Appendix G

Statement of heritage impact
TIMBER TRUSS BRIDGE REPLACEMENT

HERITAGE IMPACT STATEMENT

The Heritage Group
NSW Government Architect’s Office
Prepared for the Department of Attorney General & Justice

December 2014

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David Mason, Heritage Specialist

The Heritage Group, Government Architect’s Office

NSW Office of Finance and Services

2-24 Rawson Place

Sydney NSW 2000

david.mason@finance.nsw.gov.au

Phone: 9372 8418
## CONTENTS

1. **INTRODUCTION AND BACKGROUND**  &nbsp; 5  
   1.1 **PURPOSE**  &nbsp; 5  
   1.2 **BACKGROUND INFORMATION**  &nbsp; 5  
   1.3 **METHODOLOGY & REPORT STRUCTURE**  &nbsp; 6  
   1.4 **EXCLUSIONS**  &nbsp; 7  
   1.5 **TERMS AND ABBREVIATIONS**  &nbsp; 7  
   1.6 **AUTHORSHIP**  &nbsp; 7  

2. **LEGISLATIVE REQUIREMENTS**  &nbsp; 9  
   2.1 **HERITAGE LISTINGS**  &nbsp; 9  
   2.2 **HERITAGE CONTROLS**  &nbsp; 10  
   2.3 **ARCHAEOLOGY**  &nbsp; 12  

3. **DESCRIPTION & HISTORY**  &nbsp; 15  
   3.1 **GENERAL ANALYSIS**  &nbsp; 15  
   3.2 **SITE INVESTIGATION & FABRIC ANALYSIS**  &nbsp; 19  

4. **HERITAGE SIGNIFICANCE**  &nbsp; 25  
   4.1 **STATE HERITAGE REGISTER**  &nbsp; 25  
   4.2 **ROADS AND MARITIME TIMBER BRIDGE STRATEGY**  &nbsp; 26  
   4.3 **ASSESSMENT OF HERITAGE SIGNIFICANCE**  &nbsp; 27  

5. **PROPOSAL**  &nbsp; 30  
   5.1 **REPLACEMENT ROAD BRIDGE PROPOSAL**  &nbsp; 30  
   5.2 **REMOVAL OF EXISTING TIMBER BRIDGE**  &nbsp; 30  
   5.3 **Mitigation and Interpretation**  &nbsp; 30
5.4 SPECIFIC MITIGATION AND INTERPRETATION PROPOSALS

6. HERITAGE IMPACT ASSESSMENT

6.1 INTRODUCTION

6.2 BACKGROUND JUSTIFICATION

6.3 ASSESSMENT OF ALTERNATIVE STRATEGIES

6.4 STATEMENT OF HERITAGE IMPACT

7. CONCLUSIONS & RECOMMENDATIONS

7.1 CONCLUSIONS

7.2 RECOMMENDATIONS

8. REFERENCES

APPENDICES

Appendix A Tabulam Bridge (RTA s.170 Register, 1999 updated 2009)

Appendix B Tabulam Bridge SHR Record

Appendix C Tabulam Bridge, DPW plans/elevations, d. 1899 (Selected)

Appendix D Kyogle LEP 2012 (Clause 5.10 Heritage Conservation)

Appendix E Roads and Maritime Tabulam Bridge Heritage Interpretation Strategy
1. **INTRODUCTION AND BACKGROUND**

### 1.1 PURPOSE

NSW Roads and Maritime Services (‘Roads and Maritime’) proposes to demolish the Tabulam timber truss bridge in order to provide a new bridge over the Clarence River for modern road transport needs. The rationale for replacement of the bridge and the consultation process informing the final decision were set out in the Roads and Maritime *Timber Truss Bridge Conservation Strategy - Submission Report & Revised Conservation Strategy*, endorsed in 2012 by the NSW Heritage Council. Tabulam Bridge is one of 22 timber truss bridges scheduled for progressive replacement in line with the objectives defined in the Strategy.

In accordance with the Strategy, Roads and Maritime requires a consultant with extensive experience in non-Aboriginal cultural heritage assessment to prepare a Statement of Heritage Impact (SOHI) which addresses the proposed development impact upon an identified heritage item or items.

This SOHI is required as part of the consent process under Part 5 of the *Environmental Planning and Assessment Act 1979*, for activities needing approval under NSW legislation. The proposed works potentially impact on the Tabulam Bridge as a heritage listed item in the NSW Heritage Register and in the Roads and Maritime Heritage & Conservation Register (protected under sections 38 and 170 respectively of the *NSW Heritage Act 1977*), and in the Kyogle Shire Local Environmental Plan 2012 (under the EP&A Act 1979). This SOHI addresses heritage impacts of the proposed demolition of the bridge following NSW Heritage Branch guidelines for heritage impact assessment and in line with the Australia ICOMOS *Burra Charter* process.

### 1.2 BACKGROUND INFORMATION

The following background information has been used to prepare this SoHI. In brackets are shown the abbreviations used in the text:

- Road & Maritime Services, Heritage & Conservation Register, 1999 (‘s170 Register’)
- Kyogle Shire Council, *Local Environmental Plan, 2012* (‘Kyogle ELP’)
  
  


In addition to this background information, searches have been made of the NSW State Heritage Register (SHR) and other statutory and non-statutory heritage inventories. Other historical records and technical documents referred to are mentioned as footnotes in the report.

The site was physically inspected and documented by a Heritage Specialist from the NSW Government Architect’s Office (GAO) on 7 August 2014. Unless otherwise stated, photographs in this report are by GAO.

The following project information for a proposed new bridge, which touches on aspects of significance of the landscape and conservation area, has also been used in the preparation of the SoHI


GHD, *Roads & Maritime Services Tabulam Bridge BN2266 Conversion to a footbridge and associated future maintenance costs*, GHD for Roads and Maritime, November 2013


### 1.3 METHODOLOGY & REPORT STRUCTURE

This report has been prepared in accordance with the NSW Heritage Branch Guidelines and Australia ICOMOS Charter for Places of Cultural Significance 2013 (Burra Charter). Sections 2 and 3 draw on detailed analysis of existing background documentation (as described in 1.2), searches of relevant heritage inventories and local authority Standard Instruments, reviews of other historical and contextual literature, and site-based investigation. Section 5 draws on information supplied by Roads and Maritime and/or its design consultants (as described in Section 1.3). The structure of the report broadly follows the guidelines provided by Roads and Maritime on preparation of Heritage Impact Statements for its infrastructure portfolio.

This report is alert to the notion of “relative significance” in regard to the Roads and Maritime Timber Truss Bridge Conservation Strategy 2011, and seeks to assess heritage impacts against an approach to strategic heritage management that, though generally supported by the NSW Heritage Council, has departed somewhat from Burra Charter convention.
1.4 **EXCLUSIONS**

This report does not consider the heritage impact of the new bridge and road development on the Tabulam Old Bridge. This report does not address the significance or impact of the proposal in terms of “natural heritage” (waterways, wetlands, flora and fauna). Conservation of cultural and natural heritage is recognised as part of a State agency’s management response to ecologically sustainable development. Bat colonies at the site are the subject of relocation proposals developed under consultation with the Department of Environment and Conservation.

1.5 **TERMS AND ABBREVIATIONS**

- **DCP** Development Control Plan
- **EP&A Act** Environmental Planning & Assessment Act 1979
- **GAO** The Government Architect’s Office within the NSW Department of Finance.
- **HIS** Heritage Impact Statement
- **ICOMOS** International Council on Monuments and Sites
- **LEP** Local Environmental Plan
- **LGA** Local Government Area
- **m** metres
- **mm** millimetres
- **PAD** Potential Archaeological Deposit
- **PWD** NSW Public Works Department
- **Roads and Maritime** NSW Roads & Maritime Services
- **RTA** NSW Roads & Traffic Authority (pre 2011)
- **s.170 Register** A register of heritage assets owned, occupied or controlled by a State agency, prepared in accordance with section 170 of the Heritage Act
- **SHI** NSW State Heritage Inventory
- **SHR** NSW State Heritage Register
- **SOHI** Statement of Heritage Impact

1.6 **AUTHORSHIP**

This report was written by David Mason, Heritage Specialist, NSW Government Architects Office (GAO) and reviewed by Bruce Pettman, Principal Heritage Architect (GAO). The following provided background information and comments and facilitated the site visit - their assistance is gratefully acknowledged: Scott Smith, Vicky Sisson, Kate Dallimore (Roads and Maritime, Grafton); Ian Berger (Roads and Maritime, Sydney).
Figure 1.1  Location map, (Source: Link to where map was sourced, viewed 7 August 2014)

Figure 1.2  Topographical map, (Source: Link to where map was sourced, viewed 7 August 2014)
2. LEGISLATIVE REQUIREMENTS

2.1 HERITAGE LISTINGS

2.1.1 STATUTORY LISTINGS

The Tabulam Road Bridge (aka ‘Clarence River Road Bridge’) is a State listed heritage item on the State Heritage Register (SHR). This means demolition, damage, development, removal or alteration of the object, place or land require approval by the Heritage Council of NSW as prescribed under s57 of the NSW Heritage Act 1977. The listing was gazetted 20 June 2000.

The Tabulam Road Bridge is listed in the Roads and Maritime Heritage & Conservation Register. Section 170 of the NSW Heritage Act 1977 requires State Agencies to maintain a Heritage and Conservation Register. The implications of the Section 170 listing are set out below and the Heritage Council’s State Agency Heritage Guide.

The bridge is also heritage item of local significance listed in Schedule 5 of the Kyogle LEP 2012. Though part of the bridge is owned by Tenterfield Shire Council, the item is not listed in the Schedule 5 of the Tenterfield LEP 2013.

Table 1: Statutory Listings

<table>
<thead>
<tr>
<th>Listing Instrument</th>
<th>Level of Significance</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
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<td>NSW State Heritage Register</td>
<td>Heritage Act 1977</td>
<td>State</td>
<td>Road Bridge</td>
</tr>
<tr>
<td>s.170 State Agency Heritage Register (Roads and Maritime Heritage &amp; Conservation Register)</td>
<td>Heritage Act 1977 (Section 170)</td>
<td>State</td>
<td>Road Bridge</td>
</tr>
<tr>
<td>Kyogle Local Environmental Plan 2012</td>
<td>Environmental Planning &amp; Assessment Act 1979</td>
<td>Local</td>
<td>Road Reserve</td>
</tr>
</tbody>
</table>

2.1.2 NON STATUTORY LISTINGS

The Clarence River Road Bridge is listed in the following non-statutory registers

Table 2: Non-Statutory Listings

<table>
<thead>
<tr>
<th>Listing Instrument</th>
<th>Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Heritage Database (Former Register of the National Estate)</td>
<td>Registered</td>
<td>Place ID 7081</td>
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</tbody>
</table>
2.2 HERITAGE CONTROLS

2.2.1 NSW HERITAGE ACT 1977

Approvals in respect of State listing

Section 57 of the NSW Heritage Act 1977 stipulates that when listing on the State Heritage Register applies to a place, building, work, relic, moveable object, precinct, or land, a person must not do any of the following things except in pursuance of an approval granted by the approval body (NSW Heritage Council):

(a) demolish the building or work,

(b) damage or despoil the place, precinct or land, or any part of the place, precinct or land,

(c) move, damage or destroy the relic or moveable object,

(d) excavate any land for the purpose of exposing or moving the relic,

(e) carry out any development in relation to the land on which the building, work or relic is situated, the land that comprises the place, or land within the precinct,

(f) alter the building, work, relic or moveable object,

(g) display any notice or advertisement on the place, building, work, relic, moveable object or land, or in the precinct,

(h) damage or destroy any tree or other vegetation on or remove any tree or other vegetation from the place, precinct or land.

