City of Saskatoon

PUBLIC AGENDA
STANDING POLICY COMMITTEE ON ENVIRONMENT, UTILITIES AND CORPORATE SERVICES

Tuesday, February 10, 2015, 2:00 p.m.

Council Chamber, City Hall

Committee Members:

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)

Pages

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 January 12, 2015.

4. UNFINISHED BUSINESS

5. COMMUNICATIONS (requiring the direction of the Committee)

   5.1 Delegated Authority Matters

   5.1.1 Noise Bylaw Extension, Optimist Canada Day 2015, July 1, 2015, Diefenbaker Park, Brad Sylvester, Chair, Optimist Canada Day 2015 [File No. CK. 205-1] — 4 - 4

   Recommendation

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

   5.1.2 Email - Communications - Michelle Banman - High Voltage Classic 2015, March 21-22, 2015 [File No. CK. 205-1] — 5 - 5

   Recommendation

   That the information be received and joined to the file.

   5.2 Matters Requiring Direction

5.3 Requests to Speak (new matters)

6. REPORTS FROM ADMINISTRATION

6.1 Delegated Authority Matters

6.2 Matters Requiring Direction

6.2.5 Advanced Metering Infrastructure Project - Award of Contract for Meter Data Management System (File No. CK. 261-3 and WT. 2030-4) 39 - 42

Recommendation

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

1. That the proposal submitted by Harris Utilities/Smartworks for the supply of a Meter Data Management System for the Advanced Metering Infrastructure project, for a total cost of $894,430.07 (including taxes) be accepted; and,
2. That the City Solicitor be requested to prepare the appropriate agreement and that His Worship the Mayor and the City Clerk be authorized to execute the agreement under the Corporate Seal.

7. URGENT BUSINESS

8. MOTIONS (NOTICE PREVIOUSLY GIVEN)

9. GIVING NOTICE

10. ADJOURNMENT

205-1

Jan 29 2015

OPTIMIST INTERNATIONAL
Friend of Youth

Mayor Don Atchison and Members of City Council
City of Saskatoon
City Hall
Saskatoon, Saskatchewan
S7K 0J5

RE: OPTIMIST CANADA DAY 2015

Dear Your Worship and members of city Council,

The Optimist Club of Saskatoon (OCS) is in the planning stages for this year's celebration of Optimist Canada Day 2015, in Diefenbaker Park, on July 1. The Optimist Club of Saskatoon has been organizing Canada Day events since 1967, which started as a centennial project. 2017 will be our 50th year. There are five separate items for your consideration as follows:

- OCS requests an exemption from the noise bylaw until 11:30 pm on July 1. This will allow time for the fireworks and crowd clearance from the park. We will continue to face the main stage south, to mitigate the noise that occurs in the local neighborhood.
- Exemption from the ***park access*** by-law from 7 am June 30th to 1 pm July 2 for set-up/pull down and clean up by vendors and exhibitors.
- OSC requests continued Transit services, as was provided in 2014 by the city of Saskatoon Transit. Operationally this service was a success and we see community value for the city of Saskatoon to continue providing this service.
- As in the previous years, OSC requests continued support from the Saskatoon Police Services, and Fire and Protective Services to work with our committee to provide a safe family day and evening
- OCS would be pleased to work with the city to provide a safe environment to watch the fireworks. While last year we suggested the bridge be closed during the Fireworks portion of the event, the city elected to slow traffic during that time. The OCS would be pleased to provide any program information to best plan the traffic strategy for the Circle Drive South Bridge this year.

I understand that these requests will be referred to committees for consideration. OCS will provide a representative(s) to answer questions at committee level and/or at council upon request.

Yours in Optimism,

Bradley S Sylvester, C.Dir
Chair, Optimist Canada Day 2015
1014 Hurley Way
Saskatoon, Sask. S7N 4J7
306 653 0971 daytime
306 653 1458 fax

205-1

From: michelle.banman@gmail.com
Sent: January 28, 2015 9:00 AM
To: Web E-mail - City Clerks
Subject: High Voltage Classic 2015

Importance: High

City of Saskatoon Website 'Contact Us' Message

To: City Clerk's Office
From: Michelle Banman "michelle.banman@gmail.com"
Subject: High Voltage Classic 2015
Message: Good day,

This correspondence is intended for City Council regarding the upcoming U of S Engineer's/IEEE High Voltage Classic taking place on March 21-22, 2015.

If the event follows past scheduling, it will take place in front of the Francis Morrison Public Library.

Approximately 10 years ago, the event organizers applied for and received special permission to have the live music portion of their event go till 2 am. I live very nearby in a high-rise, and it was impossible to sleep, with all the sound reverberating off of all the concrete buildings downtown.

Since then, this has not happened, and they have followed the 11 pm sound by-law that all other events downtown must abide by (Jazz Festival, concerts in Bessborough Gardens, etc.), and this is a written request that this year be the same: that the event have no live music/loud music past 11 pm as per the bylaw.

I realize it's a fine line between promoting events downtown but respecting those of us that actually live there, and have no 'quiet' place to retreat to for reprieve.

Respectfully submitted,
Michelle Banman
#309 - 125 5th Avenue North
Saskatoon, Sk
S7K 6A5

Membership of the City of Saskatoon on the National Zero Waste Council

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

> That the City of Saskatoon become a member of the National Zero Waste Council.

Topic and Purpose
The purpose of this report is to provide information on the National Zero Waste Council (NZWC) and the benefits and commitments the City of Saskatoon (City) would have as a member of the Council.

Report Highlights
1. Zero Waste means striving to continuously improve toward sustainable natural cycles where discarded materials from one process become resources to another.
2. The NZWC is a leadership group with members from governments, businesses and non-government organizations. The aim of the NZWC is to substantially reduce waste and the associated environmental and economic costs of waste management through design and behavioural change.
3. Benefits to the City becoming a member of the NZWC

Strategic Goals
The recommendation in this report supports the priority to promote and facilitate city-wide recycling under the Strategic Goal of Environmental Leadership and also support the long-term strategy to eliminate the need for a new landfill under the Strategic Goal of Environmental Leadership.

Background
At its meeting on March 31, 2014, City Council considered a letter (Attachment 1) with respect to membership on the NZWC and support of a national waste prevention agenda in Canada. City Council resolved that the matter be referred to the Administration.

Report
<u>What does Zero Waste Mean?</u>
Rather than setting a specific waste diversion target, Zero Waste is a goal that is visionary and focussed on continuous improvement. Specifically, the Zero Waste International Alliance has adopted the following definition of Zero Waste:

> "Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate

> sustainable natural cycles, where all discarded materials are designed to become resources for others to use. Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health."

National Zero Waste Council

The NZWC is a cross-sector leadership group comprised of governments, businesses and non-government organizations which aims to substantially reduce waste and the associated environmental and economic costs of waste management through design and behavioural change. Attachment 2 provides an overview of the Council mandate and organizational structure.

The NWRC was created in response to the need for a unified, national voice in advancing a waste prevention agenda in Canada. The current members are listed in Attachment 3.

Many municipalities have made great strides in waste diversion through recycling and material recovery. The amount of waste we produce (per capita), however, still continues to climb. The current linear system of taking raw materials, processing them, making products, using them, and then throwing them out is an inefficient business model and according to NZWC costs local governments approximately $2.6 billion a year in waste management (NZWC, 2014).

Membership by the City of Saskatoon

As a member of the NZWC, the City of Saskatoon would be asked to commit to the Council's vision and contribute value through engagement in working groups and other Council initiatives. This includes attending the annual meeting, being available to serve on working committees, and to identify a lead politician or senior staff to support the work of, and participate in, the NZWC.

The City has outlined its commitment to waste reduction in the Saskatoon Waste and Recycling Plan (SWRP) to provide the direction and tools to successfully manage solid waste until 2028. Within this 20 year period, four implementation phases were formally defined. The City has implemented many of the programs identified in Phase 1 and 2 of the program and is now entering Phase 3.

Attachment 4 highlights how Saskatoon compares to some of the current NZWC members in terms of progress toward waste reduction.

Joining the NZWC could help the City achieve a future waste diversion target by learning from leading communities, businesses, and organizations at the national and international level. As a member of the NZWC, the City would share the council's vision of working towards becoming a zero waste community; and commit to their mission of acting collaboratively with other as an agent of change for waste prevention and reduction in the design, production and use of goods.

The benefits of membership in the NZWC include:

- Staying at the leading edge of change;
- Learning and information sharing;
- Network development;
- Policy development and advocacy.

Options to the Recommendation

City Council may choose to forgo membership to the NZWC. City Council may also choose to become a supporter of the NZWC rather than a member.

Stakeholder Involvement

The Saskatchewan Waste Reduction Council recently became a member of NZWC and supports Saskatoon and other Saskatchewan municipalities in becoming members.

Financial Implications

At this time there is no fee associated with membership to the NZWC. Costs for participation may include the commitment of time by Councillors and/or the Administration and optional travel to attend meetings or events.

