

Colemans Bridge Strengthening and Maintenance

Submissions report

Roads and Maritime Services | September 2019

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Prepared by GeoLINK Consulting Pty Ltd on behalf of Roads and Maritime
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Approval and authorisation

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Signed:	
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Executive summary

Purpose of this report

This submissions report summarises and responds to the issues raised through public consultation on the review of environmental factors (REF) for the strengthening and maintenance of Colemans Bridge (B2594). Colemans Bridge is listed as a heritage item of State significance on the State Heritage Register. Accordingly, an application to the NSW Heritage Office for a Section 57(2) exemption has been submitted and endorsed to allow the works to occur.

The proposal

Roads and Maritime Services (Roads and Maritime) propose to undertake bridge strengthening and maintenance on Colemans Bridge (B2594) on Union Street (MR544) over Leycester Creek, Lismore. The bridge is approached by Union Street (to the south-west) and Bridge Street (to the north) and in combination with Fawcett Bridge, provides an important link between the Lismore central business district (CBD) and South Lismore, as well as allied townships and farmland to the south and west. The work is required to improve the structural capacity of the bridge, which would keep Colemans Bridge serviceable.

Key features of the proposal include:

- Establishing a site compound located on a grassy area adjacent to the Winsome Hotel
- Re-stressing the stress laminated timber (SLT) deck
- Repairing the bridge wearing surface
- Minor footway repairs
- Strengthening the top chord of the Dare trusses with new truss lateral sway braces
- Replacing the traffic barrier
- Localised steel bottom chord corrosion repairs
- Timber trestle pier repairs
- Repainting of the bridge truss with hand tools to restore the appropriate heritage bridge colour scheme (steel elements black, timber elements white)
- Removal of vegetation within eight metres of the edge of the bridge to allow the works to be undertaken.

A more detailed description of the project can be found in the Colemans Bridge Maintenance and Strengthening REF, June 2019.

REF public display

Roads and Maritime placed the REF on public exhibition from 1 July to 29 July 2019 and invited submissions relating to the project.

The REF was made available online and printed copies were displayed at three locations (Lismore City Council offices, Lismore Library, Lismore Visitor Information Centre).

The project team held a community drop-in session that involved a staffed display at the Lismore Library on 23 July from 2:00 pm to 7:00 pm.

Key issues raised in submissions on the REF

Roads and Maritime received one submission from a local resident in response to the display of the REF. The submission did not object to the proposal but made a number of comments and queries in relation to the project. The submission raised issues with the proposal and other nearby infrastructure that can be categorised into the following themes:

- Colemans Bridge lighting
- Re-painting of the bridge
- Pedestrian access
- Bridge closure period
- Colemans bridge approaches
- Nearby rail bridges.

Environmental management measures

The REF for the Colemans Bridge maintenance and strengthening project identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (Section 6 of the REF).

After consideration of the issues raised in the public submissions and additional consultation with agencies, the safeguard and management measures of the REF have been reviewed. No changes are considered necessary to these safeguards based on the matters raised.

Next steps

Roads and Maritime is the determining authority for the REF and will assess the proposal, including the submissions report, and make a determination.

Roads and Maritime will continue to communicate with community members, government agencies and other stakeholders during the construction phase of the proposal.

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1. Introduction and background

1.1 The proposal

Roads and Maritime Services (Roads and Maritime) propose to undertake bridge strengthening and maintenance on Colemans Bridge (B2594) on Union Street (MR544) over Leycester Creek, Lismore. The bridge is approached by Union Street (to the south-west) and Bridge Street (to the north) and in combination with Fawcett Bridge, provides an important link between the Lismore CBD and South Lismore, as well as allied townships and farmland to the south and west. The work is required to improve the structural capacity of the bridge which would keep Colemans Bridge serviceable.

Colemans Bridge was built in 1908 and has two Dare-type truss spans; each 32 m long and comprising eight, four-metre long panels. The bridge has an overall length of almost 91 m and has two timber beam approach spans at the western end and one timber beam approach span at the eastern end. The central twin-cylinder wrought and cast iron pier, constructed c.1884, was part of the previous bridge that was removed. Colemans Bridge is of State heritage significance and is a rare and representative example of a Dare-type truss bridge. The bridge also exhibits less common features of Dare-type truss bridges, including the abovementioned central iron piers, which combined with having two-lanes, footways, and long spans, represents a level of technical significance according to heritage listing descriptions.

Key features of the proposal include:

- Establishing a site compound located on a grassy area adjacent to the Winsome Hotel
- Re-stressing the stress laminated timber (SLT) deck
- Repairing the bridge wearing course
- Minor footway repairs
- Strengthening the top chord of the Dare trusses with new truss lateral sway brace
- Replacing the traffic barrier
- Localised steel bottom chord corrosion repairs
- Timber trestle pier repairs
- Repainting of the bridge truss with hand tools to restore the appropriate heritage bridge colour scheme (steel elements black, timber elements white)
- Removal of vegetation within eight metres of the edge of the bridge to allow the works to be undertaken.

Construction is expected to commence in late 2019 and will take approximately eight months to complete. In order to minimise the period of disruption to the public and complete the works in the most efficient manner, the bridge would be closed to traffic on some weekends during the extent of the project and occasionally on the Monday following weekend closures. During closures alternate detours would be available in the order of between 2.8 km and 3.7 km, depending on the route taken, origin and destination. During the project, pedestrian access on one side of the bridge would be maintained at all times.

A more detailed description of the project can be found in the Colemans Bridge Maintenance and Strengthening REF, June 2019.

The location of the proposal is shown in Figure 1-1 and an overview of the proposal is provided in Figure 1-2.