Division 3 of the Act provides statutory procedures for applications for approval.

State Agency obligations under Section 170

Section 170A(2) of the NSW Heritage Act 1977 requires that State agencies manage items on their heritage and conservation registers with due diligence in accordance with the principles approved by the Minister, on the advice of the Heritage Council.

State agencies should establish and keep a heritage and conservation register, which lists and identifies all heritage assets owned or controlled by the agency in accordance with section 170. In accordance with section 170(6) of the NSW Heritage Act, the Heritage Council directs State agencies to submit heritage and conservation registers for endorsement.

Each State agency is to develop a heritage asset management strategy to implement the State-Owned Heritage Management Principles and Heritage Asset Management Guidelines. The heritage asset management strategy should seek to assist in the conservation of the agency’s heritage assets and should include a strategy for the management and conservation of heritage assets with no apparent economic re-use options.

Roads and Maritime has addressed these obligations through its Timber Truss Bridge Conservation Strategy. The Roads and Maritime has committed to undertake environmental assessment of each of the bridges scheduled for removal, including identification of mitigation measures to offset the heritage impact.
2.2.2 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

Under the EP&A Act development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

   (i) a heritage item,
   
   (ii) an Aboriginal object,
   
   (iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

   (i) on which a heritage item is located or that is within a heritage conservation area, or
   
   (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance

The duties (in respect of any ‘activity’ as defined in Section 110 of the Act) of a determining authority to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment are set out in section 111 of the EP&A Act. Determining authorities must obtain and consider an environmental impact statement in respect of the activity as set out in Part 5 of the EP&A Act.

2.2.3 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

SEPP (Infrastructure) 2007 provides the regulatory framework for effective delivery of infrastructure across the State. Section 14 of the SEPP (Infrastructure) requires consultation with local councils where development will have impacts on local heritage. The clause applies to development carried out by or on behalf of a public authority if the development:

(a) is likely to have an impact that is not minor or inconsequential on a local heritage item (other than a local heritage item that is also a State heritage item) or a heritage conservation area, and

(b) is development that this Policy provides may be carried out without consent.

SEPP (Infrastructure) requires that a public authority or a person acting on behalf of a public authority, must not carry out development to which this clause applies unless the authority or the person has:

(a) had an assessment of the impact prepared, and
(b) given written notice of the intention to carry out the development, with a copy of the assessment, to the council for the area in which the heritage item or heritage conservation area (or the relevant part of such an area) is located, and

(c) taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.

2.3 ARCHAEOLOGY

2.3.1 HISTORICAL ARCHAEOLOGY

The Tabulam bridge is one of six heritage items identified listed in the Kyogle LEP 2012 (the others are Chauvel Park, St Johns Church, Hotel at 34-43 Clarence St, Post Office and the Police Station, all identified as locally significant). The lots of the above items do not include any parts of the existing timber bridge. The views of the bridge from parts of Chauvel Park are noteworthy. Two other items (Tabulam Racecourse and Tabulam cemetery) are further away from the bridge.

2.3.2 ABORIGINAL HERITAGE

The Tabulam region is a land of the Bundjalung people and is culturally significant, with the Koori place name of Tabulam meaning “the originals”. European settlement of Tabulam resulted in the forced relocation of many of the Bundjalung people to a nearby Aboriginal reserve, which later became a mission (now known as the Jubullum Village, located approximately 3.5 kilometres west of the Tabulam township. The Jubullum Flat Camp Aboriginal Area (managed by NSW National Parks, approximately 0.5 km north of Tabulam village) is also a culturally significant site for the Bundjalung people.

Figure 2.3 shows areas of Aboriginal archaeological sensitivity. A place-marked burial site, reference number AHIMS #03-06-0009, identified in the Aboriginal Heritage Information Management System (AHIMS) is located in Lawrence Street at the base of the ridge slope at the eastern end of the study area, approx. 300m from the immediate curtilage of the existing Tabulam road bridge (not shown in Fig. 2.3).

Directly north of the existing bridge on the eastern side of the Clarence River are three places of cultural importance - the ‘Big House’, ‘Black Camp’ and ‘The Birthplace’ (shown hatched in Figure 2.3). The existing Tabulam Bridge is “within a significant archaeological and cultural landscape for Aboriginal cultural heritage, which where undisturbed is likely to contain Aboriginal cultural heritage “ (Everick 2014).
Figure 2.1, Clarence River Road Bridge, Curtilage information, (Source: State Heritage Register)
Figure 2.2, Extract from the Kyogle LEP 2012, Showing the heritage items of Chauvel Park (I186), Police Station (I373) and other items in Clarence Street. The archaeological site of Tabulam Old Cemetery is shown at A377. Tabulam Bridge is at I154.

(Source: Link to where map was sourced)

Figure 2.3, Aboriginal predictive mapping. (Source: RMS Preferred Option Report 2014’ Fig 4-4)
3. DESCRIPTION & HISTORY

3.1 GENERAL ANALYSIS

3.1.1 SETTING

The Tabulam Bridge (also known as Clarence River Road Bridge) is located on the Bruxner Highway (B60) in the historic village of Tabulam. Map coordinates are 28.88578: 152.565309. Tabulam is 55km west of Casino, in the Kyogle LGA. The bridge crosses the Clarence River and is part owned by both Tenterfield and Kyogle Councils.

![Figure 3.1, The site and its environmental context](Source Link to where map was sourced viewed 12 August 2014)

Built in 1903 the bridge carries a 4.6m roadway and comprises five De Burgh truss spans and timber beam approach spans. The total length is 297m. There are two separate overflow bridges to the west, both of later date.

3.1.2 TIMBER TRUSS BRIDGES IN NSW

Timber truss bridges were used extensively throughout the state from 1860 through to 1936 and five different truss types were developed over that period. Of the 407 timber truss road bridges originally constructed, most have been replaced with new structures on the same or similar alignments. The remaining bridges are heavily affected by modern road and traffic...
requirements which, in the longer term, will necessitate the substantial upgrading of these bridges or their replacement with a new bridge. ¹

Prior to the bridges being built, river crossings were often dangerous in times of rain, which caused bulk freight movement to be prohibitively expensive for most agricultural and mining produce. Only the high priced wool clip of the time was able to carry the costs and inconvenience imposed by the generally inadequate river crossings that often existed prior to the trusses construction (Roads and Maritime 2012a).

Timber truss bridges were preferred by the Public Works Department from the mid-19th to the early 20th century because they were relatively cheap to construct, and used mostly local materials. The financially troubled governments of the day applied pressure to the Public Works Department to produce as much road and bridge work for as little cost as possible, using local materials. This condition effectively prohibited the use of iron and steel, as these, prior to the construction of the steel works at Newcastle in the early 20th century, had to be imported from England.

### 3.1.3 TRUSS DESIGN

The evolution of timber truss road bridges in New South Wales from 1860 to 1905 saw a change from traditional, virtually non-scientific, British and European structures to scientifically engineered structures based on developments in America. Early timber Queen Post truss bridges favoured by the PWD from 1860 to 1886 (known as the Old PWD truss) were first improved upon on a large scale by John A MacDonald, PWD Engineer for Bridges from 1889 to 1893. The MacDonald truss was easier to build and maintain and could carry loads significantly greater than the OLD PWD designs, in order to provide some allowance for future increases in vehicle loads.

In 1893 Percy Allan introduced his new design based on the American Howe truss. The Allan truss featured a much simpler arrangement of triangulations and incorporated many improvements and innovations that made this truss a more cost-effective structure than its predecessors – it was claimed the Allan Truss could carry 50% more load but with 20% less material.

### 3.1.4 DE BURGH TRUSS

Ernest De Burgh joined the PWD in 1885 and his first composite truss bridge was built over the Queanbeyan River at Queanbeyan. This design was noteworthy adopting the Pratt type of truss, with vertical posts and diagonal tension members, and steel bottom chords rather than timber, instead of the Howe type used by Allan. The De Burgh Truss thus became the next major development in truss design in NSW. A minor change of design substituted sloping end members for the square ends characteristic of surviving De Burgh truss bridges. The design gave a stiffer, structurally superior truss for which member replacement was quite easy, but the inclusion of pins along the bottom steel chord was a hindrance to certain aspects of maintenance and future strengthening. As a result De Burgh trusses were only used for a short period of time (1900-1905). Twenty were built in this period.

¹ Material for this section of the report is taken from Roads and Maritime Strategy 2012.
Nine De Burgh truss bridges were reported as in service under RTA control in 1998 (MBK 1998). Five were on the State Heritage Register.

Figure 3.2 Comparison of main truss types in NSW

(Source: MBK, 1998).
DE BURGH TRUSS BRIDGE OVER THE CLARENCE RIVER AT TABULAM

The crossing place at Tabulam over the Clarence River had been serviced by a punt prior to the construction of a permanent road bridge. Not all found this suitable however and it was considered to be useless in times of flood. A report from the Town and Country Journal in 1879 said delays of weeks at a time were often experienced and its general location off the main road made access almost impossible under wet conditions.

The huge floods of the early 1890s saw the river rise to 42 feet in height at Tabulam and led to local agitation for the construction of a high level bridge which would allow the passage of traffic in any weather. It was not however until 1899 that the Government allocated the sum of £13000 for the construction of a bridge. Significantly at this time the Bridge was considered to be of prime importance as it was on the mail route between Tenterfield and Ballina.

A notice inviting tenders for a bridge, designed by E. M. de Burgh, was advertised in the Government Gazette in November 1899. The contract for the Bridge was awarded to F. J. Carson and a separate contract for the ironwork granted to Messrs Pope and Maher. Work proceeded with little delay as the water level in the Clarence River was much reduced by this time due to drought. The construction of the Bridge was completed using day-labour under the direction of the engineer, Mr. D. W. Armstrong and would have provided welcome employment opportunities in the depression era of the 1890s.

