



Denmark Link Road

Submissions Report

Transport for NSW | June 2021

Executive summary

The proposal

Transport for NSW proposes to build a local link road from the intersection of Garfield Road West and Denmark Road, Riverstone to the Westminster Street bridge, Schofields (the proposal). The proposal involves upgrading existing local roads and the building of new sections of road to complete the link which is about 1.5 kilometres long. An overview of the proposal is provided in Figure E-1 below.



Figure E-1: Overview of the proposal

Display of the Review of Environmental Factors

Transport for NSW prepared a Review of Environmental Factors (REF) to assess the potential environmental impacts of the proposal. The REF was on display for 29 days between Monday 16 November 2020 and Monday 14 December 2020. During this time, Transport for NSW invited the public to provide feedback on the project.

The REF display was accompanied by information on the proposal provided via the interactive online portal. An online Community Information Session was held on Tuesday 1 December between 4pm and 4.30pm where there was an opportunity to learn more about the proposal and raise questions and concerns.

Summary of issues and responses

A total of 30 submissions were received in response to the display of the REF. This included submissions from a utility provider, organisations and 27 submissions from the community.

A total of six submissions indicated a clear objection to the proposal while one submission expressed support. Other submissions raised issues or made comments regarding the proposal.

The main issues raised and responses to those issues are summarised below.

Need for the proposal

Some submitters queried the effectiveness of the proposal in addressing congestion and emphasised the need to prioritise solution to the railway level crossing.

The proposal is one of the short-term works identified in the North West Growth Centre Road Network Strategy. The need for a grade separated crossing for Garfield Road at Riverstone is identified as a longer-term initiative and Transport for NSW is continuing investigations for that grade separated crossing.

While not intended as a long-term solution, the proposal would help remove some of the daily demand from the Garfield Road West / Garfield Road East / Railway Terrace / Riverstone Parade intersection by providing an alternative route for light vehicles. The proposal would also provide long term local connectivity, allowing access to important future active open space areas envisaged by the Department of Planning, Industry and Environment's West Schofields Precinct Draft Indicative Layout Plan.

Alternatives and options considered

Submitters identified alternatives to the proposal including provision of an overpass at the Riverstone railway level crossing, the Bandon Road corridor and/or a route via Carnarvon Road.

A grade separated crossing for Garfield Road at Riverstone is a longer-term initiative that Transport for NSW is continuing to investigate.

The Bandon Road corridor would provide an extra road connection between Richmond Road and Windsor Road and reduce traffic congestion within Riverstone but this project is medium-term work in the North West Growth Centre Road Network Strategy and is subject to funding availability. The Bandon Road corridor is located more than two kilometres to the north-west of the proposal within the Marsden Park North, Riverstone West and Vineyard Precincts. It would not provide long term local connectivity within Riverstone consistent with the West Schofields Draft Indicative Layout Plan, which is an important benefit of the proposal.

While there is an existing alternative route provided by Carnarvon Road / Grange Avenue and Bridge Street, this route does not address the existing demand and does not provide the longer term local connectivity adjacent to Denmark Road envisaged by the Department of Planning, Industry and Environment's West Schofields Precinct Draft Indicative Layout Plan. With the planned growth in the North West Growth Area, both the Denmark Link Road and the Carnarvon Road / Grange Avenue / Bridge Street will be needed to service travel demand.

Traffic and transport

Submitters expressed concern about the proposal creating congestion at the northern end of Bridge Street and the nearby Westminster Street bridge.

While preliminary traffic modelling indicates Bridge Street / Railway Terrace / Westminster Street intersection can accommodate (in the year 2030) up to 200 vehicles from the new link (160 left, 40 through) during peak periods before reaching capacity, detailed traffic modelling will be carried out to inform the development of the detailed design and Transport for NSW will review the operation of the intersection following the opening of the Denmark Link Road.

Noise and air quality

Some submitters raised concerns about noise and air quality impacts associated with additional traffic on the new link road.

The introduction of additional traffic would increase road traffic noise for residences along the new link road. It is expected that 24 residential receivers would qualify for consideration of feasible and reasonable noise mitigation measures due to the proposal. Specific property treatments will be considered during detailed design in consultation with affected property owners.

A screening assessment identified that carbon monoxide, nitrogen dioxide and particulate matter concentrations during operation of the proposal at opening are all expected to be compliant with the relevant EPA criteria, including concentrations at the kerb. Compliance would also be achieved should traffic on the link grow to its capacity of 2,000 vehicles per day.

Non-Aboriginal heritage

The Riverstone and District Historical Society expressed concern about impacts on the curtilage of the heritage listed Hebe Farm and identified archaeological potential at Hebe Farm, on Denmark Road and on Garfield Road West.

The Riverstone and District Historical Society submission noted archaeological potential associated with 37 Denmark Road. The proposal would not impact the area of archaeological potential at 37 Denmark Road identified in the West Schofields Part Precinct (Northern Part) Non- Indigenous Heritage Assessment (Extent Heritage, 2018). The area along Denmark Road affected by the proposal is considered to have generally nil to low non-Aboriginal archaeological potential.

The Riverstone and District Historical Society submission noted the potential for archaeological finds associated with former buildings along Garfield Road. It is considered unlikely that the proposal would impact on a significant archaeological resource associated with earlier buildings on Garfield Road due to the works being confined largely to the existing road corridor. The archaeological evidence of this phase of historical land-use is likely to be better preserved within the house blocks associated with the Richards Avenue workers cottages (located about 400 metres to the north-west of the proposal).

Biodiversity

Some submitters expressed concern about the loss of native vegetation and habitat for native fauna.

The proposal would clear some native vegetation but would not remove any resources important to any of the threatened species that could occur at the site.

Similarly, other non-threatened native species would not be solely reliant on habitats within, or near, the proposal footprint. The species recorded are all expected to be present in the adjacent area post-work.

A Flora and Fauna Management Plan would be prepared and implemented prior to the start of construction and would include, among other things, requirements for pre-clearing surveys, fauna handling requirements and procedures in the event of injury to native fauna.

Socio-economic

A submitter expressed concern about partial property acquisition and associated amenity and safety issues.

The proposed Denmark Link Road alignment has been the subject of an option development and evaluation process over several years and is described in Chapter 2 (Need and options considered) of the REF. It would have a posted speed limit of 50 kilometres per hour and is not expected to represent a safety risk for adjacent residents.

All property acquisition would be in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

Additional studies

Additional specialist non-Aboriginal heritage advice was sought in relation to archaeological potential at 37 Denmark Road (as identified in the West Schofields Part Precinct (Northern Part) Non- Indigenous Heritage Assessment (Extent Heritage, 2018)), and with former buildings on Garfield Road. The advice confirmed that impacts on areas of archaeological potential are unlikely at both locations.

Additional specialist biodiversity advice was sought following the recent listing of River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria as a Critically Endangered Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It was identified that native vegetation affected by the proposal does not meet the condition requirements for the EPBC Act listing and no further assessment is required.

Next steps

Transport for NSW as the determining authority will consider the information in the REF and this submissions report and make a decision whether or not to proceed with the proposal.

Transport for NSW will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

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1 Introduction and background

1.1 The proposal

Transport for NSW proposes to build a local link road from the intersection of Garfield Road West and Denmark Road, Riverstone to the Westminster Street bridge, Schofields (the proposal). The proposal involves upgrading existing local roads and the building of new sections of road to complete the link which is about 1.5 kilometres long. Key features of the proposal would include:

- A new right-turn bay along Garfield Road West eastbound for traffic waiting to enter Denmark Road at Riverstone
- Improvements to the existing Denmark Road including new road pavement widening, resurfacing and kerbing at the northern extent, and a new section of road at the southern extent
- A new two-lane link road (one lane in each direction) about 320 metres long between Denmark Road and Carlton Street
- Improvements to Carlton Street between the new link to the south and Trevithick Street to the north, including new road pavement and kerbing
- Improvements to Trevithick Street between Carlton Street and West Parade, including new road pavement widening, resurfacing and kerbing
- Two new T-intersections for the new link at Denmark Road and Carlton Street, and modifications to three existing T-intersections
- Improvements to West Parade south of Trevithick Street, including new pavement widening, resurfacing and kerbing, and a new section of road to connect to Bridge Street (near the Westminster Street Bridge) at Schofields
- Street lighting at all intersections
- Drainage works including sections of kerb, open drainage and a new reinforced concrete box culvert at the crossing of the Eastern Creek tributary on West Parade
- New line marking and signage (including signage to assist wayfinding).

Additional features of the proposal include:

- Utility adjustments (primarily minor power pole relocations)
- Minor property adjustments such as reforming of driveway accesses and relocation of property fences
- Temporary ancillary facilities including a site compound on the south-east corner of the Garfield Road West / Denmark Road intersection
- Rehabilitation of disturbed areas following construction.

A more detailed description of the project can be found in the Denmark Link Road Review of Environmental Factors prepared by Transport for NSW in November 2020.

1.2 REF display

Transport for NSW prepared a Review of Environmental Factors (REF) to assess the potential environmental impacts of the proposed works. The REF was on display for

29 days between Monday 16 November 2020 and Monday 14 December 2020. The REF was available on the project webpage to view or download.

