



REPORT: Benolong Bridge - Temporary Load Limit Due to Timber Bridge Condition

DIVISION: Infrastructure
REPORT DATE: 3 July 2023
TRIM REFERENCE: ID23/1705

EXECUTIVE SUMMARY

Purpose	Seek endorsement Urgent matter	
Issue	A temporary gross vehicle load limit of 15 tonnes has been applied to Benolong Bridge, due to recently identified significant structural defects. This report provides information on the current condition and load carrying capacity of the bridge and why the load limit is necessary.	
Reasoning	- During recent planned bridge maintenance activities, significant structural damage to load bearing timber bridge girders were identified. - Dubbo Regional Council (Council) staff received advice from a senior bridge engineering consultant who advised a course of action to address the structural damage including the need for applying a 15 tonne gross load limit to the bridge. This action was recommended to reduce the risk of injury to the travelling public through further bridge damage.	
Financial Implications	Budget Area	Infrastructure Delivery
	Funding Source	Rural Bridges – General Maintenance
	Proposed Cost	To be advised
	Ongoing Costs	To be advised
Policy Implications	Policy Title	N/A
	Impact on Policy	There are no policy implications arising from this report

STRATEGIC DIRECTION

The Towards 2040 Community Strategic Plan is a vision for the development of the region out to the year 2040. The Plan includes six principle themes and a number of objectives and strategies. This report is aligned to:

Theme: 2 Infrastructure

CSP Objective: 2.1 The road transportation network is safe, convenient and efficient

Delivery Program Strategy: 2.1.1 Traffic management facilities enhance the safety and

efficiency of the road network

Theme:	2 Infrastructure
CSP Objective:	2.1 The road transportation network is safe, convenient and efficient
Delivery Program Strategy:	2.1.2 The road network meets the needs of the community in terms of traffic capacity, functionality and economic and social connectivity
Theme:	2 Infrastructure
CSP Objective:	2.2 Infrastructure meets the current and future needs of our community
Delivery Program Strategy:	2.2.5 Council maintains infrastructure and delivers services at the adopted service levels as agreed with the community

RECOMMENDATION

1. That it be noted this report was not tabled at a local traffic committee meeting
2. That Council concur with the operational decision to impose a temporary gross vehicle load limit of 15 tonnes for Benolong Bridge.
3. That the CEO make determinations on a course of action for the load limit duration when bridge repair pricing is received.

Luke Ryan
Director Infrastructure

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Operations Engineer
(West)

BACKGROUND

Council has commenced works to replace the existing 78 year old timber bridge known as Benolong Bridge. The bridge is located on Benolong Road approximately eight kilometres from the Obley Road intersection. Council crews have commenced site road works and bridge contractors, Murray Constructions Pty Ltd, will be commencing onsite bridge construction works in mid-August 2023, weather permitting. The new bridge and approach roads are planned for opening to the public by March 2024. After this time, the existing timber bridge will be demolished.

During early project development of the new bridge, it was proposed to continue use of the timber bridge with full public access for the duration of the new bridge construction. This report addresses Council's recently identified need to place limitations on access to the timber bridge.

REPORT

Identifying Structural Damage

During April 2023 and May 2023, as part of pre-construction planning for the new bridge construction project, Council staff noted some minor defects on the existing timber bridge deck. In early May 2023, Council engaged Focus Bridge Engineering to undertake a Level 2 visual inspection of the existing Benolong Bridge to propose specific maintenance needs for the bridge and to determine general bridge condition. Focus Bridge Engineering's senior bridge engineers inspected the site on 16 May 2023 and provided a report to Council on their findings (Refer to Appendix 1).

The report indicated the timber bridge was in "generally poor to good condition" and further recommended a number of maintenance actions be scheduled in the next 5 months. These repairs included replacing of damaged longitudinal deck timber sheeting, replacing damaged transverse deck planks and replacing a damaged timber brace.

On that basis, Council staff engaged a bridge maintenance contractor to undertake the listed repairs commencing 27 June 2023. While performing these works, damaged structural elements of the bridge (timber girders) were identified. The damaged girders were previously unidentified during earlier visual inspection, due to being hidden by other timbers that were removed during the routine maintenance activities.

Bridge Damage and Public Safety

Council staff sought further advice from Focus Bridge Engineering on the implications to public safety of the damaged girders, and the bridges capacity to carry traffic until the new bridge completion in eight months. The consultant provided a number of recommendations (Refer to Appendix 2) summarised below:

- Place a 15 tonne load limit on the timber bridge.

- Pack out the capwales.
- Install timber girders adjacent to the defective girders for the two inner girder lines.
- Include installation of corbels with the extra girders.
- No need for kerbside girders to be reinforced.
- Girders to be high strength grade minimum F22.
- No need to use copper chrome arsenic (CCA) treated timber for the remedial work.

If the above recommendations are implemented, the bridge can remain in service until its proposed demolition in approximately eight months.

Establishing a Bridge Load Limit

Due to the potential safety implications for traffic crossing the timber bridge in its current condition, a 15 tonne gross load limit has been implemented for Benolong Bridge. In accordance with Section 115 of the Roads Act 1993, the 'Bridge Load Limit 15t Gross' signage at the Benolong Bridge is a regulated notice erected by Council for the safety of the public, and to reduce the risk of further damage to the bridge structure so it can remain open to light traffic.

It should be noted that due to the nature of the structural damage to the bridge, it was deemed essential to place a load limit on the bridge when we received the advice from our consultant. The timing of this action prevented tabling of this report to the local traffic committee before implementing the load limit.

Detours for Heavy Traffic

Council staff have developed a detailed traffic detour plan to assist drivers of vehicles over 15 tonnes to comply with the bridge load limit. Staff have deployed temporary signs and electronic message signs at key locations to intercept heavy traffic before they enter Benolong Road. These signs and devices provide direction to alternate routes.

Council's Engagement and Communications teams have commenced notifications to the public via radio notices and Council's Your Say websites.

Council staff are seeking pricing for the recommended structural repairs. When these costs are known, further recommendations will be made in respect of the load limit and how long it will apply to the bridge.

Consultation

- A number of local landowners have been contacted to advise of the bridge load limit.
- Correspondence has been undertaken with Ogden Coaches regarding access to Benolong Bridge by their school bus.
- Members of the Local Traffic Committee, including representatives from NSW Police, the Local State Member of Parliament, Transport for NSW and Council were provided advice on the implementation of the bridge load limit, via an email from Council's Director Infrastructure on 4 July 2023.

Resourcing Implications

- Council has provided the resources in terms of staff and traffic control facilities to implement the bridge load limit, including temporary signage delineating the proposed detour for vehicles over 15 tonnes gross.

APPENDICES:

- 1 [↓](#) Benolong Bridge - Level 2 Inspection Report - Focus Bridge Engineering - May 2023
- 2 [↓](#) Benolong Timber Bridge Repairs Recommendation - Focus Bridge Engineering