



Lake Simcoe Region
conservation authority

A Watershed for Life

LSRCA's RainScaping Program Supporting Lake Simcoe



Ben Longstaff
GM, Integrated Watershed Management

Upper Thames River Conservation Authority LID workshop
April 6, 2016



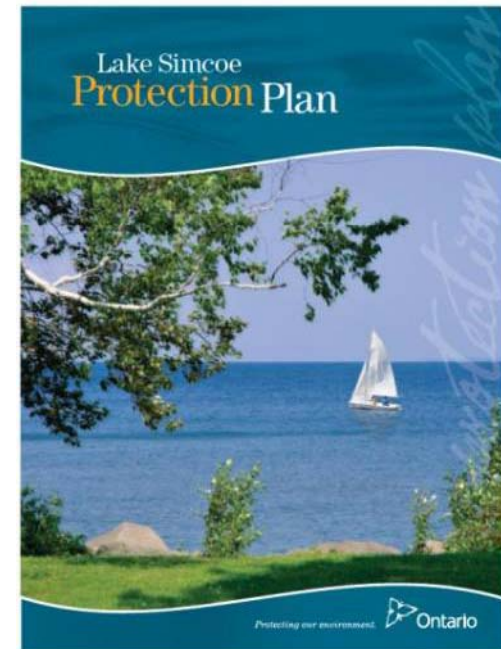
June 22, 2012

Lake Simcoe Protection Plan

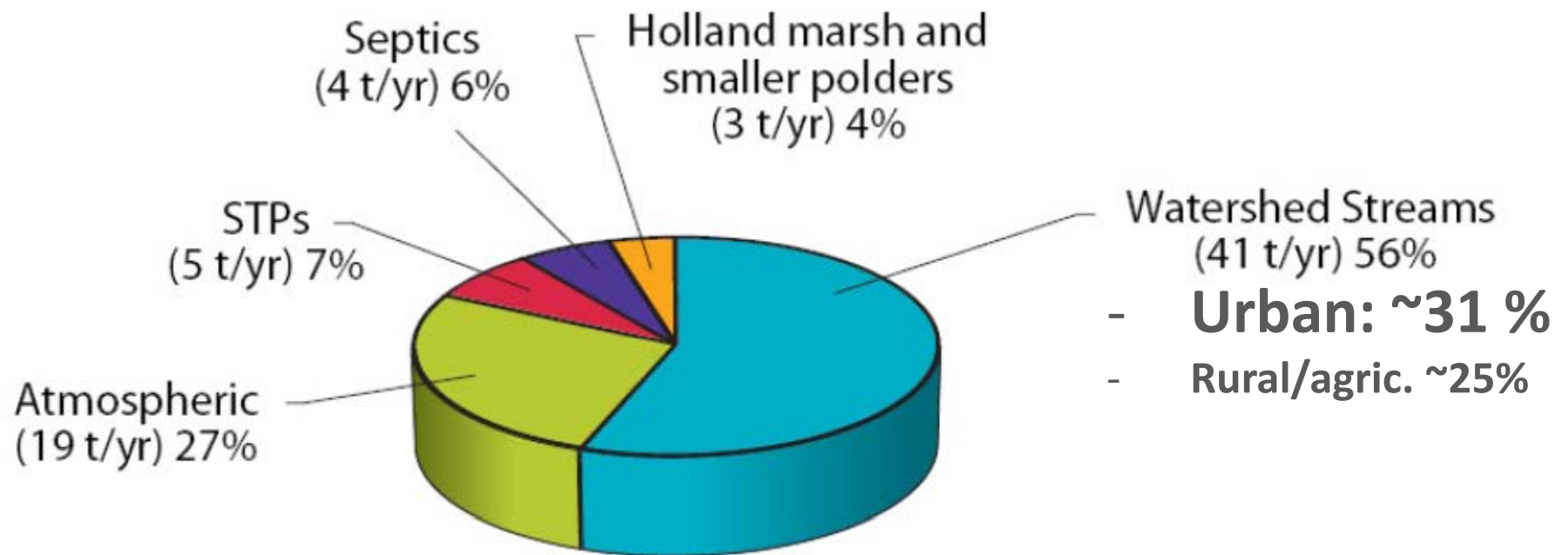
*Protect, improve and restore
ecological health of the Lake and
watershed...*

Stormwater management enabling legislation

- Municipalities to prepare comprehensive stormwater management master plans
- Municipalities to develop policies that encourage a treatment train approach to stormwater
- All major developments require a stormwater plan that uses an integrated treatment train approach (Policy 4.8)



