



Rural Municipality of Mountain

Regional Waste and Recycling Review

July 29, 2022



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1 EXECUTIVE SUMMARY

In February 2022, the Rural Municipality of Mountain (the ‘RM’) engaged BDO Canada LLP (‘BDO’) to undertake a review of its Regional Waste and Recycling Program (the ‘Program’). The scope of the review endeavoured to evaluate the Program’s internal control performance, effectiveness, and opportunities for regionalization.

The Rural Municipality of Mountain is located in the Parkland region of Manitoba, between the Duck Mountain and Porcupine Provincial Forests. The RM’s population is approximately 1,000.

In 2018, the RM of Mountain issued By-Law No. 05-18, enacting the RM to establish and operate the Solid Waste Management system. The system which consisted of two transfer stations, Mafeking and Birch River, and two waste disposal facilities Cowan and Pine River, has served the RM in offering waste disposal and recycling services to the local communities.

In 2021, the RM of Mountain has converted the two waste disposal facilities, Cowan, and Pine River, into transfer stations. Since then, the four transfer stations (Mafeking, Birch River, Cowan, and Pine River) collect, accept, and store waste and recyclables until the next pick-up facilitated by OSS (Ottenbreit Sanitation Services Ltd). The RM offers curbside collection service and a Pay-as-you-Throw Program in which residents are required to pay if their households’ disposed waste amount exceeds the limit specified by the By-Law.

In March 2021, the Manitoba government launched a new Municipal Service Delivery Improvement Program (MSDIP) that will assist municipalities and planning districts with financial support to complete value-for-money service delivery reviews of programs and services. The RM of Mountain is a beneficiary of the program to improve its regional waste and recycling program without raising taxes.

The review was funded under the MSDIP Program. Over the course of the review, the RM provided full access to various documentation, data, employees, and contractors.

The review found that the Program was, in the context of the RM’s operating environment, generally well controlled, managed, and effective in meeting current expectations.

In addition, the following opportunities were identified for consideration by the RM:

#	FINDING	RECOMMENDATION
1	Current initiatives such as the Multi-Material Stewardship Manitoba Program and Pay-as-You-Throw Program are key programs in place and require targeted improvements to reach their objectives.	It is recommended that the formal strategies be developed for both the MMSM and PAYT Programs, including considerations for stakeholder engagement and enforcement.

#	FINDING	RECOMMENDATION
2	Operational processes are suitable for the current state but may not accommodate future demands (such as growth in users, increasing regulatory complexity, and cost pressures).	It is recommended that policies be formalized with respect to: contractor management and tendering, sustainable waste management, and the Pay-As-You-Throw Program and that all policies (including the operational Waste Disposal Policy) are reviewed and updated accordingly on an annual basis.
3	Decision making is based on basic financial information, but there is limited operational analysis or evaluation of key performance indicators in the identification of trends and opportunities.	It is recommended that technical training be requested from the Province and that additional key performance indicators be evaluated for inclusion in Council reporting and that these be analyzed to identify trends and opportunities (such as category cost variances and diversion efficiency).
4	Strategic vision and targets are not formally defined for the Program.	It is recommended that the RM of Mountain develop a strategic waste management plan that defines their vision, goals and objectives, and performance metrics for the Program.
5	The Program lacks systematic processes for both the identification and monitoring of projects, as well as the procurement and management of contractors.	It is recommended that the RM of Mountain develop a strategically focused procurement policy for contractors and large capital projects that considers all the risks and benefits associated with future investments and activities.
6	The Program is not well supported by automation and thus reliant on manual processes to collect and analyze data.	It is recommended that the RM evaluate its specific data needs and the consider the long-term feasibility of automated data collection solutions.

CONCLUSION

The review found that the Program was, in the context of the RM’s operating environment (a small and simple operation), generally well controlled, well managed, and was effective in meeting current expectations. However, as demands on the Program increase (with respect to higher expectations from the residents, and/or increased regulatory compliance) the lack of a long-term strategy and the inability of existing policies and procedures to meet potential future demands will become more evident, and as a result the Program’s efficiency and cost effectiveness may suffer as a result.

