

The 2019 Paradise Dam Preparedness Review

Report 1: 2019-20

QUEENSLAND GOVERNMENT RESPONSE

Overview

Paradise Dam was built between October 2003 and December 2005. In 2013, following rainfall from ex-tropical Cyclone Oswald, Paradise Dam experienced the largest flood ever recorded at the site. This flood event resulted in damage to the area below the dam.

Approximately \$65 million has been invested in Paradise Dam since 2013 to carry out two repair and improvement projects, as well as comprehensive safety reviews and risk assessments. The first stage of improvement works were completed in late 2017, and these addressed the scouring damage sustained during the 2013 floods.

Following a comprehensive safety review and risk assessment, Sunwater identified that further upgrades are required to ensure the dam meets the latest design standards and operates safely during extreme weather events.

During normal weather conditions the dam is safe.

However, advice from Sunwater in September 2019 indicated that the storage level of the dam needed to be lowered as soon as possible due to safety concerns in the event of a significant flood.

In response to these safety concerns, to increase downstream preparedness, and in preparation for construction works commencing immediately following the wet season, Sunwater commenced releasing water from Paradise Dam on 24 September 2019 to reduce the supply level to 42 per cent ahead of the 2019–20 wet season.

In addition, on 24 September 2019, Minister Lynham announced that the height of the Paradise Dam primary spillway will be reduced by five metres in 2020 to improve the dam's ability to withstand extreme rain events until a major upgrade is completed.

IGEM Review

On 25 September 2019, the Honourable Craig Crawford MP, Minister for Fire and Emergency Services requested that The Office of the Inspector-General Emergency Management (IGEM) undertake an independent review to assess and guide preparedness for a future significant flood event affecting Paradise Dam.

As an independent office, with expertise in disaster management, IGEM is best placed to identify the strengths of Queensland's disaster management system and any opportunity for improvement.

On 19 December 2019, IGEM provided the report to the Honourable Craig Crawford MP.

Technical Reports

The technical reports that informed Sunwater's decision to lower the storage level of Paradise Dam were released once they had been peer reviewed by an international expert in roller compacted concrete dams. The reports are available on the Sunwater website.

Findings and the Queensland Government Response

The IGEM review contains observations, 33 findings and 17 recommendations.

The Queensland Government accepts all of the recommendations that it is responsible for and endorses recommendations directed towards Local Disaster Management Groups. While the Government cannot accept recommendations on behalf of those groups, it will work with them to implement the recommendations and provide support as required.

The Queensland Government notes the significant steps already taken towards information sharing and collaboration, such as the publication of the technical reports and combined exercises for flood response. The Queensland Government is committed to work together with our partners in local government, non-government agencies and the Australian Government to further improve information sharing, collaboration and community readiness in the future.

The Queensland Government response to the Review recommendations is attached. We commend the report and the Queensland Government response to all stakeholders.

Queensland Government response to *The 2019 Paradise Dam Preparedness Review, Report 1:2019-2020*

Recommendation		Government response	
Dam Safety			
1	To enable the community to have a shared understanding of risks and enhance community engagement, flood scenarios in Emergency Action Plans be published, and in a format that can be utilised by public mapping systems.	Accepted	The Government will ensure that flood scenarios are shared in a usable format. The Dam Safety Regulator will identify the best way of sharing the information.
2	To enable entities to have a shared understanding of forecast information for dam failure events during a flood, including flood wave travel time, speed and height, Emergency Action Plans contain protocols and responsibilities of relevant stakeholders for these aspects.	Accepted	Government will ensure that forecast information is made available and that protocols and responsibilities are clear. This may not necessarily be achieved through the Emergency Action Plans.
3	To enable a shared understanding of the risk, changes in the risk profile of referable dams be clearly communicated by entities that own dams to stakeholders and the community likely to be affected. The communication process starts immediately after the change is identified, is tailored to its audience, makes clear the scale of the change, and is documented so that stakeholders and the community can make informed decisions for managing risks.	Accepted	Government agrees that there is a need for clear and early communication about material changes to risks of referable dams. Government will work with the owners of referable dams to determine the most appropriate way for them to communicate and document changes in the risk profile of their dams to stakeholders and the community.
Disaster management arrangements			
4	To increase understanding of hazards and manage risks, dam failure for Paradise Dam be included as a separate risk within the North Burnett Local Disaster Management Plan.	Endorsed	Government will support the North Burnett Local Disaster Management Group to include dam failure as a separate risk within the Local Disaster Management Plan.

