

# A Collaborative Strategy to Improve Water Management and Drainage to Reduce Phosphorus Loss in the Thames River Basin



**Ontario Federation of Agriculture**

Nicola Crawhall, Deputy Director, GLSLCI  
OMAFRA Agricultural Sector Working Group  
Guelph Ontario  
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# Strategy Overview

## How did this come about?



- A partnership between OFA and the Great Lakes and St. Lawrence Cities Initiative
- Intensive consultation process in Spring 2016 involving OABA, OSCIA, Farm and Foodcare, Christian Farmers, Pork Producers, municipalities of Chatham-Kent and London, Land Improvement Contractors of Ontario, Drainage Superintendants Association of Ontario, Drainage Engineers Committee, Lower Thames CA, Freshwater Futures, Chippewas of the Thames, OMAFRA, academics from University of Guelph, Waterloo, among others.
- Detailed recommendations from 4 subcommittees on i) best practices, ii) agricultural outreach, iii) science and iv) working with regulatory agencies.
- Strategy adopted by OFA and GLSLCI boards respectively, in June 2016.

# Strategy Overview

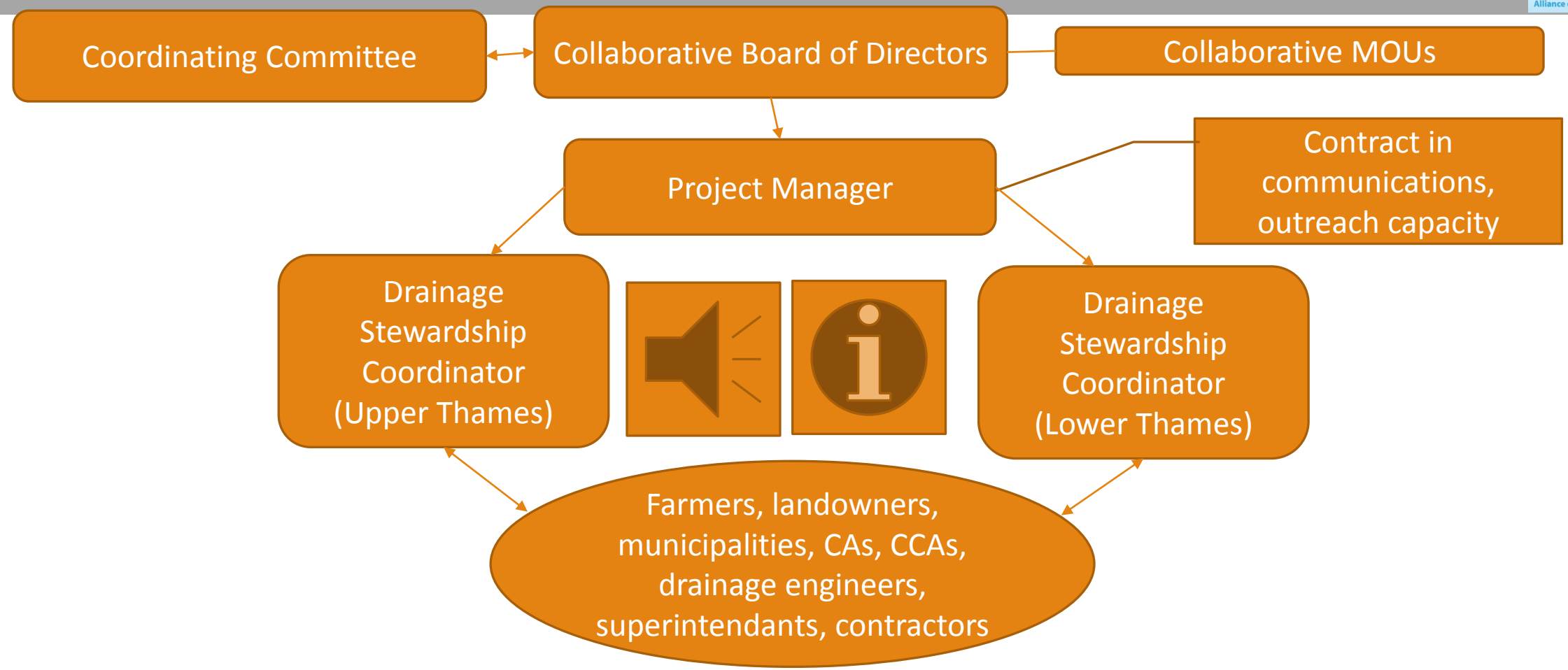
## What?



