PUBLIC AGENDA

STANDING POLICY COMMITTEE ON

ENVIRONMENT, UTILITIES AND CORPORATE SERVICES

MONDAY, SEPTEMBER 15, 2014, 2014 AT 2:00 P.M., COUNCIL CHAMBER

Councillor Z. Jeffries, Chair
Councillor E. Olauson, Vice-Chair
Councillor A. Iwanchuk
Councillor M. Loewen
Councillor P. Lorje
His Worship Mayor D. Atchison (Ex-Officio)

1. CALL TO ORDER

2. CONFIRMATION OF AGENDA

3. ADOPTION OF MINUTES

3.1 Minutes of Regular Meeting of the Standing Policy Committee on Environment, Utilities and Corporate Services held on August 19, 2014.

4. UNFINISHED BUSINESS

5. COMMUNICATIONS *(requiring the direction of the Committee)*

5.1 Delegated Authority Matters

5.1.1 Noise Bylaw Extension, Saskatoon Mogathon, September 20, 2014, 7:00 a.m. to 3:00 p.m., Michelle Prytula, Race Director
[File No. CK.185-9]

Recommendation
That the request for extension to *The Noise Bylaw* as outlined in 5.1.1. be approved subject to any administrative conditions.

5.2 Matters Requiring Direction

6. REQUESTS TO SPEAK *(new matters)*

7. REPORTS FROM ADMINISTRATION

7.1 Delegated Authority Matters

7.1.1 Integrated Waste Management Annual Report (2013)
[File No. CK. 430-37]

Recommendation
That the information be received.

7.2 Matters Requiring Direction

7.2.1 Sanitary Service Line Replacements
[File No. CK. 7820-3]

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services recommend to City Council:

1. That funding in the amount of $156,000 in 2014 Capital Project #1617 – Primary Water Mains be returned to the Infrastructure Replacement Reserve – Water and Sanitary Sewers;
2. That funding from the Infrastructure Replacement Reserve – Water and Sanitary Sewers in the amount of $156,000 be allocated to Capital Project #1616 – Waste Water Collection;
3. That that the Administration increase base funding for Sanitary Service Line replacements starting in 2015 to approximately $615,000; and
4. That the level of service provided to residents be increased to include the City's portion of an additional 40 replacement locations per year.

7.2.2 City of Saskatoon Environmental Performance Plan
[File No. CK. 7550-1]

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services forward the report of the General Manager, Corporate Performance Department to City Council for information.

7.2.3 Watermain Breaks – Summer 2013
[File No. CK. 7820-5]

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services forward the report of the General Manager, Transportation and Utilities Department to City Council for information.

7.2.4 Civic Service Review Progress Report
[File No. CK.116-1]

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services forward the report of the General Manager, Corporate Performance Department to City Council for information.

7.2.5 Report on Energy and Greenhouse Gas Emissions Reduction
[File No. CK.375-4]

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services forward the report of the General Manager, Corporate Performance Department to City Council for information.

8. URGENT BUSINESS

9. ADJOURNMENT

185-9

5.1.1

City Council
3rd Ave. North
Saskatoon, Saskatchewan
S7K 0J5

August 13, 2014

Michelle Prytula
Race Director, Saskatoon Mogathon
20 Wayne Hicks Lane,
Saskatoon, SK S7L 6S2
Ph: 230-0003

Dear City Council;

Please accept this letter in request for **a noise bylaw extension on Saturday, September 20th, 2014 starting at 7:00 a.m.** to allow us to hold our event, the Saskatoon Mogathon, a walking and running family event designed to benefitting two Saskatoon charities: the Children's Wish Foundation, and the Saskatoon SPCA. It is our goal to make the Mogathon a first class nation-wide running event that raises funds for the centre, as well as showcases the best of our beautiful city.

The past four annual Mogathon events were great successes. This year, once again in consultation with the City of Saskatoon, we have planned a fantastic running route along the river and using the West side of the Riverbank with the start and finish showcasing the beautiful River Landing location.

Over the previous four years, our event has attracted people from all over the province and beyond, as well as high calibre runners and the young and old. We have garnered the support of many Saskatoon businesses.

To attract all age groups, the Saskatoon Mogathon consists of a 30K run and relay, a 21.1K run, a 10K and 5K walk and run, a family 2K, and for those who want to participate without breaking a sweat, a No-K Beer run. In our efforts to make this a first class event, we have garnered the support of one of our local bands to play as participants cross the finish line.

We are requesting a noise level bylaw extension for our announcers to start at 7:00 a.m., and the band to start at 10:00 a.m. Activities will shut down by 3:00 p.m. We will make the necessary communication to the local community associations prior to the event, as well as any residences near River Landing and along the race route.

Our volunteer committee has been working hard to bring the #1 calibre running event to runners and walkers from all over. **We ask that you support our work by providing us with a noise bylaw extension on September 20th, 2014 starting at 7:00 a.m.**

We look forward to your response,

Michelle Prytula
Mogathon Race Director

Integrated Waste Management Annual Report (2013)

Recommendation
That the information be received.

Topic and Purpose
The performance of civic waste handling and reduction programs are reported in the Integrated Waste Management Annual Report for 2013

Report Highlights
1. Recycling programs in 2013 achieved a 67% increase in diversion over 2012 by diverting 12,622 tonnes of material.
2. The Waste Disposal Rate continues to decline and the amount of garbage collected per household is 0.95 tonnes. This is higher than the national average of 0.64 tonnes.
3. Saskatoon has one of the highest rates of residential garbage self-hauled to the Landfill in Canada, creating site management challenges for the operations of that facility.
4. Public Works delivers garbage handling services and operates depots.
5. Environmental & Corporate Initiatives leads in the development and contracted delivery of waste diversion programs and integrated waste education.

Strategic Goals
The information in this report supports the four-year priorities to promote and facilitate city-wide composting and recycling and implement energy-efficient practices in City operations, along with the long-term strategy to eliminate the need for a new landfill under the Strategic Goal of Environmental Leadership.

Background
City Council received the inaugural Integrated Waste Management Annual Report for 2012, prepared by the Environmental Services Branch, at its meeting on November 4, 2013.

Report
Attachment 1 is the *Integrated Waste Management Annual Report* for 2013. Waste Handling services and Waste Reduction initiatives continue to change significantly. The Report provides a description of these changes, the outcomes achieved, along with an outline of the new responsibilities of Environmental & Corporate Initiatives and Public Works resulting from the corporate re-alignment in 2013.

Highlights from the Report

- Recycling programs in 2013 achieved a 67% increase in diversion over 2012 by diverting 12,622 tonnes of material.
- The Waste Disposal Rate per household continues to decline and the amount of garbage collected is 0.95 tonnes (252 kilograms per person). This is higher than the national average of 0.64 tonnes.
- New specifications for garbage carts are helping to bring the cart failure rate down to 0.55% compared to the rate of 15% experienced in some neighbourhoods.
- The cost to deliver residential garbage services remains constant at $144.27 per household in 2013 ($12.02 per household per month). This cost is comparable with other municipalities across Canada.
- Availability of vehicles and equipment has been an issue in 2013 with significant hours of downtime logged for mechanical or maintenance-related issues. This is affecting both service delivery and cost.
- Saskatoon has one of the highest rates of residential garbage self-hauled to the Landfill in Canada, creating site management challenges for the operations of that facility. These challenges, along with equipment downtime, contribute to rising operating costs that have now nearly doubled since 2008 to $29/tonne.
- Landfill tipping fees must cover both operating costs and capital improvements. The range of fees for tipping waste among 26 municipal landfills across Canada is $32.65 to $125 per tonne. Saskatoon's fees (at $85 in 2013) fall in the middle of this range (near the median).

Civic Responsibilities for Waste

Integrated Waste Management is delivered by Public Works and Environmental & Corporate Initiatives under the ***Environmental Health*** Business Line.

Responsibilities between the two Divisions are as follows:

Environmental & Corporate Initiatives	**Public Works**
• Education, outreach and communications pertaining to integrated waste management • Capital projects related to waste diversion: Compost Depots, Recovery Park • New programs and energy efficiency initiatives: Saskatoon Curbside Swap, public space recycling, expanded organics program, Garbage Service Verification, natural gas vehicles • Policy and regulatory changes: Waste Bylaw • Manage recycling contracts: Loraas Recycle, Cosmopolitan Industries Ltd. • Coordinate Household Hazardous Waste Days	• Garbage containers and garbage collection services • Manage the Saskatoon Regional Waste Management Facility (Landfill) • Operate Compost Depots • Leaves & Grass collections including providing green carts • Recycling depots

Communication Plan

The 2013 Integrated Waste Management Annual Report is available for viewing at the Public Libraries under the September 15, 2014 Standing Policy Committee (SPC) on Environment, Utilities & Corporate Services Agenda, and on the City of Saskatoon website (www.saskatoon.ca), click on "C" for City Council and look under Reports and Publications).

Environmental Implications

Greenhouse gas (GHG) emissions and other environmental protection measures are included in the annual report.

Other Considerations/Implications

There is no public and/or stakeholder involvement, policy, financial, privacy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

An Integrated Waste Management Annual Report will continue to be produced each year to track progress toward waste diversion goals. The next report will be prepared for the 2014 year and submitted to the Standing Policy Committee on Environment, Utilities and Corporate Services in April 2015.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Integrated Waste Management Annual Report

Report Approval

Written by:	Brenda Wallace, Director of Environmental and Corporate Initiatives
Reviewed by:	Michelle Jelinski, Environmental Operations Manager Pat Hyde, Director of Public Works
Approved by:	Catherine Gryba, General Manager, Corporate Performance Department

Integrated Waste Management Annual Report (2013).docx

Attachment 1

INTEGRATED WASTE MANAGEMENT ANNUAL REPORT 2013

City of Saskatoon
A 21st Century City

Environmental & Corporate Initiatives

Integrated Waste Management is a systems approach to waste handling that focusses on reducing waste where possible, re-using whatever can be given a new purpose, recycling and recovering resources to minimize demand for raw materials, and conscientiously managing what remains to ensure the safety of people and the environment. A variety of programs and services comprise Integrated Waste Management in Saskatoon today:

- Garbage Collections and Containers
- Curbside Recycling
- Leaves and Grass Curbside Collections
- Compost Depots
- Landfill Management
- Household Hazardous Waste Days program

Integrated Waste Management falls within the ***Environmental Health*** Business Line. Following the corporate alignment, the *Waste Handling Service Line* is managed by Public Works and includes civic operations functions. Waste diversion initiatives (under the *Waste Reduction & Resource Recovery Service Line)*, including the development of programs and implementation of waste-related contracts, are managed by Environmental & Corporate Initiatives.

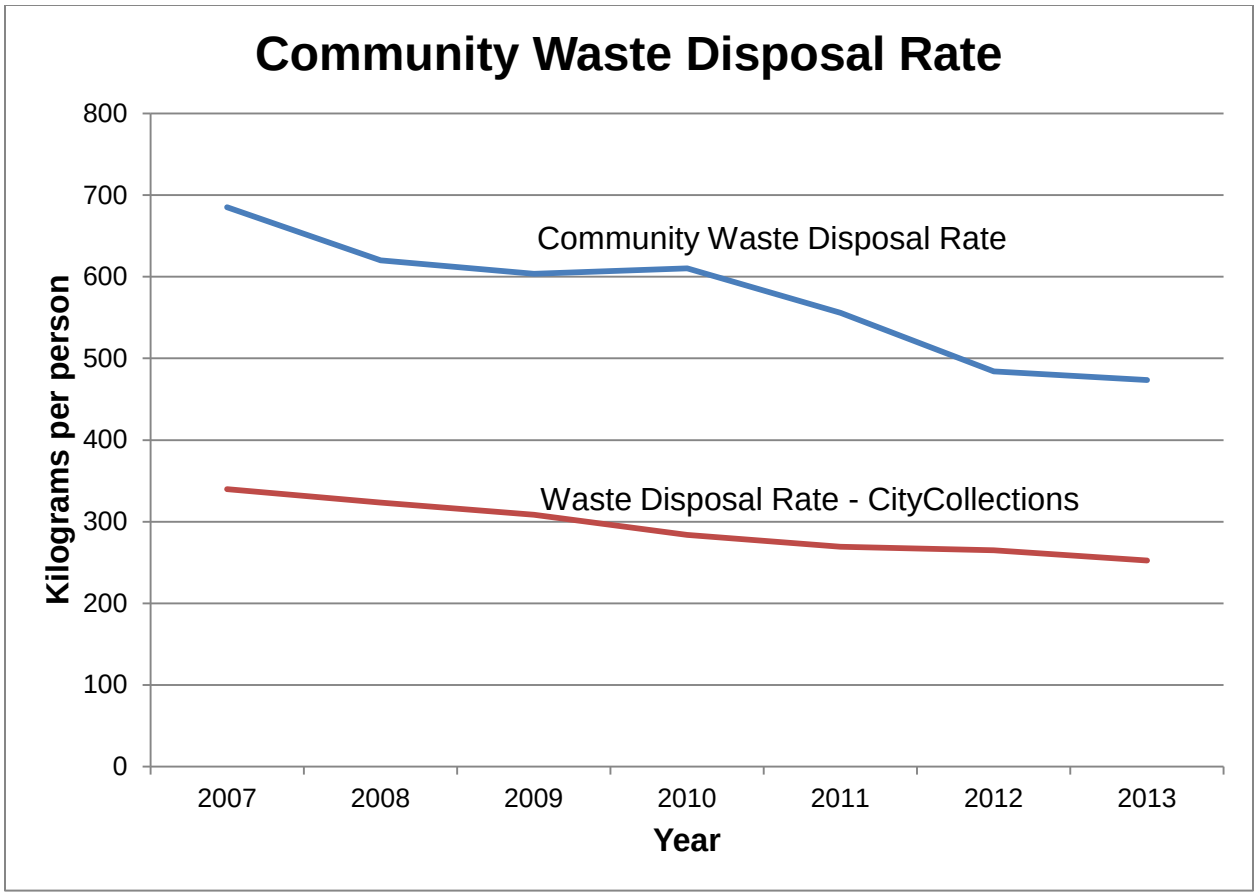
The goal of the *Waste Handling Service Line* is to provide efficient, effective, and customer-oriented waste management services*. Waste Handling* includes solid waste collections, the management of City-owned garbage carts, and the operation of the Saskatoon Regional Waste Management Facility (Landfill) to ensure solid waste is managed in a safe and environmentally sound manner. The design and operations of the Landfill are optimized to maximize the available space within the facility.

The goal of *Waste Reduction* is to provide a focus on reducing, reusing, recycling, and recapturing resources while seeking operational efficiencies. Initiatives under this program include recycling contracts for curbside and multi-unit dwellings, support for recycling depots located across the community, composting of yard waste at drop-off depots, and the residential subscription yard waste collection initiative. Performance toward waste reduction goals is contained in the Saskatoon Waste and Recycling Plan.

Our Customer

Saskatoon residents are the key customer for integrated waste services. Businesses and regional customers also make use of the various services available.

Saskatoon residential waste disposal rates (shown as City Collections in the following graph) have fallen to 252 kilograms per person, down from 265 kilograms in 2012. The introduction of the Curbside Recycling program contributed to this positive change as 1629 fewer tonnes of garbage was collected from black carts and 8034 tonnes of recyclable materials were placed into blue carts instead.



The 2013 Citizen Satisfaction Survey highlighted the confidence residents have in the waste services provided by the City of Saskatoon. Garbage collection was listed as a critical strength of the corporation having both high importance to residents and strong performance on their behalf.

