

Lake Cargelligo Embankment Dam



Community Newsletter - September 2021

Project Background

WaterNSW, the state's bulk water supplier and system operator, is upgrading the three embankment dams of Lake Cargelligo to improve dam safety.

The aim of this Project is to make modifications to the existing three embankment dams of Lake Cargelligo. The banks will be stabilised and strengthened to ensure they continue to function effectively for the long-term.

The embankments were originally constructed in 1906. In 1927, all three dams were raised to a total final height of approximately 3.5m with a base width of 5m. Historic floods damaged the embankments, and a rainfall flooding event in 2016 further impacted the condition of the embankments.

Temporary works were completed which proved successful in managing risk during the incident, however, these important upgrades will ensure the town of Lake Cargelligo continues to benefit from recreation activities at the lake for the long-term.

The project team has completed geotechnical site investigations, early environmental investigations, and concept designs. These preliminary works have identified three forms of erosion that need to be mitigated including tree erosion, internal bank erosion and external wave erosion or overtopping. This newsletter provides further detail on these forms of erosion on coming pages.

Further design development, environmental assessment and an Aboriginal Cultural Heritage Assessment will progress through to the end of 2021, acknowledging that COVID-19 restrictions may cause delays to the project timeline.



Works being undertaken are a proactive approach to managing dam safety to ensure this 100-year-old asset is safe and reliable for the community long into the future.



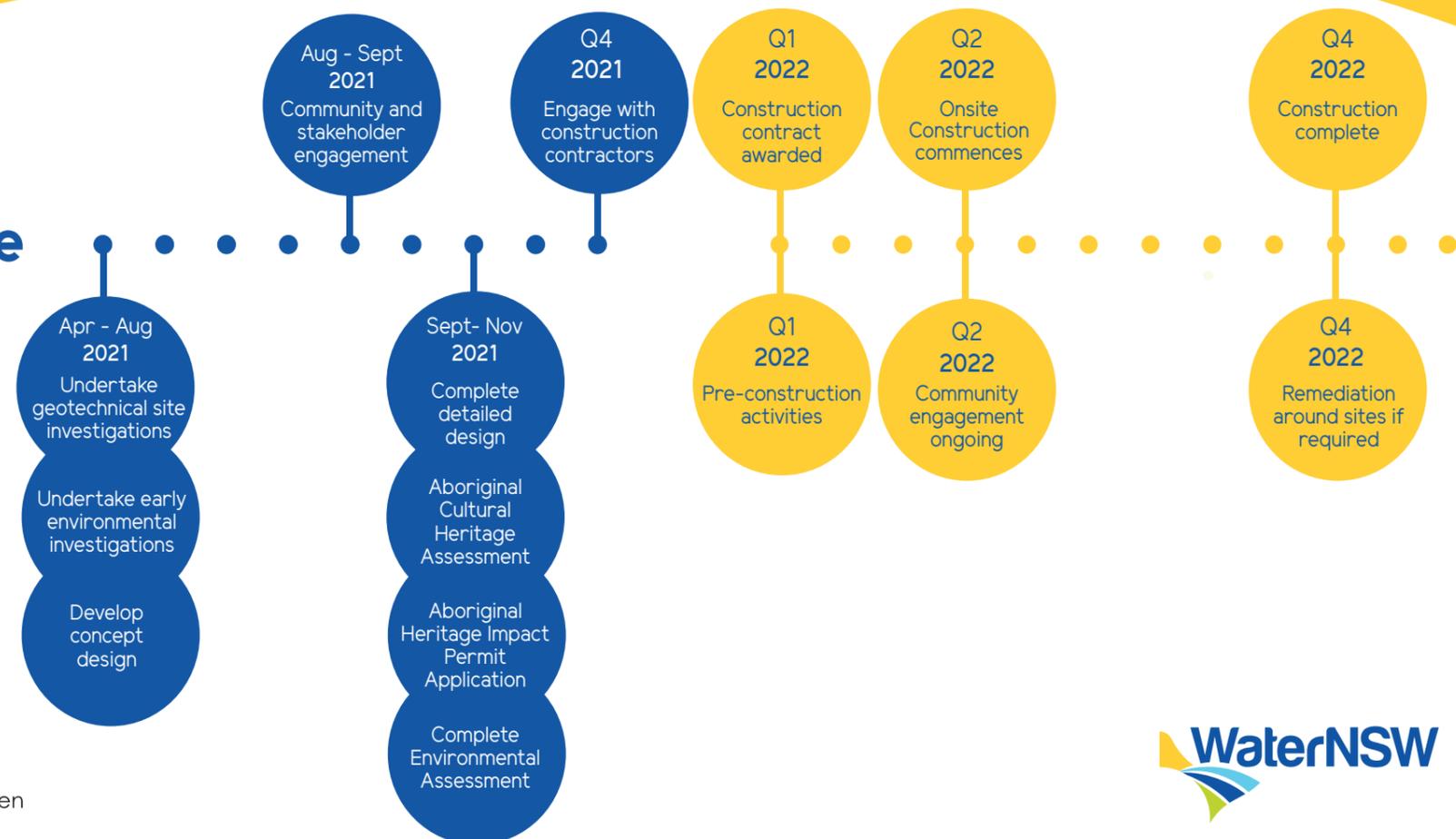
Sarinda Wickramasinghe
Project Manager, Asset Delivery -
WaterNSW

