

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON APRIL 17, 2018
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	SOUTHERN ONTARIO WATER CONSORTIUM LONDON WASTEWATER FACILITY: SUPPORT FOR LOCAL WATER RESEARCH AND DEVELOPMENT

RECOMMENDATION

That on the recommendation of the Managing Director Environmental and Engineering Services and City Engineer, the following actions **BE TAKEN** with respect to the City's involvement in water technology advancement:

- (a) An expansion to the number of available municipal infrastructure sites for technological research and demonstrations **BE ENDORSED** and
- (b) The concept of supporting Western University in expanding the current research partnership **BE ENDORSED**.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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October 6, 2015 Civic Works Committee – London Wastewater Facility Update, Operating Agreement and Next Steps

January 21, 2013 Civic Works Committee – Southern Ontario Water Consortium – London Wastewater Facility

April 23, 2012 -- Civic Works Committee – Water Technology Centre Pre-Design and Design Consultant Appointment.

August 15, 2011 -- Built and Natural Environment Committee -- Water Technology Centre Initiative Update

January 25, 2010 -- Committee of the Whole --, London Economic Development Corporation -- Key Initiatives

November 18, 2009 -- Board of Control -- Joint Venture to Secure FedDev SODP Funding for a Wastewater Technology Centre

October 7, 2009 -- Committee of the Whole -- London Strategic Economic initiatives

July 22, 2009 -- Board of Control -- Waste Water Technology Centre

2015 – 2019 STRATEGIC PLAN

The following report supports the 2015 – 2019 Strategic Plan through the strategic focus area of *Local, regional and global innovation*, by leading the development of new ways to resource recovery, energy recovery, and utility and resource optimization with local and regional partners to keep operating costs low and assist businesses with commercialization to help grow London's economy open, accountable, and responsive government, and providing excellent service delivery.

BACKGROUND

Purpose

The purpose of this report is to respond to the following Council resolution (Civic Works Committee Deferred Item #4):

*“The Civic Administration **BE DIRECTED** to report back on a review of the mandate and business plan of the International Water Centre of Excellence.”*

Context

In 2011 the Southern Ontario Water Consortium was established with funding from the Federal Economic Development Agency for Southern Ontario (FedDev). As one of the signature infrastructure projects of SOWC, the London Wastewater Facility was constructed at the Greenway Pollution Control Plant to support research and demonstrate wastewater technologies. The wastewater research facility is extremely well used and is currently booked to capacity. Given the success of the facility, there is interest in expanding the program to provide research and developmental opportunities at other City of London water, wastewater, and stormwater facilities.

DISCUSSION

Southern Ontario Water Consortium

The mission of the Southern Ontario Water Consortium is to support and foster collaboration among Ontario companies and post-secondary institutions to drive technology development and adoption and enhance economic development through the growth of the water sector in Ontario. Southern Ontario Water Consortium partners currently include Western University and the City of London, and University of Waterloo, Wilfred Laurier University, University of Guelph, University of Toronto, Ryerson University, University of Ontario Institute of Technology, McMaster University, Queen’s University, Fleming College, the City of Guelph and the Grand River Conservation Authority. Initial funding of \$20 million from FedDev and \$9 million from the Ontario Ministry of Research, Innovation and Science allowed the creation of a suite of facilities for water technology demonstration. Additional funding from FedDev in 2016 allowed SOWC to establish the Advancing Water Technologies program, a funding program to support technology development projects led by Ontario technology companies working with researchers from partner post-secondary institutions. The ongoing role of the consortium is to connect and make key introductions between private companies and academic researchers to accelerate and commercialize innovative water technologies.

Southern Ontario Water Consortium-London Wastewater Facility

The Southern Ontario Water Consortium-London Wastewater Facility is a research and development facility located at the Greenway Pollution Control Plant that consists of four indoor private testing bays. This facility was constructed at a cost of \$7,400,000, with approximately equal sharing of costs between the City and SOWC (FedDev), and an agreement with Western University to access the funding. Instrumental to the creation of this facility was the Southern Ontario Water Consortium. The Southern Ontario Water Consortium aided in the development of the original funding proposals and continues to foster relationships between prospective industries and Western University. Western University currently administers the London Wastewater Facility through an agreement with the City of London.

The 2010 business case for the International Water Centre of Excellence (subsequently renamed the Southern Ontario Water Consortium-London Wastewater Facility) states that the facility is required to “provide full-scale pre-commercial research and developmental and validation facilities for the development of best-in-class water/wastewater technologies for domestic and global markets”. The business case

indicated that the main roadblock to innovation in the wastewater technologies industry was the lack of full-scale research facilities for technology vendors to demonstrate the effectiveness of new technologies at a full operating scale.

The London Wastewater Facility at Greenway now exists to retain and attract water industry business to London, serve as a centre of excellence, stimulate the development of wastewater technology by facilitating advancement from product testing to market, and act as an economic generator for southwestern Ontario.