To ensure the health and safety of the community and the staff an online community information session was held online on the NSW Roads Facebook page at [facebook.com/ NSW Roads](https://facebook.com/NSWRoads). The session ran on Tuesday 1 December between 4pm and 4.30pm where there was an opportunity to learn more about the proposal and raise questions and concerns.

The REF was also published on the Transport for NSW project website www.nswroads.gov.au/denmarkrd and was made available for download. The details about the public display period were advertised in the local newspapers The Hawkesbury Gazette and Hawkesbury Courier which was distributed to the local community.

Community involvement activities were also carried out during the public display period to give the community a chance to learn more about the project, ask questions and 'have their say'.

Community involvement activities included:

- Community update through letterbox drops
- Project webpage
- Advertising in local newspapers the Hawkesbury Courier and Hawkesbury Gazette
- Emails
- Community information session through Facebook live
- Social media postings
- Interactive portal.

1.3 Purpose of the report

This submissions report relates to the Denmark Link Road REF and should be read in conjunction with that document.

The REF was placed on public display and 30 submissions were received by Transport for NSW. This submissions report summarises the issues raised and provides responses to each issue (Chapter 2). It details investigations carried out since finalisation of the REF (Chapter 3) and identifies new or revised environmental management measures (Chapter 4).

2 Response to issues

Transport for NSW received 30 submissions. Submissions were accepted up until Thursday 17 December 2020. 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 Chapter 3 of this report.

Table 2-1: Respondents

Respondent	Submission No.	Section where issues are addressed
Individual	1	2.10
Individual	2	2.2.2
Individual	3	2.2.1, 2.2.2
Individual	4	2.3
Individual	5	2.3
Optus	6	2.3
Individual	7	2.2.2
Individual	8	2.11
Individual	9	2.2.1, 2.2.2
Individual	10	2.4
Individual	11	2.4, 2.5
Individual	12	2.4
Individual	13	2.2.2
Individual	14	2.11
Individual	15	2.2.1, 2.2.2
Individual	16	2.2.1, 2.2.2, 2.11
Individual	17	2.4
Individual	18	2.2.1, 2.2.2, 2.9
Individual	19	2.2.1, 2.2.2, 2.5, 2.7, 2.8
Individual	20	2.2.1, 2.7
Individual	21	2.4
Riverstone Trotting Club	22	2.10
Individual	23	2.4
Individual	24	2.2.1, 2.2.2, 2.4
Individual	25	2.2.1, 2.2.2, 2.4
Individual	26	2.2.1, 2.4
Individual	27	2.2.2
Riverstone and District Historical Society	28	2.2.1, 2.2.2, 2.6
Individual	29	2.2.2
Individual	30	2.11

2.1 Overview of issues raised

A total of 30 submissions were received in response to the display of the REF. This included submissions from a utility provider, organisations and 27 submissions from the community.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised and Transport for NSW response to these issues forms the basis of this chapter.

A total of six submissions indicated a clear objection to the proposal while one submission expressed support. The other 23 submissions raised issues or made comments regarding the proposal but did not indicate support or an objection.

The main issues raised in the submissions were:

- Effectiveness of the proposal in addressing congestion and need to prioritise solution to the railway level crossing
- Alternatives to the proposal including provision of an overpass at the Riverstone railway level crossing, the Bandon Road corridor and/or a route via Carnarvon Road
- Increased congestion at the northern end of Bridge Street and the nearby railway bridge
- Noise and air quality impacts associated with increased traffic
- Loss of native vegetation and habitat for native fauna
- Impacts on the curtilage of the heritage listed Hebe Farm and archaeological potential at Hebe Farm, on Denmark Road and on Garfield Road West
- Property acquisition.

Three form letter submissions were received and have been treated as individual submissions. No submissions from government agencies were received during the public display period, although feedback was provided by the Department of Planning, Industry and the Environment, Blacktown City Council and the NSW State Emergency Service during the preparation of the REF.

2.2 Need and options considered

2.2.1 Need for the proposal

Submission numbers

3, 9, 15, 16, 18, 19, 20, 24, 25, 26, 28

Issue description

- Concern about the use of funding for a temporary solution and suggestion that a solution to the railway level crossing and associated congestion needs to be prioritised
- Comment that the proposal is a very short term solution that will not have any significant impact on the number of cars travelling across the Garfield Road, Riverstone station crossing

- Comment that it is unclear how Denmark Link Road will help the numerous heavy vehicles that either need to turn left once they have negotiated the railway level crossing or continue along Garfield Road East to access Windsor Road
- Comment that Denmark Link Road was intended as a temporary measure, to move traffic until Schofields Road was built. Schofields Road is built, so there is no need for the Denmark Link Road
- Query as to whether the Schofields Road upgrade has been effective given the previous Transport for NSW decision to put the Denmark Link Road on hold due to the opening of the Schofields Road upgrade
- Comment that it is unclear how the proposal will alleviate the pressure on Garfield Road, because motorists traveling eastbound on Garfield Road from Richmond Road with a destination of Schofields are few, with most using Carnarvon Road instead. Few vehicles turn right from Garfield Road West to Railway Terrace with only one or two vehicles waiting during peak times per traffic signal phase.
- Comment that with the increasing population of the area, there needs to be a substantial investment in infrastructure including roads and an upgrade to the station.
- Comment that the Bandon Road Corridor should have priority over the Denmark Link Road.

Response

Transport for NSW is currently planning the short, medium and long-term projects needed to implement the North West Growth Centre Road Network Strategy. The proposal is one of the identified short-term works. The need for a grade separated crossing for Garfield Road at Riverstone is identified as a longer-term initiative and Transport for NSW is continuing investigations options for the grade separated crossing.

Even with the opening of the Schofields Road upgrade in mid-2018, traffic counts (conducted in August 2019) show that there is demand for movements from Garfield Road West towards Schofields. On a daily basis, about 10 per cent of total Garfield Road eastbound traffic turn right from Garfield Road onto either Railway Terrace or Oxford Street (refer to Section 6.1.2. of the REF for further traffic count details). While not intended as a long-term solution, the proposal would help remove some of this daily demand from the Garfield Road West / Garfield Road East / Railway Terrace / Riverstone Parade intersection. The proposal would help reduce delays for motorists travelling to the southern part of Riverstone with analysis suggesting an average travel time saving of more than 2.5 minutes.

The proposal is for a local road connection with a five tonne load limit. Heavy vehicles would continue to use the Garfield Road West / Garfield Road East / Railway Terrace / Riverstone Parade intersection.

In addition to helping to alleviate congestion in the short term, the proposal would also provide long term local connectivity and allowing access to important active open space areas envisaged by the Department of Planning, Industry and Environment's West Schofields Precinct Draft Indicative Layout Plan.

While there is an existing alternative route provided by Carnarvon Road / Grange Avenue and Bridge Street, this route does not address the existing demand identified above and does not provide the longer term local connectivity near Denmark Road and West Parade envisaged by the Department of Planning, Industry and Environment's West Schofields Precinct Draft Indicative Layout Plan.

The proposal is one of several planned infrastructure investments in the area, including the upgrade of the Garfield Road corridor is part of the North West Growth Centre Road Network Strategy long term works. The NSW Department of Planning, Industry and Environment has granted Special Infrastructure Contribution funding for Transport for NSW to undertake the planning of the upgrade of Garfield Road East, West and Central. This will support planning for the release of the Marsden Park North, West Schofields and Riverstone East Precincts.

The Bandon Road corridor would be a complementary project connecting Richmond Road, Marsden Park and Windsor Road, Vineyard through Marsden Park North, Riverstone West, Riverstone and Vineyard precincts. The Bandon Road corridor is located more than two kilometres to the north-west of the proposal within the Marsden Park North, Riverstone West and Vineyard Precincts. It is part of the North West Growth Centre Road Network Strategy medium-term work and is subject to funding availability.

2.2.2 Alternatives and options considered

Submission numbers

2, 3, 7, 9, 13, 15, 16, 18, 19, 24, 25, 27, 28, 29

Issue description

- Comment that an overpass at the Riverstone railway level crossing should proceed instead of the proposal
- Comment that the route via Carnarvon Road is available as an existing alternative to the proposal
- Comment that there is already the opportunity for vehicles to turn right into Carlton Street or West Parade to access the proposed new creek crossing. Suggestion that this could reduce the amount of funding required and alleviate congestion without acquiring properties.
- Comment that the only option should be the bypass option further along towards Bandon Road, which will allow Garfield road to better cope with local traffic
- Suggestion that prohibiting heavy vehicles of a certain size may reduce traffic congestion on Garfield Road West.

Response

A future overpass at the rail level crossing and the alternative route via Carnarvon Road are discussed above in Section 2.2.1.

Routes via West Parade or Carlton Street were considered but not selected due to several limitations. Both the West Parade and Carlton Street intersections with Garfield Road West are already affected by traffic queuing on the approach to the Riverstone town centre and would therefore not allow ready access to the new link road. West Parade and Carlton Street also do not connect (to make a four leg intersection) with the future Riverstone West spine road as shown on the Riverstone West Precinct Indicative Layout Plan.

The Bandon Road corridor would provide an extra road connection between Richmond Road and Windsor Road and reduce traffic congestion within Riverstone but is medium-term work is subject to funding availability. The Bandon Road corridor is located more than two kilometres to the north-west of the proposal within the Marsden Park North, Riverstone West and Vineyard Precincts and would not provide

long term local connectivity near Denmark Road and West Parade consistent with the Department of Planning, Industry and Environment's West Schofields Precinct Draft Indicative Layout Plan, which is an important benefit of the proposal.

