

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 21, 2016

REPORTS

Item No. 1 2015 Comprehensive Integrated Waste Management Strategy (CIWMS) Annual Report

STANDING COMMITTEE DECISION:

The Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and received the report as information.

Minutes – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 21, 2016

DECISION MAKING HISTORY:

Moved by Councillor Gerbasi,

That the recommendation of the Winnipeg Public Service be concurred in.

Carried

Bill Waddell, VP Operations, Prairies, Emterra Environmental, submitted a communication dated June 20, 2016 with respect to the matter.

ADMINISTRATIVE REPORT

Title: 2015 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
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RECOMMENDATION

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.”

EXECUTIVE SUMMARY

The Annual Report to Council summarizes the accomplishments and financial results for 2015 as well as the plan and objectives set for 2016.

2015 was the third full year of implementation of the CIWMS since beginning in 2012. Program accomplishments in 2015 include: the waste diversion rate increasing 1.7 percentage points over 2014 to 31.4%; reduction in greenhouse gasses at the Brady Road Resource Management Facility (BRRMF) equivalent to the emissions of over 23,000 passenger cars; the ongoing construction of the 4R Winnipeg Depot at the BRRMF, and the commissioning of the pilot Biosolids Composting Facility.

The Diversion rate increase was driven primarily by the leaf and yard waste composting program which grew to over 33,000 tonnes, an 11% increase over 2014. Minor increases to the collected tonnages for recycling and garbage were consistent with the estimated population and housing growth.

In 2015, the number of abandoned waste reports increased three-fold over 2014 to nearly 2,600 due to the implementation of improved operating procedures by Solid Waste Services staff who are inspecting and reporting more cases of abandoned waste.

Overall missed collection reports to 311 have increased to 37,782 in 2015 over the 29,109 reported in 2014, but still remain significantly lower than the 55,011 reports in 2013, the first year of implementation. Approximately 195,000 locations are collected weekly for garbage and recycling, resulting in over 20 million annual collection stops.

An open house for the BRRMF was hosted in October 2015 to provide an opportunity for residents to learn about the new 4R Winnipeg Depot and other improvements. The Community Liaison Committee for the BRRMF met twice in 2015. The Waste Diversion and Advisory Committee was formed in early 2015, and met four times over the course of the year.

This report describes in further detail:

1. Program Accomplishments – 2015
2. Waste Diversion Results
3. Financial Results – 2015
4. 2016 Implementation Plan

IMPLICATIONS OF THE RECOMMENDATIONS

n/a

HISTORY

2015 Comprehensive Integrated Waste Management Strategy (CIWMS) Annual Report

Council adopted the Comprehensive Integrated Waste Management Strategy on October 19, 2011, with the overall strategy of the plan being to increase the diversion rate to 35% by 2016 and to greater than 50% by 2020 and thereafter. Implementation of the plan began in 2012.

1. Program Accomplishments – 2015

2015 was the third full year of the Near Term phase of CIWMS, which is the first five-year plan (2012 to 2017) of the strategy. 2015 Program Accomplishments are outlined below.

Diversion Rate Surpasses Target

With the continued implementation of CIWMS, Winnipeg is surpassing the targeted diversion rate. The diversion rate target for 2015 was 30%.

The waste diversion rate for 2015 was 31.4%, which is:

- an increase of 1.7 percentage points from the 2014 diversion rate of 29.7%, and
- an increase of 12.8 percentage points from the 2011 diversion rate of 18.6% (the year before the new CIWMS programs were implemented).

Greenhouse Gas Reduction

In its second full year of operation, the new landfill gas system at the Brady Road Resource Management Facility captured and flared 110,314 tonnes of carbon dioxide equivalent, similar to the amount captured in 2014 (109,740 tonnes). The 2015 amount is equivalent to avoiding the carbon dioxide emissions of 23,224 passenger cars.

4R Winnipeg Depots

- The 4R Winnipeg Depots are expected to divert up to 10% of currently landfilled materials by diverting more material away from the landfill, and either finding alternative secondary uses for the materials, or ensuring that they are disposed of safely (in the case of hazardous waste).
- Construction of the first 4R Winnipeg Depot at Brady Road Resource Management Facility (BRRMF) was ongoing in 2015.
- Preliminary design was completed for the second depot site on Pacific Avenue.
- Work continued to develop agreements with various product stewards for the collection and handling of designated materials at these depots for the opening of the first 4R Winnipeg Depot.