Environmental Implications

A positive impact on waste diversion, and the associated greenhouse gas emissions, is anticipated as a result of the City becoming a part of a national network focused on waste prevention and reduction.

Other Considerations/Implications

There are no communications, policy or privacy considerations at this time.

Due Date for Follow-up and/or Project Completion

If membership in NZWC is pursued, a status report on activities would be included each year in the Integrated Waste Management Annual Report. The 2015 report could include a summary of membership activities and will be prepared for May 2016.

Public Notice

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

Attachments

1. Letter of Invitation to Join the National Zero Waste Council
2. National Zero Waste Council – Brochure (Vison and Mission Statement)
3. National Zero Waste Council Members
4. Waste Diversion Targets - NZWC Government Members

Report Approval

Written by: Daniel Mireault, Environmental Coordinator
Reviewed by: Amber Jones, Education and Environmental Performance Manager
Brenda Wallace, Director of Environmental and Corporate Initiatives
Approved by: Catherine Gryba, General Manager, Corporate Performance Department

ZeroWASTE
NATIONAL ZERO WASTE COUNCIL

Canada united in the achievement of zero waste, now and for future generations

March 17, 2014

Mayor Don Atchison
City of Saskatoon
222 Third Avenue North
Saskatoon SK S7K 0J5

Dear Mayor Atchison,

On behalf of the National Zero Waste Council (NZWC), I invite the City of Saskatoon to become a member of the NZWC and support a national waste prevention agenda in Canada.

Co-founded by Metro Vancouver and the Federation of Canadian Municipalities, and launched October 16, 2013 at Metro Vancouver's Zero Waste Conference, the NZWC is a cross–sector leadership initiative bringing together governments, businesses, and non-government organizations. With a focus on influencing behaviour and improving product design and packaging, the National Zero Waste Council aims to unite efforts in waste prevention and drive a fundamental shift in our relationship with waste.

The Council recognizes that while we have made great strides forward in waste diversion, the amount of waste we produce continues to climb, with the current linear system of take-make-dispose costing local governments approximately $2.6 billion a year in waste management. A move towards a more resource efficient, circular economy – one that offers scope for innovation, financial savings, and reduced environmental impacts - is needed. Within that framework, the Council aims to act as an advocate, a convener, facilitator, and leader uniting business, government and industry efforts in the development of new solutions, and providing a unified voice calling for change in policy and practice that will address waste generation.

The Council has determined that it will advance design change, and behavior change amongst all stakeholders and sectors of society, through both advocacy and social marketing programs. Part of this work involves building the Council's constituency.

By joining the Council, you will be uniting with a core group of government, industry and community sector leaders that range from Canadian cities to the Province of BC, from the Conference Board of Canada to Canadian Manufactures and Exporters, and from Walmart to the Retail Council of Canada. A full list of members can be found at www.nzwc.ca

Council membership offers a number of benefits. These include:

- Staying at the leading edge of change.
- Learning and information sharing.
- Network development.

Additional information can be found in the Council information brochure. There is currently no fee attached to membership, and applications can be submitted online with the following supporting documentation:

1. Statement of Intent – that briefly describes in 150-250 words how your organization demonstrates a commitment to waste prevention and reduction.
2. Letter or Resolution – that demonstrates organizational support for the Council – e.g., a letter from Mayor and Council, or a copy of an endorsing Council resolution.

If you have any questions regarding the Council and membership, I am happy to speak with you regarding this invitation and can be reached at admin@nzwc.ca.

Addressing waste generation requires new solutions and new partnerships across sectors. Please join us in advancing a waste prevention agenda in Canada by becoming a member of the Council.

Sincerely,

Malcolm Brodie
Chair, National Zero Waste Council
Mayor, City of Richmond

*"The NZWC provides a forum to address the most important, but often forgotten **R—reduction**. Through national cross-sector collaboration we can tackle preventing the generation of waste, rather than focusing on managing it once it is produced."*

Christina Seidel – Recycling Council of Alberta

VISION

Canada united in the achievement of zero waste, now and for future generations.

MISSION

To act collaboratively with business, government and the community, at the national and international level, as an agent of change for waste prevention and reduction in the design, production and use of goods.

THE COUNCIL IS:

A leadership initiative bringing together governments, businesses, and non-government organizations to advance a waste prevention agenda in Canada

Taking action on factors driving waste generation, to support a high quality of life, environmental sustainability and economic prosperity while consuming fewer resources and less energy

Positioning Canadian communities and businesses to effectively compete in a resource constrained world

Driving new levels of cross-sector collaboration and innovation in support of a circular economy and a world without waste.

DESIGN CHANGE

To catalyze change in the **design of products** and packaging to reduce material intensity and allow them to be more easily reused, recovered, recycled.

STRATEGIC DIRECTIONS

BEHAVIOR CHANGE

To catalyze change in **behavior**, among all stakeholders and sectors of society, with the goal of reducing the amount of waste entering the waste stream.

"Cities have unique waste management approaches, but we all stand to benefit from tackling the generation of waste. Collaboration between stakeholders will get us to Zero faster."

Shelley Carroll – City of Toronto

BECOME A MEMBER

Help shape the direction of waste prevention and reduction in Canada.

NETWORKING AND CONNECTIONS

Join a growing stakeholder network developing new solutions to address waste generation and build new connections across the country.

LEARNING AND INFORMATION SHARING

Discuss emerging issues and take advantage of webinars, special presentations, and workshops. Engage in activities that align with the Council's mission, and contribute your ideas, knowledge and resources.

POLICY DEVELOPMENT AND ADVOCACY

Become involved in research, policy, harmonization and advocacy initiatives. Attend the AGM, participate in national working groups, and raise issues and activities for the Council to consider.

Membership is open to local, provincial, federal or territorial government entities; for-profit businesses or business organizations; not-for-profit organizations; or other public or academic entities.

There is currently no fee associated with membership.

Individuals can also engage with the Council's vision by becoming a supporter.

Visit **www.nzwc.ca** to submit a membership application, or sign up as a supporter.

www.nzwc.ca
Email: **admin@nzwc.ca**

zeroWASTE NATIONAL ZERO WASTE COUNCIL

Founded by Metro Vancouver in collaboration with the Federation of Canadian Municipalities.

INTRODUCING

THE NATIONAL ZERO WASTE COUNCIL

zeroWASTE NATIONAL ZERO WASTE COUNCIL

Canada united in the achievement of zero waste, now and for future generations.

WWW.NZWC.CA

GUIDING PRINCIPLES

1. Commit to collaboratively working with business, government and community partners to develop new solutions.

2. Adopt a waste prevention and reduction framework that positions Canadian cities and businesses to compete globally in an emerging resource constrained economy.

3. Align with global and international initiatives.

4. Stress the economic, social, and environmental benefits associated with the conservation of resources.

5. Consider local and global consequence and long term impacts.

"Local governments spend approximately $2.6 billion a year to manage waste – even with waste diversion programs in place. More needs to be done to increase waste prevention and reduction. Collectively, cities have considerable influence and we need to apply that influence through organizations such as the National Zero Waste Council. I call on my colleagues in government to join us and work together with business and others to address the issue of waste."

Malcolm Brodie – Metro Vancouver

PRIORITIES

IMPLEMENT NATIONAL COMMUNICATION CAMPAIGNS

Develop and support national communication and education campaigns that encourage behavior change and build public awareness that products and packaging can and should be designed to prevent waste, with benefits for the economy, the environment and lifestyles.

ADVANCE POLICY DEVELOPMENT

Research and assess opportunities for policy harmonization that will facilitate more producers to improve the design of products and packaging, and pursue targeted initiatives to help facilitate this shift in identified product streams.

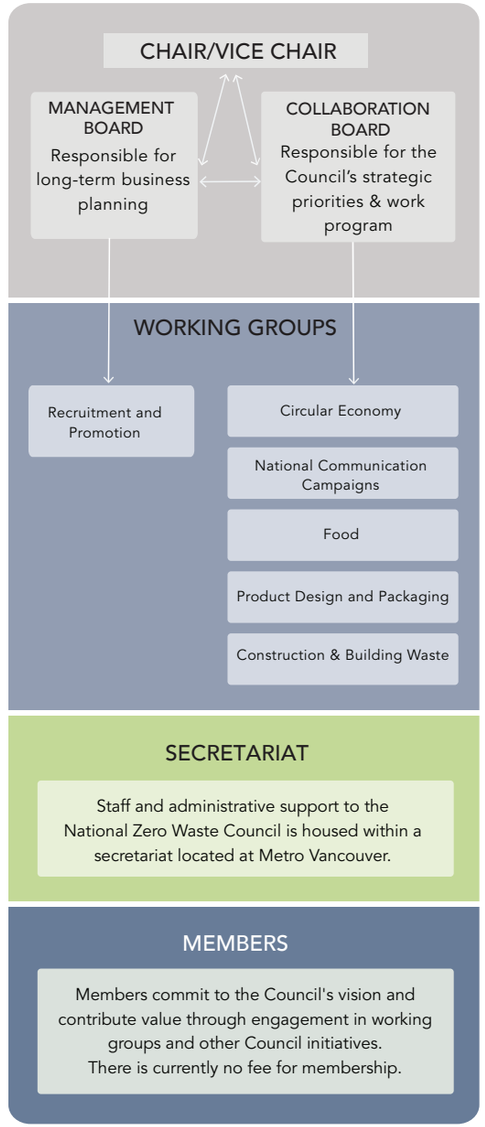
FACILITATE KNOWLEDGE EXCHANGE AND DIALOGUE

Support and leverage existing initiatives and opportunities that promote best practices and facilitate knowledge exchange between industry, government and other key stakeholders.