2 INTRODUCTION

BACKGROUND

The Rural Municipality of Mountain

The Rural Municipality of Mountain is located in the Parkland region of Manitoba, between the Duck Mountain and Porcupine Provincial Forests. The RM's population is approximately 1,000.

In 2018, the RM of Mountain issued By-Law No. 05-18, enacting the RM to establish and operate the Solid Waste Management system. The system which consisted of two transfer stations, Mafeking and Birch River, and two waste disposal facilities, Cowan and Pine River, has served the RM in offering waste disposal and recycling services to the local communities.

In 2021, the RM of Mountain has converted to the two waste disposal facilities, Cowan, and Pine River, into transfer stations. Since then, the four transfer stations (Mafeking, Birch River, Cowan, and Pine River) collect, accept, and store waste and recyclables until the next pickup facilitated by OSS (Ottenbreit Sanitation Services Ltd) . The RM offers curbside collection service and a pay-as-you-throw program in which residents are required to pay if their households' disposed waste amount exceeds the limit specified by the By-Law.

Regional Waste Disposal and Recycling Program (the 'Program')

The RM's Regional Waste Disposal and Recycling Program (the 'Program') consists of four transfer stations (Mafeking, Birch River, Cowan, and Pine River). In addition, basic curbside collection is provided, along with Pay-as-you-Throw ('PAYT') based collection, are provided to residents. The PAYT Program charges \$3/bag excess of the two-bag basic collection.

In March 2021, the Manitoba government has launched a new Municipal Service Delivery Improvement Program (MSDIP) that will assist municipalities and planning districts with financial support to complete value-for-money service delivery reviews of programs and services. The RM is a beneficiary of this program to improve its regional waste and recycling program without raising taxes.

OBJECTIVE

The objective of this review was to report on waste and recycling activities, costs, future potential impacts, and expansion opportunities that may exist for the RM and their ratepayers through a regional approach. More specifically, this review was designed to:

- assess whether appropriate internal controls (including governance, financial management, and administrative policies) were in place and adequately supported;
- assess whether the Program was designed and delivered with due regard to the principles of economy, efficiency, and effectiveness, and;
- identify opportunities for further regionalization of the Program to reduce the overall costs and their impacts.

SCOPE

The scope of this review included: the review of costs associated with the RMs' waste disposal and recycling services; identification of future opportunities to expand, collaborate, and implement cost-saving measures, and provision of recommendations to assist the RM of Mountain achieve an efficient, economical, and effective waste disposal and recycling program.

APPROACH

To achieve the planned objectives and scope, the review's approach was structured around three core elements:

- 1) Reviewing of policies and associated documentation, as well as financial and operating data;
- 2) Interviewing with internal stakeholders regarding perceptions of the Program's performance; and
- 3) Surveying external stakeholders (tailored toward residents) to capture perceptions of the Program's performance.

3 FINDINGS AND RECOMMENDATIONS

The review found that the Program was, in the context of the RM's operating environment, generally well controlled, managed, and effective in meeting current expectations. The following findings and associated discussion form the basis of the recommendations of this report.

Finding #1: Current initiatives such as the Multi-Material Stewardship Manitoba Program and Pay-as-You-Throw Program are key programs in place and require targeted improvements to reach their objectives.

The RM is a beneficiary of Multi-Material Stewardship Manitoba Inc. (MMSM) Program. MMSM is a not-for-profit, industry-funded organization that funds and provides support for Manitoba's residential recycling programs for packaging and printed paper.

MMSM works on behalf of the manufacturers, retailers and other organizations that supply packaging and printed paper to Manitobans. These businesses pay fees on the materials to MMSM, which are then used to reimburse municipalities for up to 80% of the 'eligible costs' of the residential recycling system. Payments to the municipalities are based on the sum of eligible administration, operating, promotion and education and capital costs less revenue for packaging and printer paper program designated materials. Their main goal is to promote the reduction, reuse and recycling of the materials managed in the program. The amounts reported to MMSM between 2017 and 2021 is listed in Appendix I, at Table 1.

