



CITY OF SASKATOON
**ECONOMIC VIABILITY OF A
MATTRESS RECYCLING SOCIAL
ENTERPRISE**

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INTRODUCTION

SREDA was asked by the City of Saskatoon to analyze the economic viability of a mattress recycling social enterprise in our city. The report provides an overview of the assessment objectives, scope, and methodology, as well as the significance of the mattress recycling social enterprise in addressing waste management challenges and promoting environmental sustainability.

The City of Saskatoon, like many urban centers, faces significant challenges in managing solid waste, including the disposal of used mattresses. As these mattresses end up in landfills, they contribute to environmental degradation and consume valuable landfill space. To tackle this issue, the concept of a mattress recycling social enterprise has emerged, which not only addresses the environmental impact but also provides social benefits by creating employment opportunities and supporting community development.

The objective of this assessment is to analyze the potential of establishing a mattress recycling social enterprise in Saskatoon. The assessment considers various aspects, including market dynamics, operational considerations, cost-benefit analysis and social and environmental impact. By conducting this assessment, we aim to provide insights into the economic viability of the enterprise and make informed recommendations to enhance its prospects for success.

It is important to note that this report is based on the available data and assumptions at the time of analysis. The findings and recommendations presented herein should be considered as guidance, subject to further research and validation in the implementation phase.

SOCIAL AND ENVIRONMENTAL ANALYSIS

Mattress recycling offers significant social and environmental benefits that contribute to sustainable practices and the well-being of communities. Mattress recycling helps alleviate the burden on landfills, which are often overcrowded and emit harmful gases as mattresses decompose. By diverting mattresses from landfills, recycling programs reduce the need for additional landfill space and mitigate potential health hazards associated with the release of toxic chemicals into the air, soil, and groundwater.

In terms of environmental benefits, mattress recycling conserves valuable resources. Mattresses contain various components such as metal springs, wood frames, foam, and fabric, which can be recovered and reused or recycled into new products. By extracting these materials, recycling reduces the demand for new resources and the energy-intensive processes associated with their extraction and production.

From a social perspective, mattress recycling creates job opportunities within the recycling industry. Recycling facilities employ workers to dismantle mattresses, sort materials, and process them for reuse or repurposing.

Additionally, mattress recycling reduces greenhouse gas emissions and energy consumption. Instead of producing new materials from scratch, recycling existing mattress components requires less energy and emits fewer carbon emissions. This contributes to combating climate change and helps conserve natural resources, as recycling saves energy that would otherwise be needed for manufacturing new materials.

Overall, mattress recycling offers a dual advantage by improving both social and environmental aspects. It minimizes waste, creates employment opportunities, reduces pollution, conserves resources, and contributes to a more sustainable future.

MARKET ANALYSIS

Mattress Recycling in Saskatchewan

Mattress recycling currently does not exist in Saskatchewan, leaving the landfill and out-of-province services the only two options for municipalities and residents to dispose of or recycle mattresses.

Market Segment - Source of Mattresses

Based on our research, we have identified several key market segments in Saskatoon that contribute to mattress consumption. These segments include residential households, hotels and other hospitality establishments, educational institutions with housing options, healthcare facilities, furniture manufacturers and retailers, and government housing. These sectors collectively account for the majority of mattress consumption in the area. Additionally, charitable organizations that handle unusable mattresses and municipal waste management and recycling programs also serve as sources of mattresses for recycling efforts.

Market Size

Limitations: It is important to note that the market size calculation has certain limitations that should be considered. Firstly, the calculation does not account for potential changes in recycling fees, which can have a significant impact on the overall market size. Secondly, the analysis excludes the consideration of fees associated with mattress pick-up, which could affect the estimation of the total market potential. Thirdly, additional revenue generated from materials obtained from the mattress recycling process was not included in the market size calculation. Lastly, the calculation focuses primarily on households and hotels, neglecting other potential market segments that could contribute to the overall size of the mattress recycling market. It is essential to address these limitations in order to provide a comprehensive understanding of the market dynamics and potential opportunities for growth.

In order to evaluate the economic feasibility of a mattress recycling social enterprise, it is crucial to gauge the market size as it directly correlates with the demand for mattress recycling services in Saskatoon. By thoroughly examining population trends, housing statistics, and pertinent market research data, we can estimate the annual quantity of mattresses that are needing to be replaced. The market size analysis also informs on the enterprise's potential revenue streams and overall viability.

Considering the constraints of limited data availability, we devised an estimation approach to determine the market size in Saskatoon by focusing on two prominent mattress consumer segments: households and hotels. By employing this method, we aimed to provide a reliable approximation of the market size, taking into account the significant influence of these sectors on mattress consumption and disposal patterns.

