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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON APRIL 7, 2014
FROM:	JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	TIMELINE FOR MAJOR ENVIRONMENTAL & ENGINEERING REPORTS

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the following report **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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Various reports on these subject matters are found at www.london.ca, search Council Meetings.

BACKGROUND

PURPOSE & CONTEXT:

The purpose of this report is to provide Civic Works Committee and Council with a preview of the major reports that will be delivered in 2014 (and possibly into 2015) in the areas of:

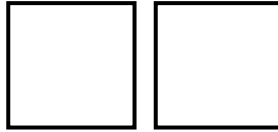
- Roads & Transportation Services
- Solid Waste Services & Environmental Programs
- Water Services
- Wastewater Services

We view these reports and highlighted subject matters as extremely important to the future direction of our major service areas and for the residents, businesses, institutions and visitors to London. These service updates, plans and implementation strategies are an essential part of the foundation of services for London and will highlight future potential direction. In addition, areas that will be optimized to contain and/or reduce cost; economic development opportunities while meeting our environmental and Council mandates and community expectations will be highlighted.

The basis of these updates, plans and implementation strategies is Council's Strategic Plan notably and the Five Key Results that contribute to the high quality of life in London:

- A Strong Economy
- A Vibrant and Diverse Community
- A Green and Growing City
- A Sustainable Infrastructure
- A Caring Community

We are pleased to highlight our work with Committee and Council, other Service Areas within the Corporation, our agencies, board and commissions, and the community and businesses of London is what drives and inspires us every day. We are a 24/7 operation and continue to strive to deliver sustainable services that meet the needs of the community. We are also a key part of London's continued economic recovery.

**DISCUSSION:****ROADS & TRANSPORTATION SERVICES**

The City of London is responsible for a transportation system that promotes the movement of goods and services to strengthen our economic growth, provides for sustainable transportation and mobility choices for residents that improve our quality of life and shape our community, and ensure that our roads and bridges remain safe and in good repair. Good roads and structures promote business, create employment, provide social opportunities, create markets, and save lives.

The City owns, operates and maintains approximately \$2.1 billion of transportation infrastructure. The value of these assets translates to an average of \$20,400 per property or \$5,700 per resident.

The major initiatives for the Roads and Transportation focus on the themes of *Optimization*, *Mobility* and *Sustainability*. The goal of these multiyear initiatives is to improve the overall performance of the transportation system in a cost effective manner while meeting the needs of our residents. These initiatives are based on the principle of Fiscal Responsibility while at the same time providing Sustainable Infrastructure, promoting a Strong Economy and allowing for a Green and Growing City.

Report: **Sustainable Transportation Master Plan Implementation - Sustainability**

Date: Early 2015

Description: The Transportation Infrastructure Gap report identified the long term infrastructure needs for Transportation lifecycle, growth and BRT needs. The next step is to develop a long term Financial Implementation Strategy to address the Transportation Infrastructure Gap as part of the overall Corporate Asset Management Strategy.

A key component of the implementation will be the finalization of the 2014 Development Charges that will incorporate the 20 year plan for transportation growth infrastructure.

The Corporate Asset Management Strategy will examine the current and future investment priorities and the delivery of services with a view towards mitigating growth of the infrastructure gap; including examination of the current reserve levels used for life cycle renewal activities.

Transportation is one of the two service areas that will under a pilot trial to implement Asset Management from start to finish developing the parameters and procedures for corporate asset management.

Report: **Rapid Transit - Mobility**

Date: Mid 2015

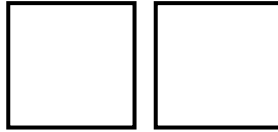
Description: The City is undertaking an Environmental Assessment for the Rapid Transit Corridors identified in the Transportation Master Plan.

The Rapid Transit Corridor Environmental Assessment will evaluate options and confirm the preferred form of rapid transit, detail the corridor improvements required to accommodate rapid transit, refine the implementation timing, and determine in greater detail the overall costs associated with the corridors.

Report: **Update – Bike Master Plan and Implementation Actions - Mobility**

Date: Mid 2015

Description: The City is updating the 2005 Bike Master Plan in light of the outcomes on the 2030 Transportation Master Plan (TMP) and London Road Safety Strategy, the future role of the Rapid Transit system, and the community engagement that has occurred as part of the TMP, London Road Safety Strategy, Rethink Energy London and ReThink London.



The Update will be undertaken as a multi service area project with Planning and Parks & Recreation staff part of the steering committee along with EES staff from several areas including Transportation & Design, Transportation & Roadside Operations and Environmental Programs). Community engagement using both existing channels and new approaches, including the newly created Cycling Advisory Committee, to ensure that new input is received in addition to what has been received to date.

