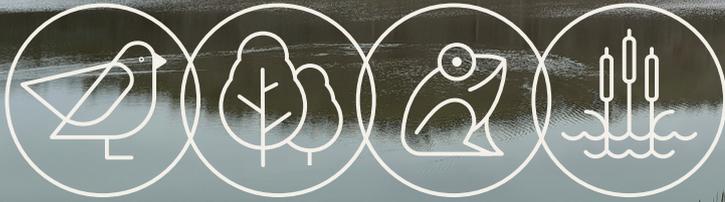


Beaconsfield Dam Safety Upgrade

Community Bulletin April 2023



Protecting our water resources

Beaconsfield Dam is an asset owned and maintained by Melbourne Water, with the land surrounding the reservoir managed by Cardinia Environment Council (CEC) on behalf of the Department of Energy, Environment and Climate Action (DEECA). The reservoir was permanently disconnected from Melbourne's water supply and distribution network in 1988. The priority for the Beaconsfield Dam Safety Upgrade project is to protect properties and communities located downstream of the reservoir.

In December 2021, Melbourne Water advised the local community that the Beaconsfield Dam would be upgraded, in line with the Australian National Committee on Large Dams (ANCOLD) guidelines. The ANCOLD guidelines represent the best Australian and International engineering practices in the safe design, management and operation of dams.

Through the planning for this project, we carried out a range of technical studies and investigations, and listened to community feedback. We understand the concerns raised and appreciate the passion in the community for this valued water resource.

In line with ANCOLD guidelines and independent specialist advice, Melbourne Water has determined that a partial reduction in the height of the dam wall embankment is the most appropriate response to mitigate the existing risks identified with this asset. The decision was based on our responsibility to protect communities and property downstream of the dam, now and into the future.

Melbourne Water manages the body of water within the Beaconsfield Nature Conservation Reserve.

We recognise there is a strong community voice to open the Beaconsfield Nature Conservation Reserve (BNCR) and Beaconsfield Dam for public use, however this project is to specifically address dam safety only. Public access issues can be referred to DEECA.

We have prepared a comprehensive FAQ document to provide more information about the issues considered during project planning. More background information on the Beaconsfield Dam Safety Upgrade project can also be found on our website.

PROJECT SCOPE



- Partial reduction in the dam wall height
- Slow drawdown of the water level over three years
- Removal of redundant infrastructure
- Construction of a secondary spillway with a rock-lined channel, and
- Decommission the high-level outlet function





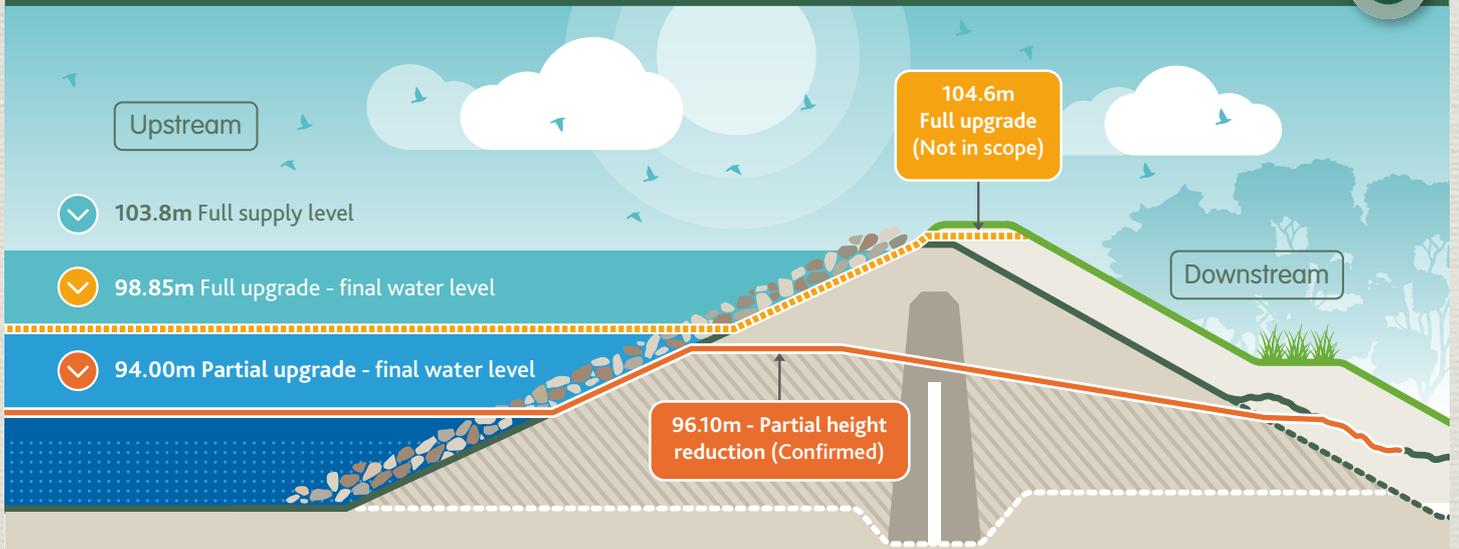
Minimising risk to Beaconsfield Dam flora and fauna

Beaconsfield Reservoir is located in the upper catchment of Haunted Gully Creek within the BNCR. The reserve is managed by the CEC and its primary purpose is to protect flora and fauna. This reserve is also remarkable for its diverse history, including cultural heritage, gold mining and the construction of the aqueduct and reservoir.