The household garbage and recycling are held in bins, while the electronics are held in a trailer. There are piles for tires, metal, burnable, and bulk items/large furniture. Items such as paper and cardboard, plastic, and tin, aluminum and glass are being recycled.

The RM has also implemented a partial Pay-As-You-Throw (PAYT) Program for picked-up garbage that requires households to pay based on the number of bags. Two bags of waste are allowed, and any additional bag is subject to an extra-fee of \$3.00. The interviews with stakeholders stated the PAYT was highlighted as an effective incentive that promotes waste reduction, increases recycling, and increases overall environmental benefits among the residents of the RM. However, the survey conducted during this review (detailed in Appendix II) noted that 33% responded as being neutral to the Program. This indifference may perpetuate non-compliance and thus undermine the Program's objectives. This demonstrates that there is room for improvement in how the Program is communicated to residents and, specifically, its impact on the environment and municipal taxation.

One of the issues noted with bag-based programs is waste compaction in which a resident will try to fit as much as waste as possible into each bag countering the purpose of the PAYT Program. To resolve this issue, the RM has decided to track collections with anyone exceeding the limit to be billed by end of the month; however, this increased littering, illegal dumping, and recycling contamination. Addressing this problem, municipalities have tailored PAYT programs to improve local compliance. Some of the commonly used options are:

- Customized bags: Municipalities have implemented trash metering systems based on volume by introducing customized trash bags. Under this system, trash collectors collect designated trash bags, which residents can buy from local supermarkets or convenience stores.
- Wheelie Bins (for curbside collection): Smaller municipalities have opted for a scheme with variable sizes of wheelie bins. A household depending on their garbage disposal for the week or every two weeks can select and pay for a wheelie bin based on their volume and size.
- Weight based system: Municipalities have also implemented precise weight-based system for garbage collection. Collection contractors can have trucks with equipment to weigh the garbage and charge each household based on the actual weight, or place smart garbage cans with scales to measure the weight and radio-frequency identification (RFID) tags to identify and bill households.

A key aspect of solid waste management is continuously communicating with and educating stakeholders. The RM has acceptable items guides/flyers published on their websites and printed copies. However, no additional initiatives are put in place to raise awareness and educate the communities on waste diversion initiatives. Examples of strategies but not limited to:

- Posting frequently asked questions about recycling practices and the Program on their website and other social media platforms.
- Collaborate with provincial programs and share guides and marketing materials such as how to divert and handle food waste, yard waste, farm waste and other types of recyclables.

- Creating a Facebook (and/or other social media) page for the Program to inform, keep the public updated, inform about schedules, and other additional information.
- Organizing recycling seminars, community activities including “Neighborhood Clean-up Day” and exchanging not used items regionally.
- Developing clear and targeted communication campaigns to ensure easy access to information on what can be recycled.
- Partnering with stewardship programs to leverage the available tools and events to promote recycling.

Recommendation #1: It is recommended that the formal strategies be developed for both the MMSM and PAYT Programs, including considerations for stakeholder engagement and enforcement.

Finding #2: Operational processes are suitable for the current state but may not accommodate future demands (such as growth in users, increasing regulatory complexity, and cost pressures).

The RM relies on the contractors for the collection and haul of waste and recyclables, but there was no contractor management policy in place to govern contractor performance and procurement. While no significant performance issues were raised during over the course of the review, oversight of the contractor was ad-hoc. These policy gaps may introduce challenges when changing the facility’s operation or managing contractor performance. Accordingly, policies should be developed to address these gaps.

For example, the adoption of the pay-as-you-throw policy initially resulted in residential garbage being left uncollected at roadside. The contractor was initially directed to only pickup additional bags if they were accompanied by an appropriate tag; however, many bags were left without tags and thus went uncollected. This quickly resulted in loose garbage being scattered through the community and necessitated a change in operational policy to pickup all bags, note the address of untagged bags, and subsequently bill those addresses. In this case, the contractor was amiable to these changes, but it’s conceivable that these types of changes could result in operational confusion, contractual scope changes, and additional billings. More substantive policies related to the day-to-day management of operations and contractor performance help to mitigate these types of risks.

