

Offsetting Programs

Urban Water Symposium

From Amsterdam to Toronto

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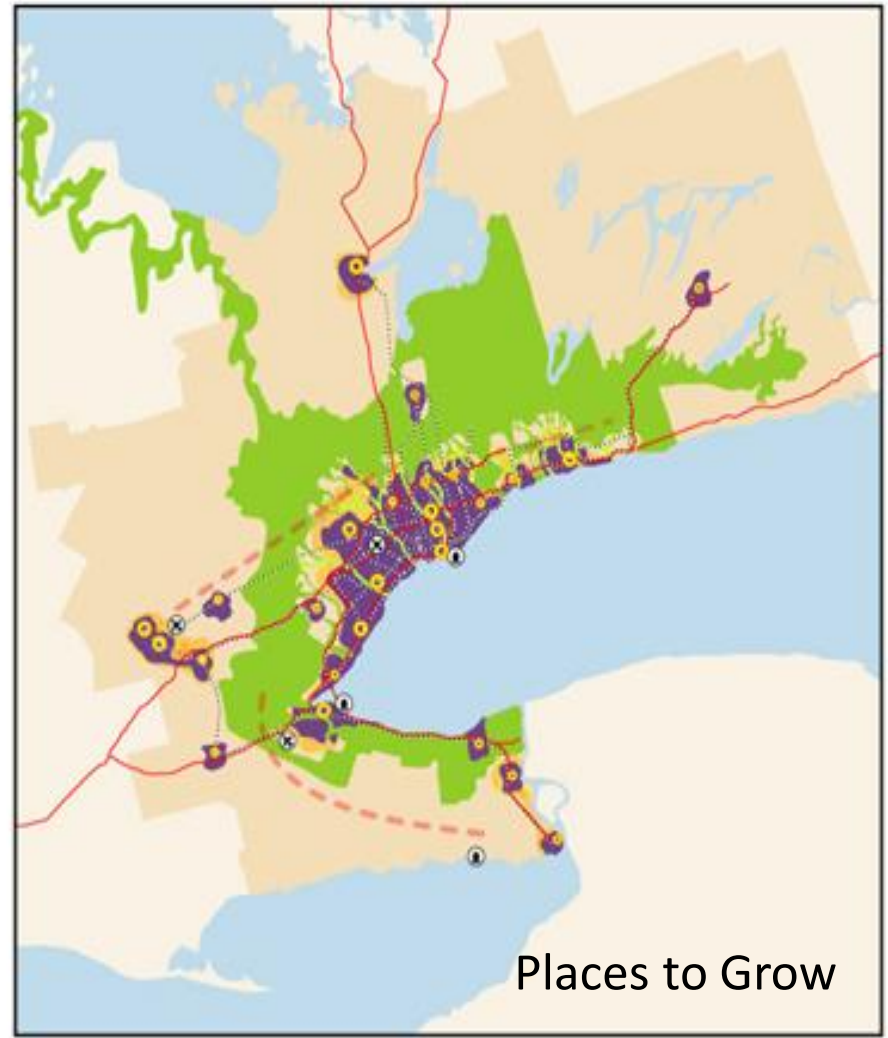
Lake Simcoe Region
conservation authority