The nature of the crossing and approaches to the Clarence River required a number of structures to be built, including the main bridge over the river itself and two smaller bridges on the Tenterfield side. The main bridge was of a considerable length having 5 composite de Burgh truss spans, each of 105 feet (on concrete piers), 11 beam spans of 35 feet and 2 of 30 feet in length. Plans of the Bridge indicate ten beam spans on the Tabulam side and three on the Tenterfield side of the Bridge. The four main piers supporting the truss spans are concrete.

On completion in early 1903 the total length of the main bridge was 974 feet and the height of the concrete piers was 60 feet above the river bed (RDPW 1903: 58). Concrete piers had proved to be economical and reliable in other locations and the PWD was keen to use these where possible. In a paper on recent road bridges built in New South Wales, Harvey Dare noted that the piers were formed on site, in open coffer-dams of various grades of concrete which was then rendered. A minor amendment to the span lengths described in the Annual Report of 1901 (see above) listed the completed length of the de Burgh truss spans as 104 feet.

Final details of the complete structure were listed in “Schedule A: New Bridges completed between 1st July, 1902 and 30th June, 1903, where no previous bridges existed”. The combined length of the structures was 1265 feet, comprising 5 truss spans and 21 beam spans, built at a cost of £14085. The listing refers to a bridge over the Clarence River, including bridges 1 and 2, and roads in approach.

No records make any mention of an opening ceremony for the Bridge. Celebrations may have been downplayed by locals due to the continuing drought and the Boer War (1992: 128). It may also have been due to the project comprising a number of stages (the three bridges and
approach roads) which resulted in staggered completion dates. One source records that the Bridge was opened in 1902 and cost the Department of Public Works £15884, yet the Annual Report for 1903 lists an amount of £14085 and states that it was completed in 1903.

Figure 3.3, Bridge over Clarence River at Tabulam on Road No 54, (Source: State Library of NSW), Link to where map was sourced

3.2 SITE INVESTIGATION & FABRIC ANALYSIS

3.2.1 CONDITION

The site was inspected on 7 August 2014.

Maintenance has been continuous and many components have been replaced at least once. Numerous modifications were reported in the CMP including alterations to piles and to at least three trestle piers. Major modifications were last recorded in 1983 when 16 cross girders, 24 vertical truss members, some top chords and 26 roadway stringers and 5 approach spangirders were replaced. The abutments have also been reconstructed using timber sheeting.

The bridge decks are generally sound and the bridge is in use for road traffic. However, access to the road deck is limited as the bridge is in constant use and has no pedestrian footway. Deck, railings and fixings appear to be in good condition. About 50% of cross girders supporting the decks have been replaced in steel.

Timber trestle piers appear in fair to good condition. The main structural piers and footings supporting the approach spans appear to be in good condition. The main concrete piers have patches of missing render but appear to be in good condition.
Figure 3.4, The Tabulam Bridge seen from the Pre-School on the Tenterfield Road, Note the timber compression diagonals and steel lower chord

Figure 3.5 (Above), Tabulam Bridge, 2013, Archival Recording (Source: Roads and Maritime)

Figure 3.6 (Right), Tabulam Bridge, 2013, Archival Recording (Source: Roads and Maritime)
Figure 3.7, Approach spans, showing replacement timber stringers

Figure 3.8, Underside of road deck at eastern approach,

Figure 3.9, Western abutment with timber sheeting
Figure 3.10, Eastern abutment, (Source: Roads and Maritime 2013).

Figure 3.11, Concrete piers seen from the western bank.

Figure 3.12, Single-lane road deck and guardrail.
Figure 3.13, Sway bracing and cross girders (c. 1983)

Figure 3.14, One of the modified trestle piers, (Source: Roads and Maritime 2013)
The De Burgh trusses consist of timber top chords and steel bottom chords with diagonal tension members attached to iron brackets at the top and connected with a steel pin to the bottom chord. The truss spans are largely intact with few modifications, but sway bracing and cross girders were added to the bridge to rectify deflections in the 1980s. Cross girders are bolted to the bottom chord of the truss. Top chords feature peaked, pressed steel capping sheets to prevent rot of timber chords.

A full description of the construction and condition can be found in the CMP (Austral, 2003).
4. HERITAGE SIGNIFICANCE

Table 3: Listing summary

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<th>Listing</th>
<th>Significance</th>
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<td>Statutory, State significance</td>
<td>Listed</td>
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<td>S 170 State Agency Heritage Register (Roads and Maritime Heritage &amp; Conservation Register)</td>
<td>Statutory, State significance</td>
<td>Listed</td>
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<tr>
<td>Kyogle Local Environmental Plan</td>
<td>Statutory, local significance</td>
<td>Listed</td>
</tr>
<tr>
<td>Australian Heritage Database (formerly Register of the National Estate)</td>
<td>Non-statutory</td>
<td>Listed</td>
</tr>
<tr>
<td>National Trust Register</td>
<td>Non-statutory</td>
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4.1 STATE HERITAGE REGISTER

4.1.1 Statement of Significance

The Statement of Significance referenced from the State Heritage Register (Date significance updated 15 June 05), is reproduced below, with a proposed addendum:

Completed in 1903, the Tabulam bridge is an early example of a DeBurgh timber truss road bridge. In 1998 it was in good condition.

As a timber truss road bridge, it has many associational links with important historical events, trends, and people, including the expansion of the road network and economic activity throughout NSW, and Ernest DeBurgh, the designer of this type of truss.

DeBurgh trusses were fourth in the five stage design evolution of NSW timber truss road bridges. Designed by Public Works engineer Ernest M. DeBurgh, the DeBurgh truss is an adaptation of the American Pratt truss design. The DeBurgh truss is the first to use significant amounts of steel and iron, and did so in spite of its high cost and the government’s historical preference for timber.

DeBurgh trusses were significant technical improvements over their predecessors. The Tabulam bridge is the longest extant DeBurgh truss bridge, and has concrete piers, thus giving the bridge a high degree of technical significance.

In 1998 there were 10 surviving DeBurgh trusses in NSW of the 20 built, and 82 timber truss road bridges survive from the over 400 built.
The Tabulam bridge is a representative example of De Burgh timber truss road bridges, and is assessed as being Nationally significant, primarily on the basis of its technical and historical significance.

* Addendum:

In 2011 there were 9 surviving De Burgh trusses in NSW of the 20 built and 62 timber truss road bridges survive from the over 400 built.

4.2 ROADS AND MARITIME TIMBER BRIDGE STRATEGY

4.2.1 ROADS AND MARITIME RESEARCH INTO ‘RELATIVE SIGNIFICANCE’

A study of the relative significance of timber truss bridges in NSW was produced for Roads and Maritime by McMillan, Britton & Kell (MBK 1998) in 1998. The study provided a relative ranking of significance of 82 timber truss bridges in NSW (of which 58 were under Roads and Maritime control). They were ranked in one of the following categories:

- National Heritage Significance
- State Heritage Significance
- Regional Heritage Significance
- Local Heritage Significance.

Tabulam Bridge was ranked sixth out of 82, grouped into the category of nationally significant timber bridges. Upon establishment of the State Heritage Register in 1999, 29 bridges under RTA control were categorised as State significant. Five were listed on the State Heritage Register (Tabulam, Beckers, St Albans, Barham and Middle Falbrook).

In 1998 the RTA assessed four of the nine extant De Burgh truss bridges under RTA control as inoperable and the Timber Bridges Committee accepted that these bridges may eventually need to be replaced subject to approvals and/or consultations. Two of these four were on the State Heritage Register (Beckers Bridge, at Webber’s creek, near Gresford; and Tabulam Bridge). Later Lansdowne Bridge was also added to the schedule of bridges proposed for replacement (having originally been deemed operable and to be retained and conserved) due the safety concerns raised by the local community.

Four of the five bridges proposed for replacement under the Strategy as of 2014 are therefore De Burgh truss bridges, including two State Heritage listed bridges. The MBK Report recommended updating of relative significance whenever a timber truss bridge is lost, because losses impact on the rankings of what remains.

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2 The SHR entry for the bridge was updated in 2005. This addendum is proposed based on updated figures from the Roads and Maritime Strategy 2011, Table 1.
4.3 ASSESSMENT OF HERITAGE SIGNIFICANCE

State Heritage Register

The following aspects of significance assessed against the State Heritage Criteria used in NSW are extracted from the SHR record for the Tabulam (Clarence River) Bridge.

N.B. Text in bold type, not included in the statutory register, is proposed based on our assessment of the history and significance of the bridge in the context of the evolving situation of timber bridges in NSW.

CRITERION (A) An item is important in the course, pattern of NSW’s cultural or natural history.

Through the bridge’s association with the expansion of the NSW road network, its ability to demonstrate historically important concepts such as the gradual acceptance of NSW people of American design ideas, and its association with Ernest DeBurgh, it has historical significance.

CRITERION (B) An item has strong or special association with life or works of a person or group of persons, of importance in NSW cultural or natural history.

The bridge is associated with the works of Ernest De Burgh, a senior engineer with the NSW Public Works in the late 19th and early 20th centuries.

CRITERION (C) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.

The bridge exhibits the technical excellence of its design, as all of the structural detail is clearly visible. In the context of its landscape it is visually attractive. As such, the bridge has substantial aesthetic significance.

CRITERION (D) An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.

Timber truss bridges are prominent to road travellers, and NSW has in the past been referred to as the “timber truss bridge state”. Through this, the complete set of bridges gain some social significance, as they could be said to be held in reasonable esteem by many travellers in NSW. The Clarence River bridge is valued by the people of Kyogle region.

CRITERION (E) An item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history.

(no assessment)

CRITERION (F): An item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history

Highly rare – longest timber truss bridge built, concrete piers.

Highly rare – in 2011 there were 9 surviving De Burgh trusses in NSW of the 20 built and 62 timber truss road bridges survive from the over 400 built.

Footnote: Figures from Roads and Maritime Strategy 2011, Table 1 & notes, p. 7. Note that the Roads and Maritime Strategy proposes to replace 5 of the 9 remaining De Burgh truss bridges, and to elevate one (Cobram) to the State Heritage Register.
CRITERION (G) *an item is important in demonstrating the principal characteristics of a class of NSW’s*
- cultural or natural places; or
- cultural or natural environments

Representative of De Burgh truss bridge.

**Roads and Maritime Heritage and Conservation Register (s170)**

The Significance Assessment for the Roads and Maritime s170 Register (last updated 17 April 09) reiterates the assessment above and adds the following under Criterion E:

**CRITERION (E) an item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history.**

The bridge has technical significance because it is a DeBurgh truss, is representative of a range of major technical developments that were made in timber truss design by the Public Works Department. The Tabulam bridge is also the longest extant DeBurgh truss bridge, and has iron piers, giving it further technical significance.

**Roads and Maritime Timber Bridge Strategy – Representative Sampling**

On the basis of the MBK 1998 Report, in 2002, the RTA released the ‘Timber Bridge Management Strategy’. This proposed that the RTA would, in the longer term, retain the 29 SHR-listed timber truss bridges under its control and replace the remaining timber truss bridges as operational needs dictated. This study further analysed the relative significance of all timber truss bridges under RTA control.

