11TH REPORT OF THE

ADVISORY COMMITTEE ON THE ENVIRONMENT

Meeting held on November 2, 2016, commencing at 12:22 PM, in Committee Room #4, Second Floor, London City Hall.

PRESENT: M. Bloxam (Chair), S. Brooks, S. Hall, M. Hodge, J. Howell, S. Ratz, G. Sass, D. Szoller and A. Tipping and H. Lysynski (Acting Secretary).

ABSENT: K. Birchall, L. Langdon, N. St. Amour and T. Stoiber.

ALSO PRESENT: T. Arnos, G. Barrett, C. Copeland, M. Heighway, E. Kuisma, and C. Warring.

I. CALL TO ORDER

1. Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

II. SCHEDULED ITEMS

2. West London Dyke and Thames River Hydro Generation

That it BE NOTED that the attached presentation from R. Goldt, Supervisor of Water Control Structures, Upper Thames River Conservation Authority, with respect to Thames River Hydro Generation and the West London Dyke, was received.

3. Sewer/Stormwater Overflows into the Thames River

That it BE NOTED that the attached presentation and communication from M. Heighway, Engineer-in-Training, Wastewater and Drainage Engineering, with respect to the sanitary system overflows and by-passes, were received.

III. CONSENT ITEMS

4. 10th Report of the Advisory Committee on the Environment

That it BE NOTED that the 10th Report of the Advisory Committee on the Environment from its meeting held on October 5, 2016, was received.

5. 9th Report of the Trees and Forests Advisory Committee

That it BE NOTED that the 9th Report of the Trees and Forests Advisory Committee from its meeting held on September 28, 2016, was received.

6. 9th Report of the Transportation Advisory Committee

That it BE NOTED that the 9th Report of the Transportation Advisory Committee from its meeting held on October 4, 2016, was received.

7. 11th Report of the Environmental and Ecological Planning Advisory Committee

That it BE NOTED that the 11th Report of the Environmental and Ecological Planning Advisory Committee from its meeting held on October 20, 2016, was received.

IV. SUB-COMMITTEES & WORKING GROUPS

None.

V. ITEMS FOR DISCUSSION

8. Urban Agriculture Conference Update

That it BE NOTED that the Advisory Committee on the Environment heard verbal presentations from S. Hall and D. Szoller with respect to the upcoming Urban Agriculture Conference; it being noted that there will be another meeting of the organizers on November 9, 2016, to finalize the plans for the Conference.

VI. DEFERRED MATTERS/ADDITIONAL BUSINESS

9. (ADDED) Municipal Council Resolution - 10th Report of the Advisory Committee on the Environment

That it BE NOTED that the Municipal Council resolution adopted at its meeting held on October 25, 2016, with respect to the 10th Report of the Advisory Committee on the Environment, was received.

10. (ADDED) Shaver and Brockley Meeting

That it BE NOTED that the Advisory Committee on the Environment (ACE) received the attached communication from R. Gillis, Corresponding Secretary, for Shaver and Brockley and heard a verbal delegation from A. Tipping with respect to a Shaver and Brockley meeting to be held on November 10, 2016 at the Westminster Trails Golf Club with respect to environmental concerns in the Shaver and Brockley communities; it being noted that the meeting is by invitation only and the ACE members are encouraged to attend.

11. (ADDED) Ontario Municipal Board Review

That it BE NOTED that the Advisory Committee on the Environment heard a verbal update from D. Szoller with respect to her attendance at an Ontario Municipal Board review meeting.

VII. ADJOURNMENT

The meeting adjourned at 2:45 PM.

NEXT MEETING DATE: December 7, 2016

City of London - Advisory Committee on the Environment
Nov2, 2016

Thames River Hydro- Electric Generation
&
West London Dyke

R. Goldt, Supervisor - Water Control Structures
Upper Thames River Conservation Authority (UTRCA)

UPPER THAMES RIVER CONSERVATION AUTHORITY

What is a Conservation Authority?

· A community based, resources management agency
· Partnership of municipalities within a watershed
· Can deal with resource management issues that cross municipal boundaries
· Watershed level analysis of the issues
· Long-term maintenance of watershed-level data and information

Mandate

· Conservation Authorities Act (1946) a joint municipal / provincial initiative - provides a broad mandate **"to establish and undertake, in the area in which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals."**
· Specific program of the Conservation Authority is established by the Board of Directors appointed by member municipalities for the benefit of the watershed
· broad mandate – empowers local municipalities
· Funding from local government, provincial government and other sources
· T here are 36 CA's in Ontario covering 90 % of the population

UPPER THAMES RIVER CONSERVATION AUTHORITY

Upper Thames River Conservation Authority

· created under the Conservation Authorities Act in 1947 - Flooding in 1937, 47
· 3400 sq. km., 500,000 + population
· 15% urban