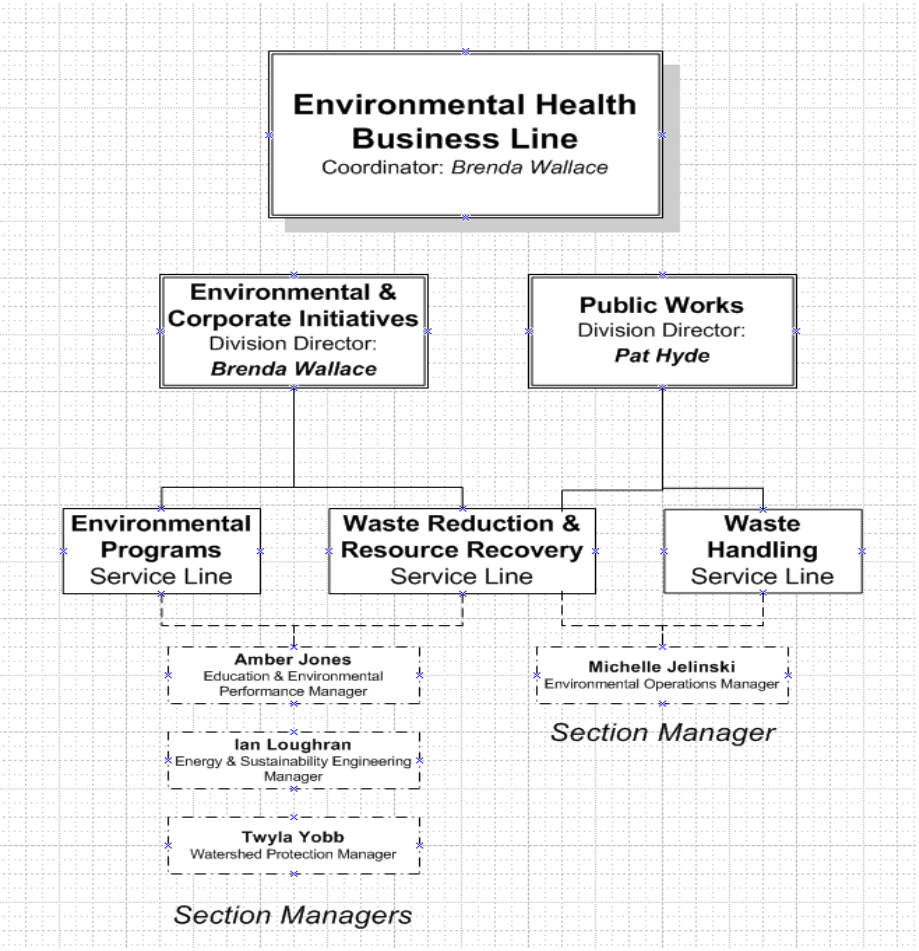
The following ratings (out of ten) for performance were noted in the 2013 report.

Service	Performance Rating	Trend
Recycling initiatives	Phone: 7.5 Online: 7.1	Significantly Improved satisfaction (+1.5)
Landfill services	Phone: 6.9 Online: 6.9	Satisfaction down slightly (-0.1)
Garbage collection	Phone: 7.9 Online: 7.5	Improved satisfaction (+0.2)

Waste Handling Services continue to be provided at a competitive cost to Saskatoon taxpayers. Average annual costs for solid waste management services in Canada ranged from $80 per household to over $200 per household. In Saskatoon these services cost $144.27 per household in 2013 ($12.02 per household per month). Residential (curbside) collection services cost $94.68 per household. $49.59 per household was incurred in disposal costs at the Landfill.

Our People

Integrated Waste Management is delivered by Public Works and Environmental & Corporate Initiatives under the ***Environmental Health*** Business Line.



Responsibilities between the two Divisions are outlined in the following table.

Environmental & Corporate Initiatives	Public Works
• Education, outreach and communications pertaining to integrated waste management • Capital projects related to waste diversion: Compost Depots, Recovery Park • New programs and energy efficiency initiatives: Saskatoon Curbside Swap, public space recycling, expanded organics program, Garbage Service Verification, natural gas vehicles • Policy and regulatory changes: Waste Bylaw • Manage recycling contracts: Loraas Recycle, Cosmopolitan Industries Ltd. • Coordinate Household Hazardous Waste Days	• Garbage containers and garbage collection services • Manage the Saskatoon Regional Waste Management Facility (Landfill) • Operate Compost Depots • Leaves & Grass collections including providing green carts • Recycling depots

Our Work

Waste Handling Services and Waste Reduction initiatives together form an Integrated Waste Management System that includes a variety of component parts:

- Garbage Containers
- Garbage Collections
- Saskatoon Regional Waste Management Centre (Landfill)
- Recycling
- Composting
- Hazardous Waste

This Integrated Waste Services Annual Report explains what these component parts include and how the City of Saskatoon is performing in delivering these services to residents and businesses in Saskatoon.

Garbage Containers

Residential (Curbside)

The City of Saskatoon owns and maintains the black roll-out carts provided to street-oriented residential properties. Cart specifications have varied over time as different companies have been successful in winning the competitive tender for supply.

In 2013, the Containers work-group within Public Works replaced 4950 carts in the field (on top of delivering an additional 1300 new carts to new homes). With the exception of 300 carts which were reported as stolen and could not be recovered, cart replacements were required primarily for one of two reasons: (1) carts reaching the end of their useful life (in neighbourhoods such as Wildwood, Parkridge, Dundonald, and Lakeridge); or (2) carts not performing as expected in the field. In late 2012, changes to the purchasing specifications for carts were made and the issue of performance has been greatly reduced. The current cart failure rate is 0.55%. In some neighbourhoods, carts placed in the field under the old specifications failed at rates as high as 15% (ie. Caswell Hill, College Park, Confederation Park).

Multi-Unit Residential Properties

The City of Saskatoon does not provide garbage containers for multi-unit dwellings and instead offers a Multi-Unit Dwelling Waste Bin Grant to offset the cost born by condominium associations and property managers for the purchase and maintenance of metal waste bins. The grant provides $8 per year per residential unit

Garbage Collections

Residential (Curbside)

Garbage collection services are provided to 66,000 single-family homes by a fleet of eighteen (18) garbage trucks.

The amount of garbage collected per household is 0.95 tonnes, higher than the national average of 0.64 tonnes. In Saskatoon, the average weight of the contents of each cart on collection day ('tip') is 22 kilograms. The national average is 13 kilograms. Collections vary seasonally with disposal rates climbing from 1.47 kilograms per household per day (winter months) to 2.95 kilograms per household per day during the growing season.

The Garbage Service Verification project began in 2013. This initiative utilizes an internally-provided $1.2million productivity improvement loan. The project components include outfitting trucks with GPS, wireless communications, on-board computers, cameras, and barcode readers, installing barcode tags on carts, establishing a new software tool to support improved customer service systems, and improvements to the '975-2486' line people call for waste-related matters.

The following describes how each component delivers savings and service improvement:

- On-board Global Positioning Systems (GPS), ruggedized touch screen computers, and wireless communication – With these technologies installed in garbage trucks, the customer service and dispatch offices can receive real-time updates on the location of the collections fleet at all times. Based on the information collected on current routes driven by the trucks, an 'optimization exercise' will be implemented in 2015 to reduce the number of kilometers driven by each truck through new routing. New routes will be established for the 2016 calendar year. A conservative estimate of fuel savings resulting from this optimization is $40,000 a year.

- Improved customer service phone and email systems - By integrating real-time collections information with a customer database, civic staff answering the '975-2486' line will be able to provide better service to citizens. When someone calls with a collection or container issue, work orders will be generated while on the phone and dispatch the work to the truck closest to that address. By changing the way collections issues are addressed through new technology, $155,000 is expected to be saved each year.

- Vehicle mounted tag readers and camera systems – Sometimes residents call indicating the garbage truck has missed their cart. With access to improved real-time field information, if there is a collection issue requiring attention at that address, it can be communicated and resolved immediately. 84% of missed collections are reported by garbage truck operators and relate to some of the following issues: ensuring the container is at the curb in time for collection, ensuring the cart is accessible (approximately four-feet away from all obstacles in every direction),

ensuring there are not items on the ground surrounding the container, and ensuring there aren't bulky items or an over-loaded cart that makes collection difficult for the truck. Pictures of collection issues will be taken and shared with residents to more clearly communicate the specific collection issue (and help residents avoid fines).

- Handheld tag readers for use by Environmental Protection Officers (for bylaw enforcement) and container staff – These units help determine which cart belongs to which property. Improved tracking of container assets has the potential to save thousands of dollars. Last year the City replaced 4950 containers, 300 of which were stolen. The cost of each container replacement is $85. The potential for the successful retrieval and return of stolen carts could save up to $25,000 a year.

There are many reasons why modernizing of garbage collections through the Garbage Service Verification project makes sense, the most important of which is to achieve significant savings of tax dollars as a result of productivity and service improvements, fuel savings, and better management of garbage containers. The savings this project will achieve are sufficient to payback the project costs in 6-7 years and generate $200,000 in savings every year thereafter.

Another significant initiative within collections in 2013 was the preparation of an integrated Garbage and Recycling Collection Calendar. Each household received a customized calendar in the mail identifying the garbage and recycling collection dates applicable to that address.

Multi-Unit Residential Properties

The City of Saskatoon will provide one collection a week for each multi-unit residential property as part of the regular service supported by property taxes. Additional levels of service may be contracted with the City or through a private waste management company.

The City operated two (2) fork-lift trucks in the provision of garbage collection services to multi-unit residential properties and commercial contracts. 64% of multi-unit residential properties use the services provided by the City of Saskatoon. The remaining 36% of property managers and condominium associations chose to contract services through private options.

Commercial Collections

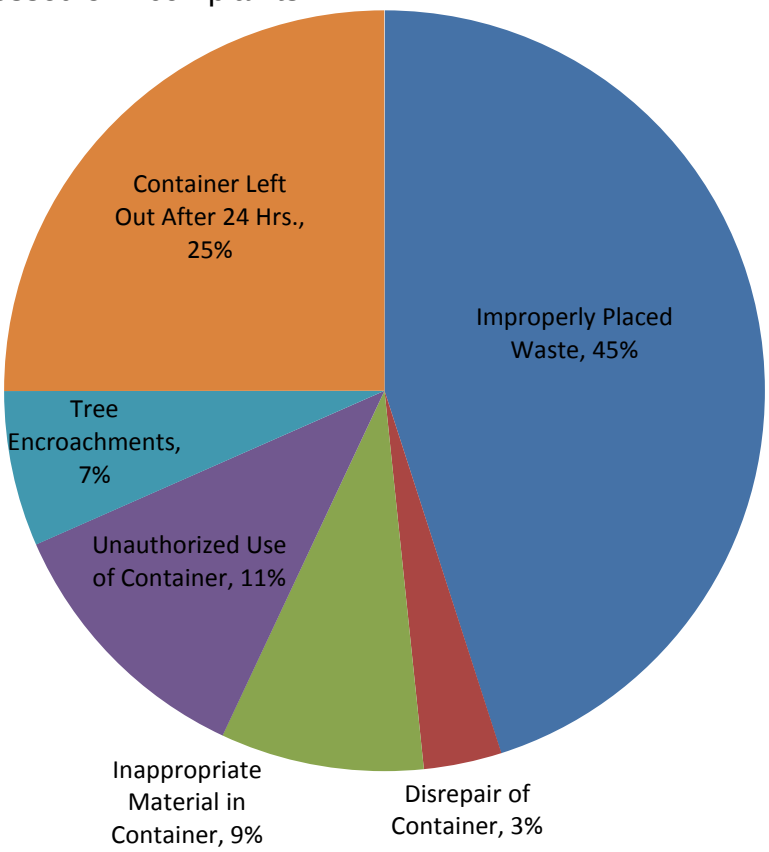
485 commercial customers used the services of the City of Saskatoon in 2013. Rates were last set in 2011 and have remained unchanged as they continue to provide full-cost recovery. The number of commercial customers has also remained stable.

Environmental Protection

In 2013, a new spill response protocol was established to ensure full containment and clean-up following issues related to hydraulic fluid leaking from the arms of the garbage trucks. Eight spills occurred and were all responsibly managed.

Bylaw Enforcement

Two (2) Environmental Protection Officers (EPO's) focus on issues in the community related to the Waste Bylaw 2004 (Bylaw #8310 codified to #9160 in 2013). In 2013 the EPO's addressed 544 complaints.



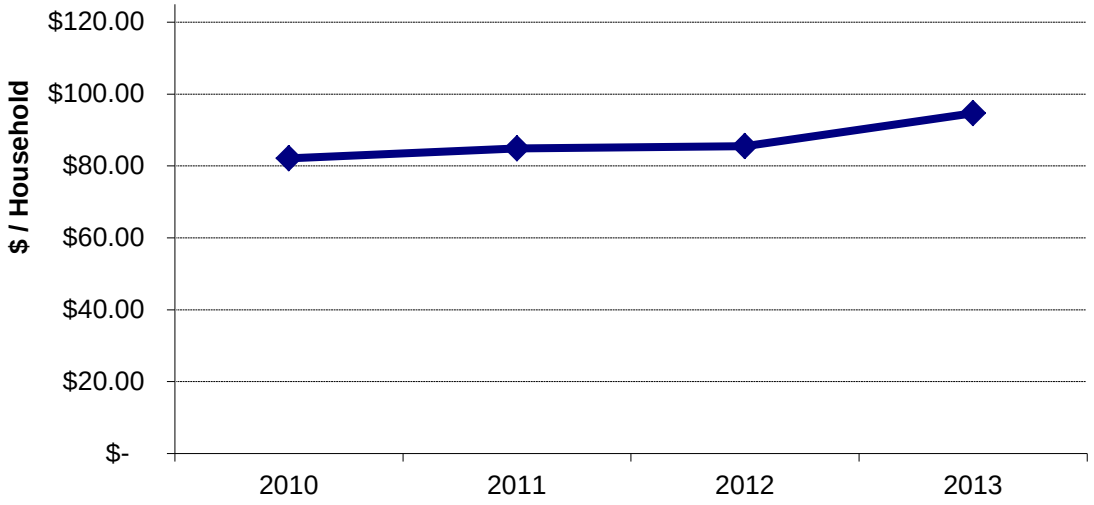
Financial Performance

The cost to deliver all Garbage Collections and Containers activities in 2013 were $119,000 more than budgeted despite challenges associated from two significant issues: (1) the need to accommodate the extraordinary spring melt conditions by moving temporarily to front street; and (2) staff overtime associated with road construction, construction surrounding the Landfill, and truck downtime. Availability of vehicles has been an issue in 2013 with 1986 hours of downtime logged for mechanical or maintenance-related issues. An additional amount was also transferred to the reserve to fund the purchase of additional garbage carts to address a back-log of container complaints.

Garbage Collection Statement of Revenue and Expenses

	Budget	Actual	Variance	%
Revenue	$640	$642	$2	0.3%
Expenses:				
Salaries & payroll	2,406	2,515	109	4.5%
V&E	2,532	2,470	(62)	-2.4%
Buildings & grounds	47	69	22	46.8%
Multi-Unit bin grant	255	225	(30)	-11.8%
IS Services	247	247	0	0%
Other expense	341	428	87	25.5%
Transfer to reserves	296	291	(5)	-0.3%
Total expense	6,124	6,245	121	2.0%
Revenue less expense	$(5,484)	$(5,603)	(119)	-2.2%

Collections Costs



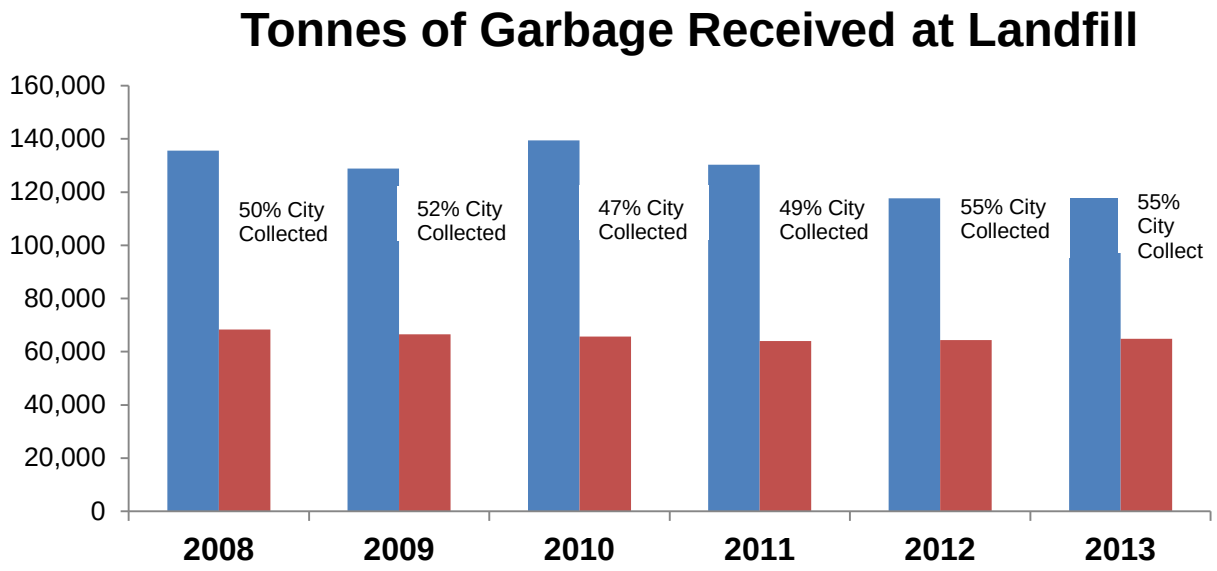
Saskatoon Regional Waste Management Centre (Landfill)

The Saskatoon Regional Waste Management Centre (Landfill) has been in operation since 1955. The Saskatchewan Ministry of Environment currently regulates the operations of the Facility under a Permit to Operate a Waste Disposal Ground.

