



# 75 YEARS OF GRAND dams



## The PAST

By 1900, the Grand River was sometimes raging and uncontrolled, flooding out communities and businesses along its banks. But during dry summer months, it was a smelly trickle of sewer water that no one wanted to go near. After years of flooding and drought, people were fed up with these problems.

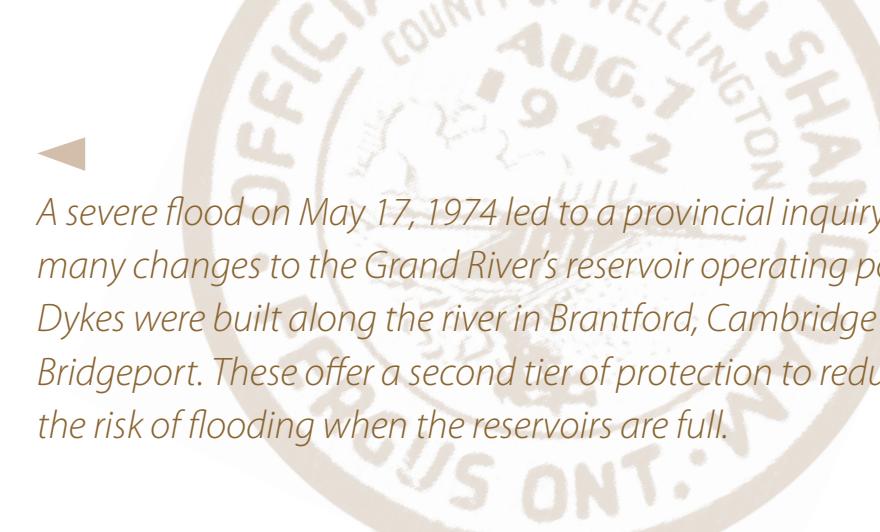


In 1905 Kitchener engineer W. H. Breithaupt called for government action. He thought if dams and reservoirs were constructed in the north, they would minimize flooding in the communities downstream. Terrible flooding in 1929 helped spur business leaders to lobby the province to look into building dams and reservoirs. A drought in 1932 drove the point home.

In 1932, provincial legislation was passed to form the Grand River Conservation Commission — the first water management organization in Canada. In 1934 the commission was given the green light to plan and build dams, starting with the biggest — the Shand Dam.



When it opened in 1942, the Shand Dam was Canada's first multipurpose dam built to minimize flooding and increase summer river flows. The Financial Post ran a front page story a year after the dam opened, with this headline: "Grand Valley masters its river."



## The PRESENT

### Budgeting money and water

Water is an important resource that is managed sustainably by the GRCA, just like we all save money sometimes and spend it when we need to.

**Saving water:** During the winter and spring, the dams hold back water from rain and melting snow and store it in the reservoirs, just like people put money in a bank account. By early May, the reservoirs are filled to capacity.

**Releasing water:** In June, July and August, water is released from the reservoirs as it is needed downstream. In the same way, a university student works during the summer to earn money and then spends it to go to school during the fall and winter.



