WASTE MANAGEMENT STRATEGY
Executive Summary 2012-2022

Sustainable, Cost Effective Solid Waste Management

City of Medicine Hat
Environmental Utilities Department

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INTRODUCTION

The Solid Waste Utility offers services and programs in three key areas as follows:

1) Waste collection services for the residential sector and for the commercial sector.

2) Landfill disposal services for residential, commercial and local industrial sectors.

3) Waste diversion program including depot recycling, materials processing, compost services and participation in Provincial waste diversion programs.

The 2012 - 2022 Waste Management Strategy proposes 23 specific strategies in each of these functional areas. It also proposes a review of five specific topics in 2017 to determine if conditions have changed to suggest that these topics be pursued as new strategies.

WASTE MANAGEMENT STRATEGY PRINCIPLES

A waste management strategy should be built upon accepted principles. This strategy is based on three principles including the Industry R’s; the Triple Bottom Line and the Diversion versus Cost proposed theme of Reasonable Diversion at Reasonable Cost.

WASTE MANAGEMENT MODEL STRATEGIES

1.0 Financial Revenue to the Cost Ratio of One

The City Solid Waste Utility maintains competitive rates and services and is in a financially healthy state. The Solid Waste Utility maintains a financial strategy to ensure that it achieves an annual Revenue to Cost Ratio of One.

Strategy:
Continue with the Revenue to Cost Ratio of 1 funding strategy for financial sustainability.
2.0 Waste to Energy

The 2012 – 2022 Waste Management Strategy does not advocate the Waste to Energy alternative for the City. As the Waste to Energy technology gains more widespread and proven support among Canadian communities of our size range, a future Medicine Hat Waste Management Strategy may give greater consideration to this alternative Strategy:

*Postpone a Waste to Energy model for waste management to a future strategic period while monitoring the technology and conversion trends by other Canadian municipalities for future consideration.*

3.0 Waste Diversion Initiatives

The government, industry and private sector attitudes, enthusiasm and support for waste management highlights the growing social element in the triple bottom line principle. The Waste Management Strategy works in harmony with the existing strong social and private sector initiatives.

*Strategy:*

*Evaluate Provincial and other waste diversion initiatives based on the Industry R’s, the Triple Bottom Line and with the “Reasonable Diversion at Reasonable Cost” balanced approach.*
COLLECTION STRATEGIES

4.0 Residential Garbage Collection

Worker injuries and vehicles accidents have dropped significantly as a result of the use of the automated cart system. Customer feedback includes a very positive response to this automated service. The viability of the residential collection service is now much more stable and secure. Other benefits include litter reduction and productivity improvements.

Strategy:
Continue with the automated cart collection system as the sustainable residential garbage collection service.

5.0 Residential Yard Waste Collection

The City’s yard waste collection was first offered to residents in 1997. Yard waste collection is a separate service that also uses special automated collection carts.

Strategy:
Continue offering residents an automated yard waste collection service on an as requested basis with the current single monthly fee structure to finance both the domestic service and the yard waste collection service. Expand the partnership with Medicine Hat College, Grasslands Naturalist Society and other local agencies to increase public education for on-site yard waste management including xeriscaping, grasscycling, composting and mulching.

6.0 Commercial Collection Development Standard

There are currently limited development standards to influence the aesthetic quality of commercial waste set out practices. Improvements in this area would be beneficial.

Strategy:
Establish a minimum standard in the Municipal Servicing Standards Manual that provides for an effective layout and screening standard for commercial waste collection.

7.0 Downtown Core Commercial Waste Collection Service

The downtown core continues to have a legacy challenge with space in rear lanes for commercial bins. The new automated cart system presents a strategic opportunity for a new service concept to address the downtown rear lane issue.

Strategy:
Initiate public consultation with downtown businesses to explore the use of the automated cart collection system to replace or supplement the current 1.5/3 yard rectangular bin system on a customer by customer basis as a more efficient and space saving system for downtown core customers.
LANDFILL STRATEGIES

8.0 Landfill Expansion Study

It is in the best interests of the community to initiate a strategy for the search and evaluation for a new or expanded landfill site with an initial study to determine the expandability potential of the existing site.

**Strategy:**
*Initiate a study to determine the expandability potential of the existing landfill site for additional capacity of at least 20 years, and if, not successful, actively review potential new landfill sites.*

9. Non-Hazardous Industrial Service

Non-traditional operations have resulted in significant revenues that are the basis of a strong working capital position in the Solid Waste Utility. The financial gains from these operations have historically been used as Solid Waste Utility general revenue.

**Strategy:**
*Continue to offer the non-hazardous industrial cell service and invest in future cells as demand requires.*

10. Landfill Gas Study

A current question most landfill operators face today is the potential for extraction of landfill gas for small scale, local power generation. This is a strategic question for the City Landfill.

**Strategy:**
*Fund and conduct a landfill gas study to determine the cost and potential for gas harvesting.*

11. Alternate Daily Cover

The Solid Waste Utility has been examining options and reviewing Alternate Daily Cover (ADC) technology appropriate for use at the landfill. The use of ADC technology has the same practical benefit as a significant, low cost waste diversion program in that it reduces the consumption of air space, thereby extending the life span of the landfill.

**Strategy:**
*Select a system and procure supporting equipment for an alternate daily cover system at the landfill to reduce the use of limited on site soil and reduce airspace consumption.*
12. Pursue Market Tipping Fees

There is a major strategic concern about the low tipping fees compared to the Alberta market average. The City landfill tipping fee should be strategically set with consideration to local market share as it moves toward a market price.