31% of Lake Simcoe Phosphorus loads from Stormwater

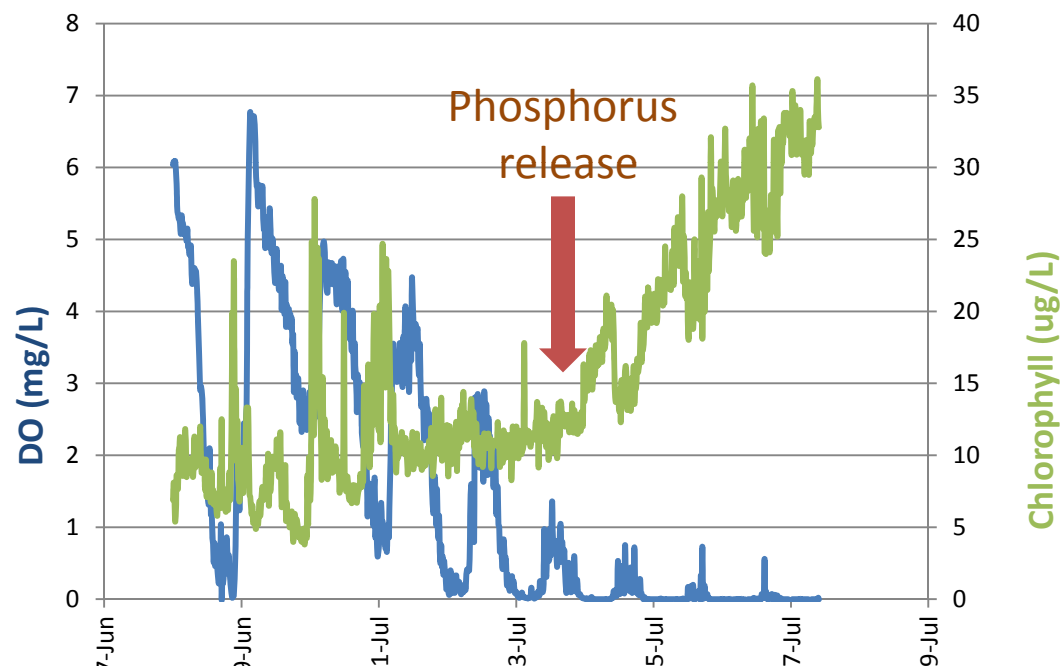


Stormwater Ponds are costly to maintain



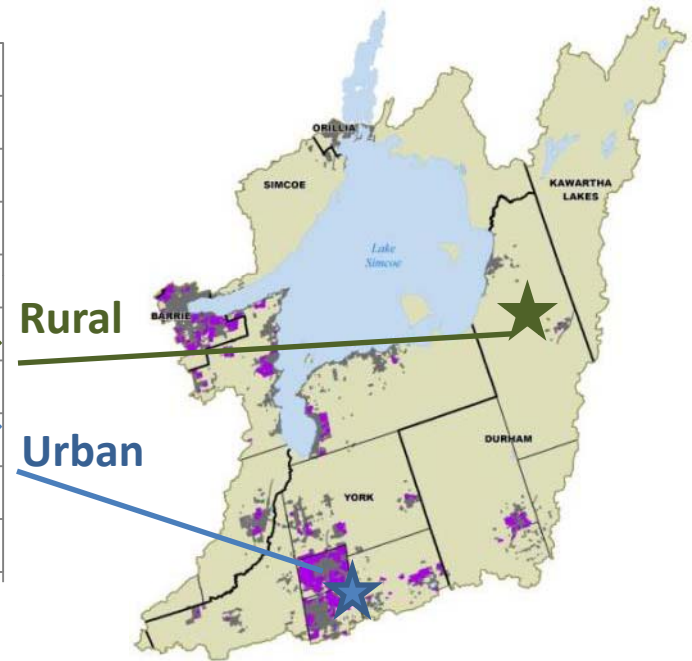
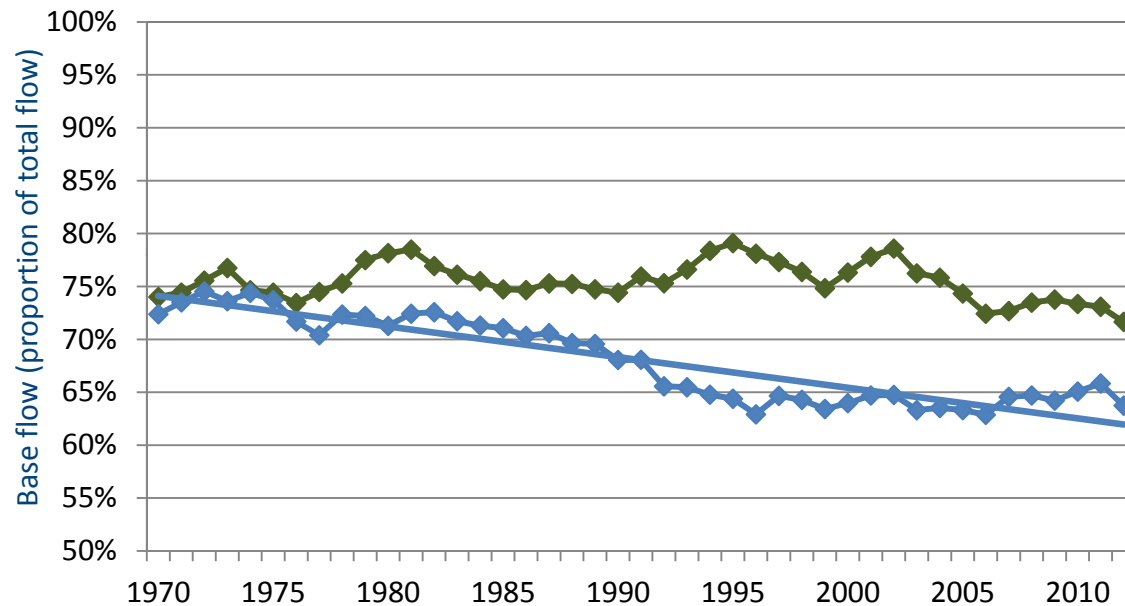
- Percent surveyed ponds below design level: **60%**
- Estimated cost to bring the 56 ponds back to design level: **\$18.5 million**
- Reduction in Phosphorus if ponds maintained: **1.1 T/y**