UPPER THAMES RIVER CONSERVATION AUTHORITY

Upper Thames River Conservation Authority

Vision
Inspiring a Healthy Environment

Mission
To protect life and property from flood and erosion
To protect and enhance water quality
To preserve and manage natural areas
To provide outdoor recreation opportunities

There is a wide range of responsibilities that fall under Conservation Authorities. These include:

- Watershed strategies and management
- Flooding and erosion protection
- Water quality and quantity
- Reforestation and sustainable woodlot management
- Ecosystem regeneration
- Environmental education and information programming
- Land acquisition
- Outdoor recreation
- Soil conservation
- Environmental land use planning
- Habitat protection
- Agricultural and rural landowner assistance
- Sensitive wetlands, flood plains, valley lands protection

UPPER THAMES RIVER CONSERVATION AUTHORITY

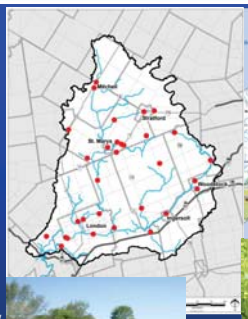
Watershed Monitoring

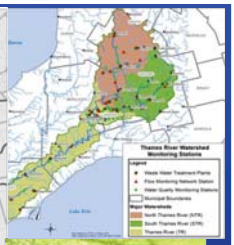
(real time and samples)

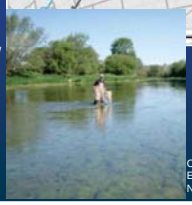
- 25 river level stations
- 7 reservoir level stations
- 22 rain gauges
- 14 snow survey stations & air / water temperature
- groundwater stations (MOE)
- water quality (MOE)
- fish and benthic
- Report Cards

- 5 LTVCA river level stations

http://thamesriver.on.ca/water-management/thames-river-flows-disclaimer/







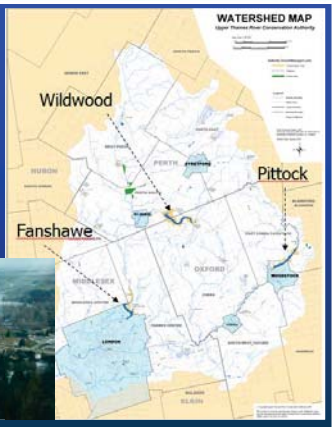
UPPER THAMES RIVER CONSERVATION AUTHORITY

Watershed Dams

- over 180 dams in the watershed – most are small, very low head, private – not well maintained
- public dams – flood control, flow augmentation, recreation
- UTRCA owned / operated
- 3 large dams, 3 recreation, 7 ponds
- largest – Fanshawe Dam – flood control, recreation – head 11+ metres – 270 ha.
- smallest - Fullarton Dam – pond recreation head 2 .5 m. 2ha. area

Other watershed flood control structures

- 4 channels, 9 dykes (8 in London)



UPPER THAMES RIVER CONSERVATION AUTHORITY

Case Study Fanshawe Small Hydro

Constructed 1984 (flood control – recreation)

- generator rated 675 kw
- head 11.6 m.
- dam modified – 1 of 2 low flow penstock extended over downstream wingwall
- Ossburger Cross flow turbine
- operation – run of river
- pre-dates Water power Clas EA, water licensing(MNRF)
- 80% efficient across operating range
- estimated 90% of time at full operation
- hydro flow replaced valve flow
- operations lag flow change – augments slightly

Today

- operating constraints on turbine range

Annual Production: 2.1 – 3.6Mwh

- Minimum operation requires 2.1 cu.m./sec. (**180kw**)
- Maximum operation at 6.5 cu.m./sec. (**430 – 520 kw**) 11.6m. – 13m.
- Constraints: low flow 1 – 3 mo. / yr - 2016: June – Oct - 5 mo.

UPPER THAMES RIVER CONSERVATION AUTHORITY

Watershed Hydro Potential

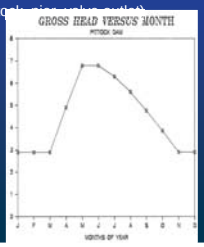
Other dams investigated

Pittock Dam-Woodstock

(flood control – flow augmentation)

-1986 preliminary investigation

- head 3 – 6.8m.
- 1 - 0.9 m. low flow discharge tunnel
- flow 1 - 3 cu.m./sec
- period of flow record 17 yrs.
- most feasible plant rated at 200 kw
- Annual – 0.7 Mwh
- required modification to dam (penstock, pipe, valve, outlet)
- detailed investigation not pursued



UPPER THAMES RIVER CONSERVATION AUTHORITY

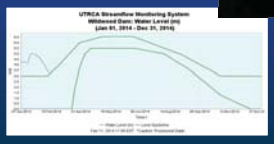
Watershed Hydro Potential

Other dams investigated

Wildwood Dam - St Marys

1986 preliminary investigation SNC
- head 5 – 13m.
- 3 existing 0.45 m. dia. low flow pipes)
- variable flow 0.3 - 2 cu.m./sec
- period of flow record – 15 yrs of dam operating conditions
- most feasible plant rated at 40 – 80 kw (1or 2 pipes)
- Annual – 0.24 - .47Mwh
- required minor modification to valve chambers
- detailed investigation not further pursued

