where residents can both drop off and procure used goods ("NYC Department of Sanitation," 2019). The list includes thrift stores, used bookstores, nonprofits, community centres and bike shops, to name a few. The program is run by the Department of Sanitation, which also provides analytical support to the City's reuse sector. This includes both the collection and analysis of data on the size, distribution and capacity of the materials used by organizations in the City ("NYC Department of Sanitation," 2019). The subsequent research findings are included in a number of published reports, allowing the City to better utilize the reuse sector and quantify the impacts of reuse activities.³

Alongside donateNYC, a popular program called ReFashionNYC provides residents with the means to easily dispose of used textiles, clothing and shoes within their own apartment buildings. The municipality supplies participating apartment buildings with ReFashion recycling bins where residents can drop off their

³ Access the 2019 NYC Department of Sanitation report here:

<https://dsnydonate.cityofnewyork.us/wp-content/uploads/2018/09/2019-NYC-Reuse-Sector-Report-FINAL.pdf>

used goods (“RefashionNYC,” 2020). The program is also run by the Department of Sanitation and was created in response to the knowledge that textiles account for approximately 6 percent (or 200,000 tons) of the City’s overall annual waste (“NYC Department of Sanitation,” 2016). The program targets apartment buildings in order to reach the maximum number of residents. While New York has a population of 8.4 million, 3.4 of these residents live in an apartment (“NYC Department of Sanitation,” 2016).

ReFashion was established through a partnership between the Department of Sanitation and a nonprofit organization called Housing Works. In accordance with their 10-year municipal contract, Housing Works has been responsible for installing the bins, picking up the used textiles, selling these collected textiles and reporting the amount of waste diverted (“NYC Department of Sanitation,” 2016). The chain of thrift shops owned and operated by Housing Works made them an appealing partner in the eyes of the municipality. For its part, the Department of Sanitation is responsible for program enrollment, research and continued efforts to increase public awareness (“NYC Department of Sanitation,” 2016). The ReFashion program pays for itself through the sale of used textiles collected within the municipality (“NYC Department of Sanitation,” 2016).

Portland, Oregon, United States

Resourceful PDX

The City of Portland’s Resourceful PDX represents a comprehensive outreach campaign designed to reduce the consumption of new materials within the municipality. Partners of the program include the City of Portland Bureau of Planning and Sustainability, Chinook Book and Reuse Oregon (Cooper, Appleby & Massey, 2015). The Resourceful PDX website offers useful ideas to residents looking to live more sustainably, but are unsure what simple changes can be made to their everyday lives. A calendar located on the website highlights upcoming events, such as clothing swap, repair fairs and a variety of workshops, teaching everything from candlemaking to gardening. The website also features an interactive map, where residents can search amongst a variety of community-based, nonprofit and grassroots organizations engaged in SRR. Resourceful PDX focuses on 4 categories: buy smart, reuse, borrow & share, and fix & maintain (Cooper, Appleby & Massey, 2015).

Paris, France

Les Deux Rives

Les Deux Rives (“the Two Banks”), located in the heart of Paris between the Lyon and Austerlitz train stations, is the flagship initiative of the Paris Circular Economy Plan. Known as the “Circular District”, its initial pilot project began with 30 companies and targeted three main environmental improvements: the reduction of disposable food packaging, the aggregation of car-pooling services and the improvement of waste management practices (“Circular Cities,” 2019). It has since become a successful business district home to over 700 companies and 100,000 employees, offering a variety of circular economy products and

support (Les Deux Rives). From companies providing innovative green energy solutions to restaurants serving locally grown and sourced ingredients, “le quartier circulaire” has it all (“Circular Cities,” 2019). Led by the City of Paris in partnership with the local transit authority, RATP, Les Deux Rives has created a partnership of eco-friendly businesses linked with a data platform that allows for easy transmission of best-practices and collaboration opportunities (Les Deux Rives). This initiative boosts the local economy, generates public support for environmental sustainability and encourages business-to-business and business-to-consumer reuse, repair and share projects. The district is full of companies that harness the power of the circular economy and prove that environmental sustainability can be profitable. Les Deux Rives and the governmental leadership that has facilitated its growth act as a template for city-level and regional policy for cities that hope to integrate more social inclusion, environmental sustainability and economic development into their community.

The Paris Circular Economy Plan makes possible Les Deux Rives and commits to several other initiatives that facilitate the incorporation of the circular economy across the City of Paris. Highlights include a commitment to work with construction industries to mandate the safe disposal and recovery of deconstruction materials; the development of new and innovative waste sorting methods to ensure the diversion of materials back to markets; and the establishment of an overseeing body tasked with regulating material recovery and reuse.

Section III:

University Case Studies

Section Overview

A growing number of universities across Canada and the globe have also become leaders in SRR innovation. This section of the report highlights unique examples of SRR initiatives undertaken by universities, providing a roadmap for other administrations interested in becoming more involved in the circular economy. The examples included in this section demonstrate the unique opportunities available on university campuses, where students have readily engaged with available SRR programs. Universities often play an important role in an individual's transition into adulthood and thus have the opportunity to help mold behaviours at an early age. Many of the individuals who attend university are living on their own and purchasing their own food for the first time, thereby facing consumer choices that they may not have previously contended with. Similar to the previous section, many of the most relevant Canadian case studies are concentrated within the province of British Columbia.

