

## Welland River Floodplain Mapping

### **Why do Conservation Authorities including NPCA generate floodplain mapping?**

Floodplain mapping and floodplain management is a fundamental responsibility of Conservation Authorities. This responsibility was assigned to Conservation Authorities by the Province of Ontario following the devastating property damage and loss of life that occurred from Hurricane Hazel in 1954. The Provincial government had the foresight to enact legislation to manage building activities within floodplain lands to protect the public from avoidable loss of property and life.

### **What does a 100 Year Flood line represent?**

The 100 Year Flood line represents the extent of flooding that would occur from a storm event that has a 1% probability of occurring in any year (i.e. 1 in 100 years). This is the minimum standard in Ontario. It is important to note that some jurisdictions in Ontario use a larger storm event.

### **Why is it necessary to update floodplain mapping and when did NPCA begin working on this?**

The Niagara Peninsula Conservation Authority is constantly updating floodplain mapping to reflect changes in bridges, culverts, land development and other modifications within the landscape that may have an effect on the extent of the floodplain.

In 2009, as part of the NPCA's capital floodplain mapping update program, the Authority contracted a firm specializing in complex floodplain modelling to re-analyze and remap the floodplain of the Central Welland River extending from the new siphon under the Welland Shipping Canal in Welland to Port Davidson in West Lincoln. Following this, work on the Upper Welland River extending from Port Davidson in West Lincoln to Westbrook Road in the City of Hamilton, and on the Lower Welland River extending from the Niagara River to the new siphon began and is nearing completion.

### **Why are the new 100 year flood lines on the Welland River different from the old ones?**

Comprehensive floodplain mapping for the Welland River was first completed in 1985. Over the last quarter century real time data has been compiled and in the last decade, computer modelling has become more capable at simulating complex flow conditions like those that exist in the Welland River.

### **What physical attributes are considered in developing floodplain mapping?**

Topography, structures across the waterway (i.e. bridges, culverts, etc.), rainfall, soils and land use are all considered.

### **What is the status of the new flood lines?**

At the January 18<sup>th</sup>, 2012 meeting of the Board of the Niagara Peninsula Conservation Authority, a decision was made to *suspend implementation* of the new flood lines until further notice.

### **How will the public be notified as to when the new flood lines come into effect?**

A Committee comprised of Niagara Peninsula Conservation Authority Board members will oversee the timelines and process for implementation of the new flood lines. The process will occur before the new flood lines come into effect and will include among other things, Public Open Houses across the watershed.

### **Why is there no public input before flood lines are modelled and mapped?**

Determining flood lines is an engineering exercise that requires knowledge and expertise of scientific principles in hydrology and hydraulics. These lines cannot be arbitrarily assigned or altered. Holding public meetings would not change the *scientific* outcome of the modelling.

## **What can I do in the 100 year floodplain?**

As outlined in the NPCA Policy the following activities are permissible within the Regulatory Floodplain:

- *Reconstruction or minor additions to existing residential dwellings and commercial buildings*
- *Additions or extensions, including new structures, to existing primary agricultural operations that are designed to not incur significant damages or pollute watercourses during a 100 year flood event.*
- *Open space uses, public and private recreational areas (i.e. boat dock, picnic pavilion)*
- *In ground swimming pools designed with hydrostatic pressure relief and provided excavated material is not placed in the floodplain*
- *Parking lots, driveways, access roads subject to certain flow/depth criteria*
- *Public infrastructure/utilities*
- *Other uses not likely to incur or create damage from floodwaters*
- *Works in accordance with any special transitional polices as may be adopted by the Board.*

## **Why can't I simply place earth fill or retaining walls to raise my land above the floodplain?**

In Ontario, a prudent long term preventative approach which limits impacts to floodplains is mandated by the Province. When a floodplain is filled at one location, the water is displaced in a way that other lands outside the floodplain will then be flooded. This is problematic for both public safety and property damage.

## **Does an increase in floodplain area diminish the development potential of my property?**

While there is a possibility that this might be the case, each property is different and is dealt with on a case by case basis. Properties that lie adjacent to rivers are often already subject to restrictions due to slope stability setbacks, wetland setbacks, septic bed requirements, municipal zoning restriction and agricultural setbacks. Conservation Authority staff work with watershed Municipal officials in an effort to accommodate proposals wherever possible.

## **Useful Links:**

- Ministry of Natural Resources: Understanding Natural Hazards (2 part PDF link)  
[http://www.mnr.gov.on.ca/en/Business/Water/Publication/MNR\\_E002317P.html](http://www.mnr.gov.on.ca/en/Business/Water/Publication/MNR_E002317P.html)

- Conservation Ontario: Protecting People And Property  
[http://www.conservation-ontario.on.ca/projects/floodstatus/pdf/Protecting%20People%20and%20Property%20\\_Full\\_Final%20Report\\_%202009.pdf](http://www.conservation-ontario.on.ca/projects/floodstatus/pdf/Protecting%20People%20and%20Property%20_Full_Final%20Report_%202009.pdf)

- NPCA Policy Document  
[http://www.npca.ca/wp-content/uploads/Development\\_LandUsePolicy\\_Oct2011.pdf](http://www.npca.ca/wp-content/uploads/Development_LandUsePolicy_Oct2011.pdf)

- Related Legislation:  
[http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02\\_163602.html](http://www.mnr.gov.on.ca/en/Business/Water/2ColumnSubPage/STEL02_163602.html)

## **For Further Information:**

John Kukalis, Director, Water Management  
Niagara Peninsula Conservation Authority  
250 Thorold Rd. W.; 3<sup>rd</sup> Floor  
Welland, On L3C 3W2  
905-788-3135  
Email: [jkukalis@npca.ca](mailto:jkukalis@npca.ca)

Issued: February 17, 2012