

# APPENDIX “B”

## WHITSON RIVER WATERSHED BACKGROUND

### I. The Whitson River Watershed

The Whitson River is the outlet watercourse which provides natural drainage to a 324 square kilometre area in the northerly area of the City of Greater Sudbury. The river and its tributaries are the remnants of a once large glacial lake. The former lake bottom is the watershed of the river that exists today. The river has its easterly head waters within the Falconbridge community. The main watercourse flows westerly in a meandering fashion a distance of 70 kilometres to its outlet, the Vermillion River. The watershed is a flat plain and the river only drops 53 metres in elevation over its length for a minimal average slope of 0.076 per cent. The river has 11 primary tributaries and scores of secondary tributaries that feed drainage into the main river. Five of those main tributaries are upstream of the Municipal Road 80 Bridge in Val Caron. As the river flows westerly, it passes through the urban communities of Hanmer, Val Caron and Chelmsford.

### II. Historical Watershed Development

The Whitson River Watershed area was settled in the early 1900's by pioneers who created farms throughout the area and developed a strong agricultural industry. By the mid 1900's, the communities of Hanmer, Val Caron, Blezard Valley, Azilda and Chelmsford were thriving villages or townships. The 1960's and 1970's saw the first growth of new subdivisions and the implementation of sanitary sewer and water services. Regional government commenced in 1973 and saw the creation of the new, consolidated towns of Valley East and Rayside Balfour. Continued growth in the 1980's and 1990's brought commercial and industrial development. By the year 2000, the once extensive agricultural industry had slowly ebbed. In 2001, Valley East and Rayside Balfour were amalgamated into the new City of Greater Sudbury.

### III. Drainage Issues

From the early days of the watershed development, farmers and property owners were battling the annual spring flood water of the Whitson River and its tributaries large and small. The implementation of approximately 170 kilometres of municipal drains under the Ontario Drainage Act in the 1980 to 2010 period has done much to alleviate those conditions. However, the spring flood risk potential on the main Whitson River remains a major issue. The main river is not a wide or deep watercourse. Under certain conditions, the normally quiet, meandering stream can turn into a raging torrent which overflows its banks, causing substantial damage and risk to persons and property. There are two notable occasions in recent times where this occurred.

In the spring of 1985, after a long cold winter with deep snow accumulation, the watershed was suddenly cast into a four day heat spell of 25 to 27 degree centigrade weather. The snow quickly melted and a massive flood occurred along the Whitson River. A normal winter river flow of 1 cubic metre per second peaked at 52 cubic metres per second on April 22, 1985. Many residents had to be rescued from their homes by boats and roads in low lying areas were impassable.

Similarly, in the spring of 1998, another snow laden winter came to an end during a 5 day period at the end of March and early April. In this case, the spring snow meltdown was augmented by 125 mm (5 inches) of rain over the impervious frozen watershed. The result was peak river flows of 45 cubic metre per second and wide spread over topping of the Whitson River banks. This caused bridge and road washouts, flooded industrial park lands and flood water around low lying residential homes.

Although weather conditions and the natural lay of the land are significant contributors to such floods, the construction of urban development within the watershed has a major impact on the peak flow of the river. Recent studies indicate that urban development within the watershed has caused or could cause increased river peak flows by up to 30 to 35 percent from flow levels of the undeveloped era.

As the creation of the new north part of the City continues, it is evident that something must be planned and implemented to protect existing and future residents along the Whitson River and its tributaries.