

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON OCTOBER 6, 2015
FROM:	JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	THAMES RIVER EXPERIMENTAL STREAM SCIENCE FACILITY AT ADELAIDE POLLUTION CONTROL PLANT

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the attached proposed by-law (Appendix A) **BE INTRODUCED** at the Municipal Council meeting to be held on October 13, 2015 in order to:

- a) authorize and approve an agreement for Consent to Enter for Western University for the purposes of conducting research at the site of the Adelaide Pollution Control Plant; and
- b) authorize the Mayor and the City Clerk to execute the Agreement authorized and approved in a), above.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- None

BACKGROUND

PURPOSE

The purpose of this report is to provide the Civic Works Committee and Council with information on the following:

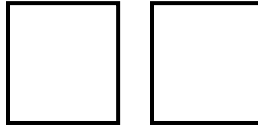
- Introduce a by-law to permit the operation of a research facility, titled the Thames River Experimental Stream Science (or TRESS) facility at the Adelaide Pollution Control Plant
- Seek authorization and approval to execute the Consent to Enter Agreement.

CONTEXT

The City of London has undertaken several co-operative research projects with Western University over the past several years. The subject of this report is a collaboration with Dr. Adam Yates from the Geography Department to establish a “mesocosm experiment” called the “Thames River Experimental Stream Science” (or TRESS) facility. A mesocosm is an experimental tool that brings a small part of the natural environment under controlled conditions for testing purposes. The goal is to mimic natural stream conditions using artificial streams to model chemical and physical changes to stream environments. A fenced compound at Adelaide Pollution Control Plant (PCP) will provide a secure space with available electrical power and water services for their use. The results will assist in watershed management and informing stream management locally and across Southwestern Ontario. This is especially relevant given the renewed interest both provincially and federally in Great Lakes water quality.

DISCUSSION

City of London has long recognized the benefits of collaborating on research with our local university. This interest in collaboration continues at Western University, and the most current area of research is outlined in this report.



With the encouragement of our partners in the Thames River Clear Water Revival, and the availability of space at the Adelaide Pollution Control Plant, we have been able to secure a fenced area and the necessary services for this important research to take place in London. The siting of the research location at the Adelaide PCP takes advantage of the close proximity of the North Thames River and several area streams such as Medway, Stoney and Pottersburg Creeks. This allows for calibration and validation of the artificial streams being constructed in the mesocosm. Currently, the facility has been constructed with six (6) artificial streams with approximately 6.5 metres of channel length each with associated stream substrate and biological life. Research work is expected to begin this fall session 2015.

The attached proposed by-law included with this report seeks the necessary authorization and approval for the research activity that is constructed. The site will be used by Western researchers for the next 2 years at the Adelaide PCP site ending in April 2017. The by-law establishes the legal framework using a Consent to Enter Agreement (Schedule “1” to the by-law) between the University and the City, covers the description of work being done (Schedule “A” to the Agreement) and provides a map showing the designated space for the research facility location within the Adelaide PCP site (Schedule “B” to the Agreement). The designated space is a relatively small area approximately 30 metres square in the extreme northwestern corner of the PCP site that is fenced off from the total area (approximately 200 metres square). The designated research space takes advantage of an unused grassed area that is surplus to the PCP operations where a separate pedestrian gate and lock has been installed in the existing perimeter fence for exclusive use by the researchers. This dedicated access enables uninterrupted work between staff of the PCP and the research facility. City investment has been approximately \$10,000. Ongoing costs to the City will be incidental in nature.

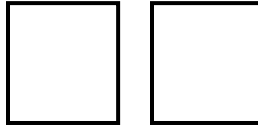
ACKNOWLEDGEMENTS

This report and background material was prepared with assistance from Tom Copeland (Wastewater & Drainage Engineering), Dan Huggins (Water Operations), Richard Atkinson (Wastewater Treatment Operations) and David Munteer (Legal & Corporate Services).