While restricting larger freight vehicles from using Garfield Road West would help to alleviate congestion, it would also have economic impacts by reducing connectivity for freight transport. Restrictions would also be inconsistent with the proposed Garfield Road West Upgrade which identifies improved access and connectivity for freight transport as a key benefit.

2.3 Proposal description

Submission numbers

4, 5, 6

Issue description

- Comment that current road is narrow prior to entering Hebe farm and concern that the proposed road will not be wide enough
- Query whether the proposed road will be two way
- Query whether on street parking will be available along the new link
- Query about access from Bridge Street towards Grange Avenue
- Query about whether bridge Street will be renamed, and preference to retain the Bridge Street name
- Comment that Optus does not have any fibre plan for Denmark Road.

Response

The Denmark Link Road would be two way local road with 4.5 metres wide travel lanes and road verges.

The proposal would affect the overall supply of on-street parking along the new link as there would be insufficient space for the proposed new lanes and parking on both sides of the road. Observations on site indicate that there is sufficient parking supply on the local road network (and within adjacent properties) to accommodate current levels of parking demand.

It is expected that there would be some on street parking restrictions required on the northern part of Bridge Street near the Westminster Street bridge. The details of any restrictions will be identified during detail design in consultation with and for the approval of Blacktown City Council.

Access south along Bridge Street towards Grange Avenue would still be available following the completion of the proposal.

The naming of local roads in this area is the responsibility of the Blacktown City Council. The query about road names will be forwarded to Council for consideration.

Comments about Optus optical fibre are noted. Consultation with public utility providers will continue during detailed design.

2.4 Transport and traffic

Submission numbers

10, 11, 12, 17, 21, 23, 24, 25, 26

Issue description

- Concern about an increase in traffic and associated congestion on the bridge connection between Railway Terrace and Bridge Street. Comment that this will be made worse as the priority is currently given to traffic from Grange Avenue and the southern end of Bridge Street
- Comment that it will be difficult to turn right from the bridge for traffic coming from Railway Terrace.
- Comment that the increase in traffic at the northern end of Bridge Street will make pedestrian access across the bridge more difficult for pedestrians
- Comment that the northern end of Bridge Street is not wide enough to accommodate the additional two way traffic, especially when cars are parked on both sides
- Comment that the railway bridge at the northern end of Bridge Street is too narrow for the increase in the traffic
- Comment that traffic lights will be needed on both sides of the railway bridge. Observation that the current traffic light phasing only lets three cars across the bridge at a time meaning it can take several cycles to get across the bridge
- Query as to whether there will be any mitigation on West Parade (such as traffic calming) as it will get more traffic
- Query as to how the Denmark Link Road can be a light vehicle route when heavy vehicles are used to access the trotting track.

Response

Traffic modelling indicates that the Bridge Street / Railway Terrace / Westminster Street intersection can accommodate (in the year 2030) up to 200 vehicles from the new link (160 left, 40 through) during peak periods before reaching capacity. Notwithstanding, it is acknowledged there is potential for some queuing along Bridge Street (both north and south) with the addition of Denmark Link Road traffic.

Detailed traffic modelling will be carried out to inform the development of the detailed design for the proposal and the operation of the Bridge Street / Railway Terrace / Westminster Street intersection will be further reviewed following the opening of the Denmark Link Road.

Pedestrian access across the southern side of Westminster Street bridge would still be available following the completion of the proposal. Access to this area has recently been improved with the construction by Blacktown City Council of a new footpath along the western side of Bridge Street.

It is expected that there would be some on street parking restrictions required on the northern part of Bridge Street near the Westminster Street bridge. The details of any restrictions will be identified during detail design in consultation with and for the approval of Blacktown City Council.

West Parade has been designed as a local road and traffic would be required to stay within the 50 kilometre per hour speed limit. No traffic calming measures have been included in the proposal.

Heavy vehicles (greater than five tonne) would be permitted to use Denmark Link Road if their destination (for example the Riverstone Trotting Club) is along the route. Heavy vehicles would not be permitted to use Denmark Link Road as a through route.

2.5 Noise and vibration

Submission numbers

11, 19

Issue description

- Concern about noise associated with increased traffic

Response

Transport for NSW acknowledges that due to the introduction of additional traffic, residences along the new link road would experience an increase traffic related noise (refer to Section 6.2.4 of the REF). Based on the noise modelling conducted it is expected that 24 residential receivers would qualify for consideration of feasible and reasonable noise mitigation measures due to the proposal. Specific property treatments will be considered during detailed design in consultation with affected property owners.

2.6 Non-Aboriginal heritage

Submission numbers

28

Issue description

- Emphasis on the historical importance of Hebe Cottage, being the oldest known building in the Riverstone/Schofields area, and the importance of preserving the curtilage around the house and exploring the archaeological history of the property
- Comment that while there are no photographic images or maps showing the existence of other buildings, as the land was used for farming purposes, it is logical that there must have been such buildings. It is understood that there were two tennis courts on the property
- Support for an archaeological study given the age of Hebe Cottage and the continual land use
- Comment that there is a second square shaped tunnel under the railway, to the north of the brick culvert, that is understood to have allowed the owners of Hebe to move their cattle from one part of their property to the other, as the property was split by the railway line.
- Comment that there is possible archaeological potential associated with 37 Denmark Road (potential 1850s structure) as identified in the West Schofields Part Precinct (Northern Part) Non- Indigenous Heritage Assessment (Extent Heritage, 2018). Further research, including testing, of the identified

archaeological sites should be carried out verify the presence or absence of archaeological features and deposits

- Comment that there may be potential for archaeological finds associated with former buildings along Garfield Road, and therefore further investigation, including archaeological testing should be carried out
- Support the recommendations on pages 58 and 59 of the Non-Aboriginal (Historical) Statement of Heritage Impact
- Comment that the following additional recommendations should be addressed:
 - Photographic archival recording of Hebe Farm should take place with copies provided to Blacktown City Council, Blacktown City Council Library and the Riverstone and District Historical Society Inc
 - Heritage protective barriers should be erected along the edge of the route/construction zone in Hebe Cottage curtilage
 - Should unexpected items of built heritage be identified during construction, these should be identified, photographed, and documented. The Riverstone Museum operated by the Riverstone and District Historical Society Inc could provide an appropriate repository for such items.

Response

Comments regarding the historical importance of Hebe Cottage and associated archaeological potential are noted. As outlined in Section 6.3.5 of the REF, Transport for NSW will carry out an archaeological testing program in the affected area of Hebe Farm that will target zones of archaeological potential including the area bordering the brick culvert and drainage channel, which runs into the property. Archival recording of the affected part of Hebe Farm, including any 'works' uncovered, will also be carried out.

Comments regarding the second square shaped tunnel under the railway, north of the brick culvert, are noted. No changes to this cross drainage structure are proposed.

Further heritage advice was sought in relation to archaeological potential associated with 37 Denmark Road (refer to Appendix B). The advice confirms that the proposal would not impact the area of archaeological potential identified in the West Schofields Part Precinct (Northern Part) Non-Indigenous Heritage Assessment (Extent Heritage, 2018). The area along Denmark Road affected by the proposal is considered to have generally nil to low non-Aboriginal archaeological potential.

Further heritage advice was sought in relation to the potential for archaeological finds associated with former buildings along Garfield Road (refer to Appendix B). The advice concludes that it is unlikely that the proposal would impact on a significant archaeological resource associated with earlier buildings due to the works being confined largely to the existing road corridor. The archaeological evidence of this phase of historical land-use is likely to be better preserved within the house blocks associated with the Richards Avenue workers cottages (located about 400 metres to the north-west of the proposal).

Prior to the start of construction, a Non-Aboriginal Heritage Management Plan will be prepared and implemented. The plan will include specific protection measures including fencing and maintenance of buffer areas. Any unexpected archaeological finds will be managed in accordance with Standard Management Procedure – Unexpected Heritage Items (Roads and Maritime Services, 2015).

2.7 Biodiversity

Submission numbers

19, 20

Issue description

- Concern about loss of native vegetation along the railway line near the creek crossing
- Concern about impacts on habitat for native fauna including for the Bell Miner (*Manorina melanophrys*)
- Comment that the amount of wildlife that resides within this area needs to be considered as all the development within the surrounding areas has left limited places for wildlife to reside.

Response

A Biodiversity Assessment for the proposal was carried out and included Appendix H of the REF.

The Biodiversity Assessment identified that about one hectare of native vegetation composed of mature trees with a heavily weed-infested understorey would be removed by the proposal. This loss of native vegetation would not remove any resources important to any of the threatened species likely to occur at the site, nor is it expected to limit the diversity of any foraging, sheltering, or breeding sites for these species. The proposal would not fragment or isolate any of these species' habitats, nor present any barriers to their breeding or movement requirements.

Other native species recorded or with the potential to occur at the site (including the Bell Miner) are protected (but not threatened) species under the *Biodiversity Conservation Act 2016*. These species are common to abundant throughout the surrounding region and have been recorded in association with a range of woodland habitats, as well as urban environments. The species recorded would not be solely reliant upon those habitats at or near the proposal footprint and the removal or further disturbance of these would not threaten the 'local' occurrence of these animals. The species recorded are all expected to be present within both the study area and surrounding locality post-work.

