

Bremer River Bridge (westbound)



Fact Sheet - General

July 2024

Overview

What is the issue with the Bremer River Bridge (westbound)?

The Department of Transport and Main Roads (TMR) has identified fatigue cracks in some steel elements of the Warrego Highway's Bremer River Bridge (westbound). These cracks were likely caused by many years of loading from heavy vehicles, which are now much heavier than when the bridge was designed and built.

As a precaution, TMR has imposed travel conditions, load restrictions and reduced speed limits on the bridge. The changed traffic conditions are necessary to reduce the risk of cracks growing and to manage loads on the bridge while TMR carries out inspections and repairs.

How old is the Bremer River Bridge (westbound)?

The steel superstructure Bremer River Bridge (westbound) has been operational since January 1958. The eastbound concrete bridge was constructed in the 1980s and is not subject to any load restrictions. The Bremer River Bridge (westbound) supports approximately 30,000 vehicles per day, which includes just over 4,000 heavy vehicles.



Bremer River Bridge



How did TMR find the cracks?

After the discovery of fatigue cracks and brittle steel in welded steel beams on the Barron River Bridge (in Cairns), TMR commenced a desktop review across the state-controlled network to identify other bridges with similar construction.

The Bremer River Bridge (westbound) was identified as having similar girder design details, design class and age as the Barron River Bridge.

An urgent program of investigations on the Bremer River Bridge (westbound) was recommended to confirm whether fatigue cracks existed. Visual inspections of the bridge commenced in late July 2023 and were completed in late August 2023.

Results to date from the inspection and testing regime have confirmed the presence of a number of fatigue cracks in welds, and that the steel is brittle, similar to the Barron River Bridge.

What is a 'brittle fracture'?

Brittle fracture is initiated when a combination of brittle steel, stress and cracks exceed a threshold. If cracks and loading on the bridge were left unmanaged, and a brittle fracture was to occur in a bridge girder, this would have a negative long-term impact on the bridge structure.

Safety and restrictions

Is the bridge structure safe?

Yes. Following a series of structural inspections, TMR has determined that the structure is safe for the travelling public to traverse. Heavy and oversize overmass (OSOM) vehicles are required to meet specified travel conditions while further investigation and bridge rehabilitation treatments are undertaken.

How often are structural assessments/investigations undertaken?

TMR undertakes three levels of structural inspections on all bridges across Queensland, in accordance with departmental policy and depending on the age of the bridge. Additional investigations, such as those being undertaken on the Bremer River Bridge, occur as needed following routine structural inspections, or in this case, once the structure was identified to be of a similar age and construction as the Barron River Bridge. Further investigations will be required in the coming months and will be completed as part of scheduled repair works.

How long will the works take?

TMR acknowledges that the Warrego Highway, including the Bremer River Bridge, is a key route for the general community and freight, and is progressing with the necessary structural investigations, assessment and monitoring required to inform rehabilitation works as a priority.

TMR is undertaking welding works to ensure the bridge remains safe for all road users. It is anticipated this initial work will be completed by mid-2024, weather permitting. Strengthening works for the Bremer River Bridge are targeted to commence in 2025 and are expected to continue through to late 2026, pending tendering requirements and construction market conditions.

TMR will continue to provide more information as works progress.

How long will the speed limits be reduced?

These speed reductions for all vehicles are expected to be in place for an extended period of time. Road users should expect speed reductions at the Bremer River Bridge, with westbound lanes reduced to 60km/h.

A long-term speed limit reduction to 70km/h on the eastbound carriageway to manage vehicle movements is also in place.

As the outcomes of the investigations are known TMR will update the community regularly. The specified travel conditions, for both light and heavy vehicles have been in effect from 31 July 2023 and are precautionary while further investigations and rehabilitation treatments of the bridge are undertaken. The specified travel conditions will be in place for the foreseeable future.

What works are already underway?

TMR has installed two crossovers in the centre median either side of the bridge to ensure OSOM vehicle movements can be maintained. The crossovers allow OSOM vehicles to use the eastbound bridge for westbound travel. Works are now complete to install traffic signals for the crossovers and eliminate the need for on ground traffic control and expedite night time OSOM vehicle movements. OSOM vehicles cross to the other side of the bridge via the median crossings, while general traffic is held at a red traffic signal at each end. Once the OSOM vehicles have crossed, the red light signal is no longer displayed. These signals only operate outside of peak hours.

In the short term, TMR will undertake welding works to ensure the bridge remains safe for all road users. It is anticipated this initial work will be completed by mid-2024, weather permitting.

What is the next stage of works?

The Queensland Government has committed \$42.5 million towards these essential works and secured matching funding from the Australian Government, bringing the total funding amount to \$85 million. The funding amount will go towards critical rehabilitation works for the Bremer River Bridge including bridge re-decking to remove the current restrictions.

Re-decking the main bridge spans and some propping works to the westbound bridge are required to bring the existing structure to its original capacity and to facilitate the removal of the current vehicle speed and mass restrictions.

Further rehabilitation and strengthening works are expected to commence in 2025 and will extend the life of the existing bridge structure.

During these repair works, traffic control measures will be in place on-site to manage vehicle movements, including a long-term speed limit reduction to 70km/h on the eastbound carriageway and single lane closures on the westbound bridge will be in place during these hours.

TMR will update the community when these works are scheduled to occur.

Why isn't TMR building a new bridge?