The Roads and Maritime Strategy 2011 applied a four-step assessment process to identify a portfolio of bridges that best met long term conservation and infrastructure service needs. The process included an operability test, sensitivity analysis and representative sampling to verify that a representative sample of the population was captured in terms of inherent variation in the population and the heritage significance of the bridges both collectively and individually. In representative sampling, Tabulam was judged to:

*offer technical significance as the only surviving example of a bridge with nine truss spans. These were historically rare, with only six built with five or more trusses.*

Operability analysis however deemed that the bridge could not be upgraded to achieve the required standard and therefore would need to be eventually replaced with a modern bridge in order to meet capacity requirements. It also determined that other bridges with three to four spans were judged to provide an indication of the potential scale of historic timber bridges.

Retention of Tabulam Bridge would present continuing conservation, operational and financial challenges while its conservation would not substantially strengthen the representative sample. The review concluded that retention of Abercrombie, Boonanga, Coorei, Sportsmans and Tabulam bridges was outweighed by the considerable operational costs that would arise and that none were viable locations for adaptive reuse.
Figure 5.1, New Road Bridge – Recommended Option (Option D), (Source: Roads and Maritime, Preferred Option Report 2014)
5. PROPOSAL

5.1 REPLACEMENT ROAD BRIDGE PROPOSAL

As part of the Roads and Maritime Timber Truss Bridge Conservation Strategy, the Tabulam Bridge has been identified to be demolished and replaced with a modern structure. The key objectives of the replacement bridge project include:

- Enhance road safety for motorists, residents, cyclists and pedestrians
- Remove the existing bridge
- Improve traffic efficiency
- Improve road transport productivity and reliability
- Support local and regional economic development
- Provide value for money solution
- Minimise the impact on the natural, social and built environment
- Involve all stakeholders and consider their interests
- Enable Roads and Maritime to focus on conservation of remaining timber bridge assets

The ‘Recommended Option’ for the site of the new bridge, chosen following community consultation, was Option D (See Figure 5.1)

5.2 REMOVAL OF EXISTING TIMBER BRIDGE

Demolition of the existing timber bridge is proposed. All timber and steel elements including the four central concrete piers and timber/earth abutments at the approaches will be taken down. The western approach road including the concrete overflow bridge will be retained as far as the present western abutment and handed over to the local authority. The eastern approach road will be removed. Abutments (earthen embankments) are not considered stable enough to retain in situ following dismantling of the bridge. Roads and Maritime engineering advice is that the concrete piers should also be removed completely as any remnants will constitute a hazard for the new bridge and for river users especially in the event of flood. Following dismantling and creation of new approach roads for the new bridge, the alignment of the original bridge will not be clearly revealed in the landscape, but measures are proposed to maintain a “sight-line” along the original bridge line (See below).

5.3 Mitigation and Interpretation

Roads and Maritime commitments under the Strategy 2012 require an application to demolish to be accompanied by a SOHI in which the reasons for removal and to what extent the bridge can no longer be used in its existing form, are set out. Other commitments made by the Roads and Maritime through the Strategy include reporting, mitigation and interpretation measures. A number of the general mitigation measures incorporated into the Strategy are applicable to the project. These are:
The publication of a timber truss bridges book

Proposed travelling display/exhibition in conjunction with Powerhouse Museum – See Section 6.3 of this report).

Archival recording of the bridge prior to demolition (undertaken, July 2013)

Roads and Maritime also proposes a specific interpretation strategy in mitigation of the impacts of demolition at Tabulam Bridge. The strategy includes the following key elements:

- Retention of sections of truss as a “gateway” at either end of the bridge:
  One full truss on the north side of the new bridge at the eastern approach and one truss on the north side of the new bridge at the western approach. The trusses will be erected outside the steel balustrade of the footway. Each incorporates sway braces and projecting sections of lateral girders as well as complete bottom chord, erected in line with the new road deck.

- A small park or rest area is proposed. A viewing platform has been proposed for consideration as a Preliminary Option, and interpretive material such as signboards or plaques, and appropriate landscape treatment. The favoured approach is to locate these at the eastern side of the crossing on the north side of the new road bridge at or near the site of the present abutment. A central viewing platform will also be provided on the north side of the new bridge, with additional interpretation signage.

- Landscape elements to mark the site/alignment of the bridge on the western bank (at the site of the present western abutment at Bottle Creek Road)
  The western abutment will be removed and replaced by new tree planting designed to form a visual marker for the line of the original bridge span.

- Reflecting features of the old bridge in the new bridge design

- Retention and conservation (e.g. in local or regional history museums) of other elements of fabric salvaged from the bridge

- Re-use of salvaged bridge components for maintenance of other historic timber truss bridges

5.4 SPECIFIC MITIGATION AND INTERPRETATION PROPOSALS

The specific mitigation/interpretation measures proposed to be implemented as part of the Tabulam Bridge project are discussed below. The following paragraphs are taken from the information provided by Roads and Maritime and appended to this report as Appendix E.

Truss spans installed on new bridge as ‘gateway’ elements.

A DeBurgh Truss span installed on the pedestrian walkway side of either end of the bridge. These will form a distinctive gateway to the bridge when approaching from either direction, and provide a sight line indicating the length of the bridge. This provides a simple [and safe] means of demarcating the bridge from the surrounding road, demonstrating its length and indicating that it has a historical connection. This will be legible at sign-posted speed for through traffic. It
further serves to retain two trusses for examination in a context where they can be readily maintained. It is a lower maintenance environment than in a public park.

The option to retain a truss or truss segment off line is based on an option utilised by Warrnambool Council, Victoria for the Hopkins River Bridge, which reintegrated a truss onto a concrete bridge as a non-structural item.

This decision was based on the bridge’s heritage significance along with visual impact comprising of a very large viewing catchment around the river at this point. Constructed in 1894/5 the Hopkins River Bridge was of historical significance as a rare surviving example of 19th century timber bridge engineering. In 2000 it was one of only a handful of timber truss bridges in Victoria and the largest and oldest, being the only surviving 19th century truss-type bridge. When the timber beam and truss bridge was replaced in 2000 the trusses were rebuilt and mounted onto the concrete deck behind the new barriers. They are supported by concrete columns at each end. Figures 4.1-4.3 show the heritage bridge and the new bridge with elements incorporated into the built form.

Figure 4.1, Hopkins River Bridge in the 1990s, (Source: Roads and Maritime)

Figure 4.2, Hopkins River Bridge in the 1990s, (Source: Roads and Maritime)

Eventual replacement of truss elements can be undertaken in any suitably dimensioned durable timber.
The preference is to reuse original spans if feasible. Span timbers and joints can be sealed and painted to be weatherproof, with cyclical maintenance painting only, as the truss span will not carry any load other than themselves.

Figure 4.3, Hopkins River Bridge in the 1990s, (Source: Roads and Maritime)

1. **Signposted rest area – providing heritage interpretation.**

A small rest area/park is proposed to be developed at the town (eastern) end of the old bridge alignment, providing an area to view the new bridge and find out about the old bridge. It will mark the eastern end of the original bridge and carry the majority of interpretative material.

The park will be the main heritage interpretation focus for tourists as it will be accessible at all hours and signposted from the road. Interpretation panels will cover the key messages and the historical context of the town, which otherwise lacks a museum or other heritage focus.

Park furniture, barriers and other elements should preferentially be constructed from recycled material from the bridge.

2. **Marking the alignment of the old bridge.**

It is proposed that the alignment of the old bridge is marked by the small park at the eastern [town] end and a landscape marker at the western end, consisting of a new retaining wall in the approximate configuration of the current abutment. This retaining wall will assist to form a terrace on which tall markertrees will be planted. The species of the trees will be confirmed in consultation with the local community and the Tenterfield Shire Council.

Until the marker trees are of sufficient height, the rest area interpretation will physically show the alignment of the bridge. This will serve to physically demarcate the position of the old bridge in the landscape, and its relationship to the town and the Clarence River.

As all original components of the bridge are proposed to be removed, including pier bases due to potential navigational and safety risks, the alignment is intended to be marked above the regular flood height of the Clarence River.

3. **Reflect features from the existing bridge in the new bridge.**
The new bridge road deck will be at a similar height to the old deck. It is recommended that the detailed design phase of the new bridge identify features of the existing timber truss bridge that can be incorporated into the design to reflect the form of the original bridge. This may include piers of similar cross-section profile and a cast motif that reflects the vertical and diagonal members of the DeBurgh truss form or other elements.

4. **Contributing conserved bridge fabric elements to local history museums in the region.**

Bridge components, suitably cleaned of chemical residues and stabilised for permanent display can be made from metal and timber components of the bridge after it has been dismantled. Such physically robust assemblies [e.g. posts socketed into metal shoes], if accompanied by captioned photos and diagrams, provide a robust and tangible display item, suitable for display in local history museums.

Tabulam does not have a local history museum, so internal display options are limited. Other regional towns do have museums, including Grafton and Tenterfield. The project team will consult with these institutions to investigate appropriate strategies for display and interpretation if desired. As some of the bridge elements are contaminated they would have to be cleaned up, and if appropriate could be used in museums for display purposes.
**Overall concept**

Figure 5.2 Tabulam New Bridge – Revised Interpretation Design: overall concept (North elevation), (Source: Peter Andrews Associates / GHD, for Roads and Maritime, *Tabulam New Bridge, Revised Interpretation*, December 2014)
Western approach

Figure 5.3 Tabulam New Bridge – Revised Interpretation Design (Western approach), (Source: Peter Andrews Associates / GHD, for Roads and Maritime, Tabulam New Bridge, Revised Interpretation, December 2014)
Eastern approach

Figure 5.4 Tabulam New Bridge – Revised Interpretation Design (Eastern approach), (Source: Peter Andrews Associates / GHD, for Roads and Maritime, Tabulam New Bridge, Revised Interpretation, December 2014)
**Eastern approach (cont.)**

Figure 5.5 Tabulam New Bridge – Revised Interpretation Design (Eastern approach - cont.), (Source: Peter Andrews Associates / GHD, for Roads and Maritime, *Tabulam New Bridge, Revised Interpretation*, December 2014)
Central viewing platform

Figure 5.6 Tabulam New Bridge – Revised Interpretation Design (Central Viewing Platform), (Source: Peter Andrews Associates / GHD, for Roads and Maritime, Tabulam New Bridge, Revised Interpretation, December 2014)
6. HERITAGE IMPACT ASSESSMENT

6.1 INTRODUCTION

This heritage impact statement considers heritage impacts of the development in terms of the values of the Tabulam Bridge as a heritage item listed in the NSW State Heritage Register. Section 6.2 below reviews the background justification for removal. Table 4 outlines the impacts and mitigations in detail.