Protecting the BNCR and the existing environmental values is a priority for this project. Following an Environmental Impact Assessment conducted by Arthur Rylah Institute in 2021, there were several recommendations outlined to minimise the risk to flora and fauna, which Melbourne Water has committed to, including:

PROJECT ITEM	PROJECT ACTION	PROJECT STATUS
Before commencing work, a detailed ecological assessment of flora and fauna to be undertaken	Targeted seasonal field surveys have been completed. Both reports are available on the website	Surveys completed Environmental Management Plan to be developed as part of the next phase
Lowering the water level should occur over a minimum of three years	To commence early 2023	Commencement mid 2023
Monitor impacts to biodiversity	Monitoring program to be included as part of the Environmental Management Plan	This will be developed during the detailed design stage of the project
Collect seed from Swamp Gum and Green Scentbark in the first year of lowering the water level	Melbourne Water to discuss further with the CEC	Commencement early 2023
Undertake spring targeted surveys for threatened species prior to any ancillary works (access tracks etc.)	Spring surveys have been completed and recommendations provided	Completed – ongoing monitoring as part of the Environmental Management Plan
Control all woody weeds	Melbourne Water to work with the CEC	Ongoing
Repair perimeter fence and undertake intensive deer control throughout the lowering of the water level	Melbourne Water to work with the CEC	In progress
Appropriate management and care of fauna during works	Monitoring / relocation will be included within the Environmental Management Plan	Construction activities 2026

CROSS SECTION OF CONFIRMED SCOPE OF WORKS



PARTIAL UPGRADE - CONFIRMED

- Net improvement to environmental values on site with wetland zones
- Less truck movements therefore less impacted residents
- Low volume of external material required to be brought onto site
- Less removal of vegetation
- Less cost
- Lower community risk
- Low consequence category dam
- Partial water body retained for amenity
- Smaller construction footprint

FULL UPGRADE - NOT IN SCOPE

- Net reduction in environmental values on site
- More truck movements and large number of residents impacted
- High volume of external materials to be brought on site
- More removal of vegetation to make way for construction lay down area
- Higher cost
- No improvement in community risk does not reduce the consequence level if the dam was to fail



FREQUENTLY ASKED QUESTIONS

Key community questions

1. I think the reserve should be open to the public for recreational use. Who do I advocate to about this?

We recognise there is a strong community voice to open the Beaconsfield Nature Conservation Reserve and Beaconsfield Reservoir for public use, however this project is to specifically address dam safety only.

Public access issues can be referred to the Department of Energy, Environment and Climate Change (DEECA).

2. Will lowering the water level limit firefighting capability?

Melbourne Water has received the following advice from DEECA's Chief Fire Officer:

Beaconsfield Reservoir is not a pre-approved location for water pickup by firefighting aircraft. Whilst the site can still be used in extreme circumstances for fire fighting purposes, nearby Lysterfield Lake, Aura Vale Lake and Cardinia Reservoir are all designated and approved water pick up locations.

Cardinia Reservoir is a pre-approved site, 6km to the north which is much larger and safer to fill from. Firefighting helicopters travel at 1.5 to 2km per minute and save 3 minutes filling from Beaconsfield.

3. Why does the height of the dam wall need to be reduced?

The dam was built over 100 years ago and does not meet current industry standards for the design of a dam of its size.

In light of our knowledge of the shortcomings in the design, construction and performance of the dam, as well as the consequences of the dam failing, Melbourne Water has a duty of care and a regulatory obligation to reduce the risk of the structure to downstream communities. We understand that the reservoir water body offers amenity value to the community and this has been carefully considered throughout the decision-making and engagement process.

4. What is the rationale for undertaking this upgrade?

The design of the dam does not meet current safety requirements and risk guidelines in terms of stability, internal erosion (piping) protection and general design deficiencies.

The dam was built over 100 years ago to the standards of the day, and no longer meets current safety standards. Melbourne Water manages its dams portfolio in accordance with Australian National Committee on Large Dams (ANCOLD) guidelines which we are required to do under our Statement of Obligations and in line with general duty of care expectations.

Australia has a strong emphasis on dam safety management principles set out by these guidelines.

As a minimum, dam managers are required to achieve a level of dam safety which is as low as reasonably practicable and where this is not the case, undertake further measures to reduce the risk. Retaining the dam in its current state, would not be in accordance with good practice dam safety management, would not satisfy Melbourne Water's Statement of Obligations and nor would it demonstrate an appropriate duty of care to downstream communities. There are multiple reasons that can cause a dam to fail. The driver of the Beaconsfield Reservoir Dam Safety project is to reduce the risk of Beaconsfield Reservoir failing, protecting properties and community located downstream of the dam.

While the likelihood of dam failure is low, the consequence is significant.

5. When will work on the dam begin?

Melbourne Water will be following the advice from Arthur Rylah Institute and lower the water level down slowly to allow the environment the best chance to establish. We will continue to regularly monitor the embankment with a view to commencing the works late 2026.

For the extended list of FAQs, please visit: www.melbournewater.com.au/beaconsfield-dam

FOR MORE INFORMATION

 131 722

 Beaconsfield@melbournewater.com.au

 www.melbournewater.com.au/beaconsfield-dam



To access the TTY and Interpreter Services
TTY 133 677
Interpreter 131 450