- A collaborative amongst a cross section of agricultural organisations, conservation organisations, drainage organisations and municipalities to raise awareness and provide an extension service aimed at reducing the surface and subsurface transportation of phosphorus off agricultural land either directly into waterways, or via municipal drainage systems.
- Extension work will be aimed at two scales:
  - 1) at the farm level, projects to slow down and/or store water on farmland; and
  - 2) at the communal drainage system level, to store/remove/recycle phosphorus in drainage system or at outlet.
- Monitor progress, report publicly on results
- Establish funding program to offer incentives to undertake improvements
- Recognition program for participants

# Strategy Overview

## Who?



# Strategy Overview

## Where?



- Three watersheds identified
  1. McGregor Creek (Lower Thames)
  2. Jeanettes Creek (Lower Thames)
  3. Medway (Upper Thames)
- Chosen as preferred sites to begin the strategy based on data available showing elevated levels of phosphorus, and opportunity to use existing monitoring instrumentation to establish a baseline.
- Further refinement of areas within these three watersheds, in consultation with federal and provincial authorities, conservation authorities, drainage superintendants who operate in the watersheds, and the county OFA offices.

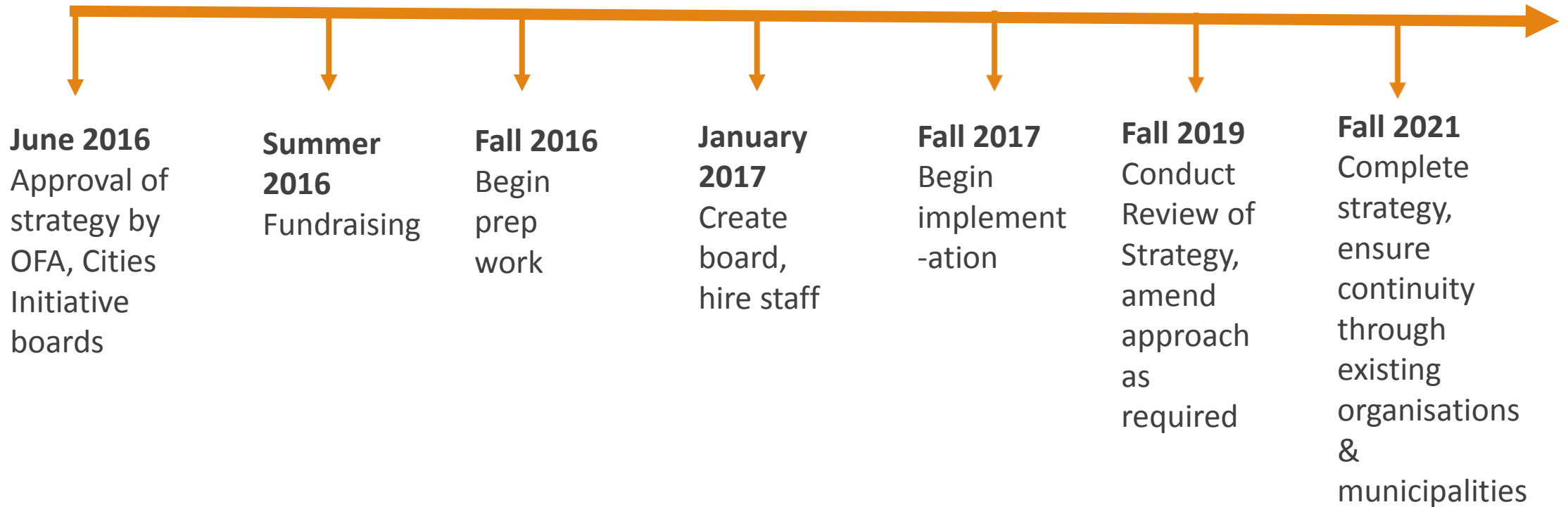
# Strategy Overview

## Financing



- Implementation of the strategy will cost an estimated \$1.5 million per year for 5 years, for a total of \$7.5 million.
- Strategy implementation is contingent on successful fundraising.
- Funding will be sought from the public and private foundations, government, private companies.