6.2 BACKGROUND JUSTIFICATION

The Strategy 2011 established which of the bridges under then-RTA control were operationally unsuitable to modern road infrastructure demands. The Strategy outlined the options for operationally unsuitable bridges are as follows:

- Transfer to local government
- Adaptive reuse (mainly by construction of a duplicate bridge and reorganisation of road users to better match the existing bridge’s service capacity)
- Relocation (generally unfavoured)
- Retention of a redundant structure
- Demolition and replacement after archival recording and establishment of interpretation capability.

The Strategy examined the timber truss bridge stock against a number of criteria:

1. Operability test
2. Sensitivity analysis
3. Representative sampling
4. Balancing analysis,

Using this methodology, it was demonstrated how the Tabulam Creek Bridge:

1. was required to meet emerging regulatory limits well in excess of its structural capability
2. would present considerable challenges for limited benefit to the representative sample. There are twelve high visibility bridges identified as operable
3. (if retained) would present continuing conservation, operational and financial challenges. Its conservation would not substantially strengthen the representative sample.

RTA proposed that 25 of the current (2011) 48 bridges be conserved, with 23 to be divested including 12 on the State Heritage Register. As part of this proposal, the RTA recommended that Briner, Cobram and Lansdowne be listed on the State Heritage Register. Cobram and
Lansdowne are De Burgh truss bridges, but Lansdowne has since been re-scheduled for demolition and replacement.

The Strategy, including the divestment of 12 bridges included in SHR was reviewed by the Heritage Council of New South Wales (Heritage Council 2011). Though it had some reservations regarding the assessment methodology, some proposals regarding the retention and conservation of 2 lift bridges and 1 bascule bridge, and recommendations to nominate five other timber truss bridges to the SHR the Heritage Council the Timber Truss Bridges Committee:

*Acknowledged* the inherent conflicts between the RTA’s obligations to manage its heritage assets and its need to provide for the increasing transport loads using the State’s network

and recommended Heritage Council endorsement of the Strategy.

### 6.3 ASSESSMENT OF ALTERNATIVE STRATEGIES

The assessment of alternative options to the management of Tabulam Bridge has been undertaken. Consultation with Kyogle and Tenterfield Shire Councils and local communities has been undertaken as part of the work carried out to develop the four route options and urban design strategy.

Community opposition to the removal of the bridge has been aired during consultation, via verbal feedback and two community petitions (as described in the Roads and Maritime Preferred Option Report 2014, p.vi). Roads and Maritime considered the community response and explored the following alternatives to demolition:

- Retain the existing bridge for pedestrian access only
- Retain the bridge for visual aesthetics only until the bridge collapses into the river
- Retain the existing bridge for its current use.

Roads and Maritime costed the option of retaining the bridge in use as a cycle and pedestrian bridge. The results of this analysis have been published in a study by GHD for RMS. This study has indicated that constraints affecting this proposal include

- Situation in an area of “high decay potential” due to harsh environmental conditions
- Timber deterioration risks and maintenance management costs
- Lack of resources and expertise in the local council to maintain the bridge
- High cost of conversion

Roads and Maritime opted to proceed with the project, applying the safeguards included in the Strategy, on the basis that operational and financial challenges presented by retaining the existing bridge made alternative use unfeasible.

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4 Roads and Maritime Services, *Tabulam Bridge BN2266 Conversion to a footbridge and associated future maintenance costs*, 2013
The Strategy incorporates a set of implementation guidelines and milestones. These were established in consultation with the NSW Heritage Council and clearly outline the agency’s implementation objectives. These guidelines include a number of measures to which Roads and Maritime has committed and which collectively off-set the heritage impacts arising from the Strategy across the portfolio as a whole. Among these measures, Roads and Maritime has pledged to:

- Report to the NSW Heritage Council on progress of the strategy every two years from 2014
- develop Conservation Management Statements for each of the five truss types represented by the Roads and Maritime bridge portfolio
- prepare a Movable Span Bridges Study of its 26 movable span bridges
- prepare a heritage interpretation strategy that will apply to both retained bridges and sites of divested bridges to establish means of capturing and sharing information about the significance of the places concerned (a comprehensive book on timber truss bridges in NSW, and site specific interventions such as signboards, markers and other initiatives developed in tandem with heritage stakeholders).

6.4 STATEMENT OF HERITAGE IMPACT

Demolition of the Tabulam Bridge (Clarence River Road Bridge) will have a detrimental impact on the heritage significance of the item itself. The reasons for this assessment are:

- Tabulam Bridge is a State heritage item listed under the NSW Heritage Act 1977.
- Tabulam Bridge was identified as the sixth most significant timber truss bridge in the RTA portfolio at the time the initial significance analysis was undertaken by MBK for the Timber Truss Bridge Strategy.
- Demolition is total, permanent and irreversible

Furthermore, demolition of the Tabulam Bridge has implications for all DeBurgh truss bridges in NSW:

- The Timber Bridge Strategy has a high percentage of De Burgh trusses scheduled for replacement. Demolition reduces the overall profile of De Burgh truss bridges in NSW (a species of truss that is already rare). The loss rate of De Burgh Truss bridges since 1998 is of concern in regard to Criterion F (Rarity) of the State Heritage Criteria

However, as stated above, Roads and Maritime has demonstrated that Tabulam Bridge is operationally unsuitable to modern road infrastructure demands. Through the Timber Truss Bridges Strategy, endorsed by the NSW Heritage Council, Roads and Maritime has examined adaptive re-use strategies that would enable conservation of Tabulam Bridge, as prescribed in the Strategy.
Roads and Maritime, in line with the Strategy, has put in place a comprehensive set of mitigation measures to offset or compensate for adverse heritage impacts of all timber bridges scheduled for replacement in the state. Having determined that adaptive re-use of Tabulam Bridge entails strategic and operational risks the agency is not willing to take on, Roads and Maritime has followed Strategy protocols to develop a set of specific mitigations for this particular project. The mitigations in regard to Tabulam Bridge are set out in Table 4.
<table>
<thead>
<tr>
<th>Aspect of Significance</th>
<th>Level of Significance</th>
<th>Heritage Impact of Proposal</th>
<th>Mitigation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association with the expansion of the NSW road network</td>
<td>State</td>
<td>Adverse impact</td>
<td>Interpretation (Timber Truss Bridges book; travelling exhibition; interpretation signs and heritage markers in the proposed Rest Area on the E side of the bridge)</td>
</tr>
<tr>
<td>Historically important acceptance of American bridge design ideas</td>
<td></td>
<td>Irreparable loss of the longest De Burgh truss bridge in Australia</td>
<td>Retention of elements of bridge fabric (DeBurgh trusses) incorporated into the structure of the new road bridge to memorialize the timber truss bridge</td>
</tr>
<tr>
<td>(Criterion A)</td>
<td></td>
<td>Diminishing evidence of the significance of Tabulam as a historical river crossing dating to the 1840s</td>
<td></td>
</tr>
<tr>
<td>Association with Ernest De Burgh (Criterion B)</td>
<td>Local/State</td>
<td>Adverse impact</td>
<td>Interpretation (Timber Truss Bridges book; travelling exhibition; interpretation signs and heritage markers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further loss of De Burgh bridges in NSW (five out of nine De Burgh truss bridges identified for demolition in the Strategy)</td>
<td>Photographic archival recording and measured drawings</td>
</tr>
<tr>
<td>Technical quality of design</td>
<td>Local, moderate</td>
<td>Adverse impact (although the bridge is somewhat altered from its original form)</td>
<td>Photographic archival recording and measured drawings</td>
</tr>
<tr>
<td>Imposing landmark for road travellers and major piece of state infrastructure</td>
<td></td>
<td>Irreparable loss of constructional elements, additions and details</td>
<td>Retention of elements of bridge fabric (DeBurgh trusses) incorporated into the structure of the new road bridge to memorialize the timber truss bridge</td>
</tr>
<tr>
<td>Nationally significant example ranked 6th out of 82 timber bridges in NSW by McMillan Britton &amp; Kell, 1998 (Criterion C)</td>
<td></td>
<td></td>
<td>Interpretation (Timber Truss Bridges book; travelling exhibition; interpretation signs and heritage markers in the proposed Rest Area on the E side of the bridge)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potential for conserving fabric elements in local history museums of other regional towns (consultation with stakeholders to facilitate the relocation of these elements)</td>
</tr>
</tbody>
</table>

Table 4: Heritage Impact Assessment
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<th>Mitigation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social visibility</td>
<td>Local</td>
<td>Adverse impact</td>
<td>Cobram (a De Burgh truss) Bridge to be upgraded to State Heritage Register</td>
</tr>
<tr>
<td>Contribution to group value (Criterion D)</td>
<td></td>
<td>Irrecoverable loss of the bridge as a landscape element; potential for harm to values of nearby ‘Black Camp’ and ‘The Birthplace’, overshadowed by the bridge</td>
<td>Landscaping elements on both banks (small park on the E, retaining wall/terrace and marker trees on the W) providing landscape references</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interpretation (Timber Truss Bridges book; local signboards and heritage markers)</td>
</tr>
<tr>
<td>Representative of major technical developments in timber truss design</td>
<td>State</td>
<td>Moderate impact</td>
<td>Photographic archival recording and measured drawings</td>
</tr>
<tr>
<td>Imposing bridge with 18 spans, approx. 300m in length and 20m high, largest De Burgh truss built. (Criterion E)</td>
<td></td>
<td>Offset by Roads and Maritime retention strategy</td>
<td>Interpretation (Timber Truss Bridges book; travelling exhibition; interpretation signs and heritage markers in the proposed Rest Area on the E side of the bridge)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Retention of elements of bridge fabric (De Burgh trusses) incorporated into the structure of the new road bridge to memorialize the timber truss bridge</td>
</tr>
<tr>
<td>Rarity - in 2011 there were 9 surviving De Burgh trusses in NSW of the 20 built</td>
<td>State</td>
<td>Adverse impact</td>
<td>Cobram Bridge (a De Burgh truss) to be upgraded to State Heritage Register</td>
</tr>
<tr>
<td>(Criterion F)</td>
<td></td>
<td>Further loss of De Burgh bridges in NSW (five out of nine De Burgh truss bridges identified for demolition in the Strategy)</td>
<td>Updating of the Roads and Maritime s170 Register</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bi-annual reporting to the Heritage Council of NSW on the progress of the Strategy and its associated conservation actions</td>
</tr>
<tr>
<td>Significance in demonstrating the principal characteristics of a class of NSW’s cultural or natural places (Representativeness)</td>
<td>State</td>
<td>Adverse impact</td>
<td>Photographic archival recording and measured drawings</td>
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</tbody>
</table>
7. CONCLUSIONS & RECOMMENDATIONS

7.1 CONCLUSIONS

The background assessment by Roads and Maritime informing the strategic decision to demolish the Tabulam Bridge has been thorough and systematic. This Report notes that removal of the Tabulam Bridge has been an objective under the Timber Bridge Conservation Strategy and concurs that alternative options for relocation, retention and adaptive re-use have been addressed in line with the Strategy. Heritage Council endorsement has been obtained for the Strategy as a whole. Roads and Maritime has committed to a range of substantive mitigation measures to offset the heritage impacts of removal as part of the Strategy.

