Welcome to the
Public Information Centre (PIC)
Master Drainage Study and
2-Zone Floodplain Policy Update
for the Reid Drain, Silver Creek and Big Creek Watersheds

Wednesday October 9, 2019
6:00 p.m. - 8:00 p.m.

Leamington Municipal Offices,
Main Hall, 111 Erie St N

Your comments are appreciated. Please fill out a comment sheet prior to leaving.

Thank you for attending!
Why are we here tonight?

• To present results of the Stormwater Master Drainage Study for the Reid Drain, Silver Creek, and Big Creek Watersheds

• To provide information on the Two-Zone approach to Floodplain Management

• To provide information on the proposed Official Plan and Zoning Bylaw Amendment to implement the recommendations of the study

• To answer your questions and get your feedback

Representatives from the Municipality, Essex Region Conservation Authority, Lower Thames Valley Conservation Authority, and Stantec are in attendance. Please let us know if you have any questions!
Essex Region Conservation Authority and Lower Thames Valley Conservation Authority Jurisdictions
What is the Purpose of the Study?

• To assess the impact of potential future development at a watershed level by:
  • evaluating the overall watershed drainage system
  • developing updated floodline mapping and elevations
  • identifying stormwater management design criteria for future developments to mitigate downstream impacts

• A model was developed to assess erosion and flood levels under existing and future development conditions throughout the watersheds.

• A two-zone approach was used, which identifies areas of floodway and flood fringe

The growth and development of Leamington’s agri-business sector has prompted the Municipality to take a holistic approach to stormwater management. This approach addresses future development at a watershed scale to mitigate impacts to the receiving watercourses and drains.
Study Approach

• The floodway was identified as a setback of 8m plus the depth of drain along drains/watercourses. The remainder of lands are considered flood fringe.

• Areas of “temporary flood storage” have also been identified – these are lower lying areas that may remain under water during heavy rainfall events and are used for additional flood storage.

• As development occurs and stormwater is controlled, these “temporary flood storage” areas may no longer be needed.

• A holding provision will be placed on these areas to ensure they remain free of development, until enough stormwater control has been established upstream that these areas are no longer required for temporary flood storage.

A holding provision is a tool under the Planning Act (applied through a Zoning Bylaw Amendment) which is typically applied to properties where the required servicing (in this case storm drainage) may not yet be in place to allow development to proceed. The holding provision may be removed when it can be shown through a technical study that the areas are no longer required for temporary flood storage.
Stormwater Management Criteria - Allowable Release Rates

The Study identifies allowable release rates and storage requirements that future developments must meet in order to mitigate downstream erosion/flooding impacts.

- **Lower Tier Rate**
  - Erosion Control
  - 1.5 to 2.9 L/s/ha
  - Controls frequent storms

- **Upper Tier Rate**
  - Overall Drainage Capacity
  - 6 L/s/ha
  - Controls infrequent storms
Floodway / Flood Fringe:

Generally, the floodplain consists of one zone set by the regulatory flood standard (e.g. 1:100 year storm).

The two-zone approach recognizes that sometimes it is appropriate to divide the floodplain into two zones.

Floodway: The hazardous portion of the floodplain where flood depths and/or velocities are such that they pose a significant threat to life and/or property. The floodway is generally defined as the area required for the safe passage of flood flows.

Flood Fringe: The portion of the floodplain between the limits of the floodway and the Regulatory Flood line. Flood depth and velocity are generally less severe in the flood fringe and some development may be permitted (with conditions).
As development occurs, more stormwater controls will be implemented.
Floodway

- Floodway = 8 metres from the top-of-bank/drain, plus the depth of drain.
- The floodway shall remain unobstructed and without fill placed

See the mapping within the Master Drainage Study for the identified floodway.

Flood Fringe

- Within the study area, areas outside of Floodway are considered Flood Fringe
- Development within the Flood Fringe may be permitted, provided appropriate floodproofing measures are incorporated, and pending the receipt of a permit from the applicable Conservation Authority and other applicable planning approvals (e.g. site plan/building permit).
- **Temporary Flood Storage Areas** have also been identified within the flood fringe and shall remain unobstructed pending future study to confirm development would have no impact to flood levels.
Development within the Flood Fringe

• Developments (including expansions/accessory uses) must be floodproofed to the satisfaction of the appropriate Conservation Authority. For example:
  – All building systems (electrical, hydro, etc.) are located above the regulatory flood level
  – No habitable floor space is permitted under the regulatory flood level
  – Building openings (windows, doors) are located above the regulatory flood level