Composting

The finished compost meets the standards established by the Compost Quality Alliance and the Canadian Council of Ministers of the Environment. Finished compost was primarily used as top dressing on finished areas of the landfill, and was provided, on a pilot basis, to other City departments.

Operation of a Biosolids Composting Facility

The facility was commissioned in May 2015. To date, it has composted 3,938 tonnes of biosolids, representing almost 8% of the 2015 tonnage of biosolids that the Brady Road Resource Management Facility receives from the City's three sewage treatment plants. The composted material is being used as final cover at the BRRMF.

Lime Mud Berm Construction

Starting mid-December 2014, a project began at the Brady Road Resource Management Facility to build a new berm along the boundary of the facility. The project is slated to finish at the end of 2016, with the full landscaping requirement completed in 2017.

The berm is being constructed of lime mud, a natural by-product of the sugar refining process from a former Manitoba sugar beet processing plant. This initiative benefits the landfill, neighbouring properties and the environment by:

- reusing hundreds of thousands of cubic metres of material that would otherwise be landfilled
- helping to buffer visibility of the landfill
- allowing the native earth at the Brady facility to be used for future phases of development generating surplus clay material excavated for the berm that can be used as landfill cover for existing and future landfill disposal cells.

2. Waste Diversion Results

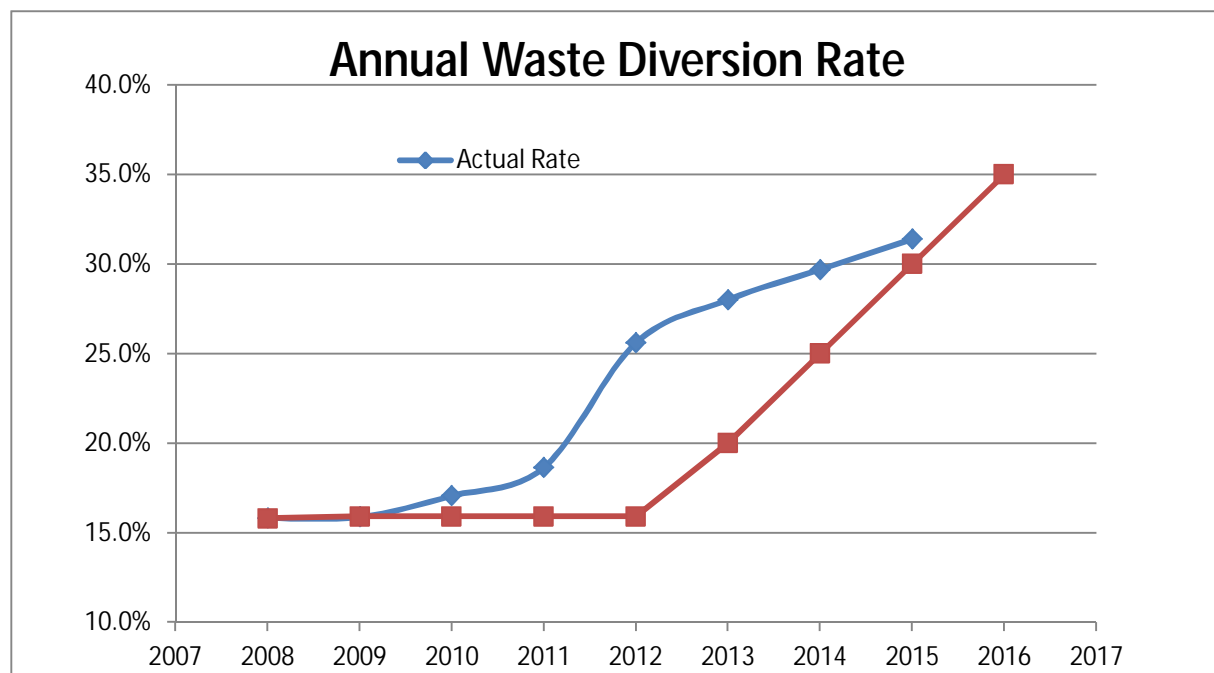
The waste diversion rate is calculated as a percentage of the total diverted tonnage versus total residential tonnage of material accepted at the Brady Road Resource Management Facility

(landfilled and diverted material). The following table summarizes the waste diversion rate over the last five years, along with a description of the program status.