Stormwater ponds can become a source of phosphorus

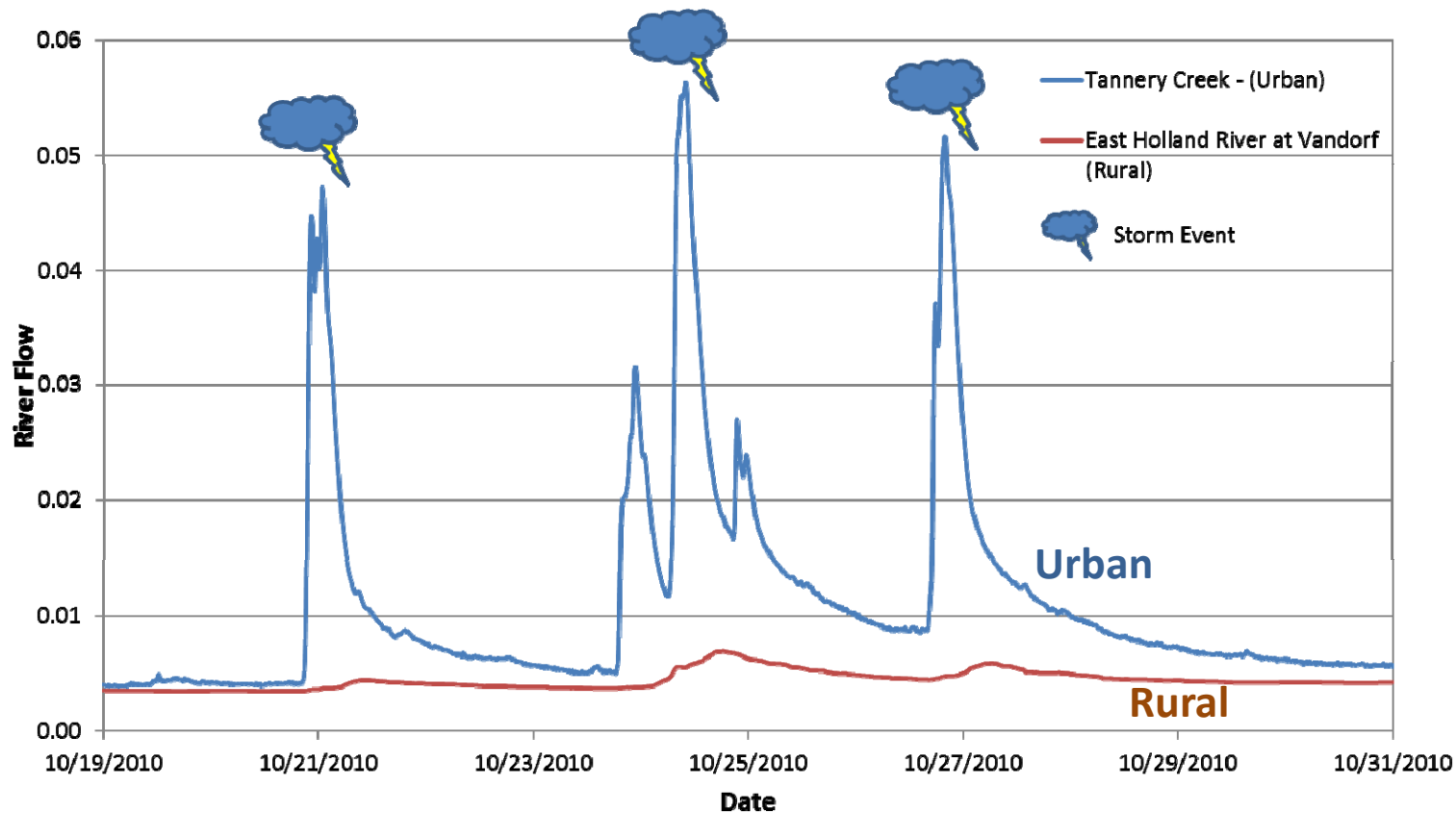


Low dissolved oxygen levels results in sediment bound phosphorus being released into the pond water.

Diverting stormwater to ponds is reducing critical cold water habitat



Diverting stormwater to ponds is still resulting in flashy high flow condition in our rivers and streams



Flash flows leading to...