Member of Conservation Ontario

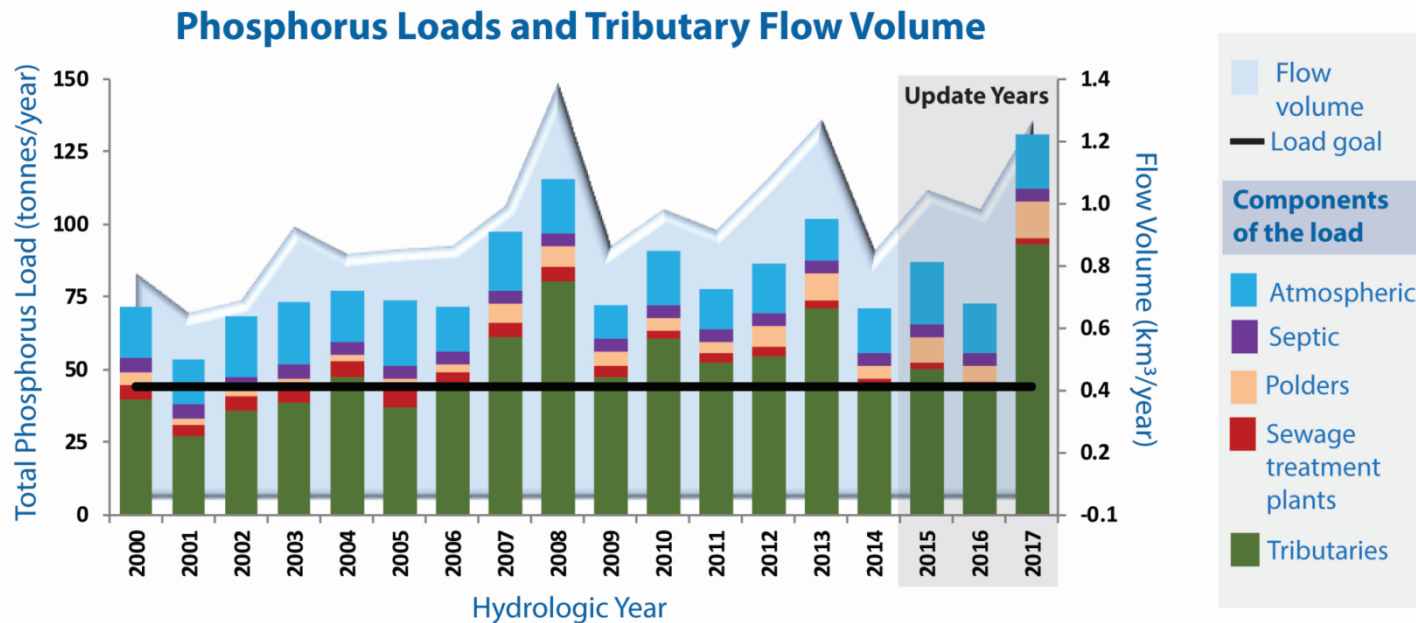
Watershed Facts

- 35 rivers and creeks
- \$400M recreation
- Source of drinking water
- Waste Assimilation,
- Important Natural Heritage Feature,
- Designated Growth Area.