Recommendation		Government response	
			IGEM will write to the Chair of the North Burnett Local Disaster Management Group drawing its attention to this recommendation in the IGEM Report and encouraging the group to take relevant actions.
5	To increase shared understanding of risks and enhance capability integration and collaborative planning, both Local Disaster Management Groups participate in the exercising of the Paradise Dam Emergency Action Plan.	Accepted	Sunwater will ensure that Emergency Action Plan exercises include relevant Local Disaster Management Groups.
6	To increase shared understanding of risks, enable coordinated plans and collaboratively engage with downstream community members, residents listed within a dam Emergency Action Plan be identified by the Local Government Area they reside in.	Accepted	Sunwater will update Appendix A4 of the Paradise Dam Emergency Action Plan to add in the Local Government Areas.
7	To increase understanding of hazards and manage risks, dam failure for Paradise Dam be included as a separate risk within the Bundaberg Local Disaster Management Plan.	Endorsed	Government will support the Bundaberg Local Disaster Management Group to include dam failure as a separate risk within the Local Disaster Management Plan. IGEM will write to the Chair of the Bundaberg Local Disaster Management Group drawing its attention to this recommendation in the IGEM Report and encouraging the group to take relevant action.
8	To enhance shared capacity and collaboratively manage risk, the Chair of the Bundaberg Local Disaster Management Group use the Queensland Emergency Risk Management Framework process to determine if dam failure for Paradise Dam should be reported as a residual risk to the Bundaberg District Disaster	Endorsed	Government will support the Bundaberg Local Disaster Management Group to determine if dam failure for Paradise Dam should be reported as a residual risk to the Bundaberg District Disaster Management Group. IGEM will write to the Chair of the Bundaberg Local District Management Group drawing its attention to this

Recommendation		Government response	
	Management Group in this instance due to known changes in the risk profile.		recommendation in the IGEM Report and encourage the Local District Management Group to take any relevant action.
9	To increase shared understanding of risks, ensure the coordination of plans and manage risks, dam failure for Paradise Dam be included as a separate risk within the Bundaberg District Disaster Management Plan.	Accepted	The District Disaster Management Plan is reviewed annually after the disaster season. This recommendation will be addressed as part of that annual review.
10	To enhance shared capacity and collaboratively manage risk, the Chair of the Bundaberg District Disaster Management Group use the Queensland Emergency Risk Management Framework process to determine if dam failure for Paradise Dam should be reported as a residual risk in this instance due to known changes in the risk profile to: <ul style="list-style-type: none"> • the State Disaster Coordination Group (SDCG) in accordance with their responsibilities under the State Plan • QFES for ensuring the development of the state-wide risk assessment. 	Accepted	This recommendation will be addressed post disaster season. Discussions have already commenced with Disaster Management Officers from both councils to schedule this work.
Emergency communications			
11	To ensure enhanced capability integration and enable timely community messaging Bundaberg Local Disaster Management Group in consultation with Sunwater develop additional Emergency Alerts and associated polygons for a Paradise Dam failure and load these on to the disaster management portal.	Endorsed	<p>Sunwater will work with the Bundaberg Local Disaster Management Group to develop additional Emergency Alerts and associated polygons for a Paradise Dam failure and load these on to the disaster management portal.</p> <p>IGEM will write to the Chair of the Bundaberg Local Disaster Management Group drawing its attention to this recommendation in the IGEM Report and encourage the group to take relevant action.</p>

Recommendation		Government response	
12	To enable the community to make informed choices about disaster management, Bundaberg and North Burnett regional councils and Sunwater undertake a community-informed audible test of the Paradise Dam siren.	Accepted	Sunwater undertook an audible test of the sirens at Paradise Dam on 16 December 2019. Learnings show some improvements will make the sound able to be heard further down the Burnett Valley. Sunwater is recalibrating the sirens to implement this improvement and will undertake another audible test shortly.
Community readiness			
13	To enable the community to make informed choices about disaster management, and act on them, a joint Sunwater/council community engagement program be conducted to prepare the community downstream from Paradise Dam for events in the 2019/2020 storm and cyclone season, including the possibility of a Paradise Dam failure.	Accepted	Sunwater will work with relevant councils to undertake a community engagement program to prepare the community downstream from Paradise Dam for the 2019/2020 storm and cyclone season, including the possibility of a Paradise Dam failure.
14	To enable the community to make informed choices about disaster management, and act on them, Sunwater develop and deliver a sustainable long-term communication strategy on the community safety issues and risk profile connected with Paradise Dam. This is to be: <ul style="list-style-type: none"> - undertaken in collaboration with local and district disaster management groups, and - continued until the risk profile of the dam is in accordance with Queensland guidelines for dam safety - evaluated for its effectiveness. 	Accepted	In collaboration with local and district disaster management groups, Sunwater will develop and deliver a long-term communication strategy on the community safety issues and risk profile connected with Paradise Dam.
15	To enable the casual/itinerant worker and tourism sector, including those who do not have English as a first language, to make informed choices about disaster management, community engagement and	Accepted	Local Disaster Management Groups will be encouraged to develop communication strategies for casual/itinerant workers and the tourism sector and undertake community engagement.

Recommendation		Government response	
	communication strategies about Paradise Dam and floods in the Burnett river system be tailored to this sector.		
Lessons management			
16	To enable entities in the sector to proactively work to achieve better results for the community, the recommendations and lessons of this review should be evaluated through the lessons management processes of entities involved in dam safety for their value and relevance.	Accepted	Queensland Government will work with other agencies to evaluate lessons learned.
Conclusion			
17	This report be returned to the Inspector-General Emergency Management to monitor, evaluate and report on progress and implementation of the recommendation(s) that are accepted in whole or in part by government.	Accepted	