

# Fact sheet How dams work



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In South East Queensland, our drinking water is predominantly sourced from dams, which collect run-off rainwater from our catchments and store it. Our dams provide a safe, secure and cost-effective water supply, as well as help to mitigate floods.

When dams fill, they are designed to pass the excess water into the creek or river system they are built on.

## Dam release notification service

Seqwater offers a free dam release notification service, which provides subscribers with notifications when gated dams release water or un-gated dams are spilling.

Subscribers to Seqwater's dam release notification service will also be notified when higher outflows are occurring from a spilling dam due to high inflows resulting from rainfall in the catchment.

These notifications advise caution downstream due to potential hazards to people and property. This means if you are downstream of the dam you should take care near waterways and floodplains, as you may encounter fast flowing or deep water that could be a safety hazard.

Sign up for notifications on our website [seqwater.com.au](http://seqwater.com.au)

Latest dam levels are also available on our website and are regularly updated throughout the day.

Seqwater works with emergency response services, as well as state and local government, to inform and update the community about flood events.

Residents concerned about flooding impacts and road or crossing closures should contact their local council.

River level and weather forecast information is available from the Bureau of Meteorology website [bom.gov.au](http://bom.gov.au)

## Flood mitigation

At its most basic level, flood mitigation is capturing water and then releasing it at a slower rate, with the aim of minimising river levels downstream of the dam.

## What is Full Supply Level?

The Full Supply Level of a dam is the approved water storage level of the dam for drinking and/or irrigation purposes.

For un-gated dams, if inflows result in the water level rising above the Full Supply Level, the water will spill out of the dam. This spilling cannot be controlled.

For our gated dams (Wivenhoe, Somerset and North Pine), if inflows result in the water level rising above the Full Supply Level, Seqwater will make controlled releases for either flood mitigation or to protect the safety of the dam.

## Un-gated dams

An un-gated dam is built in a way that means Seqwater has no control over water spilling from the dam once the dam water level surpasses the Full Supply Level.

When rainfall in the catchment results in inflows to an un-gated dam that increase the water level beyond the dam's Full Supply Level, water begins to flow over the dam spillway. The dam spillway is lower than the dam embankment so that water can flow over the spillway and safely out of the dam into the creek or river system the dam is built on.

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.

Seqwater operates 23 un-gated dams including Hinze Dam, Baroon Pocket Dam, Moogerah Dam and Enoggera Dam.

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## Gated dams

A gated dam is built to enable Seqwater to have some control over the release of water. Seqwater operates three gated dams – Wivenhoe Dam, Somerset Dam and North Pine Dam.

Once a gated dam reaches its Full Supply Level, we control the release of water over the spillway using specially designed gates.

Gated dams can mitigate flood impacts by controlling the release of water. Care must be taken not to hold back too much water and cause the dam itself to fail.

We also operate the dams with the aim that released water does not combine with downstream floodwaters to worsen flooding. This can be difficult as water released from gated dams can take more than 24 hours to reach urban areas, which receive flood water from a variety of sources in a catchment (not just the gated dam).

A controlled release of water from a gated dam will not necessarily result in downstream flooding.

## Wivenhoe and Somerset dams

Wivenhoe and Somerset dams have floodwater storage compartments, which enable the dams to temporarily hold back water on top of the drinking water supplies stored in these dams. For example, Wivenhoe Dam can hold 1.165 million megalitres of drinking water, but also has a flood storage compartment of another 1.967 million megalitres. Therefore, the dam has a total storage capacity of 3.132 million megalitres.

The flood storage compartments temporarily store floodwater and release it at a controlled rate with the aim of minimising downstream impacts.

The *Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam* explains how the flood storage compartments of these dams are used during flood events and is available on the Seqwater website [seqwater.com.au/about/publications/dam-operations](http://seqwater.com.au/about/publications/dam-operations)

In 2014, the operational strategy for Wivenhoe Dam was changed to improve flood mitigation outcomes for urban areas. This new approach will result in some river crossings, such as Colleges Crossing in Ipswich, being closed sooner and more regularly when it floods.

It is important to note that half of the Brisbane River catchment is below Somerset and Wivenhoe Dams – this includes the Bremer River and Lockyer Creek. As these river systems enter the Brisbane River below Somerset and Wivenhoe Dams, it is not possible to control their flows.

We empty the dam of floodwater after the flood has peaked, so that the flood storage compartment remains available to manage inflows if another flood occurs.

## For more information

If you have further questions, please contact us:

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