Information shown is for illustrative purposes only



0 200

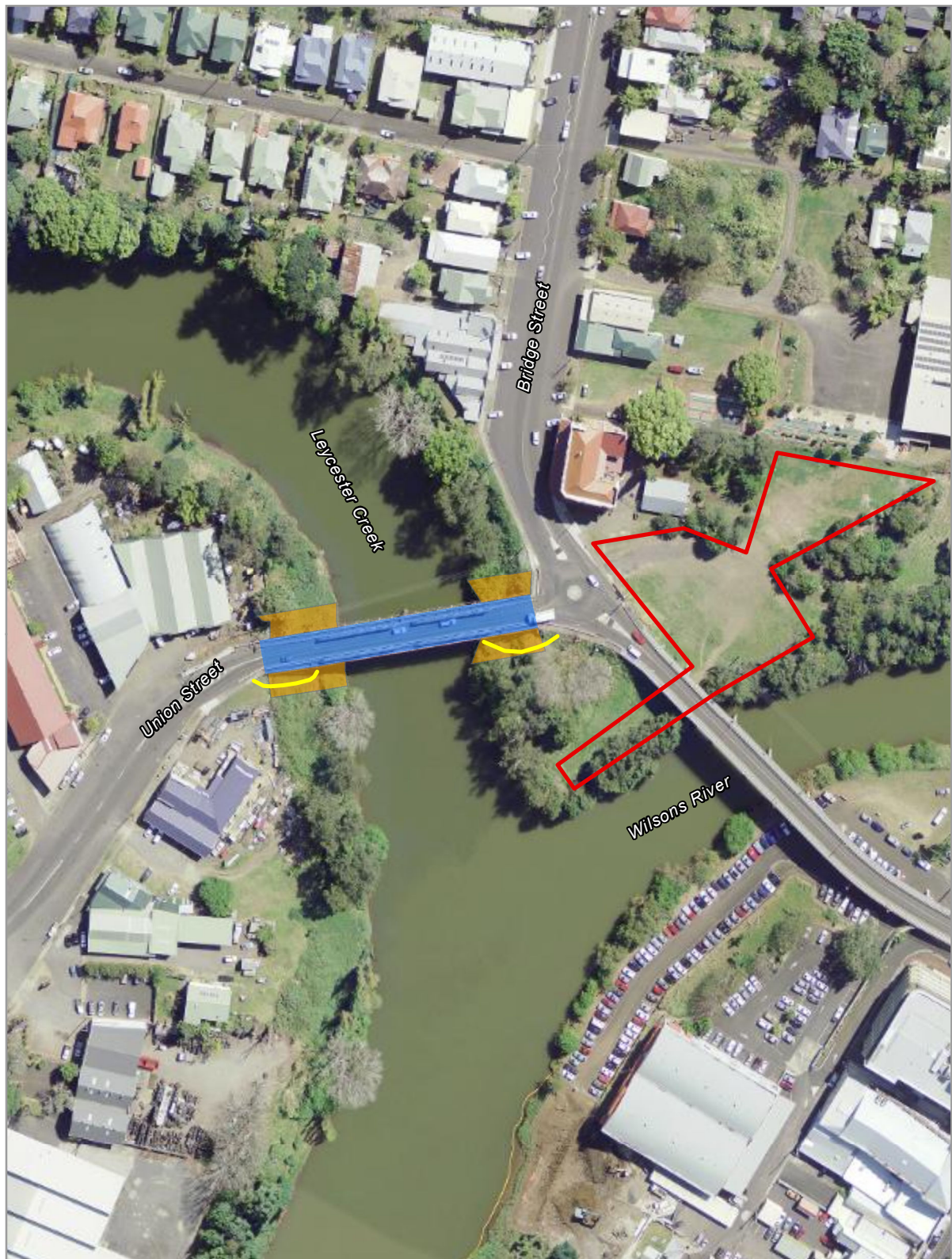


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Location of the Proposal

Figure 1-1



LEGEND

- Coleman's Bridge
- Proposed compound site
- Vegetation to be removed
- Access track

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1.2 REF display

Roads and Maritime prepared a REF to assess the environmental impacts of the proposal. The REF was publicly displayed between 1 July and 29 July 2019. Copies of the report were available at three locations, as detailed in Table 1-1. The REF was also placed on the Roads and Maritime project website and made available for download.

The project team held a community drop-in session that involved a staffed display at the Lismore Library on 23 July from 2:00 pm to 7:00 pm.

The REF feedback period was extensively promoted using the following methods:

- Media release
- Project website
- 4000+ Letter drops delivered to residential properties and local businesses
- NSW Government's "Have you say" website <https://www.nsw.gov.au/improving-nsw/have-your-say/>
- Facebook advertising

Table 1-1: Display locations

Location	Address
Lismore City Council	43 Oliver Avenue, Goonellabah
Lismore Library	110 Magellan Street, Lismore
Lismore Visitor Information Centre	207 Molesworth Street, Lismore

As part of the REF process, Roads and Maritime carried out preliminary community consultation with various parties and key stakeholders to inform them of the proposal and gauge potential impacts and how they might be managed. As part of early consultation for the proposal Roads and Maritime representatives met with 13 businesses on 2 May 2019, located south of Colemans Bridge in Union Street. The purpose of these meetings was to discuss the initial proposal to close the bridge for up to four months during construction. Six of the business owners objected to the full closure proposal, citing impacts to their business through loss of passing traffic as their key concern. In response to this consultation the proposal was modified to minimise bridge closures to only some weekends and occasional Mondays following weekend closures.

The project website has been updated with project news, documents and other relevant information. The outcomes of this consultation are discussed in the REF. Consultation with various parties and key stakeholders will be ongoing in the lead up to the start of works and throughout the duration of work.

