Murrays Road Bridge,
Murrays Road, Conjola

Heritage Assessment

For Shoalhaven City Council

Version 1: February 2022

Louise Thom Heritage Consultants
M 0421 983 971
E info@louisethomheritage.com.au
W www.louisethomheritage.com.au
P.O. Box 155, Corrimal NSW 2518

Cover Image: Murrays Road Bridge, also known as Lower Conjola Creek Bridge or Murrays Bridge viewed from the north west.

MURRAYS ROAD BRIDGE, CONJOLA – HERITAGE ASSESSMENT			
ISSUE	DESCRIPTION	DATE ISSUED	SENT TO
A	Report Issued to Shoalhaven City Council	28/02/2022	Josh Windsor, Asset Engineer – Works and Services

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1. Executive Summary

Murrays Road Bridge is a rare and significant part of the heritage of Shoalhaven. Murrays Road Bridge is an excellent example of a late 19th century high-level timber beam bridge on trestles. Once there were over 4000 timber beam bridges like this but now, they are extremely scarce in NSW. Murrays Road Bridge provides important physical evidence of the early settlement history of Conjola and the Shoalhaven and demonstrates the development history of the dairy industry. Murrays Road Bridge has historical association with generations of the Murray family, pioneers of Conjola since 1859 and dairy farmers who continue to farm on both sides of Conjola Creek using the bridge crossing to access both sides of the farm. Murrays Road Bridge is significant as a crucial piece of infrastructure on the historic road which connected Conjola and Red Head until the Bendalong Road to the north was upgraded. The road and the bridge were historically important in the timber industry providing a route for timber trucks from timber mills such as Davis's Mill at Red Head.

A full significance assessment is contained in part 7 of this report.

The condition of Murrays Road Bridge is poor, and the latest condition report recommends assessment by a structural engineer to review the load capacity of the bridge.

The heritage significance of the bridge is assessed to be high at a local level. To conserve the heritage value of Murrays Road Bridge the following options are recommended for the consideration of Shoalhaven City Council:

1. Retain the bridge as an operational bridge by undertaking necessary repairs. Or
2. Construct a new bridge alongside and maintain the timber bridge as a ruin.

The definition of a ruin accepted by the Australian Heritage Council is:

> *A heritage ruin is defined as a place that currently, through abandonment, redundancy, or condition, is disused and incomplete, is no longer maintained and appears unlikely to regain its original or a substantive use, function, or purpose other than interpretation.* (Heritage Chairs and Officials of Australia and new Zealand (HCOANZ), 2013)

The Australia Heritage Council have published guidelines for the conservation of ruins and their management. It is recommended that should Council proceed with option 2 that these guidelines be implemented in the care and management of Murrays Road Bridge.

2. Introduction

2.1. Report Objectives

The objective of this report is to provide a Heritage Assessment of Murrays Road Bridge, Conjola. The bridge is listed on Shoalhaven local Environmental Plan 2014 as a heritage item of local significance (heritage item I64).

Shoalhaven City Council have commissioned this report to provide a heritage significance assessment of Murrays Road Bridge in order to make informed decisions regarding the long-term management of the bridge.

2.2. Methodology and Structure

The Heritage Assessment will set out the history and physical description of the bridge and its setting in order to assess its heritage significance. The assessment of significance and guidance for determining opportunities and constraints are taken from the following sources:

- *Assessing Heritage Significance*, NSW Heritage, Department of Premier and Cabinet, 2001
- *Conservation Management Documents* 1996, revised 2002
- *The Conservation Plan* [Fifth Edition], James Semple Kerr for the National Trust 2000
- *The Burra Charter*: The Australia ICOMOS Charter for Places of Cultural Significance, Australia ICOMOS 2013
- Practice Note, *Understanding and assessing cultural significance*, Australia ICOMOS 2013

There are three steps in managing individual heritage items:

Step One – Investigate significance

Step Two – Assess significance

Step Three – Manage significance

This document, the Heritage Assessment of Murrays Road Bridge, Conjola, investigates (Step One) and assesses (Step Two) and provides options for management (Step Three). See Attachment A for further explanation.

2.3. Location

Murrays Road Bridge is on Murrays Road, Conjola, NSW and crosses Conjola Creek. It is located in the Parish of Conjola, County of St Vincent. The bridge is also known as Conjola Timber Trestle Bridge and Lower Conjola Creek Bridge.

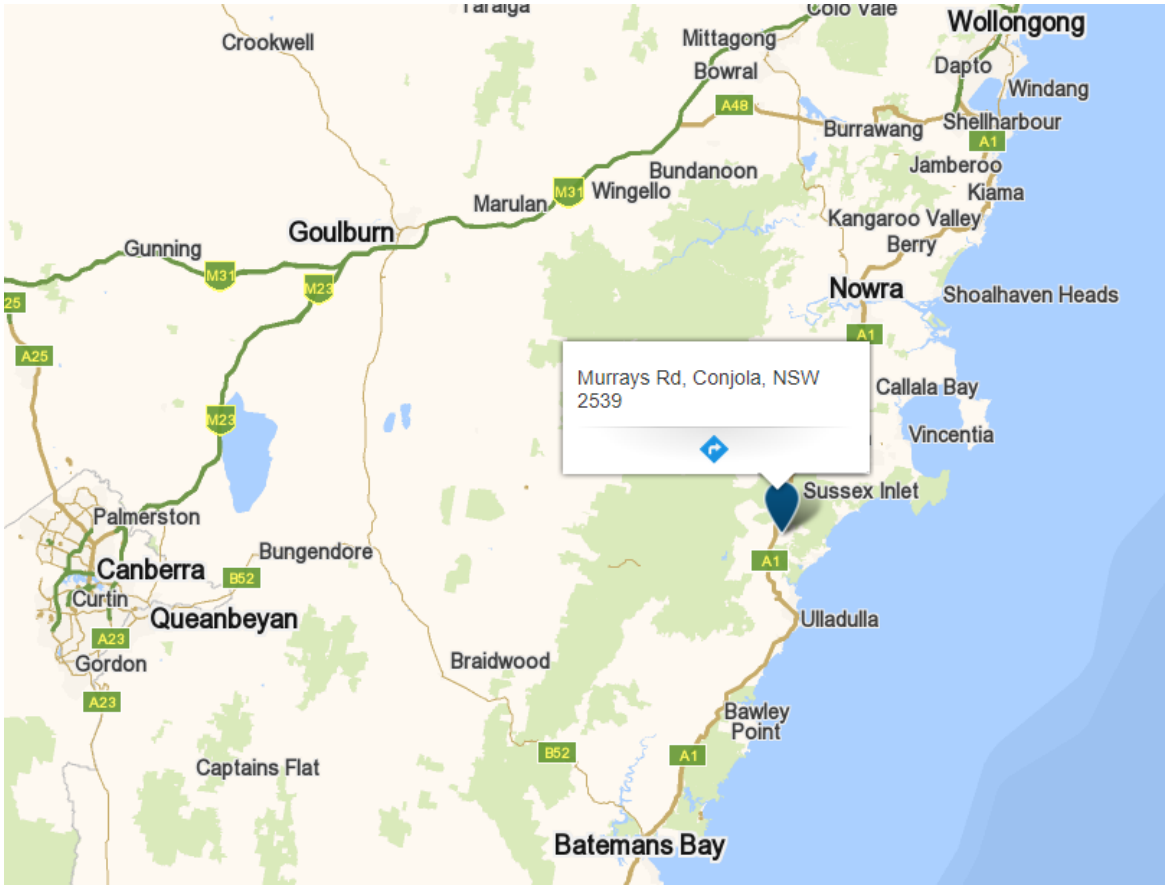

Figure 1. Location Map (WhereIs)

2.4. Study Area

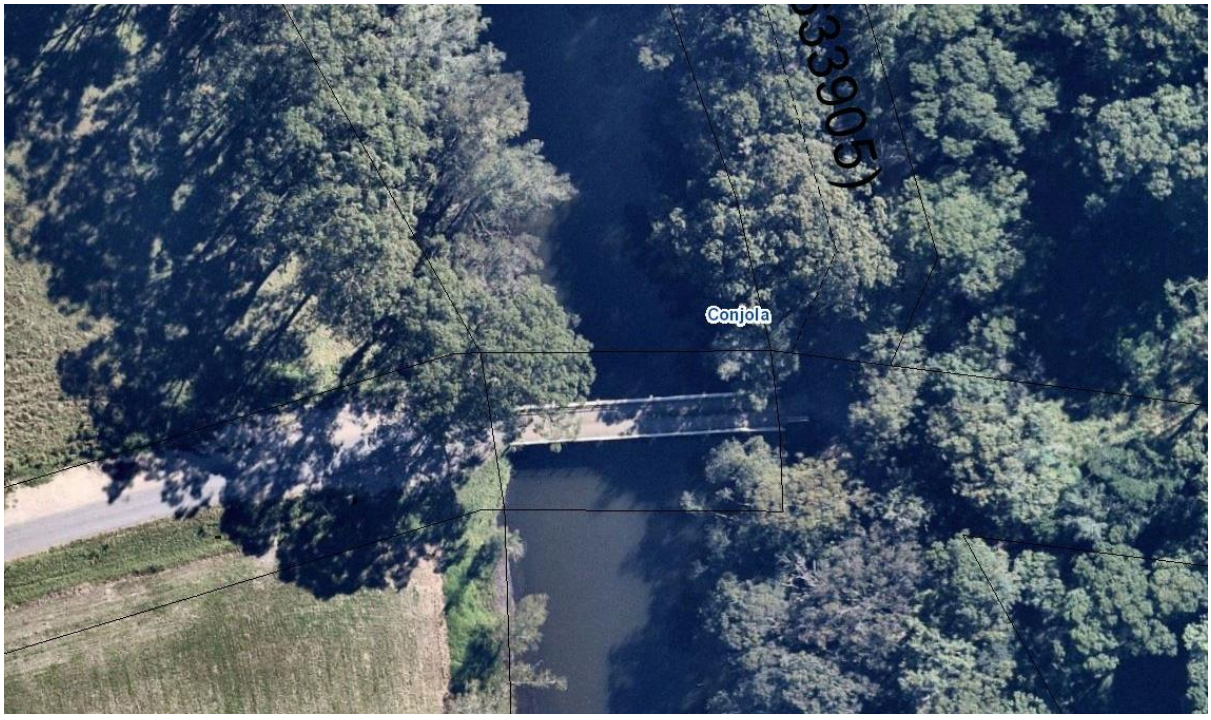

Figure 2. Aerial view of the Murrays Road Bridge. Image supplied by Shoalhaven City Council