"PAC NEXT is delighted to be a member of the NZWC - we share the mutual goal of finding global solutions for better package designs that increase recovery and recycling while minimizing waste generation."

Alan Blake – PAC NEXT

GOVERNANCE FRAMEWORK



EXECUTIVE LEADERSHIP

CHAIR

Malcolm Brodie, Chair, Metro Vancouver Zero Waste Committee, and Mayor, City of Richmond

BOARD MEMBERS

Alan Blake, Executive Director, PAC NEXT

Nancy Coulas, Director, Environment & Energy Policy, Canadian Manufacturers and Exporters

Frank Came, Senior Advisor, Globe Foundation

Shelley Carroll, City Councillor - Ward 33, City of Toronto

Dan Casselman, Senior Policy Advisor, Federation of Canadian Municipalities

Renee Gratton, Founding President, Construction Resource Initiatives Council

Bill Karsten, Councillor, Halifax Regional Municipality and Vice-chair, FCM Standing Committee on Environmental Issues and Sustainable Development

David Lawes, EPR Business Consultant

Allen Lynch, Representative, International Board of Directors, Solid Waste Association of North America

Brock Macdonald, CEO, Recycling Council of BC

David Ranson, Executive Director, Environmental Standards Branch, BC Ministry of Environment

Christina Seidel, Executive Director, Recycling Council of Alberta

Christian Shelepuk, Waste Reduction Program Manager, Wal-Mart

Nathalie St-Pierre, Vice-President - Sustainability and Quebec, Retail Council of Canada

David Stewart-Patterson, Vice-President, Public Policy, Conference Board of Canada

ADVISORY BODY

John Coyne, Director, Board of Directors, Canadian Stewardship Services Alliance

Michael Goeres, Executive Director, Canadian Council of Ministers of the Environment

Bridgett Luther, President, Cradle to Cradle Products Innovation Institute

Jared Wright, Director of Advocacy & Government Relations, Union of BC Municipalities

ATTACHMENT 2

NATIONAL ZERO WASTE COUNCIL MEMBERS

GOVERNMENT
BC Ministry of Environment
City of Burnaby
City of New Westminster
City of North Vancouver
City of Port Coquitlam
City of Richmond
City of Toronto
City of Vancouver Granville Island Office, CMHC
Metro Vancouver
Town of Cochrane
Township of Langley
Vancouver Board of Education
Ville de Gatineau

BUSINESS AND BUSINESS ASSOCIATIONS
BC Bottle and Recycling Depot Association
BSI Biodegradable Solutions
ECODAS
Green Chair Recycling
Green Spark Group
Immacutec Systems Technologies Inc.
London Drugs
One Earth
SymbiAudit Inc.

NON PROFIT/ACADEMIA
Catalyst Agri-Innovations Society
Construction Resource Initiatives Council
Federation of Canadian Municipalities (FCM)
Globe Group
Kwantlen Student Association
Light House
PAC NEXT
Retail Council of Canada
Ridge Meadows Recycling Society

ATTACHMENT 3

NON PROFIT/ACADEMIA (con't)
Saskatchewan Waste Reduction Council
Strathcona Business Improvement Association
Solid Waste Association of North America (SWANA)
Recycling Council of Alberta
Recycling Council of British Columbia
Thompson River University

ADVISORS
Canadian Council of Ministers of the Environment
Canadian Stewardship Services Alliance
Cradle to Cradle Products Innovation Institute
Union of BC Municipalities (UBCM)

Waste Diversion Targets - NZWC Government Members

Municipality	Waste Diversion Target
Metro Vancouver, BC *Vancouver* *City of Burnaby* *New Westminster* *North Vancouver* *Port Coquitlam* *Richmond*	70% by 2015 Long-term: Zero Waste
Toronto, Ontario	70% by 2010*
Cochrane, Alberta	80% by 2020 Long-term: Zero Waste
Gatineau, Quebec	65% by 2011 70% provincial target

* This target was not reached. In 2014, Toronto had a diversion rate of just over 50%.

Saskatoon Waste Diversion

	2012	2013
Waste Landfilled (tonnes)	117,523	117,759
Waste Diverted (tonnes)	26,520	34,539
Waste Diversion Rate	18.41%	22.68%
Diversion Rate (including waste soil)	32.15%	39.45%

The 2014 waste diversion rate is currently being calculated. Administration is also currently in the process of preparing a proposed Waste Diversion Performance Target for consideration by City Council.

Inquiry – Councillor Donauer (March 3, 2014) Rainwater Re-Use on Civic Buildings

Recommendation
That the report of the General Manager, Corporate Performance Department dated February 10, 2015, be forwarded City Council for information.

Topic and Purpose
The purpose of this report is to provide a response to an inquiry from Councillor Donauer regarding design of new civic facilities to collect rainwater for useful purposes.

Report Highlights
1. Useful purposes for captured rainwater include both indoor uses (flushing toilets, vehicle washing) and outdoor uses (irrigation).
2. The Access Transit Maintenance Facility is piloting an indoor rainwater capture system which replaces 30% of the building's water formerly supplied by the City utility.
3. Civic projects using outdoor rainwater capture systems include the Rain Garden at River Landing Spray Park and curb drain tree irrigation for the 20th Street streetscaping project.
4. Currently, indoor uses of captured rainwater are not as cost-effective to implement as outdoor uses due to costs for equipment and maintenance.
5. The new Civic Operation Center does not incorporate a rainwater harvesting, but it does utilize a water recycling system as part of the Automatic Bus Wash System.

Strategic Goals
The contents of this report supports the Strategic Goal of Environmental Leadership to improve the quality of storm water run-off that is going to the river and reduce greenhouse gas emissions tied to the City of Saskatoon (City) operations. Rain and meltwater diversion and management are also relevant considerations in mitigating for the impact of severe weather events on civic infrastructure.

Background
The following inquiry was made by Councillor R. Donauer at the meeting of City Council held on March 3, 2014:

> "In the interest of water preservation, would the Administration please report on the possibility of designing all new civic facilities with the ability to collect rainwater for useful purposes, such as, for flushing toilets and urinals, landscaping, irrigation, and any other possible purposes? Please include plans for the Civic Operations Centre."

Report

Defining Rainwater Capture

Rainwater capture is the practice of collecting rain from roofs and other hard surfaces and storing it for use in irrigation, industrial processes, and indoor commercial and residential uses that do not require drinking-water-quality water (such as clothes washing and toilet flushing). Beyond the benefits associated with using water provided 'free' to a property in the form of rain or meltwater, the common drivers for capturing rainwater include pollution prevention and flood control.

Civic purposes for captured rainwater could include indoor uses, such as flushing toilets and washing vehicles, or outdoor uses for landscape irrigation. Currently, most civic facilities use water treated to drinking-water-quality standards for all indoor and outdoor uses.

Opportunities for Rainwater Capture – Indoor Uses

Indoor uses of captured rainwater are known as grey water systems, and are governed under the National Plumbing Code of Canada (2005) as interpreted by City plumbing inspectors. The benefits of rainwater use for both indoor and outdoor applications include the management of storm water (reducing flood risk) and the replacement of treated water, which reduces utility costs.

Indoor grey water systems can replace only a portion of the potable drinking water supply system. Since two water supply systems would be in use in each building, there would be additional design, installation, operating, and maintenance costs. In Saskatoon there is limited experience in issuing plumbing permits for grey water systems; policy regarding locally acceptable grey water plumbing practices has not yet been developed. Furthermore, payback periods for the capital investment are long (i.e. greater than 30 years), as low local water rates mean rainwater replaces a small utility cost. For all of these reasons, rainwater capture systems are not widely used in civic buildings today.

The City has a grey water re-use system in place at the Access Transit Maintenance Facility. In this pilot project, rainwater from the roof is collected via gutters and rainwater leaders into three 40,000 litre storage tanks, resulting in approximately 700,000 litres annually for use in bus washing, toilets, and irrigation systems. This represents a 30% water savings for the facility, which is enough water to fill the Harry Bailey 25 metre pool with 225,000 litres to spare. The Access Transit Maintenance Facility project cost of $85,000, saves $1,500 per year (2014 utility rates), and has a payback period of approximately 35 years when considering maintenance costs and utility rate escalation.

Opportunities for Rainwater Capture - Outdoor Uses

Rainwater captured for outdoor purposes is released into the landscape in a managed way, so the water has an opportunity to infiltrate into the ground rather than becoming run-off into the storm sewer system. This reduces flood risk, helps improve water quality in the watershed, and reduces the costs for landscape irrigation.