1.3 Purpose of the report

This submissions report relates to the REF prepared for the Colemans Bridge strengthening and maintenance and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Roads and Maritime. This submissions report summarises the issues raised and provides responses to each (Section 2). A formal response has been developed in relation to submissions (Section 2). The mitigation and management measures proposed within the REF do not need to be revised as a result of feedback received.

No other revisions have been made to the assessment in the REF since the project was placed on public exhibition.

2. Response to issues

Roads and Maritime received one submission, via the community drop-in session held on 23 July 2019. Table 2-1 lists the respondents and each respondent's allocated submission number. The table also indicates where the issues from each submission have been addressed in this report.

Submission writers (respondents) who wish to determine how their submission was categorised and their submission number can contact Roads and Maritime for these details.

Table 2-1: Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	01	2.2

2.1 Overview of issues raised

One submission was received from a local resident in response to the display of the REF.

This submission has been examined to understand the issues being raised. The issues raised have been extracted and collated, and corresponding responses to the issues have been provided. The issues raised and Roads and Maritime's response to these issues forms the basis of this section.

The submission raised issues with the proposal and other nearby infrastructure that can be categorised into the following themes:

- Colemans Bridge lighting
- Re-painting of the bridge
- Pedestrian access
- Bridge closure period
- Colemans Bridge approaches
- Nearby rail bridges.

2.2 Issue 1 - Colemans Bridge lighting

Issue description

The respondent suggested lighting should be installed on Colemans Bridge as the bridge is heavily used by pedestrians and the absence of lights makes it unsafe for pedestrian use after dark.

Response

Roads and Maritime is exploring options to include lighting on the bridge. Consultation would be undertaken with Lismore City Council (LCC) and the Office of Environment and Heritage on the matter.

2.3 Issue 2 - Repainting of the bridge

Issue description

The respondent noted that the bridge is showing signs of dust present from a recent dust storm and needs to be repainted.

Response

The current proposal includes provision for repainting of the bridge to restore the appropriate heritage bridge colour scheme (steel elements black, timber elements white).

2.4 Issue 3 - Pedestrian access

Issue description

The respondent raised concerns about pedestrian connectivity in Union Street on the approach to the bridge, stating that pedestrians are having to cross the road in dangerous locations due to the path ending prematurely.

Response

Pedestrian access on adjoining roads of the bridge is the responsibility of LCC. Roads and Maritime will advise LCC of this submission.

2.5 Issue 4 - Bridge closure period

Issue description

The respondent requested that during bridge closures advance warning signage is located in such a way as to minimise the number of motorists needing to perform u-turns.

Response

Roads and Maritime will place detour signage appropriately to allow road users to avoid the approach roads to the bridge, thereby avoiding u-turns in the vicinity of the bridge.

2.6 Issue 5 - Colemans Bridge approaches

Issue description

The respondent noted a lot of heavy vehicles use the bridge (including B-doubles); with a number striking the bridge traffic barriers due to the tight turns involved exiting and approaching the bridge.

Response

Approach roads to the bridge are beyond the scope of the project and are the responsibility of LCC. Roads and Maritime will advise LCC of this submission.

2.7 Issue 6 - Nearby rail bridges

Issue description

The respondent raised concerns about the now defunct rail bridge noting the following:

- Trucks strike it regularly
- Over height trucks have difficulty turning around safely
- Advance warning signs for the height restriction are ineffective
- Public access to the rail bridge over Leicester Creek is a safety risk.

The submission queried whether the rail bridge could be removed or relocated.

Response

These matters are not applicable to the project and State rail infrastructure is the responsibility of ARTC. Roads and Maritime will advise ARTC of this submission.

3. Additional consultation with agencies

As part of ongoing consultation with stakeholders the final REF was provided to the following agencies for comment:

- NSW Department of Primary Industries (DPI) Fisheries
- NSW Office of Environment and Heritage (OEH)
- Lismore City Council (LCC)
- Maritime branch
- NSW DPI (Crown Lands).

3.1 Agency responses

No responses were received from agencies during the submissions period.

4. Environmental management

The REF for the Colemans Bridge upgrade identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (Section 6 of the REF).

After consideration of the issues raised in the public submissions and additional consultation with agencies, the safeguard and management measures of the REF have been reviewed. No changes are considered necessary to these safeguards based on the matters raised.

Environmental management for the project will be guided by the framework and measures outlined below.

4.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified to minimise adverse environmental impacts, including social impacts, which could potentially arise from the proposal. These management measures will be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP will be prepared prior to construction of the proposal and reviewed and certified by Roads and Maritime Northern environment staff prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in the QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing, QA Specification G10 - Traffic Management and *AS4361.1 Guide to Lead Paint Management - Industrial Applications*.

4.2 Summary of safeguards and management measures

The REF for the Colemans Bridge strengthening and maintenance project identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts, including social impacts.

After consideration of the issues raised in the public submissions and additional consultation with agencies, the environmental management measures for the project (refer to section 6 of the REF) have been reviewed. No changes are considered necessary to these safeguards based on the matters raised. The environmental management measures in Table 4-1 will guide the subsequent phases of the Colemans Bridge strengthening and maintenance project.