- Stream bank erosion



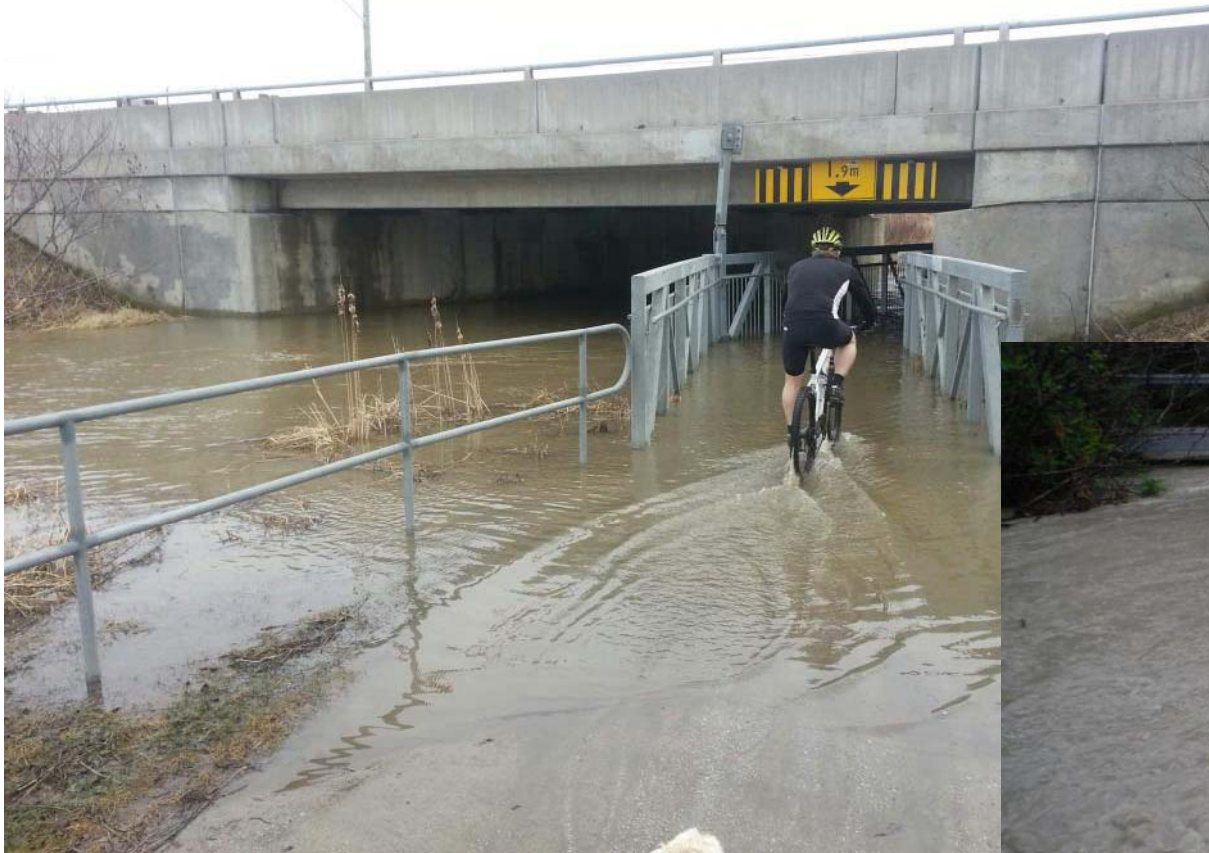
Flash flows leading to...

