



Cessnock City Council

Richmond Vale Rail Trail - Stockrington to Kurri Kurri Review of Environmental Factors

March 2022

Executive summary

The Richmond Vale Rail Trail

Overview

The proposed Richmond Vale Rail Trail is a 32 kilometre cycling and walking track along the former Richmond Vale railway between Kurri Kurri and Hexham/Shortland.

The Richmond Vale railway is a former rail line that runs from Hexham to Pelaw Main in the Lower Hunter region of NSW. Industrial operation of the railway ceased in 1987 following the closure of the collieries in the region. An opportunity now exists to establish a multi-use recreational trail for active transport by utilising the disused sections of the former rail line. The trail would be located within the Newcastle, Cessnock and Lake Macquarie local government areas.

The Council of the City of Newcastle, Cessnock City Council and Lake Macquarie City Council are the proponents of the proposal. Funding contributions have also been made from the National Parks and Wildlife Service and the Donaldson Conservation Trust.

The rail trail would provide a safe cycling and walking experience between Kurri Kurri and Newcastle that does not utilise existing road networks and would attract both local and regional users to enjoy the environmental and heritage attractions along the route. The Richmond Vale Rail Trail provides an opportunity for the communities of the Lower Hunter region to develop the key economic growth areas of tourism and recreation while providing social, health and conservation benefits for users and the region.

Objectives of the Richmond Vale Rail Trail

The aim of the Richmond Vale Rail Trail is to enhance active transport options and create connectivity between communities by providing improved cycling and walking facilities and linking the communities of the Lower Hunter region via a safe, accessible and amenable route. Key objectives of the project are to:

- Support future growth within the Lower Hunter region of NSW.
- Maximise road safety benefits by providing a safe alternative route for active transport between the communities of the region.
- Provide the local and regional community with better recreational access to the local natural environment.
- Encourage the growth of bicycle-tourism industries within the region.
- Generate opportunities for residents and tourists to enjoy healthier, more active lifestyles.

Need for the Richmond Vale Rail Trail

The Richmond Vale Rail Trail aims to deliver a continuous off-road shared pathway from Shortland to Kurri Kurri, and once constructed would provide a link between the population centres of Kurri Kurri, Maitland and Newcastle. The shared pathway would enable cyclists and pedestrians to undertake journeys without having to ride on the Pacific Motorway, Hunter Expressway or New England Highway.

The Richmond Vale Rail Trail is specifically referred to in the *Hunter Regional Plan 2036* (OEH, 2016) and *Greater Newcastle Metropolitan Plan 2036* (DP&E, 2018), which identifies a range of strategies to support sustainable growth across the local and regional area including Newcastle, Cessnock and Maitland.

The project addresses key actions related to:

- Improved access to open space, recreation areas and waterways.
- Enhanced nature based tourism through protection and promotion of natural assets.

The Richmond Vale Rail Trail provides an active transport and recreational choice for locals and visitors, passing through old railway tunnels and over bridges, amongst wildlife habitats and linking to the Hunter Wetlands Centre. It would also open up the western section of the Hunter Wetlands National Park, the Pambalong Nature Reserve and the Werakata State Conservation Area to the public and provide opportunities in the key growth areas of transport, tourism, recreation, heritage, and economic and social development.

The proposal

Overview

To seek relevant development approvals, the Richmond Vale Rail has been divided into two sections, Shortland to Tarro and Pambalong, and Stockrington to Kurri Kurri. The Stockrington to Kurri Kurri section of the rail trail is addressed in this review of environmental factors (REF), apart from a small area adjacent to the Pambalong Nature Reserve that requires development consent.

The Shortland to Tarro, and the Pambalong section, are subject to assessment and approval under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Environmental impact statements (EIS) have been prepared for both projects (GHD, 2019; GHD, 2020) to accompany a development application to the City of Newcastle and Cessnock City Council for approval. These areas are not addressed in this REF.

Key features

The proposal involves the establishment of a pathway between three to four metres wide constructed, for the most part, on an existing disused rail alignment. The proposal would generally comprise the following:

- Removal of unsuitable subgrades and the construction of pavements using imported gravel, asphalt and concrete.
- Restoration and repair, as required, of three existing railway tunnels.
- At grade crossings of the following roads:
 - Dog Hole Road, Stockrington.
 - Quarry access road, Richmond Vale.
 - Hunter Expressway construction yard off George Booth Drive, Richmond Vale.
 - Pokolbin Street, Kurri Kurri.
- Construction of a 15 metre two-span concrete bridge at Surveyors Creek and demolition of the existing timber bridge at this location.
- Construction of a new 70 metre single span bridge at Wallis Creek, and demolition of the existing timber bridge.
- Construction of a new, short bridge at Werekata Creek, with removal of the existing bridge abutments as the bridge structure having been removed previously.
- Construction of four new parking facilities at various access points along the proposal route.

Timing

Construction of the proposal, if approved, would commence when funding is received and is expected to take approximately 12 to 18 months to complete.

Objectives of the proposal

The proposal addresses the objectives of the overall Richmond Vale Rail Trail project, and also specific objectives to:

- Support growth by connecting local and regional users at key access points including Kurri Kurri, Buchanan and Stockrington.
- Provide commuters and recreational users with a safe alternative route to the local road network, including the New England Highway and the M1 Pacific Motorway.
- Provide better recreational access to the Pambalong Nature Reserve and the Werakata State Conservation Area.
- Protect and maintain natural conservation values of adjacent lands, including conservation areas.
- Generate healthier, more active lifestyles and opportunities for public appreciation and enjoyment of the local natural environment.

Need for the proposal

The proposal would provide a continuous shared pathway from Stockrington to Kurri Kurri. It is a critical component of the Richmond Vale Rail Trail project, which aims to deliver a continuous off-road shared pathway from Shortland to Kurri Kurri. Once constructed, the Richmond Vale Rail Trail would provide a regionally important active transport link between the centres of Kurri Kurri, Maitland and Newcastle.

The key benefits of the proposal include improved and more sustainable transport choices, increased visitation to the locality and region, additional recreational opportunities and the growth of bicycle-tourism industries. The proposal would improve the safety of pedestrians and cyclists who currently have to continue their journey from one pathway to the next along busy roads. The proposal would also provide opportunities for healthier active lifestyles for both residents and tourists and allow users to experience the amenity of the route as it travels through various landscapes and environments.

Cessnock City Council is committed to providing facilities that are accessible to the whole community. The general design objectives for the shared pathway are to provide a safe, enjoyable and aesthetically pleasing journey for the whole community. A number of fatalities have occurred on the New England Highway and other arterial roads and motorways within the locality. The shared pathway would improve safety for all road users.

Options considered

The proposal follows the alignment of the former Richmond Vale railway, and offers a number of advantages over alternative alignments, including:

- Improved safety by reducing cyclist interactions with road users.
- Minimal land acquisition.
- Minimal earthworks.
- Fewer environmental impacts.
- Improved aesthetic appeal.

A detailed design options assessment was undertaken for the various bridge and treatment options along the proposal alignment.

The preferred option comprises a combination of the preferred options for bridges and pavement treatment, which includes:

- Construction of a 15 metre two-span concrete bridge at Surveyors Creek and demolition of the existing timber bridge at this location.
- Construction of a new 70 metre single span bridge at Wallis Creek, and demolition of the existing timber bridge.
- Construction of a new, short bridge at Werekata Creek, with removal of the existing bridge abutments as the bridge structure having been removed previously.
- Either flexible pavement, comprising granular (gravel) material overlaid with asphalt or other bituminous seals, or concrete, either reinforced with mesh or fibres.

Statutory and planning framework

The proposal is defined as a 'road infrastructure facility' under clause 2.107 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP). Clause 2.108(1) of the Transport and Infrastructure SEPP permits development for the purpose of a road infrastructure facility to be carried out by or on behalf of a public authority without consent on any land.

Assessment, in the form of this REF, is required under Division 5.1 of the EP&A Act. Cessnock City Council is the proponent and determining authority for the REF pursuant to Section 5.3 of the EP&A Act.

Community and stakeholder consultation

Consultation with potentially affected property owners, residents, relevant government agencies and other stakeholders, and the community, has been undertaken for many years and is ongoing. Information about the proposal is available on the Council website and is updated regularly.

Council would continue to consult with the community and stakeholders throughout the future stages of the proposal.

Summary of key benefits and impacts

Key benefits of the proposal include:

- Improved facilities linking local communities via a safe, accessible and amenable route.
- A commuter and recreational transport corridor for tourists and locals to make journeys without having to use existing road networks (in particular the M1 Pacific Motorway and New England Highway).
- Improved access for tourists and locals to enjoy heritage (such as passing through old railway tunnels) and environmental attractions, including the Pambalong Nature Reserve and Werekata State Conservation Area.
- Opportunities for healthier, active lifestyles for both residents and tourists allowing users to experience the amenity of the route as it travels through various landscapes and environments.
- Opportunity for development of the key economic growth areas of tourism and recreation, while providing social, health and conservation benefits for users and the region.

These benefits have been quantified and exceed the cost of the proposal by an estimated two and a half times.

The key impacts of the proposal are considered minor in comparison and include:

- Minor amenity impacts during construction due to increased traffic and activity, visual changes, noise and dust.
- Potential water quality impacts due to pollutant runoff, sedimentation, and disturbance of acid sulfate soils.
- Minor change to surface water flows due to increased impermeable surfaces and construction of new bridges and boardwalks.
- Removal of native vegetation, which would result in a negligible loss of habitat for native (and threatened) flora and fauna.
- Potential for injury, mortality and disturbance of native fauna during construction and operation of the proposal.
- Potential introduction and spread of weeds and pathogens.
- Permanent visual changes and impacts to a small number of residents and national park visitors due to increased visitation. Impacts could include noise, inappropriate use and loss of privacy.
- Potential and actual impacts to Aboriginal and non-Aboriginal cultural heritage values.
- Impacts to a small number of landowners due to temporary or long term use or acquisition of property for the proposal.

Justification and conclusion

The key benefits of the proposal include improved and more sustainable transport choices, increased tourism, better access to recreational opportunities and the growth of bicycle-tourism industries. The proposal would improve the safety of pedestrians and cyclists who currently have to continue their journey from one pathway to the next along busy roads. The proposal also provides opportunities for healthier lifestyles for both residents and tourists and would allow users to better experience certain aspects of the cultural and natural environment of the region.

The potential impacts of the proposal are considered minor when compared to the identified benefits. Mitigation measures are provided in this REF, which would avoid, reduce or mitigate any impacts. Ongoing consultation during the detailed design, construction and operation stages would ensure that input from affected stakeholders is incorporated where relevant into the proposal.

The proposal as described in the REF best meets the proposal objectives. On balance the proposal is considered justified.

Display of the REF

The REF will be placed on public display. You can access the documents in the following ways:

Internet

The documents will be available as PDF files at:

<https://www.cessnock.nsw.gov.au/Home>

Display

The REF documents can be viewed at:

62-78 Vincent Street Cessnock

How can I make a submission?

To make a submission on the proposal, please send your written comments to:

PO Box 152, Cessnock NSW 2325 or council@cessnock.nsw.gov.au

Privacy information

All information included in submissions is collected for the sole purpose of assisting in the assessment of this proposal. The information may be used during the assessment process by relevant Council staff and its contractors.

Where the respondent indicates at the time of supply of information that their submission should be kept confidential, Council will attempt to keep it confidential. However there may be legislative or legal justification for the release of the information, for example under the *Government Information (Public Access) Act 2009* or under subpoena or statutory instrument.

The supply of this information is voluntary. Each respondent has free access at all times to the information provided by that respondent but not to any identifying information provided by other respondents if a respondent has indicated that the representation should be kept confidential.

Any respondent may make a correction to the information that they have provided by writing to the same address the submission was sent. The information will be held by the Council.

What happens next?

Following the public display period, Council will determine whether the proposal should proceed as proposed, or whether any alterations to the proposal are necessary. The community will be kept informed regarding this determination.

If the proposal goes ahead, Council would proceed with final design and call for tenders for construction of the proposal.

