

Indian and McGregor Creek – Chatham, Ontario (2009)

The Indian and McGregor Creek watershed, located near Chatham, Ontario, Canada, drains approximately 27,000 hectares of land. The watershed has a long history of both runoff and backup flooding. Runoff flooding occurs as the result of heavy rain, sometimes accompanied by melting snow. Runoff flooding of this watershed increased during the 20th century due to the reduction of forests, changes in farming practices, and improvements in drainage.

Backup flooding occurs when runoff flooding of the region's main water way, the Thames River, causes that river's water level to rise to the extent that its water backs up into the Indian/McGregor Creek watershed system.

Flooding of the Indian & McGregor Creeks occurred frequently throughout the 20th century, usually in the spring time - with the damage caused by each flood progressively increasing. These occurrences caused severe damage to homes, erosion to dykes, power outages and many other problems to the surrounding population.

In 1991, a 3.3 kilometre flood control diversion channel was completed to redirect flood waters away from the swollen Indian & McGregor Creeks. This channel has a top width of 50 metres and a depth of approximately 6 metres and uses gates at the headlands of the creeks to allow water into the channel during runoff periods. Over its entire length, approximately 100 drains run into the diversion channel, most of them 150 mm (6 inches) in diameter.



While the diversion channel greatly reduced the incidence of flooding in the greater Chatham area, over time many of the drains leading into the channel began to clog. In 2009, the Indian and McGregor diversion channel was re-trenched and the drains leading into the channel were cleared. In order to eliminate this clogging problem from occurring again, EVR duckbill check valves were placed on the end of each draining pipe. The duckbill check valves further improved the performance of the system since they allow water to

drain into the diversion channel but, when the diversion channel water level is high, will not allow water in the channel to backup through the drain lines.



EVR duckbill check valves have been used in a large number of drainage systems, similar to the Indian/McGregor Creek project, throughout the world.