- Damage to urban infrastructure

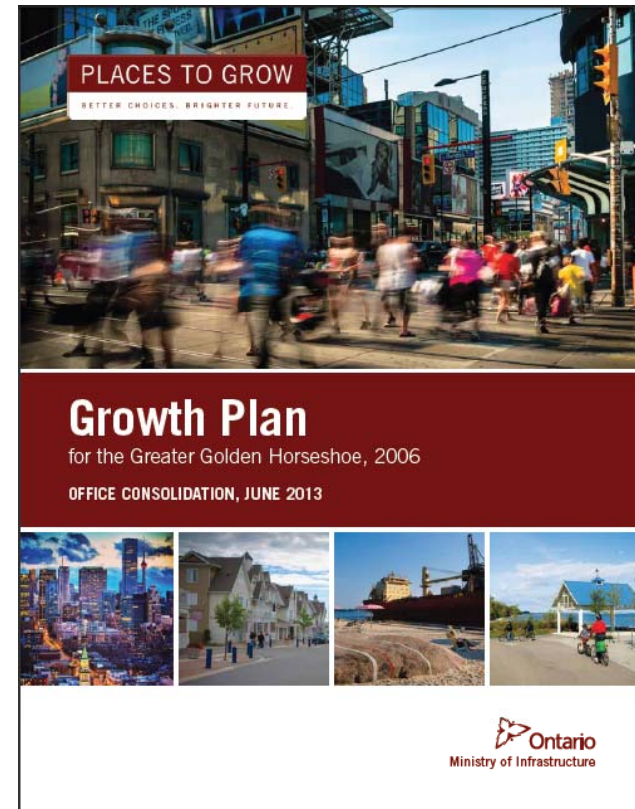
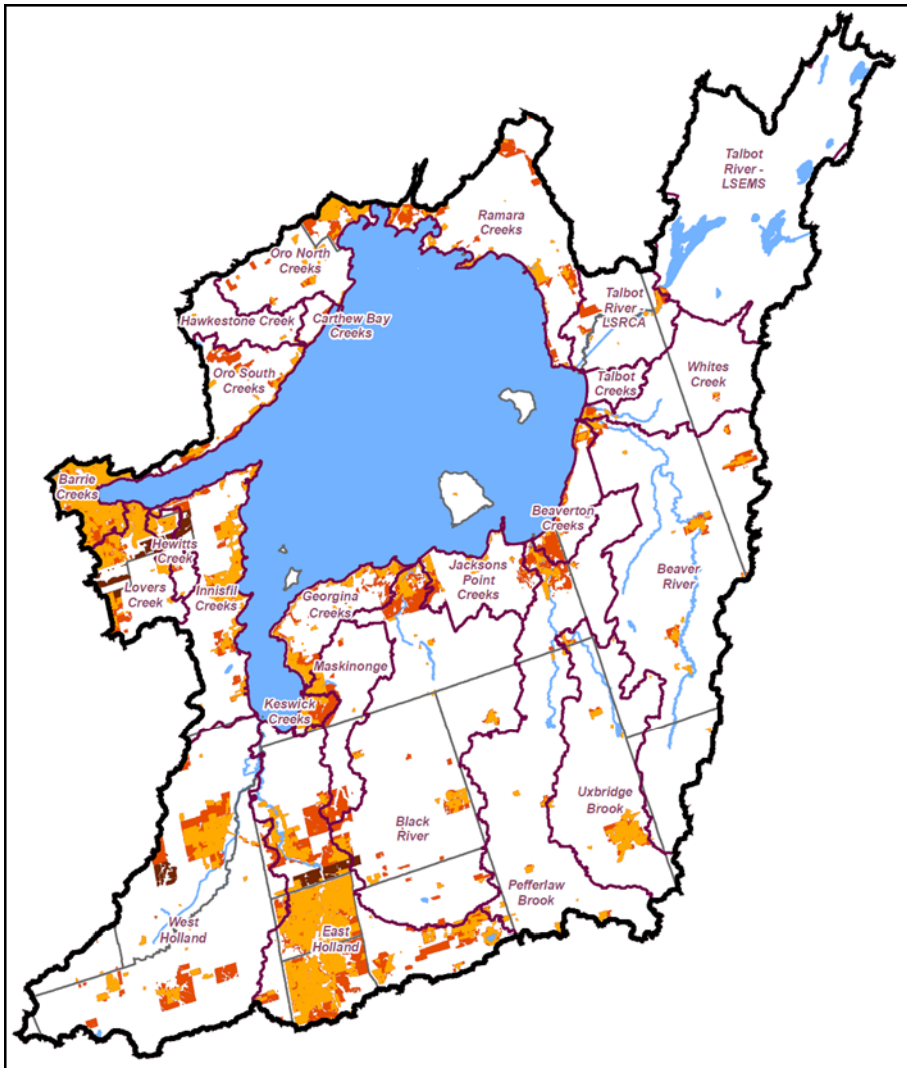


Flash flows leading to...

