



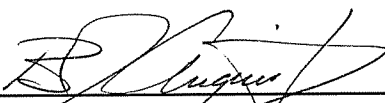
PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

3.

Halifax Regional Council
May 13, 2003

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Brad Anguish, P.Eng., PMP, MBA
Director, Environmental Management Services

DATE: May 5, 2003

SUBJECT: March 31, 2003 - Rainfall Event - Storm Frequency Benchmark

INFORMATION REPORT

ORIGIN

Halifax Regional Council Meeting of April 1, 2003, Item 12.1.

BACKGROUND

HRM experienced a significant rainfall event on March 31, 2003, and Council requested information on several items as a follow up to their meeting of April 1, 2003.

This report is to respond to Councillor Cooper's request as to how this event is rated in terms of storm frequency.

DISCUSSION

Staff rely on Environment Canada to provide data on rainfall events. Staff typically use information from the Shearwater Airport, as a rain gauge has been in service at that location since 1955, and Environment Canada continues to maintain and provide data at this station.

Using the rainfall data provided by Environment Canada for Shearwater Airport, staff plotted the March 31, 2003, event on the Intensity-Duration-Frequency (IDF) curve for that specific location. The IDF curve is a statistical tool prepared by Environment Canada to estimate the return period of rainfall events. It was determined that the event was less than a 1 in 2 year event for a time of concentration of less than one hour, and was approximately a 1 in 15 year event for a time of concentration of 12 hours.

The impact of the March 31, 2003, event was greater than normally expected from a rainfall event of this frequency as evidenced by the numerous flooding complaints. The IDF curve is a representation of the rainfall and not the runoff. Runoff is a function of not only rainfall but also ground conditions, i.e. snow cover, frozen ground, etc. Therefore, it is concluded that this rainfall event combined with ground conditions on March 31, 2003 contributed to the exceptionally high number of flooding cases experienced throughout the Municipality.

It is important to keep in mind that these return periods could vary for other areas within the Municipality based on the geographical location, rain gauge results and the IDF curves.

Storms also typically vary in total precipitation across HRM. For instance, Environment Canada reported that 95.8 mm of rain fell on March 31, 2003, at the Shearwater Airport, and the Halifax Regional Water Commission from their rain gauges reported total precipitation amounts of 103 mm at Lake Major and 78 mm at Lake Pockwock.

BUDGET IMPLICATIONS

None at this time.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

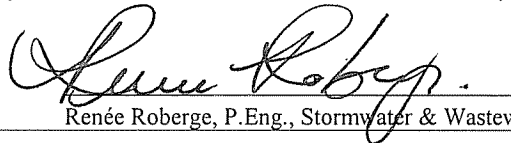
N/A

ATTACHMENTS

None

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by:



Renée Roberge, P.Eng., Stormwater & Wastewater Engineer, 490-6941