Report: **Transportation Energy Optimization Plan (TEOP) - Optimization**
 Date: Early 2014
 Description: The TEOP plan will review options for the reduction of energy associated with street lighting. The goal will be to reduce energy consumption through alternative lighting standards (time of use) and a potential staged City wide conversion to LED lighting for street lighting.

There are 20,300 cobra-style HPS street lights with wattage ranging from 70 to 400W. Replacement of these fixtures with energy efficient LED fixtures could reduce energy consumed by these fixtures by 33% and help mitigate rising energy costs within the operating budget.

As part of the process, alternative funding mechanisms for the implementation of the plan will be reviewed to determine the most cost effective manner in moving forward.

SOLID WASTE SERVICES & ENVIRONMENTAL PROGRAMS

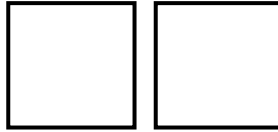
The City of London continues to operate and administer a fully integrated solid waste management program that has a solid foundation. We believe these four pieces are the foundation of London's sustainable waste management system:

- London has achieved 44% waste diversion and its waste management system cost is one of the lowest in Ontario and in Canada.
- London can boast about the fact that it has about 10 years of available, approved waste disposal capacity within its boundaries.
- Future waste diversion and resource recovery decisions, which will be more costly than the current system, will be made without a waste management (disposal) crisis hanging over elected official's heads, and
- Our waste management system is based on a Continuous Improvement Strategy (management philosophy) and sustainable waste management concepts.

In December 2013, a report entitled Road Map 2.0 – The Road to Increased Resource Recovery and Zero Waste was released for community engagement. In addition, significant discussion occurred on the future of recycling and garbage pickup schedules and waste management system costs. This work carries into 2014 and beyond noting that staff bring to Committee and Council's attention implementation plans for approval on program changes that are prepared and ready to go and consistent with Council direction and community expectations. A significant setback in 2013 was Bill 91, the proposed Waste Reduction Act, remained stuck in debate at Queen's Park.

Report: **Final Report - Road Map 2.0 – The Road to Increased Resource Recovery and Zero Waste**
 Date: June-July 2014
 Description: After 5 months of public information and community engagement, City staff will present the outcomes and propose a multi-phase program to increase waste diversion and resource recovery in London. This report will balance community expectations, environmental benefits, economic benefit and financial constraints. Key areas being examined include:

- recycling, Material Recovery Facility (MRF) operations and the status of extended producer responsibility (EPR)
- organics management from food waste reduction to community and large scale composting
- the role of the multi-materials Community EnviroDepots



- encouraging and engaging Londoners and potential roles for businesses
- the role for new, emerging and next generation technologies, and
- potential adjustments to recycling and garbage collection

Report: **Part Two: Resource Recovery and Waste Conversion Technologies and the Role of the W12A Landfill Site**

Date: Winter 2014 - 2015

Description: The W12A Landfill Site is one of the most important assets owned by the City as it ensures that remaining garbage from residents and business of London can be managed within our boundaries at an affordable cost. The key to protecting this asset is the need to meet or exceed all environmental requirements and maintaining an open and positive relationship with the neighbourhood around the W12A Landfill area and Material Recovery Facility (MRF). Road Map 2.0 – The Road to Increased Resource Recovery and Zero Waste contained available details and identified the limitation with existing information and experience in North America with respect to certain resource recovery and waste conversion technologies. This report will provide further detail in the following areas:

- Overview of Resource Recovery and Waste Conversion Technologies including facility costs, economic development opportunities, environmental and community concerns and benefits
- The role of the W12A Landfill including operations, Landfill and Waste Diversion/MRF Reserve Funds and capital requirements (20 and 40 year forecasts)
- Update on the W12A Landfill Community Enhancement and Mitigative Measures Program

Report: **Environmental Assessment Requirements (Terms of Reference) for Long Term Resource Recovery, Waste Conversion and Waste Disposal**

Date: September 2014

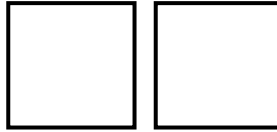
Description: Waste quantity projections suggest that the W12A Landfill has between 8 and 15 years of capacity remaining depending on how residential and business waste is managed in the future. Under existing conditions, it is estimated that the W12A Landfill has approximately 10 years of capacity remaining. It is strongly advised that the Environmental Assessment (EA) process, as prescribed by the Provincial Government, re-start in late 2014. The provincial Government released updated guidelines and protocols for Terms of Reference in January 2014. This report to CWC will provide a framework for moving forward with an EA, financial and resource requirements required to complete an EA, along with the major steps that are required.

