



**PUBLIC AGENDA
SASKATOON ENVIRONMENTAL
ADVISORY COMMITTEE**

Thursday, May 11, 2017, 11:30 a.m.

Committee Room A, Second Floor, City Hall

Committee Members:

Ms. K. Aikens, Chair
Mr. B. Sawatzky, Vice-Chair
Ms. E. Akins
Ms. A. Bugg
Ms. K. Engele-Carter
Ms. A. Garg
Councillor S. Gersher
Ms. S. Harrison
Mr. S. Homenick
Dr. D. McGrane
Ms. K. Palmer

Pages

1. CALL TO ORDER

2. CONFIRMATION OF AGENDA

Recommendation

That the agenda be confirmed as presented.

3. ADOPTION OF MINUTES

Recommendation

That the minutes of meeting of the Saskatoon Environmental Advisory Committee held on March 9, 2017, be approved.

4. UNFINISHED BUSINESS

5. REPORT OF THE CHAIR [CK. 175-9]

Verbal Update - K. Aikens

Recommendation

That the information be received.

6. COMMUNICATIONS

7. REPORTS FROM ADMINISTRATION

7.1 Environmental & Corporate Initiatives [CK. 7550-1]

Verbal Update - B. Wallace

Recommendation

That the information be received.

7.2 Special Events - Internal Process Review [CK. 205-0 x 116-1]

5 - 15

Attached is a Resolution package from the Standing Policy Committee on Environment, Utilities & Corporate Services meeting held on January 31, 2017.

Councillor Gersher undertook to raise the matter of integrating waste management and recycling at events of a certain scale to the Saskatoon Environmental Advisory Committee.

Recommendation

That the information be received.

7.3 2016 Waste Characterization Study [CK. 7830-1]

16 - 27

Attached is a Resolution package from the Regular Business Meeting of City Council held on February 27, 2017; it was resolved, in part, that the report be forwarded to SEAC for its information.

Recommendation

That the information be received.

7.4 Development of the Swale - Response to Northeast Swale Watchers' 12 Points [CK. 4131-5]

28 - 38

Attached is a Resolution package from the Standing Policy Committee on Environment, Utilities & Corporate Services meeting held on March 13, 2017; it was resolved, in part, that the report be forwarded to SEAC for its information.

Recommendation

That the information be received.

7.5 Hydropower Joint Ownership Project with Saskatoon Tribal Council [CK. 2300-1]

39 - 52

Attached is a Resolution package from the Regular Business Meeting of City Council held on March 27, 2017; it was resolved, in part, that the

report be forwarded to SEAC for its information.

Recommendation

That the information be received.

8. 2018 PROPOSED BUDGET [CK. 1704-5]

The Committee is requested to put forward a proposed budget submission for 2018 for inclusion in the 2018 Operating Budget Review. For the Committee's information the following is the budget from 2017:

\$5,000 Public Education/Information Gathering

\$1,800 Student Action for a Sustainable Future (SASF)

Total: \$6,800

Recommendation

That the Committee provide direction.

9. GREENHOUSE GAS EMISSIONS SUBCOMMITTEE [CK. 375-4]

9.1 Proposal Submission - Video Support - Unite Digital [CK. 375-4]

53 - 58

The Committee as its meeting held on March 9, 2017 resolved, in part, to invite Unite Digital Marketing Co-operative to submit a proposal regarding ongoing support/promotion of the video and the cost for this, including taxes, to the Committee for its April meeting.

Attached for the Committee's information is Unite's proposal submission.

Recommendation

That the Committee provide direction.

9.2 Proposed Targets for Community-wide Greenhouse Emissions Reductions [CK. 375-4]

59 - 61

At the Regular Business Meeting of City Council held on December 12, 2016; it was resolved, in part, that SEAC be asked to assist in developing a Community Greenhouse Gas Reduction Target.

Attached for the Committee's information is a "*draft*" of proposed targets for community-wide greenhouse emissions reductions.

Recommendation

That the Committee provide direction.

10. CASH GRANTS PROGRAM - ENVIRONMENTAL COMPONENT [CK. 1871-1]

Verbal Update - K. Palmer

The Committee at its meeting held January 12, 2017, resolved that Kathryn Plamer serve as the Saskatoon Environmental Advisory Committee representative for 2017 Assistance to Committee Groups - Cash Grants Program.

Ms. Palmer will update the Committee on the above matter.

11. STATEMENT OF EXPENDITURES [CK. 1704-5]

62 - 62

Attached for the Committee's information is a current Statement of Expenditures.

Recommendation

That the information be received.

12. ADJOURNMENT

**PUBLIC RESOLUTION
STANDING POLICY COMMITTEE ON ENVIRONMENT,
UTILITIES AND CORPORATE SERVICES**

Main Category: 7. REPORTS FROM ADMINISTRATION
Sub-Category: 7.1. Delegated Authority Matters
Item: 7.1.1. Special Events - Internal Process Review
[Files CK. 205-0 X 116-1 and CP. 0116-003]
Date: January 31, 2017

Any material considered at the meeting regarding this item is appended to this resolution package.

Councillor Loewen entered the meeting at 9:07 a.m. and assumed the role of the Chair.

Councillor Gersher undertook to raise the matter of integrating waste management and recycling at events of a certain scale to the Saskatoon Environmental Advisory Committee.

Moved By: Councillor Hill

That the report of the General Manager, Corporate Performance Department, dated January 31, 2017, be received as information.

In Favour: Councillor Loewen, Councillor Gough, Councillor Davies,
Councillor Gersher, Councillor Hill and Mayor C. Clark

CARRIED UNANIMOUSLY

Special Events – Internal Process Review

Recommendation

That the report of the General Manager, Corporate Performance Department, dated January 31, 2017, be received as information.

Topic and Purpose

The purpose of this report is to provide an overview of the results from the Special Events Internal Process Review (IPR), which occurred from August 2015 to January 2016. The review focused on opportunities for efficiency and service improvements within the application, review, approval, and implementation stages of the current special events process. The report delay relates to staffing changes and an amalgamation of the former Recreation and Sport and Community Development Divisions. However, IPR team members continued to work on implementing recommendations including the special event application update and workshops for special event organizers.

Report Highlights

1. Internal Process Reviews and Civic Service Reviews follow a similar process. Teams look at Current State, Defining Success, and Future State in a focused meeting environment. The Special Events review team included participants from 14 stakeholder Divisions and gathered feedback directly from special event organizers through an online survey.
2. To date the team has made the following improvements to service: created a single point of contact for event organizers, updated the special event application removing redundant questions and information, created a separate “how to” guide to accompany the application, and implemented bi-annual user group workshops where event organizers and citizens can get face to face information and assistance regarding the special events process.
3. The future state vision for the special event process focuses on a Digital First approach, a citizen-centric service through increased usage of smart online application forms, updating applicable policies and bylaws, as well as allocating appropriate resources to address the growing demand for special events.
4. The service improvements have also created efficiency in the administration of the application process saving approximately 100 hours in collective customer time (i.e. event organizers) and more than 200 hours in staff time. This enables the Administration to better meet the current needs of special events without the immediate need for additional FTEs.

Strategic Goals

This report supports the Strategic Goals of Continuous Improvement, Quality of Life, and Asset and Financial Sustainability.

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 (CSRs) - 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 (IPRs) - 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.

The CSRs and IPRs use a collaborative approach to bring together staff at all levels of the organization, usually from multiple divisions, who play a role in the delivery of a particular program or service. For more information on the Continuous Improvement Strategy see Attachment 1.

Report

Introduction

In recent years, the area of special events in public places on City of Saskatoon (City) land has been growing and evolving rapidly. From 2010 to 2016, the number of special events in parks has increased by 70%. Additionally, the number of events taking place on City roadways and/or rights-of-way has increased by a similar amount. Due to this rapid growth of events involving various departments of the City, a need emerged for a more strategic and coordinated approach to the City's special event process.

To accomplish this, in 2014 the Recreation and Community Development Division (then Recreation and Sport) began a review of the City's special event process. See Attachment 2 for further information on the background and foundational information for the review.

Also related to services for Special Events, in 2013, the Saskatoon Police Service changed its processes related to Special Events that serve alcohol. Police support for such events moved away from on-shift support to dedicated special-duty support staff. The costs of special-duty police are covered by the special event organizers. This decision was directly related to the need to reduce potentially negative outcomes of alcohol consumption at events including fights, traffic accidents, vandalism, and other public disturbances. For more information on this process see File No. CK. 185-9; LS 205-1 "Summer Festivals - 2013".

Current State of the Special Event Process

The Special Event Internal Process Review focused on improving service to citizens and creating efficiency in the administration of this process. The review team included members from the Saskatoon Emergency Measures Organization; Saskatoon Police Service; and Saskatoon Fire Department; the Divisions of Recreation and Community Development, Parks, Transportation, Public Works; and Community Standards, Parking Services Section. The IPR highlighted the following themes:

- a) Communication improvements are needed;
- b) Policy and Bylaw supports need to be in place;
- c) Dedicated resources are required; and

Special Events – Internal Process Review

- d) Process streamlining and improvements will lead to efficiencies.

During the review the team reached out to the main customer, special event organizers, to ask for process feedback and improvement ideas. The results suggested event organizers want:

- a) A streamlined process for event application and approvals, where all communication comes from a single source in a timely manner;
- b) An application form that is easy to understand and comes with a helpful information guide, as well as in-person support whenever needed;
- c) Events that are well-attended and serviced with all required amenities including water, power, recycling and waste collections; and
- d) Continued City in-kind and cash grant support of special events to ensure cost does not become a barrier to hosting events.

Defining Success

This section of the review focused on outlining “what a successful Special Events process would look like from the customer and City’s perspective.” The following improvements were recommended and implemented in 2016:

- a) Create a single point of contact for event organizers (i.e.: the Open Space Consultant coordinates the communication between event organizers and the Interdepartmental Special Events Committee¹;
- b) Update the special event application form, removing redundant questions and information to help reduce customer “time spent” on completing event applications;
- c) Create a separate “how to” guide to accompany the application to help those who are new to the process, and ensure all applicants understand what information is required to complete the full application ; and
- d) Create and implement bi-annual user group workshops with the help of Open Space Consultants where event organizers and citizens can receive face to face information about changes to the special events application and approval process, hear about timely topics (i.e.: food trucks at events), and ask questions or get personalized assistance regarding the special events process. Two of these user group workshops were held in 2016 and were well attended. Participants reported the information and presentations were beneficial.

A Vision for the Future State of the Special Event Process

A future state process visioning exercise to identify an ideal future state resulted in the following recommendations:

- a) Continue open communication opportunities with event planners through a single-source contact person, post-event surveys, and user-group workshops;
- b) Continue to revise the original application package and move towards a Digital-first approach;
- c) Increase the use of technology to support the special event application/booking and information distribution components of the process (with the idea of moving toward a

¹ This committee reviews special event applications and organizes civic support for events through roadway closures and detours, park inspections, waste management services, transit rerouting, and other activities.

- self-service smart-booking process similar to online systems such as “Vacation Rental By Owner”);
- d) Designate staff to support the application and review process, as well as the on-site needs of event organizers and internal staff;
 - e) Present recommendations regarding “fees for service” to be charged for special event activities where appropriate (considering some events are hosted through non-profits whereas some are full economic enterprises) with a goal of ensuring a balance between mill-rate support and user-pay fees within the special event service model;
 - f) Create a Terms of Reference document to detail the responsibilities of the Interdepartmental Special Events Committee;
 - g) Develop an administrative policy to guide decision making regarding special event approvals, support levels, and administrative conditions; and
 - h) Update existing policies and bylaws to better address the needs of special events (i.e. The Noise Bylaw No. 8244, The Recreation Facilities and Parks Usage Bylaw No. 7767, and The Special Events Policy C0S-007).