Many of the examples included in this section are aimed at encouraging students and staff to use reusable food and water containers in order to reduce waste generated by single-use plastics. Another common initiative found at Canadian universities are move-out programs, which aim to decrease the amount of waste produced as a result of students moving in and out of residence every year. The University of British Columbia stands out as a clear leader, particularly in the area of reuse, with examples of both the initiatives mentioned above and more. At the international level, Stanford University in California is identified as a frontrunner in SRR innovation with the incredibly successful My Cardinal Green program; a program that could easily be implemented on any Canadian university campus.

British Columbia Case Studies

University of British Columbia

Since 2010, **Reuse-it!** has aimed to address the surplus of assets on campus for reuse by providing UBC staff and faculty with a website where they can exchange low-value items of up to \$1,000 (Kirk, 2019). Common items for exchange include furniture, audio-visual equipment and office supplies. At present, the Reuse-it! program is primarily geared towards UBC employees, rather than students, but the University hopes to include both students and employees by adopting **Warp-it**⁴ and merging this with the current system in place. Warp-it is an online reuse platform popular among universities in the United Kingdom and will hopefully allow UBC to achieve higher levels of reuse. Adoption of the Warp-it platform will provide: greater data collection; a built in system for connecting with other schools, organizations and charities; a wishlist function that alerts people when something that they want is posted; and the capacity to track greenhouse gas emissions, among other things (Kirk, 2019).

⁴ For more information on Warp-it, access the website here: <https://www.warp-it.co.uk/>.

The **Mindful Move Out** program runs every April in an effort to reduce the amount of waste sent to landfills as a result of students moving out of residence. The program depends on the collective efforts of both Residence Life and Building Services operations, which are together responsible for the communication, marketing and implementation each year (“University of British Columbia OP-22: Waste Minimization,” 2015). In April, collection bins are placed within student residence buildings in order to make it as easy as possible for students to donate their unwanted goods. These collection bins allow for the donation of batteries, recycling, electronic waste, clothing, bedding, household goods, soaps, shampoos, detergents, canned food goods, bikes and books. Many of these donations are sent to Big Brothers Canada and the AMS Food Bank, which provides emergency food relief service to UBC students.

More recently, UBC has made plans to implement what is referred to as the **Residential Reuse Program**, representing a significant expansion of the Mindful Move Out program. This new program aims to ensure that a greater percentage of the goods and materials collected from students moving out of residence are recirculated right on campus, rather than being donated to charities for resale. The Residential Reuse Program would store goods collected by the Residential Move Out program on the UBC campus and resell these items in the fall when students are in the process of moving back into the dorms. This initiative will serve to highlight UBC as a leader and innovated amongst academic institutions as well as help to attract new students, as this current generation tends to place a higher value on sustainability. However, the program start has been delayed to 2021 due to COVID-19.

Lastly, UBC’s works to encourage the use of reusable food containers on its campus. UBC Food Services operates a program called **Green2Go**, which offers students 20 cents in savings whenever they use a disposable container when purchasing food on campus (“UBC Food Services,” n.d.). Students are provided with a carabiner clip which they can then swap for a Green2Go container at any food station and when students are done they can either exchange their container for a fresh one or for a new carabiner clip (“UBC Food Services,” n.d.). All first year residents who have a Residence Meal Plan are provided with a carabiner clip when they check into their residence. Otherwise, first year students without a Residence Meal Plan or other university students can obtain a carabiner clip by providing a \$5 deposit (“UBC Food Services,” n.d.).

University of Victoria

The University of Victoria is an active participant in the share and reuse space, as it has established a goal of becoming a zero-waste institution. The **Zero-Waste Move-Out program** helps to reduce waste and promote reuse during student move out. This program allows students moving out of residences to recycle most of their unwanted items as well as donate clothing, furniture, and electronics to charity. The school created a simple Move-Out Brochure that lists detailed information and a map about reuse and recycle opportunities on the campus. For instance, a “Stuff Swap” event is hosted on campus that allows students to exchange unwanted items. The university is also proud of its **Waterfillz**, which is its own portable water bottle-filling station on campus. The Waterfillz has dramatically reduced demand for bottled water purchases at many UVic sporting events, functions and conferences.

Two student-led initiatives are also worth highlighting. There is a **Free Store** created by the University of Victoria Students' Society (UVSS) on the campus located by the UVic Food Bank. The Free Store provides a space for UVic campus members to access resources that other members no longer need, reducing waste and supporting a more connected, sustainable community. The store is based on a community sharing principle and is open to students, faculty, and staff, who can come to the Free Store to take anything they need or donate what they no longer use.

Another initiative is the **“Love My Mug” Campaign**. The University of Victoria Sustainability Project (UVSP), funded by the UVic Undergraduate Student Society, started the Love My Mug Campaign to support their 2020 vision of no more disposable cups on campus and beyond (*The UVSS Food Bank & Free Store*, n.d.). During the campaign, 15-dollar thermal travel mugs were available for students to purchase, and free materials such as multi-colored sharpies and fair-trade stickers are provided for people to personalize their mugs. The Sustainability Project team also showcased their ‘Muggo’ campus mascot, and students were able to get their ‘Mugshots!’ taken. Through the widespread sales of 'Love My Mug's, UVSP hopes that the school cafes could lift reuse rates to 80% reusable in the 'to-go' environment. This initiative has been a success in that it has raised awareness and changed consumer habits among many students, and tens of thousands of paper cups have been saved from going into the landfill (University of Victoria, 2011).

