Agenda – Executive Policy Committee – June 16, 2021

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 2, 2021

Item No. 3 2020 Comprehensive Integrated Waste Management Strategy (CIWMS) Annual Report

STANDING COMMITTEE RECOMMENDATION:

On June 2, 2021, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and submitted the following to Council:

1. That this report be received as information.

Agenda – Executive Policy Committee – June 16, 2021

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 2, 2021

DECISION MAKING HISTORY:

STANDING COMMITTEE RECOMMENDATION:

On June 2, 2021, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

COUNCIL DECISION:

On June 20, 2019, Council concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and adopted the following:

1. That the Public Service report back to Council annually on the amount of residential waste created (generation) per capita, sent to a landfill (disposal) per capita, and recycled/composted/etc. (diverted) per capita as measures of performance.

2. That the Public Service develop a source separated organics pilot program and report back to Council with recommendations for the pilot project.

3. That the Public Service report back to Council by the third quarter of 2020 with a ten-year financial plan for the Solid Waste Utility, including recommendations for waste diversion programs.

4. That the development of the multi-family waste diversion fee be included with the ten-year financial plan (Recommendation 3).

5. That the 50% waste diversion target, as approved by Council on October 19, 2011, be deferred so that Public Service can recommend a revised waste diversion target after completion of the recommended source separated organics pilot program (Recommendation 2) and ten-year financial plan (Recommendation 3).

6. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

ADMINISTRATIVE REPORT

Title: **2020 COMPREHENSIVE INTEGRATED WASTE MANAGEMENT STRATEGY (CIWMS) ANNUAL REPORT**

Critical Path: **Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – Executive Policy Committee – Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
Michael Gordichuk, CCLP, Manager of Solid Waste Services	M. L. Geer, CPA, CA, Director, Water and Waste Department	N/A	M. Ruta, Interim CAO

EXECUTIVE SUMMARY

The Annual Report to Council summarizes the activities and financial results for 2020.

2020 was the eighth full year of implementation of the Comprehensive Integrated Waste Management Strategy (CIWMS) since beginning in 2012.

2020 program results include:

- decrease in the residential waste diversion rate to 31.1%
- increase to overall per capita residential waste generation of 10.4%
- increase to per-capita residential garbage generation of 11.7%
- increase in the number of visits to 4R Winnipeg Depots by 32.6%
- increase in the amount of materials managed at 4R Winnipeg Depots by 43.5%

Overall, there were significant increases to the total amount of residential waste managed in 2020. This is likely due to the COVID-19 pandemic, which resulted in residents spending more time in their households. Increases in overall waste generation are consistent with reports from other cities that participate in the Municipal Benchmarking Network Canada.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

On October 19, 2011, Council approved the Comprehensive Integrated Waste Management Strategy (CIWMS). Recommendation No. 28 of the CIWMS requires: “That the Winnipeg Public Service publish an annual report on the status of the Master Plan.”

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with the recommendation of the report.

HISTORY/DISCUSSION

In 2009, Winnipeggers landfilled in excess of 283,000 tonnes of residential garbage, and recycled and composted approximately 54,000 tonnes of residential material - a diversion rate of about 15 percent which was one of the lowest in Canada. At the same time, the Public Service was recommending changes to the garbage and recycling collection systems based on feedback from collectors, industry trends and other municipalities in North America.

As a result, in June 2010, Council directed the Public Service to create a waste diversion strategy in consultation with the public, to increase the waste diversion rate, explore options for material collection and provide uniform service for the citizens of Winnipeg. Working with a consultant and through extensive public consultations, a made-for-Winnipeg plan was developed.

OurWinnipeg also identified the need to carry out a comprehensive waste management strategy, to integrate and optimize the service level and efficiency of all facets of the solid waste management system, while minimizing environmental impacts. Winnipeg's Climate Action Plan further supports actions to increase waste diversion efforts and minimize the environmental impacts associated with landfilling waste.

On October 19, 2011, Council approved the Comprehensive Integrated Waste Management Strategy (CIWMS) with the overall strategy of the plan being to increase Winnipeg's diversion rate to 35 percent by 2016 and to greater than 50 percent by 2020 and thereafter. Implementation of the plan began in 2012.