Table 4-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
1.	Non-Aboriginal heritage	Application be made to the NSW Heritage Division (OEH) for a Section 57(2) exemption to facilitate the project prior to works on bridge: <i>The appropriate standard exemption type would be Type (7): Minor activities with little or no adverse impact on heritage significance</i>	RMS Project Manager	Pre-construction
2.		The bridge and its setting will be subject to a pre- and post-works archival photographic recording. The recording will be undertaken by a suitably qualified professional and meet NSW Heritage Office standards as per: <i>NSW Heritage Division (OEH). 2005. Photographic Recording of Heritage Items using Film or Digital Capture.</i> When the archival record is complete, it will be made available to the Richmond River Historical Society; Richmond Valley Council and Library (Local History Collection) and NSW Heritage Office.	RMS Project Manager	Pre-construction
3.		The <i>Standard Management Procedure - Unexpected Heritage Items</i> (Roads and Maritime, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	RMS Project Manager RMS Project Engineer	Detailed design/pre-construction
4.	Communication plan	A communication plan (CP) would be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP would include (as a minimum): <ul style="list-style-type: none">• Mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions• Contact name and number for complaints. The CP would be prepared in accordance with the <i>Roads & Maritime Communication Toolkit</i> .	RMS Project Manager RMS Communications officer	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
5.	Notification	<p>All businesses, residential properties and other key stakeholders (eg schools, council, bus operators) affected by the activity would be notified at least 10 working days prior to commencement of the activity. Project/community updates would be provided throughout the duration of works as relevant.</p> <p>Notification would utilise both digital and conventional (non-digital) modes of communication (eg media release, letter box drops, newsletters and regular updates to a project website).</p> <p>Notification would include an information package, including contact name and phone number for enquiries or complaints, the expected timeframe of works and any planned or potential disruptions to utilities/services and changed road and traffic conditions. The package is also to include details on the Colemans Bridge/road closure, the available detours alternative transport and pedestrian access.</p> <p>As part of the notification process, advanced warning signage would be established prior to and during the work to ensure road users are aware of the road closure and detours. Directional signage is to be placed along the detour routes.</p> <p>Additional and immediate notification to all affected stakeholders would also be undertaken if walkway access across the bridge were to be restricted.</p> <p>As required, Roads and Maritime Services shall issue notification to representatives of the Native Title claim NC2013/2018 - Widjabul Wia-bal People, for their consideration and comment prior to undertaking the works.</p>	Roads and Maritime project manager and communications officer	Pre-construction and during construction

No.	Impact	Environmental safeguards	Responsibility	Timing
6.	Consultation	<p>Ongoing stakeholder and community consultation would be undertaken in accordance with the <i>Roads & Maritime Communication Toolkit</i>. Consultation would include:</p> <ul style="list-style-type: none"> • Lismore City Council • Residents and businesses within 500 m of the proposal • Businesses at the north-east end of Union Street (between the low railway overpass and Colemans Bridge) who may require heavy/high vehicle access • Fire and emergency services • Bus operators • Local schools • Recreation waterway users, including Lismore Rowing Club/Far North Coast Canoe Club • Operators of community services and facilities, including Winsome and Lismore Soup Kitchen • Vulnerable and homeless people that could be directly affected by the works. 	Roads and Maritime project manager and communications officer	Pre-construction and during construction
7.	Noise and vibration specific notification and consultation	<p>Implement notification and community consultation measures with regard to airborne noise and ground-borne vibration impacts from the work, including:</p> <ul style="list-style-type: none"> • Periodic notification of all identified receivers (monthly letterbox drop or equivalent). Notifications should provide advanced warning of upcoming activities, particularly relating to highly noise emitting activities and activities scheduled outside standard construction hours • Website • Project information line • Construction response line • Email distribution list. 	Roads and Maritime project manager and communications officer	Pre-construction and during construction

No.	Impact	Environmental safeguards	Responsibility	Timing
8.	Traffic	<p>As per the notification process, advanced warning signage would be established prior to and during the work to ensure road users are made aware of changed traffic conditions and detour directions.</p> <p>Excluding the required detours, where possible, current traffic movements and property accesses would be maintained during the work. Any disturbance would be minimised to prevent unnecessary traffic delays.</p>	Roads and Maritime project engineer and work supervisor	Pre-construction and during construction
9.	Pedestrian access	Pedestrian access to, and use of, at least one of the bridge's walkways at any one time is to be maintained and remain accessible during the works.	Roads and Maritime project engineer and works supervisor	Pre-construction and during construction
10.	Waterway	As required, advanced warning signage and/or beacons (appropriate for any applicable day and night time maritime requirements) would be established prior to and during the work to ensure any users of the local waterway(s) are aware of restricted access, changed navigational conditions or hazards within the work area and waterway.	Roads and Maritime project engineer and work supervisor	Pre-construction and during construction
11.	School bus services	If a potential impact to a school bus service arises or becomes known, undertake and maintain ongoing consultation and cooperation between Roads and Maritime and any potentially affected school bus service providers prior to and for the duration of the project, to ensure no adverse or unmanageable impact to important services.	Roads and Maritime project manager and communications officer	Pre-construction and during construction
12.	Complaints	A complaint handling procedure and register would be included in the CEMP and would include that all complaints would be responded to within 24 hours.	Roads and Maritime project manager and communications officer	During construction
13.	Health and safety	<p>Suitable site induction relating to site specific hazards would be undertaken for all contractor and Roads and Maritime staff.</p> <p>The work would be undertaken in accordance with all NSW health and safety legislative requirements and relevant Australian Standards.</p>	Roads and Maritime project engineer and work supervisor	Pre-construction and during construction