Household Market Size (129,088 occupied households)				
Mattress Lifespan (Years)	Average Replacement Rate	# of Mattresses Replaced Annually	Fee to Recycle	Market Size
7	14.3%	18,441	\$20.00	\$368,822.14
10	10.0%	12,909	\$20.00	\$258,175.50
15	6.7%	8,606	\$20.00	\$172,117.00
Hotel Market Size (5,200 hotel rooms)				
5	20.0%	1,040	\$20.00	\$20,800.00
6	16.7%	867	\$20.00	\$17,333.33
7	14.3%	743	\$20.00	\$14,857.14
Total Market Size				
			Minimum	\$186,974.14
			Base	\$275,508.83
			Maximum	\$389,622.14

Source: SREDA

Provinces with Mattress Recycling

Several provinces in Canada have taken proactive measures to establish mattress recycling programs. These programs enable the responsible management of discarded mattresses, diverting them from landfills and promoting the recovery of valuable materials. The provinces that have successfully implemented mattress recycling initiatives, include:

Mattress Recycling Organizations	
Alberta	<ul style="list-style-type: none"> • Re-Matt • Evergreen Recycling
British Columbia	<ul style="list-style-type: none"> • Alberni-Clayoquot Regional District - Recycle Matters • Canadian Mattress Recycling • Mattress Recycling • Pacific Mattress Recycling • Penticton and Area Cooperatives Enterprises
Manitoba	<ul style="list-style-type: none"> • Mother Earth Recycling
Ontario	<ul style="list-style-type: none"> • Recyc-Mattress
Quebec	<ul style="list-style-type: none"> • MattCanada • Recyc-Mattress

Three notable examples are Mother Earth Recycling in Winnipeg, MB, Canadian Mattress Recycling in Vancouver, BC, and MattCanada in Anjou, QC.

Mother Earth Recycling (MER), founded in 2012, is an Indigenous Social Enterprise that arose through a collaboration between the Neeginan Centre, the Centre for Aboriginal Human Resource Development, and the Aboriginal Council of Winnipeg. As a community-driven initiative, MER provides valuable training and employment opportunities for its members who would otherwise face barriers to employment while offering an essential service to the city. Not only does MER play a pivotal role in mattress recycling, but it also actively engages in electronic waste recycling.

Canadian Mattress Recycling, established in 2011, emerged as a 100% women-owned company in response to the City of Vancouver's ban on mattresses and box springs in landfills. Their dedication led to the diversion of over 50,000 mattresses and box springs to recycling centers, resulting in savings of more than 1 million cubic feet of landfill space. Furthermore, this initiative created 45 new job opportunities, making a positive impact on the local economy.

MattCanada was established in 2004 as a result of extensive research conducted in collaboration with mattress manufacturers and retailers, driven by the objective of minimizing the adverse environmental impact of mattresses. Since its inception, the company serves a wide range of clients including manufacturers, hotels, municipalities, universities and individual residents. Alongside mattress recycling, MattCanada has expanded its services to include the recycling of upholstered furniture such as sofas and armchairs, as well as fabrics, clothing, home appliances, metal and plastics.

END MARKET-USE

Materials obtained from mattress recycling, such as wood, fabric, foam, cotton, felt, plastic and steel, offer a wide range of end-market uses through innovative recycling and repurposing processes. The recycling process can also have a recycling rate of up to 95 percent or more, depending on the process.

- **Wood:** Wood frames extracted from mattresses can be reclaimed and repurposed for constructing new furniture or flooring, or they can be utilized as a renewable source of biofuel for energy generation.
- **Fabric:** The fabric materials from mattresses can be recycled into insulation products, carpet padding, or other applications in the automotive and textile industries.
- **Foam:** Foam extracted from mattresses can be transformed into carpet underlay, cushioning materials for furniture or packaging, and even converted into new foam products.
- **Cotton and Felt:** Cotton and felt components can be utilized in the manufacturing of insulation, padding, and soundproofing materials.
- **Plastic:** Plastic components can be recycled into new plastic products, including packaging materials or plastic lumber.
- **Steel:** Steel springs are valuable for scrap metal recycling. They can be melted down and reused in the production of new steel products, including a new rebar for a car.

The diverse utilization of wood, fabric, foam, cotton, felt, plastic, and steel materials extracted from mattresses demonstrates the potential for creating new products and reducing waste through effective recycling and repurposing efforts.