2.5. Authorship

This report was prepared by Louise Thom, Heritage Consultant. All photographs unless otherwise specified were taken by Louise Thom on 16 February 2022.

2.6. Report limitations

This report does not assess Aboriginal cultural heritage significance.

This report does not assess the potential for historic or maritime archaeology.

3. Heritage Status

3.1. Shoalhaven Local Environmental Plan 2014

Murrays Road Bridge is included in schedule 5 of Shoalhaven LEP 2014 as a heritage item of local significance. It is described as:

Conjola timber trestle bridge, Murrays Road, Conjola

Part of Conjola Creek, adjacent to Lot 4, DP 864378

Local Significance, Item number 164

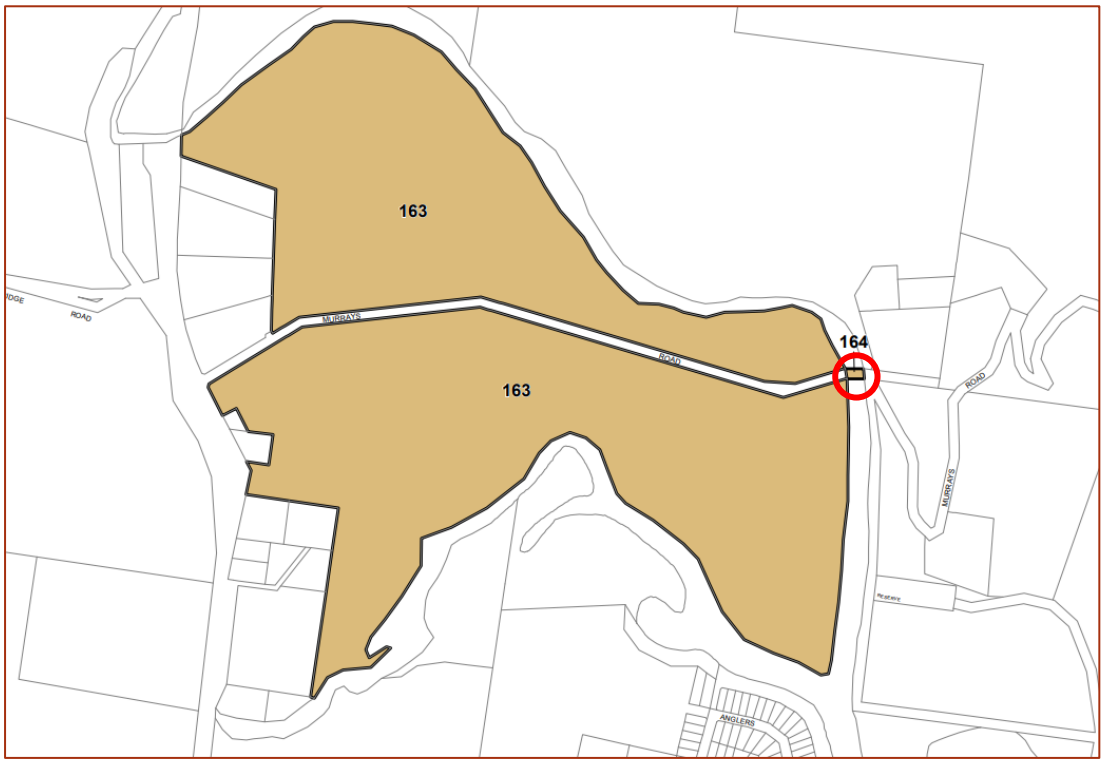

Figure 3. Shoalhaven LEP Heritage Map - Extract from 015A. Conjola Timber Trestle bridge heritage item 164 is indicated on the map.

In the vicinity of the bridge is another heritage item:

Murray Family Cemetery, 40 Murrays Road, Conjola

Lot 4, DP 864378. Local Item 163

The heritage map in Figure 3 shows the Murray Family Cemetery Item 163 on a large lot. The actual cemetery is located on a much smaller area of land located a considerable distance from the bridge, see Figure 4.

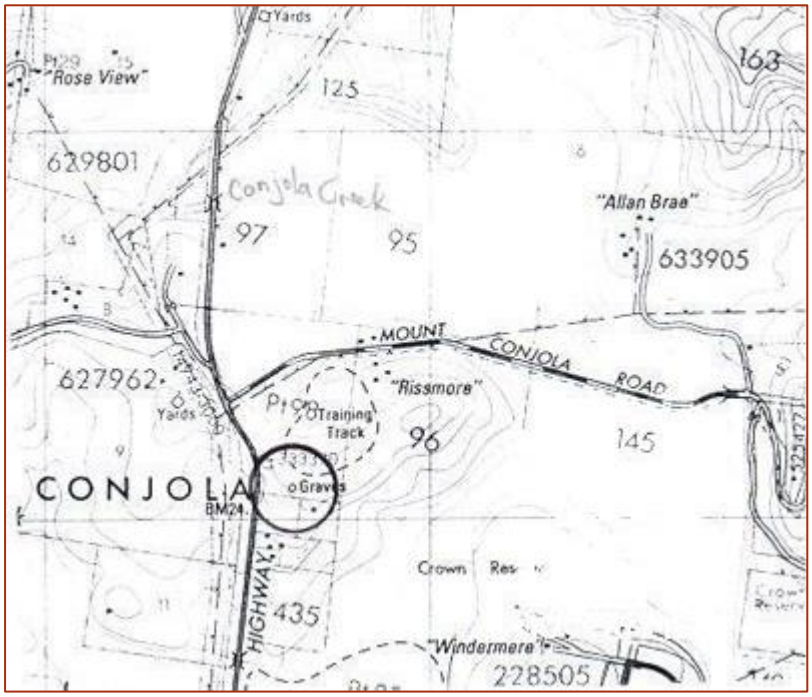

Figure 4. The Murray Family Cemetery is circled on the map. The road marked Mount Conjola Road is currently referred to as Murrays Road.

3.2. Statement of significance from NSW State Heritage Inventory

The Conjola timber trestle bridge (hereafter referred to as Murrays Road Bridge, Murrays Bridge or the bridge) is described as follows:

Construction years start to finish: 1883-1902

Physical Description

The single lane bridge originally consisted of five spans and is 36m long. The Bridge now consists of 6 spans all with timber cross decking and running planks supported by 4 timber girders on piles. The pile sets having 3 piles braced with headstock and corbels. The western abutment consists of timber wing walls, piles and gravel boards. Handrails consist of timber post top rail and mid rail. Top rail is angled at 45 degrees. The listing includes Murrays Bridge, the roadway approaches and the Conjola Creek embankments. It is apparent that the timber bridge has been repaired on many occasions.

The heritage significance of the bridge is recorded as:

Statement Of Significance

Important surviving example of an early timber bridge in the southern area of the city. Local Significance (Shoalhaven).

4. Physical Evidence

4.1. Murrays Road

Murrays Road runs from the Princes Highway in the west travelling east to Conjola Creek. The road crosses Murray's Flat the original farm established in 1855 by James Murray. To the north is 'Allan Brae', the farm established by Ken Murray and still occupied by Mrs Ken Murray, Carl Murray and his wife and children. To the south is 'Rissmore' originally the property of Bede Murray and Edi Murray, Mrs Edi Murray still resides at the property. The road was also referred to as the road to Red Head (Bendalong) through Murray's Flat.

The road crosses Conjola Creek to join with roads to private properties. Previously this road provided public access to Bendalong Road. Bendalong Road now links to the Princes Highway further north.