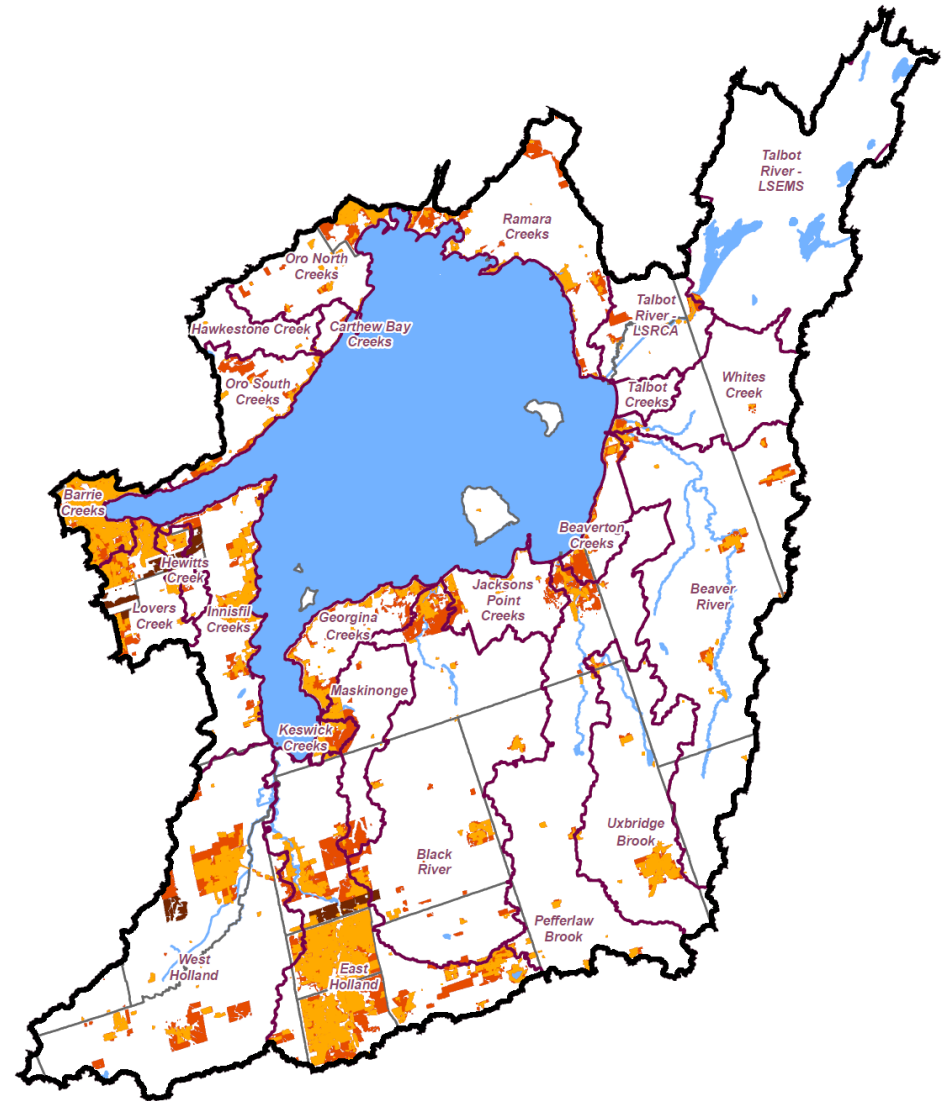
Urban Stormwater Runoff – Observations

- Urban runoff is one of the largest contributors of Phosphorus to Lake Simcoe,
- Current stormwater guidelines and industry practices are not achieving desired environmental outcomes,



Urban Stormwater Runoff – Observations

- The Lake Simcoe watershed is a growth area with more than 1200 hectares of new growth expected by 2031,
- Climate change is resulting in more frequent runoff events and a shift in seasonal trends increasing annual phosphorus loading.



LSRCA Urban Stormwater Runoff Strategy

Two specific areas of focus were identified:

Minimize\Mitigate SWM Impacts from New Growth

- Identifying and promote new more effective SWM Best Management and Better Site Design Practices,
- Create new SWM guidelines to achieve environmental outcomes.

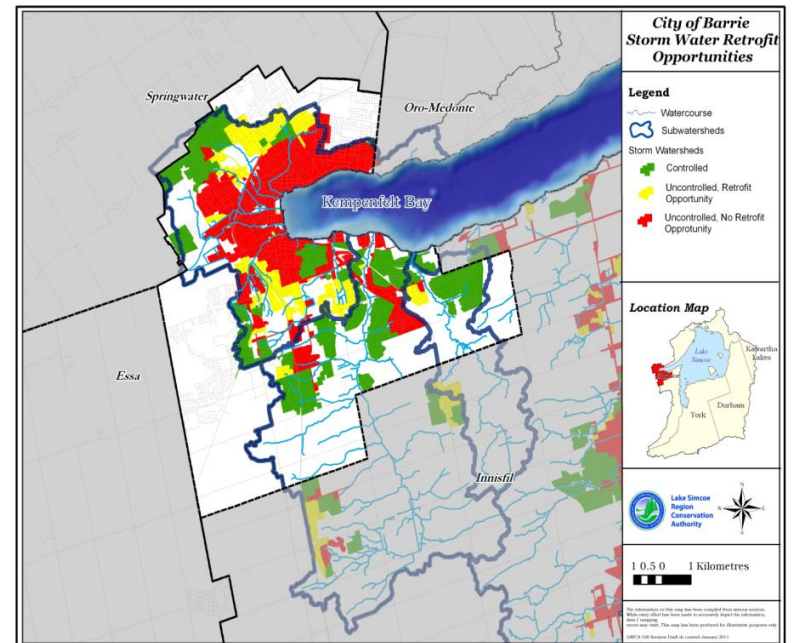
Address SWM Runoff from Existing Uncontrolled Urban Areas

- Construct new SWM Best Management Practices in existing uncontrolled urban areas throughout the watershed.