No.	Impact	Environmental safeguards	Responsibility	Timing
14.	Vulnerable and homeless people	Where appropriate, Roads and Maritime, in consultation and with the support of relevant agencies and community services (eg Family and Community Services; the Winsome and Lismore Soup Kitchen Inc), would consult homeless people that could be directly impacted/displaced by the works and assist in putting them in touch with a relevant support service.	Roads and Maritime project manager and communications officer in consultation with relevant agencies/ organisations	Pre-construction
15.	Traffic and transport	<p>A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Roads and Maritime <i>Traffic Control at Work Sites Manual</i> (RTA, 2010), Australian Standard 1742.3 <i>Manual of uniform control devices</i> and <i>QA Specification G10 Control of Traffic</i> (Roads and Maritime, 2008). The TMP will include:</p> <ul style="list-style-type: none"> • Measures to maintain access to local roads and properties • Site specific traffic control measures (including signage) to manage and regulate traffic movement • Requirements and methods to consult and inform the local community of impacts on the local road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads • A response plan for any construction traffic incident • Consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • Monitoring, review and amendment mechanisms. 	RMS Project Manager	Detailed design/pre-construction
16.		<ul style="list-style-type: none"> • All traffic disruptions would be communicated to road users in accordance with Roads and Maritime policy, using the Roads and Maritime traffic alert system, and any other means identified in the Consultation Strategy for the proposal. 	RMS Project Engineer	Construction
17.		<ul style="list-style-type: none"> • A project-specific consultation strategy must be developed and implemented in accordance with the RMS <i>Community Involvement – Practice Notes and Resource Manual</i> and <i>RMS Minor Project procedure, Communications for minor projects (ILC-MP-TP0-301)</i>. 	RMS Project Manager	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
18.	Pedestrian traffic/ access	Where possible public access to one footway of the bridge is to be provided at all times.	RMS Project Engineer	Construction
19.	Maritime	All conditions specified by Roads and Maritime – Maritime Division are to be implemented as follows:	RMS Project Manager	Construction
20.		Any work vessels involved in the project must comply with the relevant NSW Marine Legislation (ie day shapes, lights etc.).	RMS Project Manager	Construction
21.		Barges, work vessels and crew involved with the project must comply with the <i>Marine Safety (Domestic Commercial Vessels) National Law Act 2012</i> .	RMS Project Manager	Construction
22.		A minimum of one navigable channel span must be open to navigation at all times unless approved by RMS Maritime.	RMS Project Manager	Construction
23.		Any submerged hazards must be marked with yellow aqua buoys sign written "Warning Submerged Hazard". These aqua buoys must be lit with yellow flashing lights if hazards are present before sunrise and after sunset.	RMS Project Manager	Construction
24.		Twenty-Eight (28) days prior to works commencing the applicant must provide Roads and Maritime with a full scope of works including maps noting all obstructions to navigation associated with the proposed works, (vessel/barge anchoring, scaffolding and silt curtain locations etc.) so a Marine Notice can be prepared and advertised.	RMS Project Manager	Pre-construction
25.		Channel blocked day shapes and lights to be suspended in the centre of all blocked spans of the bridge ie any works that impact the current bridge navigation channel must be closed. These signals mean vessels will NOT attempt to navigate in that part of the channel: Bridge span blocked or Channel is blocked.	RMS Project Manager	Construction
26.	Airborne noise/ ground-borne vibration	In addition to the measures set out in this table, any project specific mitigation measures identified in the environmental impact assessment documentation (eg REF, submissions or representations report) or approval or licence conditions must be implemented.	RMS Project Manager	Pre-construction, construction