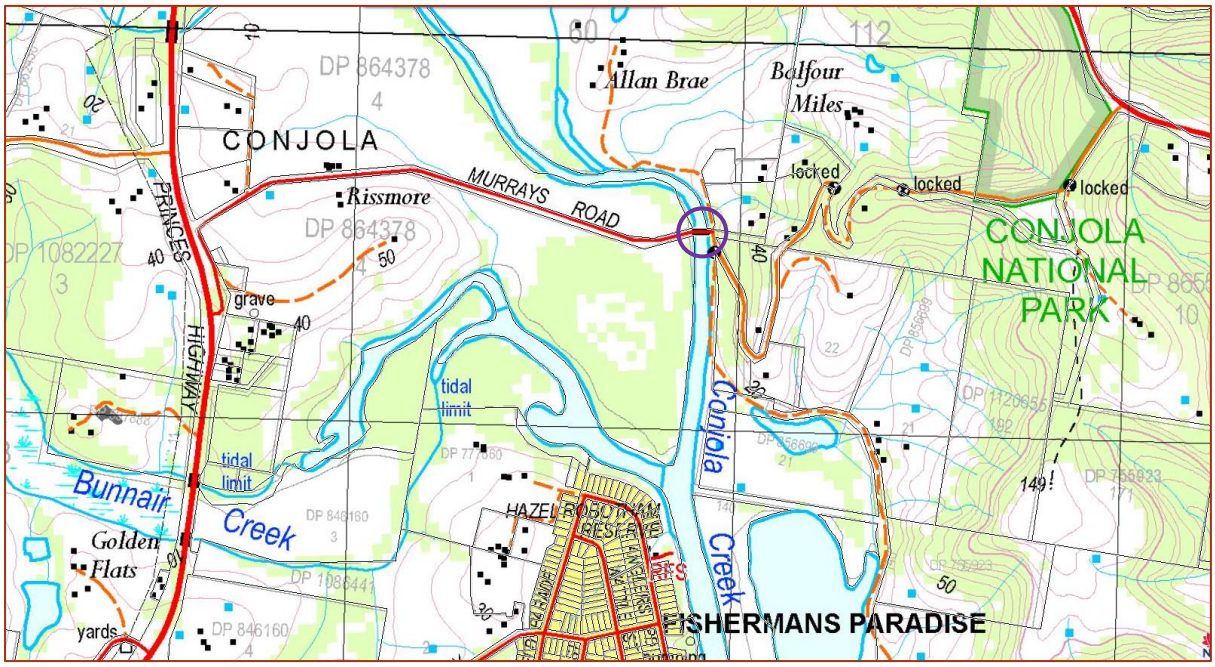

Figure 5. Topographic map showing Murrays Road. The bridge is circled. (NSW Government Spatial Services, 2021)

4.2. Murrays Road Bridge

The bridge crossing Conjola Creek at Murrays Road is a 5-span timber trestle and beam bridge 35 metres long. It is a single lane, high-level bridge with a 30-tonne load capacity. The Murrays Road Bridge is an example of a bridge repaired on numerous occasions which was the norm for timber beam bridges.

4.2.1. Description

Murrays Road Bridge is supported on the eastern end by a stone abutment. The stone is stacked and without mortar and forms a retaining wall to the road at eastern end of the bridge. At the other end is a horizontally laid retaining wall of butted timber planks behind four piles.

There are four trestle supports comprised of 3 round section piles each connected by diagonal sawn cross bracing and a horizontal bottom brace. A sawn stringer spans either side of the three piles supported on the outer edge by headstocks. Round section timber girders that have been made flat on the upper surface to accommodate the decking. Where the girders meet at the piers in opposing

spans they are supported by timber corbels. About half the girders are redundant as they were left in-situ when new girders were installed at the last major bridge maintenance.

The bridge is wide enough for one vehicle and has a 30 tonne capacity.

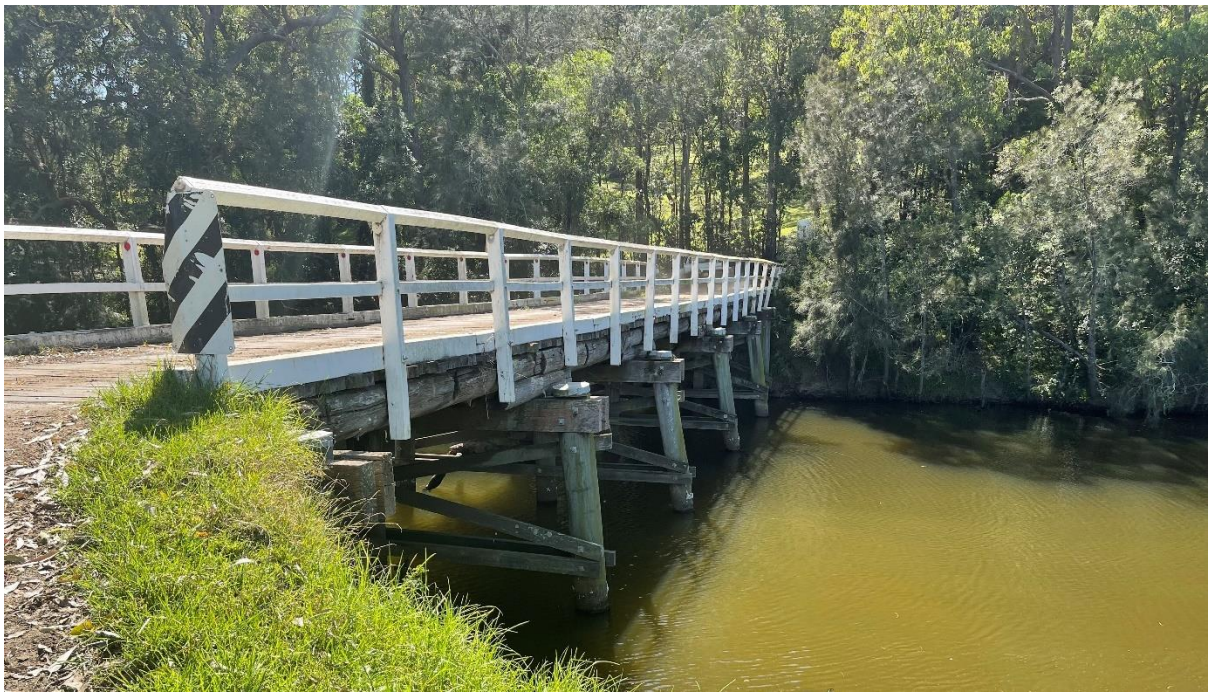

Figure 6. South side of bridge from western approach

Figure 7. North side of bridge from western approach

Figure 8. The bridge viewed from the eastern end looking towards Murrays Flats

Figure 9. Closer view of the bridge structure from the north

Figure 10. Western abutment. Note redundant girders have been left in-situ (Shoalhaven City Council,, 2021)

Figure 11. Eastern abutment (Shoalhaven City Council,, 2021)

Figure 12. Detail of girders and corbels on the first span (Shoalhaven City Council,, 2021)

Figure 13. Southern side detail

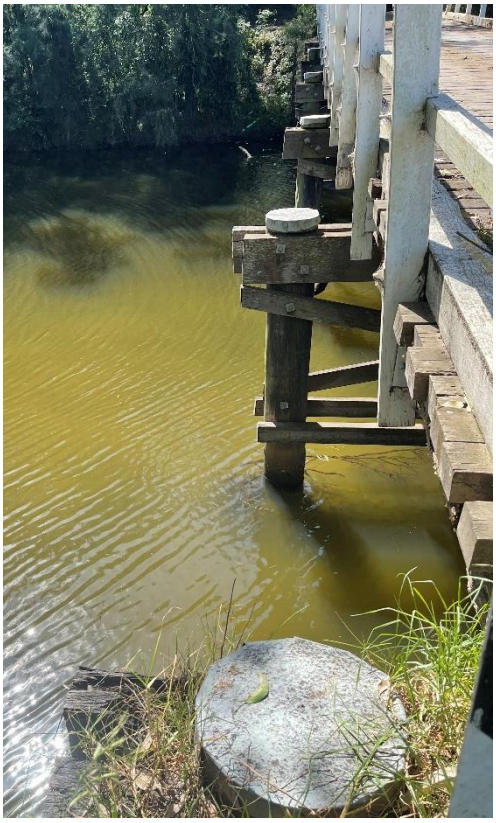

Figure 14. Northern side piles

Figure 15. Top of the bridge from western approach

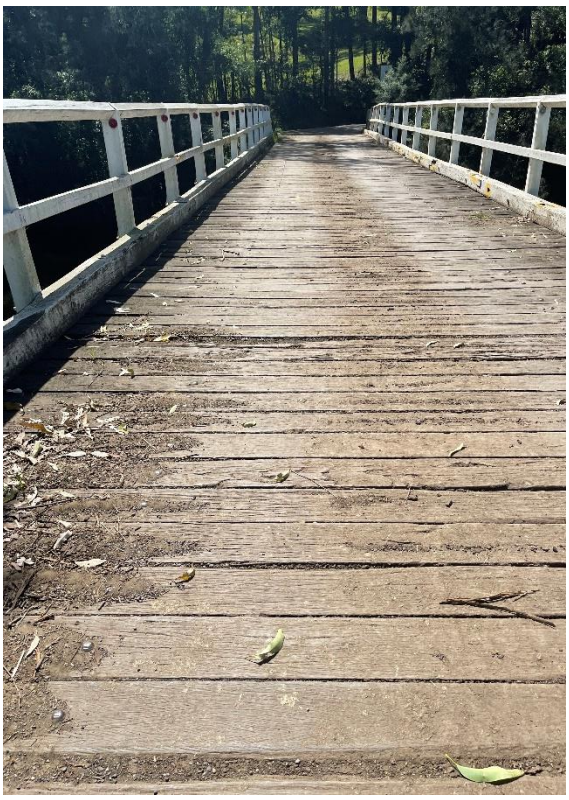

Figure 16. Decking and railings

4.3. Modifications

Timber beam road bridges generally last between 25 and fifty years (Fraser). Murrays Road Bridge has been repaired numerous times and on at least one occasion has been rebuilt.