If you have any queries regarding the proposal, please contact the Council on 02 4993 4100.

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Appendix G – Socio-economic Impact Assessment

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1. Introduction

1.1 Background

The Richmond Vale railway is a former rail line that runs from Hexham to Pelaw Main in the Lower Hunter region of NSW. The first section of the railway was opened in 1857 and it originally ran from Hexham to Minmi. In 1905 the line was extended from Minmi to the Richmond Main and Pelaw Main Collieries, near Kurri Kurri. A number of small branch lines were also established from the 1920s to the 1950s to service collieries in the Stockrington area to the east of Pelaw Main. Industrial operation of the railway ceased in 1987 following the closure of the collieries in the region. In 1991, a direct passenger line was re-opened along a section of railway from the former Richmond Main Colliery to the former Pelaw Main Colliery. This passenger line continues to operate as a tourist facility managed by the Richmond Vale Railway Museum. The balance of the line has remained closed since 1987 (Richmond Vale Railway Museum, 2010).

An opportunity now exists to utilise the disused sections of the former rail line to establish a multi-use recreational trail for active travel. Once constructed, the trail would extend for about 32 kilometres, from Shortland in the east, to Kurri Kurri in the west, within the Newcastle, Cessnock and Lake Macquarie local government areas (LGAs).

The Richmond Vale Rail Trail provides an opportunity for the communities of the Lower Hunter region to develop the key economic growth areas of tourism and recreation while providing social, health and conservation benefits for users and the region. These opportunities were identified in a feasibility study undertaken by Mike Halliburton Associates (2014), which recommended the Richmond Vale Rail Trail based on the constructability, value, community benefit and tourism potential of the trail.

GHD Pty Ltd (GHD) has been engaged by Cessnock City Council to prepare a Review of Environmental Factors (REF) for the section of the proposed Richmond Vale Rail Trail that is within the Lake Macquarie and Cessnock LGAs (the 'proposal'). The location of the proposal is shown in Figure 1-1. For the purposes of this REF, Cessnock City Council is referred to as 'Council'.

The section of the trail within the Newcastle LGA is addressed in a separate environmental impact statement (EIS) and development application (DA) and is not assessed in this REF. In addition, a small section of the trail adjacent to the Pambalong Nature Reserve, which is mapped as coastal wetland, is not addressed in this REF. Works at this location have been granted development consent, via the lodgement of a DA and EIS to Council.

1.2 Purpose of this report

This REF has been prepared in accordance with Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The purpose of the REF is to describe the proposal, to document the likely impacts of the proposal on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposal and associated environmental impacts have been undertaken in the context of Clause 171 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act), and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the REF helps to fulfil the requirements of Section 5.5 of the EP&A Act, which requires that Council examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an EIS to be prepared and approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act.
- The significance of any impact on threatened species, as defined by the BC Act and/or FM Act, as required under Section 1.7 of the EP&A Act and therefore the requirement for a species impact statement (SIS).
- The potential for the proposal to significantly impact on matters of national environmental significance (NES) or Commonwealth land and the need to make a referral to the Australian Government Department of Agriculture, Water and Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

For the purposes of this REF, the following definitions are employed:

- The 'proposal' refers to the Richmond Vale Rail Trail within the Lake Macquarie and Cessnock LGAs.
- The 'proposal site' refers to the area that would be directly impacted by the proposal.
- The 'study area' encompasses the proposal site and the area that may be indirectly impacted by the proposal.
- The 'locality' encompasses the suburbs of Stockrington, Seahampton, Buchanan, Richmond Vale and Pelaw Main, which is the area surrounding the site.
- The 'trail' refers to the Richmond Vale Rail Trail in its entirety, within the Newcastle, Lake Macquarie and Cessnock LGAs.

1.3 Scope and limitations

This report: has been prepared by GHD for Council and may only be used and relied on by Council for the purpose agreed between GHD, Council as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in the relevant sections of this report. GHD disclaims liability arising from any of the assumptions being incorrect.

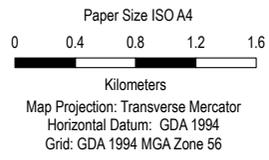
GHD has prepared this report on the basis of information provided by Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

All reports have been reviewed and approved by Council.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.



Cessnock City Council
Richmond Vale Rail Trail
Review of Environmental Factors

Project No. 12529257
Revision No. 0
Date 03/07/2020

Locality plan

Figure 1-1

2. Need and options considered

2.1 Strategic context and need

The Richmond Vale Rail Trail aims to deliver a continuous off-road shared pathway from Shortland to Kurri Kurri, and once constructed would provide a link between the population centres of Kurri Kurri, Maitland and Newcastle. The shared pathway would provide a link for users between Kurri Kurri, Pelaw Main, Tarro, Minmi and Shortland that would enable cyclists and pedestrians to undertake journeys without having to ride on the Pacific Motorway, Hunter Expressway or New England Highway.

The trail is specifically referred to in the *Hunter Regional Plan 2036* (OEH 2016) and *Greater Newcastle Metropolitan Plan 2036* (DP&E, 2018), which identifies a range of strategies to support sustainable growth across the local and regional area including Newcastle, Cessnock and Maitland. The project addresses key actions related to:

- Improved access to open space, recreation areas and waterways.
- Enhanced nature based tourism through protection and promotion of natural assets.

The trail will provide an active transport and recreational choice for locals and visitors, passing through old railway tunnels and over bridges, amongst wildlife habitats and linking to the Hunter Wetlands Centre. It would also open the Hunter Wetlands National Park, Pambalong Nature Reserve and Werakata State Conservation Area (SCA) to the public and provide opportunities in the key growth areas of transport, tourism, recreation, heritage, and economic and social development.

The proposal is a critical component of the Richmond Vale Rail Trail project. The Cessnock Cycling Strategy (2016) recognises the potential of the Richmond Vale Rail Trail, and supports its implementation:

“The Rail Trail would provide cyclists in the region with a high quality cycleway that will make cycling more attractive and encourage people to get on their bikes and participate in cycling”.

Further to the above, Council's Trails Strategy (2020) highlights the significance of the trail and its strategic importance within the broader trail network (both cross-regionally and locally). A number of high priority actions are provided within the Strategy to support the progression of the Richmond Vale Rail Trail.

The key benefits of the proposal include improved and more sustainable transport choices, increased visitation to the locality and region, additional recreational opportunities, and the growth of bicycle-tourism industries. The proposal would improve the safety of pedestrians and cyclists who currently have to continue their journey from one pathway to the next along busy roads. The proposal would also provide opportunities for healthier active lifestyles for both residents and tourists and allow users to experience the amenity of the route as it travels through various landscapes and environments.

Council is committed to providing facilities that are accessible to the whole community. The general design objectives for the shared pathway are to provide a safe, enjoyable and aesthetically pleasing journey for the whole community. A number of fatalities have occurred on the New England Highway and other arterial roads and motorways within the locality. The shared pathway would improve safety for all road users.

2.2 Route selection and alternatives considered

2.2.1 Options assessment

A number of alternatives were considered by Council during the concept design stage. The preferred option was chosen based on consideration of safety, environmental, cost and design issues. The proposal follows the alignment of the former Richmond Vale railway, which offers a number of advantages over alternative alignments, including:

- Improved safety by reducing cyclist interactions with road users.
- Reduced land acquisition requirements.
- Reduced earthworks requirements.
- Fewer environmental impacts.
- Improved aesthetic appeal and experience.

Due to the above, alignment alternatives were not considered but a number of options for the various bridges required along the rail trail were reviewed. These options are discussed in the following section. Adjustments to the design were also made during its development to minimise vegetation removal, impacts to historic and Aboriginal cultural heritage, cost, and to improve safety.

2.2.2 Options considered

Seahampton Road

The Seahampton Road option uses the northern side of Dog Hole Road for the proposal, making use of the existing road formation and seal to reduce cost and simplify construction (see Figure 2-1). Seahampton Road is currently closed to vehicular traffic.



Figure 2-1 Seahampton Road option

Quarry access road

At Richmond Vale, the proposal would follow an existing quarry access road that runs adjacent to the existing railway cutting (see Figure 2-2). The route would then re-join the railway alignment near the intersection of the quarry access road with George Booth Drive. This option is more undulating than the existing railway alignment, but it would avoid a cutting that has eroded batter slopes and is overgrown with vegetation, reducing costs and construction impacts.

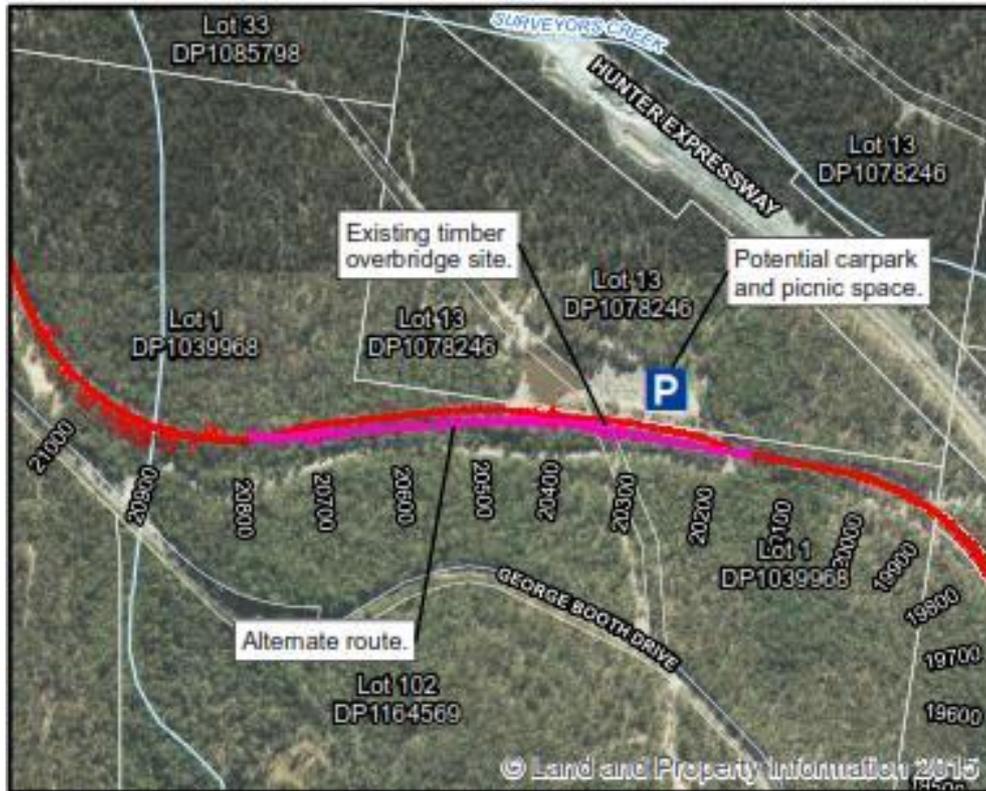


Figure 2-2 Quarry access road option

Surveyors Creek

A number of options were considered for the crossing of Surveyors Creek. An existing timber bridge constructed for the Richmond Vale railway crosses the creek at this location (see Figure 2-3). However, the existing bridge is structurally unsound and would not be suitable for the proposal. The options considered include:

- Option SCa – A new low-level bridge comprising two 15 metre long spans immediately to the south of the existing bridge.
- Option SCb - A steel or concrete bridge along the existing alignment comprised of two 33 metre long spans.
- Option SCc - A 60 metre steel or concrete single-span suspension bridge along the existing alignment.

Demolition or retention of the existing bridge was also considered. Due to cost and safety considerations, it was decided to demolish the existing bridge and construct the low-level two span bridge (option SCa).



Figure 2-3 Existing bridge over Surveyors Creek

Wallis Creek

A number of options were considered for the crossing of Wallis Creek. An existing timber bridge constructed for the Richmond Vale railway crosses the creek at this location (see Figure 2-4). The existing bridge is structurally unsound and would not be suitable for the proposal. The options considered include:

- Option WCa – A new low-level multi-span bridge approximately 30 metres to the south of the existing bridge.
- Option WCb – Two 25-metre long multi-span footbridges approximately three metres to the south of the existing alignment.
- Option WCc - A 70 metre long single-span suspension bridge approximately three metres to the south of the existing alignment.