Today
- one valve outlet converted to outflow diffuser (aeration)



UPPER THAMES RIVER CONSERVATION AUTHORITY

Watershed Hydro Potential

Other dams investigated

Springbank Dam-London

1985 preliminary investigation proctor & Redfern)
- **head 0 – 6m.**
- **no current off line discharge facility**
- **variable flow 6 - 12 cu.m./sec.**
- **assumed 8 mo. Operating season**
- **period of flow record 24 yrs.**
- **most feasible plants rated at 2 -200kw units (2 turbines)**
- **Annual – 1.83Mwh**
- **City reviewed ~ early 2000s**
- **detailed investigation not further pursued**

Today
- **shorter operating season**
- **upstream in river construction (as prior) can affect operating season**

UPPER THAMES RIVER CONSERVATION AUTHORITY

Watershed Hydro Potential

Other dams investigated

Orr Dam - Stratford

- Investigated c. 2011 by City and Countryside Energy Co-op
- Purpose was to develop demonstration site
- preliminary assessment (at normal recreation head)
- flow 0.35m3/sec
- head 2.5 m.
- site rated at 8 kw
- unfeasible due to seasonal use water level fluctuations.

UPPER THAMES RIVER CONSERVATION AUTHORITY

Watershed Hydro Potential

Other dams investigated

Summary:

Existing Examples – approximately 1030kw of generation potential evaluated at more significant existing dams in Upper Thames River watershed (most unreliable)

Potential - Possibly 2000kw total watershed hydro power capacity(2 MW) (most unreliable) based on other existing dams owned by UTRCA, private ,and online opportunities. - somewhat verified by other very general surveys (1.).

Historical – about 120 mills in Upper Thames watershed in 1800's (2.) - equivalent hydro power capacity may have been 2 to 4 times current potential.

What has changed? – 200 years of man's activity on land – logging, clearing, drainage, water taking. Streamflow is unreliable – difference of 7 x between high and low monthly flow averages - 120 to 150 x difference between low and high annual daily flows.

Ref.

1. http://www.small-hydro.com/Past-Contributors-Pages/Canada.aspx
2. http://thamesriver.on.ca/wp-content/uploads//Publications/Thames-CHRS-BackgroundStudy.pdf

UPPER THAMES RIVER CONSERVATION AUTHORITY

London Dykes

- 8 dykes
- 5.1 km total length
- W. London 2.8 km.
- Byron
- Coves
- Riverview- Evergreen
- Nelson - Clarence
- Front St. (partial decomm.
- Ada- Jacqueline
- Broughdale

- Dykes – mostly public land
- many properties purchased through flood plain acquisition UTRCA- C of London to mid -80s
- significant property encroachments
- 2015 -16 study underway - feasibility future management options
- 2016 – 18 Class EAs planned – Broughdale, Riverview

UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke
Location

- from Walnut - Cavendish Street area in west on north bank Main Thames to Forks to Saunby – Beaufort area on North Branch Thames north of CPR crossing .
- 2 main historic characteristics of dyke
  - Red line - dyke toe and river side slope erosion controlled amoured on slope
  - Green line earthen dyke some heavily vegetated, one section rock protection

UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke

Recent History:

- Glengowan Dam Environmental Assessment c. 1978 - 83
  - recommended flood control alternative towards further attention to London Dyke System and potential floodwall in St Marys over building new dam.
- Repairs 1983-86 – grouting and mass toe construction, river ballast – 1985 Maintenance Agreement City / UTRCA
- Inspections – 2005, 10, 11, 12, 13, 14 – interim repairs
- Replacement phase 1,2 – 2007- 09 – structure costs todate ~ $4.5M
- Planning: 2006 – Design phase1, Community Amenity Plan, material alternatives
  2010 -12 Hazard Tree Inventories, 2009 10 – land surveys, title search
  2011- 13 Detailed Geotechnical and Stability studies – design Guidelines
  2010 - 16 Master Repair Plan EA – revised flood levels – revised design height
  2015 – 17 Concept Plan Development – North Branch - Technical Studies: – Planning includes Subject Land Status Report, Vegetation assessments, EIS, Archeology, Cultural Assessment , Material alternatives, Geomorpholgy – 2016-17 Erosion Control EA

- Considerations Ahead :

- Further material updates, Blackfriars Bridge, repair staging, constr. Access, ref. other City plans, pathways – connections, access, land acquisition, encroachments, flood plain planning / regulation.

UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke
2016 Master Repair Plan Segments

1985

1947

UPPER THAMES RIVER CONSERVATION AUTHORITY

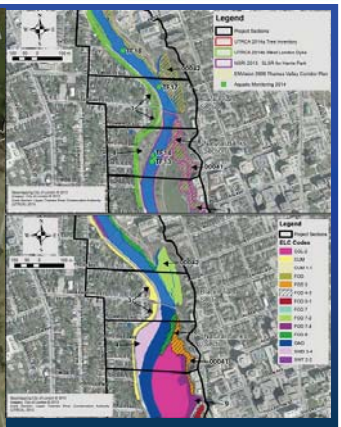
London Dykes

(West London Dyke)
- Hazard tree inventories
- Hazard tree removal
- Planting
- Vegetation assessments

Floral, Community
- Aquatic Study

-Subject Land Study Reports
- EIS

1985 Repairs



UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke

Design

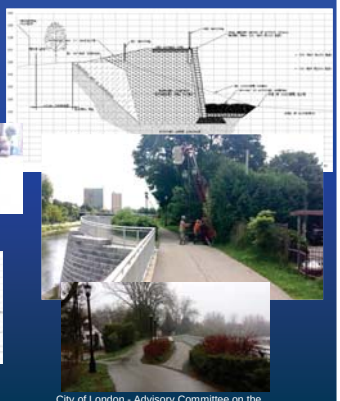
2011-13 - Design Guidelines
- slopes – stability – factor of safety – flood simulation - seismic
- setbacks – flood hydraulics – access – observation
- safety – width – recreation - refuge - lighting
- maintenance - access - staging
- freeboard - flood uncertainty – climate change

Master Repair Plan

Cross section & working challenges
- properties, encroachments, private planting - walls, hazard trees
- flood plain, staging, vegetation
- infrastructure – pipes, crossings, paths, bridges

Possible Section Forks – Wharncliffe, Cavendish

Typical Section North Thames & Cavendish



UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke

Alternative Designs

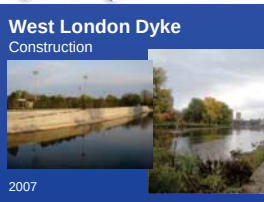
2007 – Long list of materials and structure types evaluated for composition of dyke shapes and facings
– still similar today but with more acrhitectural choices.

Potential Structure and Facings
- Concrete retaining wall
- Sheetpile wall
- Sloped Panel concrete – anchors
- Earth Reinforced Walls – different types

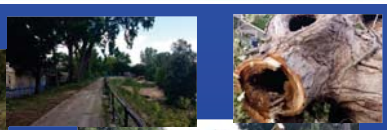
UPPER THAMES RIVER CONSERVATION AUTHORITY

West London Dyke

Construction



2007



2016

UPPER THAMES RIVER CONSERVATION AUTHORITY

Questions provided:

Springbank Dam: - recreation use, species impacts
City is planning an EA for a portion of the Thames Corridor based on the potential Back to the River design influences. Many other considerations in the corridor will also be evaluated in the same EA. UTRCA has provided documentation on river environment inventory work since Springbank Dam has been out.

Fanshawe Dam: - similar
Fanshawe was constructed in 1950-52 for purposes of flood control and recreation – federal funding was contingent on recreation. Fanshawe Dam is a barrier to aquatic species migration, has an effect on water quantity +ve & -ve, water quality in itself as a sink.
Downstream impacts are mitigated somewhat by low level discharge, hydro plant, - flow dampening.

Other UTRCA dams at Wildwood (North Branch Thames) an Pittock (South Branch) provide flow augmentation from late spring to early winter. At point of discharge the dams release minimum combined 1.5 cu. M. /sec. of flow. On the North branch the augmentation can provide 90% of eth river flow in St Marys flow. At Woodstock – Ingersoll augmenttaion can provide up to 25 – 50 % of flow. At Springbank (late Oct 2016) is 7 – 10 cu. M./sec. and has been as low as 5 cu. m. / sec. at times. Treated effluent through growth is increasingly adding to the flow in the Thames River.

Using Fanshawe for flow augmentation as for the other dams would drain the reservoir at 1 cu.m./sec. over 5 months if starting at it's normal recreation level. Today conversion of Fanshawe operations would be detrimental to it's local environment and beyond. An EA would be required.

UPPER THAMES RIVER
CONSERVATION AUTHORITY

Questions provided:

What are benefits to all life forms including endangered and at risk species, plants and people near or in the river if the river's height was managed instead of it being reduced to small pond areas in the summer?

What are the long term impacts to fish when they are blocked and can't travel up river - behind Labatt's.
Blocked is the key – different structures and conditions have
What are the anticipated river health impacts related to temperatures rising, precipitation levels dropping due to climate change and thereby concentration of pollutants?

Has a pre and post study been completed looking at social, political, environmental, economic, technological impact where small run of river type hydroelectric installations combined with fish passes and aeration have been installed in Ontario?

Since our river is already managed by a dam for flood protection are there any overall sustainability (social, political, environmental, economic, technological) benefits to London's community associated with environmentally conscious water power installations?