A search of Shoalhaven City Council archives provided documentation from 1982 to 1996, table 1 is a summary of information in these files.

Table 1. Council files[1] provide reference to repairs between 1976 and 1996

Date	Description
1976	Initial signs of structural deterioration, major repairs would be required in the future. An item was included in bridge works for $25,000.
1976-1982	Maintenance was carried out. A girder on the eastern span broke. Bridge in dangerous condition. Bridge closed except for pedestrians and cattle.
8 March 1982	Council resolved to replace the whole superstructure for a cost of $35,000.
27 May 1982	Timber was purchased for the bridge costing $12,758
10 March 1995	Council resolved that an amount of $40,00 be voted for an urgent survey, investigation and design works to rehabilitate or replace Murrays Bridge. . .
16 May 1995	Report of General Manager. The amount of $40,000 voted for survey, investigation and design works be used on the rehabilitation of Murrays Road Bridge with the objective of bringing the bridge into service with a 20 tonne load level.
5 March 1996	Bridge works completed. Load limit raised to 20 tonne from 2 tonne.

The bridge now has a load limit of 30 tonne, therefore further work must have been done to raise the limit from 20 tonne.

4.4. Condition

The following assessment is based upon the document *Level Inspection Report Asset ID – 11028445 Murrays Road Bridge (1.635)* by R. Ford and A. Manly, Shoalhaven City Council, Dated 18/11/2021. (Shoalhaven City Council,, 2021)

Summary of findings

Substructure at abutment 2 is nonvisible. All original superstructure components are defective. Strengthening components are showing signs of rotting and splitting. Kerbs and rails are rotting with section loss. Decking is loose and failing in some locations. Timber drill test is required on some

[1] Shoalhaven City Council maintenance file 95/1328 and project file 95/25.

girders to determine the structural integrity of the component. Recommend assessment by a structural engineer to revise load rating. (Shoalhaven City Council,, 2021)

The condition report shows that the bridge is poor condition and that the load limit may need to be lowered.

5. Historical Background

5.1. Early history

5.1.1. Indigenous history

Yuin (also Djuwin) is the name Aboriginal people living between the Shoalhaven River and Malacoota on the South Coast of NSW use to refer to themselves. Yuin has also been used to describe Aboriginal people living between the Victorian border and northern Illawarra. According to Rose the term "Yuin" would be more adequately translated as "our people", or we the people (Rose 1990: 10). Howitt also used the term Yuin freely in his 1904 work. Aboriginal people of the south coast refer to themselves as the saltwater people of the NSW South Coast. Important places for the Yuin are Jerrinja, Wreck Bay, Pigeon Cottage/Didthul, Gulaga, Najanuga, Baranguba, Wallaga Lake and Mumbulla Mountain.

An article published in the Shoalhaven Telegraph in 1934 described a conversation with a local Aboriginal man called Gidgee at Wandandian. He described himself as belonging to the Wandandian tribe whose territory "was bounded on the on the north by a line running along a green flat now known as Sussex inlet to Lake Conjola and away back to the mountains on the west." He described the other side of the lake was the country of the Conjola tribe. Game and food was plentiful both on land and in the lake and sea, with good fishing, oysters, wallabies, wallaroos, emus and kangaroos.

5.1.2. European expansion

Following the initial European exploration of the Shoalhaven River in 1805, cedar-getting became the main industry of the area, but any further development was curtailed by a lack of access to the interior, particularly the Southern Highlands. Throughout the 1810s several explorers attempted to find practical routes to the area, with Charles Throsby finally surveying a good route in 1821 through Tallaganda Shire, although the route itself was not developed at this time. Throughout the 1830s the increased amount of produce and wealth created by the pastoralists of the Southern Highlands and Monaro and the unsuitableness of the Great South Road for transporting goods to Sydney led to demand for an easier and more efficient route. One such alternative route was Throsby's down to the coast which would allow produce, and in particular wool, to then be shipped to Sydney or exported straight to England.

The Wool Road from Braidwood to Jervis Bay (South Huskisson or present-day Vincentia) via Nerriga, Sassafras, and Wandandian, was constructed using convict labour during 1841. The road was financed by the landowners around Jervis Bay and the Southern Highlands and Monaro who raised £5000 for its construction, with the only government assistance being the loan of the 70 convicts and overseers. Its construction brought about a land boom in the Shoalhaven area during the early 1840s as speculators envisioned the creation of a large port that would ship all manner of goods

produced in the South Coast and Southern Highlands to Sydney. Following its opening it did act as a spur for the establishment of regular coastal shipping between Jervis Bay and Sydney, but this trade did not last. A bad drought in 1843 firstly brought about a lessening in traffic to Jervis Bay and then agitation by landowners and businessmen along the Great Southern Road who were losing trade brought about the cessation of the use of the Wool Road by 1844.

In the meantime, shipping from Sydney to Jervis Bay lead to rise of communities in Huskisson and South Huskisson. A convict transport called the Hive was wrecked on Bherwerre Beach, in 1835 with significant numbers of survivors who were aided by the local Aboriginal community.

Reverend Thomas Kendall (1788-1832) of Lincolnshire, was the earliest European to take up land in the district in the vicinity of Conjola. He was granted 1280 acres in 1827 on Narrawallee Creek where he cut and transported Cedar between 1828 and 1832 (Ewin). Another early settler was Thomas Florance who took up 1280 acres next to Kendalls.

The earliest European settlement around Conjola Lake was on its western side. A school opened at 'Congola' in 1847 and then changed its name to Conjola in 1877. There were early farms at Narrawallee, Yatte Yattah and Conjola. Access to the eastern side of the lake was provided in 1859 when a bridge was built to provide access to seven properties on the eastern side of Conjola Creek. This bridge was later rebuilt in 1883 and is now known as Murrays bridge. The bridge remained the main access into Bendalong, Manyana and Cunjurong Point until the latter half of the 20th century. (McAndrew, 1991)

In the late 19th century Conjola was one of seven small town centres south of Berry's Coolangatta. Schools opened at Red Head and Yatte Yattah in 1879. With timber getting and increased farming came greater levels of settlement and demands for churches, schools, postal services and other services. Conjola was dominated by Irish Catholics, the first of whom was Charles Murray. Seven generations of Murrays undertook various pursuits there including farming and dairying. A report from a local Postal Inspector in 1878 stated that at that time there were 11 families in Conjola and about 35 at Red Head. In 1914 the Murray family gave land for the erection of a St Patrick's Roman Catholic Church at Conjola.

5.1.3. Sunny Hills

To the south east of Conjola Creek was the farm owned by Francis Hobbs. The farm, called Sunny Hills had a frontage to Lake Conjola. The farm was one of the early places for tourism on the lake. From the 1920s visitors would come to Sunny Hills on boat tours around the lake. In the 1950s and 1960s the farm provided tourist accommodation.

5.1.4. The Murray Family

Charles Murray (1792-1872) emigrated to New South Wales in the 1840s from County Fermanagh, Ireland, due to extreme famine in Ireland. James Murray took up 500 acres in Conjola in 1857. James Murray (1822-1879) marked out the road between Milton and Wandandian and also advocated for establishment of a school at Conjola. Phillip Murray (1824-1880) owned land at Yatte Yattah of which he donated one acre for the Yatte Yattah school in 1877. Charles Mordant Murray (1859-1949) and his brother James (1861-1949) founded the Conjola Butter Factory in 1895.

The family let out some of their farm holdings for tender and over the generations acquired a reputation as breeders of racehorses. Charles Mordant Murray was a horse - fancier who was President of the Race Meetings and provided horses to the Prince of Wales and Lord Mountbatten

when they visited the Naval College at Jervis Bay in 1920 and Conjola and surrounding districts. Their property they had a training track for horses (McAndrew, 1991).

The farm owned by James Murray was located on the western sides of Murrays Road (Parish portions 95, 96 and 145). Edward Murray owned 170acres across Conjola Creek (Parish portions 100 and 101). Charles and James Murray also owned land to further west on both sides of the Princes Highway. (NSW Land Registry Services, 2022)

The Murray Family Cemetery is located on Lot4 DP864378. Members of the Murray family still live in Conjola and continue to have horses or operate dairy farms.

