

# Phosphorus Offsetting Policy

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**Lake Simcoe Region**  
conservation authority

September 2017

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## Acknowledgements

This policy could not have been developed without the participation of and collaboration with:

- Ministry of the Environment and Climate Change (MOECC)
- Chippewas of Georgina Island First Nation
- City of Barrie
- City of Kawartha Lakes
- Regional Municipality of Durham
- Township of Brock
- Township of Scugog
- Township of Uxbridge
- Town of Bradford West Gwillimbury
- Town of Innisfil
- Town of New Tecumseth
- Township of Oro-Medonte
- Township of Ramara
- Regional Municipality of York
- Town of Aurora
- Town of East Gwillimbury
- Town of Georgina
- Township of King
- Town of Newmarket
- Town of Whitchurch-Stouffville
- Building Industry and Land Development Association (BILD)
- Ontario Federation of Agriculture (Simcoe Chapter)

The Lake Simcoe Region Conservation Authority would especially like to acknowledge the support of the Minister of Environment and Climate Change, the Hon. Glen Murray.

## Conservation Authority Resolution

The LSRCA Board of Directors on September 22, 2017 adopted the Phosphorus Offsetting Policy by resolution as follows:

Moved by: S. Macpherson

Seconded by: P. Ferragine

**BOD-131-17 RESOLVED THAT Staff Report No. 38-17-BOD regarding the Lake Simcoe Phosphorus Offsetting Program be received; and**

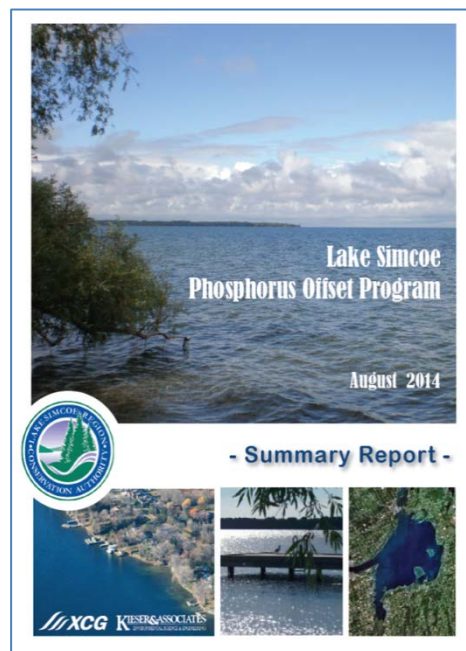
**FURTHER THAT the Phosphorus Offsetting policy be approved to take effect January 1, 2018; and**

**FURTHER THAT LSRCA's member municipalities and the Building Industry and Land Development Association be notified accordingly. CARRIED**

## 1.0 Introduction

The Lake Simcoe Region Conservation Authority (LSRCA) Strategic Plan (2016–2020) sets the groundwork for achieving a healthier watershed by 2041 than we have today. The Strategic Plan provides action items and goals which speak to a thriving environment that inspires and sustains the needs of generations to come. The first goal of the Strategic Plan is to *support a safer, healthier and livable watershed through exceptional integrated watershed management*. The initiation of a Lake Simcoe Phosphorus Offsetting Program (LSPOP) to reduce phosphorus is one of the plan’s key activities and will ultimately protect and improve the water quality in Lake Simcoe and its tributaries.

The LSPOP is the product of more than 4 years of work in collaboration with the First Nations, Chippewas of Georgina, the Ministry of the Environment and Climate Change (MOECC), our municipal partners, the Building Industry and Land Development Association (BILD) and the watershed community. Extensive consultation was held during the study and to develop policy to operationalize the program. The study report and appendices were released in late 2014 and are available on the LSRCA website: [www.LSRCA/watershed-health/phosphorus-offsetting-program](http://www.LSRCA/watershed-health/phosphorus-offsetting-program), along with a summary document. This policy outlines the steps needed to facilitate an offset with the development industry and is intended to aid in operationalizing the program. The effective launch date of January 1, 2018 has been selected in order to provide a transitional period for municipalities and members of the Building Industry and Land Development Association.



It is noted that the Lake Simcoe Phosphorus Offsetting Program will result in many other environmental, social and economic benefits including:

- 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,

- Facilities that are aesthetically attractive and provide opportunities for carbon offsetting and climate change mitigation.