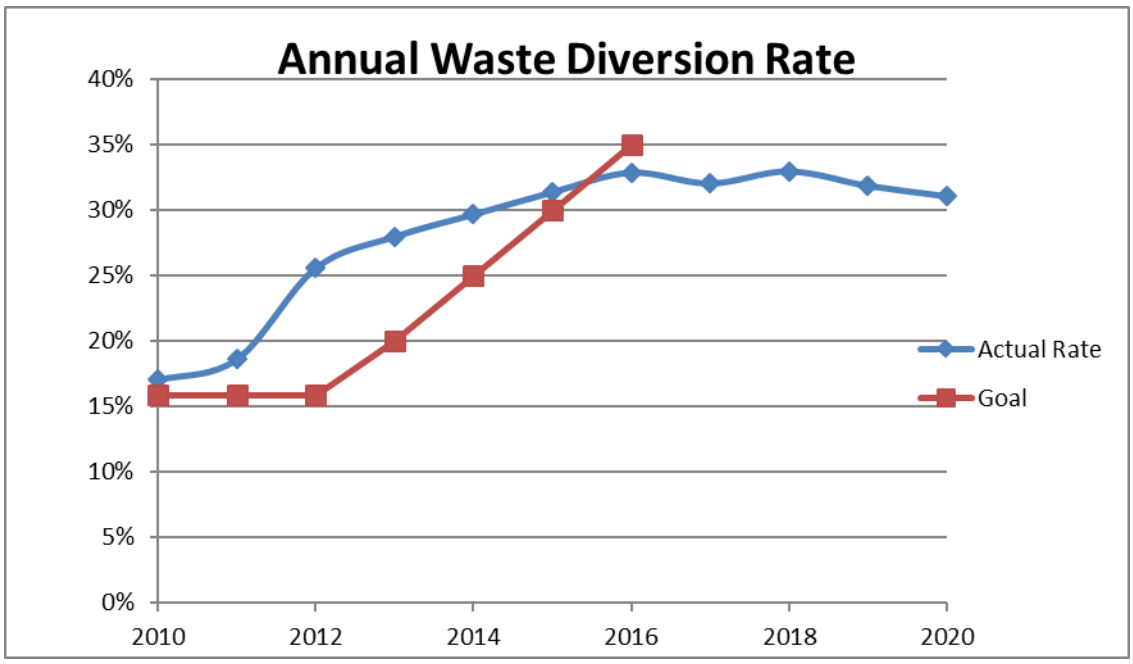
PROGRAM RESULTS – 2020

1. Residential Waste Diversion

The residential waste diversion rate decreased to 31.1 percent in 2020 from 31.9 percent in 2019.

The residential waste diversion rate is calculated as a percentage of the total diverted residential tonnage divided by the total residential tonnage of material landfilled and diverted. The methodology was updated in 2018 to align with the *Generally Accepted Principles for Calculating Municipal Solid Waste System Flow* manual. This aligns the City's methodology with the other cities that participate in Municipal Benchmarking Network Canada. The methodology reflects minor changes to the calculation of backyard composting, bottle deposit returns (beer bottles and cans), and residuals tonnages.

The following graph highlights waste diversion goals (2011 to 2016) established by CIWMS, as well as the actual rate since 2011. Overall, the diversion rate has remained stable since 2015, with a six-year average (2015 to 2020) of 32.1 percent.



A significant increase to the waste diversion rate would not occur without the introduction of a city-wide Residential Food Waste Collection and Composting program.