Civic projects piloting outdoor rainwater capture systems include the Rain Garden at River Landing Spray Park and the curb-drain tree irrigation installed within the 20th Street streetscaping project from Avenue E to Avenue F. The greenway planned along the boundary of the Northeast Swale will include rain gardens and drainage swales specifically designed for rainwater and neighbourhood storm water capture and use.

The City is in the process of developing a Storm Water Management Plan that will identify opportunities throughout the community for outdoor rainwater capture. Guidelines for the implementation of outdoor rainwater capture systems for civic and other buildings will be part of this Plan.

Civic Operations Centre (COC)
The design solution from the P3 Partner in the COC does not incorporate a rainwater harvesting system. However, the Automatic Bus Wash System, which will represent the single largest user of water within the Transit Operations Facility, has been specified and will be installed with an integral water recycling system which will allow up to 75% of the wash water to be reclaimed and reused.

Environmental Implications
Rainwater capture is beneficial to the environment because it reduces the amount of water that needs to be drawn from the river and treated to drinking-water standards.

Rainwater capture systems divert rain and meltwater from the storm water system for re-use in the sanitary sewer system (in the case of indoor uses) or to infiltrate the ground (in the case of outdoor uses). This reduces sediment and pollution flowing to the river, thereby reducing harmful impacts to the river ecosystem and protecting our source of drinking water.

Other Considerations/Implications
There are no financial, communications, policy, privacy, or CPTED implications at this time.

Due Date for Follow-up and/or Project Completion
Opportunities to expand rainwater capture for outdoor uses will be included in the Storm Water Management Plan. A report introducing the Plan will be prepared for October 2015.

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

Report Approval

Written by:	Brydan Tollefson, Engineer I Jill Cope, Corporate Initiatives Project Manager Jeanna South, Corporate Initiatives Project Manager Twyla Yobb, Watershed Protection Manger
Reviewed by:	Brenda Wallace, Director of Environmental and Corporate Initiatives

Approved by: Catherine Gryba, General Manager, Corporate Performance Department

Administrataive Report - Inquiry – Councillor Donauer (March 3, 2014) Rainwater Re-Use on Civic Buildings.docx

Tall Wind Turbine Project Update

Recommendation
That the report of the General Manager, Transportation & Utilities Department dated February 10, 2015, be forwarded to City Council for information.

Topic and Purpose
The purpose of this report is to provide an update on advances in wind turbine technology and possible applications within the Saskatoon Light & Power (SL&P) Service Area. Information is also included on a recent Health Canada study finding no link between wind turbine noise and negative health effects in people.

Report Highlights
1. Wind power is an attractive technology for Saskatchewan, but faces difficult challenges within SL&P's franchise area.
2. A new Health Canada Study has found no link between exposure to wind turbine noise and negative health effects in people.

Strategic Goals
This report supports the long-term strategy to increase use of renewable energy in City operations, and to reduce greenhouse gas (GHG) emissions tied to City operations under the Strategic Goal of Environmental Leadership.

Background
At its meeting held on January 16, 2012, City Council resolved:

"1) that the Request for Proposal No. 11-0950 for the Tall Wind Turbine Project be cancelled, as the single proposal received exceeded the project budget and was non-compliant;
2) that the Administration be directed to monitor advances in wind turbine technology and report to the Administration and Finance Committee no later than mid-2014; and
3) that any remaining funds available within this project will be returned to their original funding source."

Report
Advances in Wind Turbine Technology

According to the Canadian Wind Energy Association, the capital cost to build wind generation is very competitive in comparison with other generation technologies. Wind energy is one of the fastest growing major sources of new electricity around the world.

Canada is one of the fastest growing countries for newly added wind power capacity, ranking 5th globally at the end of 2013. Currently, Canada has over 8,500 megawatts (MW) of installed capacity. Saskatchewan has nearly 200 MW of installed wind

capacity, which represents 5% of the available provincial generation capacity according to SaskPower.

Wind power is an attractive electricity generation technology for Saskatchewan, but faces challenges inside the SL&P Service Area. Residential setback for large-scale wind is recommended at 550 metres and makes siting a wind turbine difficult within an urban area. Proximity to the airport and flight paths provides additional challenges.

The best wind resource inside the SL&P Service Area is on the top of the Saskatoon Landfill. The capital cost to build a single turbine is higher due to crane mobilization/demobilization, and the cost of the turbine foundation on a landfill increases costs further. Without funding assistance, to proceed with the same Tall Wind Turbine Project as considered in 2012 would not be economically feasible.

SL&P has also explored the use of small wind turbines in the SL&P Service area. A 1.3 kilowatt unit was installed and assessed over a one-year period at a SL&P substation in 2008. Based on the results of the one-year assessment, the application of small wind is not considered economically feasible within an urban area.

SL&P recently met with a local entrepreneur to explore the possible application of a vertical-axis wind turbine within the SL&P Service Area. A vertical-axis wind turbine differs substantially in construction from the horizontal-axis turbine considered in 2012. Further development needs to occur before this technology could be considered for Saskatoon; however, it does show promise for offering lower costs and improved performance in lower wind speed applications.

<u>New Health Canada Study</u>

Health Canada, in partnership with Statistics Canada, conducted a two-year study that was released in November 2014, to better understand any link between wind turbine noise and negative health effects in people.

The study involved an adult in 1,238 households at varying distances between 600 metres and 10 kilometres from wind turbines. The participants answered a questionnaire in person, as well as provided health measurements including blood pressure, heart rate, measures of sleep quality and levels of the stress hormone cortisol in hair samples. The researchers also measured 4,000 hours of wind turbine noise in order to calculate indoor and outdoor noise levels at different homes in the study. Following are some of the key points from the Health Canada study:

- Wind turbine noise did not have any measurable effect on illness and chronic disease, stress and sleep quality.
- However, the louder the wind turbine noise was, the more people reported being very or extremely annoyed.

Other Considerations/Implications

There are no options, public and/or stakeholder involvement, communication plan, policy, financial, environmental, privacy, or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

SL&P will continue to monitor wind turbine technology and will update when appropriate.

Public Notice

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

Report Approval

Written by:	Nathan Ziegler, Sustainable Electricity Engineer
Reviewed by:	Trevor Bell, Director of Saskatoon Light & Power
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities

EUCS NZ - Tall Wind Turbine Project Update

Summary of SaskPower Smart Meter Review by Crown Investments Corporation of Saskatchewan

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

That Administration continue on its current path to implement an Advanced Metering Infrastructure (AMI) system for both the electricity and water utilities

Topic and Purpose
The purpose of this report is to provide information regarding a recent independent third-party review of SaskPower's Smart Meter Program following eight meter-related fires in 2014. This information is relevant as City Council considers recommendations to approve contracts for implementing an Advanced Metering Infrastructure (using smart meters) for the City's electric and water utilities.

Report Highlights
1. Under the direction of the Saskatchewan Government, the Crown Investments Corporation (CIC) conducted a series of independent third-party reviews of SaskPower's Smart Meter Program, following eight meter-related fires in 2014.
2. Saskatoon Light & Power (SL&P) has been installing new Elster Solutions Canada (Elster) smart meters since 2008, and has received no reports of meter-related fires.
3. Elster meters complied 100% with all safety verification testing conducted by Underwriters Laboratories (UL).
4. SL&P employ their own Certified Meter Installers for all installations, and safety checks are conducted to ensure meters are installed properly and operating normally.

Strategic Goal
This report supports a commitment to public safety, under the Strategic Goal of Quality of Life.

Background
At its meeting held on June 23, 2014, City Council directed Administration to negotiate pricing, terms and conditions with Elster for the supply of the electricity meters, water meter communication modules, and the AMI system (data collectors and repeaters, software, training and support), and to report back with the appropriate recommendations.

In the summer of 2014, SaskPower reported a number of incidents that occurred during their smart meter deployment, as part of their AMI project. Eight meter-related fires were

reported related to their Sensus smart meters. The Administration took this as an opportunity to review our own procurement of Elster meters.

Report

CIC Review of SaskPower's Smart Meter Program

The Government of Saskatchewan requested that CIC undertake a detailed review of SaskPower's Smart Meter program following eight recent meter-related fires. The scope of the review included the selection of a smart meter supplier and installation contractor, legal due-diligence related to contracts for equipment and services, and an assessment of the cause of the smart meter fires.

There were six key findings stated in the CIC review. The following table lists the key findings with a comparison to SL&P's Smart Meter Program. At the outset, it is important to note that SaskPower had opted to deploy a Sensus product.