Has the UTRCA networked with the Otonabee Region Conservation Authority? How has the Otonabee Region Conservation Authority worked with the City of Peterborough as Peterborough developed their leading sustainable energy program? see link http://www.pui.ca/Generation.htm. Has or could a review be completed between our river and Peterborough waterways related to social, political, environmental, economic and technological pros and cons and other relevant comparisons?

UPPER THAMES RIVER
CONSERVATION AUTHORITY

Sanitary System Overflows and Bypasses

Advisory Committee on the Environment

Mitchell Heighway
Engineer In Training
Wastewater and Drainage Engineering
Environmental and Engineering Services
Nov. 2nd, 2016

Presentation Overview

- *Introduction to SSOs and CSOs*
- *Introduction to WWTP Bypasses*
- *Synopsis of monitoring and tracking*
- *Reporting*
- *City Proactive Measures*

SSOs and CSOs

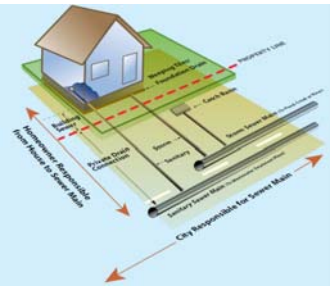
- Sanitary Sewer Overflow (SSO)
- Combined Sewer Overflow (CSO)

  Overflows from sanitary or combined sewers to storm sewers/watercourses occurs during heavy rainfall events and are due to Inflow and Infiltration (I&I) to the sanitary system

SSOs and CSOs

- Inflow and Infiltration
  - Inflow can be from weeping tile (foundation drain) connections, cross connections, or catchbasins connected to combined sewers (approximately 1% of sanitary sewers in London are combined)
  - Infiltration is groundwater seeping into sanitary through joints and cracks in the pipe

SSOs and CSOs



The primary source of Inflow and Infiltration in London is from Weeping Tile connections

5

SSOs and CSOs

- Excessive amounts of stormwater can enter the sanitary sewer during heavy rain storms
- Sanitary sewer is not designed to accommodate this extra rainwater
- Sanitary overflows into storm sewer/watercourse through SSOs and CSOs to reduce chance of backing up into basements

6

SSOs and CSOs

Sanitary sewer manhole with overflow to storm sewer

7

Bypasses

- Bypasses occur at Wastewater Treatment Plants (WWTP)
- Occurs due to large amounts of rainwater entering sanitary from inflow and infiltration

Greenway WWTP

8

Bypasses

- Incoming mix of sanitary and stormwater can bypass directly into watercourses, called a 'Raw Bypass'
- WWTPs treat as much flow as possible before this occurring, including only primary treatment
- When incoming flows only receive primary treatment, this is called a 'Secondary Bypass'
- Bypasses reduce basement flooding

9

Flooded Basement

SSOs, CSOs, and Bypasses help to minimize occurrences of flooded basements in London

10

Monitoring and Tracking

CSO and SSO activity are monitored by the Wastewater and Drainage Engineering (WADE) Division

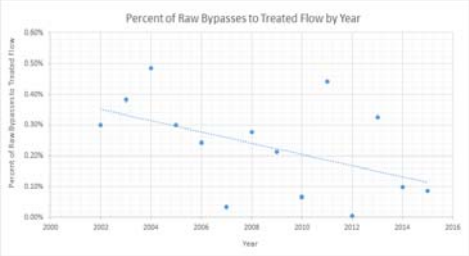
11

Monitoring and Tracking

- Raw bypasses and secondary bypasses at WTPs are tracked by date and volume by the Wastewater Treatment Operations Division
- Monthly and yearly summaries are available on London's website
- Percent of raw bypasses to treated flow has been less than 0.5% since 2002

12

Monitoring and Tracking



13

Reporting

Monthly CSO and Bypass events and volumes are reported to Environment and Climate Change Canada on an annual basis as required by Wastewater Systems Effluent Regulations (WSER)

14

Proactive Measures

- Pollution Prevention Control Plan (PPCP) is a three phased master plan study to prioritize and develop alternatives to overflows
- Conformance with Ministry of Environment and Climate Change Procedure F-5-5
- Currently in the second phase which consists of sanitary hydraulic models of CSOs and SSOs to determine priority overflows

15

Proactive Measures

- Basement Flooding Grant Program has been operating for about thirty years
- Homeowners receive grant funding for plumbing works to reduce frequency and severity of basement flooding
- Homeowner is required to disconnect their weeping tiles so they are no longer contributing to overflows, bypasses, or basement flooding in their neighbourhood

16

Proactive Measures

- Weeping tile disconnect program targets areas most at risk for flooding
- Program is voluntary and works are paid for 100% by the City
- At least 60% of homeowners in an affected area need to be willing in order for works to proceed

An installed Sump Pump

17

Proactive Measures

Greenway WWTP expansion is in the construction phase, increased treatment capacity for future population and excessive storm flows

18

Thank you.

