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**Date**                      **December 8, 2020**                      **Report No. 2020-71**

**To**                      Chair and Members  
Committee of the Whole – Operations and Administration

**From**                      Inderjit Hans P.Eng., PMP, General Manager  
Public Works Commission

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## 1.0    Type of Report

Consent Item	<input type="checkbox"/>
Item For Consideration	<input checked="" type="checkbox"/>

**2.0    Topic        2021-2026 Contract Award for the Operation and Maintenance of Landfill Gas Collection System and Utilization Facility (Financial Impact – 2021 \$156,954)**

## 3.0    Recommendation

- A. THAT Report No. 2020-71 titled “2021 – 2026 Contract Award for the Operation and Maintenance of Landfill Gas Collection System and Utilization Facility”, BE RECEIVED; and
- B. THAT RFP 2020-99 for the Operation and Maintenance of Landfill Gas Collection System and Utilization Facility, BE AWARDED to INTEGRATED GAS RECOVERY SERVICES INC., P.O. Box 100, Thorold, Ontario L2V 3Y8 at an estimated annual cost of \$1,016,454; and
- C. THAT the necessary Contract between The Corporation of the City of Brantford and INTEGRATED GAS RECOVERY SERVICES INC. BE PLACED on a Signing By-law for execution by the Mayor and Clerk; and
- D. THAT the General Manager or acting member of staff and the Purchasing Officer be authorized to execute any ancillary or amending agreements necessary during the term of the agreement that will not affect the approved budget or significantly change the scope of the work to be

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completed under the agreement, in a form satisfactory to the City Solicitor and upon the approval of the City Treasurer or designate.

## **4.0 Purpose and Overview**

To obtain approval from Council to award the multi-year contract for the operation and maintenance of the landfill gas collection system and utilization facility at the Mohawk Street Landfill Site (MSLS) to INTEGRATED GAS RECOVERY SERVICES INC. (IGRS).

Council approval is being sought to award the five (5) year contract to the highest ranking proponent as determined through a Request for Proposals (RFP) solicitation process.

The landfill gas (LFG) collection system and utilization facility has been operated and maintained under contract by Wajax, since 2010. The original contract included a ten (10) year renewal option to continue the contract past August 24, 2020. Contract extension discussions with Wajax representatives continued until late August 2020. Unfortunately, staff was unable to complete successful negotiations for a contract extension. As a result, on September 9, 2020 staff issued a RFP for the operation and maintenance of the landfill gas collection system and utilization facility. In order to complete the RFP process and maintain operations, staff was able to negotiate a temporary contract with Wajax until January 8, 2021 as per the Purchasing Policy. The new contract through the RFP process is to commence on January 9, 2021.

The following report provides an outline of the estimated budget impacts and recommendations of staff.

## **5.0 Background**

### **5.1 Landfill Gas Collection System and Utilization Facility**

The existing landfill gas (LFG) collection system and utilization facility is comprised of the following two major operating components;

- (i) LFG Collection System - approximately 92 gas wells and 6 horizontal pipes installed within the waste including a complex piping system to capture landfill gas and direct to the utilization facility.
- (ii) LFG Utilization Facility – (i) two 2,700 kilowatt (kW) engines and related power plant operating components including blower, fuel treatment and exhaust systems, heat exchangers, integrated control systems, (ii) a

large diameter enclosed gas flare, (iii) high voltage transfer system and switch gear for power distribution and (iv) office space for contract operators and City staff from the Solid Waste Operations Division.

The renewable electrical power generated by the facility, approximately 1.1-1.5 megawatts, is fed into the local power distribution system to provide annual revenue for operations.

## **5.2 Ownership and Contractual Background**

Collection of landfill gas (LFG) and operation of the utilization facility (LFG Facility) commenced at the MSLS in August 2010. The City assumed day-to-day operations of the collection system and LFG Facility on May 2, 2016 following Council approval of Report No. PW2016-030 “Acquisition of Brantford Generation Inc. (BGI) Assets and Operations by the City of Brantford” on March 29, 2016.

As part of the acquisition process and settlement with Ontario Infrastructure and Lands Corporation (IO), the loan holder for the development of the project, the City completed the following;

- (i) Renegotiated the outstanding loan agreement held at that time by BGI;
- (ii) Executed a 50/50 revenue sharing agreement with IO;
- (iii) Assumed the twenty (20) year Renewable Energy Standard Offer Program (RESOP) Agreement with provincial Independent Electricity System Operator (IESO) for the preferred electricity pricing for the supply of renewable energy. The RESOP agreement is to end in August 2030;
- (iv) Assumed the initial ten (10) year Design, Build, Operate and Maintain (DBOM) agreement with Wajax for the ongoing operations and maintenance of the LFG collection system and utilization facility.