- Flooding

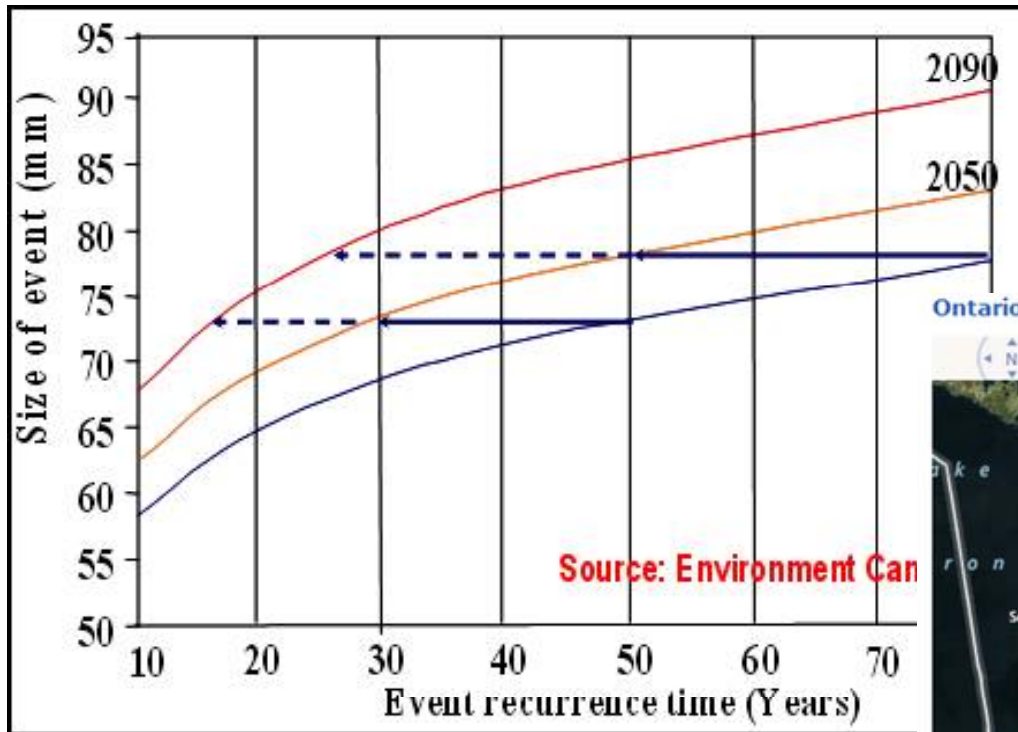


Only going to get worse unless we change the way we do business...Meeting Growth Plan targets



Existing urban area 2010	= 22,793 ha
Future urban area at 2031	= 35,028 ha
Total Change in the Watershed	= 12,235 ha

Only going to get worse unless we change the way we do business...Climate Change



Rain Scaping

Is a voluntary market transformation program working with our municipal partners and development community to promote Low Impact Development (LID) and more sustainable building practices.



Rain Scaping

Protection

New Development



Developers, Builders and Municipalities



Restoration

Retrofit Existing Urban Areas



Public Lands
(Municipalities)

Private Lands
(Residential, Institutional,
Commercial, Industrial)



Strategies to effect “transformation”



Connecting with people: *Building community support and knowledge*

What was needed

- Community (council, industry, municipal staff) support for the program

What have we done

- Engaged a champion: “we can do this” - Jay
- Provided high level promotional workshops: watershed wide, regional and local municipal
- Council delegations, dinner events...



Collaboration: *Stormwater Management Working Group*

What was needed

A forum to drive collaboration, consistency and knowledge sharing between all stakeholders

What has been done

- Regularly bringing together municipal, Provincial, development, consultant & Conservation Authority
- Progressed a number of key initiatives. e.g.
 - development of model by-law & guidelines
 - Salt management; SWM Utility Fees / Credit Program; Grant programs



Maximizing resources: *Collaboration*

What was needed

- More collaboration with the GTA CAs (TRCA & CVC) across the board, to share resources and complement (not duplicate) next step efforts.



What have we done

- Synergy with training, staff resources and development of the LID design tool
- Working with Conservation Ontario to expand collaboration across all Conservation Authorities.



Support planning: *Model by-laws and guidelines*



What was needed

A new regulatory and implementation framework to support consistent LID SWM and erosion and sediment control practice in the watershed.

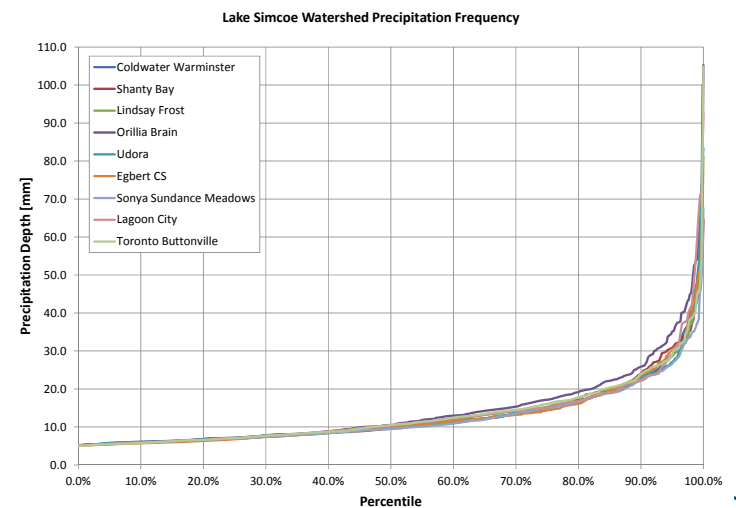
What have we done

- Developed a Draft Model By-law and LID SWM Guidelines (90% of events - 25mm)
- Provided to all municipalities to use as needed
- Formed basis of update to LSRCA's stormwater guidelines

DRAFT

Lake Simcoe Watershed
Model By-Law for Municipalities

April 9, 2015



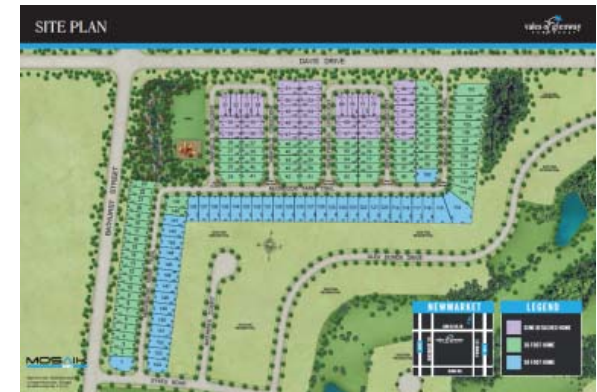
Getting developers on board: *Design Charrettes*

What was needed

Promote the early integration of LID into site plan design

What has been done

- Offering design charrettes for new development
 - Over 10 RainScaping charrettes completed
 - Defined opportunities & constraints for LID implementation
 - Reducing the number of submissions to reach Final Draft Plan Approval.