Questions?

19

Chair and Members
Advisory Committee on the Environment
Nov. 2, 2016

Sanitary System Overflows and Bypasses

At the June 1, 2016 Advisory Committee on the Environment meeting it was requested that Civic Administration provide the following with respect to the Thames River Monitoring to the Advisory Committee on the Environment;

i) A synopsis of the monitoring and tracking that the City implements in order to offset spills into the Thames River;
ii) The most recent report to review; and,
iii) Any reports, when they are provided to the Civic Works Committee

This report will also provide an overview of overflows and bypasses, why London has them, and proactive measures that are taking place.

Overflows and Bypasses:

In the City of London there are two types of sanitary water 'spills' to the stormwater system that can occur. The first type of spill are overflows from Sanitary Sewer Overflows (SSO) and Combined Sewer Overflows (CSO), and the other type of spill are bypasses at the City's Wastewater Treatment Plants (WWTP). Both occurrences occur due to large rainfall events. Rainwater can enter the sanitary sewer system through Inflow and Infiltration (I&I) through; weeping tile connections (which is the primary source in London), cracks in sanitary pipes and joints, or direct cross connections. Weeping tiles are drains around the homes foundation which directs water away from the foundation to help prevent foundation cracking and water infiltration. Subdivisions approved before 1985 allowed for homes to be constructed with their weeping tiles connected to their sanitary drainage, this outdated practice contributes a significant amount of rainwater to the sanitary sewer.

The sanitary sewer system is not designed to accommodate these additional stormwater flows, London has a separate storm sewer system to accommodate these flows. As such, when excessive stormwater enters the sanitary sewer system, the sanitary sewer system becomes overwhelmed and a combination of sanitary and stormwater can either back-up into basements or can overflow into storm sewers and/or watercourses. These overflows exist to minimize the frequency and severity of backups into the basements of homes during severe rainfall events, this is a practice that has been employed for a long time and across Canadian municipalities as it values the health and property of homeowners over environmental health.

Bypasses that occur at WWTPs also occur because of excessive stormwater entering the sanitary sewer system, this can happen regardless of overflows and backups occurring in the upstream sanitary system. A WWTP bypass occurs when the incoming sanitary flow exceeds treatment capacity of the plant. The combination of incoming raw sewage and storm water can discharge directly to watercourses through an outlet to assist in preventing basement flooding, this is referred to as a *raw sewage bypass.* However, the WWTP treats as much sewage as possible prior to any raw sewage bypasses by directing a portion of the excessive flow to receive primary treatment without receiving secondary treatment prior to discharging, this is referred to as a *secondary bypass.*

Overflow and Bypass Monitoring and Tracking:

CSO and SSO activities are tracked by the Wastewater and Drainage Engineering Division. Monthly CSO summaries are provided to Environment and Climate Change Canada on an annual basis through the Effluent Regulatory Reporting Information System (ERRIS) as required by the Wastewater Systems Effluent Regulations (WSER) which are established under the Fisheries Act. This reporting has been completed since

2013 and will continue into the future. CSOs are more active and produce a larger volume of flow to the storm system than SSOs, as such SSOs are monitored on a more intermittent basis to establish how active they are for a given rainfall event.

Appendix A contains a yearly comparison of CSO data. Administration is taking steps towards reducing the frequency and volume of overflows, however overflows and bypasses are still very dependent on the magnitude and spatial distribution of a rainfall event.

Bypasses at wastewater treatment facilities and pumping stations are tracked by the Wastewater Treatment Operations Division. Monthly summaries of the bypasses into the Thames River and its tributaries are also provided to Environment and Climate Change Canada on an annual basis via ERRIS as required by WSER. Monthly bypass events since 2013 and yearly bypass summaries since 2002 are available for the public to view at;

http://www.london.ca/residents/Sewers-Flooding/Sewage-Treatment/Pages/Byass-and-Overflow-Activity.aspx

A summary comparison of these bypasses are in Appendix B. Since 2002, yearly total raw bypasses to the Thames River have been less than 0.5% of the total treated yearly flow discharged to the river. The trend line also shows a yearly declining percentage which should continue with planned WWTP expansions, infrastructure renewal projects, and other initiatives.

Overflow and Bypass Proactive Measures:

London is currently in the process of completing a Pollution Prevention Control Plan (PPCP), which is a three phased, multi-year master plan project, which will provide a long term solution for sanitary sewer system overflows and WWTP bypasses. It is an effort to meet system wide conformance with the Ontario Ministry of Environment and Climate Change (MOECC) Procedure F-5-5 and to mitigate overflow impacts on the Thames River. The PPCP will develop a list of sewer overflow and bypass control measures which will be adopted by the City as construction projects.