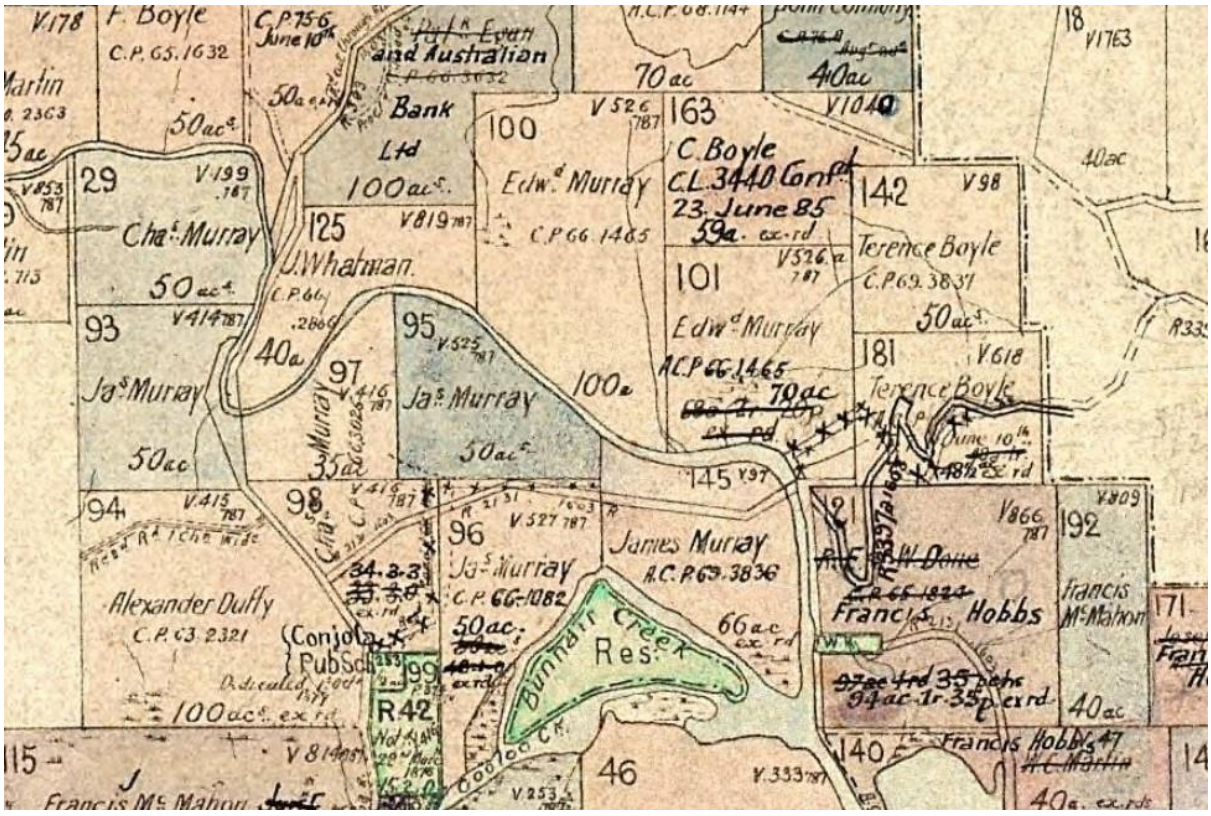

Figure 17. 1893 Parish Map showing lands owned by the Murray family at Conjola (NSW Land Registry Services, 2022)

The Murrays Road Bridge was vital to the operation of the Murray family farms and continues to be today. Brothers Carl and Leon Murray operate a dairy farm grazing cows on the west side of the creek and milking on the east. Their cows cross over the bridge in the morning to graze and back again in the evening. The milk tanker crosses the bridge to collect the milk from the dairy. The load limit of the bridge is a limiting factor in milk supply.

5.2. Contextual history

5.2.1. Timber getting and saw mills

Timber getting was an important industry in this area of the Shoalhaven. In the 1850s farms were being cleared in the forests simultaneously serving the timber industry. As Cedar became scarce other timbers such as ironbark, turpentine, mahogany, blackbutt, spotted gum and coachwood were harvested. The first sawmills were established in the 1860s. Ulladulla Harbour played a significant

role in the shipping of timber to other ports. There were around 70 sawmills in peak period between Nowra and Kiola.

Around Conjola Lake timber was a significant industry. In 1878 the Goodlet and Smith Saw Mill was established at Red Head next to what became Bendalong Boat Harbour. Over the years of its use substantial numbers of sleepers were milled for the new railway lines that were being constructed between 1860s and 1880s. There was also considerable demand for timber in the Illawarra mining industry which was thriving at the end of the 19th century before the 1890s depression. Another mill was built at Red Head by Kirton and Earnshaw Ltd and worked by Tetley Davis and Reid.

5.2.2. Roads and Bridges

In 1856 the recently formed NSW Government amalgamated the office of the Surveyor of Roads and bridges with the Surveyors Office and Lands Office to form the Department of Lands and Public Works (later Department of Public Works). The Department was given a statutory basis in 1858 with the passing of the Main Roads Act. Between 1858 and 1906, when the Local Government Act was introduced, the construction and maintenance of all main roads and bridges was the responsibility of the Department of Public Works. (Roads and Maritime Services, 2014)

The Robertson Lands Act of 1860s led to expansion of settlement made possible by smaller lots. This in turn lead to increased demand for transport to move people, mail, goods and services and as well as industry, which between Conjola and Red Head was dominated by saw milling. The Commissioner for Roads and Bridges introduced standards for road and bridge construction as well as a system for maintenance.

A survey was made of the road to Red Head in 1881 with the intent to create a deviation as the existing route was too steep. The plan of the surveyor indicates there was an existing bridge over Conjola Creek. (Department of Lands, 1881)

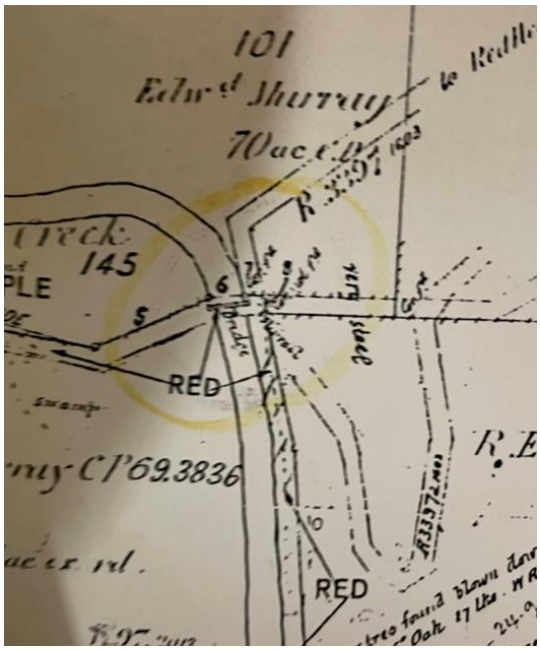

Figure 18. 1881 survey indicating a bridge was in place at this time. (Department of Lands, 1881)

The Municipalities Act was introduced in 1858 creating local authorities who were given the responsibility of local roads. Clyde Shire was in operation from 7 March 1906 to 30 June 1948 when

it became part of the recently established Shoalhaven Shire Council. In December 1906 the newly formed Council was informed by the Department of Public Works that all roads would be taken over by Council from Jan 1st. The newly formed Shire had no engineer and reached out to other councils such as Cambewarra and Nowra with the view to having a joint appointment.

State Archives of NSW holds a 1907 document which lists of all the roads within Clyde Shire together with accompanying maps. Murrays Road is labelled number 46, Red Head Road.

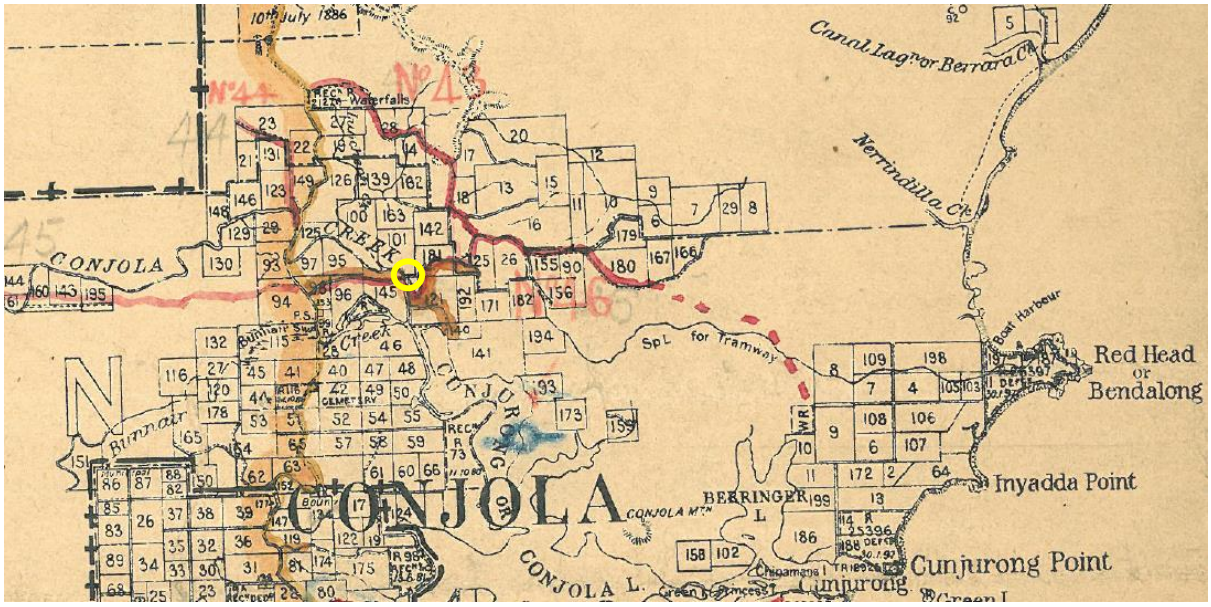

Figure 19. Part of a map of Clyde Shire showing public roads. Roads Branch file Clyde Shire Council 1907 The road from Conjola to Red Head is numbered 46. The bridge location is circled. (State Archives of NSW)

The same branch file contains correspondence from C. Edwards for the Acting Metropolitan District Surveyor dated 20/9/1910 in response to an application by the Clyde Shire for control of roads, County of St Vincent. Road 46 was described as being reserved or provided in a Crown subdivision and established in part and approved to be in the control of Clyde Shire Council. The original Murrays Road Bridge is therefore assumed to have been constructed by the Department of Public Works (circa 1893) and then managed by Clyde Shire from 1907. When the previous bridge shown in the 1881 survey was built is not known.