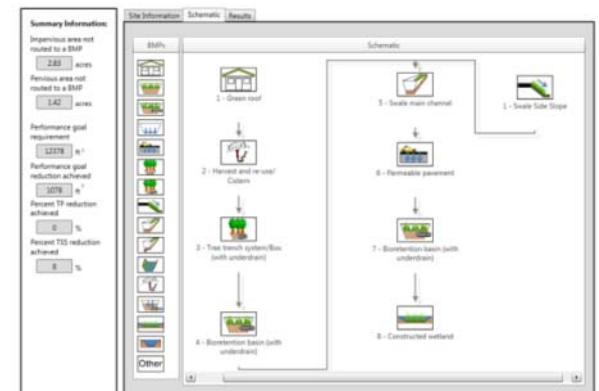
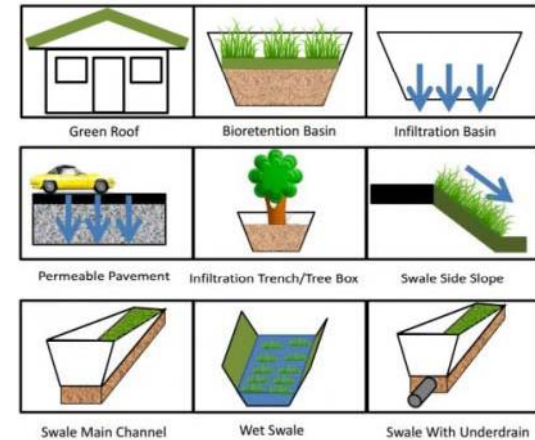
Providing tools of the trade: *Preliminary Design Tool*

What was needed

Provide decision makers with standardized approach for assessing LID options to quantity and quality reduction based on preliminary site conditions

What have we done

- Scoped tool to support implementation of LID in early stages of New Build & Retrofit projects.
- Tool in final stages of development;
- Collaborative project (scoping, funding, etc) between TRCA, CVC, LSRCA
- Planned availability: mid 2016
- Tool User Guide to follow.



Building technical knowledge: *Training, Education, Outreach*

What was needed

- LID and related training courses in watershed for Municipalities and industry.

What have we done

- Surveyed municipal staff to determine training needs
- Regularly providing subsidized training opportunities related to design, construction and maintenance
- Established LSRCA RainScaping website:

<http://www.LSRCA.on.ca/programs/rainscaping/>



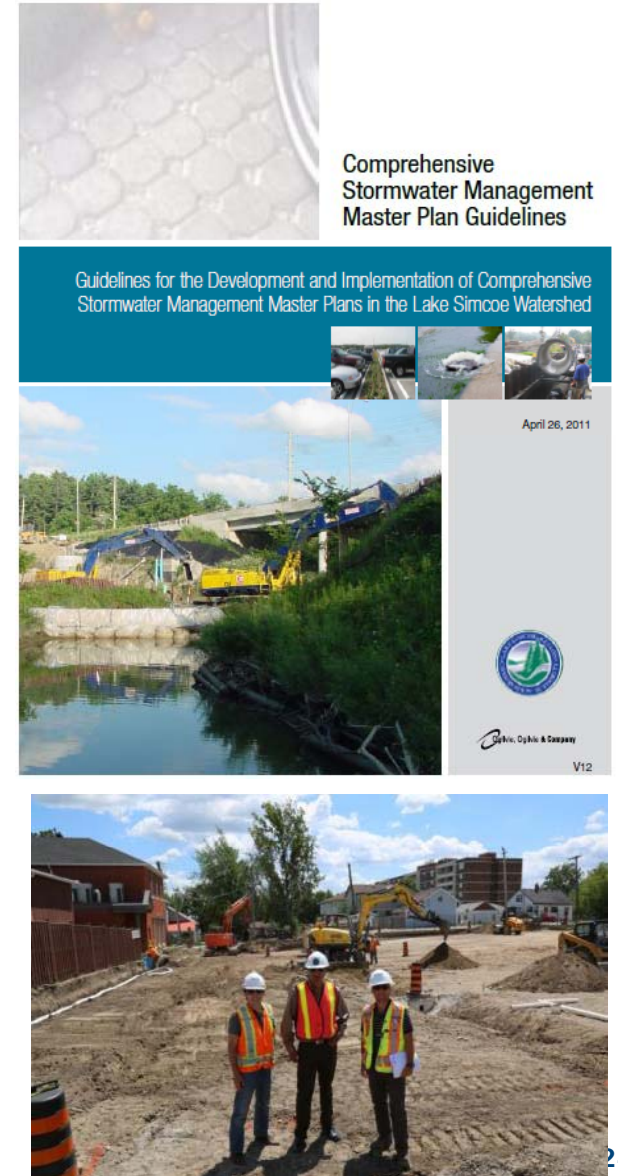
Providing technical & implementation support

What was needed

- Technical support for LID design and implementation, as requested for Municipal and Private projects

What have we done

- Support Municipal and Private Industry requests for Technical guidance for LID SWM design and implementation.
- Comprehensive SWM Master Plan Reviews
- Updates to LSRCA's 'Technical Guidelines for SWM Submissions' with more discussion, standard drawings and credit formulas for LID, where appropriate (Early 2016).