Re-decking works will extend the lifespan of the bridge for 15–20 years. A new bridge would take a minimum of 5 years to plan, design and build. The existing structure would still require strengthening and rehabilitation works to remove the current restrictions, and to keep the bridge safe while a new bridge is being built.

Where can I find out about upcoming closures and works?

For up-to-date information, please check the *QLDTraffic* app or website www.qldtraffic.qld.gov.au, or **13 19 40**.

Should you have any further questions or wish to subscribe for future updates, please contact TMR's Metropolitan Region on **3066 4338** or at metropolitanregion@tmr.qld.gov.au.

Monitoring of compliance and enforcement

Will there be traffic cameras to monitor compliance of all vehicles?

TMR has installed monitoring equipment on the bridge for heavy vehicles to provide TMR assurance that vehicles are travelling as per the specified travel restrictions to minimise stress on the bridge. The data obtained from the monitoring equipment will be used to determine if changes to the current restrictions are required.

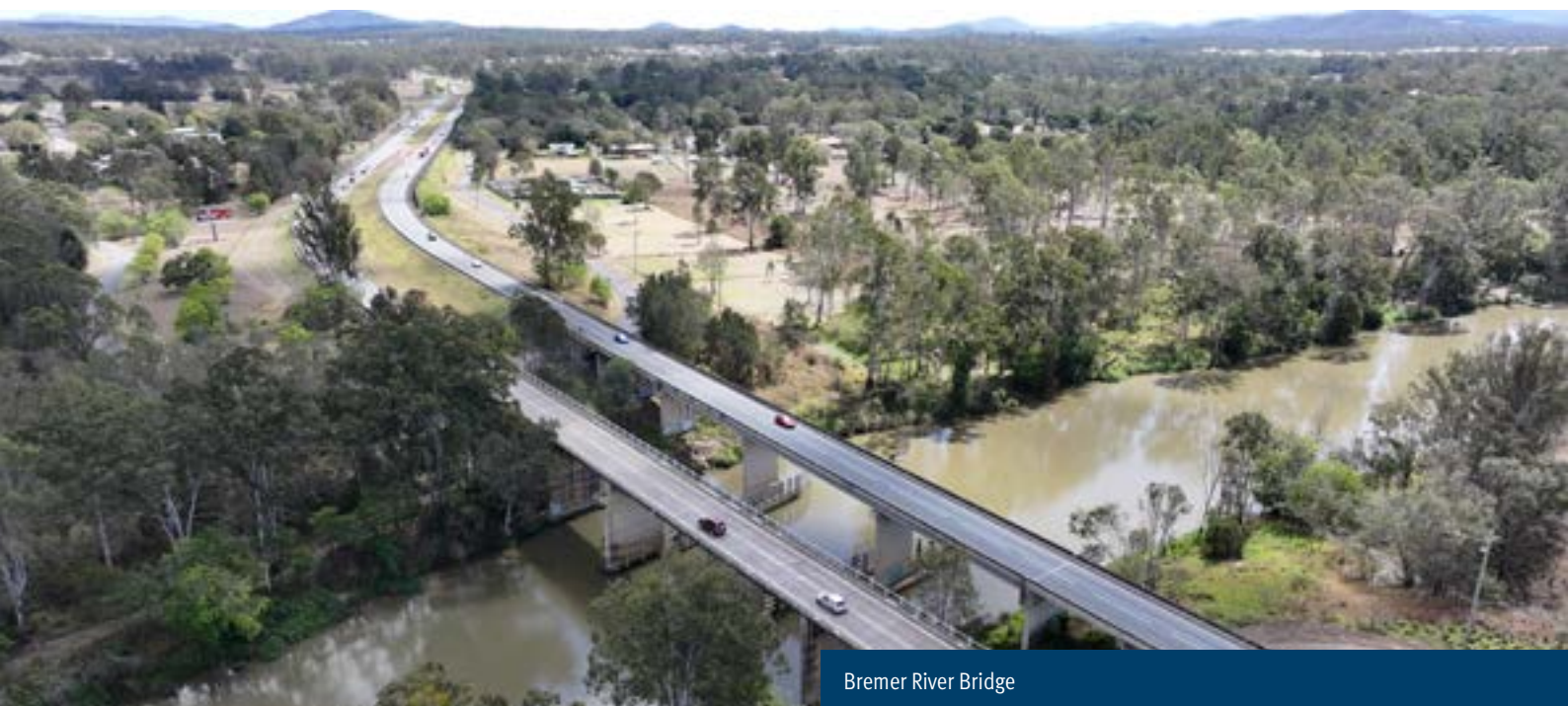
The travel and load conditions will be enforced as per the *Heavy Vehicle National Law Act 2012* and the *Transport Operations (Road Use Management) Act 1995*. Penalties will be applied as per the severity of the breach. TMR will be closely monitoring overall compliance and will implement any changes to access conditions as required.

Where can I report heavy vehicles that are seen to be not complying?

If you identify a heavy vehicle not obeying the road traffic signs or the road rules, please report it to the Queensland Police Service via Policelink (phone **13 14 44**).

Why are there Transport Inspectors parked near the structure?

Queensland Police Service and Transport Inspectors were on site to ensure heavy vehicles comply with the current load and speed restrictions and to ensure the safety of workers on site. Although TMR has moved to electronic monitoring of the bridge, officers may undertake spot checks throughout 2024.



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