

# Fact sheet What is a dam?



## What is a dam?

A dam is a wall of solid material built across a river valley or catchment to block the flow of the river. The dam wall creates a lake and allows water to continue flowing down stream of the dam. Dams create a permanent supply of water for the community to use.

The dam must be watertight so it is safe and stops water from escaping downstream and the walls must be strong enough to resist water pressure. The higher the dam, the greater the depth of water stored behind it, and the greater the water pressure on the dam wall.



A dam must have pipelines that connect to the nearest water treatment plant, to ensure water can be treated until it is ready to supply as drinking water to homes. A dam must have a way of releasing water in controlled amounts so people can use it.

Water is released from water treatment plants to a water service provider which is then released into a network of pipelines that supply homes, businesses and farms with water.

Water can be released from dams by:

- spillway
- gates
- cone valves.



If it rains heavily, or if the river floods, water can escape over a spillway and into the river downstream. This is an engineering design to help remove the water pressure on the dam wall. A spillway is usually built at the side of the dam wall.

There are larger dams that have been designed with large steel release gates and/or cone valves. These can be controlled by engineers to open and allow water to flow out when required.

If the dam is built of concrete, water can even flow over the dam wall.

Some dams are constructed to provide flood mitigation while others are for drinking water storage and others to produce hydroelectricity.

# Fact sheet What is a dam?



## How are dams built?

Each dam is different – some are small and deep, some are shallow and wide. It all depends on the size of the river and shape of the valley. Dams can be made from different materials. There are two main types of dams:

- concrete
- earth and rock fill.

Concrete dams are made of strong, solid concrete walls that resist the pressure of water. Earth and rock fill dams have a solid core of clay in the middle to prevent water leakage, and an outer layer of rock for strength.

There are dams that are built with a combination of both concrete and earth and rock fill.

## Dams and the environment

A dam built across a river will impact the river valley. Plants, animals, roads, farms and sometimes even towns will be flooded.

The flow of a river downstream will also be disrupted, and fish and wildlife may be threatened. For this reason all modern dams must adhere to strict environmental controls to minimise the environmental impact.

Listed below are key factors that can be applied in the planning, design and ongoing maintenance phase of a dam, to assist in reducing the environmental impact:

- working with the local community to relocate houses and roads
- keeping trees and vegetation in the valley to prevent soil erosion
- preventing noise, dust and pollution during construction



- relocating and/or protecting wildlife and special cultural sites in the catchment area
- pest management
- fire management
- building water 'ladders' around the dam wall to enable fish to swim upstream or downstream
- regularly releasing water to keep the river healthy.

## For more information

To book a tour, or to speak to a member of our community education team, contact:

**P** (07) 3035 5500

**E** [education@seqwater.com.au](mailto:education@seqwater.com.au)

**W** [www.seqwater.com.au](http://www.seqwater.com.au)

**F** [facebook.com/seqwater](https://www.facebook.com/seqwater)

**T** @\_seqwater