Demolition or retention of the existing bridge was also considered. Due to cost and safety considerations, it was decided to demolish the existing bridge and construct the 70 metre long single-span suspension bridge (option WCc).



Figure 2-4 Existing bridge over Wallis Creek

Pelaw Main

The proposal deviates from the railway alignment prior to the intersection of the rail trail with Pokolbin Street at Pelaw Main (see Figure 2-5). The proposal would follow an existing formed track adjacent to the top of the cutting. This deviation would avoid the need to remove vegetation that has become established in the rail cutting.

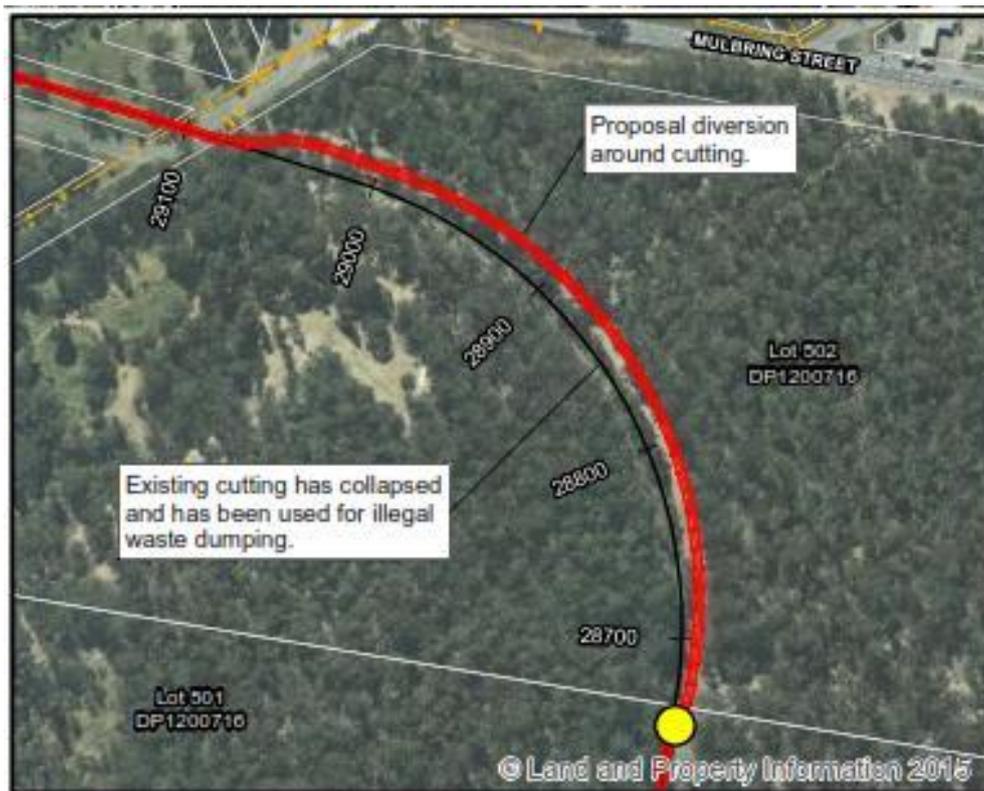


Figure 2-5 Pelaw Main option

Werakata State Conservation Area

The existing bridge within the Werakata SCA has collapsed and only the bridge abutments are remaining. The proposal alignment would deviate at this location to follow an existing diversion immediately to the south-west of the collapsed bridge (see Figure 2-6). Low-level box culverts would be constructed to provide a crossing over the waterway. This option would reduce costs and environmental impacts.



Figure 2-6 Werakata SCA option

Pavement treatment options

Paving of the trail is proposed because:

- The trail would be more attractive to road and touring cyclists.
- Sealing would improve safety and attractiveness for a range of other users, such as families, walkers, mobility impaired users.
- Use of paving reduces the ongoing maintenance required, which would save costs, improve durability and reduce environmental impacts.

The proposal would be paved using either flexible pavement, comprising granular (gravel) material overlaid with asphalt or other bituminous seals, or concrete, either reinforced with mesh or fibres. The choice of pavement type is based on:

- Cost.
- Ride quality.
- Moisture in subgrade and management of surface water ingress.
- Constructability.

The 'do nothing' option

The 'do nothing' option would result in the trail not being constructed. This would mean that the aim of improving cycling facilities and resultant economic opportunities within the Lower Hunter region would not be achieved. The safety of pedestrians and cyclists who currently use busy roads to continue their journey from one pathway to the next would not be improved. Healthy lifestyle and natural area enjoyment benefits would not be fulfilled. The do nothing option would be a lost opportunity to repurpose an unused existing asset to provide a range of community benefits.

2.2.3 Selection of preferred option

The preferred option for the proposal was chosen based on cost, ride quality and user experience, reduced environmental, social and economic impacts, and constructability. The preferred option is based on extensive consultation with relevant stakeholders and the community. The design was refined in response to this input on a number of occasions as described in the previous section.

The preferred option comprises a combination of the preferred options for bridges and pavement treatment, which includes:

- Construction of a 15 metre two-span concrete bridge at Surveyors Creek and demolition of the existing timber bridge at this location.
- Construction of a new 70 metre single span bridge at Wallis Creek, and demolition of the existing timber bridge.
- Construction of a new, short bridge at Werekata Creek, with removal of the existing bridge abutments as the bridge structure has been removed previously.
- Either flexible pavement, comprising granular (gravel) material overlaid with asphalt or other bituminous seals, or concrete, either reinforced with mesh or fibres.

3. Proposal description

3.1 Proposal overview

The proposal involves the establishment of approximately 17 kilometres of recreational pathway, constructed for the most part within existing cleared road corridors or the former Richmond Vale railway alignment. The proposal would enable active transport between the suburbs of Kurri Kurri, Pelaw Main, Buchanan, Richmond Vale, Seahampton and Stockrington.

The proposal would generally comprise the following construction activities:

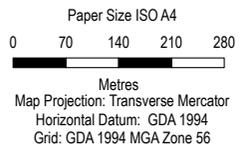
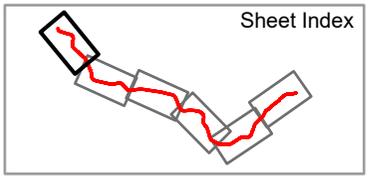
- Removal of unsuitable subgrades and construction of pavements using imported gravel, asphalt and concrete.
- Restoration and repair, as required, of three existing railway tunnels.
- Installation of at-grade crossings of the following roads:
 - Dog Hole Road, Stockrington
 - Quarry access road, Richmond Vale
 - Hunter Expressway construction yard off George Booth Drive, Richmond Vale
 - Pokolbin Street, Kurri Kurri
- Construction of a 15 metre two-span concrete bridge at Surveyors Creek and demolition of the existing timber bridge at this location.
- Construction of a new 70 metre single span bridge at Wallis Creek, and demolition of the existing timber bridge at this location.
- Construction of a new, short bridge at Werekata Creek, with removal of the existing bridge abutments as the bridge structure having been removed previously.
- Construction of parking facilities at five access points along the proposal route.

The key features of the proposal are shown in Figure 3-1. Concept design plans for the Richmond Vail Rail Trail are included in Appendix A.



Legend

- Proposed route
- Asphalt
- Compound/Stockpile
- Proposed carpark area
- Proposed rural style fencing
- Cadastral
- Watercourse

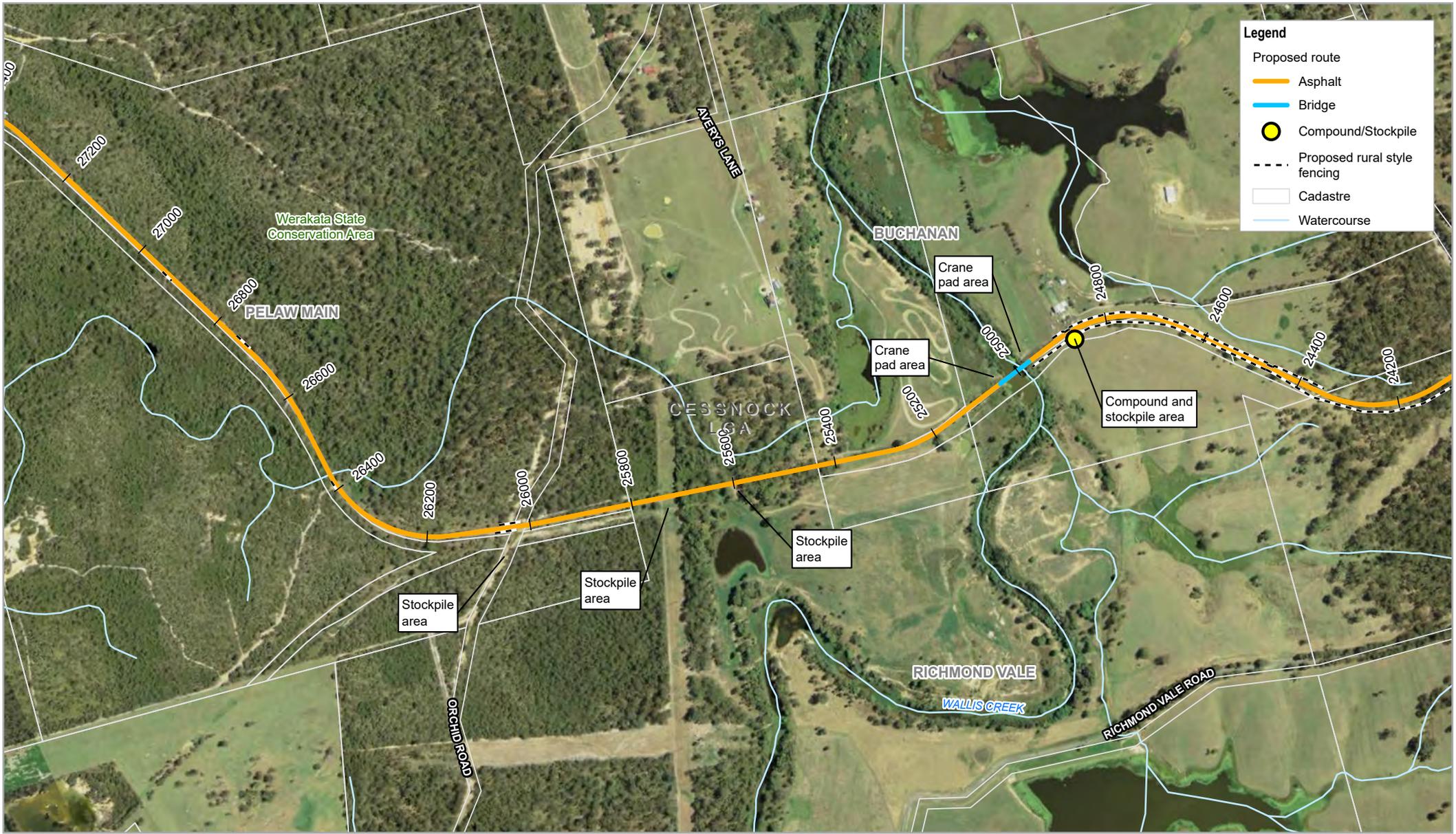


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Review of Environmental Factors

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Date 03/07/2020

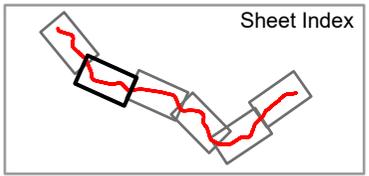
Proposal area
Sheet 1 of 6

Figure 3-1a



Legend

- Proposed route
 - Asphalt
 - Bridge
- Compound/Stockpile
- Proposed rural style fencing
- Cadastral
- Watercourse



Paper Size ISO A4
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 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Cessnock City Council
 Richmond Vale Rail Trail
 Review of Environmental Factors