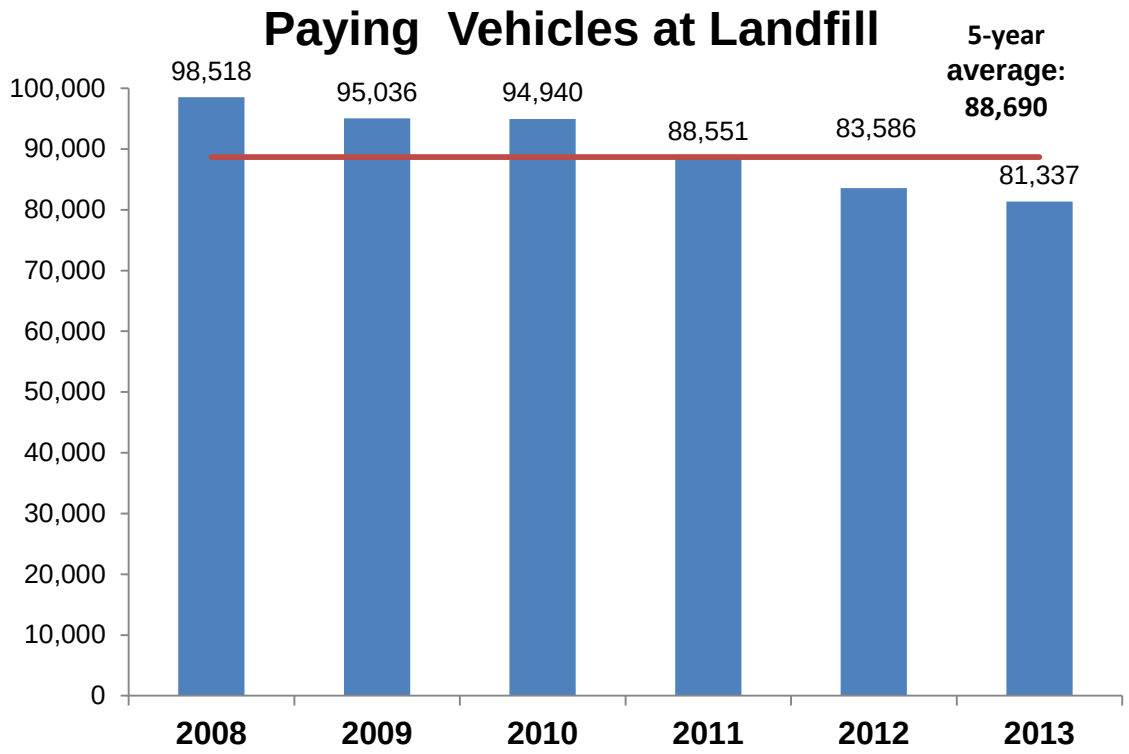
In 2013, approximately 160,000 tonnes of material was accepted at the Landfill including 42,000 tonnes of clean earth fill used for construction purposes or cover. Of the 117,800 tonnes of waste, 800 tonnes of metals, white goods, propane tanks and batteries were removed from the site for recycling or disposal as hazardous waste.

Operations

The Landfill site is a secure compound with fencing around the majority of the perimeter and security checks after-hours. Six transfer bins are located on site for public waste disposal. In addition, several public drop-off areas are provided for metals, white goods, batteries, propane tanks, and used oil, oil containers and filters. Waste management operations include waste placement, compaction and covering practices.

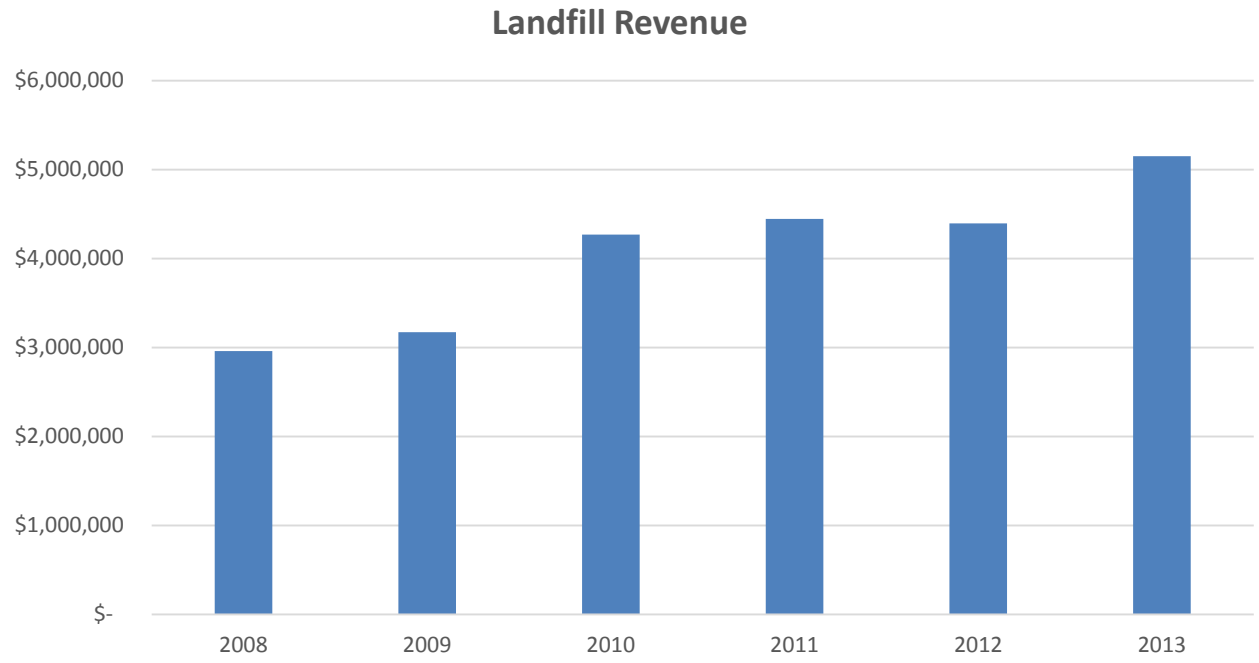


Fewer paying customers are using the Landfill. Some of the decline in visitation is a result of construction activities both on and near the site. Another factor affecting commercial use of the site is competition from the Northern Landfill operated by Loraas Disposal. A significant amount of commercial growth is occurring in the north portions of the city and surrounding region. The number of paying customers at the Landfill is still higher than 2007 (before accelerated growth in the region) and aligns with the 10-year average.



Saskatoon has one of the highest rates of residential garbage self-hauled to the Landfill in Canada. The average size of loads delivered to the Facility has been shrinking and was 0.65 tonnes in 2013. A review of rates and subsidies in 2012 led to changes to the schedule of fees to maintain affordability to customers visiting the Landfill Facility while better reflecting the true cost to provide services. As of January 1, 2013, all subsidies previously available to customers at the Landfill were removed with the exception of a 75% subsidy which is applied to very small loads weighing less than 250 kilograms. This subsidy continues as the City does not currently offer a service for the handling of bulky items that may not fit in City-provided roll-out garbage carts.

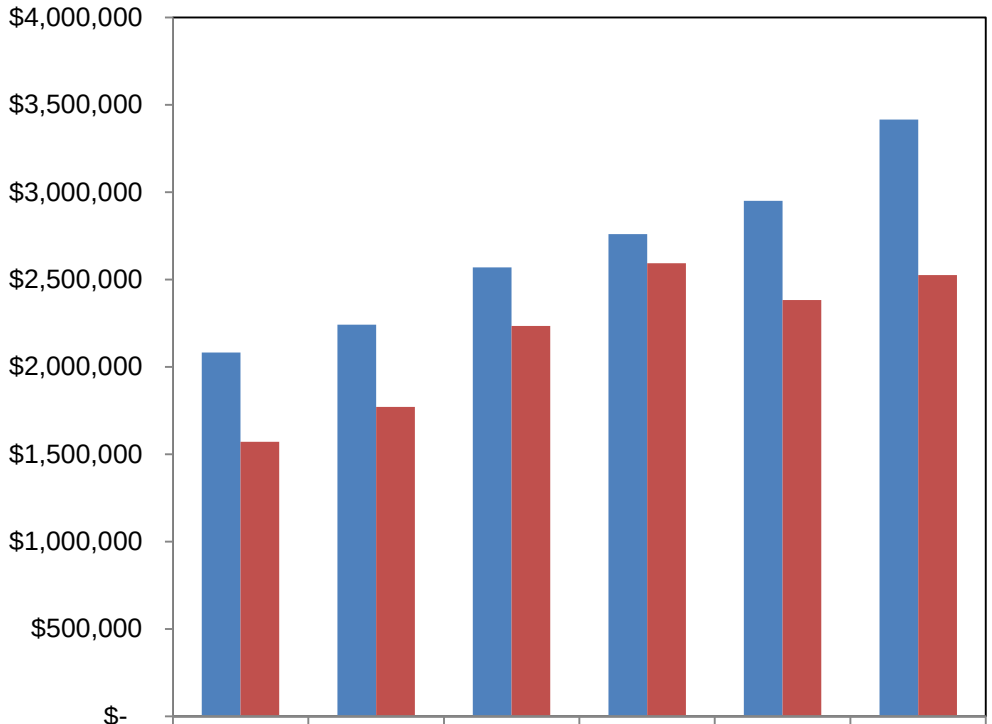
Financial Performance



Year	2008	2009	2010	2011	2012	2013
Chargeable Tonnes Received	67,303	62,268	73,810	66,343	53,297	52,878
Average Load Size (tonnes)	0.68	0.66	0.78	0.75	0.64	0.65
Landfill Rate (tipping fee)	$45	$50	$55	$65	$85	$90

According to nation-wide benchmarking for 2013, the range of fees for tipping waste among 26 municipal landfills across Canada is $32.65 to $125 per tonne. Saskatoon's fees (at $90 in 2013) fall in the middle of this range and represents a common value among reporting landfills.

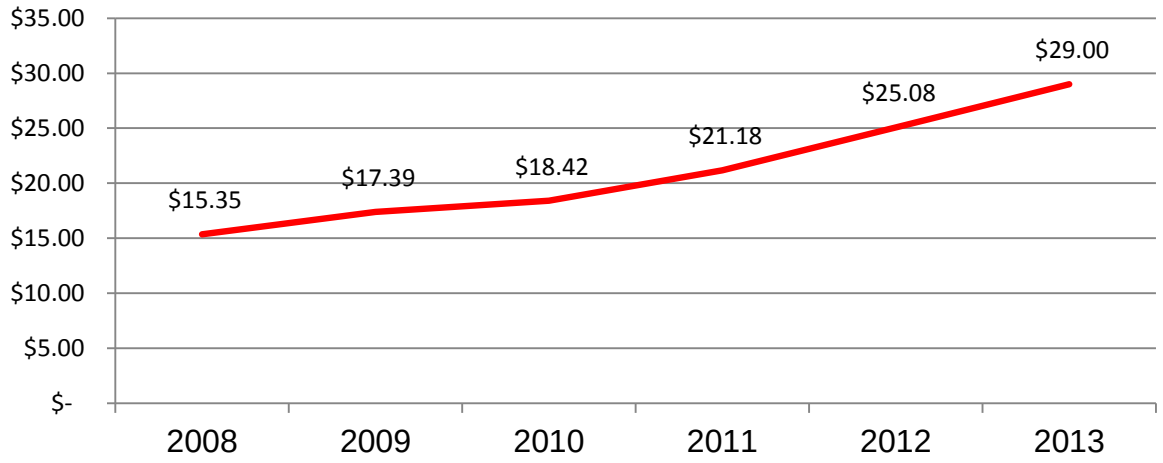
Landfill Expenditures



	2008	2009	2010	2011	2012	2013
Total Operating Costs	$2,082,282	$2,241,147	$2,569,694	$2,760,614	$2,951,120	$3,415,053
Total Capital Expenditures	$1,570,538	$1,770,007	$2,233,417	$2,593,355	$2,382,246	$2,525,748

Operating costs continue to rise and the operating cost/tonne of material handled has nearly doubled since 2008 to $29. Mill-rate support required for the Facility in 2013 dropped from 18% in 2012 to 13%.

Landfill Operating Cost/Tonne



The adoption of the Landfill Optimization Strategy to extend the life of the Facility will continue to require higher operating costs and expenditures on capital improvements in the short term. These investments in safety, environmental protection, and more efficient filling practices will provide significant long-term financial benefit in the future.

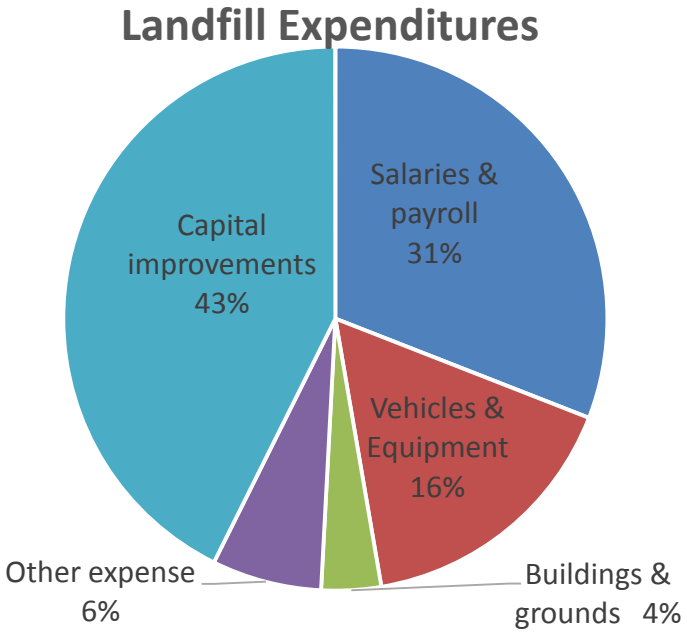
Approximately 41,000 staff hours were spent on-site to support the daily operating requirements of the Facility. Salaries and payroll costs were $1.8 million (including 19% spent on over-time) and accounted for 31% of Landfill expenditures in 2013.

Equipment issues, availability, and costs continue to pose a significant issue for Landfill operations. Vehicle & equipment costs were $969,000 in 2013, and accounted for 16% of total Landfill expenditures. The number of pieces of equipment and age of the equipment also remain well beyond industry averages. Equipment downtime was somewhat improved in 2013. Equipment with 1600 hours of logged downtime in 2012 was down 1294 hours in 2013.