# Strategy Timing



# Strategy Prep Work



- Approval of the strategy by the boards of the OFA and Cities Initiative
- Secure funding
- Create the board
- Hire the project team
- Develop a website
- Develop a communications strategy and materials
- Develop a promotion and outreach strategy and materials
- Gather BMP information and prepare materials
- Develop a protocol to engage with regulatory agencies
- Agree on a monitoring and evaluation protocol
- Agree on subwatersheds within chosen watersheds in which to start work.
- Arrange presentations at events



# Outreach, Engagement Agricultural Community



- Face to face meetings with local farmers, landowners, possibly hosted by municipality
- Involve local farm organisations, commodity groups as agents to communicate and raise awareness amongst local farmers, landowners.
- Identify local champions to help rally people locally, ask county federation for advice.
- Contact landowners as well as farmers to reach those who lease land.
- Articles in leading farming publications, presentations at agricultural conferences
- Distribute information through OFA County federations, OMAFRA Nutrient Management Plan group, and/or livestock commodity groups
- Provide CCAs, PAgS, CA staff with materials that they can disseminate to farmers, landowners
- Use of Social media (twitter and facebook),

# Outreach, Engagement Municipalities



- Drainage 101 presentations to municipal councils, importance of the municipal role in reducing phosphorus entering waterways.
- Project team to engage municipalities in watersheds, determine their interest and capacity to participate in the strategy.
- Ask participating municipalities to help engage landowners and farmers through public meetings, mail-outs, etc.
- Model municipal drainage by-law and policy to be developed to share with municipalities + existing examples (Leamington, Huron-Kinloss) to be circulated to municipal councils, drainage superintendants and engineers.

# Outreach, Engagement Drainage Professionals



Host session on drainage and phosphorus reduction in the Thames River region, for drainage superintendants, drainage engineers, drainage contractors, other landscape managers (CCAs, Cas, P.Ags, etc).

Workshops on drainage improvements at conferences of drainage professional associations, LICO, DSAO, Drainage Engineers' Committee.

Technical workshops on installation of water management/drainage features, possibly hosted by universities involved in similar research.

Drainage demonstration day, possibly hosted by LICO

Provide continuous education opportunities to update content as new information on BMPs, results of strategy come available.

Annual sessions at LICO conference, Drainage Engineers Committee, Professional Engineers of Ontario, OCCAA, Conservation Ontario's Latornell Symposium

# Outreach, Engagement First Nations



## Within Strategy

- Outreach to First Nations in chosen watersheds
- Seek traditional knowledge and monitoring data from First Nations in chosen watersheds

## Outside of Strategy

- Document drainage outlet discharge onto Chippewas of Thames territory, assist with determining source, alert authorities to address impact.

# Working with Regulatory Agencies

On communal drain, season for drainage maintenance or improvements may be impacted by

*Endangered Species Act*

*Fisheries Act*

*Conservation Authorities Act*

*Species At Risk Act*

- Once project is identified, bring representatives from DAWG and DART (MNRF, DFO, CAs) together with local drainage superintendant, drainage stewardship coordinator to discuss project early in process.



# BMPs

- Gather current best knowledge of BMPs (literature review) for reducing phosphorus loss, including the effectiveness of BMPs in mitigating impact of major storm events and snow melt on phosphorus loss.
- Hold a BMP Workshop with Conservation Authorities, drainage superintendants, drainage engineers and licensed contractors to assemble shared knowledge and experiences.
- Possible treatment design competition to spur innovation.
- Develop website, with “portal” interactive community, to house Information on BMPs.



# Monitoring, Measuring Progress

- In-stream monitoring to be conducted above and below the areas where improvements are undertaken and in a control watershed.
- Use of existing instrumentation where possible, supplemented by additional instrumentation as required.
- Land characteristics survey to add information to evaluation.

# Next Steps

- Secure funding
- Create board and coordinating committee
- Consult with regulatory agencies on where this strategy fits into to broader phosphorus reduction efforts.
- Promotion of strategy (Better Farming Magazine; Conservation Ontario, drainage , agricultural, municipal conferences)
- Outreach in local watersheds