2015 – 2019 Strategic Plan Goals

The 2015-19 Strategic Plan for the City of London includes the following strategy related to the Southern Ontario Water Consortium-London Wastewater Facility:

Growing the Economy – 3B

- What are we doing? Lead the development of new ways to resource recovery, energy recovery, and utility and resource optimization with our local and regional partners to keep our operating costs low and assist businesses with commercialization to help grow London's economy.
- How are we doing it? International Water Excellence Centre (now the Southern Ontario Water Consortium-London Wastewater Facility)

There are currently two milestones related to this strategy:

1. Engage partners in a discussion on expanding research opportunities beyond the Greenway Water Demonstration Facility, and
2. Prepare corporate by-law changes to constitute the new business plan.

In alignment with the first milestone, city staff have reached out to the primary stakeholders—London Economic Development Corporation, Southern Ontario Water Consortium, and Western University—to explore the most appropriate means of expanding research and developmental opportunities in London. The second milestone contemplates using the “International Water Centre of Excellence” corporate entity to manage the research and developmental opportunities at City of London facilities. This approach is now being reconsidered, given the input of the various stakeholders.

A New Model for Facilitating Research and Development

During discussions with the various stakeholders, it was apparent that academic and industrial partners need the flexibility to respond quickly to funding opportunities and changes in the industrial marketplace. Stakeholders would also like access to a variety of infrastructure, including wastewater storage, combined sewer overflows, stormwater management, and “low impact development” infiltration facilities. The initially contemplated model of a corporate entity (the International Water Centre of Excellence) to manage the research and development opportunities at City of London facilities does not provide our stakeholders with the most value. Based on input from stakeholders, a new model for facilitating research using City of London infrastructure has been developed.

Rather than a highly structured corporate entity, it is recommended that research and developmental opportunities be fostered on a case-by-case basis through individual agreements developed in accordance with a series of governing principles. Each agreement would be submitted to Committee and Council for consideration and approval. The intention is that the City of London's role in this new model would be to facilitate research and development rather than actively pursue new researchers and industries. The new model for collaboration has been shared with the various stakeholders and will provide more flexible and responsive research opportunities. The role of connecting interested researchers and industries with the London Wastewater

Facility would be left to the Southern Ontario Water Consortium and our academic partners.

Research Model Governing Principles

A set of governing principles to guide the City's participation in future research and developmental activities has been created in order to ensure any research that proceeds, using City of London infrastructure, respects the interests of the City of London and its residents. The following principles are recommended to guide future partnership negotiations:

1. Ensure the health and safety of our workers, researchers, and the public are maintained at all times.
2. Develop project-specific risk assessments to ensure that proposed research projects do not have an adverse impact on city infrastructure, or place the City at regulatory risk.
3. Ensure perspective partners have an appropriate amount of insurance coverage for both their researchers and work activities.
4. Ensure that industrial clients are at arm's length from the City and do not conflict with *Municipal Act* bonusing provisions.
5. Ensure city costs for research and development are low, and/or provided in the form of in-kind amounts, and that there is available staff capacity to facilitate the work. All utility costs related to the research and development project are to be recovered.
6. Prioritize research opportunities that provide new technologies that aid in the delivery of clean, cost-effective, and sustainable water services.

The intent of these governing principles is to recognize the City's responsibilities under the Municipal Act, manage risk, and set objectives to maximize the benefit to the city and our stakeholders.

Western University Research Partnership

Western ranks as one of Canada's top research-intensive universities. The faculty of engineering includes many highly recognized faculty with a significant amount of expertise and interest in water related research. Western University has expressed interest in expanding its research opportunities to other facilities and water services, including stormwater and sewer overflows. They, in turn, are considering the concept of a centre for research with a focus on water innovation. The centre would include faculty from chemical and biochemical engineering, and civil and environmental engineering, and would include 12 faculty members. This proposed centre would conduct research related to water reuse in regions of water stress, protection of source water, wastewater resource recovery, drinking water supply and treatment, and stormwater management. The City of London owns many facilities that may provide opportunities for research that align with these objectives.

Remaining Strategic Plan Milestone and Next Steps

Given the changes in the water industry, and current discussions with Western University, it is recommended that the consideration of a city-led corporate entity based business plan be abandoned, and that the overall strategy be refocused to support Western University in expanding our current research partnership. This initiative would be led by Western University and would be supported through partnership agreements on a site-by-site basis. These agreements would be brought forward to Committee and Council for approval. City staff will continue to work with Western University, the Southern Ontario Water Consortium and other industrial stakeholders to provide the opportunity to use City of London infrastructure for water research and development.

CONCLUSION

The City, with others, established the Southern Ontario Water Consortium-London Wastewater Facility to support research and the demonstration of wastewater technologies. Based on discussions with the primary stakeholders (London Economic Development Corporation, Southern Ontario Water Consortium, and Western University) a new model has been proposed to facilitate water related research that meets the intent of the 2015 – 2019 Strategic Plan. City staff will continue to work with Western University to formalize their concept for a water-focused research centre. The governing principles outlined in this report will form the basis for any future partnership with Western University or other perspective partners.

SUBMITTED BY:	REVIEWED AND CONCURRED BY:
SCOTT MATHERS, MPA, P. ENG. DIRECTOR, WATER AND WASTEWATER	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER

Attach:

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