The demolition of the Tabulam timber truss bridge will detrimentally impact on heritage significance of the heritage item.

However this report is satisfied that:

- Long-term operability of the bridge for modern road infrastructure and regional development has been shown to be untenable
- The option for retention and re-use of the structure as a cycle-pedestrian bridge has been explored but a pedestrian only bridge is likely to receive a lower share of the maintenance budget and could fall into disrepair
- Retention of a divested bridge without beneficial use, maintenance and conservation (i.e. postponing demolition) is not a viable approach as the bridge will rapidly fall into disrepair
- The Roads and Maritime Timber Truss Bridge Conservation Strategy has charted positive long term strategic goals for timber truss bridges in NSW and this is being followed through in accordance with commitments made to the Heritage Council
- Heritage advice, research and community consultation in the lead up to the scheduling of Tabulam Bridge for divestment and removal have been systematic
- Archaeological and Aboriginal heritage issues have been taken on board during project planning.

This report considers that the following mitigations have the potential to offset the heritage impacts:

- Archival recording prior to demolition has been followed through in line with NSW Heritage Branch guidelines How to Prepare Archival Records of Heritage Items, and this will further offset the loss of the item
- Interpretation strategies to maintain a link between the bridge and the heritage values of Tabulam township are in development and will also mitigate some of the loss
Roads and Maritime is understood to be engaged in updating its s.170 Register to reflect changes to the bridge portfolio and to monitor heritage safeguards for its other timber truss bridges.

The retention of elements of bridge fabric to use as gateway elements for the new bridge will go some way to mitigating the heritage impacts of demolition.

7.2 RECOMMENDATIONS

The following recommendations are made to assist the Roads and Maritime in progressing the project with the NSW Heritage Division:

1. This report recommends that Roads and Maritime has grounds to proceed with an application to NSW Heritage Division for delisting of the bridge from the State Heritage Register.

2. We advise that engineering and navigational studies be prepared in support of this application, notably as regards the conclusion that other key elements of fabric, such as concrete bridge piers or the stumps of such piers, which are important contributory elements in the historic landscape and transport history of Tabulam and Kyogle Shire since European settlement, cannot be safely retained in situ.

3. Roads and Maritime is advised to collate supporting evidence to show how the operational and management constraints and liabilities of retention (e.g. as a pedestrian bridge) were conveyed during community consultation, as well as the options presented and scenarios explored.

4. It is a statutory requirement under Section 170(A)(1) of the Heritage Act 1977 that Roads and Maritime provide written notice to the NSW Heritage Council not less than 14 days prior to the commencement of transferral or demolition work of any items listed on an s.170 register.

5. Under Section 14 of the SEPP (Infrastructure) Roads and Maritime would provide written notice of the intention to carry out the proposed works, with a copy of this SoHI to the Tenterfield and Kyogle Shire Councils.

6. Incorporation of features or elements of the existing bridge into the design of the new bridge should be refined in greater detail. The new bridge design should have a character and identity of its own, sympathetic to the landscape and setting, respectful of the presence of the old bridge as a once dominant landscape element, but in no way trivialising or constituting a pastiche of the old bridge.

7. A design-based approach to rehabilitation of the river banks after demolition should be undertaken. More detailed descriptions and schematic representations of the finished landscape will enable the integration of the new Park/Rest Area, access, views and landscape markers on the western bank overlooking the river to be more effectively visualised by the approval authorities. The approach to rehabilitation of the eastern

\[\text{Note the examples of the Shenandoah Highway Bridge in Maryland, or the Hartman Bridge at Koppel, Pennsylvania.}\]
earth abutment and relationships between viewing area and abutment will be an important project component and should be developed further in the detailed design phase in consultation with the Tabulam community and Kyogle Council.

8. The question of access to the river bank, especially on the eastern side where sightlines of the original bridge will be highlighted, should be explored and appropriate strategies developed in consultation with local councils insofar as this may further benefit the interpretation or appreciation of the old bridge in the landscape.

9. In the unlikely event of any archaeological remains being discovered, works should cease and the Roads and Maritime Unexpected Finds Procedure be implemented.

10. The eastern approaches are in a High Risk area for Aboriginal Heritage. It is recommended that due diligence be incorporated into the project (refer to the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW)
8. REFERENCES


Australia ICOMOS, *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (Burra Charter) 2013


Gardner, Jane (coord.), *Copmanhurst Shire Community Based Heritage Study*, January 2004 [link to Copmanhurst Shire Community Based Heritage Study]


NSW Government, Department of Environment, Climate Change & Water, *Due Diligence Code for the Protection of Aboriginal Objects in NSW*, 2010

NSW Heritage Branch, NSW Department of Planning, *Assessing Heritage Significance*, (n.d.)

NSW Heritage Branch, NSW Department of Planning, *Statements of Heritage Impact*, (n.d.)


Road & Maritime Services, *Heritage & Conservation Register*, 1999 (‘s170 Register’)


**APPENDICES**

<table>
<thead>
<tr>
<th>Appendix</th>
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<tr>
<td>Appendix A</td>
<td>Tabulam Bridge (RTA s.170 Register, 1999 updated 2009)</td>
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<tr>
<td>Appendix B</td>
<td>Tabulam Bridge SHR Record</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Tabulam Bridge, DPW plans/elevations, d. 1899 (selected)</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Kyogle LEP 2012 (Clause 5.10 Heritage Conservation)</td>
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<tr>
<td>Appendix E</td>
<td>Roads and Maritime Tabulam Bridge Heritage Interpretation Strategy</td>
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APPENDIX A
Tabulam Bridge
(RTA s.170 Register, 1999 updated 2009)
Clarence River Road Bridge, Tabulam

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<tr>
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**Statement of Significance**

Statement of Significance: Completed in 1903, the Tabulam bridge is an early example of a DeBurgh timber truss road bridge. In 1998 it was in good condition. As a timber truss road bridge, it has many associational links with important historical events, trends, and people, including the expansion of the road network and economic activity throughout NSW, and Ernest DeBurgh, the designer of this type of truss. DeBurgh trusses were fourth in the five stage design evolution of NSW timber truss road bridges. Designed by Public Works engineer Ernest M. DeBurgh, the DeBurgh truss is an adaptation of the American Pratt truss design. The DeBurgh truss is the first to use significant amounts of steel and iron, and did so in spite of its high cost and the government's historical preference for timber. DeBurgh trusses were significant technical improvements over their predecessors. The Tabulam Bridge is the longest extant DeBurgh truss bridge, and has concrete piers, thus giving the Bridge a high degree of technical significance. In 1998 there were 10 surviving DeBurgh trusses in NSW of the 20 built, and 82 timber truss road bridges survive from the over 400 built. The Tabulam Bridge is a representative example of DeBurgh timber truss road bridges, and is assessed as being Nationally significant, primarily on the basis of its technical and historical significance.

Date Significance Updated: 27 January 1999

**Description**

<table>
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<th>Designer: E M DeBurgh</th>
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<td>Builder: Pope &amp; Maher, Sydney</td>
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<td>Physical Condition and/or Archaeological Potential: Good</td>
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Physical Condition and/or Archeological Potential: Good

Modifications and Dates: ----

Date Condition Updated: 23 October 1998

History

Historical Notes: Timber truss road bridges have played a significant role in the expansion and improvement of the NSW road network. Prior to the Bridges being built, river crossings were often dangerous in times of rain, which caused bulk freight movement to be prohibitively expensive for most agricultural and mining produce. Only the high priced wool clip of the time was able to carry the costs and inconvenience imposed by the generally inadequate river crossings that often existed prior to the trusses construction.

Timber truss bridges were preferred by the Public Works Department from the mid 19th to the early 20th century because they were relatively cheap to construct, and used mostly local materials. The financially troubled governments of the day applied pressure to the Public Works Department to produce as much road and bridge work for as little cost as possible, using local materials. This condition effectively prohibited the use of iron and steel, as these, prior to the construction of the steel works at Newcastle in the early 20th century, had to be imported from England.

Ernest DeBurgh, the designer of DeBurgh truss and other bridges, was a leading engineer with the Public Works Department, and a prominent figure in early 20th century NSW.

Timber truss bridges, and timber bridges generally were so common that NSW was known to travellers as the “timber bridge state”.

Situated in the Kyogle region, the Clarence River bridge has been an essential crossing of the river for over 90 years. The transport intensive logging industry has relied heavily on the Bridge since its construction for its continued economic survival. Before the construction of the Bridge, a river ford was in place, which in the wet season frequently became a major obstacle to traffic.

Listings

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<th>Gazette Page</th>
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Assessment of Significance

Historical Significance: Through the Bridge’s association with the expansion of the NSW road network, its ability to demonstrate historically important concepts such as the gradual acceptance of NSW people of American design ideas, and its association with Ernest DeBurgh, it has historical significance.

Aesthetic Significance: The Bridge exhibits the technical excellence of its design, as all of the structural detail is clearly visible. In the context of its landscape it is visually attractive. As such, the Bridge has substantial aesthetic significance.

Social Significance: Timber truss bridges are prominent to road travelers, and NSW has in the past been referred to as the “timber truss bridge state”. Through this, the complete set of bridges gain some social significance, as they could be said to be held in reasonable esteem by many travelers in NSW. The Clarence River bridge is valued by the people of Kyogle region.

Technical Significance: The Bridge has technical significance because it is a DeBurgh truss, is representative of a range of major technical developments that were made in timber truss design by the Public Works Department. The Tabulam bridge is also the longest extant DeBurgh truss bridge, and has iron piers, giving it further technical significance.

Integrity/Intactness: Intact

Representativeness: Representative of DeBurgh truss bridges

Rarity: Highly rare - longest timber truss bridge built, concrete piers

Endorsed Significance: State
References

Bibliography

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<td>1985</td>
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Study Details

Title: Relative Heritage Significance of all Timber Truss Bridges in NSW
Year: 
Number: 5000092
Author: McMillan Britton & Kel
Inspected By: 
Guidelines Used: No

Custom Fields

RTA Region: NORTHERN
Bridge Number: 2266
CARMIS File Number: ****
Property Number: ****
Conservation Management Plan: Tender being assessed

Images
Appendix B
Tabulam Bridge SHR Record
Clarence River Road Bridge

Item details

Name of item: Clarence River Road Bridge  
Other name/s: Tabulam Road Bridge  
Type of Item: Built  
Group/Collection: Transport - Land  
Category: Road Bridge  
Location: Lat: -28.8858434216 Long: 152.5651256530  
Primary address: State Highway 16, Tabulam, NSW 2469  
Localgovt area: Kyogle

All addresses

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Statement of significance:

Completed in 1903, the Tabulam bridge is an early example of a DeBurgh timber truss road bridge. In 1998 it was in good condition, 
As a timber truss road bridge, it has many associational links with important historical events, trends, and people, including the expansion of the road network and economic activity throughout NSW, and Ernest DeBurgh, the designer of this type of truss. 
DeBurgh trusses were significant technical improvements over their predecessors. The Tabulam bridge is the longest extant DeBurgh truss bridge, and has concrete piers, thus giving the bridge a high degree of technical significance.

