

Paradise Dam Emergency Response Overview

June 2020

Purpose

Sunwater is committed to ensuring the community has access to information about the risks with Paradise Dam and how they are managed.

This document has been revised and re-issued in June 2020 to include updated information about how our emergency response will be modified during works at Paradise Dam.

What is a dam Emergency Action Plan?

Paradise Dam requires an Emergency Action Plan by law, because people downstream would be in danger if it failed. This is nothing new, Paradise Dam has had an Emergency Action Plan since it was built.

An Emergency Action Plan identifies:

- dam hazards and possible emergency events
- the area likely to be affected by an emergency event
- circumstances that increase the likelihood of emergency events
- people who may be harmed and whose property may be impacted, and how these people are warned, and
- the actions to be taken in response to a dam hazard or emergency event and who is responsible.

What could cause Paradise Dam to fail?

Dams are complex and can fail due to a natural event such as flooding or an earthquake, or a deliberate act such as a terrorist activity. For example, Paradise Dam could fail due to:

- **Overturning and sliding:** a huge concrete block (a monolith) moves or collapses and the water released cannot be controlled.
- **Flood:** a flood may cause the dam wall to exceed its design limits. A flood can also generate pressure and cause overturning or sliding (described above). Most dams are designed to withstand a flood bigger than what many of us are likely to see in our lifetime.
- **Piping:** over time, water movement can lead to internal erosion which can result in a hole or “pipe” forming. If not detected and repaired, the pipe could expand and lead to collapse of the dam.
- **Terrorism or deliberate act:** whilst unlikely, dam owners remain vigilant to this threat.

What has changed at Paradise Dam?

Paradise Dam was damaged during flooding in 2011 and 2013 and flood repairs were completed in 2014. Over time more testing and risk assessments have identified more structural issues with Paradise Dam.

In September 2019, Sunwater confirmed the increased risk that all or part of the dam may overturn, or collapse should a major flood occur at Paradise Dam again.

Dams the size of Paradise, with large populations downstream, should not be in danger of collapse in a flood event that has been experienced in recent history. That risk is why Paradise Dam’s storage level has been reduced to 42% capacity (and releases will occur after rainfall to bring it back to 42% capacity) and Sunwater has commenced Essential Works to reduce the risk and make the dam safe.

Changes to Evacuation Triggers During Essential Works

During Paradise Dam Essential Works, the spillway will be lowered in sections. Therefore, the height of water over the spillway will not be a reliable trigger for emergency planning or evacuation. New trigger points have been created and these changes have been documented in an Addendum to the Emergency Action Plan.

During the Essential Works the gauge at Mount Lawless, upstream of the dam, will be used to monitor river heights. Flows that pass through Mount Lawless travel to Paradise Dam and the Mount Lawless stream gauge has been agreed by the Local Disaster Management Group to be used as a common reference point.

The table below summarises the change in place for the works period.

Before evacuations would have been activated when the dam reached:	From June 2020 evacuations will be activated when:
197 % capacity	7.2 m is reached at the Mount Lawless stream gauge
which is 6.9 metres over the spill way	
and an Elevation Level of 74.5 (equivalent to 18.0 m at the Mount Lawless stream gauge)	

What does this change mean for downstream communities?

The extra precautions during the Essential Works mean that the evacuation process will start earlier than has occurred in the past to ensure public safety. Evacuations are managed by the district and local disaster management groups.

Sunwater and the local councils are focussed on protecting lives.

Areas that were not evacuated previously, may also be asked by local councils to leave early to ensure they are protected from floodwaters, and do not become isolated.

Protecting lives and property

Sunwater monitors Paradise Dam and the Mount Lawless gauge (data is available on the Bureau of Meteorology website) daily and our Emergency Action Plan identifies specific actions to be taken as water rises. The image over page shows the actions taken as the water level at the Mount Lawless gauge reaches specific heights.

Sunwater and local councils have shared evacuation information with residents within approximately 10 km of Paradise Dam.

It is critical that all residents respond to evacuation alerts.