Thompson Rivers University

Thompson Rivers University (TRU) has several reuse initiatives that are part of its Sustainability strategy. For example, it encourages the reuse of textbooks by providing a bin outside of their bookstore, and the books can then be used by Better World Books in developing countries. The most innovative reuse initiative is the **Fill it Forward program**, which incentivizes the use of reusable beverage containers rather than single-use cups. Fill it Forward is a Canadian born movement that links one's beverage container to an interactive app experience. With every refill of bottle, cup, or mug, one will be entered into draws for prizes for a \$15 TRU Food Services gift card through the Sustainability Office and has the opportunity to work toward free beverages at select coffee shops on campus. There are also tags that can be put onto bottles and be scanned, and the tags are in two different colors for its water refill and hot beverage programs. In addition, people can scan the Fill it Forward tag when they refill and a cup of water is donated to a water charity project through the organization WaterAid.

In addition to the Fill it Forward program, The TRU Student Union (TRUSU) also has a **ECO Club** located at the Campus Community Centre where both Clothing Swap events and Repair Café are hosted. Clothing Swap events take place on the campus and students can participate in the reuse of clothing. At the Repair Café, students bring an article of clothing that needs mending or a piece of jewelry that needs fixing, and they can learn new skills and save money.

Simon Fraser University

Simon Fraser University (SFU) has launched the **GoGreen Container Pilot** that helps reduce single-use plastics and products on the campus. Students can bring back GoGreen containers and cutlery to any return

location on campus. The pilot will help determine the best program for SFU, expansion possibilities, and provide metrics on overall campus waste reduction. Additionally, there is an initiative called **TumblerShare** that is led by students who are passionate about sustainability. This initiative provides a convenient app that allows students to use reusable Tumbler cups and earn reward points. Students can return their tumbler at any participating Renaissance Coffee shop on campus within 14 days.

National Case Studies

McGill University, Quebec

By 2030 the University of McGill hopes to achieve a platinum star status in The Association for the Advancement of Sustainability in Higher Education (AASHE) rankings (McGill, 2017). Currently most universities in Canada have a gold or silver status. The University of McGill runs several programs and initiatives that are in line with the City of Montreal's sustainability goals. McGill was the first university in Canada to utilize the Ozzi system⁵ in its residential dining halls (McGill, 2020). The **Ozzi program** works by asking food servers in the residential hall to place food in a reusable container and then returning the empty container and exchanging it for a token at the Ozzi machines. The token can then be used to get a reusable container the next time you purchase a meal. By using reusable containers instead of disposable ones, there is a reduction in the materials being sent to the landfill leading to a decrease in McGill's carbon footprint. In order to keep sanitation standards, reusable containers are only handled from behind the counter. After removing them from the machine, McGill Student Housing and Hospitality Services sanitizes and cleans the containers. Several universities and hospitals in the U.S. also utilize the reusable container system. Further by using a reusable container, students are not charged the fee that comes with using disposable containers. Overall, the Ozzi program can be implemented in other universities and is a small step the school can take in creating a circular economy.

Wilfrid Laurier University, Ontario

According to the 2019 Princeton Review's Guide to Green Colleges, Wilfrid Laurier University is one of North America's most environmentally friendly universities (Laurier, 2019). The university runs several programs to increase sustainability efforts. Laurier's model focuses on the 5R's of sustainability including: refuse, reduce, reuse, rot and recycle (Laurier, 2020a). While most universities across Canada offer a 10 to 25 cent discount for bringing your mug, Laurier offers you 40 cents off your total, which may incentivize students more. Similar to McGill, Laurier also offers a **reusable eco-container program** that is available across campus dining halls.

Due to the large number of items that go to the landfill each year from students moving out, Laurier launched their **Freestore program** (Laurier, 2020b). Freestore collects various free items donated by

⁵ For more information on Ozzi, access the website here: <https://www.planetozzi.com/solutions#ozzisy>.

students, staff and faculty. Items include kitchenware, room accessories, storage, bathroom, electronics, school, and recreation. Freestore gives the opportunity for incoming students to reuse items rather than buying new.

Similar to the Freestore, Laurier has another program for students moving out: Laurier's **Move Out Program** (Laurier, 2017). The move-out program collects things not being collected by the Freestore, such as e-waste, textiles, textbooks and non-perishable food for donation, recycling and furniture. In 2018, the move-out programs diverted 5000 pounds of waste from going to the landfill (Laurier, 2020a). Donated furniture and clothing are taken to Laurier's Something Golden program which resells items to students at a low-cost or donates them to Goodwill. Other donations such as non-perishable foods are donated to the Waterloo Food Bank, electronic waste is recycled by Tech Wreckers, and textbooks are donated to Textbooks4Change. Laurier's Freestore and Move-out program are both run by volunteers from the sustainability office.