Appendix A attached to this report provides the timeline for the ownership and operation of the LFG collection system and utilization facility and outlines milestone dates for facility start up, contract dates, key reports to Council, etc.

The original contract with Wajax expired on August 24, 2020 after new contract negotiations were unsuccessful. However, in order to complete the Request for Proposal (RFP) process staff was able to negotiate and enter into a temporary contract until January 8, 2021 as per the City’s Purchasing Policy.

At the end of October 2020, the operating hours of the power plant engines (Engine 1 and Engine 2) were 38,766 and 39,302, respectively. As part of the

manufactures recommended preventative maintenance program both engines are required to have minor and major service intervals completed at specific intervals based on engine operating hours. For the City's engines, major service intervals are to occur at 40,000 and 60,000 hours. As previously reported to Council on June 8, 2020 (Report No. 2020-240), payments made to Wajax for major service intervals are not recoverable.

### **5.3 Issuance of Request for Proposals (RFP) for Operation and Maintenance of Collection System and Utilization Facility**

#### **5.3.1 Issuance of Request for Proposals (RFP)**

On September 9, 2020 staff issued RFP 2020-99 for a five (5) year contract for the operation and maintenance of the landfill gas collection system and utilization facility. The proposed contract also includes a renewal term of one, five (5) year extension.

The draft contract issued with the RFP requires the contractor to complete all preventative maintenance (PM) and corrective maintenance (CM) services in order to operate and maintain all landfill gas collection system and power generation components. It should be noted CM services will be completed on a case by case basis only with the approval of City staff.

The specific responsibilities of the Contractor will include:

- Day-to-day management of operations and maintenance including health and safety aspects related contract responsibilities;
- Executing all preventative maintenance (PM) services according to equipment manufacturer service interval requirements and specifications;
- Executing all corrective maintenance (CM) services required to return operations to normal function/operation.
- Executing and maintaining a Materials Stream Agreement (MSA) with licensed distributor of equipment manufacturer (OEM) replacement parts for engine and power plant components;
- Staying in compliance with the City's contract agreement;
- Carrying out sampling and testing required for compliance, monitoring process performance and making adjustments to operations accordingly;

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- Maintaining appropriate documentation and meeting reporting requirements of the City;
  - Purchasing power plant supplies and arranging for outside specialist trade work;
  - Coordinating any power plant shut downs with local utility and provincial electrical system operators;
  - Coordinating operations with major capital projects such as expansion of LFG collection system and related components;
  - Providing staff training and development; and
  - Providing after hours monitoring and emergency response.

The responsibilities of the City are to include:

- Monitoring the performance of the LFG collection and power plant operation and operator reports, scheduled and unscheduled system checks and visits, process analysis, review of monthly production data laboratory results and other records;
- Manage building maintenance and grounds maintenance;
- Ensuring that the service requirements of the contract are being fulfilled;
- Reviewing and approving the Contractor's annual pricing escalation calculations, monthly billing, etc. and monitoring for potential budget variance;
- Reviewing and approving CM requirements falling outside of scope of contract;
- Approving any equipment changes or operating process changes that would require notification to the Ministry of Environment, Conservation and Parks (MECP); and
- Working with the Contractor to ensure LFG collection system and power plant are properly maintained.

### **5.3.2 RFP 2020-99 Results**

RFP 2020-99 closed on October 7, 2020 and one submission was received from INTEGRATED GAS RECOVERY SERVICES INC. (IGRS). Staff has reviewed references supplied by IGRS and found them to be acceptable and representative of their experience with no concerns noted.

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IGRS was successful in meeting the technical submission requirements of the RFP which allowed staff to proceed with the review of the Schedule of Prices. Based on the pricing received and an estimate for completion of corrective maintenance services, which are to be approved by staff on case by case basis, the overall annual contract is estimated to be \$1,016,454. Section 9 of this report provides estimated budget impacts based on the pricing submitted by IGRS.

As part of the RFP submittal proponents were also asked to provide possible value added services and/or opportunities which their firm could bring to the project. Included with their proposal, IGRS provided the following services and/or opportunities for consideration:

- (i) Use of a computerized management system to document and track all maintenance activities as well as to provide reporting functionality (included with contract pricing);
- (ii) Use of a Work Order Management system (included with contract pricing);
- (iii) Potential use of a proprietary web based landfill gas data logging system to assist and enhance the tracking of system operations, reporting and regulatory monitoring requirements (additional cost to contract pricing)
- (iv) Potential alternate plan to reduce costs to execute 40,000 hour service on generation engines (additional cost to contract pricing)

Staff is currently reviewing each of the value added items submitted for possible application during the agreement, should IGRS be awarded the contract.