Creating Efficiency and Savings

Items a) and b) listed above are already underway. Efficiencies from these efforts and the initial update of the special events application and information guide are likely to save approximately 100 hours in collective customer time (i.e. event organizers) when filling in special event applications for the upcoming 2017 season. Additionally, these efforts will reduce approximately 200 hours of staff time on processing applications and manual entry of information and return time to staff in Recreation and Community Development, better meeting the growing numbers of special events and the needs of event organizers.

Items c) through h) from above are under continued investigation by the review team. See Attachment 3 for a summary of key findings on efficiency and effectiveness.

Public and/or Stakeholder Engagement

As the special event review process continues and new policies, bylaws and fees for services are being considered and/or developed, the Administration will continue to consult with event organizers.

Communication Plan

Approved levels of service will be communicated through Service Saskatoon to ensure citizens know what services they can expect. Results from the Civic Service Reviews and Internal Process Reviews will be communicated on the City’s website in the “Latest Strides” and/or “City Spotlight” sections of the “Our Performance” page at www.saskatoon.ca/strides.

Financial Implications

This report identifies the need for additional dedicated support for special event administrative processes including application review, applicant support, on-site support, and evaluation duties. To assist in addressing some of this, with the recent amalgamation of two divisions into the Recreation and Community Development Division, the Administration has been able to redeploy 0.5 of an existing Full-Time Equivalent (FTE) to

Special Events – Internal Process Review

assist with the coordination of event logistics and monitoring of larger-scale outdoor events.

This redeployment of a partial FTE will assist in addressing some, but not all, of the workload associated with special events. Other areas, such as Parks and Transportation, have also expressed a need for additional resources to address the ongoing demand for support for special events and the provision of in-kind civic services.

Policy Implications

As noted in this report, there is a need to develop an administrative policy to outline guidelines for reviewing and approving special event applications. There is also a need to update existing policies and bylaws. All recommended policy changes and/or new policy development will be presented to City Council for formal approval.

Other Considerations/Implications

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

Due Date for Follow-up

Follow-up reports related to policy and bylaw updates, the establishment of new policies, and recommendations for potential dedicated support staff, as well as new fees for services will be brought forward in 2017 to the Standing Policy Committee on Planning, Development and Community Services for review, direction, and recommendations to City Council.

The Administration will continue to review the special event process to determine the specifics for additional human and financial resources needed to support the City's role in special events and will prepare a report for consideration during the 2018 Business Plan and Budget deliberations.

Public Notice

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

Attachments

1. Continuous Improvement Strategy Overview
2. Background and Foundational Information for the Special Event Review
3. Summary of Key Findings on Efficiency and Effectiveness

Report Approval

Written by: Kristin Bruce, Performance Improvement Coordinator,
Strategic and Business Planning

Reviewed by: Kim Matheson, Director of Strategic and Business Planning;
Lynne Lacroix, Director of Recreation and Community Development
Randy Grauer, General Manager, Community Services Department

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

Continuous Improvement Strategy Overview

In 2014, the Administration began our Civic Service Reviews (CSR) to conduct a detailed examination of each of our services to address three main questions:

- A. Is the service aligned with our Strategic Plan?
- B. Does the service provide value for citizens?
- C. Are we delivering the service in the most efficient way?

Framework for Civic Service Reviews:

1. Service Level

a. Asset Service Level

How the assets and services are preserved, renewed, and funded to ensure the quality of life for citizens is sustained or improved, and include:

- Inventory of Asset(s)
- Condition of Asset(s)
- Costs to Preserve Asset(s)
- Gap in Funding
- Funding Plan/Investment Strategy

b. Maintenance Service Level

The maximum interval between tasks or activities required to maintain the defined level of service are referred to as Maintenance Service Levels, and include:

- Description of Service
- Definition of Service Level
- Cost to Maintain Asset
- Timelines to achieve Service Level
- Service Level Approval

2. Efficiency

a. Operational Efficiency

A review of current processes identifies opportunities to improve efficiency and increase the effectiveness of the service and /or program. Savings resulting from the improvements will be quantified and reported as part of the overall Civic Service Review.

Knowledge Base for Service Saskatoon

All of this information can be used to prepare our knowledge base for Service Saskatoon and the 311 Call Centre.

Communication Plan

The CSRs provide an opportunity for the public to learn more about the City's operations, the costs to deliver the services, and to provide feedback and input into how the City can deliver any of its services more efficiently. Citizens will have the opportunity to provide input into levels of service as well as the budget using the Shaping our Financial Future budget tools.

Results from the Civic Service Reviews will be communicated on the City's website in the 'Latest Strides' and/or 'City Spotlight' sections of the *Our Performance* page at www.saskatoon.ca/strides.

Background and Foundational Information for the Special Event Review

At its December 3 and 4, 2013, Budget Review meeting, City Council approved the Continuous Improvement Strategy, which included the following three components:

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

Key findings included:

1. In recent years, the number of special event bookings in parks has increased by 70% from approximately 250 (2010) to 426 (2016). These numbers do not include events that took place in the civic square. This increase can be attributed to:
 - a) an extended event season that includes year-round booking requests;
 - b) an increase in the city's population;
 - c) the development of River Landing; and
 - d) an increased desire by individuals and organizations to host outdoor events.
2. The budget allocation for the Provision of Civic Services, which offers outside organizations in-kind civic assistance for events (e.g. garbage collection, street sweeping, facility and material rental, and parking meter hooding), has remained the same since 2010 (\$75,000) with a small increase up to \$80,000 in 2015. However, the actual in-kind expenses charged to the Provision of Civic Services have increased from \$78,541 (2010) to approximately \$190,000 (2015 and 2016).
3. In an analysis of 9 similarly-sized Canadian municipalities, the following information was found regarding fees for special events held on City land:
 - a) 4 municipalities charge an application fee;
 - b) 9 municipalities charge a park rental fee; and
 - c) 9 municipalities charge for some of the civic services being provided.
4. In a review of 12 similarly-sized Canadian municipalities, 9 municipalities had a team of staff specifically devoted to coordination of special events on City land. Of these same 9 cities, 6 had a special event policy or bylaw in place to support the work of the Administration.

5. Most cities have online tools, special event applications, and planning resources to ensure the special event committee has all of the information they need to make fair and consistent approval decisions.

Summary of Key Findings on Efficiency and Effectiveness

Key Findings	Estimated Savings/Benefits
Continuing to improve the application form focusing on a Digital-first approach and increasing the use of technology to support the special event application/booking and information distribution components of the process (with the idea of moving towards a self-service smart booking process similar to online systems such as “Vacation Rental By Owner”).	Reduction in customer time to complete special events applications and in staff time to process <ul style="list-style-type: none"> • ~100 collective customer hours • ~200 hours in saved staff time within Recreation. & Community Development.
Continuing open communication opportunities with event planners through a single-source contact person, post-event surveys, and user-group workshops.	Improved customer service for special event organizers
Designating staff to support the application and review process, as well as having staff available to address the on-site logistics and needs of event organizers and internal staff. Also to ensure compliance with Administrative Conditions for the event.	Improved customer service on-site at events that occur outside traditional office hours, ensuring administrative conditions are met, and potential hard dollar savings by a reduction park in damages.
Presenting recommendations regarding “fees for service” to be charged for special event activities where appropriate (considering some events are hosted through non-profits whereas some are full economic enterprises) with a goal of ensuring a balance between mill rate support and user-pay fees within the special event service model.	Improved Quality of Life in Saskatoon through supporting a diverse event season and striking an appropriate balance between tax support and fee for service support for event services
Creating a Terms of Reference document to detail the responsibilities of the Interdepartmental Special Events Committee (ISEC).	Improved customer service through role clarity on the ISEC and savings in staff time by ensuring meetings are attended by the right people at the right time
Developing an administrative policy to guide decision-making regarding special event approvals, support levels, and administrative conditions.	Improved clarity on where and under what conditions special events are approved. Also clarification on the application of the Provision of Civic Services Budget and potential revenue streams through fees-for service
Updating existing policies and bylaws to better address the needs of special events.	

**PUBLIC RESOLUTION
REGULAR BUSINESS MEETING OF CITY COUNCIL**

Main Category: 8. CONSENT AGENDA

Sub-Category: 8.4. Standing Policy Committee on Environment,
Utilities and Corporate Services

Item: 8.4.3. 2016 Waste Characterization Study [File No. CK. 7830-1
and CP. 7542-006]

Date: February 27, 2017

Any material considered at the meeting regarding this item is appended to this resolution package.

Moved By: Councillor Hill
Seconded By: Councillor Dubois

That the report of the General Manager, Corporate Performance Department, dated January 31, 2017, be received as information; and forwarded to the Saskatoon Environmental Advisory Committee for its information.

In Favour: Mayor C. Clark, Councillor Block, Councillor Davies,
Councillor Donauer, Councillor Dubois, Councillor Gersher,
Councillor Gough, Councillor Hill, Councillor Iwanchuk,
Councillor Jeffries and Councillor Loewen

CARRIED UNANIMOUSLY

2016 Waste Characterization Study

Recommendation

That the report of General Manager, Corporate Performance Department, dated January 31, 2017, be forwarded to City Council and SEAC for information.

Topic and Purpose

This report provides a preliminary summary of the 2016 comprehensive, community-wide Waste Characterization Study.

Report Highlights

1. A Waste Characterization Study was completed throughout 2016 with four seasonal sampling periods and targeting all waste generators in Saskatoon.
2. The results of the Waste Characterization Study will be used to inform a Waste Diversion Plan, a Plan that will outline options for achieving 70% waste diversion by 2023. It will also be used in the review of civic waste management services.
3. The Waste Characterization Study indicated that 77% of waste sampled in residential black carts could be diverted from the landfill if new programs for diversion are made available.
4. On average, a single-family household puts 15.6 kg of waste in their black cart each week, and multi-family household puts 7.2 kg. The biggest percentage of this (58% and 40% respectively) is organic, mostly food waste.

Strategic Goal

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

In October 2015, the Administration issued a Request for Proposals (RFP) for the characterization of municipal solid waste generated in Saskatoon and development of a draft Waste Diversion Plan based on the characterization.

Report

The Waste Characterization Study was completed over four seasonal sampling periods during 2016; it will inform the results of a Waste Diversion Plan expected to be completed during 2017. The Plan will outline potential policies and programs for achieving 70% waste diversion by 2023, with a focus on both the City of Saskatoon's (City) Landfill, as well as steps residents and businesses can take to reduce or divert waste.

The Study will also inform a civic waste management review, as discussed in the report on the State of Waste Management also tabled at today's Standing Policy Committee meeting.

The key areas of municipal solid waste sampled included:

- single family and multi-family residential households,
- industrial, commercial, and institutional (ICI) organizations,
- self-haul loads to the City landfill; and
- construction and demolition (C&D) waste.

Attachment 1 shows a preliminary summary of the Waste Characterization Study results. Highlights include:

- 77% of waste sampled in residential black carts could be diverted from the landfill if new programs for diversion are made available. In particular, 58% could be diverted by expanding organics programs.
- 61% of waste sampled in multi-unit residential waste containers could be composted (40%) or recycled.
- According to representative sampling, 56% of the waste generated by Industrial, Commercial and Institutional organizations could be composted or recycled.
- 80% of waste sampled from loads self-hauled to the City Landfill could be diverted for composting or recycling.
- Up to 94% of construction and demolition waste currently being delivered to landfills in the Saskatoon region could be diverted at Recovery Park.