2. Waste Generation

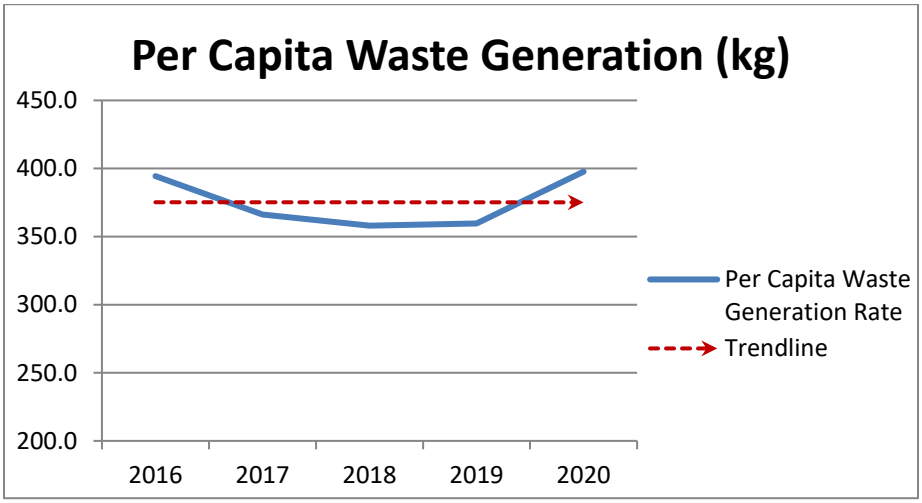
Waste generation is an indicator of system performance and provides additional detail to the waste diversion rate. In 2020, the amount of residential waste managed by the City was over 304,300 tonnes compared to 275,200 tonnes in 2019, an increase of 10.6 percent. During this time, Winnipeg's population grew from 763,900 people to 766,894 people, an increase of 0.4 percent. The increase in the total amount of residential waste managed in 2020 is likely due to the COVID-19 pandemic, which resulted in residents spending more time in their households. These increases in waste generation during the COVID-19 pandemic are consistent with reports from other cities that participate in the Municipal Benchmarking Network Canada.

On a per-capita basis from 2019 to 2020, the total amount of residential waste managed by the City increased by 10.4 percent. Per capita garbage generation increased by 11.7 percent, recycling decreased by 0.1 percent, and leaf and yard waste increased by 16.9 percent. Notably, per-capita garbage generation has decreased by approximately 11.6 percent since 2011, in spite of significant increases in 2020.

Residential Waste Managed by City of Winnipeg Programs per Capita (KG)

	2011	2019	2020	2020 vs 2011
Population	677,800	763,900	766,894	+13.2%
Garbage	309.4	244.7	273.4	-11.6%
Recycling	63.4	66.6	66.5	+5.2%
Leaf & Yard Waste Composting	13.5	42.0	48.4	+257.2%

The following graph illustrates the per capita waste generation rate over the past five years, which has remained fairly static with a five-year average of 375 kg per household.



3. Recycling Program (Curbside and Recycling Depots)

The per capita amount of residential recycling cart-type material collected from all City programs decreased slightly by 0.1 percent in 2020 from 2019. The per capita weight of recyclable material collected at the curb increased by 0.8 percent, and the per capita amount collected at depots decreased by 23.6 percent.

Apart from 2020, there has been a fairly consistent decrease in the weight of recyclable materials collected since 2015 because of ongoing changes occurring in the manufacturing and recycling industries. Known as the “evolving tonne”, recyclable material has continued to shift in composition away from heavier and denser material (e.g. glass, metal, and newsprint) to lighter and bulkier material (e.g. plastic, corrugated cardboard).

Year	Tonnes Recyclable Material Processed	
2020	51,011	
2019	50,856	
2018	52,553	
2017	54,177	
2016	55,010	
2015	55,697	
2014	54,465	
2013	53,606	
2012	48,087	*CIWMS Implemented
2011	45,835	

The five-year average for tonnes of recyclable material processed is 52,721. The 2020 results are approximately 1,700 tonnes below this average.

4. Leaf and Yard Waste Collection and Composting

From 2019 to 2020, the total amount of residential compost material that was diverted increased by 17.3 percent (5,500 tonnes). Per capita, there was an increase of 15.7 percent for curbside collection and 22.3 percent increase for self-haul. Leaf and yard waste (LYW) collection and composting numbers fluctuate from year to year due to weather conditions and other factors. In October 2019, a significant storm event occurred that reportedly damaged 30,000 trees. This resulted in high volumes of LYW in the fall of 2019, and likely contributed to increases observed in the spring of 2020. Additionally, it is likely the COVID-19 pandemic also resulted in an increase of self-haul of compostable materials.

