Recommendation

That the report entitled Lakefield Lagoon Sludge Removal be received for information; and

That Selwyn Township enters into an agreement with Terrapure Environmental to complete services for removal and disposal of biosolids from the Lakefield Wastewater Treatment Plant (Lagoon) with a contract value up to $498,000 (HST excluded); and

That the 2019 Lakefield Sewer capital maintenance budget be updated to include this amount; and

That By-law 2019 – 042 to authorize the execution of an Agreement between Terrapure Environmental and the Township of Selwyn for the Lakefield Lagoon Sludge Removal be forwarded to the by-law section of tonight’s agenda for Council consideration.

Information

As reported to Council at the January 22, 2019 regular meeting, the Lakefield Lagoon requires capital maintenance as it relates to sludge accumulation. Council approved the following resolution:

Resolution No. 2019 – 013 – Lakefield Lagoon Sludge Removal
Deputy Mayor Sherry Senis – Councillor Anita Locke –
That the report from the Manager of Finance/Treasurer and the Project Coordinator – Water & Sewer regarding the Lakefield lagoon sludge removal be received for information; and
That the Township of Selwyn proceed with preparing a request for proposal (RFP) for sludge removal at the Lakefield Lagoon in the 2019 operating year; and
That the results of the RFP and related staff recommendation be brought forward to a future Council meeting for consideration.

Biosolids at the Lakefield Lagoons were last removed in conjunction with capital upgrades in 1999. The initial Design Report produced by RAL Engineering for those upgrades calculated an annual sludge accumulation and this anticipated removal again in approximately 20 years.
Peterborough Utilities has since conducted a Lagoon Sludge Report in the fall of 2017 which supports RAL Engineering’s initial estimation. The 2017 report noted that current conditions can be attributing to an increase in regulated Ammonia levels and a decrease in hydraulic retention time.

In addition, Ministry of Environment, Conservation and Parks (MECP) inspections have recommended that the Township initiate a sludge management program. Removal under this project and continued monitoring will support this recommendation. This activity is pre-approved through the Limited Operational Flexibility condition of the Environmental Compliance Approval (ECA) issued by the MECP.

Given Council direction and the above noted points, staff proceeded through the procurement process and requested bids for two options of sludge removal from the lagoon:

    Option 1 – dispose of biosolids through land application
    Option 2 – dispose of biosolids through landfilling

The bid request closed on Thursday April 4, 2019 with bids received from two firms as follows:

    Terrapure Environmental  Option 1 $498,000 or Option 2 $ 797,250
    Wessuc Inc.             Option 1 $645,090 or Option 2 $1,578,520

The preferred method of removal is Option 1 and is contingent upon receiving satisfactory sludge sample results to support land application.

**Sludge Removal Project Details**

Through proper land application methods, best management practices and nutrient management planning, Terrapure Environmental will complete the proposed work in the South Pond during the summer/fall of 2019.

**Hydraulic Dredging (preferred method)**

Terrapure Environmental will utilize a hydraulic dredge to remove biosolids from the Lakefield Lagoon while the wastewater treatment system remains in service. Basic components of hydraulic dredges include a cutter head, pump, floatation system or platform, engine or motor, control system, and the discharge system. Cutter heads agitate settled solids on the lagoon bottom to be dredged and create slurries. A powerful centrifugal pump mounted directly behind the cutter head draws the slurry into a discharge piping system, pushes the slurry through the piping to the surface, and then to the haulers to be transported to the approved application site(s).
Strategic Plan Reference

Goal 2 - Achieve excellence in governance and service delivery.

Environmental Impact

Agricultural land application is environmentally sustainable and the most cost effective biosolids management method. While landfilling and incineration waste the nutrient and soil conditioning value of biosolids, land application uses these properties to enhance soil fertility and crop growth. Land application is the most preferred biosolids management option and is used by more than 80% of Ontario municipalities.

Financial Impact

Initial sludge sampling was completed in 2018 as part of approved capital works. Composite sample results of the South Pond demonstrated that biosolids met requirements set out in the Nutrient Management Act for land application.

This range of capital maintenance at the Lagoon represents a significant increase in annual sewer investment. However, when compared over a 20 year operational span this investment is comparable to annual biosolids management at other wastewater treatment facilities.

Funding for the project will come from the Lakefield Sewer Reserve.
Attachment

➢ Lagoon Aerial Map

Adam Tobin

Prepared By: Adam Tobin, Project Coordinator – Water & Sewer

R. Lane Vance

Prepared By: R. Lane Vance, Manager of Financial Services

Janice Lavalley

Approved By: Janice Lavalley, CAO