TO:	**CHAIR AND MEMBERS WASTE MANAGEMENT WORKING GROUP MEETING ON JUNE 14, 2017**
FROM:	**JAY STANFORD, M.A., M.P.A. DIRECTOR - ENVIRONMENT, FLEET & SOLID WASTE**
SUBJECT:	**UPDATE REPORT #2: PROGRAMS, PROJECTS AND PROVINCIAL ACTIVITIES THAT WILL INFORM AND/OR INFLUENCE STRATEGIES**

RECOMMENDATION

That, on the recommendation of the Director - Environment, Fleet and Solid Waste, this report **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

Relevant reports that can be found at www.london.ca under City Hall (Meetings) include:

- Update and Next Steps – Resource Recovery Strategy and Residual Waste Disposal Strategy as part of the Environmental Assessment Process (February 7, 2017 meeting of the Civic Works Committee (CWC), Item #10)

Relevant reports that can be found at www.london.ca under City Hall (Meetings – Advisory and other Committees) include:

- Resource Recovery Update (January 19, 2017 meeting of the Waste Management Working Group (WMWG), Item #7)

COUNCIL'S 2015-2019 STRATEGIC PLAN

Municipal Council has recognized the importance of solid waste management in its 2015-2019 - Strategic Plan for the City of London (2015 – 2019 Strategic Plan) as follows:

Building a Sustainable City
- Strong and healthy environment
- Robust infrastructure

Growing our Economy
- Local, regional, and global innovation
- Strategic, collaborative partnerships

Leading in Public Service
- Proactive financial management
- Innovative & supportive organizational practices
- Collaborative, engaged leadership
- Excellent service delivery

BACKGROUND

PURPOSE:

This report provides the Waste Management Working Group with an update on a number of projects, programs and provincial activities that will inform and/or influence the Resource Recovery and Residual Waste Disposal Strategies. This update covers the period January 1 to June 1, 2017.

CONTEXT:

The January 19, 2017 WMWG report (Update #1) contained 2016 overview details in the following areas:

- Part A - Background on current waste diversion and resource recovery system includes a mixture of provincially mandated programs, Council directed initiatives and some minor activities in the business sector that contribute to provincial waste diversion goals and objectives.

- Part B - New Senior Government Legislation & Policies (including Appendix A)

- Part C - London Waste to Resources Innovation Centre (including Appendix B)

- Part D - Recent Activities in Resource Recovery

During the discussion of the above noted report, two other topics were raised:

- Managing food and avoiding food waste at City Hall

- A specific focus on institutional waste, recyclables and organics

Both these items are discussed in the next section.

DISCUSSION

Waste Free Ontario Act

In November 2015, the Minister of the Environment and Climate Change introduced a new legislative framework for managing waste in Ontario under Bill 151, *Waste Free Ontario Act (WFOA)*. The legislation is comprised of two Acts, the *Resource Recovery and Circular Economy Act* (RRCEA), and the *Waste Diversion Transition Act* (WDTA). Accompanying the proposed legislation was a draft Strategy for a Waste Free Ontario: Building the Circular Economy to support Ontario in achieving its goals.

Bill 151 received Royal Assent in June 2016 and was proclaimed November 30, 2016.

The Ministry of Environment and Climate Change (MOECC) published the final Strategy for a Waste-Free Ontario: Building the Circular Economy in February 2017, a requirement of the WFOA, which outlines a road map for resource recovery and waste reduction for Ontario. It also:

- sets a vision and goals including interim waste diversion goals for 2020, 2030 and 2050;
- articulates key government actions to support implementation of the vision and goals; and
- identifies performance measures to measure progress towards achieving the vision and goals.

The Strategy focuses on moving Ontario towards a circular economy described as “a system where nothing is wasted and valuable materials destined for landfill are put back into the economy without negative effects on the environment.” This approach – a circular economy – has the potential to reduce greenhouse gas emissions, save and better utilize scarce resources, create jobs and create financial opportunities.

City of London

In addition to ongoing efforts to maintain and/or improve existing waste diversion/resource recovery programs, listed below are additional initiatives that have been underway to assist with the advancement of waste prevention and resource recovery. The updates are for the period January 1 to June 1, 2017.

