Lake Simcoe Phosphorus Offset Program

National Nutrient Recovery and Reuse Forum
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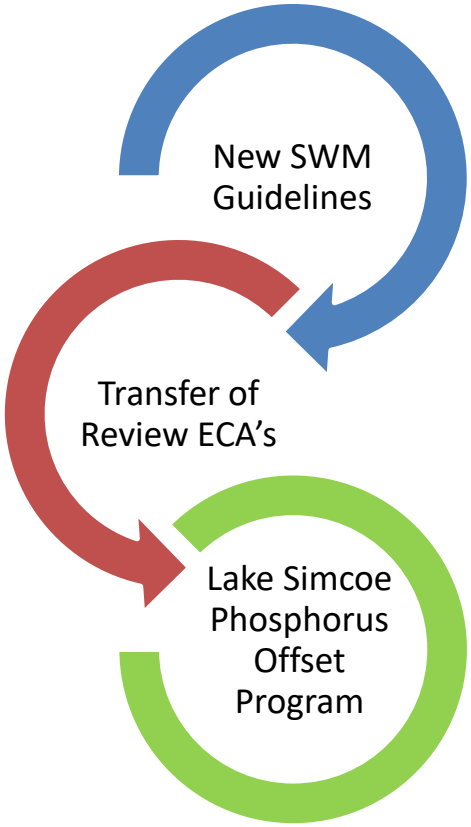
Lake Simcoe Region
conservation authority

Michael Walters, CAO

LSRCA Stormwater Strategy

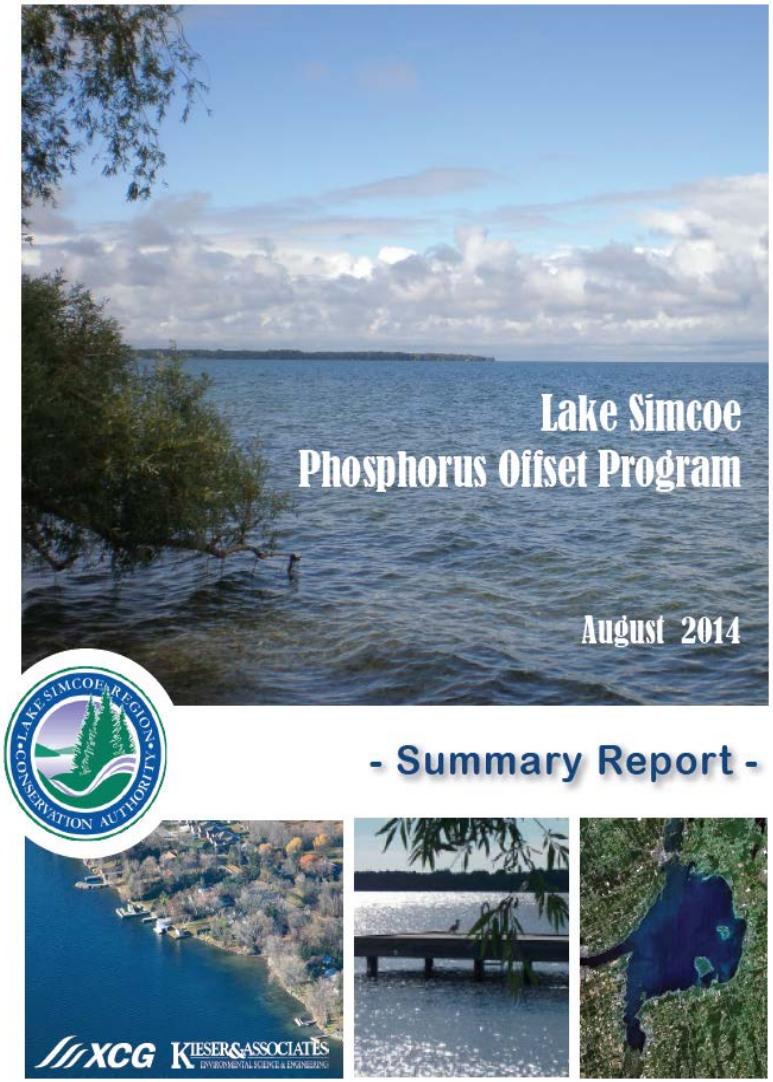
LSPOP is one of three initiatives to change how stormwater is managed within the Lake Simcoe Watershed.