Year	Waste Diversion Rate	Program Status
2015	31.4%	Third full year of new program
2014	29.7%	Second full year of new program
2013	28.1%	First full year of new program
2012	25.5%	Partial year of new program
2011	18.6%	Original program
2010	16.9%	Original program

Annual waste diversion rate and diversion rate goals

The chart below shows the waste diversion goals established by CIWMS, as well as the actual rate since 2009. The City is ahead of schedule of reaching its short-term goal of 35%, as set out in the strategy, however, after the commissioning of the 4R Winnipeg Depots, it is expected that the diversion rate will not increase significantly going forward without increased organics diversion.



Residential Curbside Garbage Collection and Disposal

The amount of residential garbage collected and landfilled in 2015 increased marginally over 2014 by 1,835 tonnes (a 1% increase). This may be attributed to new housing starts (based on the requirement to provide 1,593 new dwellings with carts and service).

The chart below shows that the garbage collected and landfilled in 2015 remains 15% below the 2011 tonnage.

Year	Residential Garbage Tonnage	Program Status
2015	177,845	Third full year of new program
2014	176,011	Second full year of new program
2013	173,897	First full year of new program
2012	201,741	Partial year of new program
2011	209,741	Original program
2010	223,106	Original program

Yard Waste Collection and Composting

In 2015, over 33,000 tonnes of yard waste was composted on the nine-hectare compost pad. This represents a 44% increase over the full first year of curbside collection (in 2013) and five times higher than the 2011 tonnage.

The finished compost meets the standards established by the Compost Quality Alliance and the Canadian Council of Ministers of the Environment. Finished compost was primarily used as top dressing on finished areas of the landfill, and provided on a pilot basis to other City departments.

Year	Yard Waste Tonnage	Program Status
2015	33,474	Third full year of new program
2014	29,754	Second full year of new program
2013	23,223	First full year of new program
2012	10,081	Partial year of new program
2011	6,598	Original program
2010	5,541	Original program

Curbside collection

More than 26,000 tonnes of yard waste was collected curbside from the following properties:

- Single-family homes
- Other residential properties with seven units or less
- Businesses, registered charities and places of worship signed up for cart collection service

The collection contractor, Emterra Environmental, experienced equipment breakdowns during the peak fall season (October and November). This, coupled with the high volume of material placed out by residents, resulted in delays in collection. The contractor has submitted a fleet maintenance plan that addresses the equipment issues which should alleviate any major delays in the future.

Self-haul

About 7,400 tonnes of material were delivered by customers directly to the yard waste composting area at the Brady Road Resource Management Facility:

- 6,869 tonnes from citizens/businesses
- 529 tonnes from the City's Retention Pond Weed Harvesting Program and from other public sources

A Strategy for the Future of Organics

The public service began working on an Organics study in 2015. Organic material is roughly 40% of the residential waste stream and diversion from the landfill is necessary to achieve a 50% diversion target. The public service will continue to work on an organics diversion plan and funding models for same, conduct public engagement, and report back to Council with recommendations to keep organics out of the landfill. The plan will identify estimated costs, a potential framework and options for Council's consideration, to manage all types of organic material that arrive at the Brady Road Resource Management Facility.

Recycling Collection Program

There was a 2.3% increase, corresponding with population growth, in 2015 over last year in the recycling material collected through the curbside, depot and public space collection programs, and an overall increase of 21% from 2011.

Year	Recycling Tonnage	Program Status
2015	55,697	Third full year of new program
2014	54,465	Second full year of new program
2013	53,606	First full year of new program
2012	48,087	Partial year of new program
2011	45,835	Original program
2010	46,896	Original program

Abandoned Waste, Large Item and Extra Garbage Collection

Abandoned waste reports have increased significantly due to the implementation of improved operating procedures by Solid Waste Services staff. Field Inspectors have targeted neighbourhoods that have had a history of numerous reports of Abandoned Waste with increased inspection and are reporting more cases of abandoned waste.

Large Item pickup requests have remained consistent over the past three years.

Since 2013, the number of residents using the Extra Garbage pickup has steadily decreased, possibly because residents are adapting to the 240 litre garbage cart system by distributing any excess waste over a number of collections rather than discarding the excess on a single collection day.