## **6.0 Corporate Policy Context**

Council's seventh priority Tier 2 is about the implementation of the Green Bin Program for diversion of household organics from the landfill and construction of anaerobic digester system for processing of organics. Efficient operation and maintenance of LFG collection system and utilization facility will support generation of electricity from organics digester gas if RESOP agreement permits.

## **7.0 Input From Other Sources**

Input for this report has been provided by Clerks, Finance, Legal & Real Estate and Purchasing Departments.

## **8.0 Analysis**

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Based on the RFP submission IGRS is an experienced landfill gas engineering design and analysis company as well as systems operator for several municipal and private utilization facilities across Ontario. Reference checks confirmed the company's experience and operational knowledge within the industry.

The new contract requirements and payment structure will provide for the following operational and financial benefits over past contractual arrangements:

- (i) Ensure core utilization plant components including generation engines are monitored and maintained according to manufacturer requirements;
- (ii) Allow City staff to track and report on preventative maintenance activities on an ongoing basis;
- (iii) Allow City staff to review corrective maintenance activities on an ongoing basis as well as to develop knowledge and experience with generation facility and well field operations;
- (iv) Allow for payment adjustments on collection system operations as active gas monitoring/collection locations are added due to expansions and/or removed as a result decreased performance;
- (v) Reduce secondary pricing mark ups for engine oil purchase and supply.
- (vi) Engage with an experienced LFG operator and engineering based firm.

In addition, staff is currently reviewing each of the value added items submitted for possible application during the agreement, should IGRS be awarded the contract. In particular the potential alternate plan to execute the 40,000 hour service on the generation engines is being reviewed to determine possible cost savings to the City. Staff has currently included expenditures to complete these services in the capital budgets for 2021 and 2022.

## **9.0 Financial Implications**

As shown in Appendix B attached to this report, the overall 2020 approved contracted services budget for the operation and maintenance of the LFG collection system and utilization facility is \$859,500. Staff estimates 2020 year end expenditures to be \$957,800 with a budget impact of \$98,300.

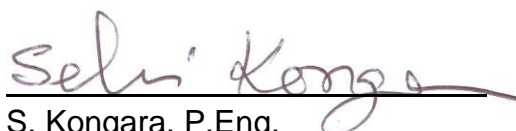
Based on the pricing received through RFP 2020-99, future annual contracted services expenditures are estimated to be \$1,016,454. The 2021 budget increase is estimated to be \$156,954. It should be noted this includes an estimated value for corrective maintenance repairs which may be annually lower or higher depending facility requirements.


Staff is currently reviewing value added and/or cost reduction opportunities provided by IGRS with the RFP submission. One possible opportunity is expenditure reductions to complete the 40K servicing requirements on the generation engines. Once these investigations are completed, staff will provide a follow up report to Council regarding possible capital expenditure reductions for 2021 and 2022.


## 10.0 Conclusion

As the current owner of the landfill gas and utilization facility and party to the loan agreement with Infrastructure Ontario, the Revenue Sharing agreement with Infrastructure Ontario and the RESOP agreement with the ISEO, the City is obligated to continue to operate and maintain the facility until at least 2030. Additionally, given the City's requirement to collect and flare landfill gas generated by waste materials disposed of at the site, it must operate and maintain the landfill gas collection system, flare, and the portion of the utilization facility components related to gas collection and flaring.

Based on the technical proposal and pricing submitted in response to RFP 2020-99, staff is recommending the award of the five (5) year operations and maintenance contract of the LFG collection system and utilization facility at the Mohawk Street Landfill Site to IGRS.

  
S. Kongara, P.Eng.  
Director of Environmental Services

  
I. Hans P.Eng., PMP  
General Manager, Public Works  
Commission

  
D. Hodgins, P.Eng.,  
Manager, Solid Waste Operations

### Attachments

Appendix A - Timeline, Landfill Gas (LFG) Utilization Facility and Collection System Operation



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Appendix B – Estimated 2021 Operating Budget Impacts, RFP 2020-99 Results,  
Proposed Landfill Gas Utilization Facility Operations Contract