Collection and Self-Haul

Almost 28,000 tonnes of yard waste were collected curbside and over 9,000 tonnes of LYW[1] were dropped off at the 4R Winnipeg Depots and directly to the yard waste composting area at the Brady Road Resource Management Facility (BRRMF). An additional 5,500 tonnes of material were delivered from other public sources, including the City's Retention Pond Weed Harvesting Program.

Composting

In 2020, over 37,000 tonnes of LYW waste[2] were composted at the BRRMF, a 17 percent increase from 2019. The finished compost continues to meet the standards established by the *Compost Quality Alliance* and the *Canadian Council of Ministers of the Environment*. Finished compost is used as top dressing on finished areas of BRRMF and provided to other City departments.

Approximately 10,878 cubic meters of compost was sold as surplus goods in 2020. An additional 1,700 cubic meters (up from 530 cubic meters in 2019) of compost was made available for pick-up by Winnipeg residents through a compost giveaway. In 2020, the compost giveaway was expanded from a one-day event at BRRMF, to a week-long event at BRRMF, Kilcona Park, and Summit Landfill that took place throughout Compost Awareness Week, May 5 to 11.

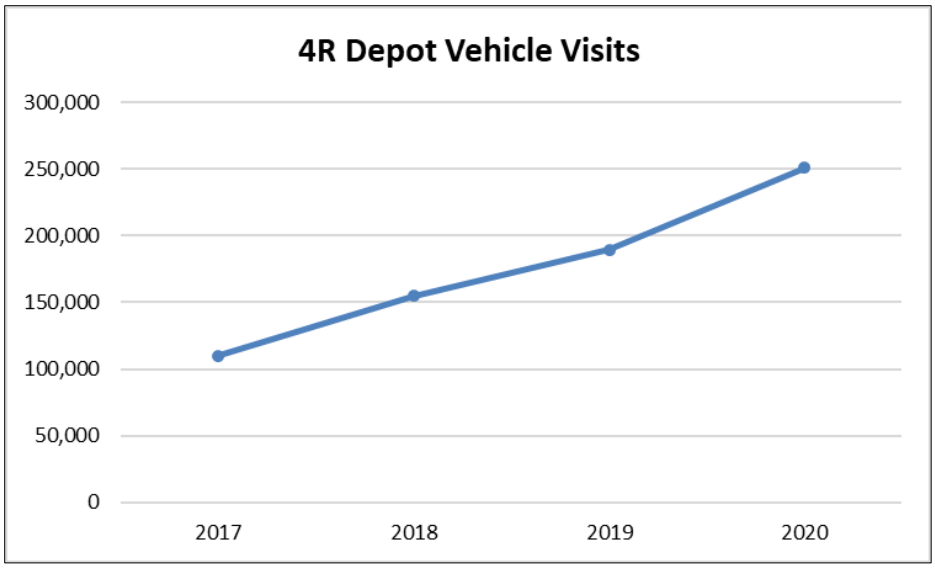
Year	LYW Tonnes Composted	
2020	36,993	
2019	31,630[3]	
2018	33,041	
2017	28,528	
2016	34,123	
2015	33,474	
2014	29,754	
2013	23,223	
2012	10,081	*CIWMS Implemented
2011	6,598	

[1] Includes clean lumber
[2] Includes leaf and yard waste generated from residential properties only
[3] Restated from 2019 CIWMS Report

5. 4R Winnipeg Depots

Combined, the Brady, Pacific and Panet 4R Winnipeg Depots managed 16,675 tonnes of material, a 43.5 percent increase compared to 2019. Of the tonnes managed in 2020, 7,925 were diverted into recycling or composting programs. The remaining 8,750 tonnes consisted of clean fill[4] and concrete/ceramic which was used at BRRMF for daily operations.