**Strategy:**
Pursue market tipping fees through a gradual incremental approach to retaining a market share of revenues. Consider a differential fee structure to encourage diversion and beneficial re-use.

13. Regional Landfill

The City, Town of Redcliff and Cypress County agreed to review opportunities for regionalization of solid waste disposal operations in the 2010 Inter-municipal Development Plan.

**Strategy:**
Review opportunities for regionalization of solid waste disposal operations with the Town of Redcliff and Cypress County.

**COMPOST STRATEGIES**

14. Expand Biosolids Compost Service

The City previously contracted with another community to compost biosolids. As long as the City composes biosolids for its own needs, the additional tonnage provided by contracted services offers favorable returns.

**Strategy:**
Expand the biosolids compost service to other communities on a fee for service arrangement as determined by demand.

15. Food Waste Collection and Composting

With a successful and stable biosolids and yard waste compost program, it is appropriate to consider whether to strategically pursue a food waste collection and compost program. A high level analysis was conducted and the conclusion is that a commercial/institutional food waste collection and composting program will be costly for the limited diversion potential.

**Strategy:**
Defer consideration of a City sponsored food waste collection and composting program until after 2017 due to excessive cost for the service benefit and continue to monitor technological improvement, investment costs and operations costs for future consideration.
WASTE DIVERSION STRATEGIES

16. C&D Waste Diversion

There is significant potential for more C&D waste diversion. The Provincial government has initiated a study to capture more C&D waste and is working with local construction associations to promote more cooperation from the building industry.

**Strategy:**
*Initiate public consultation with construction sector to develop a strategy to increase C&D waste diversion.*

![Diagram showing Waste Source at Landfill]

17. Expand Commercial Sector Fiber Diversion

The City and other waste collection service providers also offer a cardboard recycling collection service to businesses and institutions on a fee for service arrangement. There is opportunity for expansion of the City fee for service to the business and institutional sector.

**Strategy:**
*Initiate public consultation with businesses to expand the current Solid Waste Utility fiber diversion service and revenue stream.*
18. Residential Curbside Collection Service

It seems that it is the community’s preference at this time to remain with the Drop-Off Depot Collection System since the Curbside Collection System would lead to significant program costs which the community as a whole is unwilling to pay. Residents who are prepared to pay for personal curbside collection service can do so with any of the small businesses that offer this service.

**Strategy:**
*Defer consideration of a City sponsored residential curbside collection model service until after 2017 due to excessive cost for the service benefit and identify opportunities available for private curbside collection services from existing small businesses.*

19. Expand the Drop-Off Depot Service

In consideration of the advantage of continuing with the drop-off depot system, a suitable location for additional drop-off depots to enhance service levels in a cost effective manner is required.

**Strategy:**
*Pursue the development of additional drop-off depots.*

20. Materials Recycling Facility Expansion

Natural growth and community support for recycling has been demonstrating the need for an expanded processing facility.

**Strategy:**
*Expand the MRF capacity based on a drop-off depot collection model.*

21. Plastic Bag Ban Bylaw

Since the Provincial government is working with the retail industry on this issue, there appears to be merit in allowing the government and retail industry a fair opportunity to advance their education and incentives to result in a decrease in the use of plastic bags.

**Strategy:**
*Monitor the effectiveness of government and industry strategies for the reduction of single use plastic bags while encouraging private retail services to continue their education initiatives and incentives.*

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“Plastic bags are one component of a larger stream of packaging waste, which is currently being addressed at the national level. Alberta Environment is working with C.C.M.E. to develop options for reducing the amount of packing marketed to consumers. These options will include measures for reducing plastic bags.”

Alberta Environment
22. Eco Center

The landfill has evolved into an Eco Center where residents can divert numerous household hazardous and non-hazardous wastes. A review of establishing a new manned Eco Center Collection facility in the city compared to remaining with the status quo landfill facility was conducted. Due to the safety and environmental nature of handling these products, an Eco Center Collection facility must have immediate access to trained and knowledgeable operation staff to properly handle, process, package and ship the products for further processing.

**Strategy:**

*Defer consideration for an ECO Center in the city due to cost while continuing to encourage residents to take advantage of the flexible hours of operation available with the current Eco Center at the landfill.*

23. Other Waste Management Initiatives

There are initiatives that enable the community to participate in recycling choices including opportunities to recycle, donate for reuse, or properly dispose of a wide variety of items. Locally many charitable organizations have reuse and recycle initiatives in clothing, furniture and building supply programs that include both drop-off services and curbside collection services.

**Strategy:**

*Continue to encourage charitable and private sector initiatives to enhance their existing services in conjunction with their social program objectives*

**CONCLUSION**

The 2012 - 2022 Waste Management Strategy builds on the successes and momentum of the past decade and a half as well as takes into consideration the community feedback on costs and benefits of additional services. The strategy also focuses on optimizing the cost-benefit balance to extend the life of the landfill at a reasonable cost while working in harmony with the existing strong social and private sector initiatives.

Increased opportunities are needed for recycling and recovery of value from waste generated by the institutional, commercial and industrial sectors. The City’s initiative in providing collection services and processing to the commercial sector has steadily influenced the private sector to be more proactive.

Some of the strategies presented are based on conclusions that conditions or timing is not supportive for action in the 2012-2022 timeframe. The City should revisit several initiatives in the 2017 timeframe to determine if conditions, technology, costs or advantages have changed to suggest greater pursuit. These include:

- Waste to Energy
- Food Waste Collection and Composting
- Residential Curbside Collection Service
- Eco Center
- Plastic Bag Ban Bylaw