PREPARED BY:	PREPARED BY:
GEORDIE GAULD DIVISION MANAGER WASTEWATER OPERATIONS	PATRICK DONNELLY MANAGER – WATERSHED PROGRAMS ENVIRONMENTAL PROGRAMS
REVIEWED & CONCURRED BY:	RECOMMENDED BY:
JOHN LUCAS, P. ENG. DIRECTOR, WATER and WASTEWATER	JOHN BRAAM, P. ENG. MANAGING DIRECTOR - ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER

Appendix A – Proposed By-law

- c.c. Dr. Adam Yates, Geography Department, Western University
- Peter White, Executive Director, Government Relations and Strategic Partnerships, Western University



APPENDIX A

Bill No.
2015

By-law No. A.-

A by-law to authorize and approve an Agreement between The Corporation of the City of London and The University of Western Ontario for the use of space at the Adelaide Pollution Control Plant for a research experiment (termed a Mesocosm) and to authorize the Mayor and the City Clerk to execute the Agreement.

WHEREAS section 5(3) of the *Municipal Act, 2001* S.O. 2001, c.25, as amended, provides that a municipal power shall be exercised by by-law;

AND WHEREAS section 9 of the *Municipal Act, 2001* S.O. 2001, c.25 as amended, provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under this or any other Act;

AND WHEREAS it is deemed expedient for The Corporation of the City of London to enter into an Agreement with University of Western Ontario for the Mesocosm experiment;

AND WHEREAS it is appropriate to authorize the Mayor and the City Clerk to execute the Agreement on behalf of The Corporation of the City of London;

NOW THEREFORE the Municipal Council of The Corporation of the City of London enacts as follows:

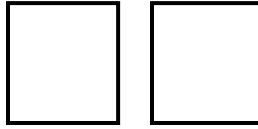
1. The Agreement attached as Schedule "1" to this by-law, being an Agreement between The Corporation of the City of London and University of Western Ontario is hereby authorized and approved.
2. The Mayor and the City Clerk are hereby authorized to execute the Agreement authorized and approved under Section 1 of this by-law.
3. This By-law shall come into force and effect on the day it is passed.

PASSED in Open Council on October 13, 2015.

Matt Brown
Mayor

Catharine Saunders
City Clerk

First Reading – October 13, 2015
Second Reading – October 13, 2015
Third Reading – October 13, 2015



CONSENT TO ENTER AGREEMENT

BETWEEN:

THE CORPORATION OF THE CITY OF LONDON
 (hereinafter called the "City") and

THE UNIVERSITY OF WESTERN ONTARIO
 (hereinafter called the "Western University")

WHEREAS the City operates the Adelaide Wastewater Treatment Plant located at 1159 Adelaide Street North (the "Facility");

AND WHEREAS Western University has requested permission to use a portion of the Facility for the purpose of conducting research;

AND WHEREAS the City has agreed to permit Western University to use a portion of the Facility as more particularly described herein for the purpose of conducting research;

FOR VALUABLE CONSIDERATION, the receipt and sufficiency of which is hereby acknowledged, the City hereby consents to the entry into the Adelaide Wastewater Treatment Plant pollution control plant by Western University and its employees, authorized representatives and consultants with all necessary machinery and equipment, for the purpose of conducting research.

Western University shall have, during the term of this Agreement, the exclusive right to occupy and use that portion of the Facility as shown in the Schedule B attached (the "Designated Space").

Western University's use of the Designated Space shall be for the purposes of the Mesocosm Project as detailed in Schedule A (the "Project") . In connection with the Project, Western University shall have the right to:

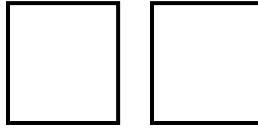
- a) connect to the electrical system of the Facility;
- b) connect to the water system of the Facility through connection provided.

The term of the Project shall be from May 1, 2015 to April 30, 2017.

Any alterations to the Designated Space shall be at Western University's expense and approved by the City's Site Manager, who shall also approve any contractors that will make alterations to the Designated Space. Western University shall prepare a Health and Safety Plan (the "Plan") with respect to the Designated Space for its employees, authorized representatives and consultants. The Plan will be reviewed by the City's Site Manager.