CIC SaskPower Smart Meter Review	SL&P Smart Meter Program Comparison
Moisture and contaminants getting inside the meters were a major factor in the meter fires.	Meter safety verification testing has been completed by UL. The Elster meters were 100% in compliance with all ANSI and UL tests performed, including a rain test, and a dust/water-spray test.
There is no evidence to indicate the fires were the result of improper installation or hot sockets.	SL&P uses its own certified meter installers for all installations, and is conducting safety checks of all customers' meters. Meters are checked for any visual indication of problems, and to ensure they are operating normally.
SaskPower did not adequately consider the possibility for significant meter failures resulting in damage to homes.	SL&P has been installing Elster meters since 2008, and have received no reports of any meter-related fires. SL&P considered this issue, and Elster has offered as a term of the contract an optional warranty that provides a remedy if any meter gives rise to a public safety issue that could potentially result in property damage or fire.
SaskPower does not have two formal processes to distinguish between regular procurements and complex procurements (like those covered in the AMI program). Complex procurements have additional complexities and should be managed by a different set of processes.	The procurement has involved staff from several other divisions within the City of Saskatoon. Early review and input was sought from Finance, Purchasing, Information Services, and the City Solicitor's Office. Contract negotiations with Elster began in July of 2014 and have been comprehensive. The degree of diligence was beyond what occurs during the course of a standard procurement.

CIC SaskPower Smart Meter Review	SL&P Smart Meter Program Comparison
Roles and responsibilities were not clearly defined to effectively identify initial risks, manage ongoing/added risks as incidents in other jurisdictions became public, complete adequate due diligence (i.e. assessment of product liability insurance needs), and manage the project.	A Steering Committee made up of division Directors provides overall direction for the project, and a single project manager has been assigned from the start of the project. A consulting firm has also been engaged since the fall of 2013, with extensive expertise related to AMI and smart meter deployments across Canada and the US. Elster does not maintain product liability insurance, and it would likely be prohibitively expensive.
There were three critical points that, taken together, could have prompted SaskPower to re-evaluate the risk to customer safety throughout the Smart Meter Program (i.e.: correspondence from another meter supplier related to the Sensus product; litigation in 2010 in Alabama that alleged fault with the Sensus product for similar fires to those in Saskatchewan; in August 2012 PECO was dealing with issues related to overheating in meters provided by Sensus)	Elster meters are designed, manufactured, and guaranteed to operate in accordance with American National Standards Institute (ANSI) standards. Elster has been engineering and manufacturing meters for 125 years (beginning as Westinghouse in the US). Over the past ten years since Elster started manufacturing smart meters, they have deployed over 8 million smart meters worldwide, with major deployments in the provinces of Ontario and Alberta. There have been no similar reports of problems with the Elster product like the fire incidents reported by SaskPower with the Sensus product.

Installation of New Elster Smart Meters Since 2008

SL&P began a gradual roll-out of the first smart meters in 2008, with the procurement of 2,000 new smart meters from Elster, installed them over the next twelve months, and monitored their performance in the field. A stepped procurement process continued through 2013, and SL&P has now installed new smart meters for 55% of its meter population.

Minor defects have been reported in 166 of approximately 33,000 meters in-service (0.5%, or 1 in 200), and of these, 16 were reported during the initial warranty period (0.05%, or 1 in 2,000). These meters were immediately removed from service and returned to the manufacturer, and if under warranty were replaced or repaired. Reported defects were mostly issues with displays and miscellaneous error codes; although two issues were reported with faulty disconnect switches. None of the defects were considered to be a safety risk and posed no risk to any customers. There have been no reports of any meter-related fires. SL&P reports all meter defects and nonconformities to Measurement Canada. The number of defects reported to date has been within the accepted industry-average manufacturing defect rate of 0.5% (1 in 200).

Over the past several years, smart meters have been installed by electric, water, and natural gas utilities throughout North America, including most Canadian provinces. Elster smart meters have been installed at many other utilities across Canada including at SaskPower, with major deployments in the provinces of Ontario and Alberta. There have been no reports of any public safety incidents caused by any Elster meters over the past ten years since Elster began manufacturing and deploying smart meters. Elster has been engineering and manufacturing meters for 125 years (beginning as Westinghouse in the United States), and now have over 8 million smart meters and 110 AMI/smart grid systems deployed worldwide. Elster meters are designed, manufactured, and guaranteed to operate in accordance with American National Standards Institute standards.

UL Safety Verification Testing

SL&P joined with a group of Canadian electric utilities that are implementing smart meters to conduct third-party independent meter testing for various meter manufacturers, and to monitor compliance with current ANSI and UL standards for electricity meters. All testing was performed in the Underwriters Laboratories test facility in Raleigh, North Carolina, USA. SL&P provided forty (40) of its Elster brand smart meters to undergo a series of tests as defined in the ANSI C12 standard series (American National Standard Code for Electricity Metering) and the UL2735 standard (Electric Utility Meter Safety Standard, May 2013). The Elster meters were 100% in compliance with all ANSI and UL tests performed. This provides additional confidence in the expected performance of the Elster smart meters in the field.

Certified Installers used for all Meter Installations

SL&P uses its own certified meter installers for all installations, and training is provided both internally and through an external program. All meter installers have the necessary certification to comply with the provincial Occupational Health and Safety Regulations.

SL&P is committed to ensuring public safety for all of its customers, and has decided to conduct safety checks on all installations of smart meters and the older style mechanical meters. During the safety checks, SL&P staff look for any visual indication of problems, and ensure meters are operating normally. All safety checks are expected to be complete by April 1, 2015.

Options to the Recommendation

SL&P is confident it has reviewed and addressed the issues that the SaskPower Smart Meter Review highlighted. If City Council wishes to conduct an external review of the procurement process before proceeding to enter into a further contract with Elster, the Administration could be directed to retain the services of its Internal Auditor, PWC. Cost and schedule impacts will be presented verbally at Committee, as they were not available at the time of writing this report.

Public and/or Stakeholder Involvement

SL&P issued a letter to all customers in the summer of 2014 to provide information about its Smart Meter Program, and to reassure customers of its commitment to public safety. A follow-up letter was issued to all customers in January of 2015, providing an update on the safety checks and the Smart Meter Program.

Communication Plan

A Communication Plan has been developed to inform customers about smart meters, how they work, and the installation process. As the project progresses, significant milestones and updates will be communicated with the news media, on the City of Saskatoon website, and through the City's Twitter and Facebook accounts.

Other Considerations/Implications

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

Due Date for Follow-up and/or Project Completion

The AMI system is expected to be complete and operational in 2016, with all electricity meters installed by the end of 2017, and all water meter communication modules installed by the end of 2019.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C91-021, Public Notice Policy, is not required.

Attachment

1. Crown Investments Corporation of Saskatchewan Report – Smart Meter Review http://www.saskatchewan.ca/government/news-and-media/2014/october/27/smart-meter-review

Report Approval

Written by:	Kevin Hudson, Metering & Sustainable Electricity Manager
Reviewed by:	Trevor Bell, Director of Saskatoon Light & Power
Approved by:	Jeff Jorgenson, General Manager Transportation & Utilities Department

EUCS KH - Summary of SaskPower Smart Meter Review -Crown Investments-Feb 10-2015

CONTENTS

Introduction and Background

In August 2010, SaskPower commenced its Automated Metering Infrastructure (AMI) Program, a program designed to make use of new technology to improve the efficiency and effectiveness of metering customers' electricity usage. Between 2010 and 2011, SaskPower completed key project vendor procurements, and selected Sensus USA Inc. (Sensus) for the supply of the AMI technology, including smart meters, and Grid One Solutions Inc. (Grid One) for the installation in January 2012.

SaskPower's equipment delivery began in early 2012, as did laboratory and field testing activities. These activities continued through the fall of 2013 when full meter and module deployment commenced. A pilot project in Hanley, Saskatchewan began in the summer of 2012, where 400 smart meters were installed and tested. At the end of July 2014, close to 108,000 electric meters were installed, and 280 network sites had been commissioned.