The full detailed report describing the Study methodology and providing full results of sampling will be posted to the City web-site once complete.

Administration will bring forward a report on options for responding to the opportunities identified in the report as part of a Waste Diversion Plan.

Public and/or Stakeholder Engagement

Completion of the Study involved engagement with a number of waste-industry stakeholders. Further engagement is planned as the Waste Diversion Plan is developed.

Communication Plan

Information from the Study will be used in a variety of waste-related communications efforts planned for 2017 including the City web-site, recycling education and awareness programs, Green Cart and compost depot materials, etc. The information will also be used for the proposed review of waste management services.

Environmental Implications

Greenhouse gas (GHG) emissions implications and other environmental protection measures will be estimated and reported on as the Waste Diversion Plan is developed.

Other Considerations/Implications

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

Due Date for Follow-up and/or Project Completion

Final study findings will be posted to the City web-site. The Administration will bring forward a report on options for responding to the opportunities identified in the report following completion of a draft Waste Diversion Plan. This will be provided to the Standing Policy Committee on Environment, Utilities and Corporate Services in March 2017.

Public Notice

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

Attachment

1. Summary of Key Results

Report Approval

Written by: Daniel Mireault, Environmental and Corporate Initiatives

Reviewed by: Amber Weckworth, Education and Environmental Performance
Manager

Brenda Wallace, Director of Environmental and Corporate Initiatives

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

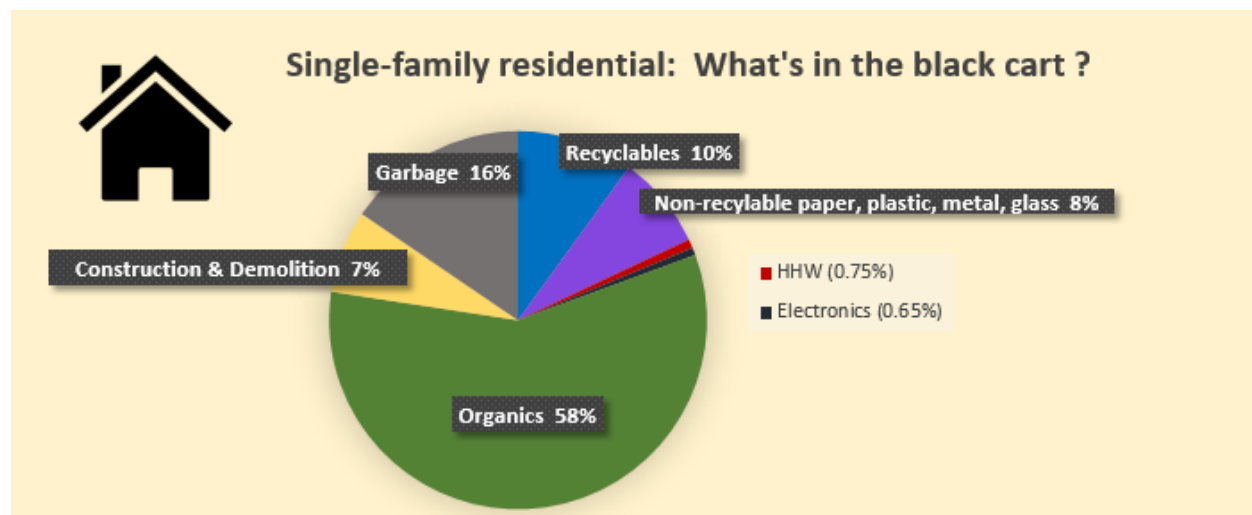
2016 Waste Characterization Study.docx

Summary of Key Results

The 2016 Waste Characterization Study involved an extensive year-long process that produced a precise estimate of waste quantity and waste composition. Methods used in previous studies were expanded to gather more detailed information on solid waste, particularly where estimates had been vague such as in the Industrial-Commercial-Institutional (ICI) sector, self-haul loads to the landfill, and Construction and Demolition waste.

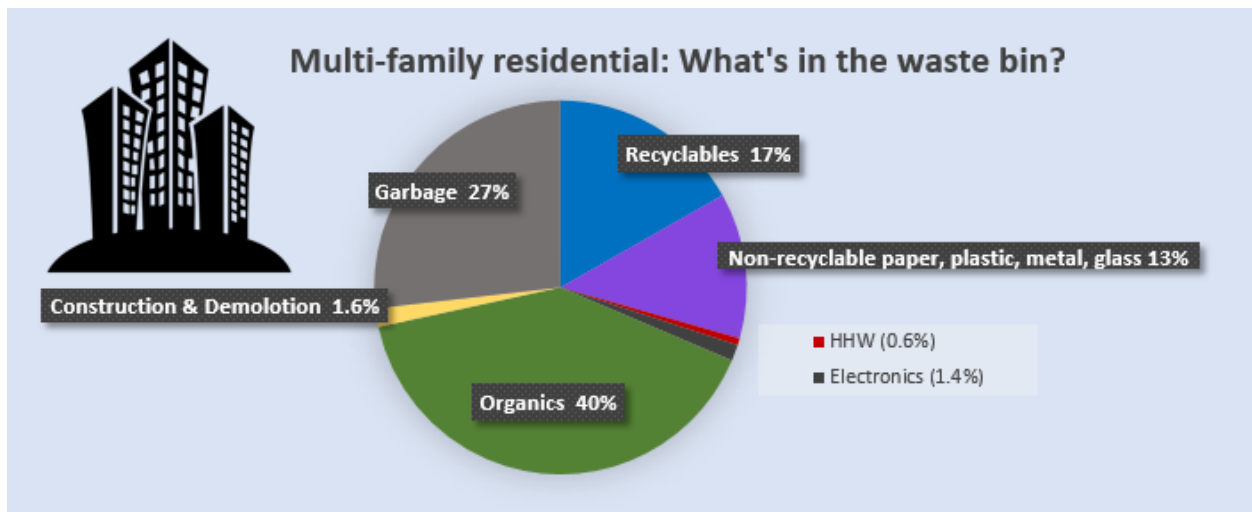
Single-family (Curbside) Residential Households

- The average household set out 15.6 kg of garbage each week in 2016.
- Of this, approximately 10% of the material could have been recycled through the blue cart program. In comparison, the 2014 study found that 13% of the material could have been recycled, suggesting current education and awareness efforts are having a positive impact.
- 58% of material found in the black cart consisted of compostable organic waste, 47% of which was food waste, the remaining 9% was yard waste.
- A large portion of the food waste is considered avoidable (i.e., edible at one point), suggesting there are opportunities for both waste reduction and waste diversion efforts.
- Less waste was generated during winter months and the heaviest season for waste-generation was Spring. This seasonal variance is mostly attributed to the presence of yard waste.
- Of the waste sampled, it is estimated that 77% could be diverted if programs for composting are expanded and recycling program capture rates are expanded and improved.



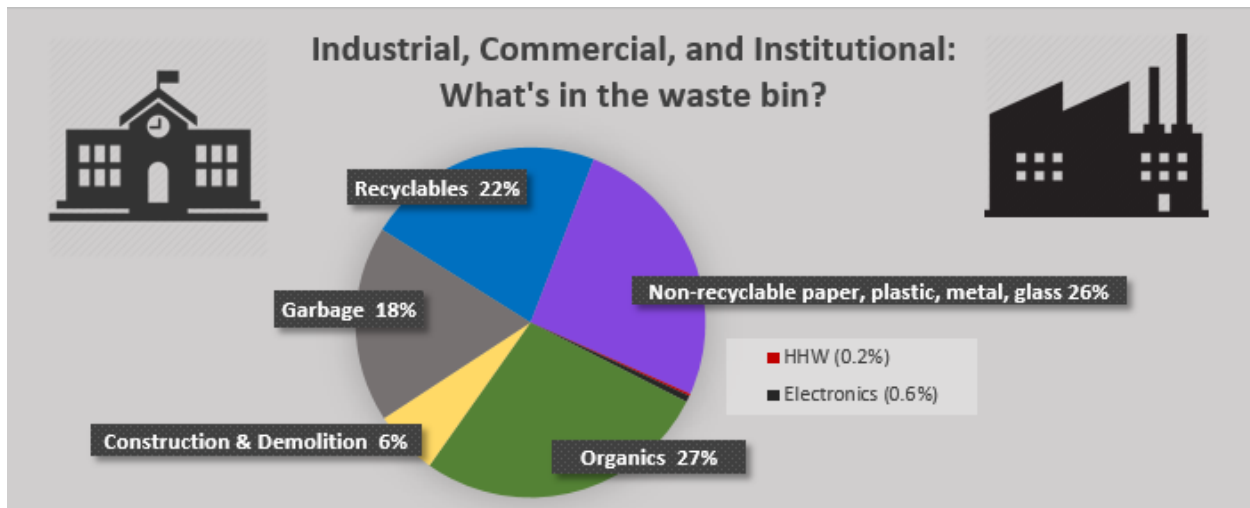
Multi-unit Residential Households

- The average multi-unit household set out 7.2 kg of garbage each week. This is less than half the amount of single-family households. Average household size for multi-unit residences is also smaller (at 1.91 persons per unit) than single-family households (2.78 persons per unit). The average multi-unit set out 9kg of garbage in a snap-shot study conducted in 2014. This reduction may highlight the impact of introducing the Multi-Unit Residential Recycling (MURR) program.
- Of the garbage placed in communal metal containers, approximately 17% of the material could have been recycled through the existing MURR program. The 2014 study found that 23% of the material could have been recycled.
- 40% of the waste was compostable organics, with 88% of the organic waste consisting of food scraps. Of the food waste, 53% was avoidable (i.e., edible at one point).
- An estimated 61% of total waste sampled could be diverted if programs for composting are expanded and recycling program capture rates are improved.



Business - Industrial, Commercial, and Institutional (ICI)

- The study found that most ICI waste is managed by the private sector and disposed of at private landfills in the Saskatoon region.
- It is estimated that approximately 56% of the ICI waste stream could be diverted if composting and recycling programs that handle materials similar to existing residential programs were introduced.
- The key waste streams that could be diverted include food waste (27%), recyclable paper/paper packaging (22%), and construction and demolition (C&D) waste (6%).



The Construction and Demolition (C&D) Waste Stream

To assist with plans for Recovery Park, additional effort to understand the composition of C&D waste was undertaken by completing visual waste audits of construction loads received at a private landfill in the Saskatoon region.

- 91% of the waste in sampled loads fell into the category of C&D waste.
- The average size of a sampled load was 2,428 kg.
- Untreated wood, asphalt roofing shingles, asphalt, concrete and bricks, and metals are a number of key C&D waste streams that could be diverted once diversion programs are available at Recovery Park.
- Up to 94% of C&D waste could be diverted (although it is noted that some C&D waste, such as treated wood, is not easily recycled).

Self-haul loads to the City landfill

- Residents and businesses can self-haul waste to the City landfill for disposal.
- The average load sampled was approximately 145 kg.
- A small portion (1%), consisted of recyclable waste which could have been captured in the City's recycling programs.
- Approximately 18% consisted of organic waste, with 98% of organic waste consisting of yard waste.
- A large portion (58%) consisted of C&D waste.
- It is estimated that 80% of the self-hauled waste could be diverted through Recovery Park, expanded composting programs and improved capture rates by existing recycling programs.