5.2.3. Timber Bridges

By the end of the 19th century there were approximately 4000 timber beam bridges in Australia. Structural hardwood was readily available and in regional areas such as Conjola it could be sourced close to where the bridges were to be built. Ironbark, turpentine, mahogany, blackbutt, spotted gum and coachwood were harvested but for bridge building hardwoods were preferred for their strength and durability. From 1861 Government pressure as well as practical reasons encouraged the building of bridges using local materials. (Fraser)

The engineering of bridges in NSW from 1850 to 1915 was dominated by British and American technology. In the latter half of the 19th century most bridges constructed were beam or girder type.

Early bridges were built with hand tools, the broad axe, the adze, the hand auger and chalk line. The use of hardwoods such as Blackbutt and Ironbark meant the builders needed to be particularly

skilled. The contractor would have a consignment of timber delivered from the mill, often shaped at the mill prior to delivery. The most difficult construction phase was driving the piers for the trestles.

Public Works introduced the parallel girder which had 1.5 metre centres (5 feet) for deck widths ranging from 3 metres (10 feet) to 7.6 metres (25 feet) the latter including a footway. The inner beams were round timbers with flat tops to receive the decking, and the undersides were also flattened at the pier or trestle supports. The outer girders were dressed square, hewn in the past but sawn more recently. The range of spans is 7.6 metres (25 feet) with single 300 x 300 mm girders through to 13.7 m (45 feet) in which case doubled or compound girders are used with corbels 2.4 m (8 feet) long over piers. There are two classes of beam bridges for roads, low level, and high-level bridges. (Fraser)

The evolution of a different structural system came about due to the limitations of spans for timber girders which were restricted to 9 metres to 13 metres. This was to lead to the dominance of timber trussed bridges (Fraser). Much has been written about timber truss bridges through the state agency requirements under S.170 of the NSW Heritage Act. Local government managed timber beam bridges are generally managed on a case by case basis without the benefit of comparative history resources of the state government.

Figure 6.12: *Hewing a log with a broad axe. Source: VicRoads, Roads and Maritime copy*

Figure 20. Picture showing a log being hewn by hand with a broad axe. Date unknown. (Roads and Maritime Services, 2014)

Figure 6.21: *Gin pole is at rear centre with ropes extended to place a girder log, with piling derrick at rear (R). Source: Roads and Maritime*

Figure 21. A timber girder bridge under construction, Date unknown. (Roads and Maritime Services, 2014)

5.3. Murrays Road

The first bridge over Conjola Creek between Murrays Flat and Red Head was constructed circa 1859. It was rebuilt between 1883 and 1902. (NSW Heritage, 2022) The road was officially surveyed on 29 March 1881.

Kiama Independent listed the results of the Parliamentary Estimates Committee which included 300 pounds for a bridge on Conjola Creek, no further detail provided. (Kiama Independent, 1877) The finalised list of proposed roads grants was published in July 1877, showing 300 pounds contribution to Conjola Creek Bridge. (The Sydney Mail and NSW Advertiser, 1877)

The notification of the road within James Murrays lands, being part of the road from Conjola to Redhead was officially announced in 1883. (Gazette Oct 1883)

In 1893 the Ulladulla and Milton Times reported that the decking on the Murrays Road Bridge was in a very unsafe condition. According to the article half the bridge was re-decked six months previous and retarred, along with new kerb logs. The article went on to say this work was a waste as it did not re-deck the whole bridge to allow for later kerb replacement and tarring. (The Ulladulla and Milton Times, 1893)

In 1905 the H. A. Blomfield, District Engineer called for tenders for the road from Conjola to Red Head. The works were not specified as the advertisement was for contracts for a large number of other roads. (The Shoalhaven Telegraph, 1905) The lowest contract received was from S. Parker for £78 17 s. (Road Contracts, 1905) Parker must not have proceeded with the works as fresh tenders were called in 1906.

The Ulladulla and Milton Times reported in January 1908 an update on Clyde Shire that mentioned the bridge at Lower Conjola Creek.

> *All of the bridges, or nearly all have been overhauled and painted. Practically a new and extensive one at lower Conjola been erected, and the roads, notwithstanding the severe*

traffic they have been subjected to by timber hauling, left in a far better state. (Milton and Ulladulla Times, 1908)

In 1909 the summary of expenditure on roads and bridges Lower Conjola to Red Head was £24 12 s. 6 d. The Shire Engineer in May 1911 gave a lengthy report to Clyde Shire Council in which he said that the road gang had been employed for the better part of a month in the vicinity of Conjola on the Red Head Road. Throughout 1934 and 1935 Clyde Council recorded that the road to Red Head from Murrays Flat was often wet and corrugated and during bushfires was subject to falling timbers.

In 1932 tenders were called by the Main Roads Board of New South Wales for the supply and delivery of round and sawn timber for girders, piles, deck planks etc. for the bridge over Conjola Creek near Conjola, Princes Highway (The Nowra Leader, 1932). The 1899 Parish Map shows Murrays Road as a formed road passing through portions 98, 96 and 145 where it the crosses Conjola Creek and continues through portion 121 and on to Red Point (Bendalong).

Timber cartage from the Red Head timber mills took its toll on the road to the highway. In 1940 Shoalhaven News reprinted a letter from Charles Mordant Murray regarding the state of Murrays Road. The road was described as in a 'very very bad' state as a result of heavy timber traffic from Davis Mill at Red Head. The damage to the road would indicate that the heavy vehicles carrying timber would also have had an impact on the timber trestle bridge over Conjola Creek.

Table 2. Historical Timeline of Murrays Road Bridge

Date	Event
1857	James Murray took up 500 acres in Conjola
	Edward Murray owned 170acres across Conjola Creek
1859	Anecdotal evidence suggests a bridge was first constructed over Conjola Creek
1877	Parliamentary Estimates Committee included 300 pounds for a bridge on Conjola Creek
1881	Road survey for a deviation shows a bridge over Conjola Creek
1883	Road to Red Head from Conjola through Murray's Flats officially gazetted
1883-1902	A timber beam and trestle bridge is built by the Department of Public Works over Conjola Creek on the road to Red Head
1907 - 1948	Clyde Shire Council has responsibility for bridge maintenance
1907 - 1908	Clyde Shire Council does an extensive upgrade to Murrays Road Bridge
1948	Clyde Shire amalgamated into new Shoalhaven Shire Council
1948 – present	Shoalhaven Council has care and control of Murrays Road Bridge
1970s	Road from Conjola to Bendalong (Red Head) opened north of Murrays Road. Murrays Road closed to Bendalong traffic.

6. Other timber beam bridges

6.1.1. Timber beam bridges in Shoalhaven

Bridges were an important part of the growth and development of the Shoalhaven. For example, the opening of the bridge over the Shoalhaven River in Nowra in 1880 dramatically increased growth which lead to Nowra becoming a seat of governance and commerce.

Timber beam bridges were once common in the Shoalhaven. A surviving example of a timber trestle and girder bridge can be found at Falls Creek. The bridge is now a ruin but is still in-situ crossing Currumbene Creek. It is a trestle and beam bridge of the same construction detail as the Murrays Road Bridge and was built as part of the Princes Highway.

Figure 22. Old Currumbene Creek Bridge

Figure 23. Old Currumbene Creek Bridge at Falls Creek

Another timber beam bridge on trestles in the Shoalhaven is Pettys bridge on Croobyar Road, Croobyar. An inspection of Pettys Bridge by Council's asset officers revealed significant structural issues requiring immediate rectification. The bridge has been assessed and is programmed for replacement with a concrete bridge.

Figure 24. Pettys Bridge, Croobyar Road in March 2020 (Manly, 2020)

Harpers Creek Bridge, Kangaroo Valley Road, Kangaroo Valley was included in the Shoalhaven Heritage Study however the bridge was not located for this assessment report.

Once common, timber beam bridges are now rare in the Shoalhaven. The Conjola Creek timber trestle bridge is the only timber bridge listed on Shoalhaven Local Environmental Plan 2014.

6.1.2. Timber beam bridges in NSW

A full search of the Australian Heritage Database – NSW did not reveal any timber beam/girder bridges. A small number of entries were for timber truss bridges.

A search of the NSW Heritage database revealed there are several timber beam bridges listed on local environmental plan heritage schedules. Many were no longer in use, whilst some were continuing their original function as a road bridge. Of the four bridges identified for comparative purposes only two appear to be operational. Figures 30 to 33 show the four examples found in the NSW Heritage database.

Further research was conducted through the NSW Heritage Advisors Network and several more examples were located. A comparative analysis is in Appendix C.

Terrabile Creek Bridge, National Park Road, Curban NSW 2827

Figure 25. Terrabile Creek Bridge Gilgandra Shire (NSW Heritage, 2022)

Clifton Bridge, Bridaree-Thuddungra Road, Maimuru NSW 2594

Figure 26. Clifton Bridge (NSW Heritage, 2022)

The Clifton Bridge is no longer in use, it has been fenced off at either end.