RM and contractor employees are provided safety training from the Workplace Health and Safety Officer prior to commencement of their work. This training addresses safe work expectations in relation to current equipment and procedures. It was noted that there is no formal cadence to the refreshment of that training. This presents a risk that equipment and procedure is implemented without ensuring adequate safety training. Accordingly, associated policies should be re-evaluated to ensure an appropriate retraining cadence, including its triggering by the addition or modification of existing equipment or procedure. All training activities should be logged.

The current Waste Disposal Policy mirrors the Waste Management Facilities Regulations (M.R. 37/2016) and Standards for Transfer Stations in Manitoba (2016); it reflects the minimum operational requirements. However, the Policy has not been updated since 2018 and, as a

result, may not reflect current guidelines. In addition, it may not reflect nuances of local operations. It is best practice to have management review formal policies on an annual basis.

Recommendation #2: It is recommended that policies be formalized with respect to: contractor management and tendering, sustainable waste management, and the Pay-As-You-Throw Program and that all policies (including the operational Waste Disposal Policy) are reviewed and updated accordingly on an annual basis.

Finding #3: Decision making is based on basic financial information, but there is limited operational analysis or evaluation of key performance indicators in the identification of trends and opportunities.

It was noted that the information provided to Council was basic and lacked underlying analysis or reference to performance indicators. While strong information was not being provided to Council, there was also no indication that Council requested stronger information. This observation suggests that there may be a lack of technical understanding about financial aspects of waste management operations. Waste management operations is a specialised discipline within public works and requires, not only specific performance measures but also, specific technical knowledge. Owing to the small size and scale of rural governments, this specialised skillset may not be readily available and, as a result, lend itself to standardized training programs covering its basic elements. Provision of a level-setting training program would improve the core knowledge of both Council and Staff and thus enable a more rigorous and productive level of oversight.

The site attendants, on a monthly basis, provide financial data to the Financial Clerk who then prepares the budgets and financial reporting for Council. The Council members meet every two weeks to discuss matters related to the program's operation. The meeting's agenda include reporting areas ranging from budget approvals, equipment purchases, and financial planning. Meeting minutes are published on the website for public viewing. However, the use of key performance indicators ('KPIs') was limited.

The budget and the expenses are reviewed by Council and the Financial Clerk. The RM reports the expenses per transfer stations and tracks contractor's invoices received monthly. The Dauphin landfill also sends to the RM monthly reports of waste disposed in landfills¹ weighted in tonnes, who then reported to the Waste Reduction and Recycling Support (WRARS) Program to receive rebates as they are subject to \$10.00 per Tonne WRARS levy. The WRARS Program was established to improve Manitoba's waste diversion rate, encourage sustainable waste management practices and enhance municipal waste diversion activities².

In the absence of additional technical guidance, stakeholders suggested value in reporting on both the 'diversion rate' and 'waste characterization'. The diversion rate is the proportion of waste that is diverted to recycling or other alternate end uses; it is a generally used performance metric for the efficacy of a recycling program. Waste characterization is a quantitative assessment of waste composition; it serves as baseline to the development of

¹ Note: Municipal governments and businesses can reduce their waste bill by reducing the amount of waste sent to landfill and municipalities can increase their financial reward through enhanced recycling and waste diversion activities.

² <https://www.gov.mb.ca/sd/wastewise/wastereduction/index.html#:~:text=The%20Waste%20Reduction%20and%20Recycling,enhance%20municipal%20waste%20diversion%20activities.>

waste management strategy. Both of these metrics can be manually assessed on a periodic basis, with the existing technology, and would serve to better inform the RMs policies.

Recommendation 3: It is recommended that technical training be requested from the Province and that additional key performance indicators be evaluated for inclusion in Council reporting and that these be analyzed to identify trends and opportunities (such as category cost variances and diversion efficiency).

