Enoggera Dam Information sheet for residents downstream

December 2017

Introduction

This information sheet is for residents living downstream of Enoggera Dam. It outlines how the dam has been designed and constructed, what Seqwater does to manage the dam, and how the dam performed during the heavy rainfall associated with ex-Tropical Cyclone Debbie in March 2017.

About Enoggera Dam

Enoggera Dam is about 10 kilometres west of Brisbane's CBD, located on Enoggera Creek. The catchment of Enoggera Creek extends west from the valleys in the D'Aguilar Mountains.

Built in 1866, Enoggera is the oldest dam in Brisbane. It was the third largest dam built in Australia in the 1800s and was one of the three dams constructed to store water for Brisbane's growing population from 1864 to 1916. Enoggera Dam was raised in 1976 after the 1974 floods to increase flood mitigation.

Although Enoggera Dam is not currently used for water supply in South East Queensland, it could supply drinking water during drought. It is also a unique and popular recreation destination in the heart of Brisbane.

How the dam works

Enoggera Dam has an earth and rockfill embankment, with a puddle clay core and an un-gated spillway. This means when water reaches the level of the spillway, water flows over and into Enoggera Creek downstream.

Enoggera has a two level spillway. In 1976, the concrete spillway was added and the embankment raised for more storage and flood capacity. The lower level contains a rectangular culvert under the concrete crest. When the full supply level is reached, water flows through the culverts and out of the dam. The upper spillway has a concrete ogee crest. During major floods, water will also flow over the upper spillway.

The main dam wall has a maximum height of 23.5 metres and is 380 metres long. At full supply, the dam holds back 4,567 million litres of water and the lake level is 74.37 metres above sea level.

The upstream catchment of the dam is about 33 square kilometres in steeply graded, mountainous land that is predominantly forested. This land is largely uninhabited.

Flood mitigation

All un-gated dams help mitigate flooding to some extent. The peak outflow from an un-gated dam during a flood event is less than the peak outflow that would have occurred had the dam not been built, because some water is held in the dam while it is spilling. This means that water flow slows down as floods pass through the dam.

As an un-gated dam, Seqwater has no control over water spilling from Enoggera once the dams full supply level is reached. It is not possible to influence the outflow from the dam during a flood event.

Seqwater's primary responsibilities during flood events are to monitor the safety of the dam and provide dam outflow information to the relevant emergency agencies as required. Such agencies will generally be the Bureau of Meteorology and the local council responsible for the area impacted by the dam outflow. For Enoggera Dam, this is Brisbane City Council.

Dam safety

Dams are long-life assets and require continual assessment, monitoring and maintenance. Queensland has a good dam safety record, but just like cars, dams need regular checks and maintenance to keep them in good working order. The engineering and safety features of cars have improved over time and so too have those of dams. Seqwater's Dam Improvement Program is about upgrading our dams in line with the latest engineering standards, while meeting the current Queensland Dam Safety Guidelines.

A number of dams across South East Queensland have been identified for improvement works as part of Seqwater's Dam Improvement Program.

For more information about the program, visit seqwater.com.au/damimprovement.

Quick facts

Watercourse:	Enoggera Creek
Location:	Off Waterworks Road, The Gap
Catchment area:	33km^2
Lake surface area	75ha at full supply level
Full supply capacity:	4567ML
Year completed:	1866. Upgraded in 1976.
Crest level	80.47m AHD (above sea level)
Wall height:	23.5m
Outlet system:	Two low level un-gated sluices
Type of construction:	Concrete and rock-faced earth and rockfill dam
Length of dam wall:	380m

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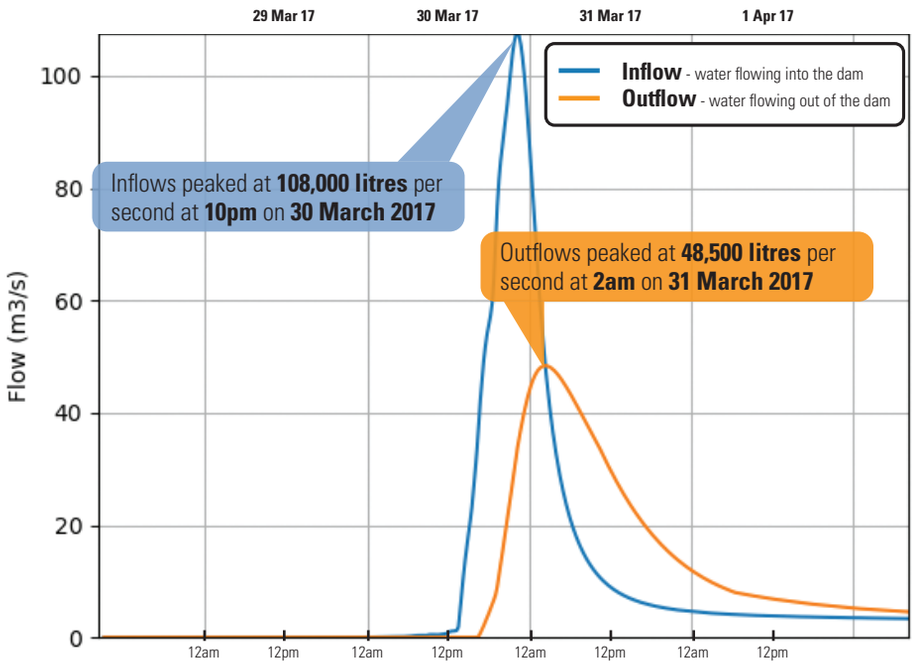
Enoggera Dam information sheet

Ex-Tropical Cyclone Debbie – March 2017

How did the dam perform?

- During the event, inflow into Enoggera Dam peaked at about 108 cubic metres per second (or 108,000 litres per second) at 10pm on 30 March 2017– the equivalent rate would fill about 2.6 Olympic-sized swimming pools every minute.
- The water level at Enoggera Dam peaked at 76.6 metres above sea level.
- This peak level was still 1.5 metres below the flood of record for Enoggera, which occurred in January 2013.
- The peak outflow through the un-gated spillway at Enoggera during ex-TC Debbie was about 48.5 cubic metres per second (or 48,500 litres per second).



The flow hydrograph for Enoggera Dam associated with ex-Tropical Cyclone Debbie is shown above. Inflows into the dam began at 1pm on Thursday 30 March 2017 and the dam began to spill at 4.30pm that day. The peak inflow occurred at 10pm on Thursday 30 March and the peak outflow occurred at 2am the following day. At the same time, the lake level reached its peak at 76.6 metres above sea level, which is 2.23 metres above the dam's full supply level.

Other flood impacts

Your local council provides information about potential flood risks in Brisbane including mapping and tips on how to be prepared.

To find out about the impacts of localised flooding or flash flooding in your area, you should contact your local council brisbane.qld.gov.au

Dam release notification service

Seqwater provides updates about dam levels and spilling at seqwater.com.au and on 1300 737 928

You can also register for email and SMS dam release notifications on our website or download the Seqwater public safety app (via Google Play or Apple's App Store) to receive regular updates.