In 1998 there were 10 surviving DeBurgh trusses in NSW of the 20 built, and 82 timber truss road bridges survive from the over 400 built.

The Tabulam bridge is a representative example of DeBurgh timber trusses road bridges, and is assessed as being Nationally significant, primarily on the basis of its technical and historical significance.

Date significance updated: 15 Jun 05
Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.
Description

**Designer/Maker:** M DeBurgh  
**Builder/Maker:** Pope & Maher, Sydney  
**Construction years:** 1903-1903  
**Physical description:** The Bridge over the Clarence River is a De Burgh type timber truss road bridge. It has five timber truss spans - two end spans of 32.0m (105ft) and three interior spans of 32.3m (106ft). There are 10 timber approach spans at one end and 3 at the other. The overall length of the bridge is 207.5m (680ft). The main spans are supported by concrete piers located in the river. The approaches are supported by timber trestles. 

**Physical condition and/or Archaeological potential:** Good  
**Date condition updated:** 15 Jun 05  

**Current use:** Road Bridge  
**Former use:** Road Bridge

History

**Historical notes:** Timber truss road bridges have played a significant role in the expansion and improvement of the NSW road network. Prior to the bridges being built, river crossings were often dangerous in times of rain, which caused bulk freight movement to be prohibitively expensive for most agricultural and mining produce. Only the high priced wool clip of the time was able to carry the costs and inconvenience imposed by the generally inadequate river crossings that often existed prior to the trusses construction.

Timber truss bridges were preferred by the Public Works Department from the mid 19th to the early 20th century because they were relatively cheap to construct, and used mostly local materials. The financially troubled governments of the day applied pressure to the Public Works Department to produce as much road and bridge work for as little cost as possible, using local materials. This condition effectively prohibited the use of iron and steel, as these, prior to the construction of the steel works at Newcastle in the early 20th century, had to be imported from England.

Ernest DeBurgh, the designer of DeBurgh truss and other bridges, was a leading engineer with the Public Works Department, and a prominent figure in early 20th century NSW.

Timber truss bridges, and timber bridges generally were so common that NSW was known to travellers as the "timber bridge state".

Situated in the Kyogle region, the Clarence River bridge has been an essential crossing of the river for over 90 years. The transport intensive logging industry has relied heavily on the bridge since its construction for its continued economic survival. Before the construction of the bridge, a river ford was in place, which in the wet season frequently became a major obstacle to traffic.

Historic themes

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Assessment of significance

**SHR Criteria a)**
(Historical significance)
Through the bridge's association with the expansion of the NSW road network, its ability to demonstrate historically important concepts such as the gradual acceptance of NSW people of American design ideas, and its association with Ernest DeBurgh, it has historical significance.

**SHR Criteria c)**
(Aesthetic significance)
The bridge exhibits the technical excellence of its design, as all of the structural detail is clearly visible. In the context of its landscape it is visually attractive. As such, the bridge has substantial aesthetic significance.

**SHR Criteria d)**
(Social significance)
Timber truss bridges are prominent to road travellers, and NSW has in the past been referred to as the "timber truss bridge state". Through this, the complete set of bridges gain some social significance, as they could be said to be held in reasonable esteem by many travellers in NSW. The Clarence River bridge is valued by the people of Kyogle region.

**SHR Criteria f)**
( Rarity)
Highly rare – longest timber truss bridge built, concrete piers

**SHR Criteria g)**
(Representativeness)
Representative of DeBurgh truss bridges

**Integrity/Intactness:** Intact

**Assessment criteria:** Items are assessed against the [State Heritage Register (SHR) Criteria](https://wwwença) to determine the level of significance. Refer to the Listings below for the level of statutory protection.

---

**Procedures / Exemptions**

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<td>Standard Exemptions</td>
<td>SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977</td>
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<tr>
<td></td>
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<td>1. the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and</td>
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<td>3. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached,</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>FRANK SARTOR Minister for Planning Sydney, 11 July 2008</td>
</tr>
<tr>
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<td>To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.</td>
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### References, internet links & images

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Note: Internet links may be to web pages, documents or images.
Appendix C
Tabulam Bridge, PWD Plans/Elevations (d. 1899) (Selected)
Appendix D
Kyogle LEP 2012
(Clause 5.10 Heritage conservation)
5.10 Heritage conservation

Note. Heritage items (if any) are listed and described in Schedule 5. Heritage conservation areas (if any) are shown on the Heritage Map as well as being described in Schedule 5.

(1) Objectives
The objectives of this clause are as follows:
(a) to conserve the environmental heritage of Kyogle,
(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
(c) to conserve archaeological sites,
(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

(2) Requirement for consent
Development consent is required for any of the following:
(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):
   (i) a heritage item,
   (ii) an Aboriginal object,
   (iii) a building, work, relic or tree within a heritage conservation area,
(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,
(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,
(d) disturbing or excavating an Aboriginal place of heritage significance,
(e) erecting a building on land:
   (i) on which a heritage item is located or that is within a heritage conservation area, or
   (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,
(f) subdividing land:
   (i) on which a heritage item is located or that is within a heritage conservation area, or
   (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

(3) When consent not required
However, development consent under this clause is not required if:
(a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:
   (i) is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or archaeological site or a building, work, relic, tree or place within the heritage conservation area, and
   (ii) would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or
(b) the development is in a cemetery or burial ground and the proposed development:
   (i) is the creation of a new grave or monument, or excavation or disturbance of land for the purpose of conserving or repairing monuments or grave markers, and
(ii) would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance, or
(c) the development is limited to the removal of a tree or other vegetation that the Council is satisfied is a risk to human life or property, or
(d) the development is exempt development.

(4) **Effect of proposed development on heritage significance**
The consent authority must, before granting consent under this clause in respect of a heritage item or heritage conservation area, consider the effect of the proposed development on the heritage significance of the item or area concerned. This subclause applies regardless of whether a heritage management document is prepared under subclause (5) or a heritage conservation management plan is submitted under subclause (6).

(5) **Heritage assessment**
The consent authority may, before granting consent to any development:
(a) on land on which a heritage item is located, or
(b) on land that is within a heritage conservation area, or
(c) on land that is within the vicinity of land referred to in paragraph (a) or (b),
require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.

(6) **Heritage conservation management plans**
The consent authority may require, after considering the heritage significance of a heritage item and the extent of change proposed to it, the submission of a heritage conservation management plan before granting consent under this clause.

(7) **Archaeological sites**
The consent authority must, before granting consent under this clause to the carrying out of development on an archaeological site (other than land listed on the State Heritage Register or to which an interim heritage order under the **Heritage Act 1977** applies):
(a) notify the Heritage Council of its intention to grant consent, and
(b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.

(8) **Aboriginal places of heritage significance**
The consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:
(a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and
(b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.

(9) **Demolition of nominated State heritage items**
The consent authority must, before granting consent under this clause for the demolition of a nominated State heritage item:
(a) notify the Heritage Council about the application, and
(b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.

(10) **Conservation incentives**
The consent authority may grant consent to development for any purpose of a building that is a heritage item or of the land on which such a building is erected, or for any purpose on an Aboriginal
place of heritage significance, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:

(a) the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and

(b) the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and

(c) the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and

(d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and

(e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area.
Appendix E
Roads and Maritime Tabulam Bridge Heritage Interpretation Strategy
(October 2014)
Tabulam Bridge, Clarence River – Heritage interpretation for the bridge replacement project

The purpose of heritage interpretation is to communicate the significance of a place to an audience, so that it can understand why it is important. Where development impacts adversely on its significance, heritage interpretation is one means of mitigating that loss by providing other ways of telling those stories and passing on the meaning and value that do not rely on the presence of the object itself.

This section outlines RMS’s commitment as to how it will mitigate the loss of heritage values arising from the replacement of the state significant Tabulam Bridge, across the Clarence River at Tabulam, with a new concrete bridge.

It presents a preferred heritage concept, including installations and indicative content, which form part of the overall development project that is to be reviewed in the Heritage Impact Statement [SOHI] and the Review of Environmental Factors [REF]. The indicative content will be further developed and refined in conjunction with detailed design of the bridge. The final form of the interpretation will be prepared in consultation with the local Tabulam community and other stakeholders.

Heritage significance of Tabulam Bridge

The following section sets out the significance of the bridge in summary format. Please refer to Chapter 4 of the Heritage Impact Statement for a comprehensive discussion of significance values.

Tabulam was assessed in the Cardno MBK Study of relative heritage significance of all timber truss road bridges in NSW [1998] as ranking 6th in significance of all timber truss bridges then remaining in NSW. Among the DeBurgh truss category it ranked first, ahead of St Albans Bridge.

The statement of significance adopted for Tabulam Bridge in the NSW State Heritage Register reads: Completed in 1903, the Tabulam bridge is an early example of a DeBurgh timber truss road bridge. In 1998 it was in good condition.

As a timber truss road bridge, it has many associational links with important historical events, trends, and people, including the expansion of the road network and economic activity throughout NSW, and Ernest DeBurgh, the designer of this type of truss.

DeBurgh trusses were fourth in the five stage design evolution of NSW timber truss road bridges. Designed by Public Works engineer Ernest M. DeBurgh, the DeBurgh truss is an adaptation of the American Pratt truss design. The DeBurgh truss is the first to use significant amounts of steel and iron, and did so in spite of its high cost and the government’s historical preference for timber.

DeBurgh trusses were significant technical improvements over their predecessors. The Tabulam bridge is the longest extant DeBurgh truss bridge, and has concrete piers, thus giving the bridge a high degree of technical significance.

In 1998 there were 10 surviving DeBurgh trusses in NSW of the 20 built, and 82 timber truss road bridges survive from the over 400 built.

The Tabulam bridge is a representative example of DeBurgh timber truss road bridges, and is assessed as being Nationally significant, primarily on the basis of its technical and historical significance.

Further detail is provided in the SHR listing against each of the assessment criteria:

SHR Criterion A

Historical significance Through the bridge’s association with the expansion of the NSW road network, its ability to demonstrate historically important concepts such as the gradual acceptance of NSW people of American design ideas, and its association with Ernest DeBurgh, it has historical significance.

SHR Criterion C

Aesthetic significance The bridge exhibits the technical excellence of its design, as all of the structural detail is clearly visible. In the context of its landscape it is visually attractive. As such, the bridge has substantial aesthetic significance.