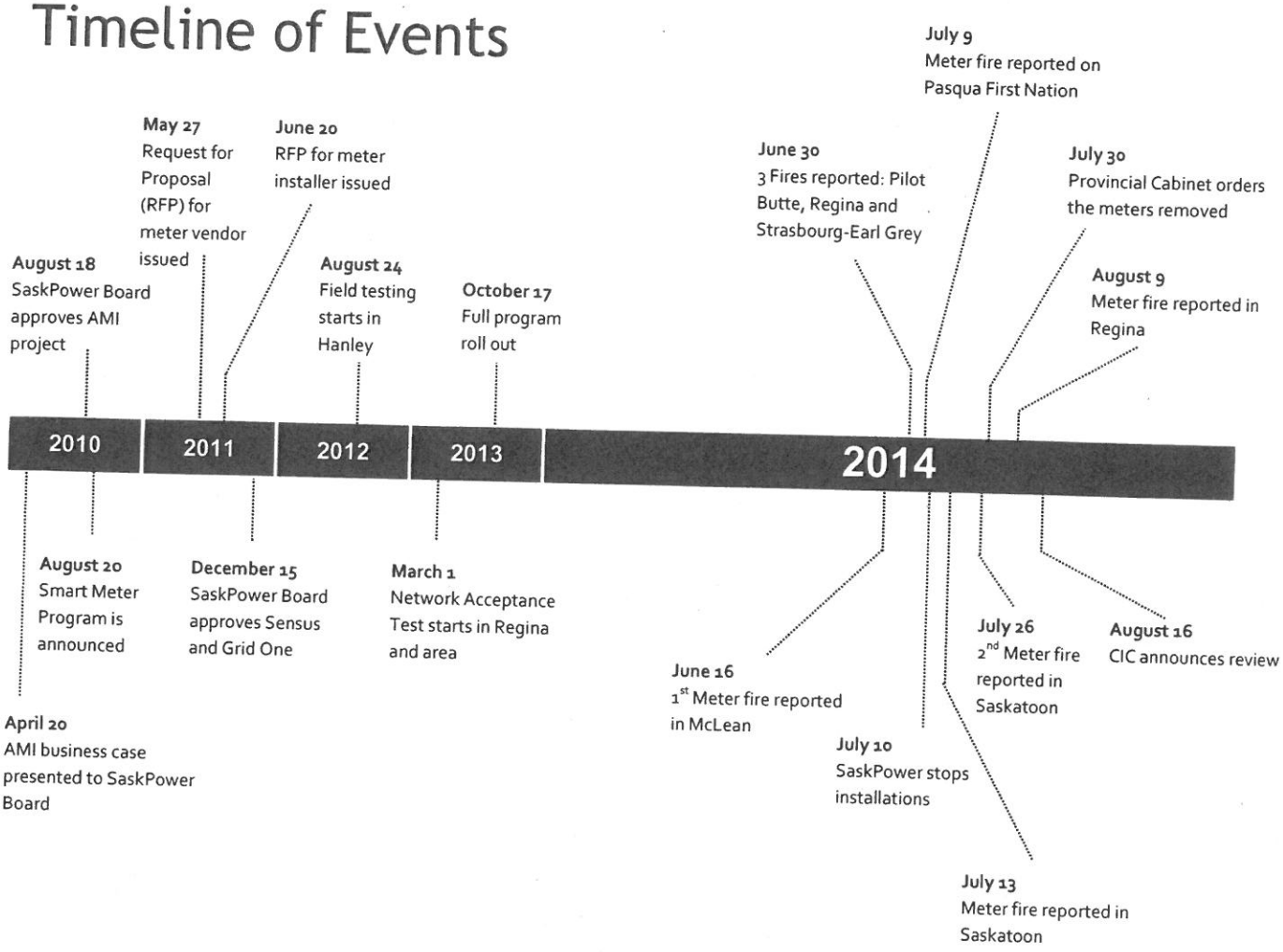
Over a period of three weeks in the summer of 2014, in various parts of the Province, eight meters failed catastrophically, melting or burning, and in some cases damaging the sides of houses.[1] These incidents were considered sufficiently serious for SaskPower to halt the installation program. Shortly thereafter, the Government of Saskatchewan (the Government) ordered the removal of all of the Sensus smart meters.

Public safety and transparency are of paramount importance to the Government. Under the direction of the Government, CIC conducted a series of independent third party reviews of SaskPower's Smart Meter Program, following the eight meter related fires. The reviews assessed the Smart Meter Program from legal, technical, and procurement perspectives as well as contract management.

The reports prepared by PricewaterhouseCoopers (PwC) and Ritenburg & Associates (Ritenburg) are attached. The report prepared by CIC's independent legal experts, Robertson Stromberg LLP, will not be released in order to protect SaskPower's legal privilege in the event that future litigation is considered. However, a summary report of the legal review has been included.

[1] A catastrophic failure has been defined by the consultants and industry as a meter which has burnt, melted, blackened, caught fire, arced, sparked or exploded/blown from the premise.

Timeline of Events



Advanced Metering Infrastructure (AMI)

Smart meters are widely used across North America and many parts of the world. They represent a generational shift in metering technology as power companies move to a more automated system that provides the operators with much more information on the performance of the power grid.

The shift to smart meters also represents a huge infrastructure renewal challenge. SaskPower's AMI Program consists of the replacement of SaskPower's existing electric meters with an AMI electric meter (smart meter) with a two-way AMI communication module, installed at a customer's home, farm or business.

AMI also includes a provincial communication network to deliver information from the smart meters to SaskPower, where it will be integrated into corporate systems for customer billing and other operational purposes. The key customer benefit associated with smart meters is that they record actual power usage details, so bills are based on actual electricity used, rather than estimates. Meter readings can be done remotely, eliminating the cost of manual readings.

This is accomplished through a wireless communications system, which takes measurements throughout the day. The data is transmitted over a secure network to a central data management system. This capacity allows the meters to detect power outages, meaning customers no longer have to call in to SaskPower when there is an outage. This remote communications ability also allows for a quicker transfer process for customers who move. Despite problems with a specific model of meter, smart meter technology is, in the long run, the best option for improving and expanding electrical infrastructure in the province.

Scope of Review

The scope of the Review included:

1. SaskPower's due diligence exercised in the selection of the supplier of smart meters, including, but not limited to:
   - the factors used to evaluate the suppliers, measured against good practices;
   - compliance of technology with safety and measurement regulations;
   - compliance with SaskPower's internal policies;
   - consideration of company reputation and product history; and,
   - the ongoing supplier contract management.
2. SaskPower's due diligence exercised in the selection process for the contract of installation services, including, but not limited to:
   - the process used to evaluate installation service providers;
   - review documentation; including the request to the Ministry of Labour Relations and Workplace Safety regarding the qualifications of the installers;
   - the examination of smart meter installation programs in other jurisdictions;
   - compliance with SaskPower's internal policies; and,
   - the contract management oversight of meter installation work by Grid One, to ensure the safe installation of meters.

3. Legal due diligence related to, but not limited to:
   - breach of contract, termination, and dispute resolution if performance or safety issues emerge;
   - payment terms and hold backs to protect SaskPower's financial interests in the event of problems; and,
   - SaskPower's ability to receive compensation recovery.
4. Assessment of the cause of the smart meter fires. CIC's legal consultant engaged an engineering firm on CIC's behalf.

Selection of Independent Experts

In selecting independent experts to conduct the Smart Meter Review, CIC considered a number of factors including experience and industry knowledge, level of involvement in other SaskPower projects to ensure independence, and their level of credibility to ensure public confidence. Three firms were engaged to undertake the review.

PwC is a highly regarded, international accounting and consulting firm with extensive experience in procurement engagements of utility companies and smart meters. PwC was responsible for assessing the adequacy of SaskPower's due diligence, procurement, and contract management practices related to the Smart Meter Program; and compared to good practice, identifying weaknesses in SaskPower's procurement and contracting policies and procedures. PwC was asked to identify recommendations to enhance SaskPower's policies and procedures in the execution of both procurement and contract management going forward. PwC ran an evidence-based review, relying on documentation and interviews with key positions at SaskPower, Sensus, Grid One, and the Ministry of Labour and Workplace Safety, as well as drawing on the knowledge of PwC's smart meter specialists.

Saskatoon based, Robertson Stromberg LLP is one of Saskatchewan's leading law firms. They were selected to review the contracts between SaskPower and the vendors to advise on the strengths and weaknesses of the contracts and advise on possible legal options for SaskPower, including receipt of financial compensation.

Robertson Stromberg conducted extensive interviews with SaskPower, reviewed thousands of pages of SaskPower documentation, and reviewed external sources to develop a comprehensive understanding of this Smart Meter Project. Their investigation was widespread and thorough, including contacting the legal counsel and principal litigant in *Baker v. Sensus USA et al v. Alabama Power Company*.

After their preliminary findings were developed, Robertson Stromberg retained the services of Aird & Berlis, nationally recognized for their expertise in public sector procurement, for the purpose of gaining broader context against which the contractual and procurement analysis could benefit.

The full report prepared by Robertson Stromberg will not be released in order to protect SaskPower's legal privilege in the event that future litigation is considered.

After consulting with the Association of Professional Engineers & Geoscientists (APEGS), Regina-based engineering firm, Ritenburg and Associates Ltd. (Ritenburg) was selected to provide an independent assessment of the cause of the fires. Ritenburg was engaged through Robertson Stromberg in order to protect SaskPower's legal privilege in the event of future litigation.

In performing its work, Ritenburg examined meters that burned, and meters that simply quit for various reasons, including overheating. They reviewed manufacturers' information, contracts, UL/CSA standards and surveyed publicly available information. They also conducted personal interviews with SaskPower staff who were directly involved in the Smart Meter

Project. A number of questions were also electronically posed by Ritenburg, which were subsequently answered by the topic's corresponding SaskPower employee.

SaskPower was cooperative throughout the review process by providing the consultants with necessary documentation, making staff available to be interviewed, and being forthcoming with information.

SaskPower's Settlement with Sensus

During the course of the Review, on September 8, 2014, SaskPower was able to negotiate an agreement with Sensus to recover $47 million in costs. This included a cash refund of $24 million for all meters that were already purchased, a credit of $18 million for future meters, and $5 million for research and development of a new meter designed specifically for Saskatchewan's conditions.