Finding #4: Strategic vision and targets are not formally defined for the Program.

This review noted the absence of a strategic waste management plan. These plans are used to articulate goals and objectives in the context of long-term constraints and operating conditions. The implications of not having a strategic waste management plan are that it may be challenging to establish reliable long-term plans and align resources accordingly. This impact can be particularly profound in the context of small municipalities because of the relative inflexibility in levying special charges to rate payers. While capital costs associated with waste and recycling operations may be large, the ability to quickly raise funds from a small community may be limited. Strategic planning provides foresight to put necessary money aside well in advance of large projects.

Accordingly, strategic plans are common tools for affecting municipal governance objectives. While the RM has developed the Program around broad waste reduction objectives, it has not written an associated plan that outlines the goals and objectives.

The Manitoba Waste Diversion and Recycling Framework outlines the Province's approach to encouraging circular strategies as a means to create new economic opportunities. Circular economy largely focuses on the elimination of waste by improving the design of materials, products, and business models. Avoiding and reducing waste to landfill, as well as reusing material, minimizing waste disposed and overall waste generation rates. These Provincial goals are inherently strategic in nature.

Without a formal strategic waste management plan, the RM's alignment to the Provincial framework is undocumented. However, in writing a strategic waste management plan, the RM has an opportunity to ensure fulsome integration of circular economy principles and thus allow the Program to evolve concurrently with other municipal and provincial developments. Integrating the circular economy into the RM's program will allow the program to move in the same direction as other municipalities and the provincial plan. Examples of goals include:

- Support circular economy approaches;
- Minimize environmental impacts of solid waste management to air, water, and land, and;
- Increase awareness of waste prevention.

Clear strategic vision and realistic goals will allow the RM to accurately evaluate waste and recycling program performance and identify actionable strategies for future improvement. It is also considered best practice to incorporate public participation and transparent communication into the evaluation and design of strategies.

Recommendation #4: It is recommended that the RM of Mountain develop a strategic waste management plan that defines their vision, goals and objectives, and performance metrics for the Program.

Finding #5: The Program lacks systematic processes for both the identification and monitoring of projects, as well as the procurement and management of contractors.

Municipalities are financially responsible for the establishment and operation of waste depots and handling facilities. Capital expenditure into waste management infrastructure is largely comprised of vehicles, dumpsters, trailers, and supporting infrastructure. To ensure expenditures are properly managed, the Council will review and approve, on a yearly basis, the waste disposal budgets, financial statements and reports to Council.

However, the RM does not have an established process for the systematic identification, evaluation, and adoption of new projects. As a result, there is a risk that potentially valuable projects are missed, or they languish without receiving proper consideration. Furthermore, it may be challenging to provide an appropriate level of oversight for adopted projects, where evaluation criteria were not established at the project's outset. As a result of the lack of a capital replacement plan, there's a risk that capital expenditures are inefficient in their deployment. In outsourced business models, capital replacement and new project evaluation are naturally tied to procurement and contract management processes. Accordingly, there's an opportunity to integrate the evaluation of projects with the development of a strategically focused procurement policy.

The RM relies on contractors to provide services; however, it does not currently have a procurement policy for contractors or large capital projects. This affects the depth of the contractor pool and thus the overall effectiveness of contractor driven service delivery. Hesitance to engage in the evaluation of contractor performance may limit the ability to properly monitor key performance indicators, quality standards, and service levels.

Furthermore, reliance on one contractor risks service disruptions in the event the contractor goes bankrupt or otherwise fails. While the remoteness of the community contributes to the small contractor pool, concerted efforts over the long term combined with a clear procurement strategy can help correct this deficit. It is recommended that a procurement policy be implemented as to provide a framework for contracting and purchasing activities while ensuring fair and transparent accountability for public money.

Recommendation #5: It is recommended that the RM of Mountain develop a strategically focused procurement policy for contractors and large capital projects that considers all the risks and benefits associated with future investments and activities.

Finding #6: The Program is not well supported by automation and thus reliant on manual processes to collect and analyze data.