Western University, Ontario

Among many of its reuse services, Western University offers an innovative reuse program on its campus. The **Choose2Reuse (Eco-tainers)** initiative is put forth by the school with the goal of addressing necessary waste produced in residence. This program can be accessed in residence dining halls across campus, and it offers the unlimited use of reusable food and beverage takeout containers. Students first pay a one-time and non-refundable \$5.00 program fee to obtain a C2R card, and then they can order their food or beverages 'to-go' in a C2R container or travel mug with the card. Students can simply return the dirty container to the designated drop-off area and collect their C2R card from the cashier in the dining hall. All ecotainers are washed and sanitized so that all food will be placed in a clean C2P container. Students are encouraged to repeat the process of "card for container, and container for card" throughout the academic year, and so far this program has successfully helped the school reduce the amount of waste students produce in residence. According to a Sustainability Report published by Hospitality Services at Western University in 2018, over 20,000 Eco-tainers had been sold since the program was first launched in 2013 (Zok, 2018).

International Case Study

Stanford University, California, United States

My Cardinal Green

Named after the official colour of Stanford University, My Cardinal Green refers to an online portal and incentive program that aims to encourage faculty, students and employees to adopt more sustainable consumption habits. This is a personalized and data-driven platform that relies on annual surveys completed by the program's participants. When participants first sign on to My Cardinal Green, they are required to complete an initial survey in order to determine the sustainable practices most applicable to their individual lifestyle. This allows the platform to recommend specific actions, which individuals can then work to complete. My Cardinal Green awards 'points' to individuals every time that they complete a particular action and once an individual has accumulated 100 points they are entitled to receive a reward. As a reward, participants are given a choice between a \$75 cash reward, a sustainability enhancing item/experience, or a charitable donation for the given amount. Throughout the year, participants are able to track their progress on their personal dashboard.

The My Cardinal Green initiative was launched in May 2017 and the first 18 months of the program far exceeded the University's expectations. Within this period, more than 3,700 people had signed on to the online platform (Peacock, 2019). Approximately half of these users were university students, with the other half of users being university faculty and staff (Peacock, 2019). Within the first 18 months, My Cardinal Green users had completed a total of 14,000 actions, representing an estimated savings of \$114,000 as a result of a reduced dependence on energy, water and other utilities (Peacock, 2019). According to the Office of Sustainability, the program saved the University approximately 630,000 kilowatt hours of electricity and reduced carbon dioxide emissions by 735,000 pounds (Peacock, 2019). Additionally, participants of the My Cardinal Green program were found to have conserved approximately 900,000 gallons of water and diverted more than 125,000 pounds of waste from landfills (Peacock, 2019). However, these initial results were valuable beyond their immediate environmental or financial impacts as they demonstrated to students the potential impacts of their individual choices.

Today, the My Cardinal Green program continues to grow. At last count, membership within the program has risen to 5,720 and includes a wide variety of users from undergraduate students to school administrators (Sullivan, 2020). The program continues to both protect the environment and save money for the University. According to a presentation from March 2019, the program's total savings at this date stood at \$194,714 (Hennessy, 2019). This figure incorporates a variety of savings categories, including energy consumption, water consumption and waste production, to name a few (Hennessy, 2019). The most significant savings are attributable to electricity and heating, which accounted for \$91,902 and \$82,165 in savings, respectively (Hennessy, 2019).

Conclusion

The purpose of this report is to identify the role that cities and universities can play in the inner loops of the emerging circular economy and to provide an overview of best practices pursued within Canada and abroad. While there are often many barriers to the implementation of SRR programs, the research outlined in this report demonstrates the inherent value of these programs in both environmental and economic terms. Municipalities and universities both have a key role to play in the transition to the circular economy and many have already established themselves as leaders in SRR innovation. It is also important to note that while the municipal and university case studies contained within this report are separated for the convenience of readers, many of the initiatives included in this report are applicable to both. There is a great deal that we can learn from one another in our efforts to alter consumer behaviour and encourage circular business models. Those governments, universities, businesses and nonprofits already engaged with SRR should not be isolated from one another, but should rather take advantage of the incredible opportunities for knowledge sharing and cooperation.

Bibliography

Aggesund, P. (2018). The sustainable development way of implementing circular economy: A system thinking approach. Stockholm: Department of Human Geography Stockholm University. Retrieved from <https://pdfs.semanticscholar.org/1154/7a08238f81841eae0c7799c9abf23575153e.pdf>

Association for the Advancement of Sustainability in Higher Education. (2015). *University of British Columbia OP-22: Waste Minimization*. The Sustainability Tracking, Assessment & Rating System. Retrieved from <https://reports.aashe.org/institutions/university-of-british-columbia-bc/report/2015-08-04/OP/waste/OP-22/>.

Bruemmer, R. (2019, November 12). Automated recycling centre opens in Lachine, but glass remains an issue. *Montreal Gazette*. Retrieved from <https://montrealgazette.com/news/local-news/automated-recycling-centre-opens-in-lachine-but-glass-will-go-to-landfill>.

CBC News. (2019, November 12). New recycling centre in Lachine will send glass to landfill for now. *CBC News*. Retrieved from <https://www.cbc.ca/news/canada/montreal/new-recycling-centre-1.5356427>.

C40 Cities. (2019, December 24). Circular Copenhagen - 70% waste recycled by 2024. *C40 Cities*. Retrieved from https://www.c40.org/case_studies/circular-copenhagen-70-waste-recycled-by-2024.

Champion, K. (2019, July 19). Newmarket library will soon lend more than books. *NewmarketToday*. Retrieved from <https://www.newmarkettoday.ca/local-news/newmarket-library-will-soon-lend-more-than-books-1592551>.

