



DEVELOPMENT AND INFRASTRUCTURE SERVICES – ENGINEERING SERVICES  
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June 14, 2016

**DEVELOPMENT AND INFRASTRUCTURE SERVICES - ENGINEERING SERVICES  
INFORMATION REPORT ES 2016-30**

TO: Mayor Van Bynen and Members of Council

COPY: R.N. Shelton, P.Eng., Chief Administrative Officer  
P. Noehammer, P.Eng., Commissioner, Infrastructure and Development Services  
I. McDougall, Commissioner, Community Services  
E. Armchuk, Commissioner, Corporate Services  
Members of OLT  
Lake Simcoe Conservation Authority (LSRCA) - Mike Walters (CAO)  
Rob Baldwin (Director)  
Ben Longstaff (Director)

**SUBJECT: Climate Change Activities and Raingarden Brochure**

ORIGIN: Director, Engineering Services

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**PREAMBLE**

In accordance with the Procedure By-law, any Member of Council may request this Information Report be placed on an upcoming Committee of the Whole agenda for discussion.

**BACKGROUND/COMMENTS**

Please see the attached brochure on Rain Gardens, developed by the Town's "Senior Environmental Coordinator – Climate Change Adaptation" (Jen Slykhuis, M.Sc.), in collaboration with the Town's Communications team. Jen is with the Town of Newmarket until December 31, 2016 on a special contract funded 50% (salary and benefits) by the LSRCA. This partnership has been instrumental in reinforcing the Town's commitment to, and leadership role in, climate change adaptation, and in strengthening the strong alliance between the Town and the LSRCA.

A decorative graphic in the bottom right corner consisting of two overlapping curved lines, one dark grey and one light grey, sweeping upwards and to the right.

Climate change is at the forefront of today's most pressing issues for the public, scientists and policymakers alike. We are proud that the Town of Newmarket has been addressing the subject proactively for the past few years and has been identified as a leader in breaking ground to find ways to adapt to climate change.

For example, Engineering Services has changed the way in which we approach new designs for roads and drainage projects. We now look first at opportunities to implement Low Impact Development (LID) solutions such as bioswales, rain gardens, infiltration trenches and others on all of our capital construction works (roads, drainage projects, buildings, etc.) before reverting to traditional storm sewers. For the past two years, we have also been working diligently with developers and consultants in the institutional, commercial and industrial (ICI) sector to capitalize on opportunities for them to implement LID on their own properties as well, thereby further reducing the amount of rain water that enters the Town's storm sewer system as a result of the new hard surfaces that may be created on their developments.

Public education, persistence and our partnership with the LSRCA have been the key to our continued success in this area. As a result of our efforts, the vast majority of new ICI developments in Newmarket and most of our own capital works now include LID features to help reduce flooding.

We at the Town are further showcasing our leadership in climate change adaptation by constructing a major LID Demonstration Project on Forest Glen Road north of Queen Street this summer. This project would not have been possible without the technical and financial support of the LSRCA. That project is currently under construction, and within a few weeks, the LID features will begin to take shape.

Other climate change initiatives that the Town has undertaken since our Climate Change Adaptation partnership with the LSRCA, which started 6 months ago, include the following:

#### Education and Awareness

- Working with Lake Simcoe Region Conservation Authority (LSRCA) and the Windfall Centre to engage residents to manage stormwater on their own properties. One example is the Windfall Centre's "Win a Designer Rain Garden Competition", in which the Town was a partner. The winner of this competition was Newmarket's Ferrie family of Lemar Road, and the rain garden was built with the help of volunteers on May 28<sup>th</sup>. Other partners included York Region, the LSRCA and Cypress Hill Landscape Design & Build;
- Partnering with LSRCA to promote their rain garden grants to high priority neighbourhoods in Newmarket, such as those that have experienced flooding in the past;
- Working with other Town departments to ensure their buy-in to promote and maintain LID features;
- Attending Town events to enhance awareness of LID and the importance of climate change and stormwater. For example, the pamphlet in the attachment was created in time for distribution at the Community Open House and Touch-A-Truck event on May 25. Additional copies are available for individuals or community groups, including schools. Also, an event is being planned for another Town community event to be held in September, where residents will participate in painting catch basins on Main Street to create public art awareness pieces focusing on stormwater and how it impacts our streams and rivers (similar to the "Yellow Fish" program);

- Created a new stormwater management section on the Town's website and developed literature on LID for residents. See: [www.newmarket.ca/LID](http://www.newmarket.ca/LID)