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 Date 03/07/2020

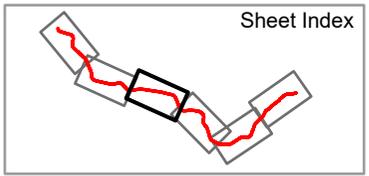
Proposal area
 Sheet 2 of 6

Figure 3-1b



Legend

- Proposed route
 - Asphalt
 - Bridge
 - Concrete
- Compound/Stockpile
- Proposed carparking area
- Proposed rural style fencing
- Cadastre
- Watercourse



Paper Size ISO A4
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 Map Projection: Transverse Mercator
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 Grid: GDA 1994 MGA Zone 56

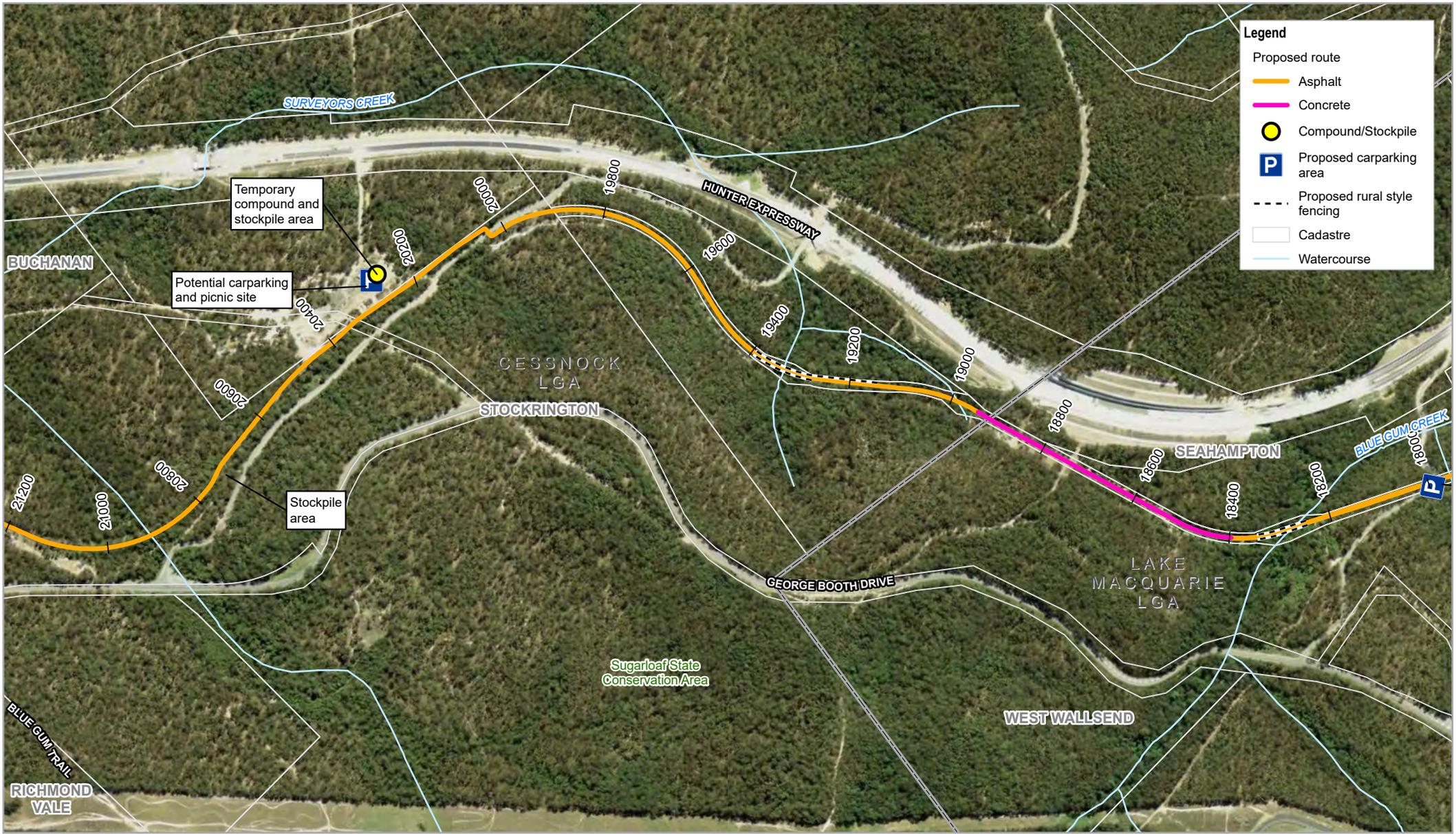


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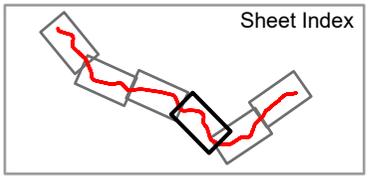
Proposal area
Sheet 3 of 6

Figure 3-1c



Legend

- Proposed route
 - Asphalt
 - Concrete
- Compound/Stockpile area
- P Proposed carparking area
- Proposed rural style fencing
- Cadastre
- Watercourse



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 Grid: GDA 1994 MGA Zone 56

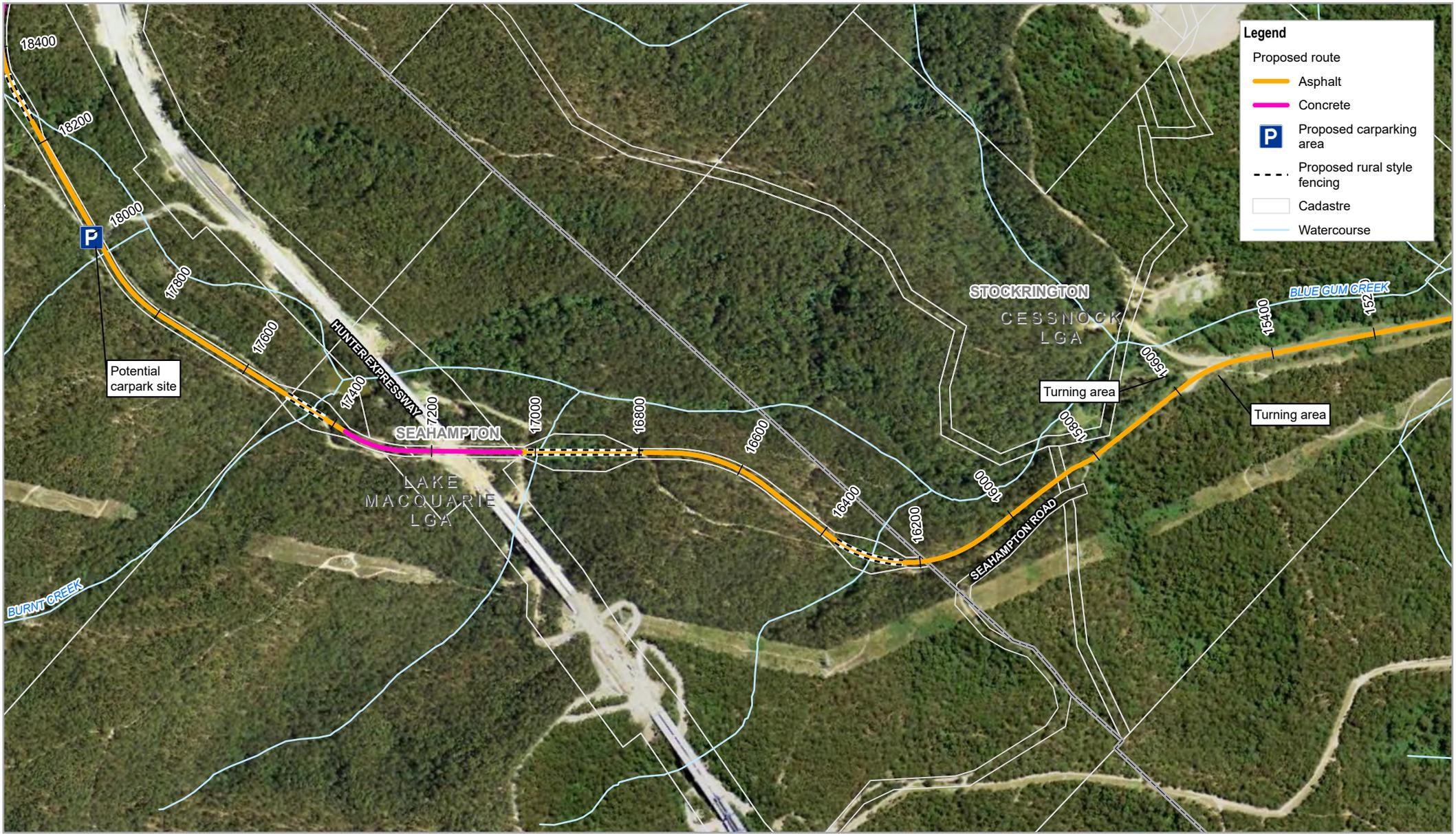


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 Date 03/07/2020

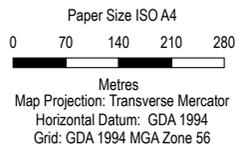
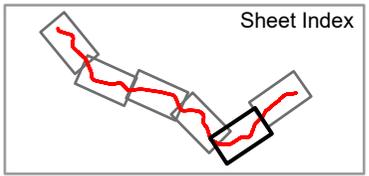
Proposal area
 Sheet 4 of 6

Figure 3-1d



Legend

- Proposed route
 - Asphalt
 - Concrete
- Proposed carparking area
- Proposed rural style fencing
- Cadastrre
- Watercourse

