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Date: **November 14, 2020**

To: **Mayor and Council**

Author: **Tim Del Greco, Manager of Engineering**

RE: **Cottam Sanitary Lagoons – Capacity Increase**

Report No.: **MS2020 – 47**

AIM

To seek approval of capital works in order to facilitate increased sanitary treatment capacity at the Cottam Lagoons.

BACKGROUND

Sanitary sewage within the Cottam Collection Area flows to a lagoon facility located at 168 County Road 27. This facility, which consists of two cells (ponds) and an intermittent sand filter bed, provides the required treatment of sanitary influent.

The Cottam Lagoons are now operating at peak capacity. As a result, new development within the Cottam Collection Area is prohibited until additional sanitary capacity is secured. That said, there are several developers currently planning new residential developments in Cottam and are eager to proceed with construction.

The 2017 Kingsville Development Charges Background Study identifies the construction of increased capacity at Cottam Lagoons as an eligible project. Further, funding was allocated in the 2019 Kingsville Capital Budget for procurement of engineering services pertaining to an expansion of Cottam Lagoons. Dillon Consulting was awarded this work in June of 2019.

DISCUSSION

Dillon evaluated several options for increasing treatment capacity including the construction of either a third pond, a smaller aerated pond, or a year-round nitrification system. Following review, Dillon concluded with a recommendation that the Town proceed with the construction of a year-round nitrification system.

A nitrification system consists of the following components:

- A Moving Bed Biological Reactor – this is an aerated tank with specialized filter media enabling increased biological growth and activity.
- Disc Filters – a filtration system removing suspended solids and minerals from the wastewater.
- UV Disinfection – a process by which UV light neutralizes harmful microorganisms.

There are a number of benefits to utilizing this type of system when compared to traditional treatment ponds. Examples include:

- Increased Capacity – Cottam Lagoons can only treat wastewater and discharge to Lake St. Clair during non-freezing conditions (the system is idled during the winter months). As a result, overall treatment capacity is limited. A nitrification system allows for continuous year-round operation and therefore increased capacity.
- Improved Environmental Protection – On several occasions during the winter, the Town has requested permission from the MECP to discharge partially treated sanitary wastewater. This occurs when sanitary inflows and rain/snowfall exceed the available pond storage. A nitrification system provides for continuous treatment and will prevent this type of emergency discharge. As well, a nitrification system is able to provide further polishing of wastewater when compared to traditional ponds and sand filters.
- Improved Land Use – A third pond is estimated to be 40,000 square metres in size. The footprint of the nitrification system is approximately 200 square meters.
- Scalable Technology – The nitrification system is scalable and allows for cost efficient future expansion.

Dillon is recommending the nitrification system be purchased (single sourced) from Veolia Water Technologies. Kingsville's Procurement of Goods and Services Policy does allow for single sourced purchases under certain conditions. One such condition being:

"When there are limited numbers of sources where the goods and services can be purchased."

Veolia has been developing a nitrification system for cold weather climate with Canadian Universities over the past two decades. Veolia has gained significant experience in this field and is now able to offer innovative and patented technology with a guarantee for performance. There are no known competitors offering similar technology for cold weather climate and Veolia was the only bidder to respond to a recent municipal tender.

Attached in Appendix A is a brochure from Veolia describing their product. Appendix B includes a memo from Dillon describing in greater detail the rationale for selecting Veolia.

Upon order confirmation, Veolia requires approximately 11 months for design, fabrication, installation, and commissioning. Therefore, considering this project for approval prior to 2021 is necessary in order to ensure completion in 2021.

Sanitary capacity for an additional 293 residential lots is estimated upon project completion.

LINK TO STRATEGIC PLAN

To become a leader in sustainable infrastructure renewal and development.

FINANCIAL CONSIDERATIONS

Veolia has provided a quote in the amount of $673,600 for supply and installation of the nitrification system.

Dillon is estimating $1,888,400 in construction services (this includes site servicing, tank construction, process building construction, electrical, controls, contingency, etc.). Construction services would be subject to the public bidding/tendering process.

The entire project, including engineering, is estimated at $2,627,000. This project is to be funded 100% via collected development charges per the 2017 Kingsville Development Charges Background Study.

CONSULTATIONS

Kingsville Administration
Dillon Consulting
Veolia Water Technologies

RECOMMENDATION

That Council approve $2,627,000 in the 2021 Capital Budget in order to facilitate increased sanitary treatment capacity at Cottam Lagoons;

And That Council direct Administration to provide Veolia Water Technologies with order confirmation of a nitrification system for the treatment of sanitary wastewater.

Tim Del Greco

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