No.	Impact	Environmental safeguards	Responsibility	Timing
27.		<p>Periodic notification of all receivers within 200 m of works (monthly letterbox drop or equivalent)¹. Notifications should provide advanced warning of upcoming activities, particularly relating to highly noise emitting activities and activities scheduled outside standard construction hours.</p> <ul style="list-style-type: none"> • Website • Project info line • Construction response line • Email distribution list 	RMS Project Manager	Pre-construction, construction
28.		<p>All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include:</p> <ul style="list-style-type: none"> • All relevant project specific and standard noise and vibration mitigation measures • Relevant licence and approval conditions • Permissible hours of work • Any limitations on high noise generating activities • Location of nearest sensitive receivers • Construction employee parking areas • Designated loading/unloading areas and procedures • Site opening/closing times (including deliveries) <p>Environmental incident procedures.</p>	RMS Project Manager/RMS Project Engineer	Pre-construction, construction
29.		<p>No swearing or unnecessary shouting or loud stereos/radios on-site.</p> <p>No dropping of materials from height, throwing of metal items and slamming of doors.</p>	Project team	Construction
30.		<p>Verification noise monitoring is suggested for noisy activities outside standard construction hours.</p> <p>Monitoring of noise and vibration should be undertaken upon receipt of complaints.</p>	RMS Project Manager	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
31.		<p>Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods.</p> <p>If work is required to occur at night, any high noise emitting activities should be scheduled to occur in the less sensitive evening period, whenever possible.</p> <p>Unless negotiated with the community, with consultation documented and approved by the Roads and Maritime project manager or permitted under the licence, there should be no more than:</p> <ul style="list-style-type: none"> • two consecutive nights per week • three consecutive evenings per week • separated by not less than one week and no more than six evenings or nights per month. 	RMS Project Manager	Construction
32.		<p>In general, the following respite is provided:</p> <ul style="list-style-type: none"> • High noise and vibration generating activities² may only be carried out in continuous blocks not exceeding three hours each, with a minimum respite period of one hour in between each block³. 	RMS Project Engineer/RMS Project Manager	Construction
33.		<ul style="list-style-type: none"> • Use quieter and less vibration emitting construction methods where feasible and reasonable. 	RMS Project Engineer	Construction
34.		The noise levels of plant and equipment must have operating Sound Power or Sound Pressure Levels compliant with the criteria in Table F.1 of the CNVG.	RMS Project Engineer	Pre-construction, construction
35.		The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used on-site unless compliant with the criteria in Table F.1 of the CNVG.	RMS Project Engineer	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
36.		<p>Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.</p> <p>The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.</p> <p>Plant used intermittently to be throttled down or shut down when not in use.</p> <p>Noise-emitting plant to be directed away from sensitive receivers.</p>	RMS Project Engineer	Construction
37.		Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.	RMS Project Engineer	Construction
38.		Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on-site and for any out of hours work.	RMS Project Engineer	Construction
39.		<p>Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers.</p> <p>Select site access points and roads as far as possible away from sensitive receivers.</p> <p>Dedicated loading/unloading areas to be shielded if close to sensitive receivers.</p> <p>Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.</p>	RMS Project Engineer	Construction
40.		Whenever practical, work areas should be screened to reduce noise levels at receivers. Many of the proposed activities would be confined to discrete work areas and are thus suitable for temporary screening. High noise emitting activities occurring outside standard construction hours, particularly at night, should be screened. If traffic diversions are necessary to permit temporary screening this should be considered. Stationary noise sources should be enclosed or shielded while ensuring the occupational health and safety of workers is maintained. Appendix D of AS 2436:2010 lists materials suitable for shielding.	RMS Project Engineer/RMS Project Manager	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
41.	Hydrological impacts	A CEMP must be prepared in accordance with the specifications set out in the <i>QA Specification G36 - Environmental Protection (Management) System</i> to guide the implementation of environmental impact mitigation measures, identify key roles and responsibilities for environmental monitoring and methods of reporting incidents.	RMS Project Manager	Pre-construction
42.	Erosion sedimentation	<p>A site-specific Erosion and Sediment Control Plan is to be prepared and implemented as part of the CEMP.</p> <p>The plan is to identify detailed measures and controls to be applied to minimise erosion and sediment control risks including (where relevant) but not limited to: runoff, diversion and drainage points, sumps, scour protection; stabilising disturbed areas as soon as possible; check dams, fencing and swales and staged implementation arrangements.</p> <p>The plan is to also include arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.</p> <p>Work in areas where soil may be disturbed is to only commence once all relevant erosion and sediment controls have been established. The controls are to be maintained in place until the work is complete and all exposed erodible materials are stable.</p>	RMS Project Manager	Pre-construction, construction
43.		Erosion and sedimentation controls must be checked and maintained (including clearing of sediment from behind barriers) on a regular basis (including after any precipitation events) and records kept and provided on request.	RMS Project Engineer	Pre-construction, construction
44.		Disturbance of natural sediments and vegetation must be minimised.	RMS Project Engineer	Pre-construction, construction
45.		Erosion and sediment control measures must not be removed until the work is complete or disturbed areas are stabilised.	RMS Project Engineer	Construction, post-construction
46.		Maintenance of site compounds must be in accordance with the RMS Stockpile Site Management Guideline (EMS-TG-10).	RMS Project Engineer	Pre-construction, construction

No.	Impact	Environmental safeguards	Responsibility	Timing
47.		Cleaning of tools and equipment must occur within a designated wash-down bay. The wash-down bay must be bunded and placed so water is captured and contained and does not flow directly into Leicester Creek or the Wilsons River.	RMS Project Engineer	Construction
48.		Water utilised for cleaning of tools must be minimised and obtained from a licensed location or town water supply.	RMS Project Engineer	Construction
49.		Clean equipment and vehicles must be used, with equipment being cleaned down before being brought to the site.	RMS Project Engineer	Pre-construction, construction
50.		A site-specific emergency spill plan will be developed and include spill management measures in accordance with the <i>Roads and Maritime Code of Practice for Water Management</i> (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Roads and Maritime and EPA officers).	RMS Project Manager	Detailed design/pre-construction
51.		A spill containment kit for aquatic and terrestrial spills must be available at all times. The spill kit must be appropriately sized for the volume of substances at the work site. All personnel must be made aware of the location of the kit and trained in its effective deployment.	RMS proposal Manager	Pre-construction, construction
52.	Reduced water quality	If a spill occurs, Roads and Maritime's Environmental Incident Classification and Reporting Procedure must be followed, and the Roads and Maritime Project Manager notified as soon as practicable.	RMS Project Manager/ Project Engineer	Pre-construction, construction
53.		Locate stockpiles of dispersible material away from areas of concentrated overland flow.	RMS Project Manager/ Project Engineer	Construction
54.		Required fuels and other liquids must be stored in self-safe chemical storage containers.	RMS Project Manager/ Project Engineer	Pre-construction, construction
55.		Unnecessary storage of fuels, lubricants or other compounds on-site must be avoided.	RMS Project Manager/ Project Engineer	Pre-construction, construction