Approximately 250,000 vehicles visited the depots in 2020, a 33 percent increase (61,745 visits) from 2019. The chart below highlights a steady increase of 4R Winnipeg Depot use since 2017, the year 4R Winnipeg Depots began tracking vehicle visits.



The increase in the amount of material managed and the number of visits shows the facilities are continuing to become more popular and familiar to residents. This can be attributed to continued focus on customer service and efficiency, as well as increased promotion and advertising. This included additional targeted advertising for fall and spring clean-ups; specific electronics promotion during Black Friday, Cyber Monday, and the Christmas season; as well as the regular communications methods used in years past.

Tonnes of Material Managed at 4R Winnipeg Depots

Material	2019	2020
Batteries	74	79
Bicycles	9	14
Ceramics and Concrete	2,452	3,371
Clean Fill	2,947	5,379
Electronics	665	713
HHW	686	826
Oil	90	124
Mattresses	233	316

Material	2019	2020
Glass	80	79
Lumber	192	91
LYW	2,909	4,184
Appliances	166	190
Recyclable Material	321	305
Scrap Metal	635	726
Tires	164	277
Total	**11,624**	**16,677**

[4] Clean fill typically consists of clay or soil. These are materials that are not originally intended for disposal and therefore not considered diverted material.

Notable, is the 43.8 percent increase of residential LYW managed at 4R Winnipeg Depots. As indicated in Section 4, a storm event in October 2019 resulted in considerable damage to trees and property, which likely contributed to increased LYW tonnages in the spring of 2020.

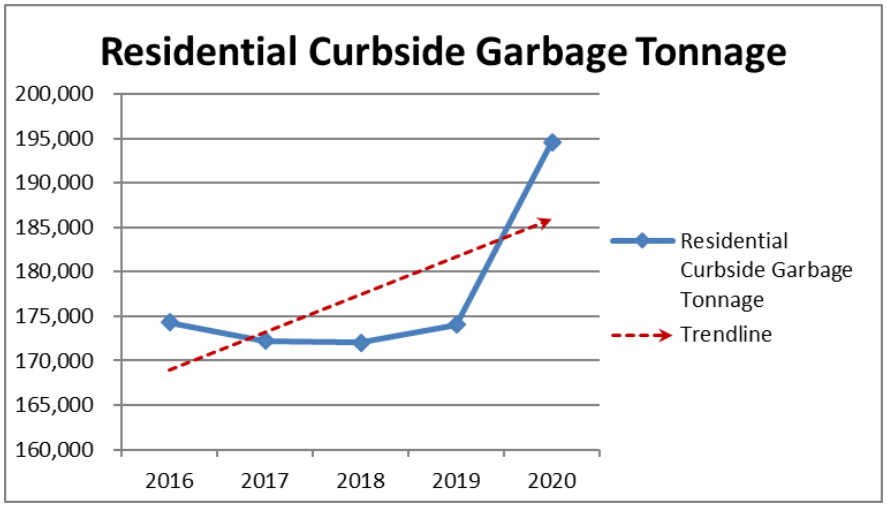
6. Residential Curbside Garbage Collection and Disposal

The weight of residential garbage collected[5] at the curb and landfilled increased by approximately 11.8 percent or 20,520 tonnes.

The chart below highlights a significant increase in garbage collected and disposed of in 2020 compared to 2019. It also shows that, apart from 2020, there has been a trend of decreasing residential garbage collected and landfilled since the implementation of CIWMS.

Year	Residential Curbside Garbage Tonnage	
2020	194,570	
2019	174,050	
2018	172,041	
2017	172,209	
2016	174,280	
2015	177,845	
2014	176,011	
2013	173,897	
2012	201,741	*CIWMS Implemented
2011	209,741	

With a five-year average of residential curbside garbage tonnage at 177,430, the 2020 tonnages are significantly above normal. The following graph illustrates the dramatic increase observed in 2020, highlighting the impact the COVID-19 pandemic had on waste generation in Winnipeg.



[5] Includes a small amount of waste from municipal facilities and small commercial generators

Requests to 311 for Large Item Pickups increased by 12 percent in 2020 compared to 2019. Reports of Abandoned Waste decreased by 34 percent in 2020 compared to 2019, and the number of residents using the Extra Garbage Pickup service increased by 33 percent.