The Program is not well supported by automation and thus reliant on manual processes to collect and analyze data. This places greater strain on already limited municipal resources. For example, it was noted during site visits that data is collected manually on printed spreadsheets. When household garbage comes in, it is marked down, by hand, and allocated to the proper household. This information is then transcribed into spreadsheets that, in turn, flow into the

information reviewed at bi-weekly Council meetings. As manual data entry can be prone to error, it may result in poor decision making and performance evaluation, especially over the long term.

Poor data quality undermines decision-making. Increasing the level of automation in data collection would improve data quality. Benefits of having an integrated software for all transfer stations and other services that the program offers include:

- Program growth by streamlining the transactional processes,
- Better decision-making process,
- Audit trails of all tickets minimizing the risk of financial manipulation, and
- Minimizing human error through automated processes.

Alternate approaches to improving data quality in manual systems primarily emphasize secondary reviews and standardization of data forms. As there are cost and management implications to implementing these additional layers of manual control, automated systems should be considered. In evaluating the cost/benefit of various approaches to improving data quality, it should be noted that the enduring nature of waste management utilities introduces a long-time horizon over which small incremental improvements may be captured. Short 'pay-back' periods may not be appropriate.

Recommendation #6: It is recommended that the RM evaluate its specific data needs and the consider the long-term feasibility of automated data collection solutions.

4 CONCLUSION

The review found that the Program was, in the context of the RM's operating environment (a small and simple operation), generally well controlled, well managed, and was effective in meeting current expectations. However, as demands on the Program increase (with respect to higher expectations from the residents, and/or increased regulatory compliance) the lack of a long-term strategy and the inability of existing policies and procedures to meet potential future demands will become more evident, and as a result the Program's efficiency and cost effectiveness may suffer as a result.

APPENDIX I – MMSM WEIGHTS REPORTED AND OVERVIEW OF PRODUCT STEWARDSHIP PROGRAM PARTICIPATION

Table 1: Weights reported under MMSM program for the RM from 2017 and 2021

	MOUNTAIN				
	2017	2018	2019	2020	2021
Kg reported	27,735	21,350	28,180	22,240	22,076
Kg per capita	28.4	21.8	28.8	22.7	22.5

Table 2: Product Stewardship Programs

PROGRAM	OVERVIEW	ACCEPTED MATERIALS
CleanFarm	CleanFarm is a national not-for-profit organization that delivers industry-funded, end-of-life stewardship programs in the agricultural sector across Canada.	Pesticide & Fertilizer Containers
Manitoba Association for Resource Recovery Corporation	MARRC was established in 1997 and initially just covered used oil, oil filters and containers but in 2011, MARRC was also approved to operate the Used Antifreeze Stewardship Program.	Automotive antifreeze, automotive antifreeze containers, used oil, used oil filters, and used oil containers
Call2Recycle Battery Collection Program	Call2Recycle, operated by the non-profit organization Call2Recycle Canada, Inc., promotes environmental sustainability by providing free battery and cellphone recycling in North America.	Dry-cell single use and rechargeable batteries including batteries sold stand-alone and batteries from e-scooters; e-bikes, e-boards, as well as batteries in e-toys, power tools, construction tools, flashlights, spotlights etc.
Electrical and Electronic Waste (Electronic Products Recycling Association)	The EOLE Stewardship Program is a Canadian free recycling program for electrical and electronic waste.	Desktop computers, mice, keyboards, cables, monitors, computer notebooks, notebooks, laptops, and tablets, desktop printers and scanners, televisions, personal portable audio/video systems, vehicle

PROGRAM	OVERVIEW	ACCEPTED MATERIALS
		audio/video systems, cell phones (collected separately by Recycle My Cell) and non-cellular telephones and microwave oven
Tires (Tire Stewardship Manitoba)	TSM has operated a free tire recycling program in Manitoba since 2007.	All tires and tubes for passenger/light trucks, medium trucks, large agricultural and small and large off-road tires
Paint, CFL lights, etc. (Household Hazardous Waste - Product Care Association)	The Manitoba HHW Program is a free Canadian recycling program for household hazardous waste. The program has been in place in Manitoba since May 1, 2012.	Paint, flammable liquids/gasoline, corrosives, toxics, physically hazardous materials, pesticides, fluorescent lighting tubes and compact fluorescent lights ("fluorescent lights"). Includes product containers