	2015	2014	2013
Abandoned Waste reports*	2,559***	851	2,119
Large Item pickup**	13,561	13,339	13,295
Extra Garbage pickup	825	1,136	1,500

* Based on customer requests to 311.

** Includes pickups of bulky waste and appliances with ozone depleting substances.

*** Includes requests generated by Solid Waste Services staff.

Curbside Garbage, Recycling and Yard Waste Collection Performance

Collection	Approximate no. of locations collected weekly	Reports to 311 2015	Reports to 311 2014	Reports to 311 2013
Garbage carts	195,000	13,668	13,341	26,031
Recycling carts	195,000	15,066	11,995	18,882

Yard waste (April to November)	97,500	9,048	3,773	10,098
Total		37,782	29,109	55,011

The numbers noted above reflect reports to 311 of missed collection.

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.

Landfill Gas Capture and Flaring System

The new landfill gas system, which became operational in 2013, captured and flared 110,314 tonnes of carbon dioxide in 2015. This is equivalent to avoiding the carbon dioxide emissions of 23,224 passenger cars (based on the US EPA Greenhouse Gas Equivalencies Calculator).

Landfill Gas Capture and Flaring Operation	2015	2014	2013 (July 8 - Dec 31)
Tonnes of carbon dioxide equivalents from the flare	110,314	109,470	50,945
Average cubic feet per minute	1015	900	1026
Average methane content	49.5%	49.0%	49.6%
Average oxygen content	1.7%	1.5%	2.2%
Average temperature	904°C	900°C	884°C

Public Engagement

On October 22, 2015, an open house was held at the St. Norbert Community Centre to provide an opportunity for residents to learn about the new 4R Winnipeg Depot and other improvements at the Brady Road Resource Management Facility.

The Community Liaison Committee for the Brady Road Resource Management Facility, established in 2014 as part of the requirements of the new Environmental Act Licence, had two meetings in 2015. Committee members provided advice on:

- a plan for landscaping finished areas of the landfill
- a plan for monitoring noise and odour
- ways to reduce the impact of landfill activities (e.g., construction, operations) on the local environment

Pursuant to Council direction, a Waste Diversion Advisory Committee was formed in 2015. The role of the committee is “to provide advice and recommendations for the completion, implementation, and continual improvement of the Garbage and Recycling Master Plan”. The Committee was chosen to ensure a variety of perspectives were represented, including a diversity of ages and gender, urban and suburban residents, homeowners and renters, families with and without children, and residents living in single-family and multi-family dwellings. In its first year, the committee familiarized itself with solid waste operations and provided input into the development of the Organics Diversion Strategy.

3. Financial Results

City Council's adoption of the CIWMS also included the introduction of the annual Waste Diversion Fee. Effective April 1, 2015, this fee was charged at a rate of \$55 (2014 - \$50) per dwelling unit (properties with seven or less dwellings as defined by the Solid Waste By-law). These monies are used to fund waste diversion programs. The total revenue collected in 2015 was \$10.5 million, comparable to \$9.9 million in 2014.

Operating Costs

Program	2015	2014	2013
Garbage Collection	\$7.5 million	\$7.9 million	\$8.4 million
Recycling Collection	\$5.1 million	\$5.4 million	\$5.6 million
Recycling Processing	\$7.6 million	\$8.7 million ¹	\$7.8 million
Leaf and Yard Waste Collection	\$2.9 million	\$2.7 million ²	\$2.1 million
Leaf and Yard Waste Composting	\$0.9 million	\$0.8 million ²	\$0.5 million

¹ The recycling material processing facility, owned and operated by Emterra, was expanded in 2012-13 to accommodate the processing needs of the additional tonnage of recycling material collected. The expansion costs translated into a new, increased per tonne operating costs for the City. The agreement was finalized in the spring of 2015, and 2014 cost reflects the impact of catch-up payment from the terms of the agreement for the 2013 and 2014 fiscal years.

² 2014 was the first full year that the leaf and yard waste composting facility was operational, and there was a marked increase in the volume of material collected and composted. These costs do not include allocations for salary or equipment costs.

Carts

In 2015, funding for cart purchases was transitioned out of the capital budget and into the annual operating budget. Total costs in the amount of \$492,000 were incurred for the purchase of garbage and recycling carts for new housing developments and for the replacement of damaged carts.