Phone: 3120 0270

Email: paradise.dam@sunwater.com.au

Visit: sunwater.com.au/projects/paradise-dam-essential-works/

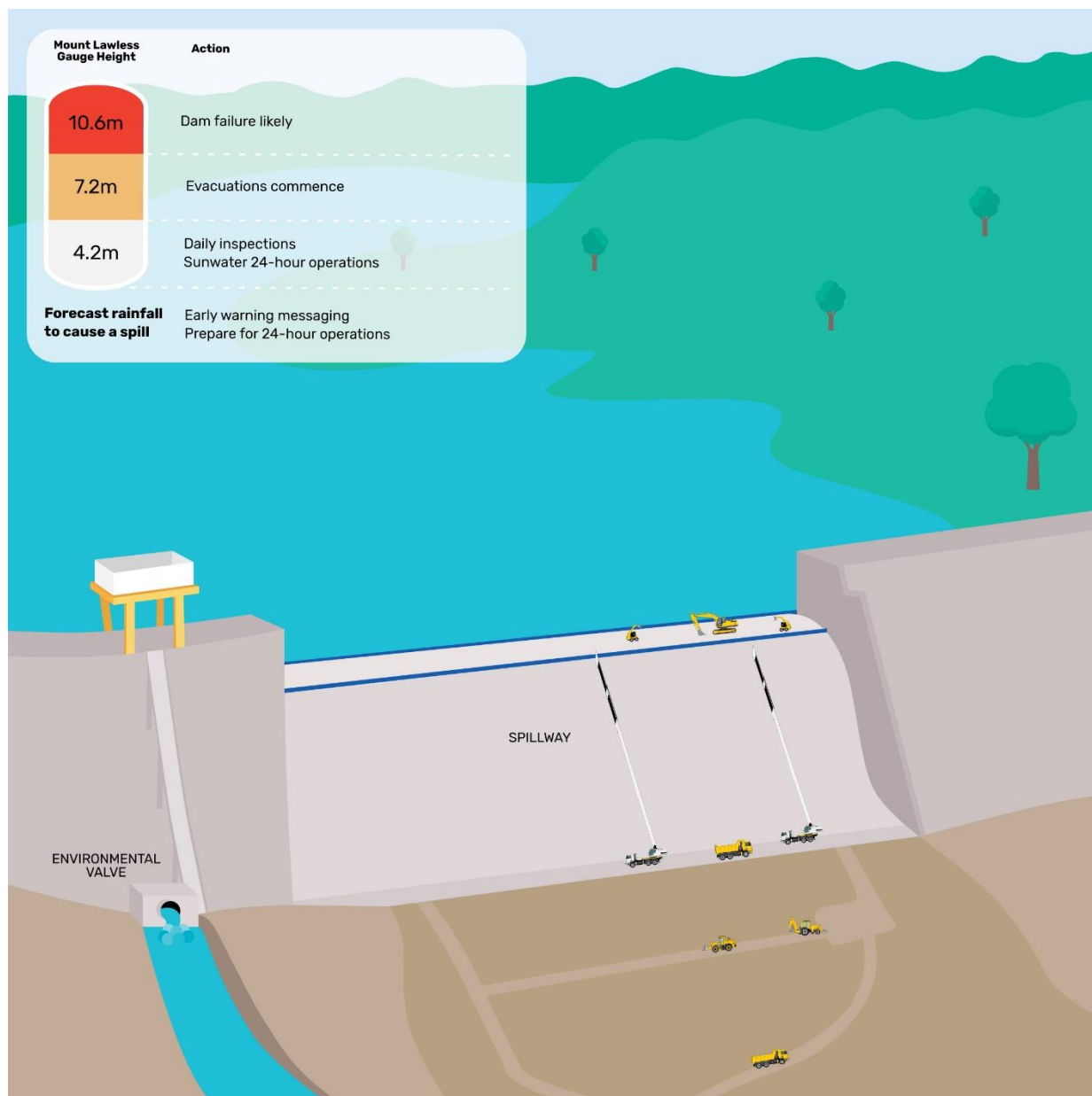
Testing the Emergency Action Plan

The Emergency Action Plan was successfully tested in December 2019 with the Local Disaster Management Group and the District Disaster Management Group.

More information

- Access the Paradise Dam Emergency Action Plan at https://www.sunwater.com.au/wp-content/uploads/Home/Community/Preparing-for-weather-events/Stay-informed/EAP/Paradise_Dam_EAP.pdf
- Refer to local disaster information at <http://disaster.bundaberg.qld.gov.au/>
- Access interactive flood mapping: <https://www.bundaberg.qld.gov.au/interactive-mapping-system>

This image shows the actions taken as the water level at the Mount Lawless gauge reaches specific heights



The information presented in this flyer is current at the time of publication in June 2020.

It may be updated over time in response to new information.

Refer to www.sunwater.com.au for the latest information about Paradise Dam.

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