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# Water and Wastewater Treatment Plants River Impact Study – Award of Engineering Services

## Recommendation

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

1. That the proposal submitted by Hutchinson Environmental Sciences Ltd. in association with Canada North Environmental Services for engineering services for the Water and Wastewater Treatment Plants River Impact Study, for a total upset fee of \$285,262.12 (including GST), be approved; and
2. That the City Solicitor be requested to prepare the appropriate agreement and that His Worship the Mayor and the City Clerk be authorized to execute the agreement under the Corporate Seal.

## Topic and Purpose

The purpose of this report is to obtain City Council approval to award a proposal from Hutchinson Environmental Sciences Ltd. in association with Canada North Environmental Services (Hutchinson Environmental Sciences Ltd.) to study the effects and risks of the Water Treatment Plant (WTP) and Wastewater Treatment Plant (WWTP) operations on the South Saskatchewan River.

## Report Highlights

1. The proposed study will deliver a characterization of the river ecosystem and an assessment of the possible ecology effects that the WTP discharge and WWTP effluent have on the river.
2. An understanding of how the WTP discharge and WWTP effluent affect the river's ecosystem will help define each plant's Water Security Agency Permit to Operate requirements.
3. A Request for Proposals (RFP) for Engineering Services to complete the study was issued on August 13, 2018, and closed on September 4, 2018. Four proposals were submitted and the proposal from Hutchinson Environmental Sciences Ltd. was rated the highest, based on the criteria outlined in the RFP.

## Strategic Goal

This report supports the Strategic Goal of Environmental Leadership by investigating the potential impacts of the WTP discharge and WWTP effluent on the South Saskatchewan River. Once these effects are quantified, the City can work towards reducing the impact it has on the river water quality.

## Background

The WTP withdraws raw water from the South Saskatchewan River and supplies treated water to over 300,000 customers in and around the City.

A by-product of the water treatment process consists of water, lime, sand, salt, ferric sulfate, and chlorine. The solids are removed and the remaining water is dechlorinated prior to discharging to the river. The WTP intends to quantify and further understand any ecological effects of the discharge on the river by establishing an industry-standard mixing zone, performing a river characterization study, and obtaining an ecological survey.

The WWTP currently processes an average of 90 million litres of wastewater per day. In 2009, the Province of Saskatchewan adopted the Canadian Council of Ministers of the Environment National Strategy for the Management of Municipal Wastewater Effluent. Under this Strategy, the Canadian Council of Ministers of the Environment establishes minimum performance standards for all municipal wastewater treatment plants operating within Canada. However, it is the responsibility of facility owners to monitor, assess, and mitigate any environmental risk imposed by the effluent released from their plant.

The WWTP completed Environmental Risk Assessments in 2015 and 2017 to characterize the effluent and raw water quality and develop specific environmental quality objectives. Recommendations from the 2017 assessment were to further study the ecological effects and the effects on the conditions downstream of the outfall.

## **Report**

### River Impact Study Deliverables

The study will investigate the impacts of the WTP discharge and WWTP effluent on the South Saskatchewan River in three phases:

- Phase One will characterize the river water and use industry standards to identify the mixing zone for the WTP discharge.
- Phase Two will study the ecosystem of the river, looking at algal biomass, benthic invertebrate communities, and fish communities. This will include identifying potential risks for the ecosystem associated with WTP discharge and WWTP effluent. Macrophyte mapping, plant tissue analysis, and sediment sampling may also be performed.
- Phase Three will include an internal workshop and presentation of the study deliverables, findings, and recommendations for both plants by February 2020.

### Permit to Operate Requirements

Following the delivery of the final reports from Hutchinson Environmental Sciences Ltd., the Administration will be able to share the findings of each report with the Water Security Agency to shape future Permit to Operate requirements with respect to nutrient removal. As well, the management teams will use the findings of each report to assist in setting the direction and timeline of future capital expansion at the WTP and WWTP.

### Request for Proposals

On August 13, 2018, an RFP was advertised on the SaskTenders website. Four proposals were received on September 4, 2018 from the following firms:

- Associated Environmental Consultants Inc. (Regina, SK)
- Arcadis Canada (Saskatoon, SK)
- Hutchinson Environmental Sciences Ltd. (Kitchener, ON) in association with Canada North Environmental Services (Saskatoon, SK)
- KGS Group (Saskatoon, SK)

A systematic evaluation of the proposals by six Saskatoon Water staff members resulted in the proposal submitted by Hutchinson Environmental Sciences Ltd. receiving the highest rating and confirmed that it met the scope of work defined in the Terms of Reference. Hutchinson Environmental Services Ltd. has delivered similar services to the City of Saskatoon successfully. This experience gives them the background to produce a valuable study. The proposal evaluation was performed as per the following breakdown:

Rated Criteria Evaluation	Maximum Available Points
1. Project Understanding/Methodology	35
2. Experience and Qualifications of the Project Team	25
3. Experience on Similar Projects and References	25
4. Innovation and Value Added	5
5. Price	10
Total Maximum Allowable Points	100

Work of this nature has been traditionally procured from the private sector. The work involves specialized knowledge and teams drawing on experience and expertise from projects throughout Canada, as well as internationally. In order for the City to complete this work in-house, additional specialized staff would need to be hired for this project and then alternate work would need to be found upon project completion.

### **Options to the Recommendation**

City Council could choose not to accept the proposal and reject all other proposals. This is not recommended as the proposal from Hutchinson Environmental Sciences Ltd. meets the City's requirements and received the highest rating based on the criteria outlined in the Terms of Reference.

### **Communication Plan**

River valley partners will be notified in advance of the sampling activities to avoid any conflicts and mitigate any concerns. The Administration will develop a strategy to communicate the results of the study and recommendations to internal, partner, and public stakeholders.

### **Financial Implications**

This project will be funded through Capital Project #2578 – WWTP – Downstream User Study and the 2018 Water Treatment Plant Operating Budget.

The net cost to the City for engineering services, as described above and within the proposal submitted by Hutchinson Environmental Sciences Ltd. would be as follows:

Consultant Labour	\$258,741.15
Contingency	<u>12,937.06</u>
Total Proposal Price	\$271,678.21
GST (5%)	<u>13,583.91</u>
Total Upset Fee	\$285,262.12
GST Rebate	<u>(13,583.91)</u>
Net Cost to the City	<u>\$271,678.21</u>

### **Environmental Implications**

Depending on the results of this study, construction and/or maintenance activities, some of which are associated with resource use and greenhouse gas emissions, may be required to improve the water or wastewater treatment processes. The overall impact on greenhouse gas emissions has not been quantified.

### **Other Considerations/Implications**

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

### **Due Date for Follow-up and/or Project Completion**

A report summarizing the results of the study will be completed in January 2020. Once the results and recommendations are presented to Saskatoon Water, a timeline will be developed based on priorities.

### **Public Notice**

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

### **Report Approval**

Written by: Kelsea Lindenias, Project Engineer, Saskatoon Water  
Reviewed by: Pamela Hamoline, Engineering Services Manager, Saskatoon Water  
Reid Corbett, Director of Saskatoon Water  
Approved by: Angela Gardiner, Acting General Manager, Transportation & Utilities Department