



July 19, 2018

Federal Funding for Thames River Phosphorus Reduction Collaborative Media Backgrounder

Partners in the PRC

The [Ontario Federation of Agriculture](#), representing 36,000 farmers, and the [Great Lakes and St. Lawrence Cities Initiative](#), a bi-national alliance of 130 mayors representing over 17 million people, have partnered with key agricultural, drainage, municipal, Conservation Authority, First Nation, NGO and private company partners to develop a collaborative strategy to reduce phosphorus loss through drainage into the Thames River, called the [Phosphorus Reduction Collaborative](#) (PRC).

Great Lakes Protection Initiative Funding for PRC technology projects

On July 19th, Federal Environment and Climate Change Minister Catherine McKenna announced that the PRC is being awarded up to \$600,000 over four years under the [Great Lakes Protection Initiative](#), to demonstrate technologies that intercept and capture phosphorus from agricultural runoff in the Thames River basin. The PRC will test the effectiveness of the technologies, compare the cost of different methods, and encourage their widespread adoption.

The Challenge

With Environment and Climate Change Canada's recently announced Domestic Action Plan to reduce phosphorus entering Lake Erie by 40 per cent, it is efforts like the Phosphorus Reduction Collaborative that are finding practical, effective, affordable solutions to reach the binational goal.

The western end of Lake Erie was covered by an 1812 square kilometre algal bloom last summer, an area equivalent to more than 250,000 football fields. These harmful algal blooms can contain neurotoxic bacteria called microcystin. When microcystin was detected in algae in its source water in 2014, the City of Toledo, population 400,000, was forced to close its public drinking water system for three days over a hot August weekend. Closer to home, Pelee Island also turned off its taps due to microcystin found in Lake Erie algae.

Agricultural runoff has been identified as one of the major contributors of phosphorus into Lake Erie, which feeds the growth of harmful algal blooms. Agricultural researchers and practitioners have made great strides in identifying better practices to retain more phosphorus on the land, including better fertilizer application methods, and improved soil health and erosion reduction. These best practices are the first line of defense in reducing phosphorus loss into waterways. However, as big storms and snow melts become more intense and more frequent, some phosphorus will always be washed away.

Technologies to intercept and remove phosphorus from agricultural runoff

The Phosphorus Reduction Collaborative focuses on the last line of defense- intercepting and removing phosphorus from run-off at the edge of field and in the drainage system during and following large rain and snow melt events in the non-growing season.

After a year of research and outreach, the PRC has identified two ways to intercept and capture phosphorus from diffuse runoff over large geographic areas.

The first way is to capture phosphorus runoff on farm fields, through inlets in field and drainage tile outlets on the edge of fields. Low –tech passive systems using beds of sorptive materials (e.g. woodchips, steel slag) that react to and bind with phosphorus, located at these two runoff gathering points can filter out phosphorus from runoff before it is released into waterways.

The second way to remove phosphorus is to use active technologies adjacent to the municipal drains where agricultural runoff is collected and pumped out into waterways. While phosphorus removal technology has been used for years in wastewater treatment plants, the application of technologies at a much smaller scale at varying water temperatures and flows is largely untested.

Municipal Partners

The City of London and the Municipality of Chatham-Kent are demonstrating their commitment to the PRC by contributing financially and lending their time and expertise towards the successful implementation of the technologies. Municipal staff are advising the PRC on the best location for testing technologies. At least one demonstration project will be located in each municipality.

Finding solutions to a global problem

Algal growth as a result of excessive phosphorus levels, made worse by intense rain events, is a global problem. Finding a practical, effective, affordable solution would be a very significant achievement for the agricultural and drainage community in south-western Ontario. With the provincial and binational reach of its principal partners, the OFA and the Cities Initiative, the PRC intends to share everything that we learn with agricultural partners throughout the Great Lakes and St. Lawrence region and beyond.

For more information and updates on the Phosphorus Reduction Collaborative, please go to www.thamesriverprc.com .



Thames River

PHOSPHORUS REDUCTION COLLABORATIVE

IMAGES



Installation of a surface water filtration box system in Chatham-Kent

Credit: Kevin McKague, OMAFRA



Phosphorus removal bed Credit: Phosphorous Removal Online Guidance <http://phrog.okstate.edu/>



Municipal drain pumping station in Chatham-Kent
Credit: Nicola Crawhall, Cities Initiative