Hinze Dam Information sheet for residents downstream

December 2017

Introduction

This information sheet is for residents living downstream of Hinze 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 Hinze Dam

Hinze Dam provides the main drinking water supply for the Gold Coast region. Built across the Nerang River, it was originally constructed in 1976, raised in 1989 and significantly upgraded in 2011.

The most recent upgrade involved raising the dam wall by 15 metres, doubling the dam's drinking storage capacity and improving water security and flood mitigation.

How the dam works

Hinze Dam is a rock and earth-fill embankment dam with an un-gated spillway. This means when water reaches the level of the spillway, water flows over the spillway and into the Nerang River. If the dam water level continues to rise another 5.8 metres, the water flows over both the upper and lower spillways.

Water flows into (inflows) Hinze Dam from the surrounding catchment, which is 207 square kilometres and includes the Numinbah Valley and Springbrook Plateau – about 77 per cent of the catchment is native bushland and state forest.

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.

The size and design of Hinze Dam help to mitigate floods. The lower spillway throttles flows from the dam by temporarily storing water, while the spillway helps protect the safety of the dam in large flood events.

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.

In recent years, we have upgraded a number of dams as part of our Dam Improvement Program, including Hinze in 2011. For more information about the program, visit seqwater.com.au/damimprovement.

QUICK FACTS

Water course:	Nerang River, Gold Coast
Location:	15km southwest from central Nerang
Catchment area:	207km^2
Lake surface area:	1500ha
Full Supply Capacity:	310,730 million litres
Year complete:	Stage 3 completed 2011 (Stage 1 in 1976, Stage 2 in 1989)
Crest level:	108.5m AHD (above sea level)
Full Supply waterline:	94.5m AHD
Wall height:	83.4m (from toe to crest)
Outlet system:	Uncontrolled 'ogee' crest – two level passive spillway
Type of Construction:	Zoned earthfill and rockfill embankment
Length of dam wall:	1,780m
Water supply capacity:	225ML per day

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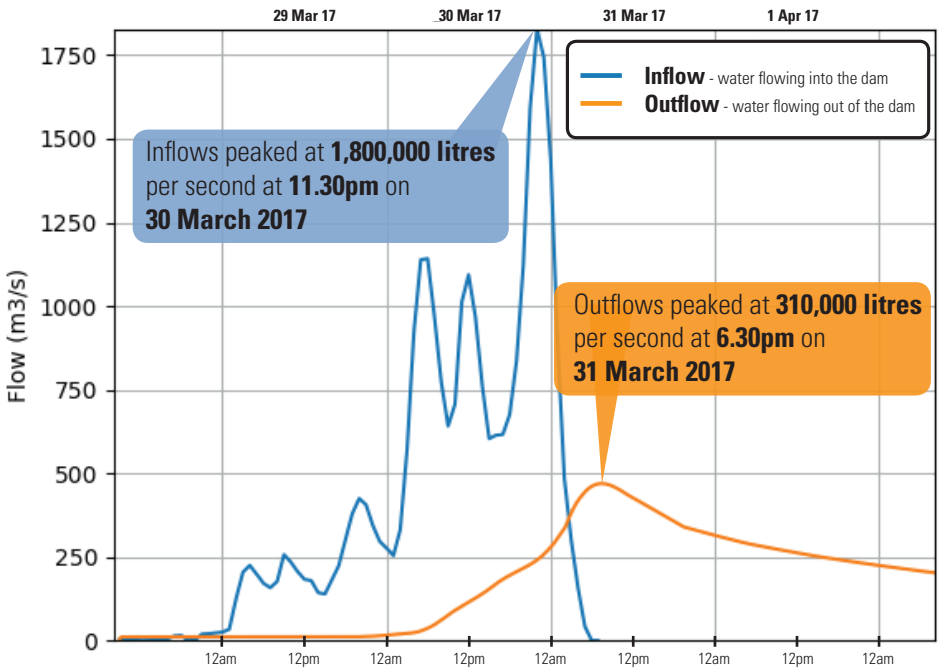
Hinze Dam information sheet

Ex-Tropical Cyclone Debbie – March 2017

How did the dam perform?

- Ex-TC Debbie produced the largest flow in the Nerang River valley in the past 50 years.
- The most recent upgrade to Hinze Dam was a major contributor to reducing the risk of flooding for thousands of downstream homes.
- Hinze Dam reduced the peak outflows by 80 per cent, preventing flooding for several thousand homes across the vast floodplain of the Nerang River, including Surfers Paradise, Bundall, Carrara and canal estates further to the south.
- During the event, inflows into Hinze Dam peaked at about 1,800 cubic metres per second (or 1.8 million litres per second) at 11.30pm on 30 March – the equivalent volume fills about 45 Olympic-sized swimming pools every minute.
- The water level at the Hinze Dam peaked at a record of 100.28 metres above sea level – about 5.7 metres above the spillway.
- With Hinze Dam in place, the peak outflow from the un-gated dam was reduced to 310,000 litres per second, holding back what would have been a disastrous flood.



The flow hydrograph for Hinze Dam associated with ex-Tropical Cyclone Debbie is shown above. Inflows into the dam began at 1am on Wednesday 29 March 2017 and the dam began to spill at 4.30pm the following day. The peak inflow occurred at 11.30pm on Thursday 30 March and the peak outflow occurred at 6.30pm on Friday 31 March 2017. At the same time, the lake level reached its peak at 100.8 metres above sea level, which is 5.7 metres above the dam's full supply level.

Other flood impacts

Your local council provides information about potential flood risks in the Gold Coast region 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 council at cityofgoldcoast.gov.au

Dam release notification service

Seqwater provides updates about dam levels and spilling at seqwater.com.au and on 1800 613 122.

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.