Landfill Statement of Revenue and Expenses				
	Budget	Actual	Variance	%
Revenue	$5,979	$5,152	(827)	-13.8%
Expenses:				
Salaries & payroll	1,669	1,833	164	9.8%
V&E	495	969	474	95.8%
Buildings & grounds	240	348	108	45.0%
Other expense	573	249	(324)	-56.5%
Capital improvements	2,716	2,526	(190)	-7.0%
Total expense	5,693	5,925	232	4.1%
Revenue less expense	$286	($773)	($1,059)	370.3%

The Landfill variance in 2013 was large again at $1.059 million resulting both from revenue shortfalls and cost overruns, particularly for equipment.

Costs incurred at the Landfill for each tonne of material disposed has increased over the last five (5) years. While over-expenditures on equipment and staffing resulting from equipment downtime has been an issue, a significant proportion of this cost escalation is attributable to the capital improvement program. 43% of 2013 expenditures at the Landfill were put toward capital projects.



Environmental Protection

A number of environmental protection measures are part of the regular operations of the Landfill.

Surface water management ensures that any storm water that may have come in contact with garbage does not flow off-site. Storm water management infrastructure also helps minimize the creation of leachate ('garbage juice') and protect roadways and other customer-serving assets of the site. Improvements to storm water infrastructure are integrated into the capital improvement plan for the site.

Ground water monitoring results are reviewed by an independent party each year to ensure the Landfill is not impacting the environment beyond its site. In 2013 there were forty-three (43) monitoring locations analyzed. Additional leachate collection system development is planned on the basis of monitoring results. Twenty-seven (27) hectares of the waste footprint at the Landfill Facility is unlined and leachate interception is therefore an important environmental protection measure.

Fire prevention and suppression is critical. Materials within the mound have the potential to burn for prolonged periods and to release toxins into the atmosphere. Landfill staff are trained in fire prevention and suppression and operate a water truck on-site to respond to incidents in a timely manner. A strong relationship with the Saskatoon Fire Department has also been developed as Landfill fires pose a unique challenge.

Landfill gas management began in 2012 with the completion of the clay cap on the north mound of the site. The Landfill Gas Energy Generation project has now commenced full operations.

Greenhouse gas emissions reduction efforts occur at two levels at the Landfill. The destruction of landfill gases (which have greenhouse gas concentrations up to 21 times stronger than carbon dioxide) is addressed through landfill gas management. Emissions from equipment used on site were greater than 600 tonnes CO_2e in 2013. As equipment is replaced, Tier IV emissions-compliant equipment is being selected to significantly reduce this impact. GPS equipment installed on waste pushing and compaction vehicles will also improve equipment utilization, compaction rates, and slope and grade contours of the mound.

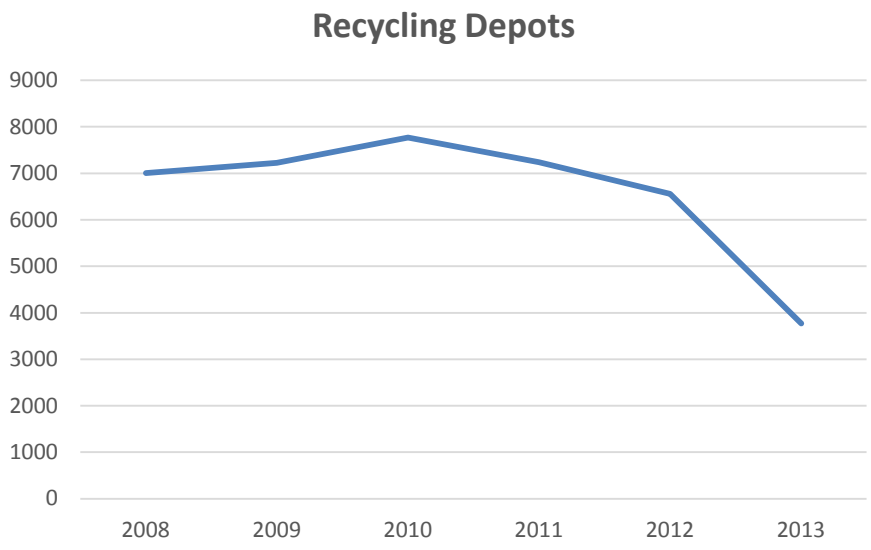
Recycling

The 2013 Waste Diversion Rate in Saskatoon was 39.5% comprised of the following:

Waste	Tonnes
Recycling	
Fibre from Depots	3,773
Curbside Recycling	8,034
Public Space Recycling	14
Outgoing Recyclable Material from Landfill (mixed metals, propane tanks, batteries)	800
Compost	21,500
Household Hazardous Waste	50
Clean Fill	42,189
Landfill	117,759

Recycling Depots

The City of Saskatoon and Cosmopolitan Industries Ltd. have been partners in recycling since 1983. Through this partnership, a variety of paper and cardboard materials have been diverted from the Saskatoon Regional Waste Management Centre (Landfill). The following chart highlights some of the achievements of this program.



In 2013, the curbside recycling program launched, effectively accelerating the trend of reduced tonnes of recycled paper and cardboard from depots.

The system of depots includes fifty-four (54) locations, six (6) are City-owned depots available to the public, an additional twenty-five (25) locations established by Cosmo are accessible to the public, four (4) are located at City-facilities such as City Hall or a Fire Hall, and nineteen (19) locations have been established by Cosmo for private use.

All recyclable paper material is collected by the City of Saskatoon collections fleet from each of the 54 locations and delivered to the sorting facility operated by Cosmopolitan Industries at 28 – 34th Street East.

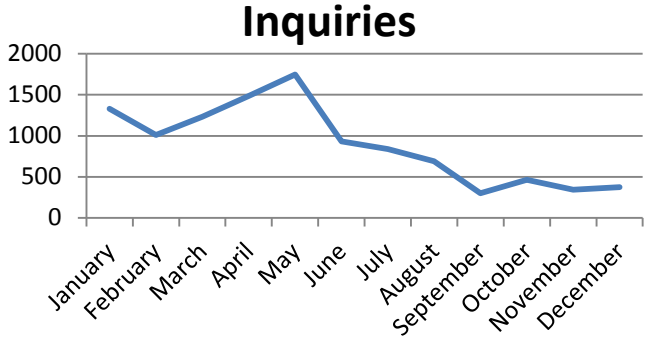
Curbside Recycling Program

Starting January 2, 2013, the Curbside Recycling Program began implementation based on a seven (7) year performance contract with Loraas Recycle. The Program includes bi-weekly collection of blue roll-out carts on a different day from City garbage pick-up, but from the same service location (ie. front street or back lane). All recyclable materials can be placed in the blue recycling cart; with no sorting by citizens required. Materials that may be placed in the cart include aluminum and tin cans, aluminum foil and pie plates, corrugated cardboard, mixed paper, newspaper, polycoat, fine paper, magazines, boxboard, recyclable plastic containers #1 thru #7 that have contained non-hazardous products, all provincial legislated beverage containers, milk cartons and jugs, and glass food and beverage containers.

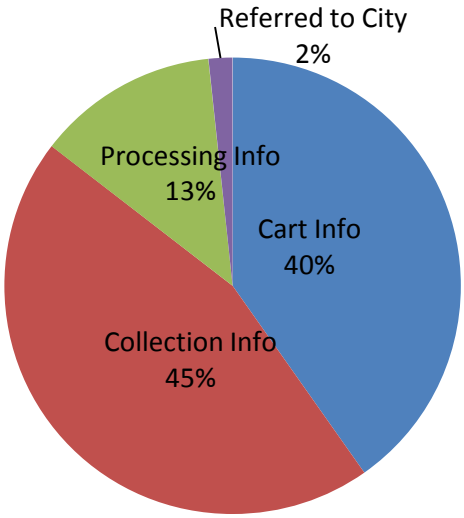
Despite encountering significant challenges associated with the extraordinary spring melt and temporary front street collections program, implementation of the Program finished on-time with the last cart deployed to His Worship, The Mayor on May 27, 2013.

A few program clarifications were required throughout the roll-out including distributing additional *Blue Cart. Green City. Recycling Guides,* as the pouches used to stick the Guide to the cart were not working as expected. Copies of the Guide continue to be available on SaskatoonRecycles.ca and at all branches of the Saskatoon Public Library.

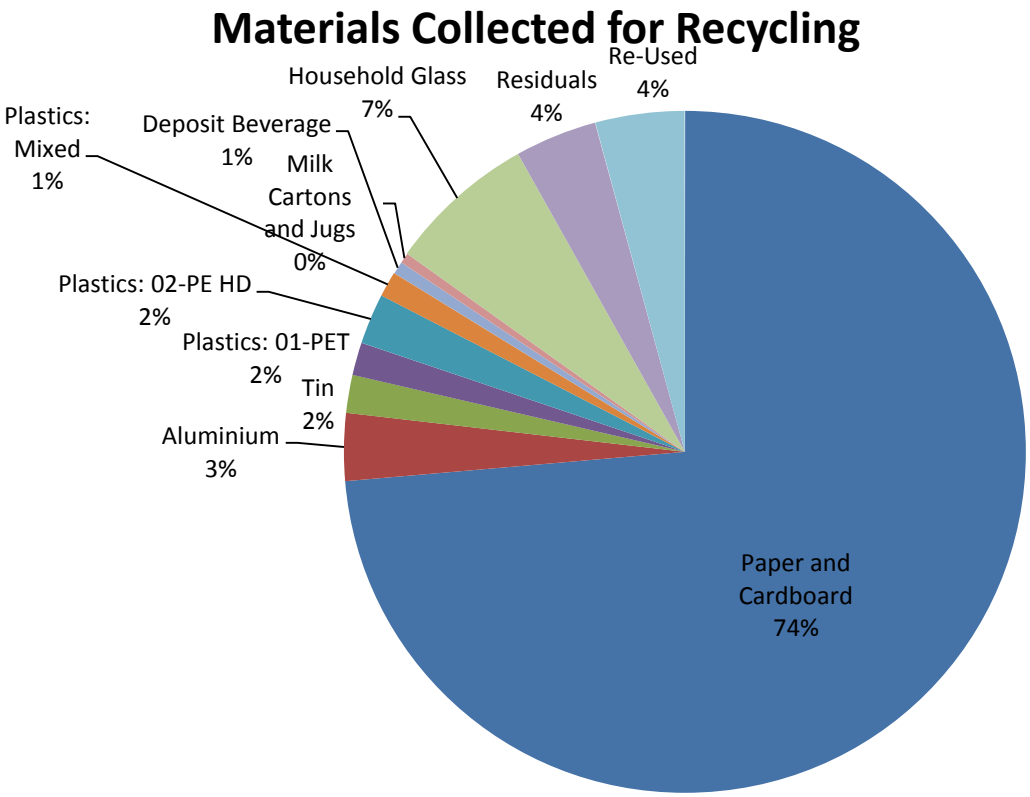
Residents having basement or other secondary suites were receiving multiple blue recycling carts despite having only one black garbage cart. For the purposes of applying recycling charges to the utility bill, every legal residence was included in the program. If residents with occupied suites have only one black garbage cart and only want one recycling cart, the extra cart(s) is removed but the extra recycling fee is still applicable. If residents have a suite that is vacant and they do not plan to rent it out, an Environmental Protection Officer (EPO) will visit their home upon request to confirm there is only one black garbage cart and ask the property owner to sign a declaration indicating that the suite is vacant and therefore the extra recycling fee(s) is waived. If the property is sold, a new signed declaration is required. If the suite becomes occupied, the additional fee will be applied.



Loraas utilizes nine (9) collection vehicles equipped with computer-assisted routing and information systems. On board cameras are also utilized to assist the operators in their efforts related to quality assurance. Loraas delivered approximately 1800 'Oops' Notices to inform residents of the expectations of the program and fielded 10,700 customer service inquiries by phone (75%) or email.



An education campaign was launched on November 26, 2012. The primary objective of the campaign was to build awareness and enthuasiasm for the new recycling program to inspire broad acceptance and seamless adoption of recycling behaviours that lead to a doubling of material diverted from landfill. Recycling programs in 2013 achieved a 67% increase in diversion over 2012 by diverting 12,622 tonnes of material.



Recycling is a significant environmental initiative. At current recycling diversion rates, the life of Landfill will be extended 5.5 years, the equivalent of recapturing 10% of the landfill airspace each year. The goal is to increase this to 8 years and 15%.

Recycling also has significant and positive greenhouse gas implications. The energy used to manufacture, transport, and dispose recyclable materials is large. Energy savings of 95% are possible when aluminum cans are recycled and for 6.5 tonnes of greenhouse gas (CO_2e) is saved for every tonne recycled. For every tonne of newspaper recycled, 2.8 tonnes CO_2e are saved. For every tonne plastic recycled, 2.3 to 3.6 tonnes CO_2e are saved.

Based on the results of the Curbside Recycling Program, it is anticipated 73,000 tonnes CO_2e will be saved each year. This is equivalent to removing 14,000 cars from Saskatoon roadways annually.

Financial Performance

The cost of the program is fully cost-recovered from utility fees charged monthly to qualifying property owners (ie. those receiving garbage collection services from City-provided black roll-out carts). The fee for 2013 was set at $4.66 per household per month. The contract with Loraas Recycle constitutes 82% of the total utility fee. Other charges cover costs for program education and contract administration. The anticipated contribution to the stabilization reserve was spent on program education to launch the program.

Curbside Recycling Utility Statement of Revenue and Expenses

	Budget	Actual	Variance	%
Revenue	$3,661	$2,753	$908	24.8%
Expenses:				
Contractor Fees	3,020	2,263	(757)	-25.1%
Salaries & payroll	64	61	(3)	-4.7%
Billing & customer service	189	71	(118)	-62.4%
Education	191	199	8	4.2%
Operations support	87	0	(87)	-100.0%
Transfer to reserves	110	159	49	-44.5%
Total expense	3,661	2,753	(908)	-24.8%
Revenue less expense	$0	$0	$0	-

Multi-Unit Dwelling Recycling Program

A Memorandum of Understanding between the City of Saskatoon and Cosmopolitan Industries was signed in June 2012 outlining the principles for negotiating a sole-source contract for the delivery of a Multi-Unit Dwelling Recycling Program.

Negotiations and consultations with stakeholders, including residents, tenants, building managers, and building owners, continued through 2013.

Recycling Partnerships

Other local recycling opportunities are available in the community. The Saskatchewan Waste Reduction Council maintains a province-wide online database of information on where to recycle a variety of materials. The City of Saskatoon partners with the Council in promoting this online tool: http://www.saskwastereduction.ca/

Composting Programs

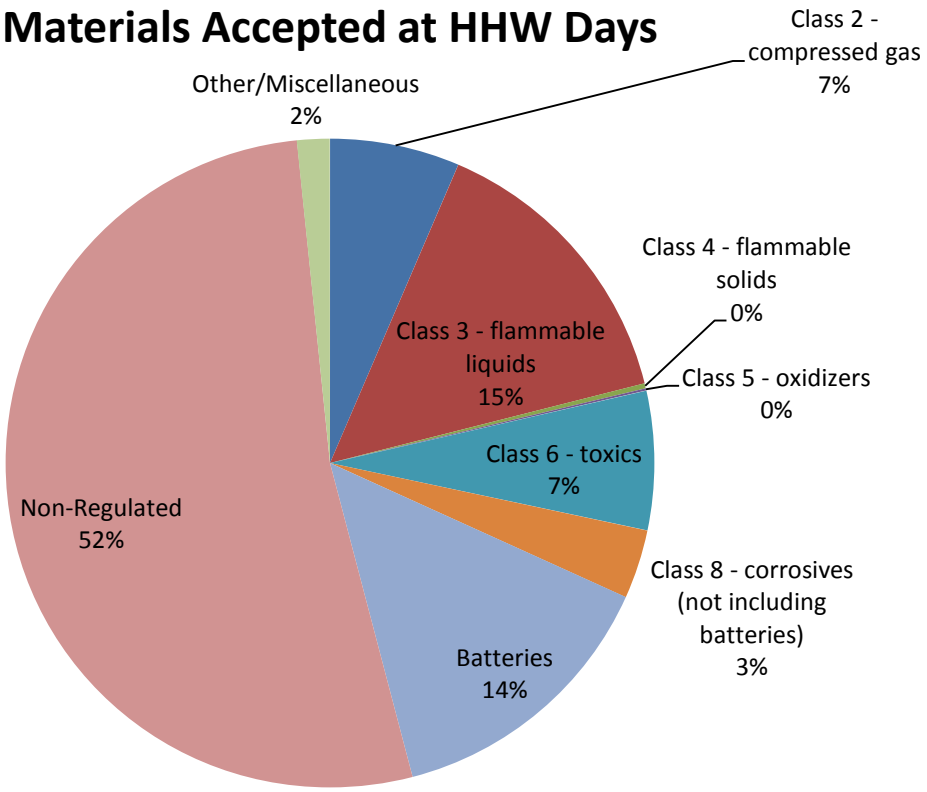
The Leaves and Grass Subscription Program served 3000 households in 2013. Materials collected through this program are composted at the City's compost depots along with materials from public and commercial customers. The total cost for the 2013 organics programs was $780,380 with revenues from subscription fees of $137,200 ($50 per household per season), permit fees from commercial haulers of $19,925, and revenues from the sale of finished compost and mulch of $2,305. Approximately 21,920 tonnes of organics were composted in 2013, resulting in the avoidance of 5,000 tonnes CO_2e.

