

A lifeline for state's deteriorating timber bridges *Cedar Creek Bridge gets a new lease of life in less than a week*



Bridges form a vital part of Australia's transport network, with around 30,000 timber road bridges in service throughout the country. In Australia timber bridges are recognised for their place in the country's colonial history, with many of the old bridges classified as 'State Significant' under the States Heritage Act. However, heavier and faster moving vehicles have put a considerable strain on these old timber bridges, accelerating the rate at which many of these ageing timber structures have been deteriorating.

In regional NSW alone, thirty per cent of timber bridges are in a poor condition¹, making the restoration of these critical transport arteries a priority for local governments and councils. Given the importance of these transport routes and the safety of the local community, councils have needed to lower payload and speed limits as a precaution to the continued deterioration and disrepair of the state's 2,000 timber bridges².

When a bridge is closed for maintenance or repairs, or is load limited, the impact on the local community can be significant, particularly if the bridge is one of only a handful of access points connecting a region, as is the case with the farming area around Cedar Creek Bridge in NSW's Hunter region.

As one of 74 bridge assets in the Cessnock local government area, the ageing timber bridge was highlighted as a priority for urgent restoration given the significant deterioration of the corbels, girders and deck planks. Heavier vehicles cause much more vibration in the bridge as they pass over; this can cause bolts and fasteners to rattle loose over time requiring higher maintenance and causing increase wear to the joints in the timber. The council had implemented a six-tonne load limit on the bridge as a short-term solution while it searched for a low-cost alternative to a steel or concrete replacement, both of which come at significant costs to the community.

¹ <http://www.rms.nsw.gov.au/documents/business-industry/partners-and-suppliers/lgr/country-bridge-solutions-flyer.pdf>

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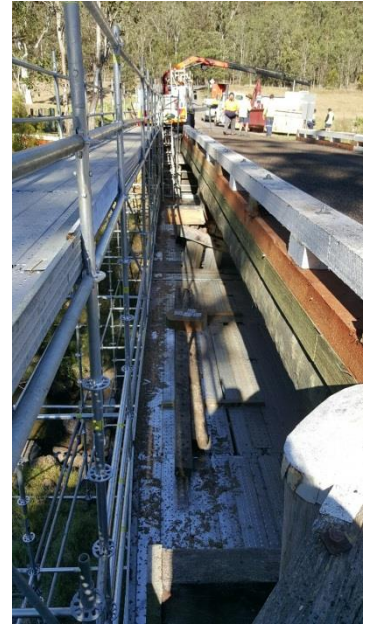
As a way to extend the life of timber bridges, the Cessnock Council selected Bridgeply, a plywood bridge deck system developed by timber specialist and plywood manufacturer, Big River Group. An alternative to steel and concrete decks, the system is an engineered substitute for traditional hardwood decking, which is less expensive and faster to install, a critical measure of success for the Cedar Creek Bridge.

The larger size of the Bridgeply product helps to absorb much of the extra vibration of heavy vehicles while also tying together the other timber components of the bridge better than solid hardwood planks. This in turn means the product is not only quite durable in itself but it also extends the life of the timber frame it's installed on.

Due to the condition of the bridge and the local community, comprising of small farms, a bed and breakfast, and a wombat refuge, who needed access to this infrastructure, a fast installation to minimise the impact on the residents was critical.

The bridge restoration took just three days – four days ahead of schedule – with the council contracting two work crews around-the-clock to restore it quickly.

In full consultation with the residents, the council managed issues of transport and water, with a shuttle bus made available to transport residents to and from their properties, and a pedestrian walk bridge was maintained throughout the project to enable continued access for those getting around on foot. Cessnock City Council estimates that to take the old bridge down and replace it with a new steel and concrete bridge would take a minimum of two months, likely even longer.



A retrofit solution that can help extend the life of timber bridges by decades, Bridgeply offers a low-cost option for rehabilitating existing, older timber structures without needing to replace the entire bridge – meaning only components that are failing need to be replaced, saving time and material costs.

Faster to install due to its light weight, Bridgeply can be moved in larger sections with the same machinery used for alternative materials, so less trucks are required for delivery and less crane movement to install components is needed. Additionally, as a timber-based product most of the

machinery alterations such as drilling, can be done on site with hand tools. This, together with the lightweight material, means installation can occur in a timely manner, with minimal disruption to the local community.

Happy with the result, Cessnock Council are currently restoring five other bridges in the area and are using the same product as it means minimal downtime for the community and lasts longer – allowing for much less maintenance.

For further information on Bridgeply please contact Dan Berryman at Big River Group, call 0418 497 753 or dberryman@bigrivergroup.com.au.



About Big River Group

Big River Group manufactures and distributes timber and steel formwork products, timber flooring, structural plywood and related timber products and distributes a broad range of other building products, primarily to the commercial and residential, non-residential and infrastructure construction market segments. The Company has a network of 10 sales and distribution centres across Australia and sources its products from both its own manufacturing facilities and also many Australian and international manufacturers of building products. The Company owns and operates manufacturing facilities at Grafton and Wagga Wagga in NSW.