City of Copenhagen. (2018). Circular Copenhagen: Resource and Waste Management Program 2024. Retrieved from <https://stateofgreen.com/en/partners/city-of-copenhagen/solutions/making-the-most-of-waste/>.

City of Coquitlam. (2019). Register for Coquitlam's City-Wide Garage Sale. Retrieved from <https://www.coquitlam.ca/city-hall/news-media/news-media/2019/04/08/register-for-coquitlam-s-city-wide-garage-sale>.

City of Edmonton. (n.d.) *Reuse*. Retrieved from https://www.edmonton.ca/programs_services/garbage_waste/reuse-centre.aspx.

City of Guelph. (2020a). *Guelph waste*. Retrieved from https://apps.apple.com/app/id1354015207?utm_source=guelphca.

City of Guelph. (2020b). *Goods exchange weekends in Guelph*. Retrieved from https://guelph.ca/living/garbage-and-recycling/waste-reduction/goods-exchange-weekend/?utm_source=guelphtoday.com&utm_campaign=guelphtoday.com&utm_medium=referral.

City of Guelph. (2011). Paint + reuse program recognized. Retrieved from https://guelph.ca/living/garbage-and-recycling/waste-reduction/paint-reuse-program/?utm_source=guelphtoday.com&utm_campaign=guelphtoday.com&utm_medium=referral.

City of Kamloops. (2019). Green Living Expo. Retrieved from <https://www.kamloops.ca/our-community/news-events/events-calendar/green-living-expo-0>

City of Kamloops. (2020a). CANCELLED- Green Living Expo at Made in BC. Retrieved from <https://www.kamloops.ca/our-community/news-events/events-calendar/cancelled-green-living-expo-made-bc>.

City of Kamloops. (2020b). "Bring Your Own" Initiative. Retrieved from <https://www.kamloops.ca/city-services/recycling-garbage/waste-reduction>.

City of Ottawa. (n.d.) *Take it Back! Program*. Retrieved from <https://ottawa.ca/en/business/business-assistance-and-growth/programs-and-projects/take-it-back-program>.

City of Surrey. (2020). Environmental Education in the Classroom. Retrieved from <https://www.surrey.ca/city-services/4572.aspx>.

City of Toronto (n.d.) *Circular Economy in Action at the Local Level*. Retrieved from <https://www.toronto.ca/services-payments/recycling-organics-garbage/long-term-waste-st>

[rategy/working-toward-a-circular-economy/businesses-supporting-torontos-circular-economy/](#)

City of Toronto. (n.d.). *Community Reduce & Reuse Programs*. Retrieved from <https://www.toronto.ca/services-payments/recycling-organics-garbage/long-term-waste-strategy/waste-reduction/community-reduce-reuse-programs/>.

City of Toronto. (n.d.) *Waste Strategy Overview*. Retrieved from <https://www.toronto.ca/services-payments/recycling-organics-garbage/long-term-waste-strategy/overview/>.

City of Toronto. (n.d.). *Working Towards a Circular Economy*. Retrieved from <https://www.toronto.ca/services-payments/recycling-organics-garbage/long-term-waste-strategy/working-toward-a-circular-economy/>.

City of Vancouver. (2020a). *POSTPONED* Reuse and Recycling Drop-Off Event. Retrieved from <https://vancouver.ca/news-calendar/calendar-of-events.aspx?trumbaEmbed=eventid%3D143201728%26view%3Devent%26-childview%3D>

City of Vancouver. (2020b). Zero Waste reuse and recycling drop-off events. Retrieved from <https://vancouver.ca/green-vancouver/zero-waste-drop-off-events.aspx>

City of Vancouver. (2020c). Take-out containers. Retrieved from <https://vancouver.ca/green-vancouver/take-out-containers.aspx>.

EIT Climate-KIC. (2018). *C40 Cities Municipality-led circular economy case studies*. Retrieved from https://c40-production-images.s3.amazonaws.com/researches/images/75_CE_case_studies_interactive.original.pdf?1554823891.

Ellen MacArthur Foundation. (2019). *Circular Economy in Cities: Project Guide*. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/CE-in-Cities-Project-Guide_Mar19.pdf.

Ellen MacArthur Foundation. (2019). *Circular Economy in Cities Case Studies – Toronto*. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/Toronto_-Case-Study_Mar19.pdf.