Requests to 311	**2020**	**2019**	**2018**
Abandoned Waste reports	349	527	779
Large Item pickup[6]	14,587	13,037	12,934
Extra Garbage pickup	306	230	236

7. Curbside Collection Performance

Overall there was a small increase to the number of garbage and LYW collection deficiencies in 2020 compared to 2019, while recycling collection deficiencies saw a decrease.

Collection	**Approximate No. of Locations Collected Weekly**	**311 Reports of Missed Collection**		
		2020	**2019**	**2018**
Garbage carts	207,200	6,782	6,592	8,009
Recycling carts	207,200	4,632	4,668	6,097
Yard waste (April to November)	103,400	1,775	1,531	3,137
Total		**13,189**	**12,791**	**17,243**

Note: The total number of reports of missed collection may not be a true indication of contractor performance and penalties. For example, upon investigation by either the City or the contractor, a number of complaints registered as missed collection show:

- there was a valid reason why collection was not done
- the call should have been recorded as a different type of service request.

8. Residential Food Waste Collection Pilot Project (Source Separated Organics)

The two-year residential food waste collection and public engagement pilot project began February 2020, with data collection launched in June 2020, and weekly curbside cart collection to approximately 4,000 households having commenced on October 5, 2020. The purpose of this project is to gauge homeowner interest and participation in a program that collects food waste separately from the traditional waste stream and diverts it from landfill. Out of the 4,000 households selected, 95.67 percent are participating in the pilot.

Phases 1 and 2 of the public engagement strategy were completed in 2020, which included one City-wide scientific survey, one pilot participant survey, and a series of webinars to obtain feedback from pilot participants and the general public. Information obtained from this project will be used to determine the feasibility of a city-wide program.

9. Landfill Gas Capture/Green House Gas Reduction

In its seventh full year of operation, the landfill gas (LFG) system at the BRRMF captured and flared 11.4 million cubic metres of gas, which resulted in a GHG reduction equivalent of 84,324 tonnes of carbon dioxide. This amount is equivalent to avoiding the annual carbon dioxide emissions of 18,339 passenger cars[7] - a 5.8 percent increase in carbon dioxide equivalent avoided compared to 2019 (79,700 tonnes).

[6] Includes pickups of bulky waste and appliances with ozone depleting substances

[7] Based on USA Environmental Protection Agency Greenhouse Gas Equivalencies Calculator

10. Public Engagement

The Community Liaison Committee for the Brady Road Resource Management Facility was established in 2014 as part of the requirements of the new Environment Act Licence. Two Committee meetings were held in 2020. Committee members received updates and provided comment on:

- Residential Food Waste Collection Pilot Project
- Landfill Gas to Energy Beneficial Use Feasibility Study
- landscaping activities on finished areas of the landfill
- noise and odour considerations
- seagull management
- ways to reduce the impact of landfill activities (e.g., construction, operations) on the local environment

The Waste Diversion Advisory Committee did not meet in 2020; however, outreach to committee members occurred in March 2020.

11. Financial Rate Model Study

A request for proposal (388-2019) was awarded on October 1, 2019 for a qualified consultant to complete a Solid Waste Program Management Ten Year Financial Plan and Utility Rate Model. The study reviewed the integrated waste management capital and operational programs, reserves and funding sources, utility model options based on best practices, and a cost of service (COS) rate analysis recommending a sustainable rate structure for the Utility. The Public Service will report back at a future Standing Policy Committee meeting.

12. Biosolids Composting and Soil Fabrication

The 2018-2020 Biosolids Soil Fabrication Pilot Project examines the viability of utilizing biosolids and other residuals generated from City operations, primarily wood waste and street sweepings, to fabricate topsoil to complete the cap system at Summit Landfill. In 2020, approximately 26,000 tonnes, or 47 percent total produced, of biosolids were beneficially used to make soil as part of this three-year pilot project. Solid Waste Services submitted an Environment Act licence proposal for an ongoing biosolids soil fabrication program to commence in 2021. The pilot project has been given a one-year extension while the application is under review.