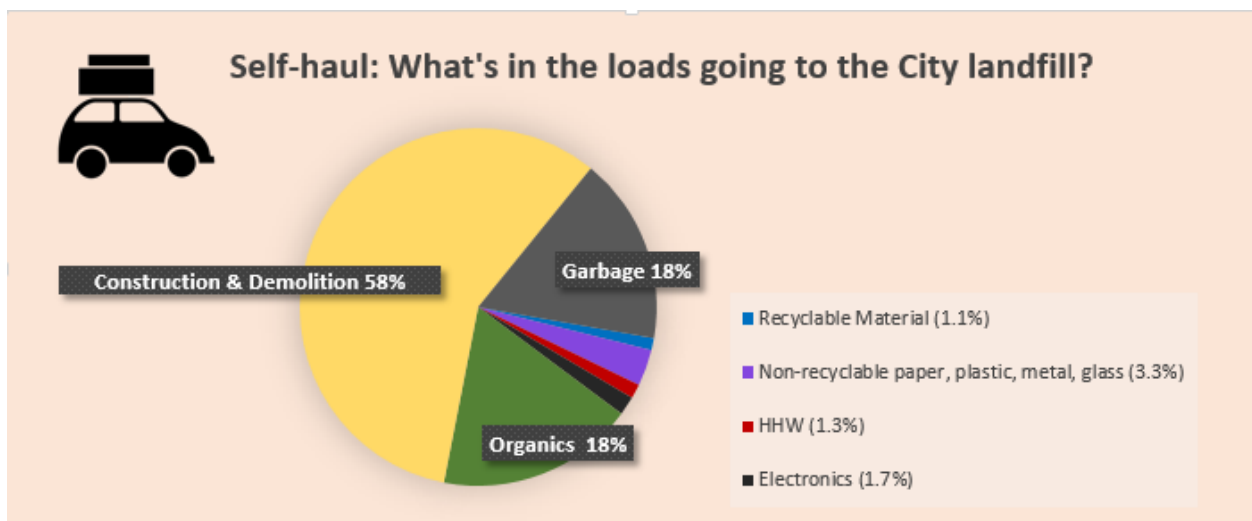


Table 1: Estimated Composition of Municipal Solid Waste Disposal Streams

	Single-family Residential	Multi-family Residential	IC&I	Self-haul	C&D
WASTE STREAM	%				
Recyclable:					
Paper	1.9	3.1	4.8	0.2	0.3
Paper Packaging	2.7	5.7	12.7	0.6	1.4
Plastics	3.2	5.1	3.3	0.2	0.1
Metals	1.3	1.4	1.0	0.1	0.0
Glass	0.9	1.5	0.2	0.0	0.0
Non-Recyclable:					
Paper	3.5	5.4	12.6	0.0	0.0
Plastics	3.1	6.1	12.2	0.8	1.2
Metals	1.0	0.9	0.8	1.9	0.0
Glass	0.5	0.2	0.2	0.6	0.9
Organics:					
Food Waste	26.9	35.4	26.8	0.3	0.3
Yard Waste	30.7	4.8	0.5	17.6	0.4
Toxic Materials:					
Waste Electronics	0.7	1.4	0.6	1.7	0.2
Household Hazardous Waste	0.8	0.6	0.2	1.3	0.1
Other:					
Construction & Demolition	7.2	1.6	6.0	57.8	91.3
Garbage (Other Materials)	15.5	26.8	18.0	16.8	4.0
Total (%)	100	100	100	100	100

Saskatoon's Solid Waste Disposal

Table 2: City of Saskatoon Landfill Solid Waste

	2014	2015	2016
	tonnes/year		
Single Family	52,800	51,500	51,500
Multi Residential	9,500	8,800	9,100
Industrial, Commercial and Institutional (IC&I)	45,800	34,700	23,900
City Landfill Self-Haul	18,100	17,400	15,900
Total Waste	126,200	112,400	100,400
Clean Fill	43,400	44,700	54,700
Total Waste & Clean Fill	169,600	157,100	155,100

*C&D waste tonnages are included in the above table

The rate of garbage disposal per person has been declining over time. The total tonnes of residential garbage collections has also generally shown a trend of decline, with some fluctuation over the past four years.

Other communities and comparison to national averages

Saskatoon's disposal rate was compared to the national and provincial averages as shown in the table below.

Region	Year	Total Waste Disposed (tonnes)	Total Waste Rate (kg/capita)	Residential Component (tonnes)	Residential Rate (kg/capita)
Saskatoon	2012	117,660	486	64,363	265
Saskatoon	2015	112,418	436	62,502	242
Saskatchewan	2012	957,669	881	315,987	290
Canada	2012	25,013,204	720	9,586,511	276

Source: Statistics Canada

Saskatoon's Residential Waste Disposal Rate was also compared to other cities in Canada using data from the National Solid Waste Benchmarking Initiative. The tonnes of residential garbage collected per household was higher than the median for reporting municipalities.

2016 Waste Characterization Study

The City's waste diversion rate is below the national average. In 2012 (Statistics Canada), Canadians diverted 240 tonnes of waste per capita resulting in an overall diversion rate of 25.2%.

Saskatoon's 2015 diversion rate was benchmarked against other Canadian cities, as shown in the table below. Saskatoon's diversion rate is second lowest amongst comparable cities.

City	Diversion Rate
Surrey	68%**
Halifax	61%***
Toronto	53%*
Edmonton	51%**
Ottawa	45%*
Winnipeg	34%*
Calgary	28%*
Saskatoon	21%
Regina	19%***

* Source: 2014 Partnering for Service Excellence Performance Measures Report, Ontario Municipal CA's Benchmarking Initiative

** Source: 2015 rate from webpage of the City

*** Source: 2014 rate as previously reported in the 2014 IWM annual report (the 2015 diversion rate not yet available)

DEFINITIONS

Construction and Demolition waste: primarily made up of wood (untreated/treated), gypsum wallboard, asphalt roofing shingles, industrial use metals, asphalt, concrete, bricks, and ceramics.

Recyclable Material: those materials currently accepted in the City of Saskatoon residential recycling programs.

Garbage (Other Material): includes diapers and sanitary products, pet waste, textiles, rubber items, bulky wastes, and other waste that is difficult to classify.

Organics: food and yard waste

Food Waste: Edible food waste consists primarily of the following categories; bakery, meat and fish, dried food, fruit and vegetables, and dairy. Inedible food includes items such as peelings, bones, and oil.

Yard Waste: includes grass (thatch and sod), leaves, other yard and garden debris, brush, and branches.

**PUBLIC RESOLUTION
STANDING POLICY COMMITTEE ON ENVIRONMENT,
UTILITIES AND CORPORATE SERVICES**

Main Category: 7. REPORTS FROM ADMINISTRATION

Sub-Category: 7.1. Delegated Authority Matters

Item: 7.1.1. Development of the Swale - Response to Northeast Swale Watchers' 12 Points [Files CK. 4131-5 and PL. 181-14]

Date: March 13, 2017

Any material considered at the meeting regarding this item is appended to this resolution package.

Mayor C. Clark entered the meeting at 9:54 a.m.

Growth Plan Manager Schulz provided a high-level overview of the Municipal Heritage Advisory Committee's request for Heritage Designation (Item 6.2.1), the response to the Northeast Swale Watchers' 12 points (Item 7.1.1), and the discussion around the Environmental Reserve dedication of this area (Item 7.2.1) with a PowerPoint.

The following requests to speak were provided: Louise Jones, Richard Huziak, and Janet McVittie.

Ms. Louise Jones addressed the Committee regarding the Northeast Swale's ecological significance along with proposed actions that City Council can adopt in dealing with the Swale. She displayed the logo used by the Northeast Swale Watchers.

Mr. Richard Huziak, Saskatchewan Light Pollution Abatement Committee addressed the Committee regarding expanding Dark-Sky Lighting policy to commercial and residential areas near the Swale.

Ms. Janet McVittie, Professor, University of Saskatchewan commented on protection of the Northeast Swale.

Moved By: Councillor Gersher

1. That the information be received;
2. That copies of the report of the General Manager, Corporate Performance, dated March 13, 2017 be forwarded to the Standing Policy Committee on Planning, Development and Community Services and the Saskatoon Environmental Advisory Committee for information;

3. That the Administration bring together stakeholders in regards to the Northeast Swale (Swale) to continue the discussion about protection of the Swale. Stakeholders should include, but are not limited to, the City of Saskatoon, University of Saskatchewan, Meewasin Valley Authority, Saskatoon Environmental Advisory Committee, Municipal Heritage Advisory Committee and the Swale Watchers. Stakeholders' composition does not need to come back to Committee, but suggested starting points for initial discussion include integrated project management, long-term planning, financial implications, community engagement and communications. This process should be underway by the fall of 2017 with a report coming back to the Standing Policy Committee on Environment, Utilities and Corporate Services before 2018 budget deliberations; and
4. Given the importance of Northeast Swale could the Administration provide a follow up report, which explores Dark Sky compliance in private development within a buffer zone surrounding the Swale.

In Favour: Councillor Loewen, Councillor Davies, Councillor Gersher and Mayor C. Clark

CARRIED UNANIMOUSLY

Development of the Swale – Response to Northeast Swale Watchers’ 12 Points

Recommendation

1. That the information be received; and
2. That copies of this report be forwarded to the Standing Policy Committee on Planning, Development and Community Services and the Saskatoon Environmental Advisory Committee for information.

Topic and Purpose

The purpose of this report is to provide information regarding the Northeast Swale Watchers’ “Twelve Main Points for City-Responsible Protection of the Swale,” identifying how the points are being addressed by the City of Saskatoon and other agencies.

Report Highlights

1. The City of Saskatoon’s (City) plans, policies, and practices currently address the majority of the “Twelve Main Points for City-Responsible Protection of the Swale” (Twelve Points).
2. A forthcoming report will address long-term protection of the Northeast Swale (Swale).
3. The points related to the regional planning process (Saskatoon North Partnership for Growth) and Dark Sky compliance are partially addressed through existing and/or forthcoming plans or practices.
4. Discussions and studies, led by the Provincial Ministry of Highways and Infrastructure, regarding the general location of the Saskatoon Freeway (formerly Perimeter Highway) have concluded with the current location crossing the Swale determined to be “valid.”

Strategic Goals

Existing and proposed measures to protect and enhance the Swale demonstrate the Strategic Goals of Environmental Leadership and Sustainable Growth.

Background

During its April 11, 2016 meeting, the Standing Policy Committee on Environment, Utilities and Corporate Services (Committee) received a submission from the Northeast Swale Watchers, entitled “Twelve Main Points for City-Responsible Protection of the Swale.” The Committee resolved:

- “1. That the information be received; and
2. That the Administration report back to the Standing Policy Committee on Environment, Utilities and Corporate Services in response to the 12 recommendations put forward by the Northeast Swale Watchers.”

Report

The Administration has reviewed the Twelve Points and has prepared a detailed response that describes if and how each point is being addressed and the agency or agencies responsible (see Attachment 1).