What is Phosphorus Offsetting?

- A method to generate revenue from growth to undertake remedial projects to reduce urban runoff.
- Designed to achieve the LSPP phosphorus reduction target from urban stormwater in the watershed,
- It is not “trading” but a requirement for new growth.
- Revenue is used to design and stormwater retrofit projects in existing uncontrolled urban areas.

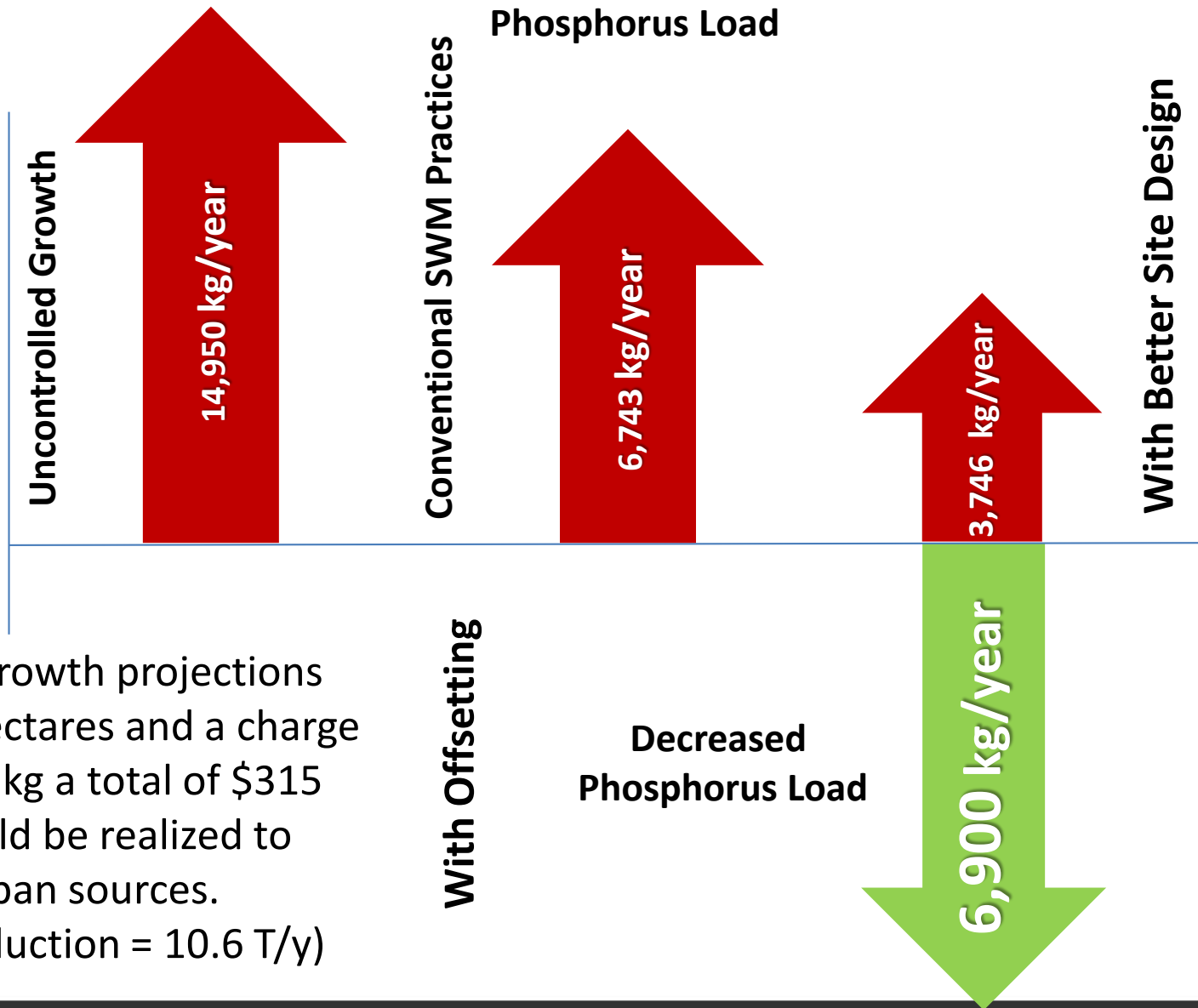


What is Phosphorus Offsetting?