Key Findings

- Moisture and contaminants getting inside the meters were a major factor in the meter fires.
- There is no evidence to indicate the fires were the result of improper installation or hot sockets.
- SaskPower did not adequately consider the potential for significant meter failures resulting in damage to homes.
- SaskPower does not have two formal processes to distinguish between regular procurements and complex procurements (like those covered in the AMI Program). Complex procurements have additional complexities and should be managed by a different set of processes.
- Roles and responsibilities were not clearly defined to effectively identify initial risks, manage ongoing/added risks as incidents in other jurisdictions became public, complete adequate due diligence (i.e., assessment of product liability insurance needs), and manage the project.
- There were three critical points that, taken together, could have prompted SaskPower to re-evaluate the risk to customer safety throughout the Smart Meter Program.

Summary of Review

Overall, the issues that arose in the Smart Meter Program (Program) can be linked back to SaskPower's approach to the project. SaskPower treated the Program as a complex initiative insofar as it engaged specialist advisors to augment in-house capabilities. However, good practice would suggest complex procurements should be managed by a different set of processes than typical procurements, with increased due diligence. SaskPower does not have two formal processes to distinguish between regular procurements and procurements of high risk goods and services (like those covered in the AMI Program). SaskPower followed their approved policies and procedures, which reflect a typical procurement. While SaskPower did exercise due diligence by closely following existing procurement policies and procedures, and preparing comprehensive legal contracts with its vendors, there were several areas that the consultants indicate SaskPower fell short in terms of good practice.

SaskPower's overreliance on external consultants led to an inadequate risk management process. The majority of procurement advice was provided by external consultants who tend to have a narrow focus, which excluded SaskPower's interest or accountability for public safety. This is evident by the fact that the potential for catastrophic meter failure was never identified as a possible risk. Therefore, SaskPower did not develop controls to respond to unexpected occurrences or issues. Had this occurred, the risks associated with the Program might have been appropriately identified and managed, triggering a different reaction and/or decision at critical points throughout the project. There are a number of activities SaskPower could have taken to improve risk management and customer safety activities.

Shortcomings in Product Design

The portion of the CIC review conducted by Ritenburg concluded that there was no evidence to suggest a problem with either the sockets or the competency of the installation crews. There has been considerable public interest in SaskPower's use of "competent labour" for the installation of the meters. Of the eight fires, five were installed by journeyperson electricians or journeyperson linemen. Conditions such as high electricity loads, which can lead to hot sockets, were not present at the time of the fires, and Ritenburg believes it is unlikely that hot sockets caused the fires.

There are, however, shortcomings in the design of the Sensus Generation 3.3 Meters. There is evidence that this particular model does not seal properly to keep out moisture and contaminants, both of which could affect meter function. Precipitation levels at the site of several of the fires were unusually high prior to the incidents. Prior to SaskPower installing the meters, Sensus was working on a new model to correct the moisture issue. Features included a breather hole with a Gore-Tex filter, a drain hole at the bottom of the meter, a reduced number of moisture entry points, and improved insulation over the bus bars.

Additional Policies and Procedures Needed for Complex Procurements

SaskPower management did treat the AMI Program as a complex initiative, which is evidenced by the fact that SaskPower engaged specialist advisors to augment in-house capabilities. However, SaskPower followed the same "Purchasing Policy & Procedures" used in non-complex, low-risk procurements. Good practice involves a differentiated process, with increased controls to handle complex procurement needs, based on the level of risk associated with the equipment or service and the amount of expertise required. Some of the key activities that would be expected in complex procurements were missed, such as more rigorous due diligence. SaskPower should have taken additional precautions, such as enhancing its risk management to better respond to critical points in the project.

The Smart Meter Program was the first large scale, multi-year project to take place on customers' premises in fifty years. Although SaskPower management believed the project to be complex, SaskPower's "Purchasing Policy & Procedures" are not designed to manage complex procurements any differently than routine procurements, including increased controls to better manage risk.

Critical Points

The consultants identified three critical points in the Project that could have served as warning signs, requiring additional due diligence and, perhaps, changed SaskPower's course of action.

1. Correspondence from one of the proponents of the RFP process whose proposal was ultimately rejected in favor of Sensus. This correspondence raised the prospect that more due diligence should have been directed towards both Sensus and the product they offered. SaskPower consultants considered and, subsequently, dismissed the concerns raised by the proponent, concluding that their due diligence was adequate.

2. Litigation was initiated in 2010 in Alabama (Baker litigation) that alleged fault with the Sensus product that resulted in fires similar to those that occurred in Saskatchewan. While this litigation appears to have been dismissed by April 2011, there was no mention of this litigation by Sensus at the time it was negotiating its contract with SaskPower. SaskPower became aware of the Baker litigation in late March 2012; after the Sensus procurement contract was effective, but prior to any significant work orders being executed. This flag was dismissed by consultants as involving an earlier version meter and, thus, concluding that the litigation should not be of concern.

3. In August 2012 SaskPower became aware that PECO was dealing with issues related to overheating in meters provided by Sensus. Subsequently PECO announced the replacement of several thousand Sensus meters. We found that the implications of PECO's actions were clearly appreciated by the legal department. This concern was shared with other members of the team, who then visited PECO to learn more. However, one of the lessons available from that visit was the need to have the meters independently tested by UL, which was not done.

SaskPower became aware of these critical points and did take some additional steps, including increasing its efforts to detect faulty sockets, enabling an extra temperature sensor in the meters, and seeking assurances from Sensus that the meters were safe. The temperature sensors and remote reading function never did work properly and there were a large number of high temperature alarms, which SaskPower could not investigate due to the large volume. Even after more than 100,000 installations, SaskPower continued to read the meters manually.

According to PwC's report, good practice suggests that the PECO incident should have triggered an independent re-evaluation of the risk, which may have prompted a heightened level of caution while proceeding with the Smart Meter Program. However, no additional tests on the meters were ordered after the PECO fires became public. SaskPower did not conduct an independent due diligence assessment of Sensus, but relied on Sensus' representations of legal actions against them.

Insufficient Risk Management

All three reports, PwC, Ritenburg, and Robertson Stromberg, maintain that SaskPower had insufficiently managed risk throughout the Smart Meter Program. PwC explains that because SaskPower's procurement policies inadequately address complex procurement management, the risks associated with the Program were not appropriately identified.

Although SaskPower did many things correctly in terms of good procurement process and adhering to policy and procedure, the Corporation's risk management process was found to be lacking. While SaskPower did identify a number of risks, it did not consider the risk of a wholesale replacement of the meters due to catastrophic meter failures. Had this risk

been identified, SaskPower may have undertaken more vigorous testing and included additional safeguards in its contract with Sensus.

According to Robertson Stromberg, the risk of a safety defect is one that can be more readily identified by engineers, or by specialists in meter procurement and deployment, but no such risk was identified prior to the completion of the major contractual documents.

SaskPower received expert advice that it should purchase small batches of meters through a "stepped procurement" process, install them gradually, and watch for problems. SaskPower instead purchased over 100,000 meters in a three-week period and initiated a full-scale installation program.

Unclear Project Leadership

Leadership roles were not clearly defined to effectively manage risk, complete due diligence, and manage the contracts and vendor performance through the duration of the project. This led to unclear lines of accountability and inadequate risk assessment, communication, and follow up. Instead, critical positions were filled with external consultants whereby SaskPower overly relied on consultants to provide expertise in the areas of smart meter technology. Filling critical positions with external consultants was problematic as they lacked familiarity with SaskPower's operating environment and did not share SaskPower's interest or accountability for public safety.

Contract Development - Lacking Protection Against Product Failure

Robertson Stromberg has indicated that the contracts with Sensus and Grid One were comprehensive in addressing business issues identified by SaskPower management. Robertson Stromberg noted that improvements could have been made if proper risk identification would have taken place across various areas of SaskPower (i.e., engineering, management, and legal). The failure to adequately identify the risks led to a disconnect between the procurement team and the contract drafters who failed to include specific protection against complete product failure.

Recommendations

PwC made several recommendations including:

- The risk assessment processes should be strengthened in SaskPower's "Purchasing Policy & Procedures" to clearly require a more thorough consideration, documentation, and evaluation of risks during the development of a procurement strategy, as part of project planning, and monitored for new or changing risks.
- Roles and responsibilities regarding risk management, encompassing each enterprise risk category, especially safety risk, should be clearly identified in the "Purchasing Policy & Procedures", and assigned at the outset of the project for the duration of the procurement and subsequent contract management.
- A specific role should be defined and assigned in a complex procurement that provides for each of the following:
  - strategic procurement advice;
  - identification of all risks and requirements associated with the procurement of higher risk goods and service; and,
  - support to the contract owner in managing vendor performance and risk for the duration of the contract.

- A single point of accountability should be assigned in a complex procurement that would bring together the inputs and findings of all of these individual roles and responsibilities, and would ensure that risks are evaluated as a whole during the procurement process and subsequently throughout the lifetime of a contract.
- SaskPower should consider enhancing their "Purchasing Policy & Procedures" to provide guidelines for identifying the risk level of procurement and clear steps to manage both routine and complex procurement needs.
- SaskPower should consider formalizing a Process Safety Management Program, assigning responsibility for the Program, and integrating it into the procurement and contract management policies, procedures, and processes.
- SaskPower should continue to build and enhance vendor and contract management capabilities and procedures – including assigning a single contract owner responsible for vendor performance, and a specific governance process for managing risk.