Managing COVID-19

WaterNSW is committed to protecting the safety of the communities we work in. COVID-19 restrictions will be monitored and all community engagement and project works will be completed in accordance with the latest public health orders.

COVID-19 may cause restrictions and changes to community engagement and project timelines. In the instance this occurs updates will be provided via the website.

Project Timeline



Erosion Impacts

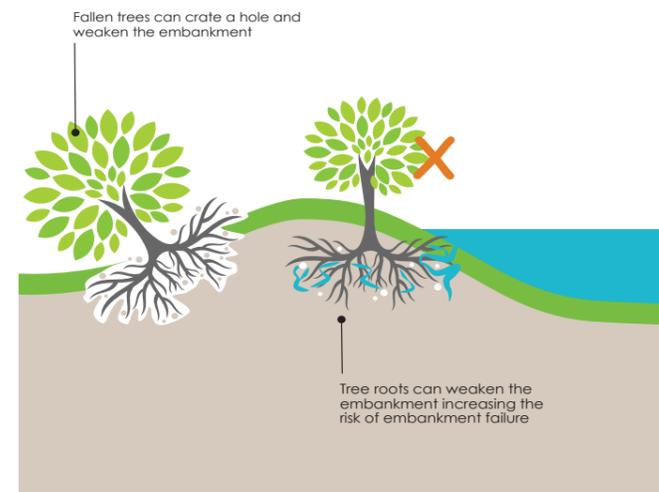
To ensure the embankment continues to operate safely and complies with best practice dam safety, trees and vegetation on the embankment will need to be removed as part of the remedial works. Having trees on the embankment increases the risk of embankment failure. This is caused by:

The tree roots making weaker areas and defects in the embankment including the creation of water paths. This can cause internal erosion that can lead to embankment failure, especially when storage levels are higher.

The risk of internal erosion through the embankment is made worse when the tree dies. The decaying roots leave voids in the embankment that create water paths causing additional defects leading to embankment failure if untreated.

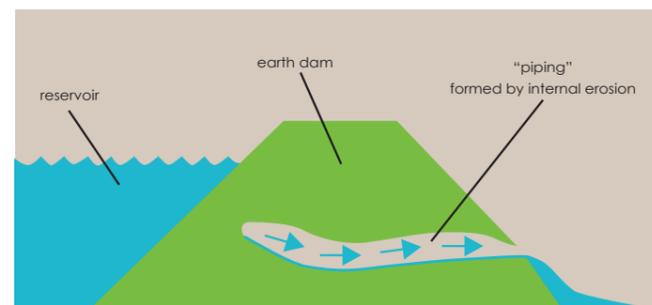
Large trees and vegetation on the embankments hides potential surface defects or damage that may be present. This makes it harder to detect these issues quickly and complete timely repairs.