APPENDIX II - SURVEY

OVERVIEW

A survey was conducted to gain an understanding of the Program and to gain an insight on how individuals and households respond to the services offered by the Program. In total, 38 survey requests were sent of which 36 were completed. The survey methodology employed included a set objective of gaining an insight of the Program, and to obtain residents thoughts on the current offerings of the Program, community satisfaction, and areas that required improvement.

The survey methodology involved deployment of a questionnaire, collection of responses, and an analysis of responses received. These responses additionally, aided in recommendations and areas that could be improved to improve the efficiency and the effectiveness of the program to best serve the local communities.

Overall, the residents were satisfied with the garbage and recycling collection service offered by the RM. However, multiple areas were noted where the RMs could enhance the efficiency of the Program and these have been reflected in the recommendations.

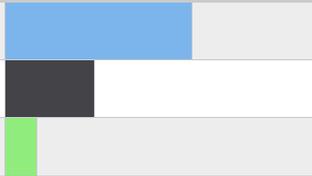
SURVEY QUESTIONS AND ANALYSIS

Question: What is the appropriate pick-up frequency?

The survey requested the community to provide their preferences on the frequency of the pick-ups wherein 50% of respondents were in favor of a weekly pick-up service and 50% in favor of the existing bi-weekly frequency. This observation supports the need for the development of a strategic waste management plan (Finding #4) wherein service expectations are aligned to operational capability over the long term.

In evaluating the appropriate pickup frequency, a detailed cost/ benefit analysis would be required. That analysis may include the engagement of contractors to evaluate different operating models such as the use of non-custom vehicles, and route optimization.

Question: Waste reduction efforts prevent waste in the first place. Waste reduction means using processes, practices, materials, or products that avoid or minimize the creation of waste or environmental disturbance and reduce risk to human health and the environment. How important is household and community waste reduction to you and those in your household?

Choice	Percentage	Count	
Very important	60.53%	23	
Somewhat important	28.95%	11	
Not at all important	10.53%	4	
Total	100%	38	

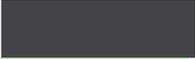
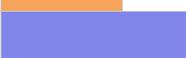
The survey requested that individuals and households provide their thoughts on waste reductions efforts and the importance they give to household and community waste reduction. It was noted from the responses that 60% of the residents were in favor and considered waste reduction as very important while almost 40% of the respondents were indifferent between somewhat important and not important for waste reduction. The responses suggest there's value in increasing awareness and education about waste reduction, diversion and its benefits to individuals, households, and the environment. This observation supports the recommendation to improve communications regarding key program areas.

Question: Which transfer stations do you use most?

Choice	Percentage	Count	
Mafeking	31.58%	12	
Birch River	28.95%	11	
Cowan	21.05%	8	
Pine River	15.79%	6	
Not utilizing the service	2.63%	1	
Total	100%	38	

The survey inquired into which transfer sites households utilize most frequently for garbage and recyclables drop off. It was noted that Mafeking and Birch River were among the most used sites by households. Despite a clear preference for certain facilities, there was no indication these facilities received higher resourcing. This observation supports the recommendation for developing a waste management strategic plan (Finding #4), wherein resourcing could be evaluated in relation to current and projected usage.

Question: What materials do you recycle curbside?

Choice	Percentage	Count	
Cardboard	50.00%	19	
Aluminum, tin, steel cans	63.16%	24	
Plastic bottles	60.53%	23	
Newspaper, mixed paper, and paperboard	39.47%	15	
Glass bottles and jars	60.53%	23	
Cartons	47.37%	18	
Others	39.47%	15	
Total	100%	38	

The survey indicated that most of the items recycled curbside, included aluminum, tin, steel cans category. Next, were plastics and glass bottles, and lastly cardboard and cartons. Additional research was performed and noted that single stream recycling leads to contamination. The biggest contamination comes from broken glass. The abrasive nature not only is hard on equipment but also if the particles get embedded into fiber, the value is diminished.

