

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING OF JUNE 7, 2017
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT	PERMISSION FOR GE WATER AND PROCESS TECHNOLOGIES TO PILOT TEST AT THE OXFORD WASTEWATER TREATMENT PLANT

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer the following actions **BE TAKEN**, related to granting GE Water and Process Technologies (GE Water) permission to pilot test at the Oxford Wastewater Treatment Plant.

- a. The Agreement (attached) between the City of London and GE Water, **BE APPROVED**; and
- b. The proposed by-law attached as Appendix A, **BE INTRODUCED** at the Municipal Council Meeting of June 13, 2017, to approve an Agreement with GE Water to conduct research at the Oxford plant, and to authorize the Mayor and City Clerk to sign the agreement.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

None

2015-19 STRATEGIC PLAN

The following report supports the Strategic Plan through a focus on Building a Sustainable City through pilot testing new technologies with the potential to reduce energy consumption and the footprint of future wastewater treatment upgrades.

BACKGROUND

Purpose

This report seeks Municipal Council approval for GE Water and Process Technologies (GE Water) to pilot test their Membrane Aerated Biofilm Reactor at the City's Oxford Wastewater Treatment Plant (WWTP).

Context

GE Water has developed a new technology which significantly reduces energy consumption and the area required to treat a given amount of wastewater. This technology could help reduce energy consumption and expand treatment capacity in future plant expansions at the Oxford and other City WWTPs. The pilot will be installed in Section 1 which is not currently in use and will be entirely funded by GE Water.

DISCUSSION

The City of London hosts a Wastewater Technology Research Centre at the Greenway

WWTP and has long promoted the development of new wastewater treatment technologies, including offering much needed access for academic and institutional research. At the time of commissioning, the City's Oxford WWTP was the largest plant in Canada using membranes supplied by Zenon Environmental, which was subsequently purchased by General Electric and continues to operate as GE Water in Oakville Ontario. GE Water has developed a new Membrane Aerated Biofilm Reactor (MABR) technology which can complement the existing membrane systems or operate as a standalone technology. The MABR process offers significantly reduced energy consumption and plant footprint, both of which are major concerns as treatment plants are expanded and renewed.

A trailer mounted MABR pilot unit is currently operating at the Adelaide WWTP. GE is currently looking for a local operating WWTP at which to test a full scale MABR. Full scale pilots are complicated by the need to maintain the plant effluent quality during testing. The MABR pilot could not be accommodated at the Greenway research facility due to its size. Through discussions with GE, it was determined that the inactive section of the Oxford WWTP would be an appropriate location for the pilot. Using the inactive section would allow effluent from the MABR pilot to be recirculated through the plant and receive full treatment. City staff will operate and oversee both sections during the pilot testing.

The Ministry of Environment and Climate Change (MOECC) Innovations Branch was approached for support of the project and has provided a draft amended Environmental Compliance Approval (ECA) allowing minor modifications to the inactive section for up to two years while the pilot testing is completed. After two years, or within 60 days notification from either party, the GE Water equipment will be removed and the plant returned to its original state.

CONCLUSIONS

Allowing GE Water to pilot test their MABR technology at the Oxford WWTP offers a unique opportunity for City staff to evaluate the process for its potential application at City of London plants and for GE Water to test at a local operating WWTP. It will also allow GE Water to showcase an Ontario developed technology to potential clients from around the world.

Acknowledgements

This report was prepared with the help of Kirby Oudekerk, P.Eng. Environmental Services Engineer of the Wastewater Treatment Operations Division.

PREPARED BY:	REVIEWED AND CONCURRED BY:
GEORDIE GAULD, DIVISION MANAGER, WASTEWATER WASTEWATER TREATMENT OPERATIONS	JOHN LUCAS, P. Eng. DIRECTOR, WATER AND WASTEWATER
RECOMMENDED BY:	
KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER	

Attach:

Appendix A-By-law allowing GE Water to test at the Oxford Wastewater Treatment Plant

Appendix B-The Agreement

cc: GE Water and Process Technologies, 3239 Dundas Street W, Oakville, On L6M 4B2