Two compost depots, one on McOrmond Drive and the other on Highway 7, provide residents the opportunity to drop off yard waste at no charge. These temporary locations accept leaves, grass, non-elm tree and shrub branches, as well as garden waste that would otherwise end up in the landfill.

The depot on McOrmond Drive will close at the end of the 2014 season. A new location will open on Highway 5 in 2015.

Hazardous Waste

In 2013, sixteen (16) Household Hazardous Waste Collection Days collected 51,600 kilograms of hazardous materials from 1611 customers.



Household hazardous waste materials are also responsibly managed at the Landfill. An Eco-Centre for the recovery of oil, oil containers, and oil filters has been established in partnership with Saskatchewan Association for Resource Recovery Corporation (SARRC) The Eco-Centre (one of 36 across Saskatchewan) captures in excess of 20,000 litres of used oil, over 1,000 used oil filters, and more than 1,200 kilograms of oil containers each year. These materials are reused and recycled, saving approximately 53 tonnes of $C0_2e$ each year.

Sanitary Service Line Replacements

Recommendation
That the Standing Policy Committee on Environment, Utilities and Corporate Services recommend to City Council:

1. That funding in the amount of $156,000 in 2014 Capital Project #1617 – Primary Water Mains be returned to the Infrastructure Replacement Reserve – Water and Sanitary Sewers;
2. That funding from the Infrastructure Replacement Reserve – Water and Sanitary Sewers in the amount of $156,000 be allocated to Capital Project #1616 – Waste Water Collection;
3. That that the Administration increase base funding for Sanitary Service Line replacements starting in 2015 to approximately $615,000; and
4. That the level of service provided to residents be increased to include the City's portion of an additional 40 replacement locations per year.

Topic and Purpose
The purpose of this report is to inform City Council of the current level of service the City provides for the replacement of sanitary service lines, to recommend a new service level and funding strategy going forward, and to transfer funding to increase the budget for 2014 emergency replacements.

Report Highlights

1. The City's past practice for Sanitary Service Line (SSL) Replacement Programs was to replace any pipes that had structurally failed, and if funding allowed, customer-requested lines were replaced providing the homeowner cost-shared the replacement.
2. Current funding levels need to be increased in order to fund annual emergency replacements and in order to continue with the City's contribution of customer-initiated replacements.
3. Funding adjustments will be included in the 2015 budget and beyond to deal with the existing backlog in 2015 and 2016, and enable the City to continue to partner with residents on customer-initiated SSL replacements.

Strategic Goal
The information presented in this report supports the Strategic Goal of Quality of Life as residents with sanitary maintenance issues will benefit directly from a program which replaces sanitary service lines at the request of the homeowner.

Background
Sanitary service lines are small diameter pipes which connect properties to the sanitary sewer main in the street. Saskatoon has approximately 69,000 total sanitary service lines.

Tree roots growing inside sewer pipes are generally the most expensive sewer maintenance issue. Roots from trees growing throughout the city can cause flooded basements and damaged sewer pipes, 66% of cleaning services are performed to remove roots from the pipe.

Roots thrive in the warm, moist, nutrient-rich atmosphere above the water surface inside sanitary sewers. The leading tip of tree roots can detect a minute difference in moisture and nutrient levels and penetrate a crack or joint in the pipe. Once inside the pipe, roots will continue to grow and if not disturbed, they can completely fill the pipe. The force exerted by root growth may break the pipe and could cause a collapse.

The City removes roots from the SSL using augers. These tools are useful in releasing blockage; however, cutting and tearing of roots encourage new growth. After root removal, the City performs a televised inspection of the pipe to confirm root damage. If the televised inspection shows significant structural damage to the SSL, it is replaced.

Report

Current SSL Replacement Programs

The City's current approach for the SSL Replacement Program is to replace any lines that have structurally failed, known as emergency replacements. Approximately 100 emergency replacements have been required each year.

When the City replaces its portion of the SSL (from the property line to the main in the street), the property owner has the option to replace their portion of the service line (from the property line to the house) at the same time. The only exception is if the water service line is made of lead, then both the water and sewer service lines must be completely replaced from the mains to the meter. Partial replacement of lead service lines is not permitted under the current lead connection policy.

If the property owner decides not to replace their portion of the SSL, the City will not provide future maintenance to the SSL.

The City has a cost-sharing program where the property owner is responsible for 40% of the contract cost of the replacement. This cost is intended to represent the property owner's portion of the service line which is from the property line to the footing of the house. The 2014 cost for this work is $1,933. Any work required inside the house to reconnect from the footing to the clean-out is fully the homeowner's responsibility and is in addition to the $1,933. The property owner can pay the contractor directly for their portion of the contract costs or defer their costs to their property taxes over one year, interest free.

The City pays the contractor 60% of the replacement cost. The 2014 cost for this work is $2,900. The City also pays approximately $1,600 per location for pavement restoration and other internal costs (project management, inspection, traffic control) for a total cost of approximately $4,500 per service line.

2014 Funding Transfer

The replacement of SSL's is funded from Capital Project #1616 – Waste Water Collection. In 2014, $330,000 was allocated to Service Line Replacements which will cover approximately 65 emergency replacements. To date, 47 emergency replacements have been performed and it is estimated that 100 emergency replacements will be required. In order to avoid an over expenditure in the 2014 Service Line Replacement budget, the Administration is recommending that $156,000 be transferred from Capital Project #1617 – Primary Water Mains to Capital Project #1616 – Waste Water Collection.

Go-Forward Service Level and Funding Requirement

Starting in 2015, the City will set an annual SSL Replacement budget of approximately $630,000 for 100 emergency replacements and 40 homeowner requested replacements to begin addressing the existing backlog of 67 requested replacements. In subsequent years as the homeowner request backlog is reduced, funding will be put towards the proactive replacement of locations with historically high rates of maintenance issues.

2015 and Onward Proposed Program	Amount	Funding
Capital (Replacement)		
Emergency	100	$ 450,000
Homeowner Request	20	90,000
Proactive Replacements	20	90,000
Operating (Maintenance)		
Cleaning & Inspection	2,700	729,000
Total		$1,359,000

The cost of this option is approximately $630,000 of capital funding for an anticipated 100 emergency replacements, 20 homeowner requested replacements (estimated dependent on backlog and demand) and 20 replacements of locations with a history of frequent maintenance visits (contingent upon funding available from the homeowner request backlog being removed).

Homeowners at locations with histories of frequent maintenance visits will be contacted and given information regarding the replacement program and the option to be included. If they are not interested, the connection will not be replaced and maintenance visits will continue as required.

Options to the Recommendation

One option would be to no longer accept or perform homeowner requested sanitary replacements. The annual SSL Replacement budget would be $450,000 for approximately 100 emergency replacements per year. The existing backlog of homeowner requested replacements would still need to be addressed, as these homeowners were told that their connection would be replaced once funding allowed.

Although this option has a lower cost than the recommended option, it reduces the quality of life of residents. Homeowners have shown a willingness to replace their portion of the service line at their cost rather than incur multiple maintenance visits which are provided to them at no additional cost. This indicates that homeowners feel there is a Quality of Life improvement that is provided by the recommended option.

Financial Implications
With the return of $156,000 to the Infrastructure Replacement Reserve - Water and Sanitary Sewers, there will be sufficient funding to allocate to Capital Project #1616 – Waste Water Collection in order to fund this anticipated over expenditure in 2014. The go-forward funding increase will be funded through the Water & Wastewater Utility.

Public and/or Stakeholder Involvement
The recommendations in this report were developed in conjunction with the Public Works and Construction & Design divisions. The number of residents (67) who are waiting for service line replacements is an indicator that this is a desired level of service. Ongoing input will continue to be gathered from customers requiring service line maintenance at the time of request, including the option for replacement.

Communication Plan
The backlog of homeowners requesting replacements will receive a letter in advance of the replacement to ensure interest and to provide further program details. Once the backlog has been addressed, the City may proactively communicate program options through a targeted mail out and PSA.

Environmental Implications
All of the materials and processes used in SSL replacement contribute negatively to the environment through the creation of greenhouse gasses and the consumption of non-renewable resources.

Other Considerations/Implications
There are no policy, privacy, or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion
This project is an annual recurring program, and if the recommendation is adopted by City Council, the Administration will proceed with eliminating the 67 requested SSL replacements over the next two years and 20 requested SSL replacements every year thereafter.

Public Notice
Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval
Written by: Stephen Wood, Manager, Water & Sewer Preservation
Reviewed by: Rob Frank, Manager, Asset Preservation Section

Reviewed by:	Mike Gutek, Director of Major Projects
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities Department

EUCS SW – Sanitary Service Line Replacements

City of Saskatoon Environmental Performance Plan

Recommendation
That the information be received.

Topic and Purpose
This report is to provide clarity on the Environmental Performance Plan implemented by the Environmental and Corporate Initiatives Division.

Report Highlights
1. There are four components to the Environmental Performance Plan: waste diversion, energy efficiency, green energy generation, and environmental protection.
2. An Annual Work Program is established based on the priorities of the Strategic Goal for Environmental Leadership in the Corporate Strategic Plan.
3. The Environmental Performance Plan is expected to achieve the performance targets that will be established under the Strategic Goal of Environmental Leadership.

Strategic Goals
The Performance Plan for Environmental and Corporate Initiatives is drawn specifically from the Strategic Goal of Environmental Leadership. The initiatives also make a positive contribution to the achievement of other goals such as Continuous Improvement. These initiatives contribute toward the Vision for Saskatoon as a great place to live, where sustainable growth enables the community to invest for the benefit of all.

Background
On August 14, 2013, City Council adopted the 2013 – 2023 Corporate Strategic Plan. Building on the community vision for a Green City, a number of four year priorities and long term strategies were established to achieve the Strategic Goal of Environmental Leadership.

Report
Environmental Performance Plan

The proposed Environmental Performance Plan for Environmental and Corporate Initiatives fits into four categories: waste diversion, energy efficiency, green energy generation, and environmental protection.

Waste diversion initiatives are developed to achieve four key outcomes:

- Extend the life of the landfill;
- Provide programs that are convenient to encourage citizen participation;
- Create valuable commodities from the things the community no longer wants (waste) to keep programs affordable and economically sustainable; and
- Lead to environmentally-friendly secondary benefits such as energy reduction, reduced emissions, and/or reduced or managed toxins in the environment.

Energy efficiency initiatives are expected to save money for the Corporation and facilitate savings for citizens through environmental programs that provide support and leadership from the City of Saskatoon (City).

Energy generation initiatives are led by two divisions: Saskatoon Light and Power develops utility-scale (>2 megawatt) projects, while Environmental and Corporate Initiatives facilitates small-scale (or distributed energy) opportunities. Green energy generation initiatives are expected to diversify revenues for the Corporation by generating new non mill-rate sources of revenue. Green energy initiatives also help protect Saskatonians from rising or fluctuating prices for conventional energy by creating greater energy independence.

Environmental protection efforts focus on ensuring compliance with environmental regulations by the Corporation with an emphasis on preparing for future regulatory changes through the adoption of best practices. Initiatives are developed to achieve three key outcomes:

- Ensure the City is in charge of its future plans, rather than being ordered to comply;
- Minimizing costs by maximizing coordination and management in the handling of materials of interest to environmental and health regulators (eg. soils, water, air); and
- Building the capacity of civic staff through education and facilitating good record-keeping.

2014 Annual Work Program

The Annual Work Program for Environmental and Corporate Initiatives (Attachment 1) is drawn directly from the four year priorities and ten year strategies contained in the Corporate Strategic Plan adopted by City Council.

The initiatives contained in this plan have been created to achieve progress toward the goal of Environmental Leadership and any performance targets City Council may set under this Strategic Goal.

Public and/or Stakeholder Involvement

Environmental initiatives are developed with input gathered from residents and stakeholders through a variety of mechanisms. A 2012 survey of Saskatoon residents provided information about current levels of environmental awareness and attitudes among citizens. This survey will be updated later this year. The Annual Civic Services Survey asks residents about their general satisfaction with waste programs and concern about the environment and pollution. Targeted engagements are also conducted when new programs are introduced (eg. consultations on recycling).

Communication Plan

The Environmental Performance Plan is communicated through the City web-site, SaskatoonRecycles.ca, and through a variety of targeted program communications. These communications include, the ‘Put Waste in the Right Place’ campaign, ‘Be Water Wise’ campaign, the ‘Our Environment’ report, ‘Be Pesticide Free’ campaign, and environmental events like Earth Hour and Earth Day.

Financial Implications

Environmental and Corporate Initiatives implement the Environmental Performance Plan with a team of 12 permanent and 5 temporary employees. This team works collaboratively across the Corporation to achieve positive environmental performance. The 2014 operating budget is $897,900 and capital projects underway total $14.125 M. The division also manages the Recycling Utility having a budget of $3.98M.

Environmental Implications

Environmental implications are considered as a part of every civic initiative and reported through reports to City Council and Standing Policy Committees, in the 'Service, Savings and Sustainability' report, and through the Energy and Greenhouse Gas Reduction Annual Report.

Policy Implications

The proposed environmental performance plan aligns with the City of Saskatoon Environmental Policy C02-036 and is intended to advance the objectives of that policy.