Western University and its employees, authorized representatives and consultants shall comply with the Facility Fire Safety Plan and other policies and procedures applicable to the Facility provided to Western University by the City.

To the best of its knowledge, Western University agrees that its activities in the Designated Space and the Facility will not interfere with the ongoing operation by the City of the Facility as a wastewater treatment plant. Western University shall maintain comprehensive general liability insurance on an occurrence basis for an amount of not less than Five Million (\$5,000,000.00) Dollars and shall include the City as an additional insured with respect to



Western's occupancy and use of the Designated Space and the Facility. In addition, Western University shall maintain automobile liability insurance for an amount of not less than Two Million (\$2,000,000.00) Dollars on forms meeting statutory requirements covering all owned or leased vehicles. Western University agrees to provide evidence of continued insurance coverage from insurer(s) licensed to operate in Canada annually in a form acceptable to the City at each policy renewal date during the term of this Agreement.

Western University shall indemnify and save harmless the City and its council members, officers, employees and agents from any and all liability, loss, claims, demands damages and costs caused in whole or in part by the negligent acts, errors or omissions of Western University or anyone for whose acts it is responsible in law.

The City shall indemnify and save harmless Western University and its officers, employees and agents from any and all liability, loss, claims, demands damages and costs caused in whole or in part by the negligent acts, errors or omissions of the City or anyone for whose acts it is responsible in law.

The City reserves the right to enter the Designated Space for the purpose of determining compliance with this Agreement provided the City's Site Manager gives Western University reasonable notice of such entry.

The City reserves the right to terminate the right of entry and occupancy hereby granted by giving Western University thirty (30) days' written notice. Upon receipt of such notice, Western University shall immediately vacate the Designated Space and remove all its equipment and material.

Any approvals required by this Agreement may take any form, provided such approval is confirmed in writing as soon as possible.

Western University shall not assign this Agreement without the consent of the City, which consent may be unreasonably withheld.

This Agreement shall ensure to the benefit of and be binding upon the parties and their respective successors and approved assigns.

DATED at London this day of October, 2015.

THE CORPORATION OF THE CITY OF LONDON

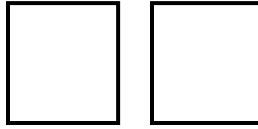
M.Brown, Mayor

Catharine Saunders. City Clerk

THE UNIVERSITY OF WESTERN ONTARIO

Dan Sinai, Associate Vice President, Research

I have the authority to bind the University



Schedule A

Statement of Work:

The goal of the project is to establish thresholds of key indicators of riverine ecological health to nutrient exposure for the Thames River and other Great Lakes tributaries using artificial mesocosm experiments.

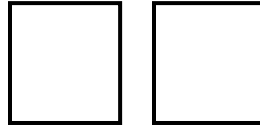
The establishment of ecological thresholds will be achieved through a series of exposure experiments over the two year period, beginning on September 1, 2014 and ending on August 31, 2016. There may be opportunities for additional studies in following years), in which case, this Agreement will be amended if agreed to by both parties.

We will use a set of mobile artificial stream mesocosm units (approximately 8) which will be temporarily located at the City of London's Adelaide Pollution Control Plant. Mesocosms consist of a flume with a partial recirculation system supplied by a series of pumps connected to reservoir tanks. Mesocosms will use City of London drinking water with controlled additions of nitrogen and phosphorus forms to generate exposure conditions.

Stream biotic communities will be seeded into the mesocosms through the transfer of gravel substrate from nearby streams.

Experiments will occur over 3 - 4 four week periods throughout the summer months (June through September).

During the experiments biological and chemical measurements will be made over daily to weekly intervals. Mesocosm units will be partially dismantled and disconnected from water and electrical connections during the non-operational months (November through April). All units and supporting equipment will be removed from City of London property following the completion of the 2016 experimental season.



Schedule B

Designated Space:

at

Adelaide Pollution Control Plant

Photo below shows the Designated Space (see red outline) and the location of Mesocosm and related services (see inset photo).