No.	Impact	Environmental safeguards	Responsibility	Timing
56.		Refuelling of plant and equipment is to occur in impervious bunded areas located a minimum of 50 m from drainage lines or waterways otherwise a double bund is required.	RMS Project Manager/ Project Engineer	Construction
57.		All equipment must be maintained in good working order and operated according to manufacturer's specifications.	RMS Project Engineer	Pre-construction, construction
58.		All work must be undertaken according to RMS <i>Specifications B223 (Management of Lead Chromium and Asbestos in Bridge Maintenance Painting)</i> and <i>B220 (Protective treatment of Bridge Steel Work)</i> and <i>AS4361. 1: Guide to lead paint management, Part 1: Industrial Application</i> .	RMS Project Engineer	Construction
59.		Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient silt curtains or erosion and sediment controls.	RMS Project Engineer	Construction
60.		Prepare an emergency response plan for flood events for the proposed work. Include a procedure for rapid removal in the emergency response plan and location for the material.	RMS Project Manager	Pre-construction
61.		Establish the compound site in such a way to limit potential impacts from flooding (eg on as high a ground as possible and that are readily removed in the event of a flood).	RMS Project Manager	Construction
62.	Flooding	<p>Include a Work Method Statement (WMS) in CEMP on compound site evacuation procedure. Issues to be addressed in the WMS include:</p> <ul style="list-style-type: none"> • Responsibility for monitoring flood threat/flood warning information and how it is to be done • Training for staff on evacuation • Demonstrate that specific equipment for evacuation is readily available. 	RMS Project Manager	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
63.	Contaminated land	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Roads and Maritime Environment Manager and/or EPA.	RMS Project Manager	Detailed design/Pre-construction
64.	Soils	Imported site compound/stockpile base materials must be sourced as clean-fill from a licensed quarry or approved site (if required).	RMS Project Manager	Pre-construction
65.		Upon completion of the work and usage of the site compound, these areas must be re-established to similar existing conditions.	RMS Project Manager	Post-construction
66.	Landscape character and visual impact	All working areas will be maintained, kept free of rubbish and cleaned up at the end of each working day.	RMS Project Engineer	Construction
67.		Soil disturbance will be minimised where possible.	RMS Project Engineer	Construction
68.		The bridge will be re-painted with the timber truss elements in white and steel elements in black.	RMS Project Engineer	Construction
69.		Any temporary site lighting is to be installed and operated in accordance with AS4282:1997 <i>Control of the Obtrusive Effect of Outdoor Lighting</i> .	RMS Project Engineer	Construction
70.		Bridge works are to be managed in accordance with Roads and Maritime <i>Bridge Aesthetics guidelines, 2012</i> .	RMS Project Manager	Construction
71.		At the completion of works all areas including compound areas will be rehabilitated.	RMS Project Manager	Construction
72.	Removal of native vegetation	Native vegetation removal will be minimised through detailed design.	RMS Project Manager RMS Project Engineer	Detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
73.		The footprint of the site (including site compound, accesses and construction areas) will be clearly delineated in accordance with <i>Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011). Exclusion zones will include tree protection zones around trees to be retained in proximity to the proposed work (such as at the site compounds) in accordance with the <i>Australian Standard 4970-2009 Protection of trees on development sites</i> .	RMS Project Engineer	Construction
74.		<p>Pre-clearing surveys will be undertaken in accordance with <i>Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011). These guidelines cover the felling of both non-habitat and habitat trees and the rescue and relocation of fauna.</p> <p>An experienced, licensed ecologist or appropriately trained Roads and Maritime staff is to undertake pre-clearing surveys prior to vegetation removal to inspect trees for the presence of fauna. If fauna is identified, a licensed ecologist is to be engaged to perform any spotter catcher duties required.</p>	RMS Project Engineer RMS Environmental Officer Ecologist	Prior to construction
75.		<p>Vegetation removal will be undertaken in accordance with <i>Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).</p> <p>Manual removal of vegetation is preferred to avoid mulch entering the river.</p>	RMS Project Engineer	During construction
76.		The unexpected species find procedure is to be followed under <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site.	RMS Project Manager RMS Project Engineer	During construction
77.	Removal of threatened species habitat and habitat	Habitat removal will be undertaken in accordance with <i>Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	RMS Project Manager RMS Project Engineer	During construction

No.	Impact	Environmental safeguards	Responsibility	Timing
78.	features	The unexpected species find procedure is to be followed under <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) if threatened fauna, not assessed in the biodiversity assessment, are identified in the proposal site.	RMS Project Manager RMS Project Engineer	During construction
79.	Removal of threatened plants	Pre-clearing surveys will be undertaken in accordance with <i>Guide 1: Pre-clearing process</i> of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	RMS Project Manager	During construction
80.		The unexpected species find procedure is to be followed under <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) if threatened flora species, not assessed in the biodiversity assessment, are identified in the proposal site.	RMS Project Engineer	During construction
81.	Aquatic impacts	Aquatic habitat will be protected in accordance with <i>Guide 10: Aquatic habitats and riparian zones</i> of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011) and Section 3.3.2 <i>Standard precautions and mitigation measures</i> of the <i>Policy and guidelines for fish habitat conservation and management Update 2013</i> (DPI (Fisheries NSW) 2013).	RMS Project Manager RMS Project Engineer	During construction
82.		Stumps of trees cleared are to be left in situ to protect creek bank stability.	RMS Project Manager RMS Project Engineer	During construction
83.		Controls (such as drop nets and shade cloths) will be used when required during overwater activities to prevent entry of construction sourced debris entering Leycester Creek.	RMS Project Manager RMS Project Engineer	During construction
84.	Groundwater dependent ecosystems	Interruptions to water flows associated with groundwater dependent ecosystems will be minimised through detailed design.	RMS Project Manager	Detailed design
85.	Fragmentation of identified habitat corridors	Exclusion zones will be set up at the limit of clearing in accordance with <i>Guide 2: Exclusion zones</i> of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	RMS Project Manager	During construction

No.	Impact	Environmental safeguards	Responsibility	Timing
86.	Edge effects on adjacent native vegetation and habitat	Exclusion zones will be set up at the limit of clearing in accordance with <i>Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	RMS Project Manager RMS Project Engineer	During construction
87.	Injury and mortality of fauna	Fauna will be managed in accordance with <i>Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011). Should injured fauna be located on the site during the work, local wildlife care groups and/or local veterinarians must be contacted immediately, and arrangements made for the immediate welfare of the animal. The phone number of the local fauna rescue group must be known to the project foreman.	RMS Project Engineer Ecologist	During construction
88.	Invasion and spread of weeds	Weed species will be managed in accordance with <i>Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	RMS Project Manager RMS Project Engineer	During construction
89.	Invasion and spread of pests	Pest species will be managed in accordance with the <i>Biosecurity Act 2015</i> .	RMS Project Manager RMS Project Engineer	During construction
90.	Invasion of yellow crazy ants	Any plant or soil material to be removed from the site would be taken the Lismore Recycling and Recovery Centre in accordance with the General Biosecurity Direction issued under the <i>Biosecurity Act 2015</i> . Relevant control measures extending beyond this period will be captured within the proposal Construction Environment Management Plan (CEMP).	RMS Project Manager RMS Project Engineer	During construction
91.	Invasion and spread of pathogens and disease	Pathogens will be managed in accordance with <i>Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA 2011).	RMS Project Manager RMS Project Engineer	During construction