## 2.0 Context

LSPOP requires that all new development must control 100% of the phosphorus from leaving their property. This is referred to as the Zero Export Target, a key component of the LSPOP that ensures new development or redevelopment activities do not continue to contribute to phosphorus loading to Lake Simcoe. Under this Policy, as new urban growth occurs phosphorus loads will be controlled to the maximum extent possible using the best available control technology within the development itself in compliance with the MOECC Stormwater Guidelines and the LSRCA Watershed Development Guidelines, whichever is most stringent. Any remaining stormwater phosphorus load that cannot be controlled would trigger the need for an offset to achieve a net zero target. An offset ratio of 2.5:1 would be applied meaning that 2.5 kg of phosphorus per year would be removed for every 1 kg required to be offset. The offset measures would consist of phosphorus load reduction through the use of Low Impact Development (LID) techniques and the retrofit of existing stormwater discharges elsewhere in a sub-watershed or in adjacent sub-watersheds.

LSPOP is based on the following provincial, regional, and watershed documents in the Lake Simcoe watershed:

Lake Simcoe Environmental Management Strategy	(1990-2007)
Assimilative Capacity Study	(2006)
Lake Simcoe Protection Plan	(2009)
Lake Simcoe Phosphorus Offsetting Program	(2014)
Provincial Policy Statement	(2014)
Growth Plan for the Greater Golden Horseshoe	(2017)
Ontario Water Resources Act	(R.S.O. – 2017)
Subwatershed Plans	(2009 - 2017)

For example, Chapter 4 of the Lake Simcoe Protection Plan identifies that phosphorus loadings should be reduced to achieve a target for dissolved oxygen of 7mg/L in Lake Simcoe, which equates to a long-term goal of 44 tonnes per year. Phosphorus offsetting is a means to help achieve this long-term goal and target.

### 3.0 Principles

LSPOP is based on the following principles:

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<b><i>Accountable</i></b>	Mechanisms will be in place to demonstrate that actual phosphorus reductions will result from the offsets and that program implementation and decisions will be transparent.
<b><i>Beneficial</i></b>	Offsetting will result in net water quality benefits to Lake Simcoe.
<b><i>Defensible</i></b>	Offsetting parameters, such as credits and ratios, will be based on reliable scientific evidence and methods.
<b><i>Economical</i></b>	Reductions in phosphorus loadings to Lake Simcoe that result from offsetting should be at an overall lower cost than traditional approaches to water quality improvement.
<b><i>Enforceable</i></b>	Offsetting procedures will be simple, consistent and implementable.
<b><i>Equitable</i></b>	Offsetting will avoid bias in terms of participation, location of trades, and value of credits.
<b><i>Adaptable</i></b>	Information about program operation and water quality improvements will be reviewed from time to time and will be used to adapt offsetting to changing knowledge and technology.

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## 4.0 Policy Approach

### 4.1 Goals

- To maintain and/or improve the water quality of Lake Simcoe and its tributaries by addressing stormwater, which is defined as waste water and should not be discharged to a receiving water body that is at or as a result of the discharge, would exceed its assimilative capacity,
- To assist in achieving the Lake Simcoe Protection Plan target for dissolved oxygen of 7mg/L in Lake Simcoe with an annual phosphorus load of 44 tonnes per year.

### 4.2 Objectives

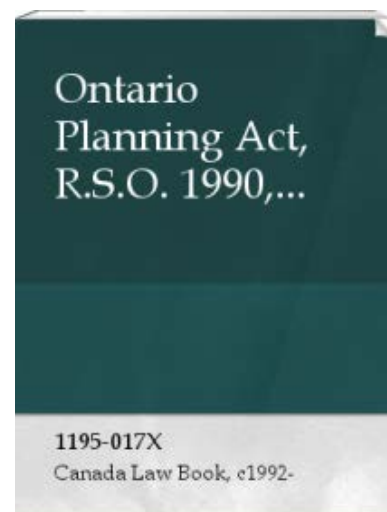
- To reduce stormwater runoff to pre-development conditions as close to the source as possible,
- To ensure that development within the watershed contributes to the protection or enhancement of water quality and quantity through the implementation of LID techniques such as enhanced swales, rain-gardens, and permeable surfaces,
- To prevent increases in phosphorus loads to Lake Simcoe and its tributaries by utilizing LID principles,
- To recognize stormwater retrofit projects on public lands as a means to achieving the overall phosphorus water quality target.

### 4.3 Definition

Phosphorus offsetting will be applied to the following applications under the *Planning Act* and *Condominium Act*:

- Plans of subdivision
- Plans of condominium
- Site plans involving major development
- Consent applications resulting in the creation of four or more new lots

For the purposes of this Policy, major development is defined as a proposed impervious area that is greater than (>) 500m<sup>2</sup>.