Tree erosion



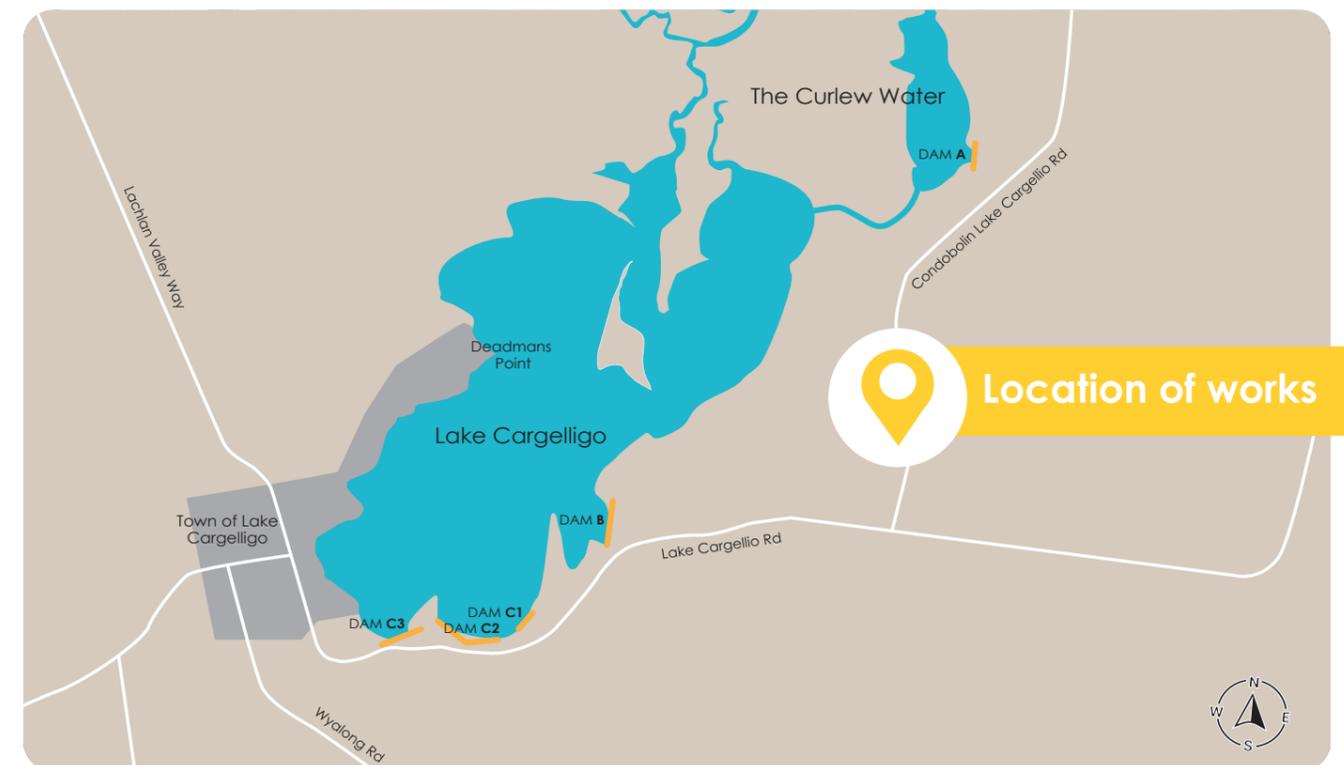
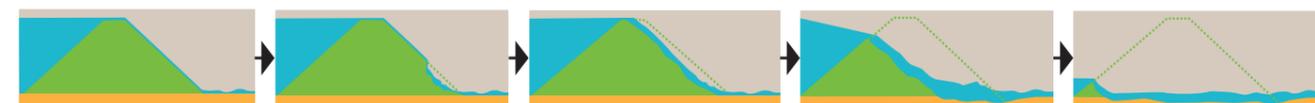
Internal Erosion

Internal erosion referred to as a piping occurs when water seeps through the dam embankment. This seepage carries soil away from the embankment. If the seepage discharges at the downstream side of the embankment an elongated cavity or piping may be eroded backward into the embankment. In many instances internal erosion is not visible.



Wave overtopping

Overtopping associated with wave erosion occurs when the water surface is below the crest level of the embankment where wind driven waves wash across the crest of the structure. This can result in a breach over a long duration with the downstream face gradually eroding over time.



Contact Us



For general enquiries and to receive project updates email
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