### Low Impact Development Implementation

- Providing advice to ensure that capital road designs include LID elements where feasible. Successful LID designs include: Forest Glen Road, Woodland Court, Arnold Crescent, Pony Drive and others;
- Initiating and coordinating LID retrofit projects on Town lands, such as the potential Ray Twinney Centre drainage retrofit project;
- Identifying and prioritizing opportunities for LID, based on past Town studies and flood vulnerable zones. In collaboration with the GIS department, an opportunities map is being created. This will lead to the development of an LID Implementation Plan that will identify locations that are ideal for LID enhancements;
- Working with school boards and other groups to implement LID pilot projects on school properties within Newmarket, such as St. Nicholas Catholic School's "Depave Paradise" initiative;
- Set targets and track the implementation of LID in Site Plan projects. More information can be provided on request.

### Policy and Guideline Development

- Leading the development of the Town's new Site Alteration By-Law with various Town Departments to address stormwater management and erosion and sediment control in construction and development projects;
- Providing updates to the Town's Engineering Design Standards to ensure the implementation of LID and account for climate change.
- Reviewing, providing feedback and communicating with Town staff regarding policy and guideline changes that will affect the Town, such as the LSRCA's new LID and Stormwater Guidelines and the upcoming Ministry of the Environment and Climate Change (MOECC) policies on stormwater.

### Stormwater Management Initiatives

- Reviewing and developing a plan to initiate the Town's Comprehensive Stormwater Management Master Plan, once finalized and approved;
- Working with the MOECC to explore new sponsorship that would make Newmarket a model community in the Lake Simcoe watershed;
- Working closely with the Finance department to develop and recommend a new Stormwater Utility Fee and potential credit program for the industrial, commercial and institutional (ICI) sector;
- Developing a streambank restoration business case for an area along the Western Creek and working with the LSRCA to prioritize the rehabilitation of watercourses on Town property to make them more efficient at draining spring runoff and storm water during intense storm events;
- Coordinating the 2016 Stormwater Pond Maintenance plan to ensure Best Management Practices (BMP's) are implemented and identify opportunities to reduce stormwater runoff into Town infrastructure. This includes addressing the flooding in flood-prone areas.

## Other Initiatives

- Providing feedback and receiving community information through participation on various working groups and committees, such as NEAC, Municipal Energy Plan Working Group, LSRCA's Stormwater Technical Working Group, etc.;
- Identifying opportunities for project funding and participation in pilot projects, such as an Erosion and Sediment Control database with the LSRCA and MOECC and the potential to test a product to reduce sedimentation in our catchbasins;
- Coordinating with the Public Works department on the future implementation of the recommendations of the Urban Canopy Study, to help mitigate the heat island effect and address increased stormwater runoff as a result of climate change.

## **BUSINESS PLAN AND STRATEGIC PLAN LINKAGES**

- Living Well...promotes activity to provide a more safe and secure environment.
- Well Planned and Connected...through improved communication.
- Well Respected... through managed partnerships and cooperation with stakeholders.

## **CONSULTATION**

There was no consultation required in the preparation of this report.

## **HUMAN RESOURCE CONSIDERATIONS**

There is no impact on current staffing levels.

## **BUDGET IMPACT**

### Operating Budget

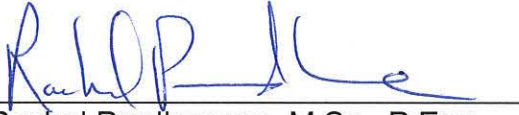
This report does not recommend any initiatives that would have an impact on current and future operating budgets.

### Capital Budget

This report does not recommend any initiatives that would have an impact on current and future capital budgets.

## CONTACT

For more information regarding this report, please contact: Rachel Prudhomme, M.Sc., P.Eng., Director, Engineering Services at ext: 2501 or via email at [rprudhomme@newmarket.ca](mailto:rprudhomme@newmarket.ca)