The majority of the Twelve Points are currently addressed through existing plans, policies, and/or practices. Those that are not fully addressed fall into three categories:

1. In-progress:
 - a) long-term legal protection for the Swale (point 9) – The Administration is preparing a follow-up report to its October 26, 2015 report to City Council for endorsement of the Northeast Swale Master Plan that will address long-term legal protection of the Swale. It is important to note that there are already a number of legal and practical “layers” of protection in place on the Swale.
2. Partially addressed:
 - a) impose Dark Sky lighting standards (point 3) - The lighting design for the North Commuter Parkway Project will ensure Dark Sky considerations are addressed appropriately. For residential neighbourhood street lighting, Saskatoon Light & Power used a standard fixture, which met Dark Sky requirements when adopted in 2014. However, Dark Sky requirements were updated in November 2015, and the City’s standard fixtures are no longer fully compliant. In addition, the Administration will be exploring the potential for Zoning Bylaw No. 8770 amendments that would provide incentives for environmentally sustainable development. The incentives to be investigated may include measures to encourage, though not require, the use of appropriate lighting on residential properties. Regulations mandating Dark Sky compliant lighting on private property are not being considered.
 - b) coordinate with the Saskatoon North Partnership for Growth (P4G) (point 12) – As a partner in the process, the City will continue to work towards a regional land use plan that supports the City’s Strategic Goals, including Sustainable Growth and Environmental Leadership. Ultimately, the P4G process will determine the extent to which environmental protection policies are adopted within the regional plan.
3. No action possible/recommended:
 - a) relocation of the Saskatoon Freeway (formerly Perimeter Highway) beyond the Swale (point 2) - Planning for the Saskatoon Freeway is a responsibility of the Provincial Ministry of Highways and Infrastructure. The City and the Meewasin Valley Authority participated in a 2014 study to validate the general location of the freeway, which determined that the current location through the Swale is “valid.” While minor adjustments in the alignment of the freeway may be necessary during the detailed design,

the Administration does not support re-opening discussions on its general location; nor has the Provincial Ministry of Highways and Infrastructure indicated that this is being considered.

Other Considerations/Implications

There are no policy, financial, environmental, privacy, or CPTED implications or considerations. No options to the recommendation were considered.

Due Date for Follow-up and/or Project Completion

No follow-up is required.

Public Notice

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

Attachment

1. Twelve Main Points for City-Responsible Protection of the Swale: Specific Responses

Report Approval

Written by: Chris Schulz, Senior Planner, Long Range Planning

Reviewed by: Lesley Anderson, Director of Planning and Development

Jeff Jorgenson, General Manager, Transportation and Utilities Department

Catherine Gryba, General Manager, Corporate Performance Department

Approved by: Randy Grauer, General Manager, Community Services Department

S/Reports/2017/PD/EUCS – Development of the Swale – Response to Northeast Swale Watchers’ 12 Points/ks

Twelve Main Points For
City-Responsible Protection of the Swale: Specific Responses

(NOTE: Original points are in bold text. Responses to each point are in italics.)

An integrated City-administered Swale Buffer Plan, parallel to the MVA NE Swale Master Plan, should be implemented since the surrounding City development creates disruptions and pollutants that will potentially affect and degrade the Swale. This Plan should include, as a minimum, all points below:

Response: The Northeast Swale Development Guidelines (2012) identify the boundary of the Swale and provide direction for how urban development should interface with, and provide a buffer for, the Swale. These Guidelines were adopted in conjunction with the University Heights Sector Plan Amendment (adopted 2013). The Guidelines prescribe a linear “Greenway” that is a minimum of 24 metres in width, beyond the Swale boundary, as a means to buffer the Swale from urban development. Where urban development already abuts the Swale (i.e. along Fedoruk Drive), the roadway corridor provides an acceptable buffer.

- 1. Include Petursson's Ravine and Central Avenue Crossing within the Swale as indicated in the MVA Northeast Swale Master Plan.**

Response: Petursson's Ravine is considered to be part of the Swale, according to the Northeast Swale Development Guidelines (2012) and the University Heights Sector Plan. The Guidelines provide guidance for the Central Avenue Crossing. This guidance has been built into the requirements for the North Commuter Parkway Project.

- 2. Insist that the Province relocate the Perimeter Highway to Clark's Crossing, to go around the Swale within the Greater Saskatoon area region.**

Response: Planning for the Saskatoon Freeway (formerly “Perimeter Highway”) is a responsibility of the Provincial Ministry of Highways and Infrastructure. In 2014, the Ministry undertook a validation study to determine whether the general location of the proposed freeway was still valid. The City and the Meewasin Valley Authority (Meewasin) were involved in this process, which involved specific discussion of the crossing of the Northeast Swale. The Ministry's study determined, in part, that the general location of the Saskatoon Freeway in the northeast area of Saskatoon, including the area of the Swale, is “valid.” While minor adjustments in the alignment of the freeway may be necessary during the detailed design, the Administration does not support re-opening discussions on its general location; nor has the Ministry provided indication that this is an option.

3. **Impose Dark Sky policy lighting standards in neighbourhoods adjacent to the Swale through zoning bylaw changes that include neighbourhood roadways, residential and commercial properties, lit signage, and minimally-lit roadways through the Swale.**

Response: Saskatoon Light & Power is working with Graham Commuter Partners, in consultation with Meewasin, on the lighting design for the North Commuter Parkway Project to ensure Dark Sky considerations are addressed appropriately.

Within residential neighbourhoods, Saskatoon Light & Power's standard fixture meets all Dark Sky-compliance requirements except the colour temperature requirement, which was updated in November 2015. The standard fixture used by Saskatoon Light & Power met the colour temperature requirement at the time it was selected in 2014.

Planning and Development will be exploring the potential for Zoning Bylaw No. 8770 (Zoning Bylaw) amendments that would provide incentives for environmentally-sustainable development. The incentives to be investigated may include measures to encourage, though not require, the use of appropriate lighting on residential properties. Zoning Bylaw amendments mandating Dark Sky-compliant lighting are not being considered at this time.

4. **Eliminate bottlenecks for safe wildlife passage, modelling from Edmonton's Wildlife Passage Guidelines, and ensure that there is an ecological network in place to enable the wildlife to move unimpeded from the river through the Swale and back.**

Response: The Northeast Swale Development Guidelines (2012) provide guidelines for design of neighbourhood interface and for roadway and infrastructure crossings to minimize the impacts to the Swale, while ensuring a connected urban environment. Meewasin's Northeast Swale Resource Management Plan 2013 is meant to guide ongoing management practices in the Swale to "ensure connectivity between the South Saskatchewan River, the existing natural areas, and the greater swale."

5. **Ensure that wildlife crossings over roads and small animal crossings under roads are designed and installed for all roadways. The success of these crossings should be monitored.**

Response: The Northeast Swale Development Guidelines (2012) provide guidance for the design of roadways that cross the Swale. Design and management requirements include:

- a) maximum 50 kph speed limit;
- b) wildlife crossing and no stopping signs;

- c) *undivided roadway (McOrmond Drive and Lowe Road collector) to calm traffic, to reduce the crossing distance for animals, and to eliminate the potential for animals to be “stranded” in the roadway median;*
- d) *level crossings, where possible (roadway should be elevated as little as possible from surrounding terrain to improve sightlines for animals);*
- e) *culverts designed to permit small wildlife crossings, while minimizing roadway elevation; and*
- f) *special road design mitigation to ensure adequate amphibian and reptile crossings, where warranted.*

6. Ensure that traffic-calming measures, including an enforced 50 kph speed limit, are implemented on all roads through the Swale.

Response: See response to point 5.

7. Ensure that there is minimum damage to the Northeast Swale and Small Swale during road and neighbourhood construction. Follow the City’s Predevelopment Protocol and the MVA’s Construction Protocols (articulated under the revised Development Review process) in a proactive way that includes environmental monitors with stop work authority.

Response: The City’s Predevelopment Protocol will be followed for all neighbourhood development. Similarly, the North Commuter Parkway included all of the same activities identified under the protocol, and environmental management plans are being observed, with ongoing monitoring and auditing, for all construction activities.

8. Ensure that the MVA has sufficient funding to finance the MVA Northeast Swale Master Plan and expand the Master Plan to include the Small Swale.

Response: Along with its endorsement of the Meewasin Northeast Swale Master Plan, City Council directed the Administration to “work with the Meewasin Valley Authority to develop a funding strategy and communication plan, consider potential regulations, and assist with additional implementation planning, reporting back at the appropriate time.” A November 30, 2016 report to City Council for the 2017 Corporate Business Plan and Budget Review addressed a capital and operating funding strategy for the implementation of Phases 1 and 2 of the Meewasin Northeast Swale Master Plan.

The Small Swale is not part of the above master plan, which is led by Meewasin. The Small Swale is currently outside of Meewasin’s Conservation Zone, though Meewasin has identified an interest in including it in its jurisdiction in the future. At an appropriate time during the development of the University Heights Sector Plan, an applicable plan and funding strategy for the Small Swale will likely be necessary. However, it is not necessary to include this level of detailed planning for the Small Swale at the same time as the Northeast Swale.

9. Enact long-term legal protection of the Northeast Swale and the Small Swale through a change to Zoning Bylaw No. 8770 through a special designation mandated by City Council.

Response: The Swale is currently under a number of “layers” of protection (all apply only within City limits):

- a) with the exception of Petursson’s Ravine, the Swale is entirely under public ownership, meaning community interests govern decisions;*
- b) the majority of the Swale is within Meewasin’s Conservation Zone and is under Meewasin’s Northeast Swale Resource Management Plan and Northeast Swale Master Plan. Additionally, both the City and Meewasin have endorsed Meewasin’s Northeast Policy, which includes a proposed extension of its jurisdiction to include the entire Swale;*
- c) the University Heights Sector Plan identifies the Swale as an area to be preserved from urban development. As Sector Plans are considered “Concept Plans” under The Planning and Development Act, 2007, this designation is statutory; and*
- d) City Council adopted the Northeast Swale Development Guidelines (2012), along with the adoption of the University Heights Sector Plan. All development within, and adjacent to, the Swale should be in conformance with these guidelines.*

Along with its endorsement of the Meewasin Northeast Swale Master Plan, City Council directed the Administration to report on the “process and implications for designating the Northeast Swale as a special conservation area.” The Administration prepared a response to this request that recommends the dedication of Swale lands as Environmental Reserve through the subdivision process. This will add another “layer” of protection to the Swale.

The Small Swale is earlier in the planning stages, but similarly has a number of layers of protection. All but a small portion of the Small Swale within the City limits is in public ownership. The University Heights Sector Plan and a subsequent natural area screening have identified the Small Swale as an area to be protected from development. While Meewasin does not have jurisdiction over most of the Small Swale, both the City and Meewasin have supported potentially adding it to the Conservation Zone in the future.

The Administration is also exploring the potential of pursuing some type of heritage designation for the Swale. This is addressed in another report.

10. Ensure that the University Heights Neighbourhood 3 (UH3) area is either not developed, or that the current design is scrapped and redeveloped as a model-sustainable community as suggested in Moriyama's 100-Year Plan. The current plan does not support designated environmental reserve lands that should be in excess of the minimal 10% for parks, playing fields, etc., and does not allow for an efficient public transportation plan.

Response: University Heights Neighbourhood 3 (UH3) is an integral part of the University Heights Sector Plan and the City's plans for growth. Foregoing development of this neighbourhood would mean that urban growth would need to be accommodated further out from the current extents of urban development; in effect: imposed urban sprawl. The City's Official Community Plan Bylaw No. 8769 explicitly prohibits such "leapfrog" development as it is not a sustainable practice.

UH3 has not yet been designed, so comments addressing how its design is not a "model-sustainable community" are premature. The City will work to ensure that when the design and development of UH3 occurs, it will reflect the City's Strategic Goals of Sustainable Growth and Environmental Leadership.

The Swale is excluded from Municipal Reserve calculations, meaning that each neighbourhood must contribute 10% of its own net developable area (in land or money in lieu) for Municipal Reserve. The requirement to preserve the 290-hectare (718-acre) Swale lands from development is in addition to the Municipal Reserve requirements from the development of urban neighbourhoods within the Sector. The University Heights Sector Plan open space (environmental) and Municipal Reserve dedication requirements far exceeds 10% of the total area of the Sector Plan.