- New development or redevelopment proposals will be required to ensure that no P load will be exported from their site!
- **This is the so-called *Zero Export policy*** which would go beyond the current requirements of the LSPP and the PRS with respect to urban stormwater management.
- The Zero Export policy is the basis for achieving a net reduction in the Urban Phosphorus Load,
- This policy provides strong incentive for innovation in the design of new urban development projects.



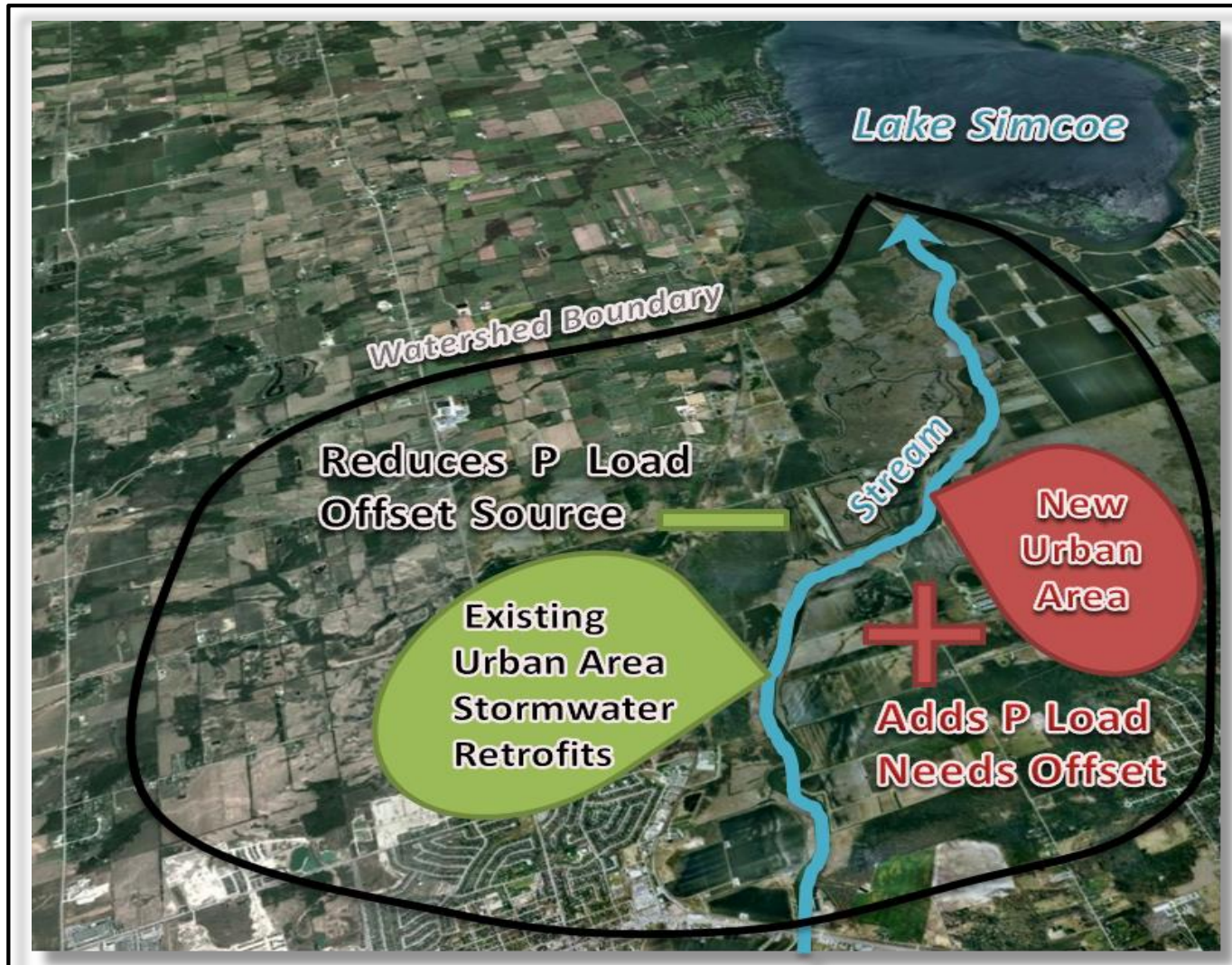
LSPOP Benefit Summary



Based on growth projections of 9,000 hectares and a charge of \$35,000 kg a total of \$315 million could be realized to address urban sources.
(Total P reduction = 10.6 T/y)



Phosphorus Offsetting: How it Works



LSPOP Example: New Development



- The proposed development will build homes and roads for 176 lots on a 9.2 ha site
- The percentage of impervious cover will increase to 45%
- Estimated annual TP load from the new development is 13.8 kg/year.



The developer must maintain the water balance and reduce the phosphorus load to zero (0).



LSPOP Example: New Development