START-UP COST

Starting a mattress recycling social enterprise involves various start-up costs that are crucial to consider when planning for the enterprise. Some of the key expenses include:

1. **Facility and Equipment:** The facility should have space for storing and processing mattresses, and for specialized equipment such as shredders, grinders, balers and conveyor systems are essential for dismantling and processing mattresses efficiently.
2. **Transportation:** Mattress collection requires transportation resources to pick up used mattresses from various sources, including individuals, retailers and hospitality establishments.
3. **Permits and Licensing:** Obtaining the necessary permits and licenses to operate a recycling facility. This includes environmental permits, waste management licenses and compliance with local regulations.
4. **Operations:** Aside Hiring skilled workers who can handle the dismantling and processing of mattresses, as well as doing administrative tasks. Additionally, the cost of utility needs to be considered.
5. **Marketing and Outreach:** Promoting the social enterprise and raising awareness about mattress recycling. This can include creating a website, developing educational materials, participating in community events and implementing advertising campaigns.

It's important to note that the specific start-up costs can vary, depending on the size of the facility. Therefore, it is advised that a comprehensive feasibility study and a detailed business plan is required to estimate the start-up costs accurately.

BENEFITS

A mattress recycling facility brings a multitude of benefits, ranging from economic advantages to positive environmental and social impacts. By efficiently processing and repurposing mattress materials, the facility contributes to resource conservation, waste reduction and the promotion of a circular economy.

In addition to mitigating the burden on landfills, mattress recycling facilities generate revenue through the sale of reclaimed materials, create job opportunities and foster sustainable practices. The following section further explores the benefits that stem from this type of initiative:

- **Cost savings from landfill diversion:** By diverting mattresses from landfills and recycling their components, the social enterprise helps reduce the burden on waste management authorities and municipalities. This reduction in landfill waste leads to cost savings for the community, allowing funds to be allocated towards other important areas of waste management and community development.
- **Revenue from material sales:** By efficiently dismantling and processing mattresses, valuable components can be extracted and repurposed for various industries, including construction, manufacturing, automotive and textiles. By monetizing these materials, the enterprise can use it to cover the facility's operational cost.
- **Positive environmental impact:** By diverting mattresses from landfills, these initiatives prevent the release of harmful chemicals and greenhouse gases into the environment during the decomposition process. Additionally, recycling mattress components reduces the need for extracting raw resources, conserves energy, and decreases the environmental footprint associated with manufacturing processes.
- **Job creation:** A mattress recycling social enterprise can create employment opportunities, specifically targeting underemployed demographic groups like Indigenous peoples, who experience disproportionately high unemployment rates in Saskatoon.

A mattress recycling social enterprise is a step towards sustainability, where waste is minimized, resources are maximized and municipalities are driven by sustainable practices.

FUNDING AND PARTNERS

Securing adequate funding and establishing strategic partnerships are vital components for the successful implementation of a mattress recycling social enterprise, especially when operating in partnership with the City of Saskatoon.

Concurrently, partnering with the City of Saskatoon, waste management agencies, local businesses, and community organizations brings invaluable expertise, resources, and collaborative opportunities to the table. This collaborative endeavour aims to combine efforts and address the pressing issue of mattress waste, while fostering a circular economy and promoting sustainable waste management practices.

Partners

Potential partners that would be applicable to support a mattress recycling social enterprise, include:

- [EGADZ](#)
- [CUMFI](#)
- [Muskeg Lake Cree Nation – Urban Reserve](#)
- [Peter Ballantyne Cree Nation](#)
- [Quint Development](#)
- [SaskAbilities](#)
- [Saskatoon Tribal Council](#)
- [Saskatoon Regional Waste Management Centre](#)
- [Saskatchewan Waste Reduction Council](#)
- [STR8 UP](#)
- [University of Saskatchewan, School of Environment & Sustainability](#)

Funding

When exploring potential funding options, including loans, for a mattress recycling social enterprise, there are several avenues available to support such an initiative, including:

- [Community Economic Development and Diversification](#)
- [Community Futures Saskatchewan](#)
- [Green Municipal Fund](#)
- [Strategic Partnership Initiative](#)
- [Telus Indigenous Communities Fund](#)
- [Women Entrepreneurship Fund](#)

CONCLUSION

An increasing challenge on the landfill and a rising shift in better sustainable management of waste present a unique opportunity for the City of Saskatoon when it comes to used mattresses. However, the concept of a mattress recycling social enterprise is one solution to addressing the city's growing problem. Not only does a mattress recycling facility address the pressing environmental impact of discarded mattresses and decreasing landfill space, but it also brings about significant social benefits by creating employment opportunities and fostering community development.

Overall, a new social enterprise has the potential to achieve certain economic, environmental, and social goals for the city while positively impacting the local community and contributing to a more sustainable future.