Brownlow Hill Road Bridge, Brownlow loop Road, Brownlow Hill

Figure 27. Brownlow Hill Road Bridge in 2006 (NSW Heritage, 2022)

The Brownlow Hill Bridge was in poor condition in 2006, it is not known if it has been conserved.

Green pigeon bridge, near 472 Green Pigeon Road, Green Pigeon NSW 2474

Figure 28. Green pigeon bridge in 2009 (NSW Heritage, 2022)

Photographs in the heritage database show the Green Pigeon Bridge to be still in use as a road bridge.

High level timber trestle and girder bridges are rare in NSW heritage schedules. Research conducted for this report indicates that timber beam bridges are becoming increasingly rare in NSW. Further research is needed to investigate and document this diminishing heritage resource.

7. Significance assessment

7.1. Existing statement of heritage significance (NSW Heritage, 2022)

The following statement is the accepted significance of Conjola timber trestle bridge, Murrays Road, Conjola, Part of Conjola Creek, adjacent to Lot 4, DP 864378, Local Significance, Item number 164

Statement Of Significance

Important surviving example of an early timber bridge in the southern area of the city. Local Significance (Shoalhaven). (NSW Heritage, 2022)

7.2. Significance assessment criteria

The following criteria have been used in the assessment of cultural heritage significance. These criteria are the standard criteria for use in NSW that have been prepared for use by the Heritage Division of the NSW Office of Environment and Heritage and adapted here to apply to Shoalhaven City. (NSW Heritage, Premier and Cabinet)

For a place to be deemed to be significant to Shoalhaven City it must meet at least one of the following criteria:

a) an item is important in the course, or pattern, of Shoalhaven City's cultural or natural history;
b) an item has strong or special association with the life or works of a person, or group of persons, of importance in Shoalhaven City's cultural or natural history;
c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in Shoalhaven City;
d) an item has strong or special association with a particular community or cultural group in Shoalhaven City for social, cultural or spiritual reasons;
e) an item has potential to yield information that will contribute to an understanding of Shoalhaven City's cultural or natural history;
f) an item possesses uncommon, rare or endangered aspects of Shoalhaven City's cultural or natural history;
g) an item is important in demonstrating the principal characteristics of a class of Shoalhaven City's - cultural or natural places; or - cultural or natural environments.

The item can also be significant to the Region, the State of NSW or the Nation.

7.3. Assessment using significance assessment criteria

a) an item is important in the course, or pattern, of Shoalhaven's cultural or natural history;

Murrays Road Bridge provides important physical evidence of the early settlement history of Conjola and the Shoalhaven. The development history of the dairy industry is demonstrated through the continuous occupation by the one family up to present times and the importance of the bridge to the farm which was on both sides of Conjola Creek.

Murrays Road Bridge is significant as a crucial piece of infrastructure on the historic road which connected Conjola and Red Head until the Bendalong Road was upgraded in the 1970s. The road and the bridge were historically important in the timber industry providing a route for timber trucks from timber mills such as Davis's Mill at Red Head.

The bridge provides evidence of the change in administration of roads and bridges in the early twentieth century when responsibility for local roads and bridges was transferred from the State to local councils.

The bridge has some historic value as it facilitated access to Sunny Hills an example of mid twentieth century tourism in Conjola.

b) an item has strong or special association with the life or works of a person, or group of persons, of importance in Shoalhaven's cultural or natural history;

Murrays Road Bridge has historical association with generations of the Murray family, pioneers of Conjola since 1859 and dairy farmers who continue to farm on both sides of Conjola Creek using the bridge crossing to access both sides of the farm.

The bridge has historical association with Clyde Shire Council who was responsible for its upkeep from 1907 to 1948 during which time the bridge provided access over Conjola Creek on the road from Conjola to Red Head (Bendalong).

The bridge has historic association with Shoalhaven Shire and Shoalhaven City Council who have maintained the bridge since 1948.

c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in Shoalhaven;

Murrays Road Bridge is an excellent example of a high-level timber beam bridge on trestles. The bridge provides physical evidence of the late 19th century construction of timber beam bridges. The bridge provides an example of a timber beam bridge constructed by Public Works in the last years prior to local roads and bridges becoming the responsibility of local councils.

d) an item has strong or special association with a particular community or cultural group in Shoalhaven for social, cultural or spiritual reasons;

The Murrays Road Bridge has special association for the Murray family for whom it has historic and practical significance. The bridge contributes to the sense of place of Conjola Creek and is valued by the local community.

e) an item has potential to yield information that will contribute to an understanding of Shoalhaven's cultural or natural history;

The archaeological potential is not known as it is beyond the scope of this report. Until proven this criterion is not met.

f) an item possesses uncommon, rare or endangered aspects of Shoalhaven's cultural or natural history;

The Murrays Road Bridge is a rare example of a high-level timber beam bridge on trestles in the Shoalhaven. The bridge is the only surviving operational timber beam bridge left in the Shoalhaven. Once extremely common the bridge type is now believed to be rare in NSW. Further work is required to establish its value at a State level.

g) an item is important in demonstrating the principal characteristics of a class of Shoalhaven's - cultural or natural places; or - cultural or natural environments.

Murrays Road bridge is an excellent example of a high-level timber beam bridge on trestles constructed in the late 19th century. The bridge is a representative example of a timber beam bridge construction and bridge carpentry.

7.4. Summary Statement of Significance

Murrays Road Bridge provides important physical evidence of the early settlement history of Conjola and the Shoalhaven. The development history of the dairy industry is demonstrated through the continuous occupation by the one family up to present times and the importance of the bridge to the farm which was on both sides of Conjola Creek. Murrays Road Bridge has historical association with generations of the Murray family, pioneers of Conjola since 1859 and dairy farmers who continue to farm on both sides of Conjola Creek using the bridge crossing to access both sides of the farm.

Murrays Road Bridge is an excellent example of a high-level timber beam bridge on trestles. The bridge provides physical evidence of the late 19th century construction of timber beam bridges. The bridge provides an example of a timber beam bridge constructed by the Department of Public Works in the last years prior to local roads and bridges becoming the responsibility of local councils.

Murrays Road Bridge is significant as a crucial piece of infrastructure on the historic road which connected Conjola and Red Head until the Bendalong Road was upgraded in the 1970s. The road and the bridge were historically important in the timber industry providing a route for timber trucks from timber mills such as Davis's Mill at Red Head.

The bridge provides evidence of the change in administration of roads and bridges in the early twentieth century when responsibility for local roads and bridges was transferred from the State to local councils. The bridge has historical association with Clyde Shire Council who was responsible for its upkeep from 1907 to 1948 during which time the bridge provided access over Conjola Creek on the road from Conjola to Red Head (Bendalong). The bridge has historic association with Shoalhaven Shire and Shoalhaven City Council who have maintained the bridge since 1948.

The Murrays Road Bridge has special association for the Murray family for whom it has historic and practical significance. The bridge contributes to the sense of place of Conjola Creek and is valued by the local community.

The Murrays Road Bridge is a rare example of a high-level timber beam bridge on trestles constructed in the late 19th century in the Shoalhaven. The bridge is the only surviving operational timber beam bridge left in the Shoalhaven. Once extremely common the bridge type is now believed to be rare in NSW.

8. Management Options

The following options are discussed directly in relation to the assessed heritage significance of Murrays Road Bridge. The bridge has been assessed as having heritage value and is noted for its rarity, with this in mind the following options are proposed for consideration.

8.1. Retention of the bridge as a working bridge

The bridge has been identified in the most recent condition report as in poor condition. It currently has a load limit of 30 tonne however the condition report recommends that this be reviewed by a structural engineer.

The condition report recommends drill testing on some girders and seeking the advice of a structural engineer. In order to establish whether or not the condition of the bridge can be rectified the advice of the condition report would need to be followed and the necessary repairs fully costed.

Keeping the bridge operational would maintain the heritage significance of the bridge.

8.2. Retention of the bridge for pedestrian traffic only.

A bridge carrying only pedestrians or bicycles still requires maintenance. Although it will no longer have the wear and tear of vehicle use, timber still deteriorates over time. The bridge would still require maintenance.

Maintaining the bridge for pedestrian traffic would maintain the heritage significance of the bridge.

8.3. Retention of the bridge as a ruin

The bridge could be closed to all traffic but not demolished and managed as a ruin.

> *A heritage ruin is defined as a place that currently, through abandonment, redundancy, or condition, is disused and incomplete, is no longer maintained and appears unlikely to regain its original or a substantive use, function, or purpose other than interpretation.* (Heritage Chairs and Officials of Australia and new Zealand (HCOANZ), 2013)
>
> For example, the timber trestle bridge at Falls Creek over Currumbene Creek is a ruin.

The Australian Government have published a guide to the conservation and management of ruins.[2] This document may assist Council if the decision is made to maintain the bridge as a ruin.

The heritage significance of the Murrays Road Bridge would be diminished by the loss of an operational use but its heritage values would still be evident in its physical evidence.

8.3.1. Interpretation

Should the bridge be retained as a non-operational bridge then an interpretation plan should be prepared to demonstrate how the story of the place can best be told.

