

Seqwater Dam Improvement Program

Leslie Harrison Dam upgrade

September 2017

Dams are long-life assets and require continual assessment, monitoring and maintenance. In 2012-13, Seqwater commissioned an independent review of its 26 referable (regulated) dams, which found improvements were needed at a number of dams to meet the Queensland Dam Safety Guidelines into the future.

Leslie Harrison Dam is an earth fill dam on Tingalpa Creek in the Redland City Council area and is one of a number of dams in South East Queensland to be upgraded within the next six years, as part of Seqwater's Dam Improvement Program.

Improving our dams

Our dams play a vital role in the South East Queensland Water Grid, providing the bulk of our drinking water to SEQ. Their continued performance and safety is critical to South East Queenslanders.

There are some key changes since Leslie Harrison Dam was originally built in 1968, which have resulted in increased dam safety standards, including:

- the latest estimates of extreme rainfall
- data from flood events and updated flood modelling
- improved understanding of earthquake probabilities and loads
- significant population growth downstream
- advances in dam design.

All these factors are considered as part of Seqwater's Dam Improvement Program so our dams operate as they should now and into the future.

Dam safety

In Queensland, dam owners are responsible for the safety of dams in accordance with the *Water Supply (Safety and Reliability) Act 2008* (the Act). Like all dam operators across the country, we also seek to meet the national guidelines set by the Australian National Committee on Large Dams (ANCOLD).

Just like cars, dams need regular checks and maintenance to keep them in good working order. We regularly monitor and assess our 26 referable dams throughout the year. Through this work, dams may be identified for upgrades to meet changes to the safety guidelines.

About the upgrade

The upgrade of Leslie Harrison Dam, at an estimated cost of about \$24 million, will involve strengthening its main embankment and spillway to better withstand earthquakes and floods.

We will be building a weighting berm with rocks and fill along the main embankment to widen the structure and provide greater stability, as well as placing a specially design layer of sand across the downstream face of the embankment to manage seepage. In addition, the top (crest) of the concrete spillway will be anchored for stability and the water intake tower will be modified to improve its flood immunity.



Construction is expected to start in mid-2018 and will take about 12 months to complete, subject to weather conditions and material availability. More information about the timing of the upgrade will be available as planning progresses.

Once construction is complete, the spillway gates will not be reinstated and the current full supply level of 13,200 million litres (ML) will become permanent.

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Lower water level

In 2014, the water level was lowered and the spillway gates at Leslie Harrison Dam were removed for the ongoing safety of the dam.

Lowering water levels is an industry-accepted practice to manage the safety of dams because it reduces water pressure and loads on the dam wall, as well as increasing its flood capacity.

Water security

The decision to keep Leslie Harrison Dam at its current full supply level permanently will have minimal impact to the region's water security. The dam supplies about 25 per cent of Redland City's drinking water, with the rest sourced from North Stradbroke Island. The Redlands is also connected to the SEQ Water Grid via the Eastern Pipeline Interconnector, which provides additional water security to the region.

Since lowering the dam's water level, we have investigated a number of options to understand whether we could safely restore the original full supply level and reinstate the spillway gates at the dam.

We found not only would there be minimal benefit to the security of the region's drinking water supply, but we would need to spend about \$42 million in total to address all the safety issues reinstating the gates present.

After carefully considering the costs and benefits, we have decided not to reinstate the spillway gates and will keep the dam at its current full supply level.

Flood mitigation

Leslie Harrison Dam was originally designed as an un-gated dam and is operating as one today. All un-gated dams help mitigate flooding to some extent.

At its most basic level, flood mitigation is capturing water in the dam and releasing it at a slower rate than creek flows into the dam, with the aim of reducing river levels downstream.

The peak outflow from an un-gated dam during a flood event is less than the peak inflow that would have occurred had the dam not been built, because some of the flood water is held in the dam and released over a longer period of time.

We appreciate there has been community concern about the decision to remove the spillway gates and what this means for downstream residents, but it's important to remember the gates were originally installed for additional water supply and not to provide flood mitigation.

Recreation

We understand some community members are interested in recreation at Leslie Harrison Dam, however Seqwater has no plans to introduce recreation at the dam in the foreseeable future.

When Redland City Council (formerly known as Redland Shire Council) transferred ownership of the dam to Seqwater in March 2008, we continued Council's policy of keeping the dam closed to public access, given its role as a drinking water source for the region and the SEQ Water Grid.

In 2014, Seqwater engaged researchers to conduct a water quality study and develop a screening tool to help us better understand the impact recreation has on water quality in our drinking water lakes. The landmark study was one of the most complex and comprehensive of its kind ever undertaken in Australia.

In 2016, a water quality assessment was conducted at Leslie Harrison Dam using this screening tool, which found at both the original and current full supply levels, recreation cannot be considered because of unacceptable water quality risks.

Living near our dams

It's important neighbours and people downstream of Leslie Harrison Dam know what to do in the unlikely event of an emergency. There is an Emergency Action Plan in place to help us to respond quickly to potential incidents in partnership with emergency services and local council and, through targeted intervention, prevent an incident from developing into an emergency.

In addition, emergency services have a range of ways to warn the community about severe weather and other emergencies that require preparation and action at the household level. For help preparing your emergency kit and evacuation plan, visit getready.qld.gov.au.

Dam release alerts

Sign up to Seqwater's dam release notification service to receive alerts via email, text message to mobile phone or recorded message to telephone landline when Leslie Harrison Dam is spilling water. Register now at seqwater.com.au to get dam alerts or download our new app from the App Store on your device.

Keeping you informed

You can stay up to date with the progress of the Leslie Harrison Dam upgrade by subscribing to our e-updates. To sign up or for more information:

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