Other Considerations/Implications

There are no privacy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

Initiatives under the Environmental Performance Plan are reported on through quarterly results reporting on the Corporate Business Plan and Budget. The next report will be in October, 2014.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. 2014 Performance Plan Overview

Report Approval

Written by:	Brenda Wallace, Director of Environmental and Corporate Initiatives
Reviewed and Approved by:	Catherine Gryba, General Manager, Corporate Performance Department

City of Saskatoon Environmental Performance Plan.docx

2014 Performance Plan Overview

Corporate Strategic Plan	2014 Annual Work Program	Environmental Component
FOUR YEAR PRIORITY: Divert waste for re-use *(Eliminate the need for a new landfill by eliminating waste and/or diverting waste to re-use in other projects.)*	Recovery Park	Waste Diversion
FOUR YEAR PRIORITY: City-wide composting and recycling *(Promote and facilitate city-wide composting and recycling to reduce the rate and volume of waste sent to the landfill.)*	Curbside Recycling	Waste Diversion
	Multi Unit Recycling	
	Saskatoon Curbside Swap	
	Composting Programs	
	Food Waste Program Options	
	Public Space Recycling	
	Household Hazardous Waste (HHW)	
FOUR YEAR PRIORITY: Energy efficiency *(Implement energy-efficient practices in City buildings, transportation and operations.)*	Energy Efficiency in Civic Buildings	Energy Efficiency
	Compressed Natural Gas (CNG) Fleet	
	Water and Waste Water Plants (IEOP)	
	Garbage Service Verification	
	Innovation (Green) Teams	
	Sustainable Procurement	
	Be Water Wise	
FOUR YEAR PRIORITY: Energy & GHG Plan *(Continue to implement the Energy and Greenhouse Gas Reduction Plan.)*	Education for Sustainable Development	Energy Efficiency
	Energy & Greenhouse Gas Reduction Plan	Environmental Protection
FOUR YEAR PRIORITY: Communicate the financial benefit *(Communicate the financial benefit of environmental initiatives.)*	Promote 'Environmental Leadership'	Energy Efficiency
FOUR YEAR PRIORITY: Green energy generation *(Identify opportunities to replace conventional energy sources with green energy technologies and find alternate ways of generating capacity to support operations.)*	Clean Energy Options	Green Energy
	CHP at Shaw and Lakewood	
	District Energy	
	Elm and Waste Wood Gasification	
	Solar City	

Corporate Strategic Plan	2014 Work Program (Performance Plan)	Environmental Component
FOUR YEAR PRIORITY: Mitigate the impact of severe weather events *(Consider mitigation strategies for the impact of severe weather events on the City's infrastructure.)*	Environmental Implications reporting	Environmental Protection
TEN YEAR STRATEGY: Improve quality and reduce quantity of storm water run-off *(Improve the quality and reduce the quantity of storm water run-off that is going into the river.)*	Storm Water Quality Monitoring	Environmental Protection
	Watershed Planning and Protection	
	Sewer Use Bylaw	
TEN YEAR STRATEGY: Address soil quality issues *(Address soil-quality issues on City-owned properties.)*	Soils Handling Strategy	Environmental Protection
TEN YEAR STRATEGY: Improve access to ecological systems and spaces *(Improve access to ecological systems and spaces, both natural and naturalized.)*	Biodiversity and Natural Area Network Plan(s)	Environmental Protection
No Strategic Statement	'Our Environment' report	Environmental Protection
	Air Management Zone	
	Environmental Expertise to major plan reviews and Growth Plan to 500,000	

Watermain Breaks – Summer 2013

Recommendation
That the information be received.

Topic and Purpose
City Council requested a report with respect to the experience of dealing with watermain breaks during the summer of 2013. This report will investigate how Public Works (PW) dealt with watermain breaks and how customers were affected.

Report Highlights
1. Comparison of the occurrences of water outages in Summer 2013 to previous years.
2. Public Works normal level of service and how they dealt with extended outages.

Strategic Goal
The solution outlined in this report supports the Strategic Goal of Quality of Life and Continuous Improvement by ensuring that the City of Saskatoon's level of service in response to water supply disruptions remains high.

Background
During consideration of the Neighbourhood Level Infill Development Strategy report, City Council, at its meeting held on December 16, 2013 resolved, in part:

> "that the Administration be requested to provide a report with respect to the experience this summer dealing with watermain breaks."

Report
There was nothing extraordinary in Public Works method of dealing with watermain breaks during the summer of 2013. Public Works attempts to restore running water within 24 to 48 hours. The remainder of this report will provide information about water outages in the summer of 2013 and comparing the time in which water was shut off due to water main breaks over the past few summers.

For the purpose of this report, summer is defined as May 1st to September 30th of the given year. This period was chosen as it most accurately represents normal warm weather operations and excludes winter complications, such as frost and sub-zero temperatures.

<u>Comparison of the Occurrences of Water Outages in Summer 2013 to Previous Years</u>
The comparison of the occurrences of water outages and the average times between years are shown in the table below.

Water Outages Due to Breaks

	2013	2012	2011	2010
No. of occurrences	60	38	52	58
No. of occurrences within PW's level of service (<48 hours)	58	35	52	58
Average hours including all occurrences	20.32	21.78	16.11	17.47
Average hours including only occurrences within PW's level of service (<48 hours)	18.89	18.87	16.11	17.47
% Within 24 hours	73.33%	57.89%	75.00%	72.41%
% Within 48 hours	96.67%	92.11%	100.0%	100.0%

This table disregards all unusable data and instances where houses were temporarily supplied from neighbours, thus minimizing any disruption in service. A table reflecting all water shut-offs, including those not affecting customers, can be seen in Attachment 1.

Looking at the data from Table 1, it can be concluded that 2013 had the highest number of overall occurrences, at 60. However, the average times for all years are very close and well within Public Works level of service. The rise in average time over the years can be attributed to a number of different factors, but most likely due to Public Works continued strive towards proactive responses and earlier shut downs when problems arise, as well as more comprehensive tracking and recording systems.

The chart in Attachment 2 shows graphically how 2013 compared to other years.

<u>Public Works Normal Level of Service and how they dealt with Extended Outages.</u>
Public Works intends to maintain a year round level of service between 24 and 48 hours. In 2013, the average time it took to restore water service after a break was 20.32 hours, which is well within the level of service.

In all instances where customers were without running water for more than 8 hours, an emergency water supply trailer was delivered within that time frame.

There are two main reasons that an outage may last more than 48 hours:
1. A separate, higher priority, issue occurred around the same time and a decision was made to repair the higher priority area.
2. In some rare cases, a repair can turn into a much larger replacement job that can take multiple days.

When Public Works is unable to respond to a service outage within a timely manner, they provide alternative sources of water through the following methods:
1. Deliver emergency water supply trailers where residents must physically fill up containers at the street supply.
2. If just a few houses are affected then a temporary connection to an adjacent home or business may be made, if possible, allowing for normal tap water.

Other Considerations/Implications

There are no policy, financial, environmental, privacy, communications or CPTED implications.

Public Notice

Public Notice, pursuant to Section 3 of Policy C01-021, Public Notice Policy, is not required.

Attachments

1. All Watermain Shut Offs
2. Chart illustrating the comparison of the length of time that water was out between the summers of 2010, 2011, 2012, and 2013

Report Approval

Written by:	Eric Purdy, Operations Engineer, Logistics and Procurement
Reviewed by:	Brian Aucoin, Acting Manager Logistics and Procurement
Reviewed by:	Trent Schmidt, Water and Sewer Manager
Reviewed by:	Pat Hyde, Director of Public Works
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities

EUCS EP - Watermain Breaks – Summer 2013

ATTACHMENT 1

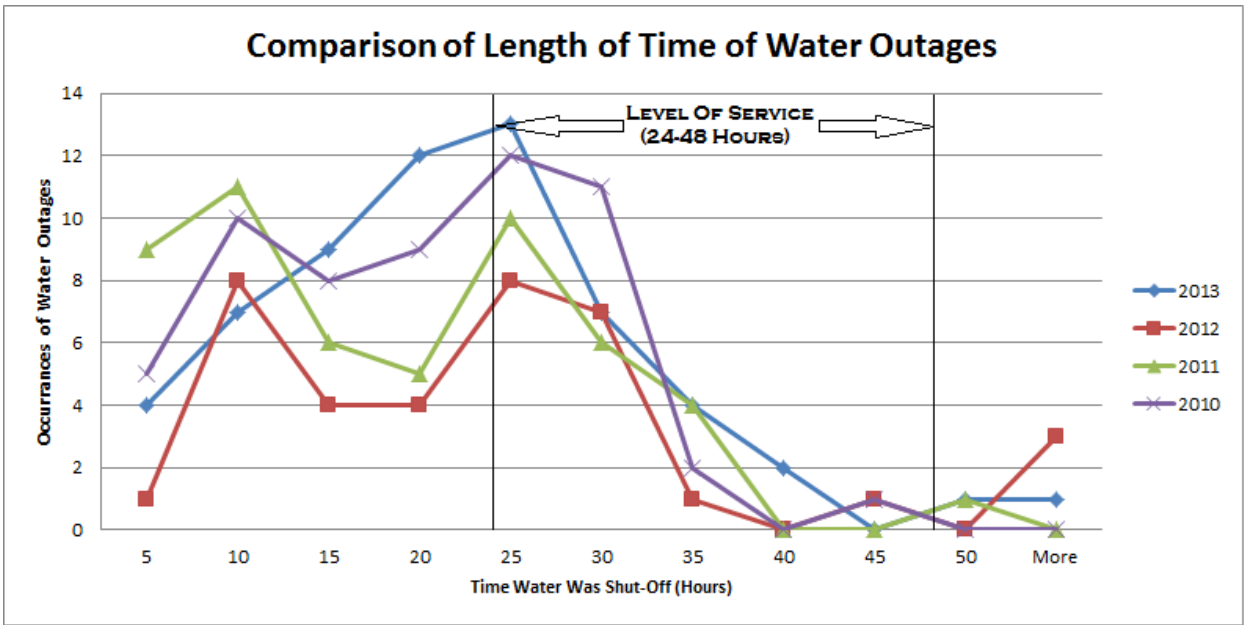
Table using ALL usable data

All Watermain Shut-Offs

	2013	2012	2011	2010
No. of occurrences	66	44	56	62
No. of occurrences within our level of service (<48 hours)	59	37	55	58
Average hours including all occurrences	26.92	35.75	18.07	19.88
Average hours including only occurrences within our level of service (<48 hours)	20.07	20.27	17.49	17.74
% Within 24 hours	66.67%	50.00%	69.64%	67.74%
% Within 48 hours	89.39%	86.36%	98.21%	95.16%

*This table reflects all usable data, including those instances where a part of the watermain was left off because **no customers were affected**. A case where the watermain may be left off for an extended period is when a break happens in an intersection where no homes are affected, thus it was left out from the main data set in the report. This table also includes instances where all residents were supplied a temporary service connection and thus their service was not significantly affected, where this information was excluded from the main data set in the report.

ATTACHMENT 2



The above chart illustrates the comparison of the length of time that water was out between the summers of 2010, 2011, 2012, and 2013.

*The data used to create this chart excludes all unusable data and all instances where houses were temporarily supplied from neighbours, thus avoiding any significant disruption in service. From the chart, one can note the points where the blue 2013 line is higher than the others. It can be seen that for occurrences that lasted from 15 hours to 25 hours, 2013 did indeed have the most number of occurrences.

Civic Service Review Progress Report

Recommendation
That the information be received.

Topic and Purpose

The purpose of this report is to provide an update on the Roadways and Parks Civic Service Reviews (CSR). Improvements in process and operations identified in this summary will improve service to citizens and improve customer satisfaction with services (realized through decreased complaints). This is accomplished by increasing the effectiveness and efficiency of the service line operation processes.

Report Highlights

1. Current State: Impact of rapid growth in Saskatoon has increased pressure on planning, design and construction as well as for maintenance operations in roadways and parks.
2. Improved Future State: A collaborative process during the design and construction phases will support better coordination of planning for maintenance operations, including staffing,budgeting and scheduling.
3. Improved Service to Citizens: A clearly defined process that considers the sequence of planning, funding and timing of scheduled work will allow for proactive elimination of issues and improve service to citizens.

Strategic Goal(s)

This report supports the Strategic Goal of A Culture of Continuous Improvement. Process improvements focus on identification of root cause issues and innovative and creative solutions that will provide optimal service improvements.

Background

City Council, at its meeting held on December 3 and 4, 2013, approved the Continuous Improvement Strategy which includes the following three components:

- Annual Civic Service Reviews - an operational review process to find ways to control expenditures and to seek efficiencies in the delivery of municipal programs and services.
- Internal Process Reviews - focus on identifying and removing redundancies and waste within existing processes to increase efficiencies in civic operations.
- Building capacity in the corporation through innovation coaches and empowering employees.

Civic Service Reviews follow a three-step approach:

- Current State - Identify the current process so there is a common understanding of how the service is currently being delivered.
- Future State - Using the "Blank Sheet of Paper" approach, put aside what the City is currently delivering, and define how the service will be delivered in the most effective and efficient way possible to meet citizen expectation.
- Gap Analysis - Identify the change in resources required to deliver the new service in comparison to the current service and identify the savings.

On January 9, 2014, the Executive Committee approved the recommendation that the following services undergo an Annual Civic Service Review in 2014:

- Road Management Program (Design, Construction, Operations and Maintenance)
- Parks (Design, Construction and Maintenance)

Report

Current State: Rapid Growth Increases Pressure in Planning, Design and Construction and Impacts Maintenance Operations

Saskatoon has experienced a significant growth rate of three to four percent a year since at least 2009. This growth has increased demand for housing and infrastructure and resulted in neighbourhoods being developed at an increased pace to meet the demand. A significant impact of the rapid growth rate is a reduction in the amount of planning time to design new infrastructure. Combined with a turnover of staff due to retirements and other opportunities, the result is an increased risk of transferring errors through all phases of planning, design, construction and maintenance.

Rapid growth and turnover have contributed to the loss of a consistent process or system that supports effective and efficient development of infrastructure. Currently, we are building roads based on current conditions and not factoring in future growth such as, interchanges and traffic signals. Small adjustments could be made today to reduce or eliminate the need for re-work when things like interchanges are built in the future. For example, although the functional design for an interchange at Marquis Drive and Idylwyld Drive has been complete for many years; Divisions struggled during the construction of Marquis Drive with the ability to fund roadway construction that would accommodate the eventual interchange construction.

Other examples are the redesign, and reconstruction that is occurrring at the intersection of Central Avenue and Attridge Drive due to the unintended downstream effects of additional neighborhood development, or the lack of turn-outs for maintenance and emergency vehicles on the new Circle Drive South Bridge and Freeway project. The current system lacks flexibility, true stakeholder understanding, and clarity of future construction.

The impact of growth and development on citizens must be a key consideration during the planning, design, construction and maintenance processes. Citizens expect parks to be clean, green and safe and roadways to be clean, accessible and safe. Incorporating effective planning, communication and budgeting into a future system will have a positive impact on citizen satisfacation.

Improved Future State: A Flexible System that Supports Coordination Between Planning, Construction and Maintenance Operations

In order to improve efficiency and effectiveness in the process, there is a need for a system that promotes coordination across divsions and all phases of development as well as a system that has the flexibility to allow for things to happen today that will help in the future. If we take the future Boychuk Drive and Highway 16 interchange as an example, it is fairly clear to the Transportation Division what may happen, however, there is a gap across the rest of the Administration on details, timing and logistics of this fairly imminent project.

A new more flexible system will allow for preparatory work, understanding of timing and logistics, maintenance demands and the opportunity to capitalize on circumstances that assist in the delivery of the asset. The same can be said with any roadway or other asset. In essence, the new resourced system would mitigate the current reality of an unprepared 'Shotgun Start' for most works.

Creation of an Optimization Team, or working committee for development projects provides an opportunity for all groups involved in planning, design, construction and maintenance to weigh in on the design and impact to maintenance costs and schedules at several stages in the process. For example, with Parks participating on an Optimization Team working on a new neighbourhood like Brighton, they along with everyone else would know exactly what stage the project is at and be able to provide input into the impact of design on their maintenance requirements.

Additionally, an Optimization Team would ensure that coordinated inspections occur, maintenance liabilities are reduced and allow for accurate identification and inventory of their responsibilities ultimately allowing for more accurate budgeting. The benefit of this change is a seamless transition from construction to maintenance resulting in decreased frustration in citizens and reduced customer complaints. Reducing complaints allows for more time to be spent on proactive planning and maintenance; improving the quality of life for citizens.

A system that coordinates all design and construction projects will also increase efficiency across the organization by allowing issues to be identified early on in infrastructure design, reducing the need for re-design of plans or rework post construction; ultimately resulting in cost savings to the organization.

The improved process also includes a review and updating of all standards, and service levels, which will improve the effectiveness of design, construction and maintenance operations and minimize the risk of inconsistency that may occur as a result of rapid growth and staff turnover. This helps ensure that citizens, developers and civic staff are all aware of the standards and process for infrastructure planning,design, development and maintenance and allows for value-based decisions on funding for projects.

Improved Service to Citizens

Better communication and collaboration allows proactive identification of and resolution for elimination of issues. The nature of work undertaken by the maintenance operations crews in the Public Works and Parks Divisions as well as the amount of area the crews are responsible for has increased and evolved over the years. While daily and weekly maintenance schedules are set based on known variables (people, equipment), their work is generally very reactive and responsive in nature given the number of unknown variables (weather, population growth).

A formalized process involving maintenance early will ensure that operations knows what infrastructure is coming on line. Being ready to accept the new infrastructure will improve customer satisfaction (measured by a reduction customer complaints) by ensuring that the new roadways or parks are included in the daily/weekly maintenance schedules.