- Minimize impacts from new development,
- Improve service delivery, reduce approval times,
- Improve water quality by reducing Phosphorus loading from existing development.



Lake Simcoe Phosphorus Offset Program

- LSRCA launched the study in 2012 with funding from the MOECC and watershed municipalities,
- Concern over the impact of continued urban expansion within the watershed,
- After more than two years of collaboration and consultation, a final report was produced.



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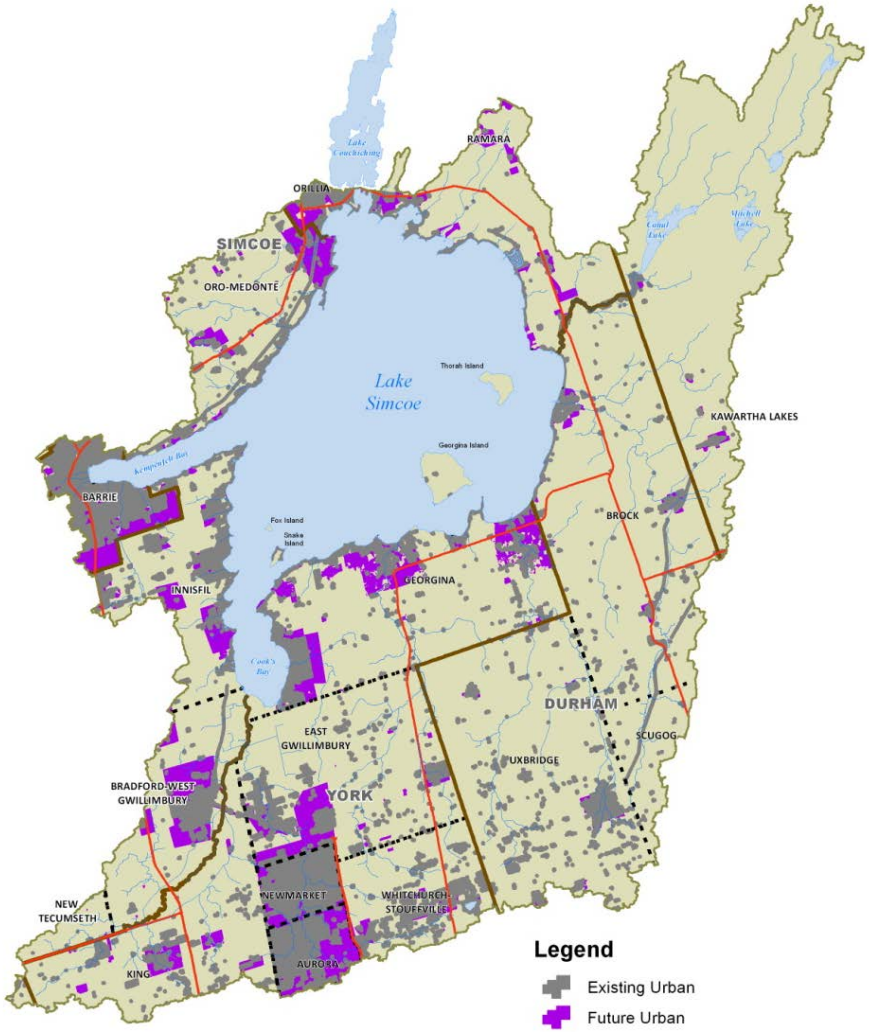
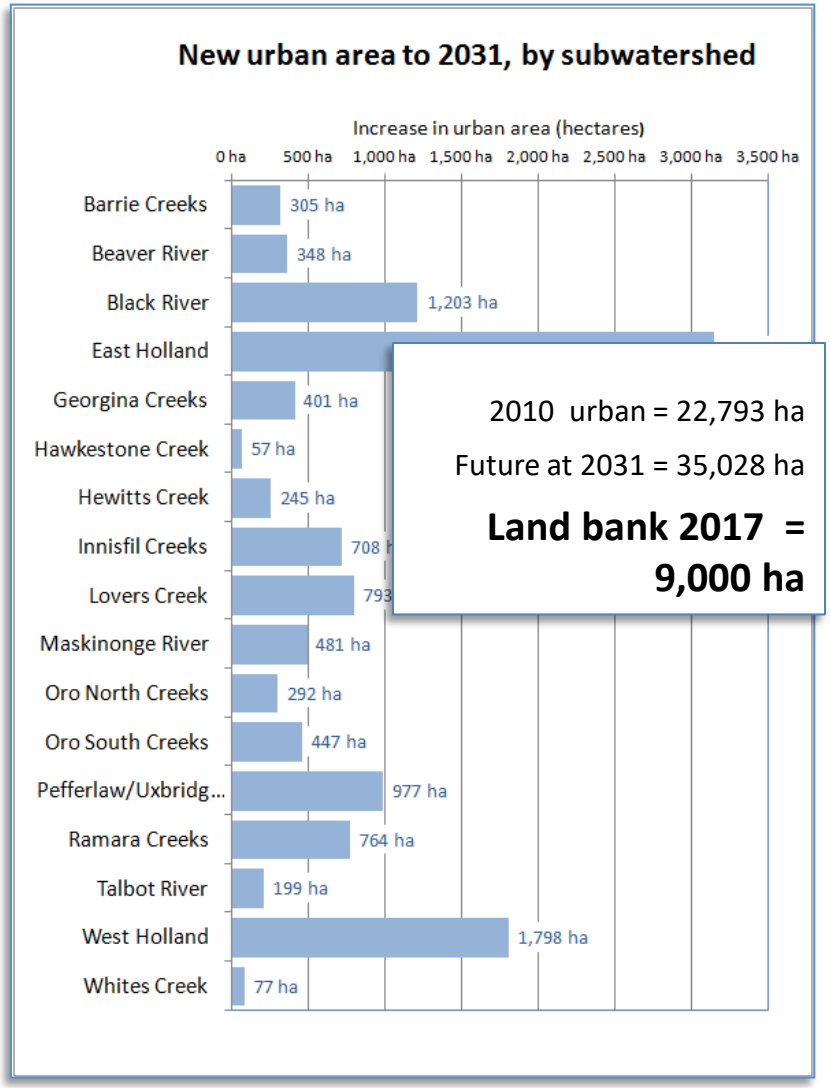
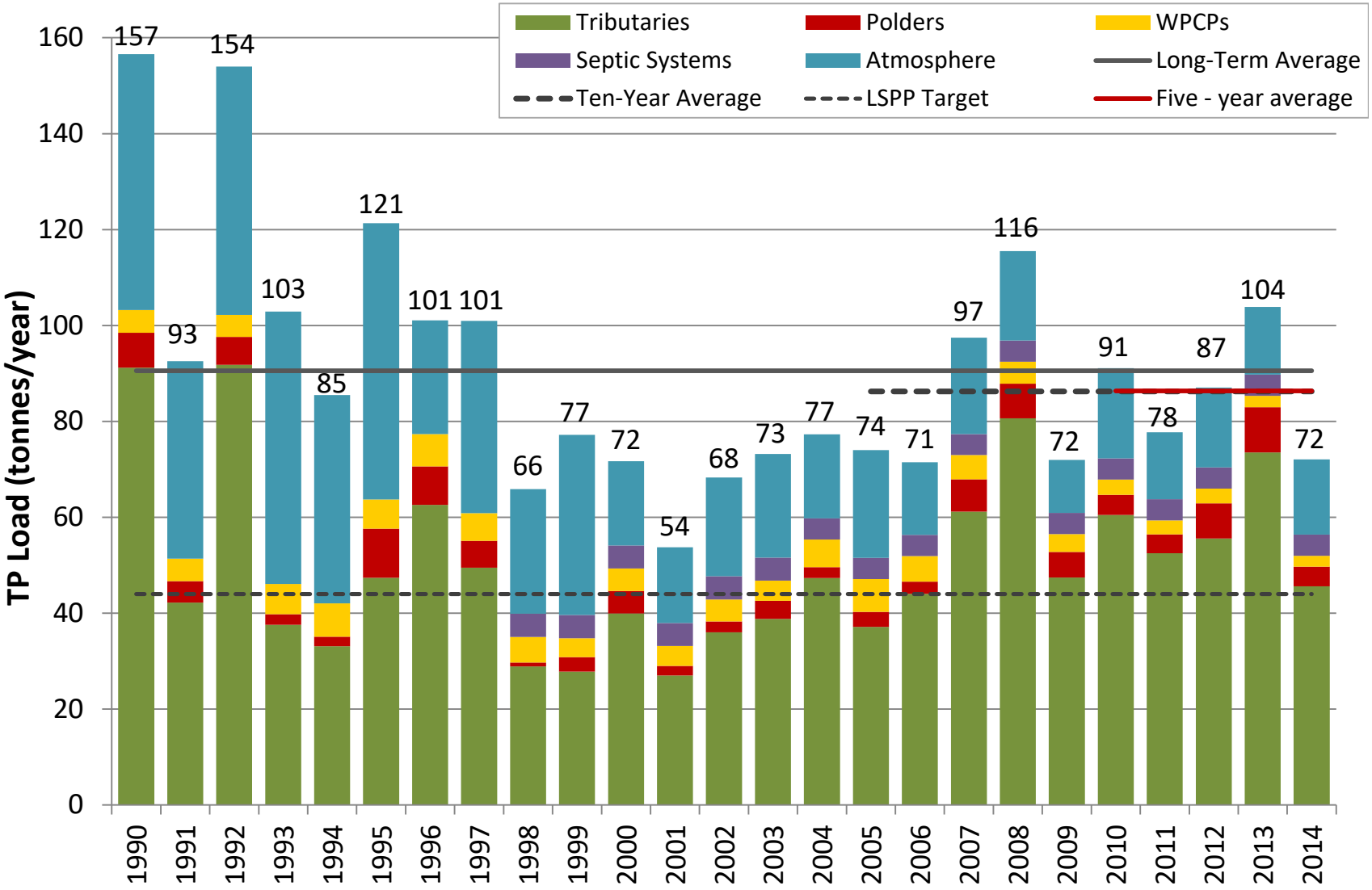
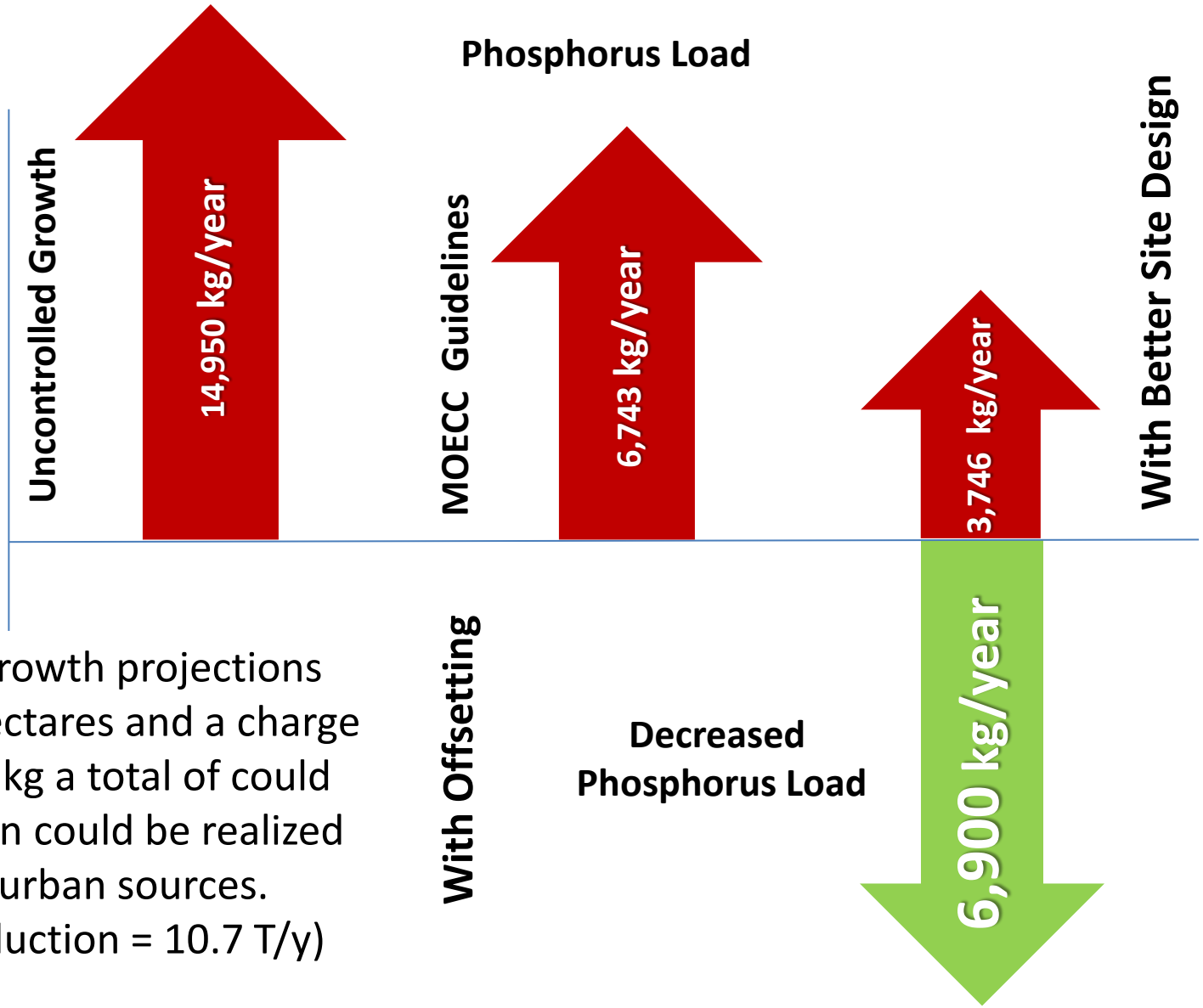