Initiative	Updates – January 1 to June 1, 2017
Organics Management	• A Green Bin Program update will be submitted to the Civic Works Committee (CWC) and the Waste Management Working Group in the fall 2017 to coincide with the development of an implementation plan. This date has been revised from May/June to accommodate the results of the Household Food Waste Survey (below). • MOECC has just released a discussion paper, "Addressing Food and Organic Waste in Ontario", to serve as the basis for preliminary discussions with stakeholders to inform the development of the Food and Organic Waste Framework. The Food and Organic Waste Framework will aim to: ◦ *"Reduce the amount of food that becomes waste* ◦ *Remove food and organic waste from the disposal stream* ◦ *Reduce greenhouse gas emissions that result from food and organic waste* ◦ *Support and stimulate end markets that recover the value from food and organic wastes* ◦ *Increase accountability of responsible parties* ◦ *Improve data on food and organic waste* ◦ *Enhance promotion and education regarding food and organic waste.* *The intent of this Discussion Paper is to offer an early opportunity for Ontarians to provide input towards the development of a Food and Organic Waste Framework. This Discussion Paper will assist the Ministry of the Environment and Climate Change in gathering information and collating the various opinions of the general public and stakeholders on the following discussion topics:* ◦ *The Scope of the Food and Organic Waste Framework* ◦ *Actions to reduce food and organic wastes going to disposal* ◦ *Actions to support processing capacity and end-markets for food and organic wastes"*
Community Impacts from Facilities in the general vicinity of Shaver-Brockley communities (general south of Highway 401)	• On November 10, 2016 a community meeting was held by representatives of the Shaver-Brockley communities in regard to a number of current and ongoing concerns with industrial facilities in an area south of the Highway 401. This general location also includes a number of City owned facilities. • Mayor Brown and Councillor Usher brought the concerns to Planning & Environment Committee (PEC) on November 28, 2016 which resulted in the following direction to City staff approved by Municipal Council on December 6, 2016: *"The Civic Administration BE DIRECTED to report back to a future meeting of the Planning and Environment Committee with an update relating to what measures have been and could be undertaken to address the negative impacts that the industrial uses in the area are having on the Shaver-Brockley community and surrounding area and what the City of London can do to mitigate the impacts."* • A Public Participation Meeting (PPM) will occur on August 28, 2017 at which time City staff will present their report along with comments from the public.

Initiative	Updates – January 1 to June 1, 2017
Avoiding Food Waste	• Household Food Waste Survey, designed and implemented by Western University, started on May 24 and will be open for participants until the end of June 2017. • Implementation of a food waste avoidance (management) pilot project with Western University (fall 2017). • Cafeteria services has been made aware of the desire to examine opportunities. • Further discussions and brainstorming will occur over the summer months on ideas that can be incorporated and/or tested in the fall
Home Composting/ Community Composting	• Continued engagement in community efforts that support composting education, including home composting and community composting at multi-residential buildings. • Draft Urban Agriculture Strategy has references and activities associated with home and community composting and recovery of food waste. A future report will be presented by Planning Services to the Planning & Environment Committee in the summer.
Mixed Waste Processing	• London is one of seven Ontario municipalities that is part of a Municipal Working Group for Mixed Waste Processing (led by the Region of Peel). • Ongoing discussions and information sharing with Working Group. Next meeting scheduled for June 20, 2017. • Additional documentation and analysis being prepared by City staff (with support from technical experts) for City of London Resource Recovery Strategy throughout 2017.
Institutional Waste, Recyclables and Organics	• No additional work undertaken by City staff on this subject and/or the broader industrial, commercial and institutional (IC&I) waste stream. • Details provided in the January 19, 2017 report remain best available information.
Biogas and Renewable Natural Gas (RNG) Production from Waste	• The Canadian Biogas Association, City of London and Union Gas worked together to assess the economic feasibility and environmental benefits of producing biogas by anaerobically digesting the organic fraction of the City's residential waste stream, and subsequently converting the biogas to renewable natural gas (RNG) for use in compressed natural gas (CNG) vehicles. This work as part of the City's investigation of options for the management of the organic fraction of its residential waste. In this report, two scenarios are considered: collecting and anaerobically digesting source separated organic (SSO) materials or anaerobically digesting organic materials separated from a mixed waste stream at a processing facility (facility-separated organics (FSO)). The report is complete as of April 2017. • Results to be incorporated in Resource Recovery Strategy documentation.
London Waste to Resources Innovation Centre (with a focus on new, emerging, and/or next generation technologies)	Two Memorandums of Understanding (MoU) approved by Council: • Green Shields Energy (GSE) - a working relationship to explore the viability of a Gas Phase Reduction (GPR) technology for managing solid waste. The process comprises heating vaporized organic material in the presence of an excess amount of hydrogen gas and superheated steam to produce a methane rich fuel syngas. The syngas can be converted to various fuels or burned directly to create energy. The expiry date of this MoU is December 31, 2017.

