

City of Lethbridge Comprehensive Waste Diversion / Waste Prevention Master Plan

Final Report



SONNEVERA
international corp.

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Executive Summary

sonnevera international corp. was contracted to develop a comprehensive Waste Diversion / Waste Prevention Master Plan to guide the future of waste diversion and prevention-related activities within the City of Lethbridge.

The City is the sole provider for residential waste collection, through weekly automated and manual curbside collection, and services an estimated 15% of the commercial sector. Private collectors, including BFI, Waste Management and some additional small businesses, offer commercial collection options to the remainder of the commercial sector.

The City of Lethbridge generated approximately 80,000 to 90,000 tonnes of waste annually between 2001 and 2006, consisting of waste generated within the residential, construction & demolition (C&D) and industrial, commercial and institutional (ICI) sectors. This equates to an average of between 1.1 and 1.2 tonnes per capita of waste annually. Approximately 58% of the waste stream originates in the ICI sector, while 19% comes from C&D sources, and the remaining 23% is generated by residents. The high contribution of the ICI sector to Lethbridge's waste stream is likely a result of the heavy concentration of large industrial operators in Lethbridge, combined with the reality of Lethbridge as a regional hub that services a wide geographic area.

Current waste prevention activities that take place include development and delivery of educational materials regarding source reduction and reuse, and promotion of backyard composting and grasscycling. Current waste diversion initiatives include recycling drop-off depots, toxic waste round-ups, E-waste collection, yard waste drop-offs, brush chipping, and Christmas tree recycling.

Approximately 14% of residential waste is currently diverted through existing recycling programs. Current diversion activity in the ICI sector represents 12% of the total ICI waste stream. There is currently little diversion activity occurring in the C&D sector in Lethbridge.

A range of potential waste reduction and diversion options were presented for residential, ICI and C&D sectors. Comparative program information was also compiled for similar municipalities, as well as provincial targets. This wide range of options was presented to the City of Lethbridge project team, and acceptability and applicability to the City's situation were discussed. Alternatives deemed to be unsuitable were excluded from the list of potential options to produce a final list of options for further consideration.

Each of these potential waste reduction / diversion options was then further researched to identify examples of best practices, including diversion potential, lessons learned and implications to the City of Lethbridge.

At the same time, extensive stakeholder consultations were conducted within residential, construction & demolition, and industrial, commercial and institutional sectors. Stakeholders were consulted on both group and individual bases, as well as through on-line surveys.

966 residential surveys were completed, with some of the notable results as follows:

- Over half of the respondents felt a user-pay approach, where those putting out more garbage are charged higher fees, is acceptable.
- Almost 80% of respondents supported the implementation of curbside recycling.
- Just under half of residents expressed a willingness to pay between \$5 and \$10 for curbside collection of recyclables, while an additional 16% were willing to pay more than \$10. About 40% of respondents were not willing to pay \$5 per month for this service.
- 44% indicated they would be likely to use a curbside collection service for kitchen organics, while 20% were unsure. Only just under 30% were willing to pay more than \$5/month for this service.
- Residents were evenly split among those willing to pay, and those less willing to pay to have yard waste collected at the curb. Over ¾ of residents were not willing to pay \$5 per month for this service.
- The majority of respondents thought bi-weekly garbage collection would be adequate for their needs.
- Respondents indicated a strong willingness to use a special waste facility.

39 ICI surveys were completed, with input from a good cross-section of industrial, commercial and institutional contributors:

- Over 90% of ICI respondents indicated that mandatory recycling would be an acceptable approach.
- Over half of those responding indicated they would be interested in an education, training and technical assistance program.
- 36% of respondents found increased tipping fees unacceptable, while only 21% feel it is acceptable to increase tipping fees.
- Well over half considered variable tipping fees acceptable, while only 11% found it unacceptable.
- Just under half of ICI respondents found banning recyclable materials from landfill acceptable, while a further 30% were neutral.



Ten construction and demolition surveys were completed, with the following results:

- There was very strong support for implementing mandatory waste reduction plans.
- There was strong negative reaction against a refundable deposit program requirement.
- Respondents were split on their acceptance of significantly increased tipping rates, while the majority supported implementing variable tipping fees. They were largely neutral on landfill bans.

Visual surveys of waste stream elements were also utilized to validate information compiled through other methods. A visual inspection and in-person survey was undertaken with 26 businesses to assist in assessing the state of current waste diversion practices in the Lethbridge Industrial, Commercial and Institutional sectors. 96% of those surveyed indicated that they recycled, while 35% of respondents participate in organics diversion initiatives. Beverage containers, cardboard and paper were the most likely to be mentioned as being recycled.

Information from the best practices research, as well as feedback from the stakeholder consultations, was used to develop suggested program strategies for each sector by combining elements from the scoped program options list. These strategies are presented in a tiered format to provide introductory to aggressive program approaches.

These strategies were further reviewed with City staff to develop a series of primary recommendations for implementation:

City Leadership

- Establish green procurement initiative
- Review City waste management operations

Residential Program Implementation

- Develop curbside collection plan for recyclables and kitchen organics, in concert with bi-weekly waste collection
- Pilot curbside program for 12 months
- Phase out drop-off depots
- Develop plan to encourage on-site yard waste management
- Increase residential user-pay garbage differentials
- Develop multi-family diversion program
- Implement Additional Program Elements, including community outreach, Master Composter / Recycling program, and incorporation of recycling incentives
- Design expanded drop-off recycling facility

Implementation of the residential programming recommendations is estimated to result in the following:

- Diversion potential: 20–50%
- Capital cost: \$8–\$9 million
- Annual operating cost: \$5–\$6 million
- Monthly additional household cost: \$12–\$17/mo

ICI Program Implementation

Based on its significant contribution to Lethbridge's waste stream, it is recommended that the ICI sector be a priority target for waste reduction and diversion initiatives.

- Initiate technical assistance and education program
- Develop organics management capacity
- Introduce differential tipping fees
- Establish mandatory ICI recycling

Implementation of the ICI programming recommendations is estimated to result in the following:

- Diversion potential: 40–60%
- Capital cost: \$175,000
- Annual operating cost: \$350,000
- Tipping fee increase: \$3/tonne (initial)



C&D Program Implementation

- Include C&D sector within ICI technical assistance and education program
- Develop / encourage infrastructure capacity

Implementation of the previous C&D programming recommendations, in concert with pending provincial regulations, is estimated to result in the following:

- Diversion potential: 40–75%
- Capital cost: \$100,000
- Annual operating cost: \$300,000
- Tipping fee increase: \$2–\$3/tonne

Build Community-Based Social Marketing Capacity

Integrate Incentives into Program Designs

Recognize / Reward High Performers

Consider Regulatory Options

Enhance Measurement and Monitoring