Phosphorus Loadings to Lake Simcoe



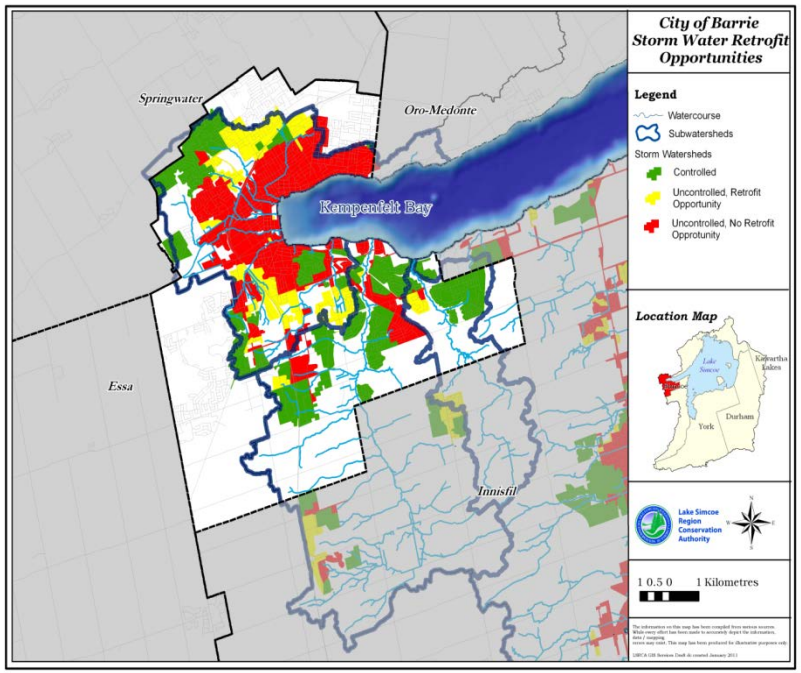
LSPOP Benefit Summary



Based on growth projections of 9,000 hectares and a charge of $35,000 kg a total of could $315 million could be realized to address urban sources. (Total P reduction = 10.7 T/y)

What is Phosphorus Offsetting?

- It is not “trading” but a required offset to meet the urban stormwater phosphorus reduction in the LSPP,
- The initial phase of LSPOP focuses exclusively on mitigating urban stormwater P loads from new development and redevelopment,
- This is achieved by providing resourcing to retrofit existing uncontrolled urban areas.



How It Works


Lake Simcoe
Watershed Boundary
Stream
Reduces P Load
Offset Source
Existing
Urban Area
Stormwater
Retrofits
New
Urban
Area
Adds P Load
Needs Offset

How It Works

- Proponents proposing development/redevelopment projects are ***required*** to consult with the LSRCA regarding their stormwater management plans (SWP),
- Based on the final SWP plan approved, a cost to achieve "Zero Export" will be assessed,
- Payment of the agreed upon amount will be required as a condition of draft plan approval (Municipal Planning Act),
- Revenue collected will go towards construction of urban retrofits and an administration cost.



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:

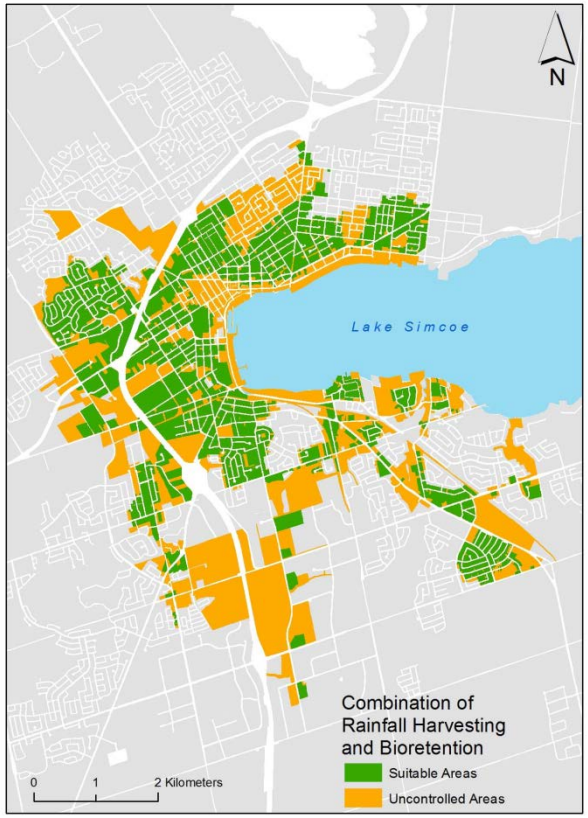
3.5 kg/year X 2.5 (offset ratio) = 8.8 kg/year

Proposed Offset Purchase

- 8.8 x $35,000 kg/y = $ 308,000
- $1,750 per lot

Retrofit Opportunities

- Conventional SWM controls, (ponds, engineered wetlands)
- LIDs, Water Harvesting, Green Roofs.



Other Benefits of LSPOP

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 ground-water drinking supplies and ecological services,
- Creation of green industry - jobs in construction, operation and maintenance,
- Drive innovation to find new BMPs,
- Facilities are aesthetically attractive, and provide opportunities for carbon offsetting.


QUESTIONS