In addition, when bottles, cans and containers come in contact with paper, the residual liquid that had been left in those containers then gets absorbed by paper products sharing the bin. This additionally puts pressure on sorting processes and the quality and amount of material reclaimed is also at risk of diminishing. Dual stream recycling would overcome the impact of such contamination; however, it would require a cost benefit analysis. Community and Council must collaboratively decide the nature, extent, and impact of implementing a dual stream recycling strategy.

As there are multiple considerations in assessing any systemic changes to the recycling program, this observation supports the recommendation to develop a comprehensive Waste management strategic plan.

Question: When your household is unsure whether an item is recyclable, what do you do?

Choice	Percentage	Count	
Place the item in the trash	47.37%	18	
Consult the RM's website for instructions	13.16%	5	
Place the item in the recycling bin	13.16%	5	
Other	26.32%	10	
Total	100%	38	

The survey indicated that when individuals and households are unsure if an item is recyclable, 47% of place the item in the trash as garbage, 27% of the households mentioned that they consulted the RM's website for instructions or assume it to be recyclable, and approximately 26% of the respondents did however mention that they chose 'other'. This observation supports the recommendation to improve communications regarding key Program areas.

Question: On average how many full black/orange garbage bags (waste) does your household place on the curb for each round of collection?

Choice	Percentage	Count	
1 or fewer	76.32%	29	
2	21.05%	8	
3	2.63%	1	
4 or more	0.00%	0	
Total	100%	38	

To gain an understanding and to evaluate the effectiveness of the PAYT Program, the survey asked respondents how many garbage bags they place on the curb at each round of collection. It was noted that 76% of the respondents selected one or fewer as their option while 24% of the respondents chose two or more for each round of collection. From the responses it was noted that households were complying with the PAYT Program and were aware of the additional charges for each additional bag that was disposed.

Question: If you had to estimate, how much of your waste is food waste (compost)?

Choice	Percentage	Count	
Less than 10%	76.32%	29	
Between 10% and 25%	15.79%	6	
Between 25% and 50%	2.63%	1	
Over 50%	5.26%	2	
Total	100%	38	

To gain an understanding of food waste, the survey asked respondents of an estimate of how much waste they generate comprises of food waste (compost), it was noted that almost 76% of the respondents mentioned that less than 10% of their waste is food waste while almost 19% respondents estimated their food waste to be more 10% and 50%. This may provide an opportunity for the RMs to raise additional awareness regarding food composting, these can include ideas like backyard composting, installation of shared composting bins like 'hotbins' that help in composting food waste at a faster rate. It was noted that the RM does not have a composting program; this observation supports the recommendation to develop a strategic waste management plan wherein composting may be properly evaluated.

APPENDIX III - SAMPLE KEY PERFORMANCE INDICATORS

KPI DIVERSION	
DIVERSION AMOUNT	Amount of material diverted, either in tonnes or kilograms. This can be measured over the total program, per building or per unit.
DIVERSION RATE	Total material diverted as a portion of total material generated as per the below formula: $\left(\frac{\textit{Weight of diversted waste only}}{\textit{Weight of all waste}} \right) \times 100$
PROGRAM COST	
TOTAL COST	Total amount required to pay for an aspect of waste management programming. This can be for total program costs, recycling, or garbage only, or split collection out from landfilling or processing material.
TOTAL REVENUES	Total amount received for selling material as commodities, and the sale of Blue Boxes.
PROMOTION & EDUCATION (P&E) BUDGET	Total amount of dollars budgeted for P&E on a per-unit or per-building basis
COMMUNITY INVOLVEMENT	
PROGRAM AWARENESS	A measure of the general public's awareness of the components of their local diversion program.
CORRECT USE	A measure of individual performance in properly sorting materials for collection. This can be done on a per-unit basis or a per-building basis.