- 11. Ensure that the stormwater handling systems do not allow contaminants to enter the adjacent wetlands. They are experimental, so careful monitoring will be needed, especially since regulations for the Pesticide Use policy and the Wetlands policy are not in place.**

Response: The Aspen Ridge constructed forebay has been designed to remove more than 80% of suspended sediments. This level of removal is within the enhanced protection category as per the Stormwater Management Planning and Design Manual, MOE, Ontario, 2003 (and City of Saskatoon wetland design guidelines), and is consistent with best practice in the industry.

Water quality and quantity within the Northeast Swale has been monitored since the fall of 2013. Certain water quality parameters were selected for analysis based on potential impacts of urban development. These parameters fall under the following categories: Metals, Major Ions, Nutrients, Microbiological Substances, and Petroleum Hydrocarbons. Additionally, a permanent monitor was installed to measure basic field parameters, such as Temperature, pH, Turbidity, Conductivity, and Dissolved Oxygen, at a 10-minute sampling interval from April to October each year.

Any additional stormwater forebays/outfalls into the Swale that may be required as a result of urban development (e.g. UH3) will include similar measures and standards.

12. **Ensure that environmental protection policies are coordinated and adopted with the P4G group through the Saskatoon North Regional Study for the entire Swale region.**

Response: In February and March of 2016, the Saskatoon North Partnership for Growth (P4G) held an open house and online engagement for the P4G Regional Plan. A draft land use plan and draft land use categories were introduced, which included a Conservation and Drainage category (now called the Green Network Study Area). This category includes wetlands, natural areas, and other vital ecological infrastructure, and provides direction for their protection. The P4G considered the comments received through the engagement and refined the draft land use map and draft land use categories. A subsequent round of public consultation for P4G began on January 24, 2017, and continued for a month.

**PUBLIC RESOLUTION
REGULAR BUSINESS MEETING OF CITY COUNCIL**

Main Category: 8. CONSENT AGENDA

Sub-Category: 8.4. Standing Policy Committee on Environment,
Utilities and Corporate Services

Item: 8.4.6. Hydropower Joint Ownership Project with Saskatoon
Tribal Council [Files CK. 2300-1 and SLP. 2000-10]

Date: March 27, 2017

Any material considered at the meeting regarding this item is appended to this resolution package.

This item was removed from the Consent Agenda.

Letter - Mr. Jonathan Storey dated March 23, 2017

Mr. Paul Van Pul spoke to City Council and provided a PowerPoint presentation.

Mr. Jonathan Storey also spoke to Council and answered questions.

Moved By: Councillor Loewen

Seconded By: Councillor Gough

1. That the Administration be directed to prepare a Memorandum of Understanding with the Saskatoon Tribal Council that outlines a joint ownership model to begin a feasibility study for a hydropower station in Saskatoon;
2. That the Memorandum of Understanding be brought forward to the Standing Policy Committee on Environment, Utilities and Corporate Services, and City Council for City approval;
3. That the report of the General Manager, Transportation & Utilities, dated March 13, 2017 be forwarded to the Saskatoon Environmental Advisory Committee for information; and
4. That the Administration meet with Whitewater proponents to discuss more about the functional plan design and next steps including costs.

CARRIED UNANIMOUSLY

Hydropower Joint Ownership Project with Saskatoon Tribal Council

Recommendation

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

1. That the Administration be directed to prepare a Memorandum of Understanding with the Saskatoon Tribal Council that outlines a joint ownership model to begin a feasibility study for a hydropower station in Saskatoon; and
2. That the Memorandum of Understanding be brought forward to the Standing Policy Committee on Environment, Utilities and Corporate Services, and City Council for City approval.

Topic and Purpose

The purpose of this report is to provide an update on the proposed hydropower project and present the benefits of a partnership between the Saskatoon Tribal Council and the City.

Report Highlights

1. Saskatoon Light & Power has explored the feasibility of a hydropower station at the Saskatoon weir.
2. Joint ownership of the project between the City and the Saskatoon Tribal Council will bolster all aspects of the project and benefit both parties. A partnership will strengthen applications to senior governments for rates and capital contributions, and the combined resources of both agencies result in a stronger project team during the investigatory and construction phases, should the project proceed to construction.
3. The project provides an opportunity for the Saskatoon Region and the Saskatoon Tribal Council to realize economic and social benefits.
4. Earlier stakeholder and community engagement shows support for a green power project at the weir that maintains its visual beauty, serenity and natural ecology. Continued engagement is planned as part of a new feasibility study.

Strategic Goals

The recommendations in this report support the short- and long-term strategies to strengthen relations with local Aboriginal organizations under the Strategic Goal of Quality of Life and the 2017 commitment to the Truth and Reconciliation Commission (TRC) Calls to Action.

The recommendations in this report support the long-term strategy to increase revenue sources and reduce reliance on residential property taxes under the Strategic Goal of Asset and Financial Sustainability. The report also supports the long-term strategy to

create new sources of green energy where feasible under the Strategic Goal of Environmental Leadership. Identifying opportunities to replace conventional energy sources with green energy technologies and finding alternate ways of generating capacity to support operations is in line with the City's four-year priorities.

Background

In 2009, Saskatoon Light & Power commissioned pre-feasibility engineering and environmental baseline studies of several possible design concepts for a hydropower station at the Saskatoon Weir, including a white water park feature. While there was interest and potential for the hydropower project to generate revenue for the City, the project requires a substantial up-front capital contribution.

When the hydropower facility was discussed publicly in 2009, one potential feature suggested was a white water park at the weir. At the time it was not known the level of community support or the impact on the operations of a hydropower facility at this location. In 2014/15, during the development of the City's Recreation and Parks Master Plan, through extensive public consultation and research, a number of indoor and outdoor recreation facility priorities were identified (both upgrades to existing facilities and building new facilities). A facility such as a white water park was not identified in the list of high priorities and as recommended in the Master Plan. As facilities become more specialized or serve a smaller segment of the population, the funding model for this type of project should include a combination of private/non-profit investment, fundraising, user fees, and potentially some public taxes. Therefore any consideration for such a facility would most likely require leadership interest from either a developer, private operator, or non-profit organization.

At its meeting held on April 27, 2015, City Council considered the Proposed Hydropower Station at the Saskatoon Weir – Update report and resolved:

“That the Administration be directed to report back to the Standing Policy Committee on Environment, Utilities and Corporate Services with development options and potential next steps to advance the hydropower initiative.”

Report

Hydropower Station at the Saskatoon Weir

The City's target is to produce or generate 10% of its annual energy requirements from local, renewable resources. Currently, the City is generating green power with the Landfill Gas Collection & Power Generation system, a multi-partner Solar Photovoltaic Demonstration Site, and a limited-subscriber Green Power program that offers environmentally preferred electricity at a higher rate.

The Saskatoon Weir is an ideal location for expanding the City's clean power generation program to hydropower and there is support from the community and governing bodies in concept. Hydropower projects have been successfully implemented in other communities across Canada, although many don't maintain the low-profile design that will be proposed.

The pre-feasibility work completed to date clearly indicates that the hydropower station is expected to generate a positive internal rate of return, which means that the project is economically viable and would result in a profit for the project owners. Gross annual revenue streams are expected to be in the range of \$3.6 to \$5.1 Million, which would be used to repay capital and fund ongoing operating costs. This conclusion from the pre-feasibility study would need to be confirmed through a full feasibility study. The City's conclusion that the project is expected to be economically viable is further supported by the fact that two proponents have approached the Administration, requesting to build the project at no cost to the City.

In addition, the annual reduction in greenhouse gas emissions is estimated at 21,120 tonnes. A new feasibility study is required before any negotiations on power rates can begin.

In addition to economic and environmental benefits, the project includes necessary restoration to the weir infrastructure and an extension of the existing 33rd Street multi-purpose pathway, improving accessibility across the river.

Saskatoon Tribal Council

The Saskatoon Tribal Council's agreement with the Federation of Sovereign Indigenous Nations identifies it as the representative for the seven First Nations communities in the Saskatoon area. Joint submission with the Saskatoon Tribal Council opens up additional funding and sponsorship opportunities for this project through the First Nations Power Authority and their agreement with SaskPower to support green power generation projects.

The combined strengths of the City of Saskatoon and the Saskatoon Tribal Council will result in a partnership where both partners are needed; both will be essential to the success of the project; and both will realize significant benefits.

Community Support

Earlier stakeholder and community engagement shows a majority of citizens would support the project, as long as the current visual beauty, serenity and natural habitat is maintained. Attachment 1 provides new engagement activities identified for critical stages of the feasibility study to ensure this legacy project reflects the pride and community spirit of citizens, possibly as a signature project to recognize the spirit and importance of Honouring the Truth, and Reconciling the Future.

Next Steps

Once the Memorandum of Understanding has been drafted by the Administration and the Saskatoon Tribal Council, it will be brought forward to each respective government for execution. Once approved, the partners will work together to resolve next steps including a procurement approach for further consideration by each agency.

Approval of the recommendations of this report do not give the Administration authority to proceed with procurement or construction. The Memorandum of Understanding is a partnership agreement to jointly investigate the next steps of the project. Subsequent reports will provide City Council with the information it needs to determine whether or not it will proceed with construction of the project.

Options to the Recommendation

The City could approach SaskPower independently to negotiate a Power Purchase Agreement for the proposed hydropower station. This option is not recommended because the City would realize all of the benefits of a partnership with the Saskatoon Tribal Council identified in the report.

SL&P could interconnect the hydropower station to its own grid and offset bulk power purchases from SaskPower. This would be a wholly City led project, and the City could use the project towards its corporate or community emissions targets. This option is not recommended as the internal rate of return is lower than all other development concepts.

Public and/or Stakeholder Involvement

Informal and formal conversations will be on-going with major stakeholder groups such as SaskPower, Meewasin Valley Authority, University of Saskatchewan, Saskatchewan Ministry of the Environment, Water Security Agency; community-based special interest groups; and adjacent residents.

Communication Plan

While many of the project details are unknown until further work is carried out, citizens can find information about the project at saskatoon.ca/hydropower. Communications planning will be ongoing as the project progresses and will include website updates, media relations and advertising where required to promote accomplishments and opportunities for citizens to engage.

A list of Frequently Asked Questions is included in Attachment 2.

A preliminary set of conceptual artist renderings of the proposed hydropower station is shown in Attachment 3, demonstrating the low-profile infrastructure and responsive design of the small facility that houses the controls.

Financial Implications

Project investigation to date has been funded from Capital Project #1281 - Sustainable Power Generation Options.

The capital costs are expected to be in the order of \$61.5 million to \$65.2 million, although this is a preliminary estimate. Because the project is expected to be financially viable and provide a positive rate of return, there will be net financial benefit to the City. The cost of capital will need to be repaid, and after that the intent is that the project would provide a legacy source of revenue for the partners. In the short term, the City

may be able to construct the pedestrian walkway at no direct cost to the City, and rehabilitate the existing weir as part of the project. The amount of short-term revenue available to the City will be known once the feasibility study is complete and the first phases of the procurement process are complete.

Other Considerations/Implications

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

Due Date for Follow-up and/or Project Completion

Administration will present a proposed Memorandum of Understanding with the Saskatoon Tribal Council for City Council approval in 2017, to include terms of a partnership and proposed strategy for developing the hydropower project.