Ritenburg made several recommendations including:

- Documentation of customer sites to help assess the factors which can impact smart meter performance (i.e., taking photos of the socket and premises before and after installation of the new meter).
- Detailed analysis of any returned meters to identify trends or problem areas (i.e., location, condition, etc.).
- Detailed documentation of the fires should be incorporated into a single safety and technical report in order to monitor trends and problems with certain types of meters. SaskPower has prepared several reports related to the eight meter fires, but they have not been consolidated into a single document, nor have they been finalized.
- SaskPower should ensure that the meters' full capabilities are tested (i.e., temperature alarms) and working in small rollouts (stepped procurement) prior to implementation including the communications system.
- Existing Sensus (Generation 3.3) meters should be replaced as soon as possible, and no later than the end of winter, prior to the spring thaw and rains. This is due to the close relationship between the previous meter fires and precipitation levels.

Robertson Stromberg made several recommendations including:

- Given that no one involved in the AMI project was alert to the risks that would flow from a safety defect, advice from risk management consultants should be sought for projects such as the smart meter initiative in order to establish processes and procedures to better identify and manage associated risks.
- Consideration should also be given to the possibility of allocating risk through the use of product liability insurance, which would be purchased by the vendor to protect the buyer, or SaskPower in this case.
- Roles and responsibilities with respect to risk management and for how to deal with external legal counsel should be more clearly defined and understood.

Next Steps

Cabinet has reviewed the reports and has directed:

- CIC to evaluate the effectiveness of the recommendations outlined in the reports and work with SaskPower to manage the implementation of those recommendations considered appropriate;
- CIC to consider the recommendations outlined in the report and determine if they can be implemented more broadly across the Crown Sector; and,
- SaskPower to remove all remaining Sensus smart meters no later than March 15, 2015.

As part of its settlement agreement with SaskPower, Sensus will develop a meter to suit Saskatchewan's conditions. It is already working on a new, more waterproof generation of meters. At that time, SaskPower and the Government will determine if they are satisfied that a new generation meter is safe and reliable, and only then will resume the smart meter installation program.

Advanced Metering Infrastructure Project - Award of Contract for Meter Data Management System

Recommendation

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

1. That the proposal submitted by Harris Utilities/Smartworks for the supply of a Meter Data Management System for the Advanced Metering Infrastructure project, for a total cost of $894,430.07 (including taxes) be accepted; and,
2. That the City Solicitor be requested to prepare the appropriate agreement and that His Worship the Mayor and the City Clerk be authorized to execute the agreement under the Corporate Seal.

Topic and Purpose

That City Council award a contract to Harris Utilities/Smartworks for the supply of a Meter Data Management System as part of the Advanced Metering Infrastructure (AMI) project for both the electricity and water utilities. An AMI system is used to transmit electricity and water consumption data from the individual meters to the utilities. A Meter Data Management System is used to process and store the vast amounts of data coming from the AMI system, and provides the interface to other critical information systems including the City's existing Customer Information System (billing system).

Report Highlights

1. A Meter Data Management System is an important part of the overall AMI system for the City's electricity and water utilities.
2. Six proposals were received in response to a Request for Proposal (RFP) issued on July 21, 2014.
3. The proposal submitted by Harris Utilities/Smartworks was the highest rated respondent to the RFP, based on a combination of price and quality factors, and is within budget.

Strategic Goal

This report supports the long-term strategy to increase productivity by being more efficient in the way the City does business, and to leverage technology and emerging trends to reach City goals and service citizens, under the Strategic Goal of Continuous Improvement. This report also supports the long-term strategy to reduce lost revenues under the Strategic Goal of Asset and Financial Sustainability. By eliminating the need to read meters manually, greenhouse gas (GHG) emissions tied to City operations will also be reduced, under the Strategic Goal of Environmental Leadership.

Background

At its meeting on June 23, 2014, City Council directed Administration to issue an RFP for the supply of a Meter Data Management System and to report back with the appropriate recommendations.

Report

Meter Data Management System

A Meter Data Management (MDM) System is the central repository for all meter related data. The MDM System will integrate with the AMI system collecting the raw data from electricity and water meters for the City's utilities. The MDM System is also used to facilitate remote connection and disconnection of services for Saskatoon Light & Power (SL&P) customers.

The integration with other core information systems used by the City is an integral part of the AMI implementation. Other information systems include the Customer Information System (CIS), Geographical Information System (GIS), and Supervisory Control and Data Acquisition Systems (SCADA) for the electricity and water utilities.

The MDM System will also integrate with other advanced applications that may be implemented in the future, including an Outage Management System for SL&P, and a Water Leak Detection System for Saskatoon Water.

Six Proposals Received

An RFP was issued July 21, 2014 for supply of the MDM System. Six proposals were received on September 3, 2014.

Two of the proposals did not fully meet the requirements of the RFP, as they offered a hosted data solution rather than an on-site software solution, and were not considered further.

The following four proposals were evaluated by an evaluation team with members from SL&P, Saskatoon Water, Corporate Revenue, Information Technology, and the City's consultant (Util-Assist). All vendors also provided an on-site demonstration of their MDM System for the evaluation team. Evaluations were based 40% on total price, and 60% on other quality factors.

Name of Firm	MDM Product Name	Location
Elster Solutions Canada	EIServer	Burlington, ON
Harris Utilities/SmartWorks	MeterSense	Ottawa, ON
Jomar SoftCorp International	JOMAR MDM	Cambridge, ON
Siemens Canada	EnergyIP	Oakville, ON

Successful Proponent Selected

The proposal submitted by Harris Utilities/Smartworks rated the highest in the evaluation and was determined to be the most favourable for the City. The total price of $894,430.07 (including taxes) is within budget.

Options to the Recommendation

The recommendations could be rejected and the AMI system server could interface directly with the Customer Information System (billing system). This option would provide a 'meter-to-cash' solution only, and would not offer several other benefits possible with implementation of AMI, and is therefore not being recommended by Administration.

Public and/or Stakeholder Involvement

Open houses were held on February 11 and 12, 2014 to provide information on AMI and answer questions. Online consultation was also facilitated through 'Shaping Saskatoon' between January 27 and March 14, 2014.

Communication Plan

A Communication Plan has been developed to inform stakeholders about smart meters, how they work, and the installation process. As the project progresses, significant milestones will continue to be communicated with citizens, the news media, on the City website and through other appropriate communication channels.

Financial Implications

Adequate funding is available in approved capital project budgets for SL&P Capital Project #1250 – AMI Implementation, and Saskatoon Water Capital Project #1055 – AMR Infrastructure. A breakdown of the proposal price is as follows:

Proposal price	$813,118.25
GST (5%)	40,655.91
PST (5%)	40,655.91
Total Cost	$894,430.07
Less GST Rebate	(40,655.91)
Net Cost to the City	$853,774.16

The cost of the MDM System will be shared 55% by SL&P, and 45% by Saskatoon Water, as shown in the following table.

Division	Capital Project	Expenditure
Saskatoon Light & Power	1250 – AMI Implementation	$491,936.54
Saskatoon Water	1055 – AMR Infrastructure	$402,493.53

The financial benefits of the MDM system are estimated at $22 million over the next 20 years, and are summarized below:

- $12.75 million from reduced electrical network losses (i.e. due to meter failure, power theft, voltage issues).
- $6.03 million from reduced water network losses (i.e. due to meter failure, water theft, and ability to detect water leaks).
- $3.31 million from improved utility billing reading verifications for both utilities (the MDM automatically verifies all meter data to avoid billing errors).

Environmental Implications

The recommendation is expected to have positive implications for water resources resulting from a reduction in losses of pumped water through the distribution system due to improved detection of leaks. The GHG emissions reductions created by the reduced water use are estimated at 3,300 tonnes CO2e, which is the equivalent of removing over 685 vehicles from the road each year.

Privacy Implications

The City of Saskatoon complies with the Province of Saskatchewan's privacy legislation, and will apply the same privacy protection standards for the MDM System as are used for the current billing system. All consumption data collected is only used to ensure accurate billing. All data and meter identification information is encrypted and transmitted over a secure network, and does not include any personal information.

Other Considerations/Implications

There are no policy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

The AMI system is expected to be complete and operational in 2016, with all electricity meters installed by the end of 2017, and all water communication modules installed by the end of 2019.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C91-021, Public Notice Policy, is not required.

Report Approval

Written by:	Kevin Hudson, Metering & Sustainable Electricity Manager
Reviewed by:	Trevor Bell, Director of Saskatoon Light & Power
	Reid Corbett, Director of Saskatoon Water
	Shelley Sutherland, Director of Corporate Revenue
Approved by:	Jeff Jorgenson, General Manager Transportation & Utilities Department

EUCS KH – AMI Project – Award Contract for Meter Data Management System