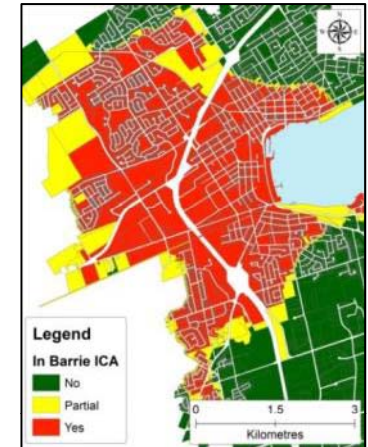
Taking action: *RainScaping Restoration*

What was needed

- Establishing an urban restoration program

What have we done

- Created a tool to prioritize restoration opportunities
- Developing incentive program focused on Industrial, Commercial and Institutional (ICI) LID projects.
- Implemented a residential Raingarden Grant Program.
- Demonstration projects



Taking action: *Funding the fixes*

What was needed

- Immediate and long term funding.

What have we done

- Invested \$745,000 of federal EC funding in urban restoration projects
- Applied LSRCA municipal stewardship funding to urban grants.
- Secured partnerships with external funders
- Exploring implementation of phosphorus off-setting program as a funding mechanism.
- Implementation discussions on Municipal SWM Utility Fees and Credit Programs.



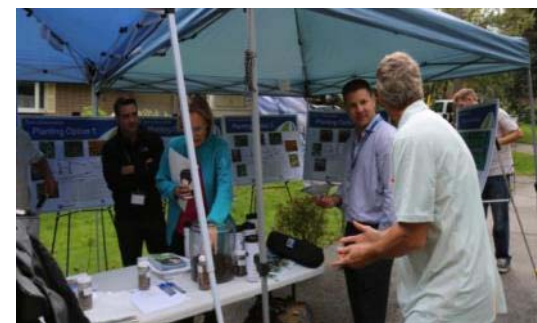
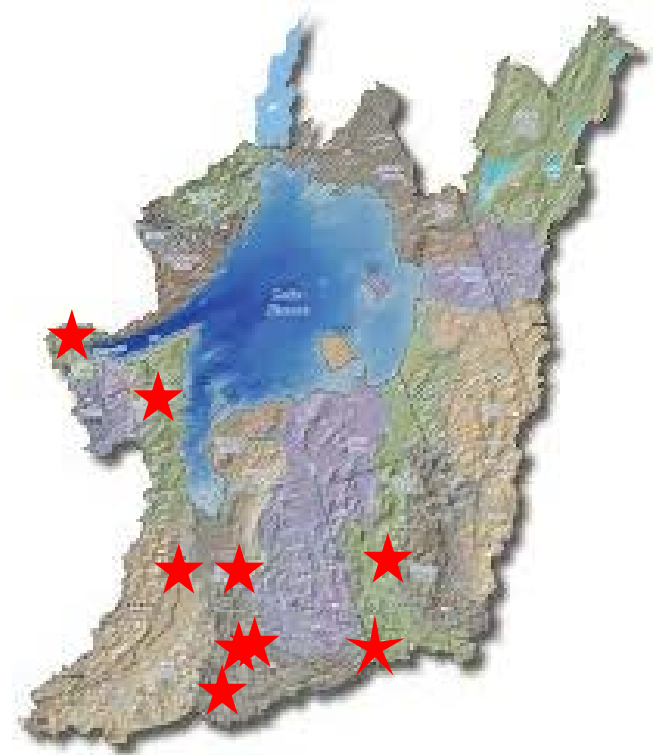
Taking action: *Municipal LID Demonstration Projects*

What was needed

- Demonstration projects to showcase LID, learn a few lessons, make a difference!

What have we done

- Over 8 projects completed or underway
- Secured up to 2/3 federal funding to complete each project
- Seeking funds and/or assisting municipalities to implement additional LID demo projects.
- Promoting projects: media, signage





Moving Forward...

1. Secure sustainable funding:
 - Supporting municipalities in instituting utility fees and credit programs
 - Implement off-set programs: quality (P) and quantity
2. Build capacity within LSRCA to design and project manage LID construction
3. A renewed focus on erosion and sediment control for development and infrastructure projects.
4. Roll out LSRCA's ICI incentive program
5. Continue current efforts... Stormwater Technical Working Group, training, demo projects etc

Acknowledgements

- LSRCA: Mike Walters, Steve Auger, Rob Baldwin, Phil Davies, David Lembcke, and many more...
- Jay Michels: EOR Consulting
- Members of the workgroup
- MOECC
- Lake Simcoe municipalities