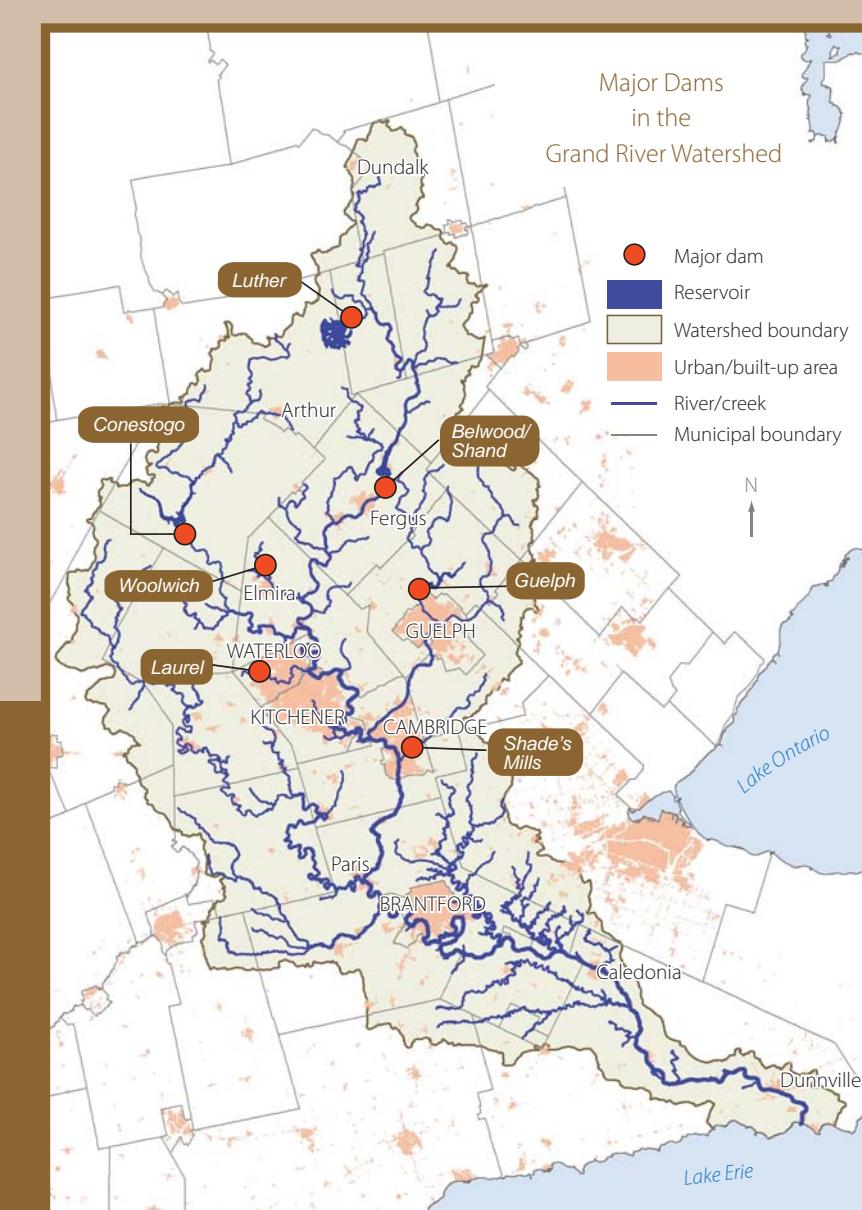
## The FUTURE

Climate change and continued growth make managing the river system even harder. Wetlands act like mini reservoirs and hold water on the land, while forests slow down snow melt. Sometimes these natural areas seem like unused land, but they are already working on behalf of everyone. It is essential to protect them as our communities grow. GRCA planning policies work to keep people safe by regulating development in these areas that make up one-third of the land in the Grand River watershed.

Climate change has the potential to cause more extreme weather in local areas which could result in flooding and drought. Weather forecasting, especially on a local level, is more important than ever before. It is a science and an art to know when to save water and when to release it. The GRCA creates maps with real-time weather information and forecasting information. These are used by emergency response teams to alert people in specific areas when a flood is on the way.