Public Notice

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

Attachments

1. Critical Activity and Community Engagement Timeline
2. Frequently Asked Questions – Hydropower Project
3. Rendering of Proposed Hydropower Station

Report Approval

Written by: Nathan Ziegler, Sustainable Electricity Engineer
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 NZ - Hydropower Joint Ownership Project with Saskatoon Tribal Council.docx

SASKATOON WEIR HYDROPOWER STATION A Clean Power Project Partnership

Critical Activity and Community Engagement Timeline

Project Phase	Possible Citizen Involvement Activities
<i>MOU Phase</i> March to June 2017	<ul style="list-style-type: none"> • Present Memorandum of Understanding agreement and recommendation to City Council
<i>Feasibility Study Phase</i> June to October 2017	<ul style="list-style-type: none"> • Host Open Houses for City Park, North Park and Richmond Heights neighbourhoods • Meetings with relevant community organizations
<i>Unsolicited Power Proposal Phase</i> September 2017	<ul style="list-style-type: none"> • Updated webpages including project video and feedback from community meetings • Project updates to key community-based organizations as needed
<i>Request for Proposal Phase</i> October 2017 to February 2018	<ul style="list-style-type: none"> • Community newsletter #1 delivered to residents of City Park, North Park and Richmond Heights • Community “Walk and Talk” in early Fall • Project updates to key community-based organizations needed
<i>Assessment Phase</i> February 2018 through 2019	<ul style="list-style-type: none"> • Updated webpages with feasibility-level engineering and environmental assessment information • Project updates to key community-based organizations needed
<i>Design-Build Phase</i> 2020 to 2021	<ul style="list-style-type: none"> • Community newsletter #2 delivered to residents of City Park, North Park and Richmond Heights • Rotating project display in community • Site signage at both ends of Weir • Host Open Houses for City Park, North Park and Richmond Heights neighbourhoods • Solicit public feedback on Shaping Saskatoon platform and through Citizen Advisory Panel • Project updates to key community organizations as needed
<i>Opening Phase</i> End of 2021	<ul style="list-style-type: none"> • Updated webpages with photos of commissioning and internal operations



SASKATOON WEIR HYDROPOWER STATION A Clean Power Project Partnership

Frequently Asked Questions – Hydropower Project

1. What is being proposed at the Weir?

The City of Saskatoon, through its electric utility Saskatoon Light & Power, is exploring the feasibility of developing a run of the river hydropower station at the weir in partnership with the Saskatoon Tribal Council.

2. What changes to the existing weir and site are being proposed?

If the project proceeds, the existing weir infrastructure would be renewed; a small-scale hydropower station would be built on the university side of the river, and a service/pedestrian bridge would be built for safer river crossing.

3. What is the cost? What is the cost to City of Saskatoon taxpayers?

The total estimated cost of the project is \$61.5 - 65.2 million. These costs are expected to be covered by an investment by the Saskatoon Tribal Council and private partners, off-set from revenue generated by the power station and funding from other levels of government.

In the short term, the City may be able to construct the pedestrian walkway at no direct cost to the City, and rehabilitate the existing weir as part of the project. A modest revenue stream in the short term may also be possible for the City. At the end of the procurement phase, the City and the Saskatoon Tribal Council will inherit the facility in good working order, which would provide a long term revenue source to both partners.

4. Will raising the height of the weir affect the water supply?

Saskatoon is very fortunate to have one of the world's largest earth dams (Gardiner Dam) upstream of us to create a large reservoir of fresh water (Lake Diefenbaker). If flows were to be severely reduced, the elevation of the weir would help ensure water continued to be available for the low-level Raw Water Intake facility.

5. How will this affect the pelicans?

The health and well-being of the pelicans will be protected and enhanced.

Pelicans feed at the weir site, but they do not nest there. The proposed project will enhance fish habitat and migration, and will retain much of the original weir structure, which will maintain attractive conditions for pelicans.

6. How will this affect fish and other aquatic wildlife?

Fish migration and habitats will be protected and enhanced.

The current Weir is a challenge for fish migration as the existing fish ladders are ineffective and impassable going upstream for most of the year. Also, the stretch of river between the Gardiner Dam the City is not particularly good fish habitat, in part because of the effects of the weir and dam.

The project will include an enhanced fish navigation channel in the project that will make fish migration easier. This bypass channel will use native bed materials and plant species to mimic natural rest and refuge areas. Flow through the channel will be supplied by natural river flow.

7. What is the expected noise level of the proposed plant?

The 5.5 to 6.1 megawatt hydropower station will produce very little noise. The mechanical systems will be completely enclosed and submerged under the water. People using the pedestrian crossing would be able to have a conversation – without having to raise their voices – standing directly above it.

8. What will the hydropower station look like?

At this early stage of the project, many details have to be finalized. As plans develop, we will seek community input on the proposed design of the plant.

We know that it will be small in scale and that it will be sensitive and responsive to its environment. For instance, we envisage a green roof on the facility – as a nod to green-friendly technology but also as a way of incorporating the structure into its natural surroundings.

9. Are there similar run of the river projects in other cities?

There are many hydropower projects that vary in size. The difference with this proposed system is that most of the infrastructure will be below the water level and maintain a low profile.

10. Are the findings of the environmental and pre-feasibility engineering studies still valid?

Yes. Pre-feasibility Engineering and Baseline Environmental studies were conducted in 2009 to gain a clearer understanding of the technical, environmental, and economic implications of a proposed hydropower station at the Saskatoon Weir. All technical and environmental conditions remain the same, making the data and findings of those reports still valid.

11. Why partner with the Saskatoon Tribal Council?

There are many benefits to both partners. Highlights of benefits to the City include a stronger project team; broader access to provincial and federal funding programs; and honouring the City's commitments to the Truth and Reconciliation Commission's Calls to Action. A joint ownership of this project leverages on Saskatoon Tribal Council's alliance with the First Nations Power Authority, a non-profit organization that assists Aboriginal power producers in advancing power generating projects to SaskPower.

12. Why isn't the City going through a tendering process to solicit interest from potential partners?

The feasibility study will explore the benefits of private partner to construct and operate the facility on behalf of the owners, the City of Saskatoon and Saskatoon Tribal Council. A partner would be selected through a competitive bidding process for the design, development and operation of the project.

13. You're exploring involving a private partner. Why doesn't SL&P just construct and operate the plant?

It is yet to be determined who will operate the plant. Public-private partnerships are common and provide a way to finance and operate public facilities efficiently and affordably. It means that state-of-the-art facilities can come on stream faster and address community needs sooner.

14. What is the economic benefit to the City of Saskatoon?

The pre-feasibility work completed to date clearly indicates that the hydropower station is expected to generate a positive internal rate of return, which means that the project is economically viable and would result in a profit for the project owners.

15. What are the benefits for the Saskatoon Tribal Council?

Investment returns from the hydropower project will support community infrastructure and social programs in the Saskatoon Tribal Council member communities. First Nations can benefit from employment, training and education opportunities that extend beyond the construction phase. The project can lay the foundation for future business ventures in sustainable power and other industries.

16. How much power is produced through this process and what will the partners do with it?

Depending on the final design, the station will produce enough green power for 2,400 to 3,500 homes each year. If approved by SaskPower, they would purchase the electricity and would contribute to their target to have 50 per cent of their generating capacity from renewables by 2030. This could yield a higher rate of return than using the power locally on Saskatoon Light & Power's grid.

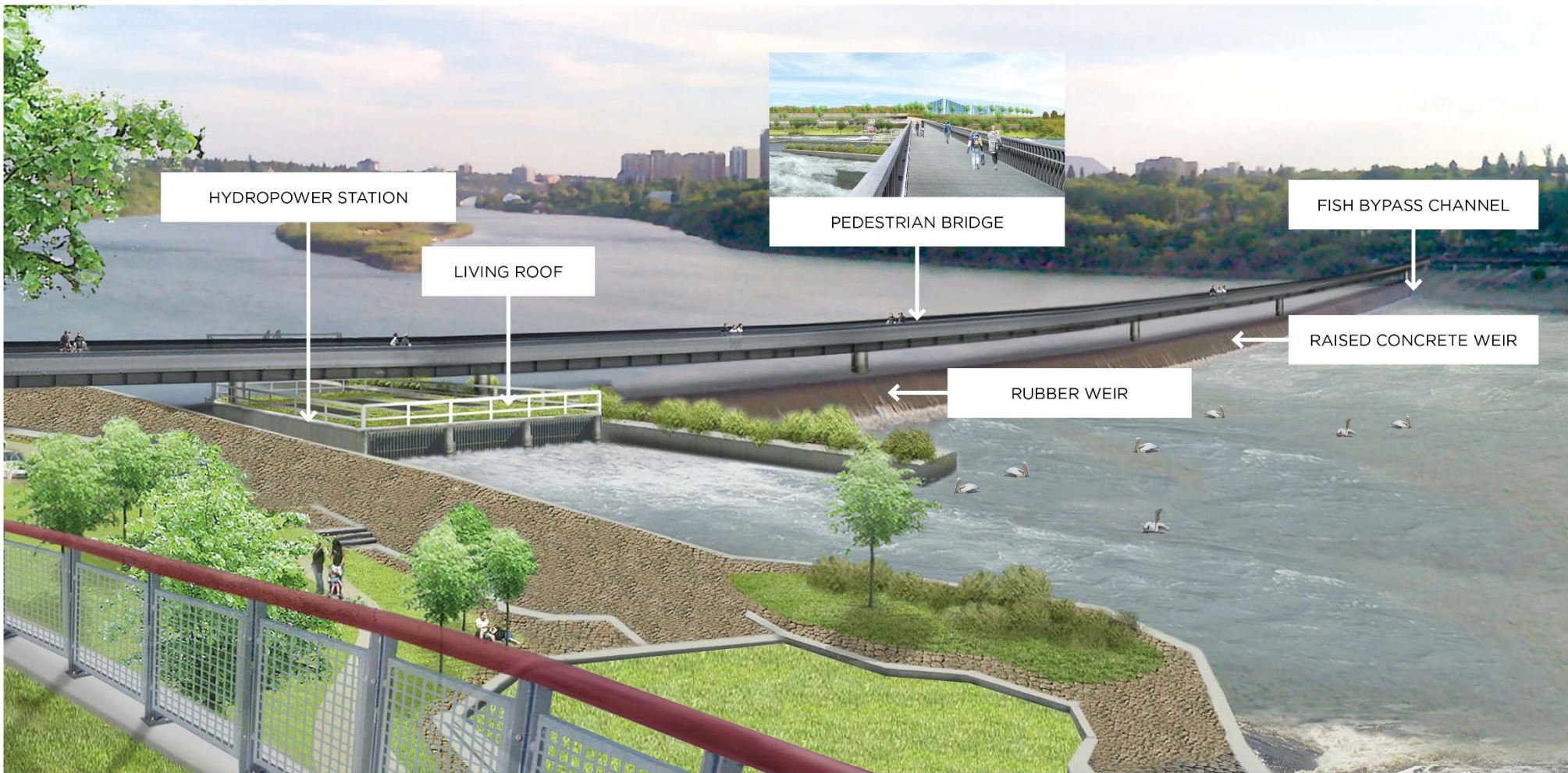
17. Why has the white water feature been pulled out of the scope of the project?

Within the Recreation and Parks Master Plan (Master Plan), there were numerous indoor and outdoor recreation facility priorities identified. The current priorities for public recreational infrastructure investment were identified through extensive citizen consultation, and include a focus on reinvesting in existing recreation facilities and parks (i.e. leisure centres, play structures, park upgrades, paddling pools, etc.); potential partnerships around the development of indoor ice facilities; and the potential development of a recreation facility.

A facility such as a white water park was not identified in the list of high priorities. The Master Plan recommends that as facilities become more specialized or serve a smaller segment of the population the funding model for this type of project should include a combination of private/non-profit investment, fundraising, user fees, and potentially some public taxes.