• Development must be in accordance with underlying zoning
Build-Out and Monitoring

- The study assumes the following build-out scenarios:

<table>
<thead>
<tr>
<th>Watershed</th>
<th>% build-out</th>
<th>New Development (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Creek</td>
<td>25% build-out</td>
<td>1,000 ha</td>
</tr>
<tr>
<td>Reid Drain</td>
<td>75% build-out</td>
<td>735 ha</td>
</tr>
<tr>
<td>Silver Creek</td>
<td>50% build-out</td>
<td>1,102ha</td>
</tr>
</tbody>
</table>

- The Municipality will continue to monitor development
- Development beyond these build-out scenarios will require additional investigation to assess impacts
Next Steps:

The adoption of the study recommendations and two-zone floodplain policy involves changes to both the Municipality of Leamington Official Plan policy framework, and the Conservation Authorities’ management policies as part of their regulations under the Conservation Authorities Act.

Consider Input Received

- Draft Official Plan and Zoning Bylaw Amendment identifying 2-Zone Floodplain Policy Area and Holding Provisions for areas of Temporary Flood Storage
- Public Meeting before Council
- Adopt Official Plan and Zoning Bylaw Amendment

Contact Information:

**Municipality of Leamington**  
Alexander N. Del Brocco, C.E.T.  
Engineering Project Manager  
adelbrocco@leamington.ca  
P: 519-326-5761 ext. 1369

**Essex Region Conservation Authority**  
James Bryant, P. Eng.,  
Water Resources Engineer  
jbryant@erca.org  
519-776-5209 ext. 246

**Lower Thames Valley Conservation Authority**  
Jason Wintemute, P. Eng.  
Manager, Watershed and Information Services  
519-354-7310 ext. 227  
jason.wintemute@ltvca.ca
The Conservation Authorities (CA) work with communities within our watersheds to provide protection and mitigation of risk when new development or redevelopment is proposed.

Such development requires permits from the CA. When a Two Zone Policy (such as the one proposed here) is approved by the municipality, the policy will be included in the CA Policies and implemented through the CA permit Process.
How do we protect the public and property from natural hazards?

1. Municipal Plan Review
2. Permitting Process
   - Administration of Section 28 of the CA Act and Ontario Regulation 152/06 and 158/06

Note: The CA is not alone. The municipality has a significant role in protecting the public and property from natural hazards through its planning program.
Section 28 (1) of the CA Act prohibits (without permits):

- Activities which straighten, change, divert, or interfere in any way with the existing channel of a river, creek, stream, or watercourse or to change or interfere in any way with a wetland.
- Development activities in areas that are within the authority’s area of jurisdiction and are within or adjacent to:
  1) Hazardous lands;
  2) Wetlands;
  3) River or stream valleys;
  4) Areas adjacent to or close to shorelines that may be affected by flooding, erosion, or dynamic beach hazards; and,
  5) Other areas.
Development is defined in the Conservation Authorities Act as:

• The construction, reconstruction, erection, or placing of a building or structure of any kind;
• Any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure, or increasing the number of dwelling units in the building or structure;
• Site grading; or,
• The temporary or permanent placing, dumping, or removal of any material, originating on the site or elsewhere.
Ontario Regulation 152/06 and 158/06 defines how Section 28 of the Conservation Authorities Act is to be implemented in the respective CA.

Development taking place in a regulated area requires permission from the CA.

To permit the development, the CA has to confirm that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land are not affected and that there is safe access to/from the lands during a flood event or because of an erosion issue.

Staff use the board-approved policies and provincial guidance manuals in evaluating the merits of a permit application.
Conservation Authority Policies

- Tells municipalities and the public how the CA will interpret the application.
  - “In the opinion of the authority, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected by the development.”
- Also provides the CA’s board-approved position on provincial technical guidance and other related studies (such as watershed master and management plans).
- Outlines fee schedule, permit application response timelines, etc.
- The 2-Zone Policy will be adopted into the CA board approved policies and implemented through the regulation
Municipality approves Technical Study (basis of 2 zone policy)

Public Meeting (Consultation A) (Regulations and OPA)

Technical Study and Draft Regs Policy to CA Board for 1st review

Draft Regs Policy posted to CA WEB (Consultation B)

Municipality approves OPA following Public Meeting before Council (Consultation C)

All Comments received from Consultation A,B,C

Policy and comments to CA Board for approval

CA Implementation