- Emerald Foundation. (2016). *Reuse Centre By: City of Edmonton, Utilities Services Branch*. Retrieved from https://emerald.foundation.ca/aef_awards/reuse-centre/.
- Gothenburg's smart map. (2017). Brussels: Euro Cities. Retrieved from http://nws.euocities.eu/MediaShell/media/participation_Gothenburg.pdf.
- Hennessy, L. (2019). Making Behaviour Change Meaningful, Accessible, and Appealing for a Diverse Campus. Retrieved from https://beccconference.org/wp-content/uploads/2019/11/hennessy_presentation.pdf.
- Kalia, A. (2019, June 18). Eskilstuna: how a Swedish town became the world capital of recycling. *The Guardian*. Retrieved from <https://www.theguardian.com/environment/2019/jun/18/eskilstuna-how-a-swedish-town-became-the-world-capital-of-recycling>.
- Kirk, C. (2019). Office Furniture Reuse at UBC. *University of British Columbia*. Retrieved from https://sustain.ubc.ca/sites/default/files/seedslibrary/VOL_400_OfficeFurnitureReuse_FinalReport.pdf.
- Laurier. (2019, November 20). Laurier named one of North America's most green universities. Retrieved from <https://www.wlu.ca/news/spotlights/2019/nov/laurier-named-one-of-north-americas-most-green-universities.html>.
- Laurier. (2020a). Waste Reduction. Retrieved from <https://students.wlu.ca/student-life/sustainability/waste-reduction.html>.
- Laurier. (2020b). Sustainability Office launches permanent Laurier Freestore. Retrieved from <https://www.wlu.ca/news/spotlights/2020/march/sustainability-office-launches-permanent-laurier-freestore.html>.
- Laurier. (2017). The Laurier Move-Out Program. Retrieved from <https://students.wlu.ca/student-life/sustainability/news/2017/winter/the-laurier-move-out-program.html>.
- Les Deux Rives (n.d.). Les Deux Rives: Quartier Circulaire. Retrieved from Les Deux Rives website: <https://lesdeuxrives.paris/>

- Martin, S. (2017, January 14). Reuse Centre celebrates 10th year in Edmonton. *CBC News*. Retrieved from <https://www.cbc.ca/news/canada/edmonton/reuse-centre-celebrates-10th-year-in-edmonton-1.3932683>.
- McGill. (2017). *Vision 2020: Climate and Sustainability Action Plan*. Retrieved from https://mcgill.ca/sustainability/files/sustainability/vision_2020_climate_sustainability_action_plan.pdf.
- McGill. (2020). *The Ozzi System & Reusable Containers*. Retrieved from <https://www.mcgill.ca/foodservices/sustainability/ozzi-system-reusable-containers>.
- MetroMag. (2010). *Consume differently*. Retrieved from https://ville.montreal.qc.ca/pls/portal/docs/page/enviro_fr/media/documents/CONSUME_DIFFERENTLY.pdf.
- Milobar, D. (2019, May 11). Plenty to see at 4th annual Green Living Expo. *CFJC Today*. Retrieved from <https://cfjctoday.com/2019/05/11/plenty-to-see-at-4th-annual-green-living-expo/>
- Montreal. (2012). Reuse centre address directory. Borough and City Index. Retrieved from http://ville.montreal.qc.ca/pls/portal/docs/PAGE/ENVIRO_FR/MEDIA/DOCUMENTS/VILLE%20MTL%20-%20REPertoire_ANG.PDF.
- Municipality-led circular economy case studies. (2018). *EIT Climate-KIC*. Retrieved from <https://www.c40.org/researches/municipality-led-circular-economy>.
- My UVic Life. (2015). *Love My Mug: a year 2020 without disposable cups*. Retrieved from <https://onlineacademiccommunity.uvic.ca/myuviclif/2015/12/08/love-my-mug-a-year-2020-without-disposable-cups/>.
- Navarro, M. (May 25, 2011). A New York Debut for Textile Recycling. *New York Times*. Retrieved from <https://green.blogs.nytimes.com/2011/05/25/a-new-york-debut-for-textile-recycling/>.
- NYC Department of Sanitation. (2016). *NYC Zerowaste Apartment Recycling Tools*. Retrieved from https://swana.org/Portals/0/awards/2016/winners/NYCDepartmentofSanitation_CEMTOOL_S.pdf.

NYC Department of Sanitation. (2019). *2019 NYC Reuse Sector Report*. Retrieved from <https://dsnydonate.cityofnewyork.us/wp-content/uploads/2018/09/2019-NYC-Reuse-Sector-Report-FINAL.pdf>.

Office of Sustainability. (2020). Stanford Sustainability Goal: Zero Waste by 2030. *Stanford University*. Retrieved from https://sustainable.stanford.edu/sites/default/files/Stanford_ZeroWaste_SustainabilityReport_2.6.pdf.

Cooper, R., Appleby, D. & Massey, C. (2015). Community Sharing. *One Earth*. Retrieved from http://www.localgovsharingecon.com/uploads/2/1/3/3/21333498/localgovsharingecon_communitysharing_oct2015.pdf.

Ordonez, I. & Hagy, S. (2019). Fixotek: Implementing and Testing Urban Reuse and Repair Centres in Sweden. Bristol: *IOP Publishing*. Retrieved from <https://iopscience.iop.org/article/10.1088/1755-1315/225/1/012007/pdf>.

Peacock, Chris. (2019, April 22). Through My Cardinal Green, individuals across campus boost sustainability at Stanford. *Stanford News*. Retrieved from <https://news.stanford.edu/2019/04/22/cardinal-green-individuals-across-campus-boost-sustainability/>.