Earlier studies confirmed that a white water park in conjunction with a hydropower plant at the weir is physically viable. To now proceed as part of the feasibility study of the hydropower project, the City would be seeking, from the community interest groups, a formal business plan for the operations of such a facility and private capital funding would have to be secured for the development and operation.





SASKATOON WEIR HYDROPOWER STATION

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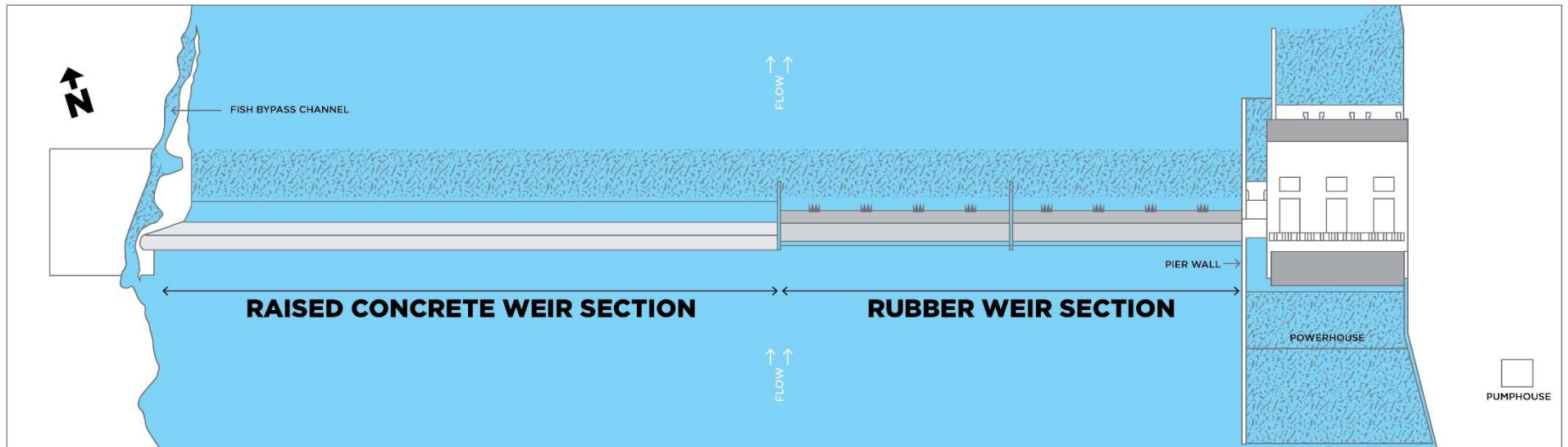




SASKATOON WEIR HYDROPOWER STATION

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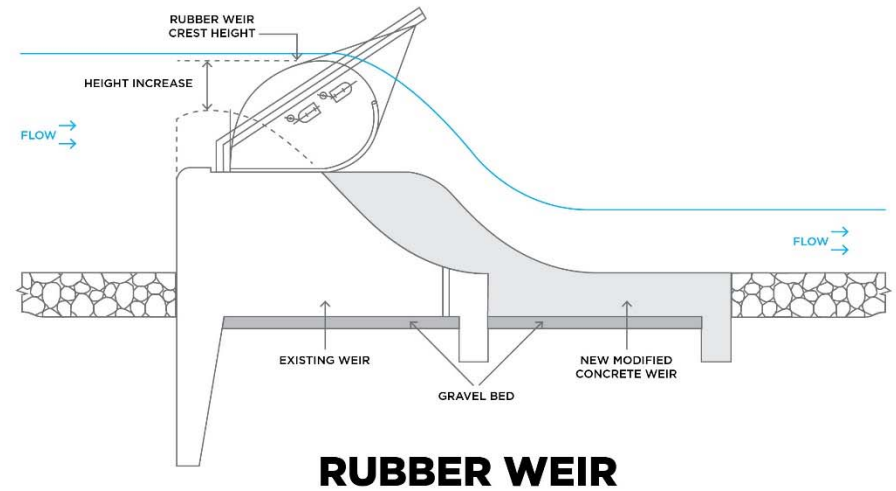
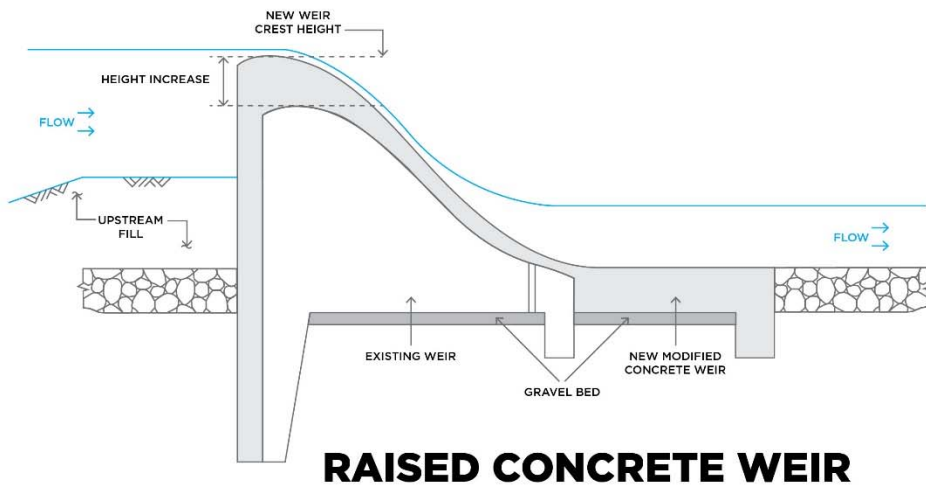




SASKATOON WEIR HYDROPOWER STATION

A Clean Power Project Partnership





SASKATOON WEIR HYDROPOWER STATION

A Clean Power Project Partnership



Ongoing Promotion with SEAC



March 14, 2017

A Proposal Submitted to Saskatoon
Environmental Advisory Committee



Unite is one of the first Marketing Co-operatives in Canada. This model helps us deliver high quality marketing solutions by bringing together highly experienced professionals in marketing, strategy, social media, design, web development, video production, and other services on-demand.

Our mission is to help positive messages spread and purpose driven organizations succeed through strategic marketing, creative ideas, and high-quality media.

Our Values

Community

Collaboration

Sustainability

Creativity

Worthwhile Effort

Fairness

Love & Respect

Our Services

- 1 Marketing & Digital Strategy
- 2 Campaign Management
- 3 Brand Development
- 4 Content Creation
 - Video Production
 - Graphic Design
 - Commercial Photography
- 5 Media Buying & Execution
 - Traditional
 - Online
- 6 Social Media Strategy, Training, and Execution

Clients



Background

Saskatoon Environmental Advisory Committee has now launched the animated video to inform residents that climate change is a municipal issue. In collaboration with SEAC, the video and content within will be promoted over the next two months. Specific objectives for promotion will be created to measure success.

Approach

1. Define Objectives

To measure success, we will define clear objectives for our promotional efforts.

2. Social Media Policy & Strategy

- Guide for interacting with comments and questions on social media.
- Strategy for connecting with the target audience and spreading reach.
- Content calendar will be used to coordinate timing of posts.
- Where paid advertising should be used.

3. Content Creation

- Shareable content will be created from the images and information from the video.

Pricing

Item	Price
Policy & Strategy	\$1,500
Content creation	\$800
Value Aligned Project Discount (10%)	\$230
Total (plus taxes)	\$2070





Where from Here?

This is how we see things, but we're interested to get your input to make this plan great!

To discuss further, please contact Fred Reibin at 306.260.2732 or fred.reibin@unitecoop.com

THANK YOU!

Proposed Targets for Community-wide Greenhouse Emissions Reductions

Saskatoon Environmental Advisory Committee
April 30, 2017 (Draft- not for circulation)

SEAC proposes the following targets for community-wide GHG emissions reductions within the city of Saskatoon:

- **15% emissions reductions below 2014 levels by 2023**
- **80% emissions reductions below 2014 levels by 2050**

We recommend an initial ambitious but attainable target for 2023, and advocate for a more aggressive emissions reductions approach in the proceeding years. We recommend setting **incremental targets every five years** after 2023, to be developed in conjunction with City Administration. Additionally we recommend yearly reporting to Council on progress.

Our rationale for these emissions is outlined below:

Globally, cities and urban areas are responsible for at least 70% of greenhouse gas emissions (International Energy Agency, 2008). While the Paris agreement is an accord between nations, there is increasing recognition that cities have a major role to play in climate change leadership (e.g. Figueres, 2017; C40 Cities Climate Leadership Group; Covenant of Mayors). The City of Saskatoon has indicated its intention to serve as a climate change leader, through its commitment to the Global Covenant of Mayors. The Covenant of Mayors includes over 7,000 cities, encompassing over 9% of the world's population. It promotes a "shared long-term vision of promoting and supporting voluntary action to combat climate change and move to a low emission, resilient society" (Global Covenant of Mayors for Climate & Energy, 2017).

The Saskatoon Environmental Advisory Committee (SEAC) is pleased that the City of Saskatoon has moved beyond the initial step of commitment to the Global Covenant and has tackled the milestone of a comprehensive inventory of greenhouse gas (GHG) emissions. The next step in meeting its obligations to the Covenant is the establishment of targets for GHG emissions reductions.

The international community has determined that the safest course of action is to limit warming to a global average of no more than 2°C. A recent *Science* publication notes that the targets put forward in the Paris agreement are technically and economically achievable (though many current targets are inconsistent with these goals) (Rockström et al., 2017). At this time, SEAC recommends community-wide GHG targets in line with international commitments. This means that atmospheric CO₂e (Carbon Dioxide Equivalent) concentrations should be stabilized at approximately 450 parts per million (ppm) by 2050 and indicates an 80% reduction in GHG emissions (below) 2020 for

industrialized nations by 2050(IPCC AR 4, 2007; Union of Concerned Scientists, 2007).

The 2014 City of Saskatoon Emission Inventory reports that emissions within the City of Saskatoon have increased 12% since the last inventory completed in 2003. Per capita emissions have fallen. SEAC recommends targets that are not based on per capita rates, but rather limits to the total agreed-upon concentration of atmospheric CO₂. However, we additionally recommend that reporting include per capita emissions reductions, in order to understand how our city's mitigation plans are interacting with population growth.

DRAFT

Sources:

C40 Cities Climate Leadership Group. <http://www.c40.org>

City of Saskatoon. (2016). 2014 City of Saskatoon Emission Inventory.

https://www.saskatoon.ca/sites/default/files/documents/corporate-performance/environmental-corporate-initiatives/2014_saskatoon_greenhouse_gas_emissions_inventory.pdf

Global Compact of Mayors for Climate and Energy, The.

<http://www.globalcovenantofmayors.org>

Figueres, C. (2017). Three signs that the world is already fighting back against climate change. *World Economic Forum*.

<https://www.weforum.org/agenda/2017/01/3-signs-that-the-world-is-already-fighting-back-against-climate-change>

International Energy Agency (IEA). (2008). World Energy Outlook 2008, IEA, Paris, 569 pages.

Intergovernmental Panel on Climate Change (IPCC). (2007). Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

Rockström, J., Gaffney, O., Rogelj, J., Meinshausen, M., Nakicenovic, N. (2017). A roadmap for rapid decarbonisation. *Science*, 355(6331), 1269-1271.

Union of Concerned Scientists (UCS). Avoiding dangerous climate change: A target for U.S. emissions reductions.

http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/emissions-target-fact-sheet.pdf