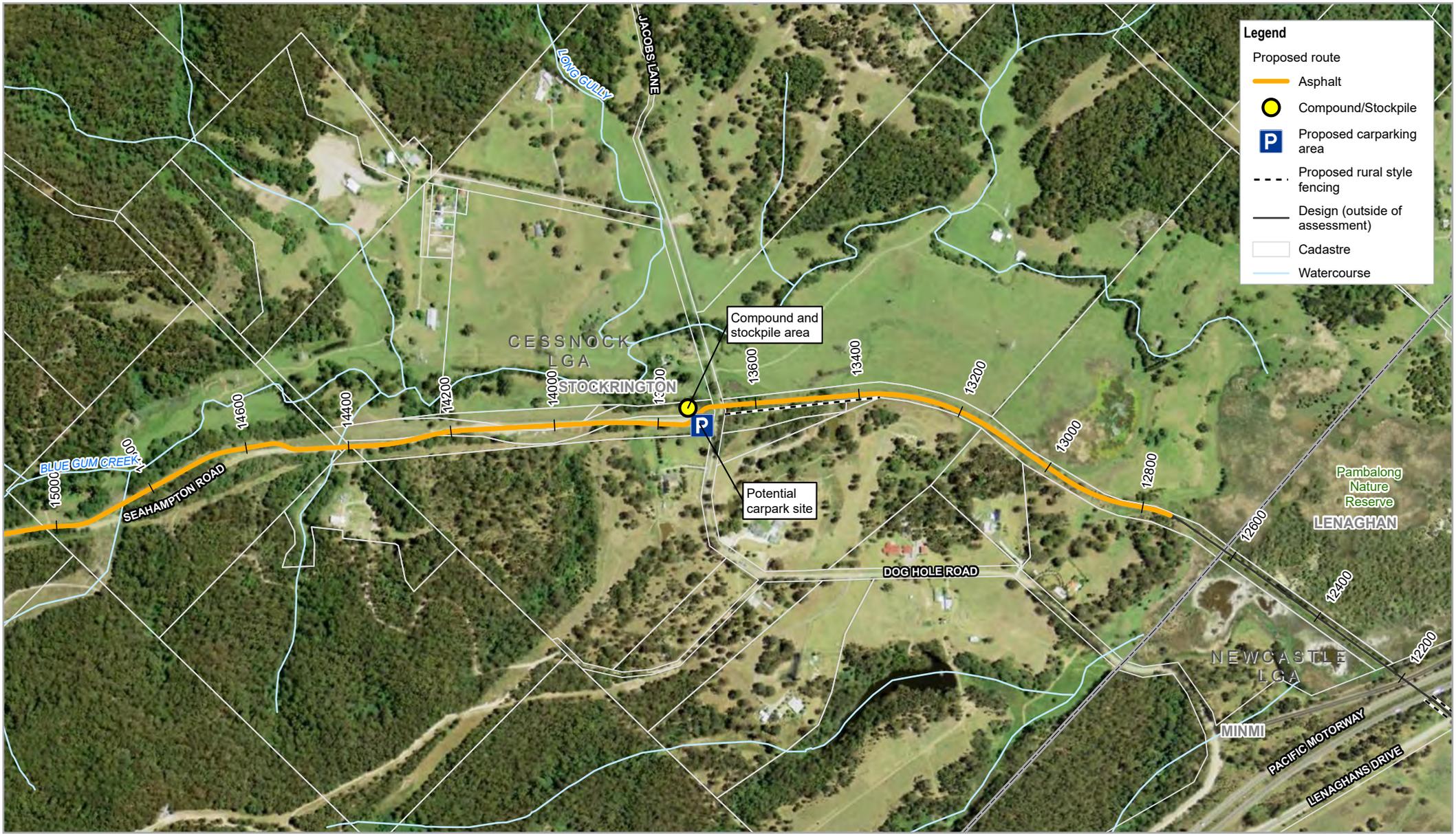


Cessnock City Council
Richmond Vale Rail Trail
 Review of Environmental Factors

Proposal area
Sheet 5 of 6

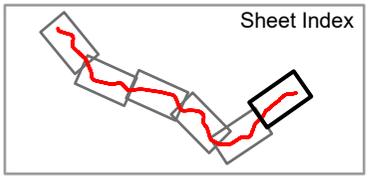
Project No. **12529257**
 Revision No. **0**
 Date **03/07/2020**

Figure 3-1e



Legend

- Proposed route
- Asphalt
- Compound/Stockpile
- Proposed carparking area
- Proposed rural style fencing
- Design (outside of assessment)
- Cadastre
- Watercourse



Paper Size ISO A4
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 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



Cessnock City Council
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 Date 03/07/2020

Proposal area
Sheet 6 of 6

Figure 3-1f

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Data source: DPE: Coastal Management SEPP, 2016; DSWEPaC; IBRA Bioregions, 2013; OEH: ASS Risk, 2017; DPI: Soil Landscapes, 2008 LPI; DTDB / DCDB, 2017; sixmaps/LPI_Imagery_Best; © Department of Finance, Services & Innovation 2017. Created by: kpsroba

3.2 Key features of the proposal

3.2.1 Design criteria

Design criteria for the proposal are primarily sourced from Austroads guidelines and relevant Australian standards. The key documents include:

- Austroads –Guide to Road Design Part 6A: Pedestrian and Cyclist Paths (Austroads, 2017).
- AS 1428.1-2009 Design for access and mobility –General requirements for access – New building work (AS1428.1).
- AS 1742.9-2000 Manual of uniform traffic control devices – Bicycle facilities (AS1742.9).
- NSW Soils and Construction - Managing Urban Stormwater - Volume 1 – the Blue Book - Landcom (2004).

Table 3-1 and Table 3-2 present the minimum design criteria recommended for the detailed design of the trail and bridges respectively. Specific treatments would be investigated further during the detailed design phase, at which time the design criteria would be confirmed based on the opportunities and constraints of the existing alignment.

The final design and management of the Richmond Vale Rail Trail on National Parks and Wildlife Service (NPWS) managed lands will be required to comply with relevant NPWS standards and policies. The final design will be prepared in accordance with the NPWS Park Facilities Manual where relevant with input and approval by NPWS.

Table 3-1 Trail design criteria

Design element	Design guide	Adopted parameters
Pathway width	AGRD06A Table 7.4	Desirable minimum width of three metres for shared pathway. The following additional widths are proposed: 6.6 metre width at approach to Ironbark Creek, for safety Four metre width from Shortland to Tarro
Shoulder	AGRD06A Section 7.6.1	0.5 metres
Cross fall	AGRD06A Section 7.6.1	2 – 4 percent for sealed surfaces
	AS1428.1	Maximum 2.5 percent
Vertical grade	AGRD06A Section 7.4.2	Maximum five percent for downhill design avoiding curves at base Desirable uphill grades as per Figure 7.1 of AGRDA06A
	AS1428 (guidance only as these reflect building ramps rather than shared paths)	For grade of 1 in 14 – landings required at nine metre centres (1.2 metres long) For grade of 1 in 20 – landings at 15 metre centres For grade less than 1 in 33 – no landing If grade is steeper than 1 in 33 – landings at 25 metre centres
Horizontal radius	AGRD06A Table 7.1	Minimum radius of 10 metres (20 km/h) without superelevation Typically 50 metres radius used (40 km/h)
Vertical curve	AGRD06A Figure 7.9	Assuming 20 km/h speed, minimum six metres where less than 11.5 percent algebraic change in grade

Design element	Design guide	Adopted parameters
Cut/fill batters	AGRD06A Section 7.4.2	Adopt maximum 1V:4H fill batters to avoid hazardous slope otherwise provide guard rails Adopt 1V:2H cut batter, steeper if required, subject to geotechnical design
Signage	AS1742.9	To be provided in detailed design
Drainage ARI	AGRD06A Section 7.6.2	Five year ARI for major paths adjacent to freeways or arterial roads, two year ARI for paths with a lesser function
Water depth x velocity	AGRD06A Section 7.4.2	Less than 0.35 m ² /s

Table 3-2 Bridge and culvert design criteria

Item	Criteria
Dead and superimposed load criteria	Dead weight of concrete = 25 kN/m ³ Future 50 mm asphalt overlay allowed for as superimposed load Barriers allowed for as superimposed load No additional services allowed for
Traffic load criteria	SM1600 traffic loading in accordance with Australian Standard AS5200.2
Flood load criteria	To be determined in detail design
Other load criteria	Shrinkage, creep, and temperature effects as per AS5100.2 Minimum lateral restraint as per AS5100.2
Design width	3 metres clear width
Design life	50 years

3.2.2 Pavement

The proposal would predominately use flexible pavement with an asphalt seal due to cost, ride quality and ease of construction. Where subgrade is susceptible to moisture, concrete pavements would be used. The pavement type would be confirmed during detailed design but is indicatively shown in Figure 3-1. A typical section of pavement is shown in Figure 3-2.

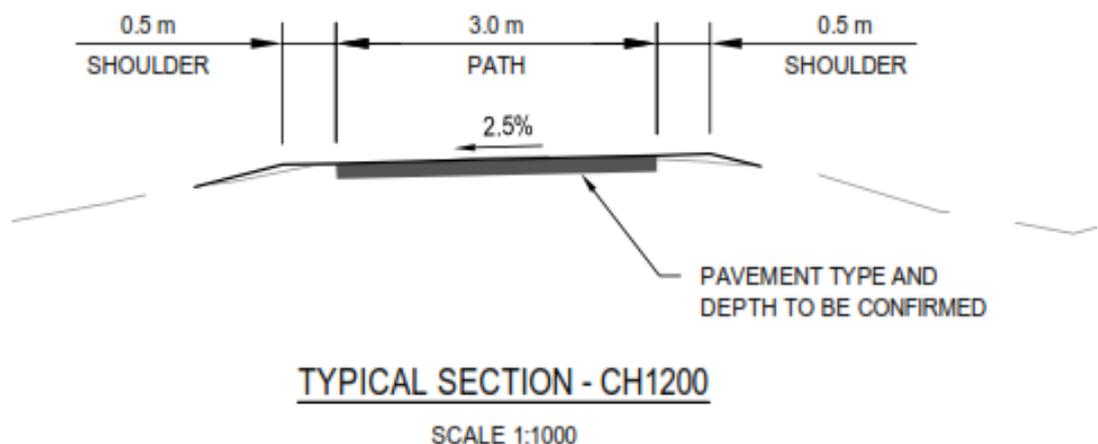


Figure 3-2 Typical pavement section

3.2.3 Bridges

Surveyors Creek bridge

The proposal would cross Surveyors Creek east of George Booth Drive via a new 15 metre long two span bridge. The existing bridge, which is in very poor condition and not safe to cross, would be removed (see Figure 2-3).

Wallis Creek bridge

The existing bridge over Wallis Creek is not suitable for repair or re-use (see Figure 2-4) and would be removed. A new 70 metre long single-span suspension bridge is proposed approximately three metres to the south of the existing alignment.

Werekata Creek bridge

There are existing bridge abutments along the trail at Werekata Creek, where the bridge structure has been removed (see Figure 3-9). A new, short bridge would be constructed at this location.

3.2.4 Cuttings

Treatments to a number of existing cuttings would be required along the former railway alignment (see Figure 3-1), including:

- Clearing and grubbing of vegetation
- Removal of topsoil and unsuitable subgrade material along the proposal pathway corridor
- Formation of bunds and drains above cut batters
- Scaling of loose rock and soil on cut batters
- Bolting of loose, unstable rock on cut batters
- Shotcreting weathered rock material on cut batters
- Meshing and fencing batters to protect from rock falls

3.2.5 Amenities and facilities

Car parking and points of entry

Car parking facilities are proposed at five access points for users who do not want to ride the entire trail but wish to access certain sections. These users would include recreational cyclists, families, mobility impaired users, walkers or those seeking direct access to particular features along the trail. All car parks would include appropriate stormwater management to prevent water quality impacts to surrounding receiving environments.

Car parking and access points are summarised in Table 3-3 and shown in Figure 3-1. Further locations for car parking are being investigated within the Stockrington SCA, particularly within a proposed 'midway precinct' off the trail. This will be addressed further through detailed design in consultation with relevant stakeholders.

Table 3-3 Access points, car parking and amenities

Access location	Description
Dog Hole Road, Stockrington	This car park would provide a safe and accessible connection to Pambalong Nature Reserve, which is within one kilometre of the access point, providing seven parking spaces, including two reduced mobility spaces.
George Booth Drive between Tunnel 1 and 2	The access point would provide accessible connection to the tunnels. The tunnels are located within one kilometre of the access point provided. There would be four parking spaces, including one reduced mobility space.
George Booth Drive at Surveyors Creek	The access point would provide accessible connection to points of interest that include Surveyor's Creek bridge, Wallis Creek bridge and Tunnel 3, which are within three kilometres of the access point.
Kurri Kurri – Log of Knowledge Park	The existing facilities at Log of Knowledge Park would be upgraded to include formalisation of the existing car parks (including reduced mobility parking); an upgraded playground facility; a new toilet block; and trail head art. There would be 26 parking spaces, including three reduced mobility spaces.

Toilet and shelter areas

Public toilet and other facilities (shelters, water, bins, interpretative and instructive signage etc.) would be provided at each of the proposed car parking areas. The final layout and inclusions at each car parking area would be determined during detailed design. However, they would be expected to include:

- Parking including reduced mobility spaces and drop off areas
- Natural drainage management
- Service/emergency access
- Lighting
- Natural or structural shade
- Toilets
- Water fountain and taps
- Seating (benches, seats, informal sitting/leaning elements)
- Bike facilities – parking, maintenance etc.
- Landscaping

3.2.6 Stormwater management

Transverse drainage structures

The existing transverse drainage structures, such as embankment culverts and minor bridges, would be retained wherever possible. The sizing of existing culverts is assumed to be adequate as any changes to sizing would affect the flood pattern.

The detailed design would include hydraulic modelling of the proposed trail where required in order to design crossing structures that, as far as reasonably practical, match the existing hydraulic response.

Pavement drainage

Significant drainage improvements can be made along the trail to divert surface runoff from entering rail cuttings and prevent the formation and pavements becoming saturated.

Top of batter diversion drains are proposed on the uphill side of each cutting and around the tunnel portals to redirect surface runoff away from cuttings. This treatment would prevent the batters from eroding and limit saturation from the rainfall that falls directly on those surfaces.