> *Interpretation is about communicating the significance of a place and the incompleteness of a ruin makes effective interpretation even more important. Care should be taken not to impact the heritage values of a ruin through excessive interpretation.* (Heritage Chairs and Officials of Australia and new Zealand (HCOANZ), 2013)

8.4. Construction of a new bridge alongside the old timber bridge

A new bridge could be built alongside the old timber bridge using modern bridge construction methods. This would ensure the load limits could be maintained or upgraded. As seen in the

[2] https://www.awe.gov.au/parks-heritage/heritage/publications/ruins-guide-conservation-and-management

statement of significance for Murrays Road Bridge in section 7.4 of this report, the Murrays dairy farm is a significant part of the heritage value of the Murray Road Bridge. Keeping an operational bridge over Conjola Creek allows access to both sides of the Murray farm and its continued use as a dairy. To continue to operate as a dairy farm a milk tanker must have access to the eastern side of the farm requiring the load limit to be at least 30 tonnes.

The heritage significance of the Murrays Road Bridge would be diminished by its loss of an operational use. However, this would be mitigated against by allowing a new bridge that would support the heritage value of the Murrays dairy farm and providing interpretation at the site.

8.5. Demolition and construction of a new concrete bridge.

Demolition of the Murray Road timber beam bridge and construction of a new bridge on the same alignment would leave the Murray farm and other residents on the eastern side of the creek without access whilst the new bridge was constructed.

Demolition of the timber beam Murrays Road Bridge would have an adverse heritage impact. Due to the rarity of the bridge this course of action is not recommended.

8.6. Relocation of the bridge.

The heritage value of Murrays Road Bridge rests in its location. If the bridge were moved to a different location it would cease to have the significance it has in its current location.

Due to the adverse heritage impact this option is not recommended.

9. Conclusions

Timber, like any other structural material, has a tendency to deteriorate with time. If timber is protected from water, UV exposure and termites, it can last for centuries, but the timber in bridges in NSW is very exposed to all these agents of deterioration. The longitudinal sheeting on which vehicles drive lasts on average seven years before having to be replaced with new timbers. Round timber girders frequently found on approach spans last on average thirty years. Timber piles are also very susceptible to rot and termite attacks in the region just below the ground surface, so installation of new piles is a critical and regular aspect of bridge maintenance. (Roads and Maritime Services, 2014)

The Murrays Road Bridge is a rare timber beam bridge on trestles. This type of bridge was once very common in NSW, at one time there were at least 4000 timber beam bridges in NSW. Shoalhaven had many of these bridges, but Murrays Road bridge is the only one left in the Shoalhaven that is intact and currently operational. Murrays Road Bridge has high local heritage value. For this reason, it is recommended Shoalhaven City Council retain the bridge is such a way that its heritage value is conserved.

There are two options for the conservation of the heritage significance of Murrays Road Bridge:

1. Retain the bridge as an operational bridge by undertaking necessary repairs.
2. Construct a new bridge alongside and maintain the timber bridge as a ruin.

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Appendix A. NSW Heritage Assessing Heritage Significance

The NSW Government is responsible for the management of our cultural and natural heritage in partnership with local councils and the community. The NSW heritage management system consists of three steps in managing individual heritage items:

- **investigate significance**
- **assess significance**
- **manage significance**

The *NSW Heritage Manual* explains these steps, which apply to all kinds of heritage items, from individual houses and movable items to archaeological and industrial sites, conservation areas, landscapes and natural areas. They also apply to items of any level of significance, from local heritage significance to world heritage significance. In practical terms, however, the vast majority of items managed in New South Wales will be of local significance. A smaller number will be of State significance.

The chart below summarises the processes in the NSW heritage management system.

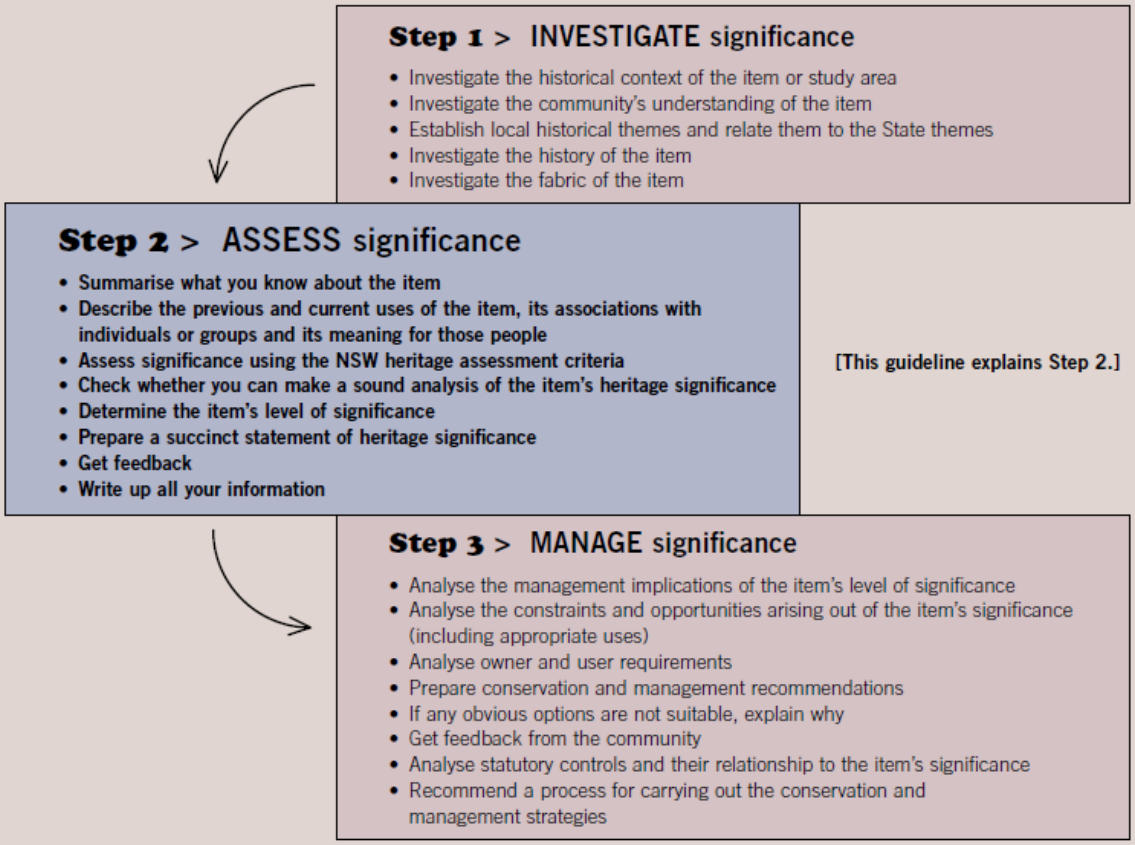

Figure 29. Page 2, Assessing heritage Significance, NSW Heritage Manual

Appendix B Glossary

Most of the following terms have been taken from The Timber Truss Book, (Roads and Maritime Services, 2014) and from the Timber Bridge Manual

abutment	the support for the far end of each outer span
Bolting strips	Longitudinal timber components (typically 200 mm x 100 mm) between girders on the underside of the decking used to bolt the decking together
compression	pushing force, opposite to tension – see forces
corbels	Longitudinal timber bearing members under girders providing support and some continuity between girders in adjacent spans
deck	Closely spaced sawn timbers up to 125 mm deep (200 mm to 250 mm wide) supported on girders
flitch	one of two elements bolted together with spacers to form a single member
Flush seal wearing surface	Bitumen spray seal with crushed rock used to seal the timber deck surface and provide traction for vehicles
girder	a longitudinal member spanning piers and supporting the deck
Girder bridges	Term referring to structures where timber girders are the primary elements between supports. Also referred to as beam bridges.
headstock	horizontal member at top of pier or abutment to support corbels
laminated	three or more rows of parallel components joined together (by glue, bolts or stressed strand) to form a single member longer than each component
members	the elements, or parts, of a bridge
Pier	support for the adjacent ends of two spans, often comprising piles beneath a headstock and various horizontal and diagonal bracings
Pile	vertical or inclined member driven deep into the ground
Potted pile	vertical or inclined member placed in a hole dug out of rock where the soil is too shallow to drive a pile to sufficient depth
sawn	Girders or stringers which have been sawn to a rectangular cross section
Stringer	longitudinal member spanning cross girders supporting a deck
wale	horizontal timber members in piers designed to provide lateral stiffness

Appendix C – Other examples of Timber Beam Bridges in NSW

The following examples were supplied my members of the NSW Heritage Network.

Figure 30. Bare Island Bridge, La Perouse NSW

Information from Robert Newton

Figure 31. Tumut Town Bridge, Tumut NSW

Information from Louise Halsey

- Baradine Creek Bridge, Baradine – I understand that this may have been subsequently demolished.
- Bennett Springs Timber Beam Bridge – This has subsequently been demolished and replaced.
- Coolbaggie Creek Bridge, Coolbaggie Nature Reserve - This is partly derelict but conservation was recommended.

Information from Ray Christison, High Ground Consulting

Figure 32. Bridge on private property at 427-507 Mulgoa Road, Mulgoa.

Information from Cameron Hartnell

Figure 33. Cuttagee Bridge, Tathra Bermagui Road, NSW. Part of the timber bridge remains at one end.

Information from Linda Mott

Nimmo River Bridge on the way to Lake Eucumbene. This bridge was not found as there was insufficient location details.

It is clear that more comparative work is required to establish how many high level timber beam bridges remain in NSW.