At its January 28, 2015 meeting, Council approved a recommendation to provide a replacement recycling cart or garbage cart at no cost to a property owner if it was determined that the cart has been damaged by a third party through no fault of the property owner. In 2015, 388 carts were replaced at no cost to property owners through this program.

Capital costs

4R Winnipeg Depots (Community Resource Recovery Centres)

The first 4R Winnipeg Depot located at the Brady Road Resource Management Facility opened on February 18, 2016. 2015 capital spending on this project totalled \$3.6 million.

Organics and Waste Audit

The development of organics diversion and waste audit started early 2015 and is ongoing. The anticipated total cost of this project is \$276,500.

Waste Diversion Reserve Fund

Funding for these waste diversion initiatives comes from the waste diversion fee. In 2015, \$10.5M was collected. Total program costs for 2015, including amortization and debt costs, were \$9.5M resulting in a transfer to the Waste Diversion Reserve Fund of \$1M.

At December 31, 2015 the balance in the Waste Diversion Reserve is \$2.4M. This will be used towards funding future waste diversion initiatives, most notably the construction and operation of the 4R Winnipeg depots. The reserve is forecasted to be depleted within the next three years as the Solid Waste Utility's capital, operating and debt costs increase as waste diversion programs continue to expand.

2016 Implementation Plan

4R Winnipeg Depots

The first depot is located at the Brady Road Resource Management Facility. Construction began in spring 2015, and the facility was opened on February 18, 2016.

The second depot will be located on Pacific Avenue between McPhillips and Weston Streets. Design work will be completed in the first quarter of 2016, with construction also beginning in 2016.

These depots will:

- provide residents with an opportunity to drop off materials that could be resold, recycled, composted, or reused instead of landfilled,
- keep more garbage out of the landfill, which means less harmful landfill gas,
- help ensure that hazardous materials are disposed of safely.

According to the CIWMS, the diversion of material through 4R Winnipeg Depot Program should contribute about a 10% increase towards the overall waste diversion goal.

Waste Characterization Study

A four-season waste characterization study started in 2015. This will determine the composition of Winnipeg's waste, with a specific focus on organic waste. This will be the first characterization study the City has undertaken since the implementation of CIWMS. The study will be used to help assess the performance of Waste Diversion Programs and to inform/assist long-term planning.

Organics Diversion Strategy

Research of best practises regarding organics diversion will continue in 2016. The strategy will consider the long-term management of residential organic material generated within Winnipeg, including kitchen waste, leaf and yard waste, biosolids, landscaping waste, animal waste, and wood waste. The strategy will examine options for residential organics collection, and backyard and community composting.

Work will continue toward developing public awareness of the benefits of keeping organics out of the landfill and public engagement regarding organics diversion will be as directed by City Council.

Communication Strategy

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

- Providing new dwellings with an a reusable bag which contains an information package on new collection services, a 2015/2016 calendar with their new collection day and two sample paper yard waste bags
- Using summer students to educate residents through home visits during the summer months
- Participating in public events, such as Home Expressions Show, Take Pride Winnipeg's Sustainability Day and Team Up to Clean Up
- Continued public education through social and traditional media (newspaper, radio ads, community newsletters)

In 2009, Winnipeggers landfilled in excess of 340,000 tonnes of residential garbage and recycled and composted approximately 54,000 tonnes of residential material, for a diversion rate of about 15%, 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, with consultation from the public, to increase the waste diversion rate, explore options for material collection and provide uniform service for the citizens of Winnipeg.

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.

FINANCIAL IMPACT

Financial Impact Statement

Date: May 16, 2016

Project Name:

2015 Comprehensive Integrated Waste Management Strategy Annual Report

COMMENTS:

This report is submitted for information only and as a result there is no financial impact associated with this report.

"Original signed by L. Szkwarek, CPA, CGA"

Lucy Szkwarek, CPA, CGA

Acting Manager of Finance and Administration

CONSULTATION

In preparing this report there was consultation with:

n/a

SUBMITTED BY

Department: Water and Waste
Division: Solid Waste Services/Finance and Administration
Prepared by: R. Park/D. Strandberg/L. Fisher
Date: May 16, 2016
File No. G101