Increased communication and collaboration across divisions involved in design, construction and maintenance of infrastructure will identify and proactively eliminate issues; improving service to citizens. Improved planning on the front end of the design phase ensures that all internal and external stakeholders involved in neighbourhood development including developers as well as civic departments utilizing the roadways and parks for programming, storm water drainage, transportation, etc. are following by the same standards and collaborating to deliver citizen friendly neighbourhoods and infrastructure.

Next Steps of the CSR

The initial phase of the reviews are complete and recommendations are currently being developed with action plans that will identify the financial implications of the recommendations and quantify savings. The recommendations will be shared with citizens to provide an opportunity for their input and feedback on the proposed process improvements.

Communication Plan

To date, the communication plan focused on internal communication with staff about the purpose and process for the review and provided an opportunity for internal stakeholder input on the current design, construction and maintenance processes.

The next phase of the communication plan will include engaging citizens and other external stakeholders through the Shaping Saskatoon website and through targeted stakeholder meetings. They will be invited to provide input on the proposed recommendations for improvement.

Financial Implications

The CSRs have identified recommendations for both short and long term improvements to roadways and parks design, construction and maintenance. The final report for the Civic Service Reviews will quantify the cost efficiencies, both short and longer term.

Other Considerations/Implications

There are no policy, environmental, privacy, or CPTED implications or considerations.

Due Dates for Follow-up

The final reports on the Parks and Roadways Civic Service Reviews including recommendations for improvement and financial implications will be presented to the SPC on Planning, Development and Community Services on November 3, 2014 and SPC on Transportation on November 10, 2014 respectively.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by:	Kim Matheson, Director, Strategic and Business Planning
Reviewed by:	Randy Grauer, General Manager, Community Services Department Catherine Gryba, General Manager, Corporate Performance Department
Approved by:	Catherine Gryba, General Manager, Corporate Performance Department

Civic Service Review – Progress Update.docx

7.2.5

Report on Energy and Greenhouse Gas Emissions Reduction

Recommendation
That the information be received.

Topic and Purpose

The purpose of this report is to provide an update on civic initiatives to reduce greenhouse gas emissions while gaining the economic benefits that result from energy reduction.

Report Highlights

1. By focusing on greenhouse gas (GHG) emissions, the City of Saskatoon (City) has enjoyed benefits such as saving money on utility costs, deferring costs for major capital expenditures, and reducing air pollutants linked with emissions reductions.
2. A number of key milestones related to GHG emissions reduction have been achieved, but the targets established under the first *Energy & Greenhouse Gas Management Plan* were not met.
3. An ambitious set of initiatives that reduce GHG emissions are underway. These initiatives relate to waste diversion, energy efficiency, green energy generation, and environmental protection.
4. A new set of GHG emissions reduction targets are being developed along with a business plan to ensure the new targets are met.

Strategic Goals

The initiatives described in this report support a number of four-year priorities and long-term strategies related to the Strategic Goal of Environmental Leadership. Specifically, the initiatives help in implementing energy-efficient practices in City buildings, transportation, and operations; help to replace conventional energy with green energy technologies; create new sources of green energy where feasible; increase use of renewable energy in City operations; and eliminate the need for a new landfill.

Background

On December 10, 2012, City Council received the *Energy and Greenhouse Gas Reduction 2012 Annual Report*. Funding for energy GHG reduction initiatives has also been provided from the Reserve for Capital Expenditures (RCE) in 2013 and 2014 on the basis of reports approved by City Council on December 4, 2012 and December 4, 2013.

Report

Why Report on Energy and Greenhouse Gas Emissions?

Initiatives that reduce GHGs reduce primary energy use and/or the City's reliance on high carbon energy sources that have rising prices. The City, like other organizations that focus on GHGs, has enjoyed benefits such as saving money on utility costs, deferring costs for major capital expenditures, and reducing air pollutants linked with emissions reductions.

A focus on GHGs also demonstrates that Saskatoon is a Green City, aligned with the vision established by Saskatonians through Saskatoon Speaks, and the City of Saskatoon is committed to its strategic goal of Environmental Leadership (Attachment 1).

The City has made a commitment to GHG reduction. Provincial environmental regulations related to GHG emissions are forthcoming. Federal Coal Fired Electricity Generation Regulations under the Canadian Environmental Protection Act take effect July 2015. By that date, Saskatchewan will either need to demonstrate compliance with these new regulations or enact the already proclaimed Management and Reduction of Greenhouse Gases Act. This change to environmental regulation will mean greater scrutiny on GHG emissions.

A History of Greenhouse Gas Reduction

The City's role in GHG management began in December 2004 when the municipality became a member of the Partners for Climate Protection (PCP) program. Since that time, a number of key milestones have been achieved, but the targets established under the first *Energy & Greenhouse Gas Management Plan* were not met. Attachment 2 provides a summary of the milestone activities and reporting that has been done to track progress toward the targets.

Recent Initiatives Supported by RCE Funds

GHG reduction initiatives supported through the Reserve for Capital Expenditures (RCE) include civic projects or programs. To align these initiatives with the Corporate Strategic Plan, they are generalized under the following four categories: waste diversion, energy efficiency, clean energy generation, and environmental protection. The current status of each initiative is summarized in greater detail in Attachment 3.

Waste Diversion

- Multi-Unit Residential Recycling Program
- Expanded Organics Program
- Recovery Park
- Public Space Recycling

Energy Efficiency

- Energy Performance Contracting Program (EPC)
- Compressed Natural Gas Vehicle Study
- Energy and Water Monitoring
- Energy Management and Efficiency Measures at the Water and Wastewater Treatment Plants
- Education for Sustainable Development
- Be Water Wise Water Conservation Campaign
- Continuous Improvement (Green Teams Initiative)

Clean Energy Generation

- Combined Heat and Power Projects
- Four (4) additional energy generation initiatives (outside of the Green Energy Park being developed by Saskatoon Light & Power)
    - Solar City Program
    - Biomass Gasification and Power Generation Pilot Project
    - NSERC Smart Net Zero Energy Buildings Initiative
    - North Downtown District Energy Feasibility Assessment and Plan

Environmental Protection

- Sewer Use Bylaw
- Several additional environmental protection initiatives have GHG emissions reduction implications that will be quantified as the programs are further developed.
    - Soils Handing Strategy
    - Watershed planning and protection
    - Natural Area Network(s) and Biodiversity Plan

Next Steps

The Administration is preparing an Energy and Greenhouse Gas Reduction Business Plan that will establish a new set of GHG emissions reduction targets. The Business Plan will also outline:

- the role of the City in facilitating GHG reductions through projects, programs, policies, and incentives;
- a three-year implementation plan;
- a projection of the financial implications including potential costs and revenues; and
- a projection of GHG emissions to ensure reduction targets are reached within the proposed timeframe to 2020.

The Administration recommends that the 2005 inventory of GHG emissions be updated in 2015, and the capacity within the Administration continue to be built through training and the provision of new reporting and tracking tools to ensure regular and accurate reporting of GHG implications.

Keys to Success

Organizational capacity - The targets for 2013 established by the *Energy & Greenhouse Gas Management Plan (2009)* were not met. Organizational capacity (described in Attachment 4) is now in place to effect the changes described in that Plan and the Administration anticipates the Business Plan will provide the focus necessary to achieve the new targets.

Sustainable Land Use and Transportation Planning - Shifts in land use and transportation planning are anticipated as a result of the new Growth Plan being developed through Growing Forward Shaping Saskatoon. These shifts provide significant potential to reduce GHG emissions as a new plan for transit, transportation networks and an Active Transportation Plan are created and the intensity of development is facilitated along corridors and at important nodes within the community.

Public and/or Stakeholder Involvement

The *Energy & Greenhouse Gas Management Plan (2009)* included broad community consultations engaging residents, businesses, and youth at forums, through focus groups, and through direct engagement by the consultants leading the development of the Plan. Additional consultation on updated emissions reduction targets is anticipated this fall with details reported along with other Performance Target-setting work currently underway.

Communication Plan

The information in this report will be communicated through the City web-site and at upcoming stakeholder meetings on Environmental Leadership Performance Targets. Details will be provided in an upcoming report on Performance Targets.

Environmental Implications

Key environmental initiatives currently reduce GHG emissions by an estimated 111,200 tonnes CO_2e annually, or the equivalent of removing 23,165 passenger vehicles from our roadways.

Other Considerations/Implications

There are no financial, policy, privacy, or CPTED implications at this time.

Due Date for Follow-up and/or Project Completion

The Energy and Greenhouse Gas Reduction Business Plan will be presented to the Standing Policy Committee on the Environment, Utilities and Corporate Services in the first quarter of 2015.

Public Notice

Public Notice, pursuant to Section 3 of Public Notice Policy No. C01-021, is not required.

Attachment

1. Commitment to GHG Reduction
2. A History of GHG Reduction
3. Recent Initiatives Supported by RCE Funding
4. Organizational Capacity

Report Approval

Written by:	Matthew Regier, Environmental Coordinator (EMS)
	Bibian Rajakumar, Project Engineer (Energy & Sustainability)
Reviewed by:	Brenda Wallace, Director Environmental and Corporate Initiatives
Approved by:	Catherine Gryba, General Manager Corporate Performance

Report on Energy and Greenhouse Gas Emissions Reduction.docx

Commitment to GHG Reduction

2013 – 2023 STRATEGIC PLAN

Environmental Leadership

Saskatoon grows in harmony with nature.

Saskatoon thrives in harmony with its natural environment, conserves resources and consistently demonstrates environmental leadership. Our city's air and water are clean. We reduced our consumption of water and energy. We rely on renewable energy sources and green technology where it makes sense to do so. We construct energy efficient buildings. And, we are a leader in operating an energy-efficient city in our cold weather climate. People routinely take transit, walk or cycle to get around, and our neighbourhoods are more compact. We produce less garbage and recycle or compost most of it. We grow more food in the city. The South Saskatchewan River Valley is Saskatoon's natural showpiece and supports biodiversity in its many forms. Our natural assets are protected, enhanced and linked. And, there is more green space per resident, thanks to a commitment to urban and grassland parks and an urban forest that is healthy and growing.

↓

2013 – 2023 STRATEGIC PLAN

Long Term Strategies (10 years)

Strategies that Reduce GHG Emissions

- Create new sources of green energy where feasible.
- Increase use of renewable energy in City operations.
- Reduce greenhouse gas (GHG) emissions tied to City operations.
- Become a recognized leader in Cold Climate Energy Efficiency.
- Increase self-reliance on green energy for City operations.

Short Term Priorities (4 years)

Strategies that Reduce GHG Emissions

- Promote and facilitate city-wide composting and recycling to reduce the rate and volume of waste sent to the landfill.
- Communicate the financial benefit of environmental initiatives.
- Implement energy-efficient practices in City buildings, transportation and operations.
- Identify opportunities to replace conventional energy sources with green energy technologies and find alternate ways of generating capacity to support operations.
- Continue to implement the Energy and Greenhouse Gas Reduction Plan.

↓

CURRENT ENERGY & GHG REDUCTION INITIATIVES

Waste Diversion

- Recycling: Curbside (Blue Cart) and Multi Unit Recycling programs, Saskatoon Curbside Swap, Public Space recycling, Recovery Park
- Organics: Composting, Leaves & Grass (Green Cart)

Energy Efficiency

- Corporate Performance: Sustainable Procurement, civic building energy efficiency, compressed natural gas (CNG) fleet, Garbage Service Verification
- Community: Be Water Wise, Energy & GHG Reduction Plan

Green Energy Generation

- Combined heat and power (CHP) at civic centres, Solar City, solar panels at pools, Landfill Gas, Turboexpander

Environmental Protection

- Education for Sustainable Development, Environmental Implications reporting, watershed planning and protection, Sewer Use Bylaw, Soils Handling Strategy, Natural Area Network(s)

A History of GHG Reduction

The City of Saskatoon's role in GHG management took a significant step forward in December 2004, when the municipality became a member of the Partners for Climate Protection (PCP) program. PCP is a network of Canadian municipal governments committed to reducing GHGs and acting on climate change. The program is based on a performance-based five milestone process, with each milestone providing an opportunity for municipal capacity building. The five milestones are:

- Milestone 1: Creating a Greenhouse Gas Emissions Inventory and Forecast – COMPLETED AUGUST 2005
- Milestone 2: Setting an Emissions Reductions Target – COMPLETED FALL 2005
- Milestone 3: Developing a Local Action Plan – ADOPTED JUNE 2009
- Milestone 4: Implementing the Local Action Plan or a Set of Activities – ONGOING
- Milestone 5: Monitoring Progress and Reporting Results – ONGOING

City Council's adoption of the *Energy & Greenhouse Gas Management Plan* achieved Milestone 3 of the PCP program and established the framework for GHG reduction initiatives going forward. This was also the first year for which GHG reduction initiatives were reported through PCP's annual *National Measures Report*. GHG reductions reported to date through the PCP program amount to 65,250 tonnes CO_2e (carbon dioxide equivalents).

The Energy and Greenhouse Gas Reduction 2012 Annual Report identified annual GHG savings of 116,887 tonnes CO_2e as a result of the various initiatives planned under the *Energy & Greenhouse Gas Management Plan*. Not all of these initiatives have been reported to PCP yet. Of the 78 identified initiatives, 96% of the City of Saskatoon (corporate) actions have started, are progressing, or are complete, and 68% of the actions to address community emissions have been initiated. The results are shown below (all reported in tonnes of greenhouse gas).

Identified Action	**Reduction Target**	**Reduction Achieved**	**% of Target Accomplished**
Goal #1 - Build an Energy Aware Community			
Corporate programs	500		256%
Civic employee education		*1279*	
Community Programs	100,000		7%
Public outreach and education		*739*	
Sustainable transportation education		*5*	
Energy efficiency/Alternative energy		*5947*	
Water conservation		*Unknown*	

Identified Action	Reduction Target	Reduction Achieved	% of Target Accomplished
Goal #2 - Create a Healthy Community			
Corporate programs *Active employee programs*	500	 *Unknown*	Unknown
Community programs *Active community programs*	100,000	 *Unknown*	Unknown
Goal #3 - Achieve a Diverse and Environmentally Sustainable Energy System			
Corporate programs *Alternative energy program*	5,000	 *19,200*	384%
Community Programs *Alternative energy program*	300,000	 *Unknown*	Unknown
Goal #4 - Design and Build Green and Smart			
Corporate programs *Energy efficient buildings*	10,500	 *521*	5%
Community Programs *Energy efficient buildings* *Energy efficient land use*	300,000	 *0* *Unknown*	Unknown
Goal #5 - Be Responsible Stewards of Our Resources			
Corporate programs *Alternative energy program* *Water and waste water programs* *Sustainable transportation programs*	10,600	 *210* *Unknown* *368*	5%
Community Programs *Sustainable transportation programs* *Waste diversion programs*	200,000	 *101* *86,724*	43%
Goal #6 - Lead by 'Green' Example			
Corporate programs *'Greening' the corporation*	1,000	 *157*	16%
Community Programs *Community leadership*	500,000	 *Unknown*	Unknown
TOTALS	**1,528,100**	**116,887** **+ Unknowns**	**8%**

The City's annual *Report on Service, Savings and Sustainability* also highlights a number of corporate productivity initiatives resulting in GHG emissions reductions. These reports – along with information reported through the *National Measures Report*, the *Energy and Greenhouse Gas Reduction 2012 Annual Report*, and the Environmental Implications section of all reports to Council and Committees – comprise the majority of corporate GHG emissions reductions identified to date. However, notable from the table above, these reporting mechanisms are not yet fully representing the overall emissions associated with City-related projects and programs.

In response, Administration is currently developing guidance tools to improve the identification and quantification of GHG emissions associated with all City activities, products and services. Administration also recommends the completion of an updated inventory of GHG emissions along with continued improvements to the measurement, verification and reporting of GHG emissions already beginning across the corporation.