Report: **Final Report – Community Energy Action Plan (CEAP)**

Date: May - June 2014

Description: After 4 months of public information and community engagement coupled with the previous work done under the banner Rethink Energy London (over 3 years), City staff will present the outcomes and propose a comprehensive approach to assist the community in reducing energy use, reducing the environmental impact of energy (e.g., greenhouse gas), increasing local economic benefits and creating a long-term platform for ongoing community engagement and actions. Londoners and London businesses – people – are the key to all areas. The major action plan elements include:

1. Policy Support for Community Energy Action Planning
2. Reporting and Education about the Economic and Environmental Considerations of Energy Use
3. Single-Family Homes
4. Multi-Unit Residential Buildings
5. Commercial and Institutional Buildings
6. Industry and Manufacturing
7. Stores and Restaurants
8. Local Energy Production and Cogeneration of Heat and Power
9. Vehicles and the Transportation System



WATER & WASTEWATER SERVICES

The City of London manages numerous aspects of drinking water, sewage collection and treatment, and storm drainage. These are 24/7 operations involving physical assets that have replacement values measured in billions of dollars. Services are expected as part of Londoner's daily lives, be it at home, at work or at play. The health and environmental effects associated with water in all its forms make these municipal services highly regulated by nature. Public expectations for quality of service are also high. Both of these reasons direct continuous improvements on the reliability, financial performance and public satisfaction with the services. Significant initiatives in 2014 on all of these fronts are in progress. The major ones that this Committee will be hearing more about through the coming year are summarized below:

Report: **Large Watermain Reliability Strategy**

Date: June 2014

Description: This report will describe work done to date on the condition assessment and protection of our large diameter watermains and identify a long term strategy to ensure the reliability of these critical assets - approximately 200 kilometers of the pipe system is defined as large diameter (450mm to 1350mm) representing approximately 12% of the City's watermain distribution system. These large diameter watermains are the most important links in our distribution system with an asset replacement value approaching \$400 million serving all 110,000 of our customers including residents, businesses, industries, hospitals and schools.

While several failures have occurred on the Lake Huron Water Supply System pipeline, London has been fortunate that our large diameter watermains have been relatively secure. The most public and costly local example of a watermain failure in an urban area occurred on a 300mm diameter pipe in 2007 and is now known as "The Dundas/Wellington Sinkhole." Damage from a larger diameter watermain failure would be expected to be considerably greater.

Beginning in 2006, staff has deployed leading edge technology to determine the condition of some of the City's largest and most critical watermains. The overall plan was to gain experience with these continually improving technologies, develop and implement protection for the most critical watermains which serve the entire City and then, in parallel, develop a long term strategy for the remaining large diameter watermains. There is no single technology which would be used for all large diameter watermains and the cost of assessment and implementation varies considerably.

Following the previous project successes, the large diameter watermain condition assessment plan is being further reviewed through a project with R.V. Anderson Associates Ltd. The deliverable for the assignment is to develop a long term strategy that prioritizes large diameter watermain pipelines using risk assessment to determine future expenditures for condition assessment and protection plans. The strategy will also provide recommendations on the type of inspection technology that will best suit the watermain to determine its condition.

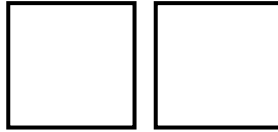
Report: **Pollution Prevention and Control Plan (PPCP) Phase II**

Date: February 2014 to fall 2016

Description: A Pollution Prevention and Control Plan will provide the City, Ministry of the Environment, Upper Thames River Conservation Authority and community with a long term plan for managing conveyance system sewer overflows and bypasses in London. The project will include investigations, development of sewer system models, mitigation strategies, and documentation to identify the problem areas and opportunities for reducing the discharge of untreated sewage into the Thames River. The plan will guide future investments to reduce overflow impacts.

Phase I of the Pollution Prevention and Control Plan included initiation of the project and master plan, background review of data and documentation, review of benthic studies and water quality data, inventory of sewer overflows, bypasses, and discharge points, determination of flow monitoring requirements and a preliminary ranking of sewer overflow and bypass discharge points.

Five technical memos were prepared along with a Phase I summary report. The technical work on river water quality is also part of a larger vision for river



improvement as under the “Clear Water Revival” – a watershed approach to enhancing the river with a broad base of partners.