SHR Criterion D

Social significance Timber truss bridges are prominent to road travellers, and NSW has in the past been
referred to as the “timber truss bridge state”. Through this, the complete set of bridges gain some social significance, as they could be said to be held in reasonable esteem by many travellers in NSW. The Clarence River bridge is valued by the people of Kyogle region.

SHR Criterion F

Rarity

Highly rare - longest timber truss bridge built, concrete piers

SHR Criterion G

Representativeness Representative of DeBurgh truss bridges

During the public consultation phase of the RMS Timber Truss Bridge Strategy the proposal to replace the existing Tabulam Bridge received the second highest number of individual submissions. It received 16 in total - six of these supported retention, while 9 favoured replacement with a new bridge, and one was neutral. Many of those advocating replacement acknowledged that the bridge was of heritage significance and important as a town landmark, confirming the assessment under Criterion D. However, these submissions recognised that it created problems for using the highway and managing the local economy, as well as providing a significant maintenance cost.

Key messages

The purpose of heritage interpretation is to convey the heritage significance of the place. The statement of significance identifies key messages that should be related about Tabulam Bridge, and which remain important to convey to mitigate the impact of its removal.

Key points about Tabulam Bridge:

- It was the first bridge on the site, built in 1903 to replace a punt.
- The Clarence is an unpredictable river. The lack of a reliable crossing was an economic constraint to a growing pastoral region.
- The Bruxner Highway, as it became known, was built to further the development of the region in the early 20th century.
- The bridge was an essential component of the new road, and linked Tabulam to Tenterfield and Casino.
- The bridge is significant in representing the aspirations of NSW at the beginning of Federation in regional development, and investment in regional infrastructure.
- The DeBurgh form of timber truss bridge was in production from 1899 to 1905, a very short period, so the bridge reflects the time of construction.
- The form of the truss reflects a range of influences including ideas from US designs and the continuing evolution of trusses designed by NSW Public Works Department.
- The designer Ernest DeBurgh associated with the bridge is significant as the designer of this form of bridge, and for his contribution to the engineering heritage of NSW.
- The bridge is significant because of its size. It was one of only six bridges built that had five or more spans. In the period up to its replacement it was the longest remaining operational timber truss bridge, and the last one to be on a highway.
- The bridge is representative of bridges constructed in New England and the north of the colony/state from the late 19th century onwards. These were instrumental in allowing the economic development of this region.
- The survival of the bridge is a testament to the quality of the engineering design, craft skill in its assembly and maintenance, and the unique qualities of the hardwood timbers used in its construction.

Interpretation constraints

Audiences

Although Tabulam bridge sits on a highway this does not mean that it is regularly experienced by a large number of people.

Tabulam is located roughly half way between Tenterfield and Casino, each about an hour’s drive away, which does not encourage stopping by regular travellers. It is a small country town with a small population of 644 people [2011 Census, inclusive of surrounding locality, and including 158 Aboriginal people]. It has limited commercial activity in the town and is primarily a service centre for the surrounding properties. About 1000 daily crossings are recorded for the present bridge.

Although a centre of population from the early 19th century, tabulam as a town dates to 1885.
As almost all near-town residences and services are on the eastern side of the river there is limited local pedestrian usage of the bridge to access the western side.

The area has an increasing, although still modest tourism profile. This is unlikely to significantly increase in the near future. The condition of the Bruxner Highway is one of the limitations to increasing tourism numbers.

As a state significant bridge Tabulam is likely to be of interest to a statewide audience, as it reflects a high level of significance on a number of SHR criteria.

**Surviving fabric**

Following its replacement the alignment of the bridge is not expected to be legible in the landscape after the removal of the bridge and construction of the new approach roads.

The Tabulam Bridge CMP [GHD / Austral 2004] identifies the significance of elements within the intact bridge as follows:

<table>
<thead>
<tr>
<th>Bridge component</th>
<th>Condition</th>
<th>Integrity / intactness</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abutments</td>
<td>Good</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Timber piers</td>
<td>Fair to good</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Concrete piers</td>
<td>Fair to good</td>
<td>Good</td>
<td>Exceptional</td>
</tr>
<tr>
<td>Truss assemblies</td>
<td>Good</td>
<td>Moderate</td>
<td>Exceptional – trusses intrusive - flashing</td>
</tr>
<tr>
<td>Approach spans</td>
<td>Good</td>
<td>Good</td>
<td>High</td>
</tr>
<tr>
<td>Decking</td>
<td>Good</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Railing</td>
<td>Fair to good</td>
<td>Good</td>
<td>High</td>
</tr>
</tbody>
</table>

While maintenance and repair may have affected the integrity of particular components since this assessment, the relative weighting of significance remains valid.

Depending upon their condition at dismantling, elements of the bridge that will survive will include:

- Bridge timber. This timber will be recycled in accordance with the RMS Timber Bridge Recycling Policy.
- Steel bottom chord segments.
- Metal items such as hanger rods, connector pins and tie plates.
- Associated bridge signage.

The abutment formations are of earthen embankments retained by timber revetments and are not considered to be stable enough to retain their form legibly following removal of the bridge structure.

Engineering advice is that the concrete piers in the waterway and the timber piers in the river channel need to be removed once the timber bridge structure is removed, as they will no longer have any lateral support and will be subject to flood impacts. The option of retaining stubs of piers to indicate the original alignment was not considered feasible on engineering grounds.

**Previous commitments on interpretation**

The Conservation management plan [GHD / Austral Archaeology 2004] committed RMS as follows. Policy 7.6 addressed interpretation in the context of the bridge’s retention. The key policies it proposed are:

7.6.1 – i] ‘the significance of the cultural landscape beyond that of a transport corridor must be interpreted in light of the thematic topics identified by the NSW Heritage Office … Australian heritage commission … and the Burra charter …’

7.6.1 – ii] ‘The information presented needs to inform the visitor of the individual abnd group significance of the cultural resources … It needs to educate the visitor about the heritage framework that protects heritage resources, such as these bridges.’

7.6.1 – iii] ‘The interpretive information needs to discuss the technology of bridge design and its context in the region and the broader NSW landscape’
Clarence River Road Bridge is also known as Tabulam Bridge. Currently there is no identification sign for the Bridge. It is proposed that a sign be installed at each end of the Bridge with the words: Clarence river road bridge (also known as Tabulam Bridge) Built 1903.

**Preferred Heritage interpretation**

The heritage interpretation mitigation consists of the following four elements:

1. Two truss spans installed on the new bridge as ‘gateway’ elements.
2. Signposted rest area – providing heritage interpretation.
3. Marking the alignment of the old bridge.
4. Reflect features from the existing bridge in the new bridge.

Further, RMS will investigate:

5. Contributing conserved bridge fabric elements to local history museums in the region.

The preferred heritage interpretation will be further refined as part of the detailed design of the bridge.

Supporting heritage elements that relate the significance of the timber truss bridge population across NSW, but not part of this bridge replacement will include:

- Projected RMS timber truss bridge book documenting the bridges and their contribution to NSW development and history.
- Projected travelling display about timber truss bridges in conjunction with Powerhouse Museum to go to regional centres.

The proposed heritage mitigation measures are described here in greater detail.

1. **Truss spans installed on new bridge as ‘gateway’ elements.**
   
   A DeBurgh Truss span installed on the pedestrian walkway side of either end of the bridge. These will form a distinctive gateway to the bridge when approaching from either direction, and provide a sight line indicating the length of the bridge.

   The preference is to reuse original spans if feasible. Span timbers and joints can be sealed and painted to be weatherproof, with cyclical maintenance painting only, as they do not need to carry any load other than themselves.

   This provides a simple (and safe) means of demarcating the bridge from the surrounding road, demonstrating its length and indicating that it has a historical connection. This will be legible at signposted speed for through traffic.

   It further serves to retain two trusses for examination in a context where they can be readily maintained. It is a lower maintenance environment than in a public park. Eventual replacement of truss elements can be undertaken in any suitably dimensioned durable timber.

2. **Signposted rest area – providing heritage interpretation.**

   A small rest area / park to be developed at the town end of the old bridge alignment, providing some car parking and picnic space and somewhere to view the new bridge and find out about the old bridge. It marks one end of the original bridge and carries the majority of interpretative material.

   The park will be the main heritage interpretation focus for travellers and tourists, as it will be accessible at all hours and signposted from the road. Interpretation panels will cover the key interpretation messages, and the historical context of the town, as it otherwise lacks a museum or other heritage focus.

   Park furniture, barriers and other elements should preferentially be constructed from recycled material from the bridge.

3. **Marking the alignment of the old bridge.**

   The alignment of the old bridge is marked by the rest area at the eastern [town] end and a landscape marker at the western end, consisting of a stable new retaining wall in the approximate configuration of the current abutment, forming a terrace on which tall marker trees will be planted.

   The rest area interpretation will physically show the alignment of the bridge, which will be necessary until the marker trees are of sufficient height.

   This serves to physically demarcate the position of the old bridge in the landscape, and its relationship to the town and the Clarence River.

   As all original components of the bridge will be removed, including pier bases due to potential navigational risks, the alignment has to be marked above the regular flood height of the Clarence River.
4. Reflect features from the existing bridge in the new bridge.
   In the detailed design of the bridge identify features of the bridge that can be designed to reflect the
   form of the original bridge. This may include piers of similar cross-section profile, a cast motif that
   reflects the vertical and diagonal members of the DeBurgh truss form or other elements.
   Elements should be chosen that are legible to casual view from the rest area or other vantage points,
   or to motorists travelling at speed.

5. Contributing conserved bridge fabric elements to local history museums in the region.
   Bridge components, suitably cleaned of chemical residues and stabilised for permanent display can
   be made from metal and timber components of the bridge after it has been dismantled. Such
   physically robust assemblies [eg posts socketed into metal shoes], if accompanied by captioned
   photos and diagrams, provide a robust and tangible display item, suitable for display in local history
   museums.
   Tabulam does not have a local history museum, so internal display options are limited. Other
   regional towns, many of which would have been close to other timber truss bridges that are now
   replaced, do have museums, including Grafton. The project team should consult with these
   institutions and offer them appropriate ready to display bridge elements and accompanying
   interpretation if desired.

6. Naming of the replacement bridge.
   An opportunity exists to consider renaming the bridge to reflect its status as the ‘new’ bridge.
   Further consultation with the community would be required to determine whether the replacement
   bridge should be distinguished in such a way.

The aim of the Heritage Interpretation component of the RMS Timber truss bridge conservation Strategy is to
provide an overarching interpretative framework that tells how the bridges fit into the story of NSW’s history.
The key elements – an authoritative book and a travelling display – are in preparation. These will allow a
more comprehensive discussion of how individual bridges fit into the state story, and the travelling exhibition
will allow regional museums such as Grafton to host a display exploring the different historical and
contemporary values of the bridges.

References
GHD and Austral Archaeology 2003
Bridge over Clarence River at Tabulam: conservation management plan, unpublished report to NSW Roads
RMS Timber truss bridge strategy
RMS Timber recycling policy