- Thru low impact development stormwater best practices the proponent can control 75% of the total phosphorus from the development, or 10.3 kg/y,
- Given that the post condition total load off the site is 13.8 kg/y phosphorus reduction needed to achieve net zero is **(13.8 – 10.3 = 3.5 kg/y)**



LSPOP Example: New Development

- Based on the stormwater offset ratio (2.5:1), the total amount of phosphorus needing to be offset is:

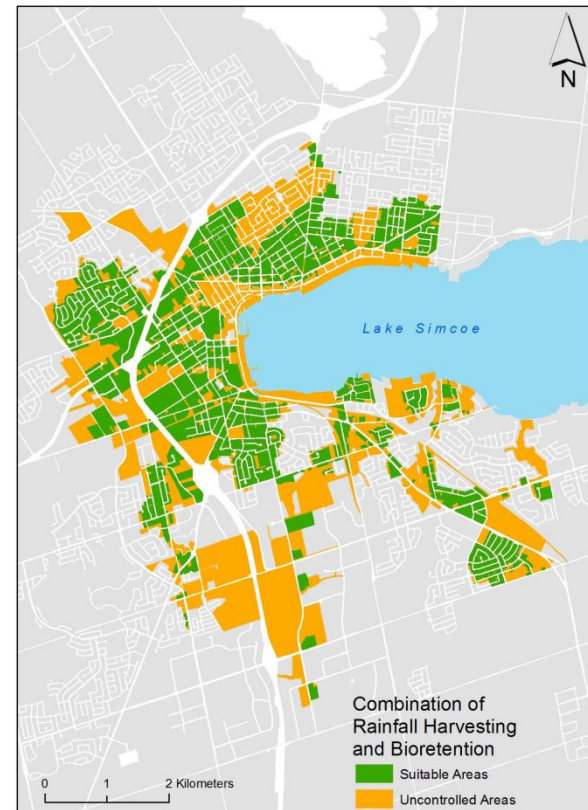
$$3.5 \text{ kg/year} \times 2.5 \text{ (offset ratio)} = 8.8 \text{ kg/year}$$

Proposed Offset Purchase

- $8.8 \times \$35,000 \text{ kg/y} = \$ 308,000$

Retrofit Opportunities

- Conventional SWM ponds,
- LIDs,
- Water Harvesting.



Other Benefits of LSPOP

Not just about Phosphorus. Other social, economic and environmental benefits:

- Reduced peak flows, frequency and severity of flooding, risk to life, property and social disruption,
- Increased resilience of communities to climate change,
- Enhanced groundwater recharge to maintain groundwater drinking supplies and ecological services,
- Creation of green industry - jobs in construction, operation and maintenance,
- Facilities are aesthetically attractive, and provide opportunities for carbon offsetting.



QUESTIONS