Rachel Prudhomme, M.Sc., P.Eng.  
Director, Engineering Services



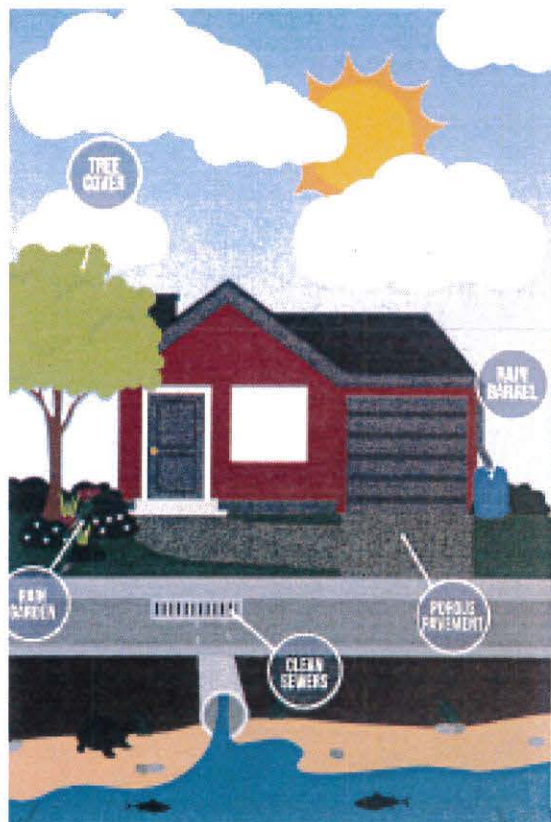
Peter Noehammer, P. Eng.  
Commissioner,  
Development and Infrastructure Services

Attachment: Rain Garden Brochure

## How can I help?

Try one or all of these great ways to help protect our local waterways:

- Disconnect your downspout
- Install a rain barrel
- Build a rain garden
- Reduce non-permeable surfaces
- Plant a tree
- Flood-proof your home
- Use environmentally friendly products
- Do not pour anything down the storm drain



## Rain Garden FAQs

### Do I need to worry about my rain garden flooding?

Rain gardens actually encourage water to filter into the ground instead of the storm system which can help divert water and help prevent flooding during intense rainfall.

### What about mosquitoes?

Rain garden filter water into the ground in less than 24 hours, therefore eliminating standing water, potential mosquito larvae habitat and help prevent the spread of West Nile virus.

### Are there incentives to install rain gardens?

There are incentive programs available which change from time to time. Visit [www.newmarket.ca/LID](http://www.newmarket.ca/LID) to stay up to date on new incentives.

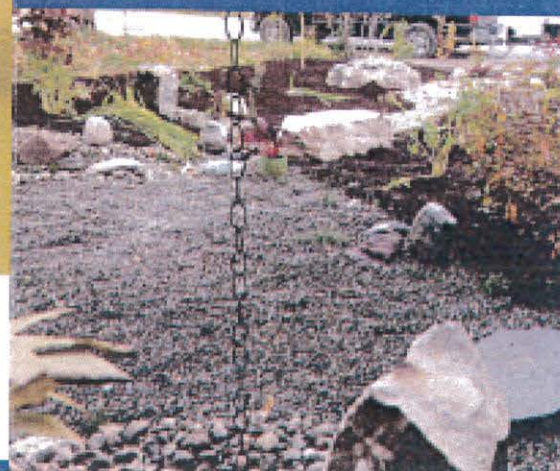
### Who is responsible for maintenance?

Rain gardens and other LID features on private property are the responsibility of the land owner. Features on public property will be subject to the Town of Newmarket's policies as they relate to the maintenance of boulevards.

Did you know that the number one risk in Canada for insurance claims is wind and water damage caused by severe weather?



## Rain Gardens: Capturing rain water where it falls



## What is stormwater?

Stormwater consists of rain or melted snow and ice. When stormwater falls on surfaces that do not allow it to soak into the soil – such as roads, rooftops, driveways and parking lots – it runs off directly into nearby watercourses carrying pollutants with it.

As we continue to develop land, we create more hard surfaces resulting in more stormwater runoff.



## How does the Town manage stormwater?

Newmarket's stormwater enters the storm drain system underground and depending on where you live, discharges into a stormwater management pond or directly into the nearest waterways.

The Town encourages **Low Impact Development (LID)**, an innovative way to manage stormwater where feasible, in order to:

- Filter pollutants out of the water
- Reduce flood risks and the impacts of climate change
- Protect aquatic animals and habitats
- Protect green spaces, natural features and our local waters
- Recharge our groundwater systems
- Reduce the amount of water entering Town stormwater facilities, and thus maintenance costs

One example of LID is a rain garden.

Did you know that there are over 100 stormwater management ponds in Newmarket?



## What is a rain garden?

On the surface a rain garden looks like any other attractive garden. It supports birds and butterflies and consists of native and drought-resistant plants. What differentiates rain gardens from other gardens are the materials placed underground. These materials clean the water and allow it to easily infiltrate back into the ground and waterways.

LIDs, such as a rain garden, are an innovative approach to managing stormwater. LIDs are modeled after nature as they use techniques that capture, infiltrate, filter, store, evaporate and detain stormwater.

Other examples of LIDs include:

- Permeable paving
- Green roofs and rain barrels
- Bioswales and soakaway pits