Grassy or sealed shoulders are proposed along the pathway to reduce residual hydrocarbons and pavement material leaching to surrounding areas. These would be designed in accordance with relevant standards and guidelines, such as the Blue Book (Landcom 2004).

Culvert and bridge locations are shown in Figure 3-1.

3.2.7 Fencing, signage and lighting

Fences and barriers

Fencing for the trail would vary depending on its location and purpose. Existing rural boundary fencing would be utilised where practicable. New fencing would be provided as necessary to delineate access and for safety purposes, in consultation with landowners. Fencing would typically include:

- Galvanised steel tube cycleway fencing on approaches and departures to bridge structures.
- Steel post and cable vehicle control fencing to prevent motorised vehicle access to the trail.
- Rural road boundary fencing at the top of large batters and to divert users to trail access points.
- Security pipe and chain-link boundary fencing (see Figure 3-3) to prevent access near roads.

In addition to fencing, screen planting with native vegetation would be provided to further enhance security and privacy where necessary. The exact fencing types and gating arrangements would be confirmed with adjacent landowners during the detailed design process. It would consider, as relevant, requirements for security, visual screening and fauna movement. Locations for fencing are shown in Figure 3-1.



Figure 3-3 Example of post and cable vehicle control fencing

Line marking and signage

A dashed (broken) centre line would be provided along the trail to separate users.

Instructional, wayfinding and interpretive signage would be provided along the trail at all parking and access areas and other locations where relevant. Signage would be designed in accordance with AS 1742.9 and installed at regular intervals of approximately 500 metres. Examples of typical signage are shown in Figure 3-4 and Figure 3-5. Where the proposal traverses conservation areas, signage would be provided stating that dogs (and other domestic animals) are not permitted.

A signage and interpretation plan will be developed for the trail. This plan will include design and siting details of proposed signage, to ensure it is appropriately located to avoid impacts to sensitive areas along the trail. Instructive signage will also be developed in consultation with NPWS and other impacted landowners regarding style and content.



Figure 3-4 Example instructional signage



Figure 3-5 Example wayfinding and interpretive signage

Lighting

Lighting of the trail would vary depending on the function and location of the area but would be designed and installed in accordance with AS1158.3.1 *Lighting for roads and public spaces – Pedestrian area lighting*. Lighting would be installed as required at points of conflict, such as road crossings, and other areas such as car parks, and through the tunnels, to reduce safety and security risks. Lighting would likely be to the minimum standard required for pedestrian paths and aim to utilise alternative forms of power such as solar, wherever possible. Longitudinal lighting of the trail is not required, but alternative treatments such as pavement delineation through luminescent materials would also be considered.

3.2.8 Urban design

The proposal design, in particular the amenities and facilities including car park areas, observation points, fences, lighting and signage, would incorporate design elements that aim to deliver an engaging and context responsive solution. Integration of existing natural assets (views, features, topography, habitat) and the provision of well-designed supporting elements (car parks, observation/ stopping areas) would offer an enjoyable and memorable experience for the user.

Access and stopping points provide an important opportunity to define the character and quality of the overall trail. The delivery of good quality urban design in these locations can have a positive impact on user experience and attract future patronage. The predominant character for these locations is defined by the route's historical, rural, agricultural and ecological assets. The urban design and landscape treatments for the trail would aim to maintain and enhance this character.

Landscaping would aim to retain all existing trees, unless there is a requirement for removal in response to a specific construction or operational need. Where planting is required, appropriate local and endemic species would be used, and sight lines and security requirements would be considered for plantings in car parks and observation areas. Landscaping requirements would be confirmed during detailed design.

3.2.9 Property acquisition and use

The proposal would impact on a small area of land owned by a range of entities and individuals. A preliminary list of impacted properties is summarised in Table 3-4. Property impacts would be confirmed by survey during detailed design.

Negotiation with all landowners has commenced. Any required acquisition or other agreements, both long term or temporary, would be finalised prior to construction commencing in accordance, as relevant, with the relevant requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* and *Conveyancing Act 1919*, as relevant.

Table 3-4 Land parcels impacted by the proposal

Land owner	Lot/Section/DP
The State of NSW - Crown Lands	Lot 7016 / DP1021277
The State of NSW - Crown Lands	Lot 7311 / DP 1167240
The State of NSW - Crown Lands / Mindaribba LALC	Lot 502 / DP1200716
Mindaribba LALC	Lot 501 / DP1200716
National Parks and Wildlife Service Reserved as part Werakata state Conservation Area	Lot 1000 / DP1142529
The State of NSW - Crown Lands	Lot 1001 / DP1142529
Coal & Allied Industries Limited	Lot 1 / DP1140694

Land owner	Lot/Section/DP
Private landowner	Lot 4 / DP1000943
Coal & Allied Industries Limited	Lot 9 DP1241636
Coal & Allied Industries Limited	Lot 1 / DP438379
Private landowner	Lot 103 / DP810221
Private landowner	Lot 19 / DP1061633
Private landowner	Lot 18 / DP1061633
Private landowner	Lot 2 / DP986081
National Parks and Wildlife Service	Lot 8 / DP1140257
Private landowners	Lot 32 / DP1085798
The State of NSW - Crown Lands	Lot 33 / DP1085798
National Parks and Wildlife Service	Lot 1 / DP1039968
National Parks and Wildlife Service	Lot 3 / DP977096
National Parks and Wildlife Service	Lot 4 / DP977096
National Parks and Wildlife Service	Lot 51 / DP1095513
Roads and Traffic Authority	Lot 52 / DP1095513
National Parks and Wildlife Service	Lot 3 / DP 250339
National Parks and Wildlife Service	Lot 82 / DP755260
National Parks and Wildlife Service	Lot 2 / DP124209
National Parks and Wildlife Service	Lot 12 / DP1195703
The State of NSW - Crown Lands	Lot 125 / DP 755260
The State of NSW - Crown Lands	Lot 1 / DP 155446
National Parks and Wildlife Service	Lot 21 / DP1195619

Land may also be temporarily impacted for access and other construction facilities. This would be confirmed prior to construction commencing and appropriate consultation and agreement sought from landowners. Some or all of the compound sites are also proposed (subject to landowner agreement) for permanent car park locations. Preliminary locations are provided in Table 3-5.

Table 3-5 Preliminary locations for construction facilities

Land owner	Lot/Section/DP	Potential use
The State of NSW - Crown Lands/ Mindaribba LALC	Lot 502 / DP1200716	Compound/ stockpile/ car park
National Parks and Wildlife Service Reserved	Lot 1000 / DP1142529	Compound/ stockpile/ car park
Private landowner	Lot 9 DP1241636	Compound/ stockpile/ car park
Private landowner	Lot 32 / DP1085798	Compound/ stockpile/ car park
National Parks and Wildlife Service	Lot 40 DP1187664	Access
National Parks and Wildlife Service	Lot 82 / DP755260	Access
National Parks and Wildlife Service	Lot 1 / DP 155446	Compound/ stockpile/ car park
Coal & Allied Industries Limited	Lot 21 / DP1195619	Compound/ stockpile/ car park

3.3 Construction of the proposal

Construction activities described below are preliminary only and would be reviewed and confirmed by the construction contractor, once appointed.

3.3.1 Work sequence

Construction activities would generally include:

- Establish site – office, stockpiles sites etc.
- Implement traffic controls
- Mark out work areas
- Pre-clearance survey, flag trees for removal and fence no go zones
- Install erosion and sediment controls
- Services location
- Tree removal
- Earthworks – clear and grade, foundations, cut and fill
- Construct pathway and ancillary facilities
- Site clean-up, revegetation and landscaping where required
- Demobilisation

3.3.2 Construction activities

Pambalong Nature Reserve to Dog Hole Road

From Pambalong Nature Reserve the proposal heads south-west for approximately 1050 metres along the alignment of the former railway to Dog Hole Road at Stockrington. Some regrowth vegetation and the existing rail infrastructure would need to be removed. However there is sufficient width and suitable grade to construct the proposal with only minor works. An existing timber overbridge would be removed due to its dilapidated and unsafe state (see Figure 3-6). A car park and drop off area would be constructed at Dog Hole Road (see Figure 3-1).



Figure 3-6 Overbridge requiring removal near Dog Hole Road

Dog Hole Road to quarry access road

From Dog Hole Road the trail would follow Seahampton Road for approximately 2200 metres before re-joining the former railway alignment. The proposal would then follow the railway alignment for approximately 4.1 kilometres, traversing steep terrain through two tunnels and a number of cuttings, before intersecting the quarry access road located between George Booth Drive and the M1 Pacific Motorway. The grades in this section are suitably flat and there is sufficient width to construct the trail. The western portal of Tunnel 2 (CH18520) represents the high point of the trail.

The Daracon Quarry access road is private land, and therefore car parking or trail access is not proposed to minimise conflict with current operations at the quarry. An access point would be provided between Tunnel 1 and 2 (see Figure 3-7) to allow pedestrian access to each tunnel. Walkers can then enjoy this section of the trail, which provides access to both rail tunnels via a flat three kilometre round trip.



Figure 3-7 Tunnel 1 and 2

Quarry access road to Surveyors Creek

The proposal runs adjacent to the quarry access road for about 820 metres in this section, before re-joining the former railway alignment. The route traverses undulating terrain through a series of long fill embankments and cuttings before reaching the dilapidated timber bridge over Surveyors Creek, to the east of George Booth Drive. The proposal would cross Surveyors Creek east of George Booth Drive via a new 15 metre long two span bridge. The existing bridge, which is in very poor condition and not safe to cross, would be removed (see Figure 2-3).

A temporary construction compound would be established east of Surveyors Creek within the disused Hunter Expressway site compound. This area would provide car parking and access to the Surveyors Creek Bridge, Wallis Creek Bridge and Tunnel 3 during proposal operation.

Surveyors Creek to Wallis Creek

To the west of Surveyors Creek, the proposal runs parallel to George Booth Drive along the former railway alignment, then passes through an existing brick-lined tunnel (Tunnel 3) and continues along to the dilapidated timber bridge over Wallis Creek.

The existing bridge over Wallis Creek is not suitable for repair or re-use (see Figure 2-4) and would be removed. A new 70 metre long single-span suspension bridge is proposed approximately three metres to the south of the existing alignment.

Tunnel 3 is in an unkept condition, with rock falls having occurred around the western portal, and would require some minor rectifications during construction (see Figure 3-8).



Figure 3-8 Western portal of Tunnel 3

Wallis Creek to Kurri Kurri

Approximately 1,200 metres west of Wallis Creek the trail heads northwest, running parallel to Leggetts Drive, deviating to avoid a collapsed bridge over an un-named drainage line and a disused and heavily vegetated cutting, before entering the township of Pelaw Main and into Kurri Kurri, terminating at the Log of Knowledge Park.

There are existing bridge abutments along the trail in this location, where the bridge structure has been removed (see Figure 3-9). A new, short bridge would be constructed adjacent to this location.



Figure 3-9 Existing collapsed bridge near Pelaw Main

3.3.3 Staging and timing

Construction of the proposal would likely be undertaken in one stage progressing along the proposed route. Timing of construction works would consider peak traffic times, property access and other relevant issues in consultation with the various stakeholders. Timing and staging would also be dependent on funding and conditions of approval.

3.3.4 Construction hours, duration and workforce

The majority of work for the proposal would be undertaken during recommended standard hours as outlined in the *Interim Construction Noise Guideline* (DECC, 2009), which are:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- Sundays and public holidays: no work

The proposal, if approved, would commence on receipt of funding and is expected to take approximately 12 to 18 months to complete.

The construction workforce is expected to comprise between 50 and 100 workers over the life of the proposal. The workforce numbers would fluctuate depending on the construction stage and location of works.