A Flora and Fauna Management Plan would be prepared and implemented prior to the start of construction and would include, among other things, requirements for pre-clearing surveys, fauna handling requirements and procedures in the event of injury to native fauna.

2.8 Air quality

Submission numbers

19

Issue description

- Concern about air pollution associated with increased traffic.

Response

The potential air quality impacts of the proposal are discussed in Section 6.7.4 of the REF. A screening assessment conducted using the Transport for NSW Tool for Roadside Air Quality (TRAQ) model identified that carbon monoxide, nitrogen dioxide and particulate matter concentrations during operation of the proposal at opening are all expected to be compliant with the relevant EPA criteria, including concentrations at the kerb. Compliance would also be achieved should traffic on the link grow to its capacity of 2,000 vehicles per day.

2.9 Hydrology, flooding and groundwater

Submission numbers

18

Issue description

- Comment that the road will be near the flood area near the trotting track and will be unusable in times of persistent rain.

Response

The REF identifies (in section 6.9.2) that the proposal footprint is subject to flooding (including Hawkesbury-Nepean River flooding, which occurs when floodwater backs up the main arms of South Creek and Eastern Creek from the Hawkesbury-Nepean River). Key findings in relation to Hawkesbury Nepean River Flooding are:

- The Denmark Road / Garfield Road West intersection would be inundated during a 10 per cent AEP flood event (a flood event that has a 10 per cent change of occurring in any one year)
- Denmark Road would be partially inundated near new transverse drainage structure EXD03 (mid-way along Denmark Road) during a 10 per cent AEP flood event
- All of Denmark Road and a large portion of the road linking it and Carlton Street would be inundated during a five per cent AEP flood event
- All but the upgraded section of West Parade would be inundated in a two per cent AEP flood event
- The upgraded section of West Parade would be inundated during a one per cent AEP flood event near its intersection with Trevithick Street and near new transverse drainage structure XING03 (between West Parade and Bridge Street).

It is also worth noting that in larger flood events Garfield Road West would already be inundated at the Eastern Creek bridge. In these circumstances there would be no Garfield Road West traffic crossing the Eastern Creek bridge, regional traffic would be discouraged from using Denmark Link Road to travel towards flood waters on Garfield Road West.

2.10 Socio-economic

Submission numbers

1, 22

Issue description

- Concern about property acquisition (division of land parcel in two) and associated safety and amenity impacts. Suggestion that the road alignment should be shifted to avoid severance of the submitter's land.
- Concern about interaction between horses and traffic with horses typically walked to the trotting track from West Parade, Trevithick Street, Carlton Street, Creek Street and Denmark Road.

Response

The proposed Denmark Link Road alignment has been the subject of an option development and evaluation process over several years and is described in Chapter 2 (Need and options considered) of the REF. Moving the alignment to the north (towards Garfield Road) to avoid severing the submitters land would bring it too close to the Trevithick Street intersection and would not be acceptable from a road design perspective. The suggested realignment to the north would also not allow sufficient space for the Department of Planning, Industry and Environment's proposed sporting fields as shown in the West Schofields Precinct Draft Indicative Layout Plan.

The proposed link road would be a local road with a posted speed limit of 50 kilometres per hour and is not considered to be a safety risk for adjacent residences.

Potential road traffic noise impacts are acknowledged in Section 6.2.4 of the REF and the submitters residence has been identified for consideration of reasonable and feasible noise mitigation.

All property acquisition would be in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

Transport for NSW will continue to work with the Riverstone Trotting Club during detailed design to address concerns about the interaction between horses and traffic using the new link road.

2.11 Other issues

Submission numbers

8, 14, 16, 30

Issue description

- Support for the proposal and request to be informed of further developments
- Comment that priority should be given to the duplication of the Richmond Rail Line
- Query about whether there is a proposal to upgrade Richmond Road to dual carriageway between Elara Boulevard at Marsden Park and George Street, Bligh Park.

Response

The community will be kept informed as the proposal progresses. Future communications and notifications may include:

- Community/construction updates
- Media announcements

- NSW LiveTraffic updates and social media updates
- Stakeholder meetings as required
- Web page updates
- Work notification letters (as required).

Comments about the duplication of the Richmond Rail Line are noted, however this is beyond the scope of the proposal. The proposal is needed irrespective of any future improvements to the Richmond Rail Line.

Transport for NSW is continuing the planning for the future of Richmond Road to support the forecast growth in the North West Growth Centre. This includes an upgrade of Richmond Road north of Elara Boulevard for about 1.5 km to provide access to Marsden Park and Marsden Park North Precincts. Further information is available at www.rms.nsw.gov.au/projects/north-west-growth-centre-strategy/richmond-road-upgrade.html.

3 Additional studies

3.1 Non-Aboriginal heritage

Additional specialist non-Aboriginal heritage advice has been obtained for the proposal and is included in Appendix B.

The advice considered the archaeological potential associated with the property at 37 Denmark Road (as identified in the West Schofields Part Precinct (Northern Part) Non-Indigenous Heritage Assessment (Extent Heritage, 2018)), and with former buildings on Garfield Road. These issues were raised in the submission from the Riverstone and District Historical Society.

The advice confirms that the proposal would not impact the area of archaeological potential at 37 Denmark Road identified in the West Schofields Part Precinct (Northern Part) Non-Indigenous Heritage Assessment (Extent Heritage, 2018). The area along Denmark Road affected by the proposal is considered to have generally nil to low non-Aboriginal archaeological potential.

The advice concludes that it is unlikely that the proposal would impact on a significant archaeological resource associated with earlier buildings on Garfield Road due to the works being confined largely to the existing road corridor. The archaeological evidence of this phase of historical land-use is likely to be better preserved within the house blocks associated with the Richards Avenue workers cottages (located about 400 metres to the north-west of the proposal).

3.2 Biodiversity

Additional specialist biodiversity advice has been obtained for the proposal and is included in Appendix A.

Since the Biodiversity Assessment Report (Appendix H of the REF) was completed, River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria has been listed as a Critically Endangered Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This community is similar to the *Biodiversity Conservation Act 2016* listed River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.

The EPBC Act listing focuses legal protection on patches of the ecological community that are the most functional, relatively natural and in comparatively good condition.' These patches are identified through minimum condition thresholds published by the Threatened Species Scientific Committee in the Conservation Advice for the listing.

It has been identified that the Forest Red Gum – Cabbage Gum Open Forest (Plant Community Type 835) recorded near the tributary of Eastern Creek does not meet the condition requirements for the EPBC Act listed River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria under the EPBC Act. No further assessment of potential impacts on this community is therefore proposed.

4 Environmental management

The REF for the project identifies the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7.2 of the review of environmental factors).

After consideration of the issues raised in the public submissions no changes to proposed safeguards and management measures were considered necessary.

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

4.1 Environmental management plans

A number of safeguards and management measures have been identified in the REF in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the project. These safeguards and management measures would be incorporated into the detailed design and applied during the construction and operation of the project.

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

The CEMP and EWMS will be prepared prior to construction of the project and must be reviewed and endorsed by the Transport for NSW Environment Officer, 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 specifications including QA Specification G36 – Environmental Protection (Management System) and QA Specification G10 – Traffic Management.

4.2 Summary of safeguards and management measures

The REF for the project identifies a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental management measures for the project (refer to Chapter 7 of the REF) have been retained with only minor editorial changes. The environmental management measures in Table 3-1 will guide the subsequent phases of the project.

Table 3-1: Summary of safeguards and management measures

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
GEN1	General – minimise environmental impacts during construction	<p>A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity. As a minimum, the CEMP will address the following:</p> <ul style="list-style-type: none"> • Any requirements associated with statutory approvals • Details of how the project will implement the identified safeguards outlined in the REF • Issue-specific environmental management plans • Roles and responsibilities • Communication requirements • Induction and training requirements • Procedures for monitoring and evaluating environmental performance, and for corrective action • Reporting requirements and record-keeping • Procedures for emergency and incident management • Procedures for audit and review. <p>The endorsed CEMP will be implemented during the undertaking of the activity.</p>	Contractor Transport for NSW project manager	Pre-construction Detailed design	Standard measure
GEN2	General – notification	All businesses, residential properties and other key stakeholders (e.g. schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor Transport for NSW project manager	Pre-construction	Standard measure
GEN3	General – environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular ‘toolbox’ style briefings. Site-specific training will be provided to personnel engaged in activities or areas of higher risk.	Contractor Transport for NSW project manager	Pre-construction	
TT1	Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Traffic Control at Work Sites Manual	Contractor	Pre-construction	Standard measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<p>(Transport for NSW, 2020) and QA Specification G10 Control of Traffic (Transport for NSW, 2020). The TMP will include:</p> <ul style="list-style-type: none"> • Confirmation of haulage routes • Measures to maintain access to local roads and properties • Site-specific traffic control measures (including signage) to manage and regulate traffic movement • Measures to maintain pedestrian and cyclist access • 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. <p>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.</p>			
TT2	Traffic and transport	The operation of the Bridge Street / Railway Terrace / Westminster Street intersection will be reviewed following the opening of the new Denmark Link Road.	Transport for NSW	Operation	Additional measure
NV1	Construction noise and vibration	<p>A Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the CEMP. The NVMP will generally follow the approach in the Interim Construction Noise Guideline (ICNG) (DECC, 2009) and the Construction Noise and Vibration Guideline (Roads and Maritime Services, 2016) and identify:</p> <ul style="list-style-type: none"> • Key potential noise and vibration generating activities associated with the activity • Feasible and reasonable mitigation measures to be implemented • A monitoring program to assess performance against relevant noise and vibration criteria • A review process scheduling and assessing out-of-hours activities including consideration of alternatives to out-of- 	Contractor	Pre-construction	Section 4.6 of QA G36 Environment Protection