Initiative	Updates – January 1 to June 1, 2017
London Waste to Resources Innovation Centre (with a focus on new, emerging, and/or next generation technologies) (continued from previous page)	• Western University (Institute of Chemicals and Fuels from Alternative Resources - ICFAR) – a working relationship covering the broad sectors of solid waste management, biomass management and related sectors that produce waste materials. The work plan is under development with Western/ICFAR. Initial actions have started. The expiry date of this MoU is December 31, 2019. Three MoUs are going through the approval stages with reports at the June 7, 2017 Civic Works Committee: • Hawthorne Thorne Green Key Group - Hawthorne has the Canadian rights to the Tucker Advanced Pyrolysis Technology, known as the Pyrolator, a patented “non-burn technology” with numerous economical and environmental advantages over both traditional burn (combustion – energy-from-waste) technologies, gasification, and pyrolysis technologies. The pyrolator can process a variety of organic feedstocks including residual waste (municipal solid waste/garbage), woody biomass, agricultural waste, diapers, hospital waste, carpet, coal, and tires. • Bio-Techfar - Bio-Techfar have developed a proprietary pyrolysis technology, referred to as the BT-100/500, that has successfully converted a range of biomass materials into pyrolysis-oil and pyrolysis-char for both energy and non-energy applications. The technology utilizes a mechanically fluidized reactor (MFR). Bio-Techfar now wants to increase the technology throughput for biomass materials such as forestry residuals, agricultural residuals, yard waste and other industrial or municipal biomass materials/waste streams. Try Recycling - Try Recycling will be looking at new beneficial use products including solid recovered fuel (SRF) (from size reduction of bulky and other items); unwanted (end-of-life) bulky items like couches, mattresses; and enhanced/customized soil conditioners.
Garbage & Resources (Recyclables, Food & Other Organics) Collection Systems	Council has directed City staff to report back on two garbage and resource collection programs by December 2017: • a Business Case including a detailed feasibility study of options and potential next steps to change the City’s fleet of garbage packers from diesel to CNG. • an Options Report for the introduction of a semi or fully automated garbage collection system including considerations for customers and operational impacts.
Recycling in Downtown	• Recycling Engagement and Program Development for downtown – Council direction – will start in July and conclude with report to Civic Works Committee in late 2017/early 2018
Landfill Gas Recovery to Energy	• Submission of an application to the Feed-in-Tariff (FIT) program for the development of a 500kW power plant using approximately 15% of the landfill gas currently captured at the W12A Landfill to produce green electricity. Details on the application should be available in the third quarter of 2017. If the application passes the connection testing and is included in the Offer List, the project will be developed in 2018/2019. (It is important to note that this FIT program is oversubscribed, and the group of applications moving forward for connection testing is significantly greater than the 150 MW procurement target for this FIT program. Therefore, not all applications moving forward will receive an Offer Notice.)

Initiative	Updates – January 1 to June 1, 2017
Landfill Gas Recovery to Energy (continued from previous page)	• Completion of a Business Case to evaluate the feasibility of converting all (in the event FIT application not accepted) or the remaining portion of captured landfill gas at W12A to RNG for either direct City fleet use or pipeline injection. It should be noted this would be done in conjunction with other evaluations involving RNG and potential fleet use that the City is planning to undertake. This work is scheduled for late 2017, early 2018.
Landfill Planning and Management in Ontario	• The MOECC has released a request for proposals for consulting services to study landfill planning and management in Ontario. This study will consider "o*ptions and recommendations for Ontario's approaches for planning and managing Landfills both at a regional and provincial scale, learning from best practices of other jurisdictions and an assessment of social, environmental and economic implications of options and recommendations."*
Landfill Best Practices	• The MOECC is undertaking a review of appropriate hydrogeological settings for landfills in Ontario.

ACKNOWLEDGEMENTS

This report was prepared with assistance from Mike Losee, Division Manager, Solid Waste Management and Anne Boyd, Manager, Waste Diversion.

PREPARED BY:	
WESLEY ABBOTT, P. ENG. **PROJECT MANAGER** **SOLID WASTE MANAGEMENT**	
PREPARED AND RECOMMENDED BY:	**CONCURRED BY:**
JAY STANFORD, M.A., M.P.A. **DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE**	**KELLY SCHERR, P.ENG., MBA, FEC** **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**