Recycling Council of British Columbia. (2020). Surrey Reuses Program. Retrieved from <https://www.rcbc.ca/services/residential>

Regional Municipality of York. (n.d.). Integrated Waste Management Master Plan. Retrieved from https://www.york.ca/wps/portal/yorkhome/yorkregion/yr/plansreportsandstrategies/integratedwastemanagementmasterplan!/ut/p/z1/jZDLUsMwDEW_JktGaqZtvM0ESh50UhZMgjedDzWuobFTWzzK1-MEtk2rla58dWQJOLTAjfjUSpC2RhyCfubLbZHeF3leYVnPWYYp1mkZJwxZIUazGvBMpAj8mv4JA5_Gl5cGhA302_HIU-Av1pD8JmhPbjvmhiI8WfcehCdNH2Nhbzv5V3ZShStE2B-E8U721pEXZufJCOpP0keoA0UNcvclPMIOGKfKfZjdIN3QOfwgdutsrYD3gvY32rxaaM9Cob0G2gAfN4_j-TKfZVhiXjMsVslmccvyGwALC4Yq_jdMHLfvntqfB9ls-rvHX4fvPQM!/dz/d5/L2dBISEvZ0FBIS9nQSEh/#.Xn4lZchKiUl.

Regional Municipality of York. (2015). *SM4RT Living Plan Balanced Scorecard 2018*. Retrieved from <https://www.york.ca/wps/wcm/connect/yorkpublic/68beb703-221a-4cc2-9d8d-67c286579e39/2018BalancedScorecardHighlightsWEB.pdf?MOD=AJPERES&CVID=mV.f5wI>.

- Regional Municipality of York. (2013). *SMART Living Plan Integrated Waste Management Plan*. Retrieved from www.york.ca/wps/wcm/connect/yorkpublic/10ba5c8d-5f7f-4e49-a06b-ab270c563fb0/SMART_Living_Plan_Nov_28_2014.pdf?MOD=AJPERES&CVID=mu8XIMD.
- Regional Municipality of York. (2013). *Reuse, Repair and Repurpose Strategy*. Retrieved from <https://www.york.ca/wps/wcm/connect/yorkpublic/4534d423-945a-436e-b4d8-4fbc696626ce/Reuse+Repair+Repurpose+Strategy.pdf?MOD=AJPERES&CVID=mu8W9H>.
- Reuse it! UBC*. (n.d.). The University of British Columbia. Retrieved from https://reuseit.ubc.ca/?content=article.view&article_id=125;article_group_id=2.
- Simon Fraser University. (n.d.-c). Sustainability Peer Program. Retrieved from <https://www.sfu.ca/sustainability/projects/peer-program.html>.
- Simon Fraser University. (n.d.). *GoGreen Container Program*. Retrieved from <https://www.sfu.ca/sustainability/projects/gogreen.html>.
- Sullivan, K. J. (2020, January 28). Living sustainably, with a little help from My Cardinal Green. *Stanford News*. Retrieved from <https://news.stanford.edu/2020/01/28/living-sustainably-little-help-cardinal-green/>.
- Thompson Rivers University. (n.d.) *Fill it Forward*. Retrieved from <https://www.tru.ca/sustainability/get-involved/fill-it-forward.html>.
- Thompson Rivers University. (n.d.) *TRUSU Eco Club clothing swap and repair café*. Retrieved from <https://inside.tru.ca/events/event/trusu-eco-club-clothing-swap-and-repair-cafe/>.
- Toronto Environmental Alliance. (2016). *Zero Waste Toronto: A Vision For Our City*. Retrieved from <https://www.toronto.ca/legdocs/mmis/2016/pw/comm/communicationfile-59363.pdf>.
- The University of British Columbia. (n.d.). *UBC Food Services*. Retrieved from <https://food.ubc.ca/green2go/>.
- University of Victoria. (2011). *Love-A-Mug campaign a huge success*. Retrieved from <https://www.uvic.ca/news/topics/2011+love-a-mug-campaign-a-huge-success+ring>.

- University of Victoria. (n.d.) *UVSS Food Bank and Free Store*.
<https://www.uvic.ca/sustainability/topics/waste/free-store/index.php>.
- University of Victoria. (n.d.). *Water*. Retrieved from
<https://www.uvic.ca/sustainability/topics/water/index.php>.
- University of Victoria. (n.d.). *Zero waste program*. Retrieved from
<https://www.uvic.ca/sustainability/topics/waste/zero-waste-final/index.php>.
- The UVSS Food Bank & Free Store*. (n.d.). University of Victoria Students' Society (UVSS).
Retrieved from <https://uvss.ca/foodbank/>.
- Ville en Vert. (2020). *The Ecocentres*. Retrieved from <http://www.villeenvert.ca/les-ecocentres/>.
- Why Refashion*. (n.d.). RefashionNYC. Retrieved from
<https://www.refashionnyc.org/why-refashion-1>.
- Zhang, T. (n.d.). *Choose2Reuse (Eco-tainers)*. RezLife. Retrieved from
https://www.rezlife.uwo.ca/articles_tips_xchange.cfm.
- Zok, A. (2018). Sustainability Hospitality Services Western University. *University of Western Ontario*. Retrieved from
<https://hospitalityservices.uwo.ca/sustainabilityreport/sustainabilityreport2018.pdf>.