Reports to Council and Committees currently attempt to identify any known or potential environmental implications associated with the recommendations of the report. 80% of reports where GHG implications (positive or negative) exist currently identify GHG implications, however only 29% (of this 80%) quantified the GHG implications. Among the reports having a GHG implication, 36% were associated with net GHG emissions reductions or savings, while only 22% (of this 36%) quantified the GHG implications of their report. Going forward, it is clear that additional training and/or improved quantification tools are required to improve reporting on Environmental Implications.

Recent Initiatives Supported by RCE Funding

Waste Diversion

Multi-Unit Residential Recycling Program

The implementation of a curbside recycling program for multi-unit dwellings will capture recyclables from 36,000 units across the city. The diversion of this material from the waste stream will extend the life of the Landfill by two years, saving taxpayers $25.3 million in recaptured airspace. The program launches this fall and will cost the City $2.2 million each year and result in the avoidance of 19,000 tonnes CO_2e annually.

Net cost per tonne of GHG reduced: $116
Additional benefits: extend life of Landfill ($25.3 million); conserve raw materials

Expanded Organics Program

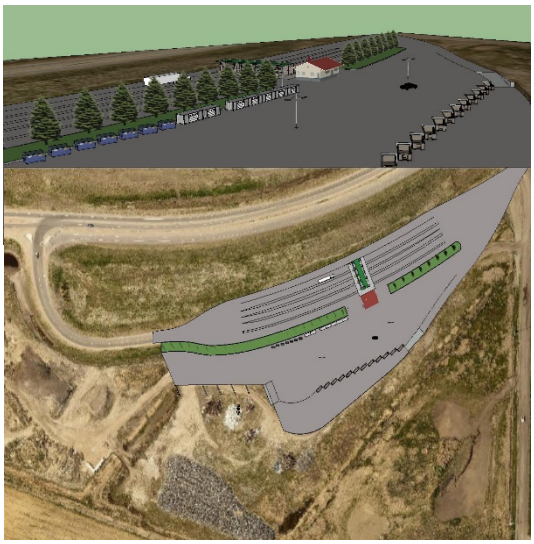
The collection of yard waste through the Leaves and Grass Subscription (Green Cart) Program was expanded in 2014, providing curbside service to 3,891 customers as of July 31, 2014 – an increase of 1,010 subscribers over 2013. Materials collected through this program are composted at the City's compost depots along with materials from public and commercial customers. The total cost for current organics programs is $904,700 each year with revenues from subscription fees of $214,000 ($55 per household per season), permit fees from commercial haulers of $24,800, and revenues from the sale of finished compost and mulch which continue through the Fall. 21,920 tonnes of organics were composted in 2013, resulting in the avoidance of 5,000 tonnes CO_2e. Expansion of the program to include food waste is being studied as it has the potential to divert an additional 50,000 tonnes from the Landfill, potentially extending the life of the Landfill by 28 years and saving taxpayers $354.2 million in recaptured airspace.

Net cost per tonne of GHG reduced: $133

Additional benefits: extend life of Landfill ($155.3 million); produces a soil amendment that contributes to the health of the watershed

Recovery Park

Phase Two Concept



A permanent site for the collection of recyclable and reusable construction materials has been identified directly west of the Landfill along the Landfill Access Road. The Recovery Park project is expected to be implemented in three phases, with public access to the site for the drop-off of general construction, renovation and demolition materials by the end of 2014 (Phase 1). Phase 2 (expansion of site to include drop-off of other recyclables and/or materials requiring special handling) and Phase 3 (relocation of Landfill Scalehouse and entry facilities as the sole material drop-off point and public interface with the Landfill) must be completed prior to the summer of 2022, based on the filling plan in the Landfill Optimization Strategy. The anticipated net operating costs for Phase 1 are $128,000 each year and result in the avoidance of 20,900 tonnes CO_2e annually.

Net cost per tonne of GHG reduced: $6
Additional benefits: extend life of Landfill ($13.4 million); produces materials that may be re-used in construction projects

Public Space Recycling

MetroBin Program to be replaced

Improvements to the City's Public Space Recycling Program began in 2014 with the addition of recycling receptacles at bus stops (130 when project is complete). The existing public space recycling program collects 14 tonnes of recyclable material from Business Improvement Districts and major commercial arterials, resulting in the avoidance of 50 tonnes CO_2e and providing $9,000 in program revenue from Creative Outdoor Advertising.

Net cost per tonne of GHG reduced: +$180
Additional benefits: awareness of recycling; small revenue stream

Energy Efficiency

Energy Performance Contracting Program (EPC)

An EPC is a unique type of agreement with an Energy Services Company that enables buildings to be retrofitted with modern energy efficiency equipment and improvements in a relatively short time frame. An EPC would be expected to yield savings of 20% over the current usage of electricity, water and natural gas, resulting in annual GHG emissions reductions of up to 8,000 tonnes CO_2e. Investments in building retrofits are backed by a contractual arrangement of guaranteed savings. The City's current savings opportunity is $720,000 annually.

Net cost per tonne of GHG reduced: $90
Additional benefits: improvements to civic buildings (including some that extend building life and improve comfort and air quality); reduced expenditures of $720,000 once contract expires provides opportunity to re-invest the funds in other strategic initiatives

Compressed Natural Gas Vehicle Study

The average garbage truck burns 13,000 litres of diesel and generates 35 tonnes CO_2e annually. Many transit, commercial transportation and waste management fleets are switching to natural gas as a fuel, realizing benefits such as reduced fuel costs and GHG emissions, quieter engine operations and reduced maintenance requirements. Transitioning to natural gas opens the door for future fueling options with biogas that can be produced from the Landfill or another waste facility. Some retrofitting of vehicle maintenance facilities is required to accommodate natural gas powered vehicles. The new transit facility will be 'natural gas ready'. The GHG emission reduction potential associated with alternative fuel vehicles is a 90% savings or 567 tonnes annually for the entire fleet of garbage trucks.

Net cost per tonne of GHG reduced: +$1192
Additional benefits: reduced vehicle maintenance; quieter vehicle operations; fewer pollutants from vehicle tail-pipe

Energy and Water Monitoring

Monitoring equipment has been installed in 13 civic facilities to reduce utility costs and provide information that enables good management of facility equipment. The project involves installing a real-time data collection, reporting and analysis system that gathers utility consumption information from the facility. Industry research suggests that up to 5% utility cost savings can be achieved through utility monitoring.

Net cost per tonne of GHG reduced: $41
Additional benefits: improved equipment operations (extending life of equipment); increased staff productivity

Energy Management and Efficiency Measures at the Water and Wastewater Treatment Plants

Water and wastewater treatment processes represent 36% of the total corporate GHG emissions, and therefore represent a significant opportunity for efficiency measures. The City applied to and was accepted by SaskPower's Industrial Energy Optimization Program, which offers 50% funding support for energy management information systems and energy saving capital projects. Simply tracking energy use has been shown to generate savings on utilities from $13,500 to $19,000 and reduce GHG emissions by up to 300 tonnes CO_2e annually. A feasibility study has recently been completed for an energy management information system at the Wastewater Treatment Plant; a detailed assessment of the business case for the project is pending.

Net cost per tonne of GHG reduced: $65
Additional benefits: improved equipment operations (extending life of equipment); improved staff productivity

Education for Sustainable Development Partnership

The program, entitled Student Action for a Sustainable Future (SASF), facilitates educational opportunities that engage students in learning and empowers them to take sustainability-focused action. Between December 2013 and April 2014, twelve grade 4 to 8 classes pursued actions focused on one or more environmental themes – water, waste, food, energy and transportation – helping them understand the environmental, social and economic impacts of their actions. Results indicate that annual savings from the collective actions would amount to 17,000 kWh of electricity, 88 GJ of natural gas, 700 m^3 of water, 8,000 kg of waste, 230 L of fuel and 29 tonnes CO_2e. The City provided $43,000 in funding for the pilot program with additional in-kind support and funding from other partners valued at $20,000.

Net cost per tonne of GHG reduced: $1483
Additional benefits: citizen engagement and enthusiasm for environmental sustainability; facilitate cost savings for citizens and schools; program cost efficiency per tonne of GHG reduced will improve over time as participant capacity is built

Be Water Wise Water Conservation Campaign

The goal of the campaign is to reduce water consumption by 5% using a strategic approach that targets the largest users first. The energy required to treat and distribute potable water is associated with a significant amount of GHGs; emissions from water use by the residential sector alone in 2013 are estimated at 24,690 tonnes CO_2e or the equivalent of the emissions generated by 5,140 passenger vehicles. Throughout the summers of 2013 and 2014 various tactics have been applied to engage and encourage residents to reduce water use on their lawns and gardens. The next phase will target large water users within the Industrial-Commercial-Institutional (ICI) sector to implement water-saving processes and procedures.

Net cost per tonne of GHG reduced: $28
Additional benefits: citizen engagement and enthusiasm for environmental sustainability; facilitate cost savings for citizens

Continuous Improvement (Green Teams Initiative)

A cross-departmental innovation group has been formed to engage employees in learning, the exchange and generation of ideas and collaboration. Environmental education will be provided to the group and it is anticipated this will stimulate action projects that realize operational and utility savings, as well as other corporate sustainability benefits. Research has shown that energy savings of 5-10% can be achieved as a result of greater employee awareness of their impact on the environment. Beyond cost savings and GHG reductions, Green Teams have also been shown to contribute to an innovative work culture, engage and retain staff, increase communication and collaboration, expand employee skill sets, build leaders and increase productivity.

Net cost per tonne of GHG reduced: not yet calculated
Additional benefits: employee engagement and enthusiasm that contributes to strong customer service and productivity

Clean Energy Generation

Combined Heat and Power Projects

Combined heat and power (CHP) generators are being installed at Lakewood Civic Centre and Shaw Centre. The units, which will be integrated into the existing electrical and heating systems, will produce electricity and recover waste heat to be used inside the building – reducing the amount of purchased utilities. The technology offers a cleaner energy source that will reduce annual GHG emissions between the two facilities by an estimated 915 tonnes CO_2e. The total cost of the project is $1.3 million with the City contributing $375,000 and partners contributing the balance, including $600,000 from Natural Resources Canada's Market Development Incentive Payments Program and $325,000 from SaskEnergy.

Net cost per tonne of GHG reduced: $134
Additional benefits: improved equipment operations (extending life of equipment); reduced impact from power outages

Four (4) additional energy generation initiatives (outside of the Green Energy Park being developed by Saskatoon Light & Power) will be reported on later this year.

- Solar City Program – a suite of programs is being explored to encourage the application of residential and commercial solar power in Saskatoon. Electricity derived from solar energy avoids GHG emissions associated with conventional

sources of non-renewable energy. GHG emissions reductions for each mega-watt hour generated by a solar electric system are estimated at 840 tonnes CO_2e.

- Biomass Gasification and Power Generation Pilot Project – currently, elm wood from City arborists and the community-at-large are directed to the Landfill to be buried due to the issues surrounding Dutch Elm Disease. This material uses up valuable landfill space and represents a wasted source of energy. Saskatchewan Research Council has been engaged to study the energy content of elm wood to determine how much biogas can be produced per kilogram of feedstock. GHG emissions reductions for each mega-watt hour generated with bio-synthetic gas are estimated at 840 tonnes CO_2e.
- NSERC Smart Net Zero Energy Buildings Initiative – the City committed $25,000 to fund 50% of the costs associated with two energy studies: analysis of solar energy options for Civic Square East and an optimization study of the solar hot water systems at Harry Bailey Aquatic Centre and Lawson Civic Centre. The other 50% of the costs are funded through Natural Sciences and Engineering Research Council's Smart Net Zero Energy Building Initiative research network. In May 2015, the City will host the annual meeting of the network, drawing leading researchers on net-zero energy buildings from across Canada and building local capacity.
- North Downtown District Energy Feasibility Assessment and Plan – a feasibility study has shown that the North Downtown area of Saskatoon is a desirable area for a district energy system. The proposed system design would be large enough to replace the heating equipment in several existing City-owned buildings and envisioned to include a combined heat and power unit.

Environmental Protection

Sewer Use Bylaw

The City is developing source control measures to manage discharge-related risks to the sanitary sewer system. Source control programming will protect sanitary system infrastructure, protect City employees from exposure to harmful wastes, protect public and private property from inappropriate discharges, reduce the risk of upsets to the wastewater treatment process, and reduce the risk of inadvertently releasing harmful substances into the river or onto farmland. Spikes in organic materials received at the Waste Water Treatment Plant can be reduced through source control programs, achieving cost savings estimated at $140,000 each year and GHG emissions reduction of 820 tonnes CO_2e.

Net cost per tonne of GHG reduced: +$24
Additional benefits: improved sewer infrastructure operations (extending life of equipment and increasing productivity through reduced need for pipe flushing)

Several additional environmental protection initiatives have GHG emissions reduction implications that will be quantified as the programs are further developed.

- Soils Handing Strategy – This initiative focuses on beneficial reuse of soils as the City grows. Since 2011, this approach has saved the City approximately $5.5 million dollars for handling contaminated material by moving and managing soil from project to project as opposed to disposal at a landfill or special facility. An additional $1.6 million was saved on tipping fees by creating Landfill Soil Acceptance Guidelines to promote use of appropriate soils as clean cover at the Saskatoon Landfill. Greenhouse gas reduction benefits for this initiative are related to reduction, in most cases, in hauling distances from the excavation site to the disposal site.
- Watershed planning and protection – Implementing best management practices in watershed protection include a variety of water re-use initiatives as well as an increased reliance on natural or ‘green’ infrastructure for storm water management instead of large investments in traditional pipe and pump infrastructure.
- Natural Area Network(s) and Biodiversity Plan – Protecting biodiversity through natural area protection has significant potential to reduce emissions as well as sequester carbon.

Organizational Capacity

New Organizational Structure

NEW DEPARTMENT **Corporate Performance** General Manager: Catherine Gryba	Department created to ensure and support high performance by the corporation in the areas of: • Performance Targets • Strategic and Business Planning • Communications • Media Relations • Human Resources • Aboriginal Relations • Information Technology • Environmental & Corporate Initiatives
NEW DIVISION **Environmental & Corporate Initiatives (E&CI)** Director: Brenda Wallace	Within the Corporate Performance Department, E&CI Division created to ensure and support environmental sustainability performance by the corporation and facilitate environmental outcomes in the community through programs and education.
SECTION IN E&CI **Energy & Sustainability Engineering** Manager: Ian Loughran	Section works to support energy reduction (through energy efficiency and waste diversion) and small-scale energy generation across the community. Team: 3 permanent and 3 temporary employees.
SECTION IN E&CI **Education & Environmental Performance** Manager: Amber Jones	Section works to support environmental planning, policy and program development, outreach and education, and monitoring environmental metrics of performance. Team: 5 permanent and 1 temporary employees.
SECTION IN E&CI **Watershed Protection** Manager: Twyla Yobb	Section works to support the reduction of pollution in the regional environment. Team: 3 permanent and 1 temporary employees.
SECTION IN E&CI **Corporate Initiatives** Project Managers: Jeanna South Jill Cope	Section works to support the planning and design of major city-building initiatives ensuring all aspects of sustainability are addressed: financial, social, cultural, and environmental. Team: 2 permanent employees.

Engaged team

When compared with disengaged employees, highly engaged employees are more than three times as likely to do something good for their employer even if it's not expected of them, almost three times as likely to make a recommendation about an improvement at work, more than 2.5 times as likely to stay late at work if something needs to be done, and more than two times as likely to help someone else at work. Organizations with Engagement scores above 65% consistently deliver better business results. An

engagement survey was recently conducted within the Environmental & Corporate Initiatives Division revealing a score of 73%.

Strengths that emerged for the team included:

- Innovation – the team readily adopts technology and has a strong capacity for ideation (the generation of ideas)
- Social capital – the team actively develops connections with others and seeks to collaborate for mutual benefit
- Strategic resourcing – the team is well-versed in researching and assessing the business case to ensure targeted investments are made that leverage significant benefit
- Strongly aligned to strategic plan – the work program for the team focusses almost exclusively on the priorities identified in the Corporate Strategic Plan
- Duty to current and future citizens – the team is motivated by improving and protecting quality of life