The PPCP is currently in its second phase which comprises of developing sanitary hydraulic models of the different areas in London that have overflows and running simulated rainfall events in these models to determine frequency and volume of overflow activity. Once these models are complete the second phase report will summarize results and identify the most critical overflows and preliminary remediation measures. Construction projects that will be recommended and identified in the third phase of the PPCP will eliminate or help to reduce overflow and bypass frequency and volumes while still maintaining the same or enhanced level of protection against basement flooding.

The City's Basement Flooding Grant Program is a City wide approach to help reduce overflows and basement flooding that has been operating for approximately thirty years. As part of the program, homeowners can receive grant money from the City to partially subsidize plumbing works which will reduce basement flooding severity and frequency. In order to receive funding homeowners are required to have a plumber disconnect their weeping tiles from their sanitary drainage so the home is no longer contributing to overflows, bypasses, and flooded basements.

Staff in Wastewater and Drainage Engineering also manage a weeping tile disconnect program, this program was initiated as a pilot project in the Sherwood Forest neighbourhood. Based on the success of the pilot project, staff will be continuing the initiative as a yearly program. The pilot project involved the disconnection of weeping tiles of the homes on Blanchard Crescent and the installation of a sump pump, backwater valve, and storm private drain connection paid for 100% by the City for homes that chose to participate. These works greatly reduce the chances of basement flooding which is appealing to homeowners and greatly reduces the amount of

stormwater entering the sanitary sewer which helps to reduce overflows, bypasses, and flooding of downstream homes. Staff are currently working towards determining homeowner willingness to identifying another street for a weeping tile disconnect project to take place in 2017.

The Greenway WWTP is being expanded and is in the construction phase, the expansion will allow for more sanitary water to be treated from an expanding population and will treat a larger amount of extra flow from extreme rainfall events.

Summary:

The City of London tracks overflows from the sanitary sewers and bypasses from the wastewater treatment plants to the Thames River and its tributaries. The overflows from the combined sewers are reported to Environment and Climate Change Canada on an annual basis. Bypasses from wastewater treatment plants are reported to Environment and Climate Change Canada and are available to the public on the City's website. Overflows and bypasses are highly dependent on rainfall patterns, however system improvements, plant expansions, and future works recommended in the PPCP will help to significantly decrease these overflow and bypass events.

Acknowledgements:

This report was prepared by Mitchell Heighway, Engineer In Training in the Wastewater and Drainage Engineering Division and Tony Van Rossum, Environmental Services Engineer in the Wastewater Treatment Operations Division.

Attach: Appendix "A" – Yearly CSO and SSO data
Appendix "B" – Yearly bypass data and analysis

APPENDIX A- Yearly CSO Data

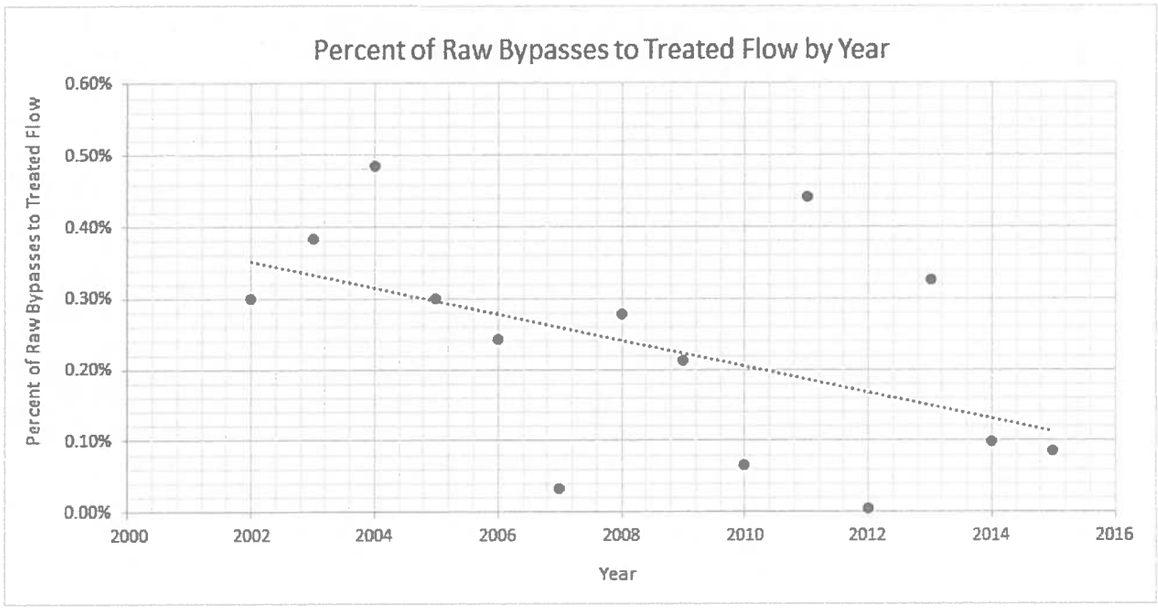
Month	2013		2014		2015	
	Overflow Events (#)	Overflow (ML)	Overflow Events (#)	Overflow (ML)	Overflow Events (#)	Overflow (ML)
April	2	9.39	1	0.09	2	0.12
May	1	13.86	2	0.1	3	0.82
June	2	5.20	2	0.85	4	12.62
July	2	14.30	2	0.85	3	1.34
August	3	22.60	1	0.01	0	0
September	2	75.50	3	10.1	1	0.88
October	1	4.96	1	0.01	1	0.21
November	0	0.00	1	0.65	0	0
Total	**13**	**145.79**	**13**	**12.65**	**14**	**15.98**