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<p>hours work, plant selection, work locations and screening to minimise impacts</p> <ul style="list-style-type: none"> • A working schedule which records respite periods for extended out-of-hours works • Arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures <p>Contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.</p>			
NV2	Construction vibration	<p>Where vibration intensive plant such as vibratory rollers are used, vibration must be managed to minimise disturbance to building occupants and to avoid damage to buildings and other structures (including heritage fabric). This includes adhering to the recommended minimum working distances for vibration intensive plant identified in Section 7.1 of the Construction Noise and Vibration Guideline (Roads and Maritime Services, 2016).</p> <p>If recommended minimum working distances cannot be met by selecting smaller plant, vibration monitoring will occur to quantify and help manage vibration. If necessary, trial vibration measurements will be conducted to further assess any possible impacts and buffer distances that may be required.</p>	Contractor	Construction	Additional measure
NV3	Construction noise and vibration	<p>All sensitive receivers likely to be affected will be notified at least five working days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of:</p> <ul style="list-style-type: none"> • The proposal • The construction period and construction hours • Contact information for project management staff • Complaint and incident reporting <p>How to obtain further information.</p>	Contractor	Pre-construction	Standard measure
NAH1	Non-Aboriginal heritage	<p>A Non-Aboriginal Heritage Management Plan will be prepared and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented to avoid</p>	Contractor	Detailed design Pre-construction	Section 4.10 of QA G36

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<p>and mitigate impacts to non-Aboriginal heritage and will include:</p> <ul style="list-style-type: none"> • Site inductions which cover significant heritage fabric and protection requirements • Specific protection measures including fencing and maintenance of buffer areas • Tailored construction methods for works near significant heritage fabric (such as use of hand tools only). 			Environment Protection
NAH2	Non-Aboriginal heritage	The later 19th century brick culvert and the open cut drainage channel under the railway line on the eastern boundary of the proposal footprint at Hebe Farm will be protected during construction.	Contactor	Construction	Additional measure
NAH3	Non-Aboriginal heritage	An archaeological testing program will be submitted as an Exception 1B under section 139(4) of the <i>Heritage Act 1977</i> . Test trenches will target zones of archaeological potential within the development footprint at Hebe Farm, notably the area bordering the brick culvert and drainage channel, which runs into the property. Archival recording of any 'works' uncovered will also be undertaken as part of the testing program.	Transport for NSW	Detailed design	Additional measure
NAH4	Non-Aboriginal heritage	A Photographic Archival Recording will be prepared for the portion of Hebe Farm within the project footprint prior to impact.	Transport for NSW	Detailed design	Additional measure
NAH5	Non-Aboriginal heritage	The Standard Management Procedure - Unexpected Heritage Items (Roads and Maritime Services, 2015) will be followed in the event 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.	Contactor	Construction	Section 4.10 of QA G36 Environment Protection
AH1	Aboriginal cultural heritage	An application for an Aboriginal Heritage Impact Permit (AHIP) will be made under section 90A of the <i>National Parks and Wildlife Act 1974</i> for the land and associated objects within the boundaries of the study area.	Transport for NSW	Detailed design	Additional measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
AH2	Aboriginal cultural heritage	The non-impacted portion of site Denmark Road AFT 1 (outside of construction and AHIP boundary) will be identified in the Construction Environmental Management Plan (CEMP) prior to construction activities to ensure this part of the site is avoided and not impacted by the proposal. The site area should be marked as an environmentally sensitive “no-go zone”.	Contractor	Construction	Additional measure
AH3	Aboriginal cultural heritage	Workers will be inducted as to appropriate Aboriginal heritage protection measures.	Contractor	Construction	Additional measure
AH4	Aboriginal cultural heritage	The Standard Management Procedure – Unexpected Heritage Items (Roads and Maritime Services, 2015) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. This applies where Transport for NSW 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. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Construction	Section 4.9 of QA G36 Environment Protection
AH5	Aboriginal cultural heritage	Archaeological salvage excavation will be required for the impacted portion of site Denmark Road AFT 1 (partial impact on site of moderate significance). Salvage excavation must be completed prior to any activities which may harm Aboriginal objects at this site location, including all construction and pre-construction works. Salvage excavation activities would be undertaken in accordance with the methodology provided in the Cultural Heritage Assessment Report.	Transport for NSW	Pre-construction	Additional measure
BIO1	Biodiversity impacts	A Flora and Fauna Management Plan will be prepared in accordance with Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects (RTA, 2011) and will be implemented as part of the CEMP. The Flora and Fauna Management Plan will include, but not be limited to: <ul style="list-style-type: none"> Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas Pre-clearing survey requirements 	Contractor	Pre-construction	Section 4.8 of QA G36 Environment Protection

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> Procedures for unexpected threatened species finds and fauna handling Procedures in the event of injury to native fauna Protocols to manage weeds and pathogens.			
BIO2	Biodiversity impacts	Measures to further avoid and minimise the construction footprint and native vegetation or habitat removal (including hollow bearing trees) will be investigated during detailed design and implemented where practicable and feasible.	Transport for NSW	Detailed design	Additional measure
BIO3	Biodiversity impacts	Pre-clearing survey will be conducted and will: <ul style="list-style-type: none"> Confirm clearing boundaries, exclusion zones, protected habitat features and revegetation areas prior to starting work Identify, in toolbox talks, where biodiversity controls are located on the site.	Contractor	Pre-construction	Additional measure
BIO4	Spread of weeds	Weed management will occur in accordance with Biodiversity Guidelines, Guide 6 (Roads and Maritime, 2016) and include: <ul style="list-style-type: none"> The Identification of weeds on site (confirmed during pre-clearing survey) Weed management priorities and objectives Exclusion zones, protected habitat features and revegetation areas prior to starting work within or directly next to the site The location of weed infested areas Weed control methods Measures to prevent the spread of weeds, including machinery hygiene procedures and disposal requirements A monitoring program to measure the success of weed management Communication with local Council noxious weed representative.	Contractor	Pre-construction	Additional measure
BIO5	Spread of diseases affecting plants	Management measures will be implemented to control and/or prevent the introduction and/or spread of disease-causing agents such as bacteria and fungi in accordance with the Biodiversity Guidelines, Guide 7 (Roads and Maritime, 2016).	Contractor	Construction	Additional measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
BIO6	Unexpected threatened species finds	If unexpected flora or fauna are discovered on site stop work immediately and implement the Roads and Maritime Unexpected Threatened Species Find Procedure in the Biodiversity Guidelines, Guide 1 (Roads and Maritime, 2016).	Contractor	Construction	Additional measure
LCV1	Landscape character and visual impact	<p>An Urban Design Plan (including detailed urban design drawings and landscape plans) will be prepared to support the final detailed project design.</p> <p>The Urban Design Plan will present an integrated urban design for the project, providing further practical detail on the application of design principles and objectives identified in this REF. The Plan will confirm design treatments for:</p> <ul style="list-style-type: none"> • Location and identification of existing vegetation and proposed landscaped areas, including species to be used • Details of the staging of landscape works taking account of related environmental controls such as erosion and sedimentation controls and drainage • Procedures for monitoring and maintaining landscaped or rehabilitated areas. <p>The Urban Design Plan will be prepared in accordance with relevant guidelines, including:</p> <ul style="list-style-type: none"> • Beyond the Pavement urban design policy, process and principles (Roads and Maritime, 2014) <p>Landscape Guideline (Roads and Maritime Services, 2019).</p>	Transport for NSW	Detailed design	Standard measure
LCV2	Visual impacts	Following the completion of construction works, plant/equipment will be removed, and disturbed areas will be revegetated, turfed or otherwise restored as appropriate.	Contractor	Construction	Additional measure
LCV3	Visual and landscape impacts	Opportunities to support the Five Million Trees for Greater Sydney initiative and the greening our city Premier's priority will be explored during detailed design and as part of the development of the landscape design for the proposal. This would include consultation with Blacktown City Council.	Transport for NSW	Detailed design	Additional measure
LCV4	Impact from lighting	Temporary site lighting will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect	Contractor	Construction	Additional measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		of Outdoor Lighting, and an approved Traffic Management Plan.			
LCV5	Impacts from lighting	The design of new street lighting will consider potential light spill impacts on adjacent properties.	Transport for NSW	Detailed design	Additional measure
AQ1	Air quality	<p>An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to:</p> <ul style="list-style-type: none"> • Potential sources of air pollution (including site compound operation) • Air quality management objectives consistent with any relevant published EPA guidelines • Mitigation and suppression measures to be implemented <p>Methods to manage work during strong winds or other adverse weather conditions.</p>	Contractor	Construction	Section 4.4 of QA G36 Environment Protection
SWQ1	Soil and water	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP. The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction.	Contractor	Detailed design Pre-construction	Section 2.1 of QA G38 Soil and Water Management
SWQ2	Soil and water	A site specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the Soil and Water Management Plan.	Contractor	Detailed design Pre-construction	Section 2.1 of QA G38 Soil and Water Management
SWQ3	Contamination	<p>A Detailed Site Investigation (“DSI”) will be undertaken prior to construction works commencing, targeting the AECs where exposure pathways are potentially complete. The DSI should include, but not be limited to:</p> <ul style="list-style-type: none"> • Investigation of the extent and nature of the illegally dumped waste in bushland at the southern end of the Denmark Road section of the Site, and between West Parade and Bridge Street. This will likely require clearing of vegetation • Collection of a surface water sample from the dam on Lot 10 Section W DP 712 to assess for water quality 	Transport for NSW	Detailed design	Additional measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> • Soil sampling across Lots 10 and 14 Section W DP 712, to assess possible contamination from potential historical farming practices • Sampling of the fill along Denmark Road, Carlton Street, Trevithick Street, West Parade and Bridge Street. 			
SWQ4	Contamination	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other work 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 Transport for NSW Environment Manager and/or EPA.	Contractor	Detailed design Pre-construction	Section 4.2 of QA G36 Environment Protection
SWQ5	Accidental spills	A site specific emergency spill plan will be developed, and include spill management measures in accordance with the Transport for NSW Code of Practice for Water Management (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 Transport for NSW and EPA officers).	Contractor	Detailed design Pre-construction	Section 4.3 of QA G36 Environment Protection
SWQ6	Salinity	Soil salinity testing will be carried out prior to construction to further assess these risks and implement appropriate controls.	Contractor	Detailed design Pre-construction	Additional measure
HF1	Flooding and hydrology	Staging for the construction of the proposal will consider adequate stormwater flow paths (including diversions and temporary connections as required) to be implemented and maintained during construction to minimise the potential on-site or upstream flooding.	Contractor	Construction	Additional measure
HF2	Flooding and hydrology	A flood management procedure will be prepared to detail procedures to be implemented where extreme weather is predicted and where there is a risk of flooding affecting the work site and compound, including removal and storage or plant and equipment and securing of site.	Contractor	Construction	Additional measure

