

REPORT TO: Mayor and Members of Council

PREPARED BY: Sam Shannon, Director of Infrastructure and Operations

DEPARTMENT: Infrastructure & Operations

DIVISION: Wastewater

MEETING DATE: July 16, 2025

SUBJECT: Report DIO-47-2025 – Parkhill Wastewater Treatment Plant – Enhanced Lagoon Long-Term Treatment Options Update

PROPOSED MOTION

THAT Council receives Report DIO-47-2025 regarding the “Parkhill Wastewater Treatment Plant – Enhanced Lagoon Long-Term Treatment Options Update” for information.

STAFF RECOMMENDATION.

THAT Council receives Report DIO-47-2025 regarding the “Parkhill Wastewater Treatment Plant – Enhanced Lagoon Long-Term Treatment Options Update” for information.

EXECUTIVE SUMMARY

This report provides Council with an update on the Parkhill Wastewater Treatment Plant (WWTP) project, specifically exploring long-term, cost-effective alternatives to the previously proposed full mechanical treatment plant. In response to escalating capital cost estimates exceeding \$41 million, AECOM was retained to evaluate more economical solutions that maintain regulatory compliance and accommodate future growth.

AECOM’s analysis identified the BioCord lagoon enhancement as the most viable option, offering substantial savings — estimated at over \$18 million — compared to the original plan. This retrofit approach would improve effluent quality while preserving the existing lagoon infrastructure.

To further assess these alternatives, R.V. Anderson Associates Limited (RVA) was engaged to undertake a feasibility study for enhanced lagoon treatment using proprietary technologies.

All options require common pre-treatment elements (e.g., headworks, filtration, disinfection), and increased operational input from OCWA will be necessary. RVA will also conduct peer consultations and initiate discussions with the Ministry of Environment, Conservation and Parks (MECP) to evaluate regulatory flexibility and confirm approval pathways.

This report is presented for information only. Staff will return to Council with recommendations for the preferred treatment alternative and next steps, including financing and regulatory considerations.

LINK TO STRATEGIC PRIORITIES

Staff, Culture, Work Environment By providing high-quality public services

Infrastructure By developing and adopting plans to reduce the impacts of climate change

Fiscal Responsibility By seeking fiscal sustainability by balancing service needs, demands, and growth

BACKGROUND

Previous Reports Related to this Matter

Regular Meeting of Council, July 19, 2023, Agenda Item 7.11, Parkhill Lagoon and Waste Water Treatment Plant Update: <https://pub-northmiddlesex.escribemeetings.com/filestream.ashx?DocumentId=9342>

Regular Meeting of Council, February 19, 2025, Agenda Item 4.1, Parkhill Lagoon Dredging: <https://pub-northmiddlesex.escribemeetings.com/filestream.ashx?DocumentId=14704>

Regular Meeting of Council, May 7, 2025, Agenda Item 6.2.2, Parkhill Wastewater Treatment Plant – Project Update: <https://pub-northmiddlesex.escribemeetings.com/filestream.ashx?DocumentId=15379>

Background Information

The Parkhill Wastewater Treatment Facility (WWTF) has historically relied on a facultative lagoon system, originally constructed in 1978. In 2019, a Municipal Class Environmental

Assessment (EA) recommended transitioning to an extended aeration mechanical treatment plant to support long-term community growth. AECOM was engaged to prepare the design, which reached 90% completion by 2021, with associated Environmental Compliance Approval (ECA) received in 2023.

However, the high capital cost estimate — reaching over \$41 million for the full buildout — led to further investigation into cost-effective alternatives. These included the BioCord lagoon retrofit and interim solutions such as lagoon dredging and pre-treatment enhancements at upstream facilities, as reported to Council at its May 7th meeting of 2025 (Report DIO-27-2025).

To support the exploration of alternatives aligned with the 2019 EA recommendations, R.V. Anderson Associates Limited (RVA) was retained to revisit the enhanced lagoon treatment/partial mechanical treatment concept originally suggested by Dillon Consulting.

DISCUSSION

The Proposal received by RVA to complete a Feasibility Study, dated June 17, 2025, builds on the recommended “Enhanced Lagoon Treatment” approach identified in the 2019 Environmental Study Report. This alternative utilizes a smaller plant footprint and integrates the lagoon system with proprietary post-lagoon treatment technologies to achieve compliance with discharge limits — especially during seasonal discharge periods into Parkhill Creek. This Proposal was solicited through RVA based on their currently ongoing Lagoon de-sludging work, for which utilization of another vendor would not represent best value to the Municipality.

Key highlights from RVA’s proposed Study include:

- Immediate Gains from Dredging: Once lagoon dredging is completed (August/September of 2025), capacity for approximately 372 additional homes will be fully unlocked based on RVA’s prior capacity assessment, noting that a portion of this has already been allocated by Council.
- Long-Term Partial Mechanical Options: RVA’s feasibility study identifies three proprietary technologies for lagoon enhancement that aim to improve effluent quality while reducing both capital and operating costs compared to a full mechanical plant.
- Preliminary Treatment Requirements: All viable treatment configurations — regardless of the enhanced lagoon technology chosen — will require common components, including a headworks facility, tertiary filtration, and disinfection units.
- Operational Considerations: Enhanced lagoon systems will demand greater daily involvement from OCWA operators. As part of the study, RVA will conduct outreach

to facilities currently using these technologies to gather operator feedback on feasibility, operational load, and seasonal performance.

- **MECP Engagement:** Two consultation meetings with the Ministry of Environment, Conservation and Parks (MECP) are included in the scope. These will be critical for evaluating regulatory acceptance, flexibility on discharge criteria (particularly during winter), and determining if a Class EA addendum will be required.
- **Cost Control & Risk Management:** RVA notes that selected technologies are proprietary, and any performance guarantees will be secured through bonding on monetary holdbacks to protect the Municipality's interest.

This report is for Council's information only. Any future direction regarding treatment technology, regulatory engagement, or budget implications will be brought forward under separate cover for Council's information and consideration.

FINANCIAL

The approved 2025 Capital Budget amount for the Enhanced Lagoon Treatment Feasibility Study is \$85,000.00. Based on the direction provided by Council at its May 7, 2025, meeting, Staff have proceeded with the continuation of services from RVA at a cost of \$82,151.00 (including HST).

This will be included as part of future budget variance reporting.

ATTACHMENT

- Parkhill Wastewater Treatment Facility – Enhanced Lagoon Long-Term Treatment Options Feasibility Study – R.V. Anderson Associates Limited

Prepared By: **Sam Shannon, Director of Infrastructure and Operations**

Reviewed By: **Ralph D'Alessandro, Director of Finance/Treasurer**

Approved By: Carolyn Tripp, Chief Administrative Officer