No.	Impact	Environmental safeguards	Responsibility	Timing
92.	Aboriginal heritage	<ul style="list-style-type: none"> • <i>The Standard Management Procedure - Unexpected Heritage Items</i> (Roads and Maritime,) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. This applies where Roads and Maritime does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place • All works in the vicinity of the find must cease and the Roads and Maritime Services Aboriginal cultural heritage officer and regional environment manager contacted immediately • Work will only re-commence once the requirements of that Procedure have been satisfied. 	Contactor	Detailed design/pre-construction
93.		All personnel working on-site must be advised of their responsibilities under the NPW Act.	All personnel on-site	Pre-construction
94.	Air quality	Vegetation or other materials are not to be burnt on-site.	RMS Project Engineer	Construction
95.		Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation.	RMS Project Engineer	Construction
96.		Stockpiles or areas that may generate dust are to be managed to suppress dust emissions in accordance with the Roads and Maritime Services <i>Stockpile Site Management Guideline (EMS-TG-10)</i> .	RMS Project Engineer	Construction
97.	Waste	Any plant or soil material to be removed from the site would be taken the Lismore Recycling and Recovery Centre in accordance with the General Biosecurity Direction for yellow crazy ant invasion in the Lismore LGA issued under the <i>Biosecurity Act 2015</i> .	RMS Project Engineer	Construction
98.		Potentially contaminated waste/hazardous waste is to be stored separately from other waste streams generated at the site.	RMS Project Engineer	Construction
99.		To minimise the risk of impacts from flooding, the quantity of waste stored on-site is not to exceed the volume of waste that can be removed in one to two days.	RMS Project Engineer	Construction
100.		Potentially contaminated waste/hazardous waste is to be stored separately from other waste streams generated at the site.	RMS Project Engineer	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
101.		To minimise the risk of impacts from flooding, the quantity of waste stored on-site is not to exceed the volume of waste that can be removed in a short timeframe.	RMS Project Engineer	Construction
102.		Resource management hierarchy principles are to be followed: <ul style="list-style-type: none"> • Avoid unnecessary resource consumption as a priority • Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery) • Disposal is undertaken as a last resort. (in accordance with the <i>Waste Avoidance & Resource Recovery Act 2001</i>).	RMS Project Engineer	Pre-construction, construction.
103.		Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.	RMS Project Engineer	Construction
104.		There is to be no disposal or re-use of construction waste on to other land.	RMS Project Engineer	Construction
105.		Waste is not to be burnt on-site.	RMS Project Engineer	Construction
106.		Waste material is not to be left on-site once the work has been completed.	RMS Project Engineer	Construction
107.		Non-recyclable wastes are to be collected and disposed of at licenced waste facilities only.	RMS Project Engineer	Construction
108.		Temporary storage of contaminated waste at the site compound is to be in sealed containers within a self-safe storage container and double bunded and sign posted as contaminated waste.	RMS Project Engineer	Construction
109.		Storage of hazardous waste (ie removed lead paint flakes and dust), restricted solid waste or liquid waste (or a combination of these) on-site at any time is not to exceed five tonnes otherwise an Environment Protection Licence under the POEO Act is required.	RMS Project Engineer	Construction
110.		Any contaminated waste generated by the proposal is to be disposed of in accordance with the EPA approved methods of waste disposal.	RMS Project Engineer	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
111.		Bulk project waste (eg fill) sent to a site not owned by Roads and Maritime (excluding Office and Environment and Heritage licensed landfills) for land disposal is to have prior formal written approval from the landowner, in accordance with <i>Environmental Direction No. 20 – Legal Off-site disposal of Bulk RTA Project Wastes</i> .	RMS Project Engineer	Construction
112.		Any CCA treated off cuts and saw dust will be stored in a dedicated storage area in the site compound for as short a duration as possible. Where possible, CCA timber will be stacked clear of the ground and preferably covered to avoid an increase in moisture content as a result of contact and to lessen any possibility of leaching of substances to the ground. Disposal of off-cuts and waste treated timber will follow OEH's Protocols for Recycling Redundant Utility Poles and Bridge Timbers in New South Wales. For CCA and /or creosote preservative treated offcuts, the disposal facility is a lined landfill with an appropriate leachate management system with license conditions to receive waste.	RMS Project Engineer	Construction
113.		All work will be undertaken according to <i>Roads and Maritime Specifications B223 (Management of Lead Chromium and Asbestos in Bridge Maintenance Painting)</i> and <i>B220 (Protective treatment of Bridge Steel Work)</i> and <i>AS4361.1: Guide to lead paint management, Part 1: Industrial Application</i> .	RMS Project Engineer	Construction
114.	Utilities	Prior to the commencement of work: <ul style="list-style-type: none"> The location of existing utilities and relocation details will be confirmed. 	RMS Project Manager	Detailed design/pre-construction

4.3 Licensing and approvals

No additional licensing or approvals are required for the proposal.

5. References

Roads and Maritime Services 2019, *Colemans Bridge Strengthening and Maintenance, review of environmental factors*, Grafton.



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