3.3.5 Plant and equipment

The following machinery and equipment is expected to be required to construct the proposal:

- Concrete pump trucks
- Excavators
- Loaders
- Cranes
- Barge (and possibly boats)
- Floating pontoon
- Piling rig (bored)
- Haul trucks

- Asphalt pavers
- Graders
- Rollers
- Light vehicles
- Compressors
- Hand tools (motorised and pneumatic)
- Chain saws and mulchers
- Generators

3.3.6 Site compounds and stockpiling areas

Site compounds and stockpiling areas are proposed at various locations along the alignment. These are shown in Figure 3-1. These locations are preliminary only and would be confirmed by the construction contractor prior to any works commencing.

The site compounds would include a portable toilet, secure and bunded storage areas for site materials including fuel and chemicals, a parking area, and a lunchroom and office for on-site personnel. The compound and stockpiling areas would be securely fenced with temporary fencing, with signage advising the general public of access restrictions. The compound and stockpile areas would be located on already cleared areas that would not require any vegetation removal or ground disturbance.

A site compound would be erected from week one of the construction program, before the mobilisation of machinery, until the completion of construction activities, which is estimated to be about 12-18 months. Upon completion of the works, the site compounds would be demobilised, cleared of all waste and materials and rehabilitated.

3.3.7 Vegetation removal

Based on the defined clearing area for the proposal, removal of approximately 13.64 hectares of vegetation would be required. Clearing areas are summarised in Table 3-6. Plant community types (PCTs) provided are based on regional vegetation surveys (DPIE, 2010) (LMCC, 2016) and supporting vegetation descriptions in Bell (2016). Vegetation clearing and other biodiversity impacts are discussed further in Section 6.7.

Table 3-6 Clearing required for the proposal

PCT ID	PCT name	Area impacted by the proposal (ha)
1568	Blackbutt - Turpentine - Sydney Blue Gum mesic tall open forest on ranges of the Central Coast	0.19
1588	Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast	0.21
1589	Spotted Gum - Broad-leaved Mahogany - Grey Gum grass - shrub open forest on Coastal Lowlands of the Central Coast	1.1
1593	Red Ironbark - Spotted Gum - Prickly-leaved Paperbark shrubby open forest of the Lower Hunter	1.04
1619	Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of the coastal lowlands	0.66
1633	Parramatta Red Gum - Narrow-leaved Apple - Prickly-leaved Paperbark shrubby woodland in the Cessnock-Kurri Kurri area	0.39
-	Exotic grassland/cleared	10.05
Total		13.64

3.3.8 Earthworks

The proposal would involve earthworks, including filling and minor cutting. Earthworks have been minimised as far as practicable to reduce potential impacts.

3.3.9 Source and quantity of materials

All materials would be sourced from the local area, wherever possible. Only clean fill would be used. It is not anticipated that any scarce natural resources would be required.

Other likely materials would include gravel, asphalt, concrete, drainage pits, concrete for paths and kerbs, timber, cored hollow steel piles, landscaping materials, etc.

Fill material imported from off-site, if required, would be sourced from certified suppliers to avoid the potential for contaminated fill.

3.3.10 Use and storage of chemicals

Chemicals anticipated to be used during construction include predominately fuels and oils, degreasers, concrete, bitumen and asphalt, sealers, paints and wash water associated with these products. All chemicals would be stored in bunded containers that would hold at least 110 percent of the chemical container's volume within the proposed compound sites.

3.3.11 Traffic management and access

The proposal would result in an increase in light and heavy vehicle movements and possible delays to traffic during construction. However vehicle numbers are not expected to be significant.

Construction machinery would access the proposal site at various points along the proposal alignment. These locations are preliminary only and would be confirmed by the construction contractor prior to any works commencing. Potential access points for the various sections of the alignment are listed in Figure 3-1 and shown in Table 3-7. Access tracks would be located on already cleared areas that would not require any vegetation removal or ground disturbance.

Table 3-7 Construction and operation access points

Location of works	Access
Minmi Junction to Dog Hole Road	Dog Hole Road, Stockrington
Dog Hole Road to quarry access road	George Booth Drive, between Tunnel 1 and Tunnel 2
Quarry access road to Surveyors Creek	George Booth Drive at Surveyors Creek
Wallis Creek	Kurri Kurri – Log of Knowledge Park

3.3.12 Waste generation and management

Waste streams likely to be generated during construction of the proposal include:

- Excess spoil
- Green waste as a result of vegetation clearing
- Roadside materials (fencing, guide posts, guard rails)
- Packaging and general waste from staff (lunch packaging, portable toilets)
- Chemicals and oils
- Wastewater from wash-down and bunded areas
- Redundant erosion and sediment controls

The potential to reuse materials would be investigated during construction planning. Unsuitable fill material that cannot be used on-site (though not considered likely) would be classified in accordance with the *Waste Classification Guidelines* (EPA, 2014) and disposed of at an approved materials recycling or waste disposal facility.

3.3.13 Public utility adjustments

Existing utilities and corresponding authorities that have been identified in close proximity to the proposal include:

- Overhead and underground electricity – Ausgrid
- Water reticulation – Council
- Sewer reticulation – Council
- Telecommunications, overhead and underground – Telstra/Optus
- Gas – Jemena

Large segments of the alignment do not interface with existing utilities, and the proposal is not anticipated to have significant utility impacts due to its location within the former rail corridor. Overhead utilities may limit constructability at Surveyors Creek, in particular.

The location of utilities would be confirmed during the detailed design stage and prior to any construction work commencing. Negotiations with asset owners would be undertaken where required prior to work commencing.

The proposal may require low voltage electrical connections for lighting along the trail alignment. However, the detailed design would seek to maximise the provision of solar-powered lighting units where practicable to minimise the need for these connections.

3.4 Proposal operation

Ongoing maintenance and management of the proposal would be undertaken by Council. Appropriate access agreements and approvals would be negotiated with landowners and would include operational requirements, where relevant. Key stakeholders, including private landowners, NPWS, Crown Land and Coal & Allied, would be consulted in the development of an operational management plan.

Maintenance and emergency vehicle access would be via the connection points at Dog Hole Road, George Booth Drive, Surveyors Creek and Kurri Kurri. Infrastructure in the form of gates and bollards would be installed at these connection points to exclude trespass by other vehicles. Once access been gained from the connection points, maintenance and emergency vehicles movements would be restricted to the trail.

Operational procedures would include measures to restrict access to the trail (such as gates that can be closed as required) and ensure safety of users during bush fires and other emergencies. Instructional signage would include safety and emergency procedures for trail users and would include emergency contact details and assembly points.

4. Legislative considerations

4.1 Legislation overview

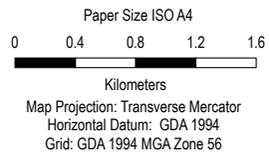
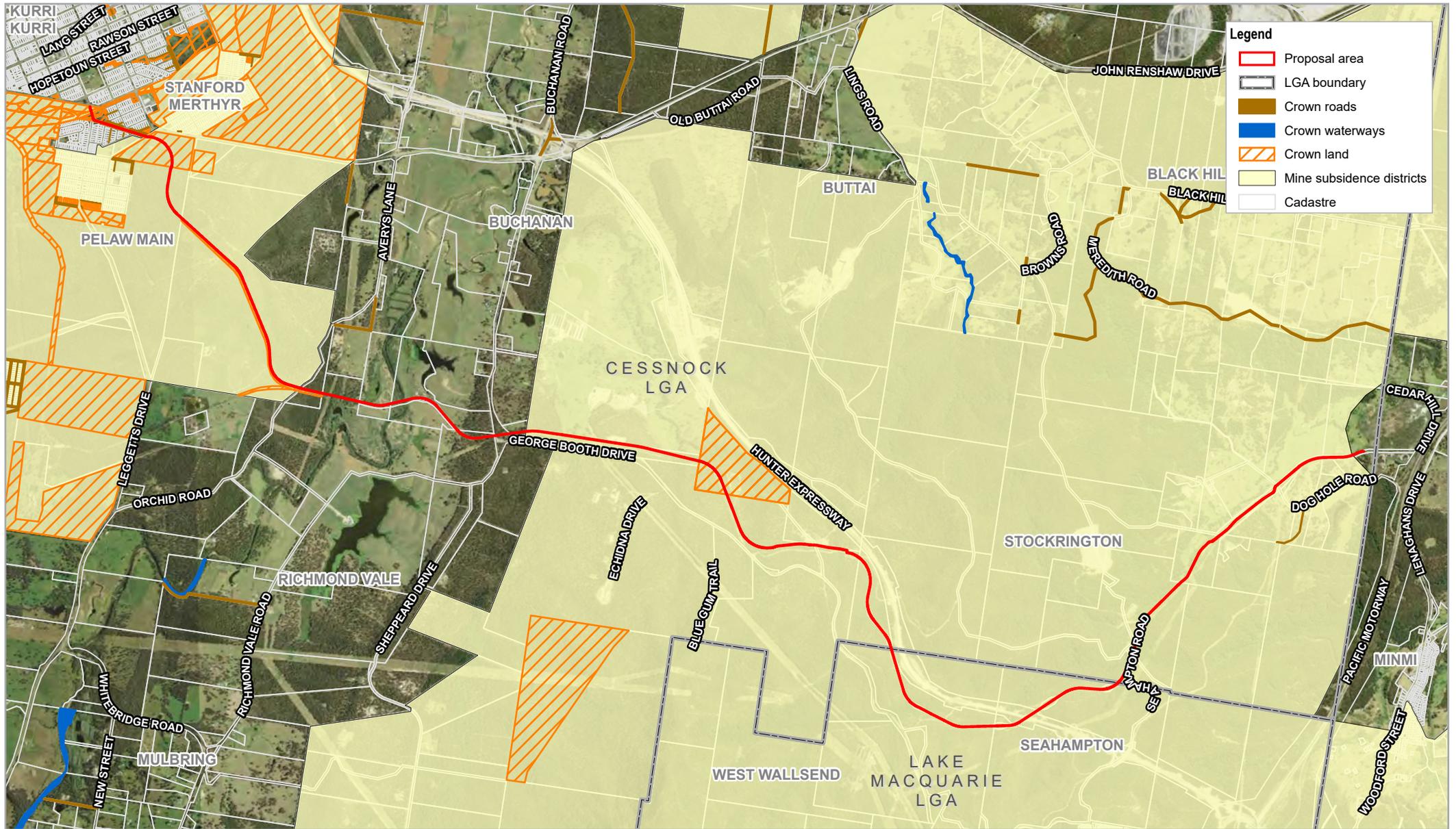
Legislation potentially relevant to the proposal is reviewed in Table 4-1. Additional discussion where required is provided in Section 4.2 and 4.3.