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

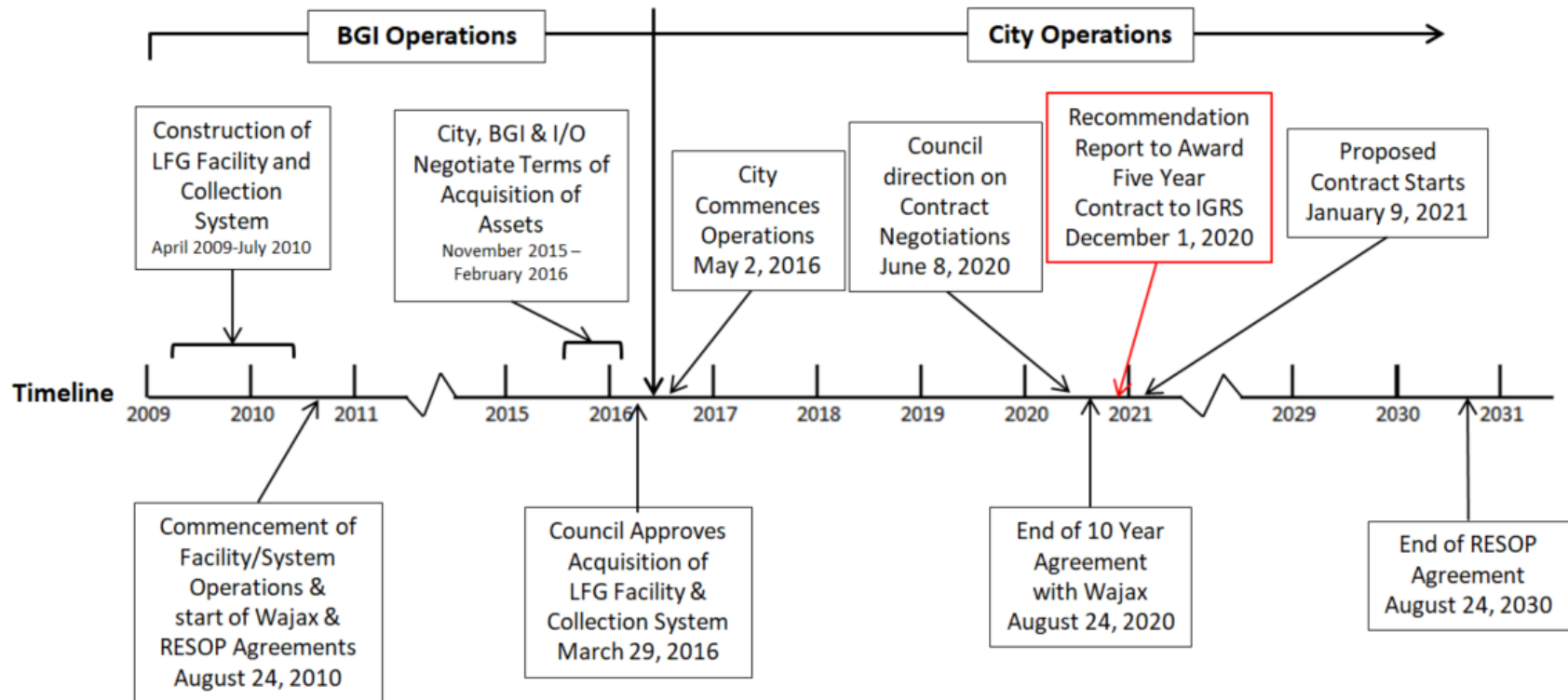
By-law required ☐ yes ☒ no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk ☒ yes ☐ no

Is the necessary by-law or agreement being sent concurrently to Council? ☐ yes ☒ no

## Appendix A

### Timeline, Landfill Gas (LFG) Utilization Facility and Collection System Operation



**Appendix B - Estimated 2021 Operating Budget Impacts, RFP 2020-99 Results, Proposed Landfill Gas Utilization Facility Operations Contract**

Contracted Services Budget - Operation and Maintenance		2020 Approved Budget	Current Contract	RFP 2020-99 IGRS	
			Estimated 2020 Year End & Budget Impact	Estimated 2021 Budget	Estimated 2021 Budget Impact
<b>Landfill Gas Collection System Operations (154302)</b>	- Monitoring and balancing of collection system, - Preventative Maintenance of collection system components, - Corrective Maintenance (current contract only) - System Operator costs,	198,500	201,500	58,806	(139,694)
<b>Landfill Gas Plant Operations (154303)</b>	- Preventative Maintenance on power plant components & generation engines (excluding 40K Service) - Corrective Maintenance (current contract only) - Engine Plant Operator Costs, - Major Over Haul Account Payments (2020 only)	661,000	756,300	832,648	171,648
<b>Sub Total - Total Estimated Contract Services Annual Expenses</b>		<b>\$ 859,500</b>	<b>\$ 957,800</b>	<b>\$ 891,454</b>	<b>\$ 31,954</b>
<b>Total Estimated Corrective Maintenance Requirements (new contract)</b>				<b>\$ 125,000</b>	
<b>Estimated Operating Budget Year End or Impacts</b>			<b>\$ 98,300</b>	<b>\$ 1,016,454</b>	<b>\$ 156,954</b>