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Phosphorus in the Thames River and Beyond -- London Context --

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London in the context of the overall Lake Erie watershed

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Thames River Watershed in relation to the other major watersheds.

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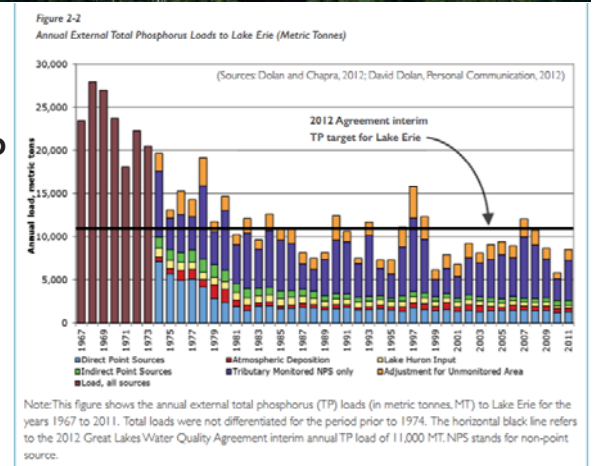


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Sources of Total P to Lake Erie

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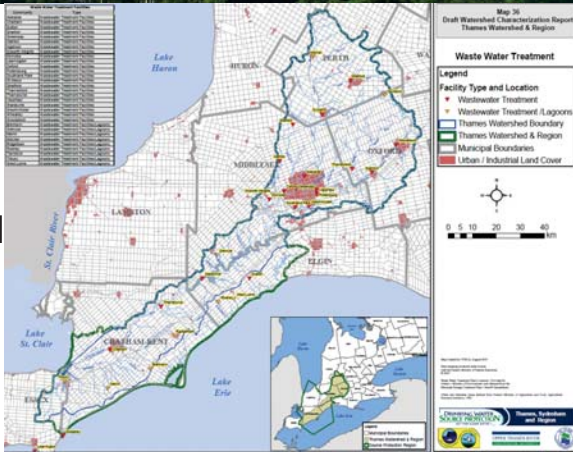
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24 WWTP within the Thames River Watershed

London 70%

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10 Largest WWTP in the Thames River Watershed (>3.78 MLD)

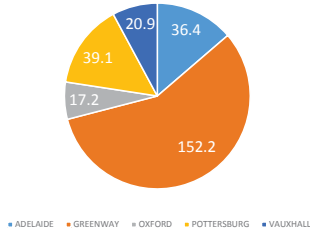
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	Municipality Name	CA Watershed	Capacity (MLD)
1.	London - Greenway	Thames - UTRCA	152.2
2.	London - Pottersburg	S. Thames - UTRCA	39.1
3.	London - Adelaide	Thames - UTRCA	36.4
4.	Chatham	Thames - LTVCA	36.0
5.	Woodstock	S. Thames - UTRCA	33.0
6.	Stratford	N. Thames - UTRCA	31.0
7.	London - Vauxhall	S. Thames - UTRCA	20.9
8.	London - Oxford	Thames - UTRCA	17.2
9.	Ingersoll	S. Thames - UTRCA	10
10.	St. Marys	N. Thames - UTRCA	5.5
	Total		381.3 MLD



London's WWTP Capacity for Sewage Treatment

RATED CAPACITY of London's Wastewater Treatment Plants (Million L/Day)



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London Plant performance

	ADELAIDE	GREENWAY	OXFORD	POTTERSBURG	VAUXHALL
RATED CAPACITY Million L/DAY	36.4	152.2	17.2	39.1	20.9
TOTAL COMPLIANCE (LEGAL) mg/L	1.0	0.75	0.65	0.75	1.0
TOTAL OBJECTIVE (TARGET) mg/L	0.7	0.6	0.5	0.5	0.75
PROPOSED COMPLIANCE mg/L	0.5	0.5	0.5	0.5	0.5
ACTUAL * PERFORMANCE mg/L			0.45		

Tertiary to 0.1 mg/l?
\$40-50M
76% reduction
15% of Canadian target

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Urban Non Point Sources of P

- Sewer system
- PPCP / CSO
- Combined sewers
- I / I programs
- LID
- Subwatersheds
- SWM ponds



Downspout Disconnect Program



Newly planted residential rain garden

• **\$164M 2016-19**

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EBR Comments*

- Deadline
- Evidence based planning
- Factoring rainfall and climate change
- Same standard for all
- Cost benefit analysis
- Assistance to municipalities
- Science, monitoring and reporting
- Environmental assessment

*RPWCO coordinated

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Deadline

- November 20 deadline for comments
- Extend, or
- Endorse by Council

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Evidence based planning

- Evidence based with effective means to be measureable
- Better understanding of sources (mass balance), heritage phosphorus and groundwater
- Lower Thames characterization

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Factoring rainfall and climate change

- Wettest years associated with worst blooms (2011 and 14)
- More effort in the Plan on managing phosphorus runoff

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Same standard for all

- Plan:
 - Prescriptive for 10-15% of the sources
 - Best practices for 80%
- Alternatives:
 - Proportional by contributor
 - 40% for all sources

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Cost benefit analysis (value)

- Relative cost by sector
- Sewage treatment expensive

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Assistance to municipalities

- Funding outside of CWWF
- Define “tertiary” treatment more generally to allow innovation
- Enhance funding support for Thames River Clear Water Revival – Management Plan

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Science, monitoring and reporting

- Develop an understanding of the Thames
- Monitoring standardization and sampling program
- For results measurements, public reporting

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Environmental Assessment

- Plan covers Phases 1 and 2?
- Master Plan?
- Time and expense saver

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That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to the Lake Erie Bi-national Phosphorus Reduction Target and the Environmental Bill of Rights (EBR) posting on the subject:

The following report **BE RECEIVED** for information;

[Comments on EBR Registry Number 012-8760 \(attached as Appendix 'C'\) BE ENDORSED.](#)



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