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
HF3	Flooding and hydrology	Further investigation into flooding impacts on the existing dwellings on the northern side of Garfield Road West near the intersection with Denmark Road will occur with the purpose of minimising impacts.	Transport for NSW	Detailed design	Additional measure
SEC1	Anxiety and uncertainty	<p>A Community and Stakeholder Engagement Plan (CSEP) will be prepared and will include:</p> <ul style="list-style-type: none"> • Procedures and mechanisms that would be implemented in response to the key social impacts identified for the proposal • Procedures and mechanisms that would be used to engage with affected landowners, business owners, and the wider community to identify potential access, parking, business visibility, and other impacts and develop appropriate management measures • Procedures to keep the community informed about construction and any associated changes to conditions (e.g. detours or lane closures) such as through advertisements in local media and advisory notices or variable message signs • Procedure for the management of complaints and enquiries, including a contact name and number for complaints. 	Transport for NSW	Pre-construction	Standard measure
SEC2	Anxiety and uncertainty	Horse owners will be engaged to identify suitable management measures for horse riders near the construction areas. Management measures would be adopted in the traffic management plan and noise management plan to mitigate against livestock disturbance.	Transport for NSW	Pre-construction	Additional measure
WM1	Waste	<p>A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to:</p> <ul style="list-style-type: none"> • Measures to avoid and minimise waste associated with the project • Classification of wastes and management options (re-use, recycle, stockpile, disposal) 	Contactor	Detailed design / pre-construction	Section 4.11 of QA G36 Environment Protection

No.	Impacts	Environmental safeguards	Responsibility	Timing	Reference
		<ul style="list-style-type: none"> • Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal • Monitoring, record keeping and reporting. 			
C11	Cumulative impacts	<p>Current and upcoming projects with the potential to interact with the proposal will be monitored. Where potential cumulative impacts are identified, the scheduling of works will be coordinated with interacting projects to minimise potential impacts. This will include:</p> <ul style="list-style-type: none"> • Scheduling works to allow suitable respite periods for construction noise • Scheduling of works to minimise consecutive construction noise impacts, where feasible • Coordinating lane closures and pedestrian/cyclist diversions to minimise the overall number of occasions where disruption occurs. 	Transport for NSW Project Manager	Construction	Additional measure

4.3 Licencing and approvals

Table 3-2 provides a summary of the licensing and approval requirements relevant to the project.

Table 3-2: Summary of licensing and approvals required

Instrument	Requirement	Timing
<i>Roads Act 1993</i> (section 138)	Road occupancy licence	Prior to start of activity
<i>Heritage Act 1977</i> (section 134)	Notification of the proposal to the Heritage Division, Department of Premier and Cabinet as part of an application for an exception under Section 134 of the <i>Heritage Act 1977</i> .	Prior to carrying out the archaeological testing program identified by measure NAH3.
<i>National Parks and Wildlife Act 1974</i>	Aboriginal Heritage Impact Permit under Section 90 of the <i>National Parks and Wildlife Act 1974</i> for the land and associated Aboriginal objects within the boundaries of the study area.	Prior to start of activity

References

Extent Heritage. (2018). *West Schofields Part Precinct (Northern Part) Non-Indigenous Heritage Assessment*. Sydney: Department of Planning, Industry and Environment.

Roads and Maritime Services. (2015). *Standard Management Procedure - Unexpected Heritage Items*. Sydney: Roads and Maritime Services.

Transport for NSW. (2020). *Traffic control at worksites Technical Manual*. Sydney: Transport for NSW.

Appendix A

Biodiversity advice

Transport for NSW

08 February 2021

Commonwealth *Environment Protection and Biodiversity Conservation Act* River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria Critically Endangered Ecological Community listing

1. Introduction and background

In October 2020 Lesryk Environmental conducted a biodiversity assessment of Transport for NSW's proposal to build a local link road from the intersection of Garfield Road West and Denmark Road, Riverstone, to the Westminster Street bridge at Schofields. An element of the biodiversity assessment was a consideration of impacts of the proposal on the NSW *Biodiversity Conservation Act 2016* (BC Act) listed Endangered Ecological Community (EEC) River-flat forest on Coastal Floodplains (RFEF), a stand of which occurs either side of a tributary of Eastern Creek that traverses the West Parade road corridor.

Since the biodiversity assessment was completed, River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria has been listed as a Critically Endangered Ecological Community (CEEC) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This CEEC is somewhat analogous to the BC Act listed RFEF. However, the 'National listing focuses legal protection on patches of the ecological community that are the most functional, relatively natural and in comparatively good condition.' These patches are identified through minimum condition thresholds published by the Threatened Species Scientific Committee in the Conservation Advice for the CEEC (Threatened Species Scientific Committee 2020).

The minimum threshold (Class C) for a patch of vegetation with suitable canopy species to be considered RFEF under the EPBC Act is that $\geq 30\%$ of its total perennial understorey vegetation cover is comprised of native species *and* that at least four such species should be present in a 20 metre (m) x 20 m plot.

The subject stand of Forest Red Gum – Cabbage Gum Open Forest has understorey vegetation that is dominated by introduced species such as Large-leaf Privet (*Ligustrum lucidum*) and Balloon Vine (*Cardiospermum grandiflorum*). The cover of the few native species present such as Weeping Meadow Grass (*Microlaena stipoides*) is less than 1%.

Therefore, the Forest Red Gum – Cabbage Gum Open Forest recorded near the Eastern Creek tributary does not qualify as River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria under the EPBC Act. Therefore, no assessment of impacts upon that CEEC is required.

If you require any further information on this matter, please do not hesitate to contact the undersigned on either (02) 9523 2016 or 0408 258 129.

Yours sincerely,



Deryk Engel (Director)
Lesryk Environmental Pty Ltd

Reference

Threatened Species Scientific Committee 2020, *Conservation Advice for the River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria*. Downloaded January 2021. <<http://www.environment.gov.au/biodiversity/threatened/communities/pubs/154-conservation-advice.pdf>>

Appendix B

Non-Aboriginal heritage advice



artefact

20 May 2021

Transport for NSW

Re. Response to Submission 28– Denmark Link Road Project

Transport for NSW is proposing the development of a local link road connection between Riverstone and Schofields, Sydney NSW. The Denmark Link Road would provide a connection from Garfield Road West at Riverstone via the Denmark Road intersection to West Parade. West Parade would be extended to the Westminster Street bridge at Schofields.

Artefact Heritage was engaged by Hills Environmental on behalf of Transport for NSW to provide a Non-Aboriginal (Historical) Statement of Heritage Impact (SoHI) to provide input into the Review of environmental Factors (REF) completed for the project.

Transport for NSW has received a submission from the Riverstone and District Historical Society (the Society) regarding several aspects of the concept design and REF, dated 14 December 2020 (submission 28).

Artefact has been engaged by Hills Environmental on behalf of Transport for New South Wales to provide a brief response to the following issues raised in submission 28:

- The identification of a potential archaeological site at 37 Denmark Road
- The identification of potential archaeological sites on Garfield Road.

Artefact would like to thank the Society for bringing these resources to our attention. They have been discussed, within the context of the Denmark Link Road Project, in the section below.

Please note this submission does not include the results of detailed primary research, and the site was not visited during preparation of this document.