Phase II will continue the master plan process: characterization of the Thames River, including benthic and water quality sampling and testing at strategically located sites; hydrologic and hydraulic modelling of the different sewer sheds to determine sewer overflow frequencies and volumes; and, the development of a long and short list of sewer overflow and bypass control measures. This phase will take two and a half years to complete. This schedule is required to allow sufficient time to complete twelve hydraulic sewer modelling and flow monitoring assignments. Individual hydraulic sewer modelling assignments will be awarded to multiple consultants through a separate two stage procurement process in 2014. A separate report will be brought forward to Council to award these modelling assignments.

A future Phase III of this project will include refinement of the prioritization of the sewer overflow and bypass discharge points, alternative selection criteria and evaluation of preferred sewer overflow and bypass control measures.

The PPCP Study is being managed by a Technical Steering Committee which includes membership from the City, MOE, Upper Thames River Conservation Authority (UTRCA) and the consultant team. Regular meetings provide direction for the development of all phases of the project.

Report: **Approach to Wastewater Treatment Optimization**
Date: May 2014
Description: This report will develop for Council a recommended approach to reducing long term capital costs for wastewater treatment plant expansions and effectively plan to meet more stringent effluent criteria. The goal is to find latent capacity at existing facilities and coordinate expansions with life cycle replacements over the next twenty years, giving consideration to the location of future expansions and technological upgrades. The future challenges of tighter effluent criteria, Combined Sewer Overflow treatment (and mitigation requirements), and the effects of climate change will also be recognized. Operational savings are possible through reduced energy consumption coupled with increased efficiency and recovery in both growth and lifecycle project designs, and by deferring capital expansions.

The plan will embrace new technologies, and involve technical staff and outside expertise within a phased process that recognizes successful pilot projects that are in progress and envisions the benefits of automation and innovation into the future. This approach will leverage the work of London’s International Water Centre of Excellence, our academic and business partners, and add the implementation of new technologies to our leadership in research role.

A preliminary capacity/optimization study for Adelaide, Oxford, Pottersburg and Vauxhall plants was undertaken in 2013. This study reviewed possible optimization of the existing processes. The next step will focus on the wet weather flows at these plants and the potential average daily flow capacity available by reducing the peaking factors.

Report: **Water and Wastewater Customer Engagement**
Date: Summer/Fall 2014
Description: Staff is exploring opportunities to provide residential water and wastewater customers with incentives to further reduce consumption. The incentives would not only be tied to water use reduction, but there would be opportunities to incorporate changes to energy consumption, transportation, and healthy living. These incentives would build on customer focused messages that have been delivered around the City on the value that the water, wastewater, and storm systems provide. The pilot CityGreen storefront at CitiPlaza has given the public an opportunity to access all environmental sustainability messages in one place, as well as promote the programs that the City delivers.

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By leveraging the information now available to customers in their monthly utility bills and directing them to either a 3rd party website or developing the City's own in house solutions, we can promote further community and healthy living initiatives. These coupled with reductions to our greenhouse gas emissions and overall water conservation will continue to build a sustainable future while supporting economic growth without the need for construction of major new infrastructure projects in the water, wastewater, and storm systems.

Report: **Computerized Maintenance Management System**

Date: May, 2014

Description: This initiative is absolutely critical to maintaining the functionality of the City's ever growing and complex infrastructures. Among the many benefits identified in previous reports, the purchase of a CMMS will ensure compliance with current and future legislative requirements, improve planning of maintenance activities thus reducing costs, provide better, more accurate and timely reporting, and dovetail well with Council's Strategic Plan including its "At Your Service" mission and a focus on "A Sustainable Infrastructure".

Since the last report on CMMS in June 2013, and upon Council's permission, Administration engaged ERSI Canada Limited in a number of productive information exchanges, necessary to develop a complete and comprehensive Scope of Work proposal. Provisions of this thorough document details major project components including but not limited to scope, implementation, general assumptions, project plan, project staffing, scheduling, challenges and associated costs. In addition, and in concert with the project's key stakeholders, staff conducted an intensive series of "Technical Road Mapping Workshops" to validate the project's mandatory and functional requirements through a number of software demonstrations based on pre-written "demo scripts". These workshops also served to observe first hand, ESRI's work ethic, work performance and software (CityWorks) capabilities with respect to system interfaces – between CityWorks and the City of London's existing computer systems such as JDE Financials, Kronos, SharePoint, etc. As a final result of all this effort, a detailed Scope of Work proposal was created and reviewed. Upon the completion of the review, minor amendments were made and incorporated into the final Scope of Work to be recommended to Municipal Council.

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