## 4.4 Phosphorus Offsetting Policies

- 4.4.1** An application as identified in Section 4.3 shall be accompanied by a Preliminary Phosphorus Budget as part of an overall Functional Servicing Report or Preliminary Stormwater Management Report. This evaluation shall be prepared by a qualified professional to the satisfaction of the municipality and local conservation authority prior to any draft plan of subdivision, site plan approval or granting of provisional consent. A Detailed Phosphorus Budget, based on the approved Preliminary Report, will be required as a condition of draft plan of subdivision/condominium or site plan approval or granting of provisional consent.
- 4.4.2** The Phosphorus Budget identified in Section 4.4.1 must demonstrate that the phosphorus load from the development on the property will be zero. The Phosphorus Budget shall be prepared in accordance with the following:
- i. Municipality's Comprehensive Stormwater Management Master Plan prepared under 4.5-SA of the Lake Simcoe Protection Plan (2009)
  - ii. Subwatershed Evaluations under 8.3-SA of the Lake Simcoe Protection Plan
  - iii. Designated Policy 4.8 of the Lake Simcoe Protection Plan
  - iv. Section 2.2 of the Provincial Policy Statement (2014)
  - v. LSRCA's Technical Guidelines for Stormwater Management Submissions
  - vi. Provisions and Regulations of the *Ontario Water Resources Act*
  - vii. Policy 3.2.7 of the Growth Plan for the Greater Golden Horseshoe (2017).
- 4.4.3** In situations where the phosphorus load cannot be met or demonstrated in a post-development scenario to achieve the Zero Phosphorus, the developer or proponent shall be required to provide phosphorus offsetting to the LSRCA. Phosphorus offsetting will include the following:
- Offset Ratio = 2.5:1
  - Offset Value = \$35,000/kg/year
  - Offset Calculation = (ratio (2.5) x P deficit in kg x \$35,000)
- 4.4.4** The revenue generated through phosphorus offsetting will be used to reduce the phosphorus load in other parts of the subwatershed by funding the construction of; stormwater pond retrofits, Low Impact Development best management practices. The

offset shall generally occur in the same catchment as the subject lands, subwatershed, or watershed in order of priority.

**4.4.5** Proper agreements shall be established in order to ensure the phosphorus offset will be employed and maintained in perpetuity. The following agreements or legal instruments, where appropriate, shall be required as a condition of approval for any draft plan of subdivision or condominium, site plan under Section 41 of the *Planning Act*, or consent application:

- Subdivision or consent agreement;
- Condominium agreement;
- Site plan agreement;
- Purchase and sale agreements; and,
- Covenants as per the *Conservation Land Act* registered under the *Land Titles Act*.

**4.4.6** Council may enact by-laws under the *Municipal Act* to help implement the approved phosphorus offset. Existing fill or site alteration by-laws may be amended or updated to include the offset requirements.

**4.4.7** Applications under the *Planning Act* that facilitate permitted agricultural uses or the construction of an accessory structure (e.g. garage) or a single family dwelling on an existing lot of record will not be subject to this Phosphorus Offsetting Policy. In addition, proposals requiring approval under Ontario Regulation 179/06 via the *Conservation Authorities Act* will not be subject to the requirements of this Policy.

## 5.0 Implementation

This Offsetting Policy will be primarily implemented through Ontario's land use planning process under the *Planning Act*. A phosphorus budget will be required as part of a Stormwater Management Report in accordance with Designated Policy 4.8 of the Lake Simcoe Protection Plan. An example of the application of the zero export target is provided below. Where a development proposal is within the Well Head Protection Area Q2 as defined by the South Georgian Bay Lake Simcoe Source Protection Plan (2015) and has an infiltration deficit, the water budget and phosphorus budget will be integrated to ensure that there will be no duplication offsetting.

### EXAMPLE:

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

8.8 x \$35,000 kg/y = \$ 308,000

Equates to \$1,750 per lot



## 6.0 Effectiveness Monitoring

### 6.1 Phosphorus Offsetting Project Monitoring

LSRCA in association with the municipality will be responsible for implementing appropriate offsetting projects. The effectiveness of some these projects where deemed necessary will be monitored over time, and any reporting will be made available to the province, Building Industry and Land Development Association (BILD), watershed municipalities and watershed community on-line.



### 6.2 Phosphorus Offsetting Revenue Monitoring



To ensure effectiveness and transparency, a record of the collection and allocation of funds received through the revenue generated in 4.4.3 and 4.4.4 will be made available to BILD, watershed municipalities and other interested stakeholders, on an annual basis, and quarterly in a report to LSRCA's Board of Directors. An independent third party audit will be conducted annually and circulated to the province, BILD, watershed municipalities and watershed community on-line.