Potential archaeological site – 37 Denmark Road

The Society referenced an assessment prepared by Extent Heritage in July 2018 - West Schofields Part Precinct (Northern Part) Non- Indigenous Heritage Assessment Final Draft Department of Planning and Environment. This report identified a potential archaeological site at 37 Denmark Road following a site inspection that noted the presence of in situ nineteenth century brick and concrete footings.

Extent Heritage concluded that the site should be conserved and avoided where possible. The assessment states that should impact to the site be required, additional archaeological mitigation in the form of testing under either a Section 139(4) Exception or Excavation Permit under Section 141 of the Heritage Act 1977 would be required. The results of archaeological testing would assist in

defining the significance and appropriate archaeological management strategy for each site based on the extent and level of preservation of identified relics.

Extent's mapping of the archaeological evidence identified during field survey in comparison to the structure shown on the 1856 subdivision map is shown below as 'Archaeological Evidence.' The potential site is on the opposite side of Denmark Road from the former structure location, illustrated on Figure 1 as a black rectangle.

It is also noted that structures are visible in the 'Archaeological Evidence' location in the 1947 and 1961 aerials of the study area. The presence of concrete pads also suggests a 20th century construction date for at least some of these remains. This does not, however, discount the potential that archaeological evidence associated with an earlier historical phase does remain at this location.

Figure 1: Plan extracted from Extent Heritage July 2018¹

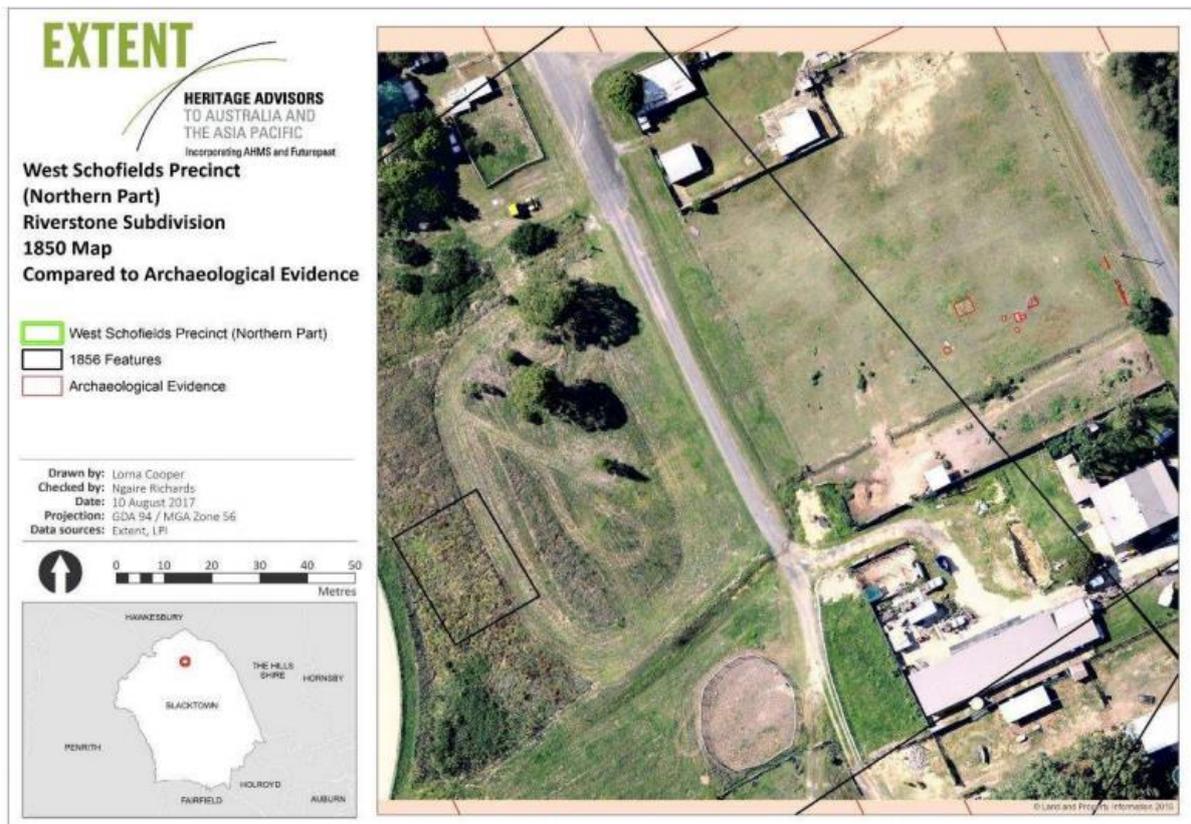


Figure 41. Aerial imagery of archaeological potential compared to archaeological evidence (Source: Extent, Nearmap)

Proposed works associated with the Denmark Link Road project would be located approximately 40 metres to the west of the identified remains and would include:

- Improvements to the road corridor to facilitate a two-lane local road
- Installation of environmental controls including erosion and sediment controls
- Cleaning and shaping of existing table drains
- Pavement and drainage constructions
- Site clean-up and rehabilitation of disturbed areas
- Installation of new street lighting at intersection

¹ Extent Heritage *West Schofields Part Precinct (Northern Part) Non- Indigenous Heritage Assessment Final Draft* Department of Planning and Environment, July 2018

- Potential minor utility adjustments
- Landscaping on Denmark Link Road.

This document concludes that the Denmark Link Road project will not impact on this potential archaeological site. As concluded in the 2020 SoHI this portion of the study area has been assessed as having generally nil to low archaeological potential. Transport for NSW's Unexpected Heritage Finds Guideline should be implemented during all excavation works.

As suggested by the Society, it is recommended that should the current study area and/or proposed scope of works be altered, that Extent's 2018 recommendations are implemented.

Potential archaeological site/s – Garfield Road

The Society included a c.1909 photograph in their submission, captured looking south away from the Riverstone Meatworks towards the project study area.

Several structures can be seen in the background of the image. Architecturally they appear to broadly date to the late 19th or early 20th centuries. The Richards Avenue cottages, as shown in the photograph middle foreground of the photograph, were demolished in the first quarter of the 20th century to make way for the later residences, the majority of which remain extant and listed on the Blacktown LEP 2015.

It is difficult to accurately identify the location of the former structures identified in the c.1909 photograph, however, based on their location in comparison to the original alignment of a rail siding approaching Riverstone Station and the orientation of the houses in the foreground, Artefact agrees that these properties are likely to have fronted either the northern or southern boundary of Garfield Road or the curve of Richards Avenue.

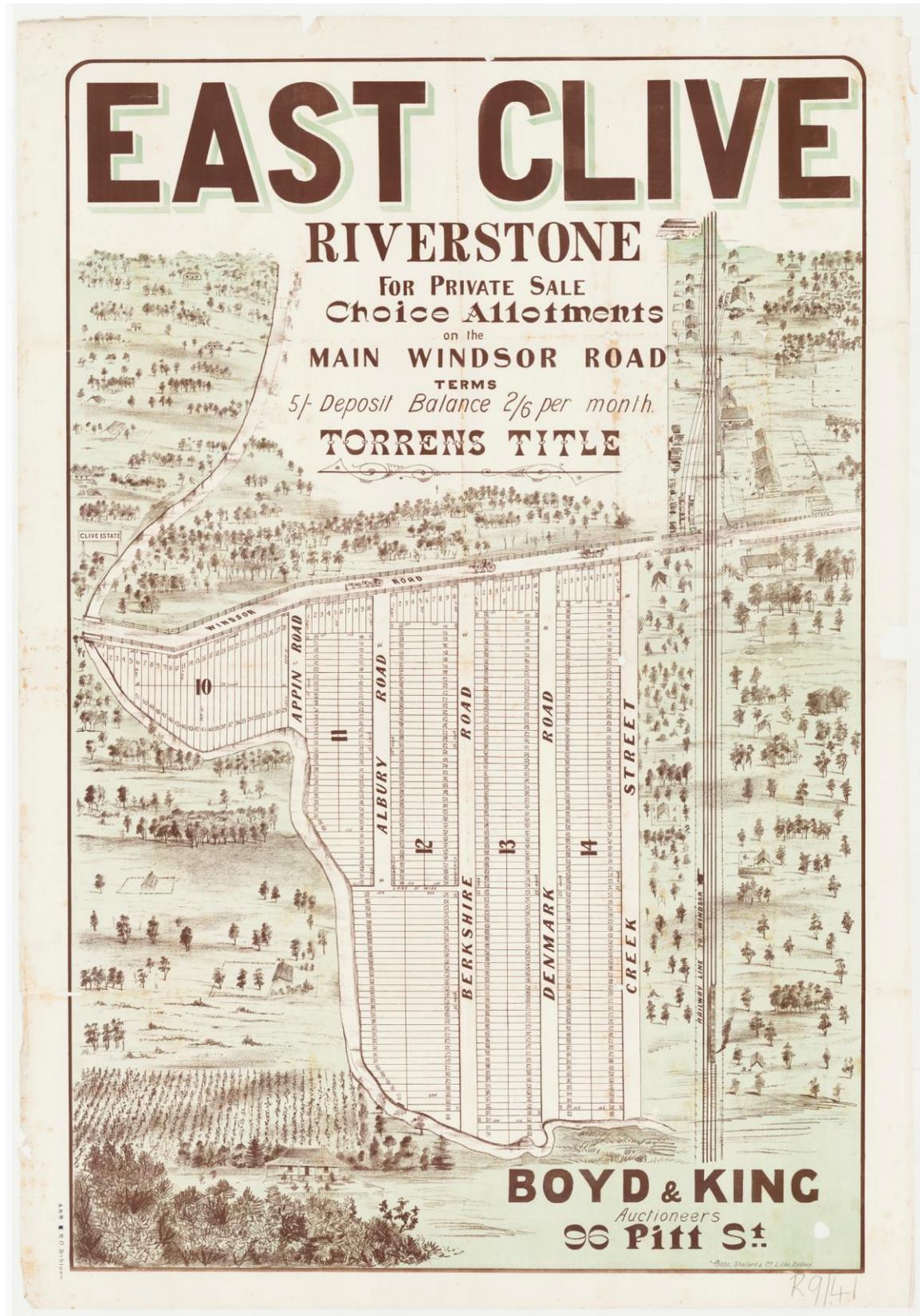
The c.1884 subdivision plan suggests that the portion of the study area to the north of Garfield Road was vacant at this time.² Based on the depth of the Richards Avenue workers housing blocks associated with the cottages in the c.1909 photograph, and assuming the current, later, cottages are in a similar orientation and location as these earlier cottages, the largest structures in the background of the c.1909 photograph is likely to have been located close to the intersection of Garfield Road and Carlton Street, rather than within the current Denmark Link Road study area.