Appendix

SRRI Jurisdictional Scan- Municipalities

SRR Jurisdictional Scan Chart - Municipalities

Municipality	Leading library of things (e.g. The Library, Tool Library)	Share sheds or free tools	Good swaps located in community centres	City-led yard sale(s)	Zero waste centre (open to drop off before disposal)	Repair Cafés or Foot Clinics	Encouraging or incentivizing reuse (options e.g. upstarts)	Encouraging and mandating building deconstruction (with reuse material)	Encouraging the development of (e.g. salvaged materials)	Limiting square footage of homes (with reuse evaluation criteria)	Municipal procurement focused on secondary and/or goods sharing as evaluation criteria	Innovation labs (focused on aspects) of SRRI	Circular Cities plan (for planning underway)	Municipal policies/plans and/or circular economy	Information program to help the public and SRRI	Other activities	
Survey & Interview (BC)																	
Surry			Y		Y	Repair Cafés (started in 2019)	Y	Demolition and Waste Recycling Bylaw 5516 (Disposal, Recycling or salvage program)						Y	Y		
Richmond	Richard Tool Library		Y			Repair Cafés (funding the first session)				Y	Y			Demolition and Waste Recycling Bylaw 5516	Repair Cafés official website		
Vancouver	Vancouver Tool Library, The Striker				Y	Repair Cafés program in 2019	disposable container (Jan 2021)	Y			Y		Y	Demolition and Waste Recycling Bylaw 5516	Y	working on a Supply-Use Item Reduction Strategy which could include other SRRI strategies.	
Guelph			Y			Planning for Repair Cafés (working with Community groups)			Y								
West Vancouver			Y			Repair Café pilot in 2020									Y	starting planning for the next waste management plan	
Carlson (Regional District)		Share sheds program	Y			Y											
Fraser Fort George (Regional District)		Share sheds at 5 transfer stations															
Kamloops							"Bring Your Own"					Green Living Expo					
North Okanagan (Regional District)		Share sheds at rural transfer stations			Y		behavior to regulate signage practices					Y				Annual green share supports Rebuilding and Reducing Waste (RRW) which was recently awarded a grant for a kitchen fixture (salvage program).	
Okanagan Similkameen (Regional District)															Where? online resource - "Reuse and Repair Sale" which is an online official website	Where? online resource - "Reuse and Repair Sale" which is an online official website	
Edmonton	Edmonton Tool Library		Repair Centre	Reuse Fair	Repair Centre, Eco Station	Repair workshops offered by general organizations									Repair Centre official website		
Toronto	Toronto Tool Library, Toronto Sharing Depot	Share and Reuse Space	Share and Reuse	city supporting Secondhand Sunday	City-run household Hazardous Waste Bicycle Repair Hub	Seeking Repair Hub; Bicycle Repair Hub	Stakeholder consultations	Construction and Demolition Strategy 2013			Circular Economy Framework 2018	Unit for Research, Innovation & Circular Economy (URICE)	Circular Economy Readiness Strategy (underway)	SMART Living Plan (Water Management Master Plan 2013)	SMART Living Plan (Water Management Master Plan 2013)	Share and Reuse Space	
York Region	The Library			Caribide Gateway Omb's 1 week Collection Program	Environment Community Centre (ECC)	Repair Cafés	Train Builders Program				Procurement strategy (underway)				official website; Train Builders Program		
Grana	Grana Tool Library			Greenway weekends	Take it Back Program										official website		
Guelph	Guelph Tool Library	Paint Reuse Program		Good Exchange Weekends											Guelph Waste Application; official website		
Montreal	LaKéroux				Eco-centre, Francité (eco-recycling centre)										Eco-Quartier; official website		

NOTES:
 "Y" denotes the survey indicates that the municipality has a particular type of initiative, but did not provide additional details about the initiative
 "Survey & Interview (BC)" section shows results obtained from surveys and interviews, regarding municipalities in BC
 "Research (Canada)" section shows results obtained from research, regarding municipalities in other parts of Canada

SRRJ Jurisdictional Scan- Universities/ Colleges

SRRJ Jurisdictional Scan Chart - Universities/Colleges

Survey & Interview (BC)	Lending library of things (e.g. The Thriftory, tool libraries)	Share sheds or free sheds	Campus move-out/in programs to collect and resell student goods	Goods Swaps and/or pop-up sales on campus	Yard sales on campus	Zero waste centres (option to drop off goods for reuse before disposal)	Repair Cafés or Fixit Clinics	Encouraging reuse and refill options rather than single-use plastic items	Innovation labs focused on aspects of SRR	Campus thrift stores	University procurement identifies secondhand items as evaluation criteria	Educational events/campaigns focused on reducing consumption and favouring SRR	Other activities
Simon Fraser University													
University of Victoria		UVic Free Store	Zero-waste Move-out Program	Surplus (reuse office furniture)			Repair Cafés - twice a year (lab phase)			UVic Free Store	Y	"Love My Mug" Campaign	bike share, car share
Thompson Rivers University				TRUSU Eco Club's clothing swap		Y	TRUSU Eco Club's Repair Café	Fill it Forward beverage containers program (reuse containers); Zero Waste Footwear Strategy (effective Jan 2020)					
University of British Columbia			Mindful Move Out program	"Re-use it UBC" (an online platform)									
Research (Canada)													
McGill University								O2U program					
Wilfrid Laurier University		Free Store	Move Out Program					reusable eco-container program		Free Store			
Western University			campus move-out program					Choose2Reuse (Eco-tainers) (reuse food containers)					
University of Toronto				College Book Sales									Y

NOTES:
 "Y" means that the survey indicates that the university or college has a particular type of initiative, but did not provide additional details about the initiative
 "Survey & Interview (BC)" section shows results obtained from surveys and interviews, regarding universities or colleges in BC
 "Research (Canada)" section shows results obtained from research, regarding universities or colleges in other parts of Canada