13. Financial Results

City Council's adoption of the CIWMS also included the introduction of the annual Waste Diversion Fee. Effective January 1, 2020, this fee was charged at an annual rate of $65.00 (April 1, 2019 was $63.00) per dwelling unit to residential properties (properties with seven or fewer dwellings as defined by the Solid Waste By-law). These monies are used to fund waste diversion programs.

The total revenue collected in 2020 was $13.4 million, comparable to $12.4 million in 2019.

Operating costs for garbage and recycling collection are stable and any changes are a result of contractual price adjustments. Decreases in recycling material processing is a result of improvements from the new MRF. LYW collection costs increased by 13.8 percent, which is reflective of the 15.7 percent increase in LYW material collected.

Operating Cost Highlights

Contract Costs (in Millions)	2020	2019	2018
Garbage Cart Collection[8]	$10.7M	$10.9M	$10.3M
Recycling Cart Collection[9]	$11.8M	$12.1M	$11.5M
Recyclable Material Processing	$7.5M	$8.3M	$9.3M
Leaf and Yard Waste Collection	$3.3M	$2.9M	$2.9M
Leaf and Yard Waste Composting	$0.4M	$0.7M	$0.8M

Processing and Marketing of Recyclable Material
2020 was the first full year of operations for the new materials recovery facility (MRF), which commenced operations in October 2019.

A variety of factors including technological, contractual and operational improvements have provided the current MRF with the ability to adapt to extreme changes brought on since 2018, when China drastically changed their import policies, introducing unprecedented quality standards that re-characterized the global recycling markets. The results from the MRF have significantly enhanced processing and marketing performance. Even with continued transitions in global recycling markets for paper and plastics, revenues increased to $3.758 million in 2020 compared to $0.892 million in 2019, a 321 percent increase.

Carts
The department spent approximately $473,000 for the purchase of garbage and recycling carts for new housing developments and for the replacement of damaged carts.

Waste Diversion Reserve Fund
As of December 31, 2020, the balance in the Waste Diversion Reserve was $4.746 million. The balance of the Waste Diversion Reserve will be used towards funding future waste diversion initiatives, such as the Residential Food Waste Collection Pilot Project. There was no transfer to the reserve in 2020 as there was no surplus in Recycling and Waste Diversion due to higher program costs.

CAPITAL COSTS

Residential Food Waste Collection Pilot Project (Source Separated Organics)
A request for proposal (RFP) (607-2019) was awarded in February 2020 to assist with the implementation a two-year residential food waste collection and public engagement pilot project. Data collection was launched in June 2020, and curbside cart collection commenced on October 5, 2020. The two-year pilot project is ongoing and within budget. The Public Service will report back to Council on the findings of the study in Q4 2022.

BRRMF Cell Design and Construction
Disposal Cell 33 was designed in 2020, complete with a leachate collection system and associated infrastructure. It will be constructed in 2021 at an estimated cost of $1.9 million.

[8] Excludes multi-family properties that use garbage bins
[9] Includes multi-family properties that use recycling carts

BRRMF Site Improvements
Improvements are required at the site of the BRRMF under the site's Environment Act Licence. In 2020, ongoing vegetation management and landscaping activities were carried out on closed areas of the landfill. New commercial weigh scales were purchased and installed for a cost of $330,000.

BRRMF Administration Building
In 2020, a new generator was installed to provide back-up power to the administration building and commercial weigh scales for a cost of $180,000. Landscaping of the area surrounding the building will be completed in 2021 for an estimated cost of $80,000.

Landfill Gas Expansion Project
Work on the landfill gas (LFG) and leachate collection system expansion continued with support obtained through the Canada Low Carbon Economy Fund. RFP 194-2020 (Landfill Gas Collection Expansion) was awarded in May 2020 for the expansion of the LFG well field and the conversion to dual-purpose wells for landfill gas and leachate collection. This will improve the LFG collection efficiency of the system to as high as 75 percent. The majority of the construction occurred in 2020, with project completion expected in 2021.