The structures under discussion do not appear on the 1947 (or later) aerial photographs of the area. It is therefore possible that the structures were originally part of the Riverstone Meatworks, possibly an extension of the workers housing group on Richards Avenue. This pre-1947 date broadly conforms with the history of the workers cottage, the first phase of which were demolished in the first quarter of the 20th century. A second 'street' of cottages can be seen on both the c.1884 subdivision plan and on an real estate 1884 sketch of the area, reproduced below.³

² Boyd and King Auctioneers, 1884. *East Clive– Riverstone– Windsor Rd, Appin Rd, Albury Rd, Berkshire Rd, Denmark Rd, Creek St.* State Library of New South Wales Call No. Z/SP/R9 IE9071307. Accessed online 23/7/20 at: http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9071307&change lng=

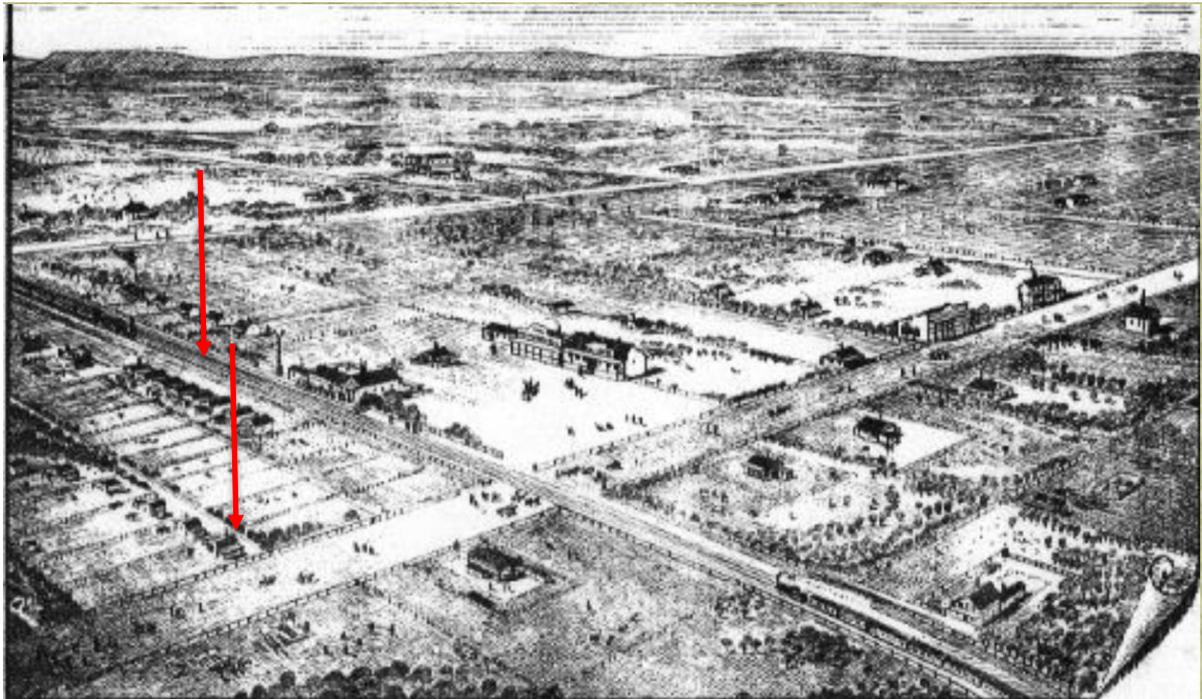
³ Image from the cover of the *Grantham Estate Purchasers' Companion and Guide*. Boyd & King, State Library of NSW

Figure 2: East Clive Estate subdivision plan, c. 1884. Source: SLNSW⁴



⁴ Boyd and King Auctioneers, 1884. *East Clive— Riverstone— Windsor Rd, Appin Rd, Albury Rd, Berkshire Rd, Denmark Rd, Creek St.* State Library of New South Wales Call No. Z/SP/R9 IE9071307. Accessed online 23/7/20 at: http://digital.sl.nsw.gov.au/delivery/DeliveryManagerServlet?dps_pid=IE9071307&change_lng=

Figure 3: Cover of Grantham Estate Purchasers' Companion and Guide. Boyd & King. The workers houses are arrowed. Mitchell Library



Due to the assumed age of the former structures, archaeological evidence associated with the frontages of properties of this date tend to include postholes, footings and pad bases. Remains of this age and type are fairly ubiquitous. Artefact bearing deposits are more likely to be preserved in the rear yards of buildings dating to this period, associated with rubbish pits or decommissioned cisterns and/or wells. An *in situ* artefact bearing deposit associated with the late 19th century occupation of Riverstone, particularly if associated with the early 20th century construction of the first phase workers cottages associated with the Riverstone meatworks, may have some associative and historical significance.

Proposed works within the Garfield Road portion of the study area would include:

- Installation of environmental controls including erosion and sediment controls
- Cleaning and shaping of existing table drains
- Pavement and drainage constructions
- Site clean-up and rehabilitation of disturbed areas
- Installation of new street lighting
- Potential minor utility adjustments.

It is considered unlikely that the project would impact on a significant archaeological resource associated with earlier buildings due to the works being confined largely to the existing road corridor. It is also considered that archaeological evidence of this phase of historical land-use is likely to be better preserved within the house blocks associated with the Richards Avenue workers cottages.

Overall, Artefact considered there to be generally limited potential for a significant archaeological resource associated with this phase of historical land-use to be identified within the study area. The assessment of archaeological potential prepared for the project in November 2020 has been updated in the below table to account for the Society's concerns. Potential archaeological remains are unlikely to reach the local significance threshold.

Table 1. Archaeological potential within the study area by land use

Phase	Sections	Potential archaeological remains	Potential
Phase 1			
Riverstone Estate (1788-1859)	All study area	Land clearing activity (i.e. tree boles etc.); demarcation activity (i.e. fencing etc.)	Nil
<hr/>			
Phase 2	North	Land clearing activity (i.e. tree boles etc.); demarcation activity (i.e. fencing etc.); route/access activity (i.e. road levelling surfaces etc.) Evidence of undocumented agricultural/industrial buildings and/or residential properties in the form of postholes, brick or stone footings, areas of flooring/hard stand and/or artefact bearing deposits.	Nil to low
	South (Hebe Farm)	Agriculture/cultivation activities (i.e. irrigation, drainage); railway-related features (i.e. culvert drainage channel etc.); occupation/domestic activities (i.e. artefact-yielding deposits, privies etc.)	Low to moderate
<hr/>			
Phase 3	North	Occupational or domestic activities (i.e. yard features, access ways and demarcation etc.) Evidence of undocumented agricultural/industrial buildings and/or residential properties in the form of postholes, brick or stone footings, areas of flooring/hard stand and/or artefact bearing deposits.	Nil to low
	South (Hebe Farm)	Agriculture/cultivation activities (i.e. irrigation, drainage, pens, outbuildings etc.); route/access activity (i.e. path-/track-way surfaces etc.)	Low

Updated recommendations

Overall, this addendum has found that the statement of heritage impact prepared for the project in November 2020 does not require alteration:

The proposed work in the northern study area will involve some improvements and modifications to the existing road networks as well as subsurface excavations, notably for the construction of a new link road (between Denmark Road and Carlton Street) and a new intersection (Carlton Street).

In terms of the impact of this work, the archaeological and heritage values of the northern study area are not considered to meet the threshold of local or State significance, and therefore the impacts are considered overall as negligible.

An Unexpected Finds Procedure should be implemented for all project excavation work not subject to archaeological testing.

In the unlikely event that substantial intact archaeological relics of State or local significance not identified in the November 2020 SoHI or this addendum are unexpectedly discovered during excavation, work must cease in the affected area and Heritage NSW, Department of Premier and Cabinet (delegate of the Heritage Council of New South Wales) must be notified in writing in accordance with Section 146 of the *Heritage Act 1977*. Depending on the nature of the discovery, additional assessment and possibly an excavation permit may be required prior to the recommencement of excavation in the affected area.



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