## Where are the dams?



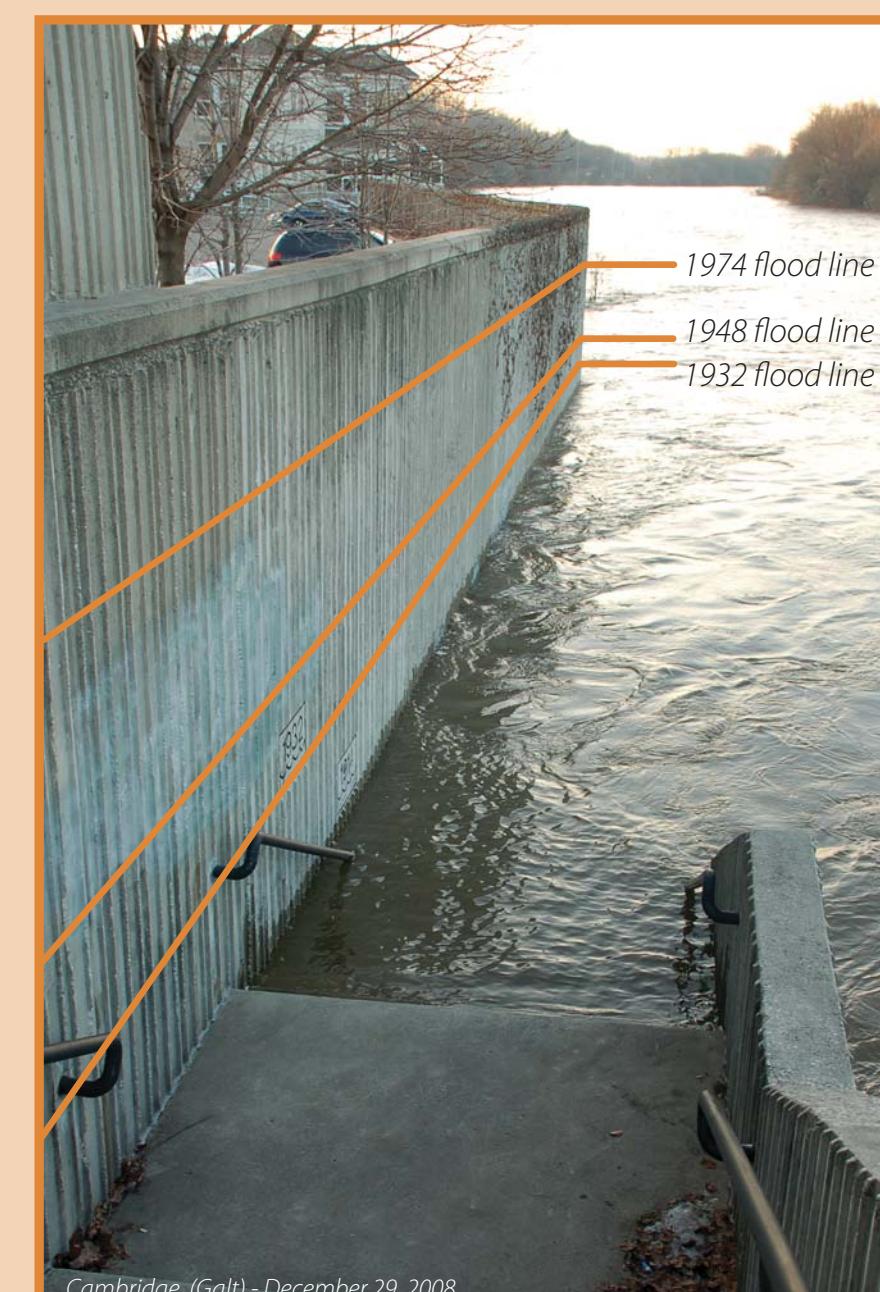
The GRCA operates seven large dams to manage floods and bring water to communities during dry weather.

These hold 185 million cubic metres of water in the reservoirs — which is enough to fill 74,000 Olympic-size swimming pools.

Dam	Watercourse	Capacity (cubic metres)	In service
Shand (Belwood Lake)	Grand River	63.9 million	1942
Luther	Black Creek	28.0 million	1952
Conestogo	Conestogo River	59.5 million	1958
Laurel Creek	Laurel Creek	2.5 million	1968
Shade's Mills	Mill Creek	3.2 million	1973
Woolwich	Canagagigue Ck.	5.5 million	1974
Guelph	Speed River	22.4 million	1976

## The Grand Torrent...

One of the wettest years ever was 2008. On December 28, 2008, the combination of rain and rapid snow melt was equal to rainfall of 110 mm to 215 mm of rain (about 4.5 to 8.5 inches)! The reservoirs were very important that day, but there was still flooding in many areas. Without the reservoirs, river flows would have been up to two times as high. There would have been extensive flooding in St. Jacobs and many bridges would have flooded in downtown Cambridge (Galt). In Brantford, water would have risen close to the top of dykes constructed since the 1974 flood. In Haldimand County, water would have inundated portions of Caledonia, Cayuga and Dunnville.



### ...and the Tiny Trickle

One of the driest years on record was 2007. During September, there were days when about 95 per cent of the water in the Grand River at Kitchener (Doon) came from the GRCA reservoirs. Flow augmentation was also high at other locations: 66 per cent at Brantford and 50 per cent on the Speed River at Guelph. This helps us understand how important the reservoirs are to our daily lives.