Landfill Gas Beneficial Use Feasibility Study – Alternative Energy Project
A contract for a Landfill Gas Beneficial Use Feasibility Study, RFP 1370-2019 was awarded in March 2020 to investigate the beneficial use of converting BRRMF LFG to alternative energy. The study assessed the relative feasibility of four beneficial use options for the conversion of LFG captured at BRRMF into a marketable energy source. Based on the analysis of potential revenue and costs of construction and operation, the Study identified two options with a positive Net Present Value worth further analysis.

14. 2021 Implementation Plan

Residential Food Waste Collection Pilot Project (Source Separated Organics)
Year two of the pilot project will take place in 2021. It will include weekly food waste collection service to approximately 4,000 households along five waste collection routes, waste audits, and public engagement activities. Additionally, with funds obtained from Manitoba Conservation and Climate, a food waste reduction campaign will be carried out in partnership with the Winnipeg Food Council, and a business case and class 4 estimate for organics processing facility options will be conducted. Information obtained from this project will be used to determine the feasibility of a city-wide program and inform the business case for its implementation.

Biosolids Soil Fabrication Pilot Project
Year four of the Biosolids Soil Fabrication Pilot Project will take place in 2021. An Environment Act licence was submitted to Manitoba Conservation and Climate in 2020 for the implementation of a full-scale program in 2021. The licence is under review; therefore, a one-year extension to the pilot project has been granted by the regulator. The continuation of the pilot project will include the all-season fabrication of soil to supplement City topsoil requirements. The soil fabrication process uses city residuals, such as biosolids, street sweepings from winter road operations (sand and grit) and woodchips, to fabricate top soil. This is then spread and seeded with native prairie species at Summit Landfill. Operations include ongoing environmental monitoring.

Landfill Gas Beneficial Use – Alternative Energy Project
A feasibility study was completed in 2020 that recommended two viable options for further consideration. The next stage of implementation will include procuring a qualified consultant to develop a business case and class 3 estimate for the design, construction and development of one of the recommended options. This work will also include an analysis of procurement and development/governance options for the construction and operation the facility.

Landfill Gas Expansion Project
In 2021, work on the landfill gas and leachate collection system expansion will continue with support obtained through the Canada Low Carbon Economy Fund. This will improve the LFG collection efficiency of the system to as high as 75 percent. The majority of the construction occurred in 2020, with completion of the project expected in 2021.

Communication Strategy
The City will continue to use a multi-pronged approach to communicate its solid waste programs and services, as well as its waste reduction/diversion efforts. Examples of different communication activities include:

- Providing new dwellings with a reusable bag which contains an information package on new collection services, and two sample paper yard waste bags
- Continued public education through social and traditional media (newspaper, radio ads, community newsletters)

FINANCIAL IMPACT

Financial Impact Statement Date: May 14, 2021

Project Name:

2020 COMPREHENSIVE INTEGRATED WASTE MANAGEMENT STRATEGY (CIWMS) ANNUAL REPORT

COMMENTS:

2020 financials are reported for information. Known and estimated future year costs have been incorporated in budget submissions.

L Szkwarek

Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through:

OurWinnipeg Reference: Section 02-2 Environment – “set long range goals for solid waste diversion”

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

This report is in accordance with Winnipeg’s Climate Action Plan through Strategic Opportunity #6 Waste Reduction and Diversion, and supports the following key directions:

6.1 Reduce Consumption and Increase Waste Diversion from Residential, Commercial and Industry (Primary Responsibility: Water and Waste Department).

6.2 Advance Winnipeg’s Circular Economy to Support Waste Reduction (Primary Responsibility: Water and Waste Department)

6.3 Utilize Biosolids In Agriculture and Landscaping Industries (Primary Responsibility: Water and Waste Department)

6.4 Support Integrated Resource Recovery Opportunities (Primary Responsibility: Water and Waste Department)

SUBMITTED BY

Department: Water and Waste
Division: Solid Waste Services
Prepared by: Richard Bolton, MNRM; Melissa Bunkowsky, CPA, CGA
Date: May 14, 2021
File No.: G-101