ML = Mega litres or million litres

APPENDIX B- Yearly Bypass Data and Analysis

City of London: Bypasses and Pumping Station Overflows							
Year	Treated (ML)	Raw Bypass (ML)	Raw Bypass (#)	Secondary Bypass (ML)	Secondary Bypass (#)	% of Raw Bypasses to Treated Flow	Rainfall Yearly Total (mm)
2002	75,150	225	32	567	11	0.299%	861
2003	74,385	285	99	365	40	0.383%	985
2004	77,304	375	106	679	47	0.485%	964
2005	75,150	225	74	566	26	0.299%	868
2006	83,075	201	99	862	33	0.242%	1202
2007	71,874	24	36	227	19	0.033%	771
2008	78,979	219	70	1033	38	0.277%	1094
2009	74,557	158	60	901	22	0.212%	931
2010	70,426	47	38	123	17	0.067%	931
2011	84,793	375	94	1630	31	0.442%	1165
2012	67,865	4	6	41	6	0.006%	660
2013	76,160	249	55	765	19	0.327%	1075
2014	72,351	72	39	142	13	0.100%	956
2015	65,709	56	40	208	11	0.085%	687
Ave.	**74,841**	**180**	**61**	**579**	**24**	**0.233%**	**939**

ML = Mega litres or million litres



Hello Advisory Committee Members on the Environment,

One member of your committee has requested that I advise you of, and send invitation to you to attend the meeting that the communities of Shaver and Brockley have arranged with Mayor Matt Brown as outlined in the following communication we have sent to City councillors. Without question our issue—one of long standing, as a couple of your committee members will already know--certainly relates to the environment in our area in south London. I will simply copy our invitation to Council members, then, explaining that the attached sample historic documents—only three of many circulated at various times in the last decade—will outline our problem for your information, and demonstrate that we have been communicating with City officials about it for some time. The update I can add, however, is that our predictions regarding worst fears we had about allowing Stormfisher Biogas to build in the area have not not only come true, but the plant has become an even greater problem for adjacent neighbours than the worst scenario we had ever imagined, and of course this adds in an excruciating way to the problems we were already experiencing—and continue to experience--with Orgaworld The situation simply must be addressed at this time. So if any of you are free to attend the meeting we have arranged with the Mayor, you are more than welcome to be our guests. Here is the information:

* * * * *

It is ironic that it was on my "to do" list today *to send an invitation off to you from our neighbourhoods of Shaver and Brockley, just south of Hwy. 401 on either side of Wellington Road inviting you to attend a meeting we have arranged with Mayor Matt Brown for*

Thursday evening, November 10th
at Westminster Trails Golf Club
2465 Westminster Drive *(just a couple of kilometers south of the 401, and east off Wellington Road)*
at 6:30 p.m.

It's ironic because it's been a dies horridus*: the whole morning when I was out trying to plant bulbs "to bloom in the spring" I endured the signature stink coming from Orgaworld which is 1.2 kms. from our property as the crow flies. This is something neighbours in our area have had to put up with for 9 years, and during this time the MOE has received literally thousands of complaints from residents about Orgaworld and now Stormfisher Biogas (aka Harvest Power). Our neighbourhoods have and continue to be hijacked, and rights protected by the MUNICIPAL Act are being violated, sometimes on a daily basis. This is why this case should be of concern and matter to all elected officials at City Hall.*

We realize many new councillors are now serving wards across London, and we have waited until those new to office were settled in office to ask you collectively to consider our plight. But we would request that you make it your business now to consider how these composting plants are impacting citizens in south London. We know that you have more than enough meetings to attend, that you have wards of your own to serve. However, Ward 14 has been without a councillor now for several months, so we would ask you to stretch your schedule to allow for this particular meeting.

I will attach two or three sample historic documents sent in the past to officials at City Hall in order that you can be informed, and that you will sense the frustration we have felt over the last decade. I will only add that having been through what our neighbourhoods have been through, were citizens in your ward being similarly impacted, I think you would find our neighbourhoods solidly in support of eradicating offenders from your neighbourhood. We would beg the same from you.

With all kind regards,
Roma-Lynn Gillis
(Corresponding Secretary for Shaver and Brockley)

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3 attachments

Petition N. to City 10-04.pdf
55K

BROCKLEY B. on Env. Concerns 09-12 PDF..docx
165K

M to City re Nuisance Bylaw 12-05PDF2.pdf
49K