Table 4-1 Legislation overview

Legislation	Requirements
NSW legislation	
EP&A Act	<p>The proposal is development permissible without consent in accordance with Division 5.1 of the EP&A Act. This REF fulfils the requirements of Section 5.5 of the EP&A Act, which requires that Council examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.</p> <p>The EP&A Act is discussed further in Section 4.2.1.</p>
Roads Act 1993 (Roads Act)	<p>The proposal would require consent under Section 138 to:</p> <ul style="list-style-type: none"> (a) erect a structure or carry out a work in, on or over a public road, or (b) dig up or disturb the surface of a public road, or (c) remove or interfere with a structure, work or tree on a public road, or (d) pump water into a public road from any land adjoining the road, or (e) connect a road (whether public or private) to a classified road. <p>Works within a public road would require approval under this Act. This would be confirmed at detailed design and a permit sought as necessary.</p>
FM Act	<p>Under Part 7 of the FM Act, a permit is required for dredging and reclamation, obstruction of fish passage, harm to marine vegetation and use of electrical or explosive devices in a waterway.</p> <p>The proposal would require works in waterways which would constitute dredging or reclamation under the FM Act. Section 200 of the FM Act states that a local government authority must not carry out reclamation work except under the authority of a permit issued by the Minister. Therefore, a permit issued under Part 7 of the FM Act would be required for the proposal. This would be confirmed at detailed design and a permit sought if necessary.</p>
Crown Land Management Act 2016 (CLM Act)	<p>This Act provides for the reservation, assessment, management and use of land that is vested in the Crown and managed for the benefit of the people of NSW.</p> <p>The proposal would impact on Crown land (see Figure 4-1) and approval must be sought under this Act.</p>
National Parks and Wildlife Act 1974 (NPW Act)	<p>The NPW Act aims to conserve nature, objects, places or features (including biological diversity) of cultural value within the landscape. If an impact to an Aboriginal heritage object or site is likely from a proposal, a permit must be sought under Section 90.</p> <p>Approval must also be sought for any activity on national park estate under this Act, unless in accordance with an adopted plan of management. The proposal would impact on the Werakata SCA reserved under the NPW Act (see Figure 4-2) and several other land parcels owned by NPWS (including the yet to be gazetted Stockrington SCA).</p> <p>The NPW Act is discussed further in Section 4.2.3. Aboriginal heritage is discussed further in Section 6.10.</p>

Legislation	Requirements
BC Act	<p>The BC Act delivers a strategic approach to conservation in NSW whilst supporting improved farm productivity and sustainable development.</p> <p>The BC Act lists the threatened species, populations or ecological communities to be considered when deciding if a significant impact on threatened biota, or their habitats, is likely as the result of an activity. Assessment of the potential impacts of the proposal in accordance with the BC Act is outlined in Section 6.7.</p>
<i>Biosecurity Act 2015</i>	<p>The primary object of this Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.</p> <p>Weeds and pests listed under this Act must be managed in accordance with the Act. This is discussed further in in Section 6.7.</p>
<i>Heritage Act 1977</i> (Heritage Act)	<p>The Heritage Act aims to ensure that the heritage of NSW is adequately identified and conserved. Under Section 57, a permit must be obtained for works, which have the potential to interfere with a heritage item or place, which is either listed on the State Heritage Register or the subject of an interim heritage order.</p> <p>There are no state listed heritage items impacted by the proposal. Heritage impacts are discussed in Section 6.11.</p>
<i>Water Management Act 2000 (WM Act)/ Water Act 1912</i> (Water Act)	<p>Approval is required under the WM Act or Water Act to extract or use water from rivers or aquifers (unless an exemption applies or water is being taken under a basic water right).</p> <p>Furthermore, Section 91 of the Act provides that certain types of development and activities carried out in or near a river, lake or estuary are 'controlled activities' and require an activity approval. However, Council is exempt from requiring approval under Section 91 of the WM Act.</p> <p>Dewatering may be required during the construction of bridges and boardwalks within the proposal site. If required, consultation would be undertaken with WaterNSW to determine if a water licence is required.</p>
<i>Protection of the Environment Operations Act 1999</i> (POEO Act)	<p>Under Section 48 of the POEO Act, an environmental protection licence relating to air, water and noise pollution and waste management is required for scheduled activities as listed under Schedule 1 of the Act.</p> <p>The proposal does not fit the definition of a scheduled activity.</p>
<i>Contaminated Land Management Act 1997</i> (CLM Act)	<p>Section 59(2) of the CLM Act requires notification of contaminated sites.</p> <p>Section 60 of the CLM Act requires landowners to report any contamination that represents a significant risk of harm to human health or the environment to the Environment Protection Authority (EPA).</p> <p>Known contaminated sites and the potential for uncovering unexpected contamination and measures to avoid causing contamination are discussed in Section 6.3.</p>
<i>Rural Fires Act 1997</i>	<p>This Act regulates bush fire management within the state and development in bush fire prone areas.</p> <p>The majority of the proposal site is mapped as bushfire prone land (see Figure 4-2). However the proposal does not incorporate rural or residential development or a special fire protection purpose; therefore approval under this Act is not required. Bush fire is discussed further in Section 6.12.</p>

Legislation	Requirements
<i>Waste Avoidance and Resource Recovery Act 2000</i>	<p>This Act provides a framework to identify and implement the most efficient use of resources in order to reduce the potential for environmental harm arising from the generation of waste.</p> <p>Under the Act, the construction contractor would be required to conform to the provisions of the Act in relation to waste management by adopting the resource management hierarchy principles (in order of priority) of avoidance, resource recovery and disposal.</p>
<i>Aboriginal Land Rights Act 1983</i> (Land Rights Act)	<p>This Act establishes Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation to protect the culture and heritage of Aboriginal persons in the council's area, and promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area. The process for land claim is defined under the Act.</p> <p>The study area is located within the boundaries of the Awabakal Local Aboriginal Land Council (ALALC) and the Mindaribba Local Aboriginal Land Council (MLALC). The proposal would impact on areas subject to land claim (see Figure 4-3). Consultation with claimants would be required under this Act where the proposal intersects a claim area.</p>
<i>Coal Mine Subsidence Compensation Act 2017</i>	<p>This Act provides for a compensation scheme for damage caused by subsidence from coal mines and outlines the process for the assessing and managing risks from subsidence, including seeking approval from Subsidence Advisory NSW for works within mine subsidence districts.</p> <p>Part of the proposal route is located within a mine subsidence district (see Figure 4-1) and approval for the proposal may be required from Subsidence Advisory NSW.</p>
Commonwealth legislation	
EPBC Act	<p>Under Section 68(1) of the EPBC Act, 'a person proposing to take an action that the person thinks may be or is a controlled action must refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.'</p> <p>The proposal is not considered likely to be a controlled action and therefore has not been referred to the Commonwealth Minister. This is further discussed in Section 4.3.1.</p>
<i>Native Title Act 1993</i>	<p>This Act recognises and protects native title. It provides that native title cannot be extinguished contrary to the Act.</p> <p>The proposal site is not subject to native title claims under this Act.</p>

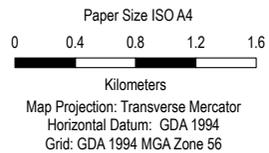
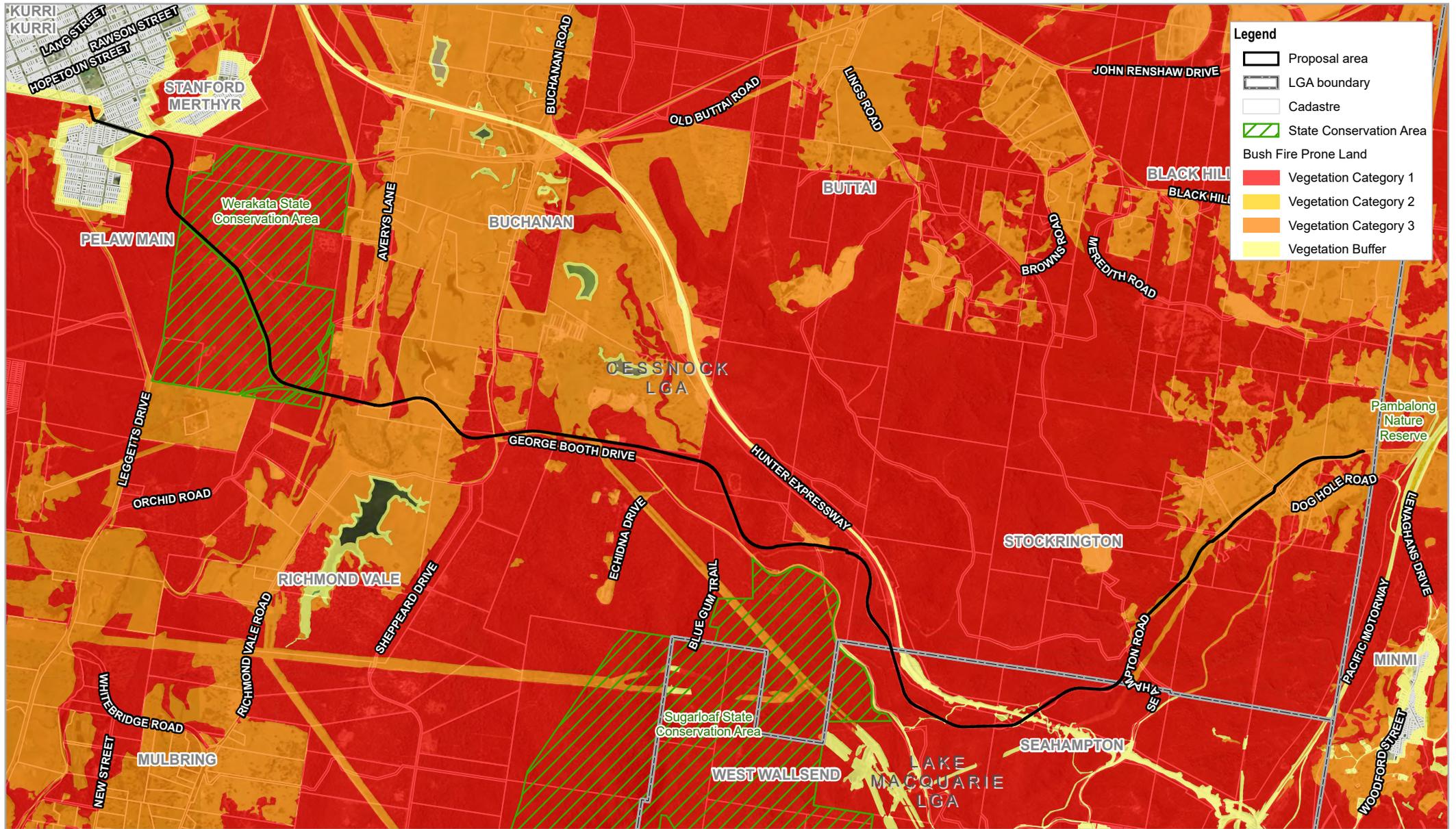


Cessnock City Council
Richmond Vale Rail Trail
Review of Environmental Factors

Project No. 12529257
Revision No. 0
Date 03/07/2020

**Crown land and
mine subsidence district**

Figure 4-1



Cessnock City Council
Richmond Vale Rail Trail
Review of Environmental Factors

Project No. 12529257
Revision No. 0
Date 03/07/2020

State conservation area and
bush fire prone land

Figure 4-2



Legend

- Proposal area
- LGA boundary
- Cadastre
- Aboriginal land claims - finalised
- Aboriginal land claims - granted
- Aboriginal land claims - under investigation

Paper Size ISO A4

0 0.4 0.8 1.2 1.6

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Cessnock City Council
Richmond Vale Rail Trail
 Review of Environmental Factors

Project No. 12529257
 Revision No. 0
 Date 22/03/2021

Aboriginal land claim

Figure 4-3

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 Print date: 22 Mar 2021 - 07:02

Data source: NSW Sixmaps, Aboriginal Land Claims, 2020; LPI: DTDB / DCDB, 2017; sixmaps/LPI_Imagery_Best; © Department of Customer Service 2020. Created by: fmacqay

4.2 NSW legislation

4.2.1 Environmental Planning and Assessment Act 1979

The EP&A Act forms the statutory basis for planning and environmental assessment in NSW. The Minister for Planning, statutory authorities and local councils are responsible for implementing the EP&A Act. The EP&A Act includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision making process.

Environmental planning instruments

Environmental planning instruments (EPIs) are made under Part 3 of the EP&A Act. EPIs include state environmental planning policies (SEPPs) and local environmental plans (LEPs). The 45 previously existing SEPPs were consolidated into 11 policies to make the system simpler, coming into effect on 1 March 2022. EPIs relevant to the proposal are discussed in the following subsections.

State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to, amongst other things, facilitate the effective delivery of infrastructure across the State through increased regulatory certainty and improved efficiency and flexibility in the location of infrastructure and service facilities while providing adequate stakeholder consultation.

The proposal is defined as a 'road infrastructure facility' under clause 2.107 of the Transport and Infrastructure SEPP. Clause 2.108(1) of the Transport and Infrastructure SEPP permits development for the purpose of a road infrastructure facility to be carried out by or on behalf of a public authority without consent on any land except land reserved under the NPW Act unless the development:

- (a) is authorised by or under the National Parks and Wildlife Act 1974, or*
- (b) is, or is the subject of, an existing interest within the meaning of section 39 of that Act, or*
- (c) is on land to which that Act applies over which an easement has been granted and is not contrary to the terms or nature of the easement.*

Assessment, in the form of this REF, is required under Division 5.1 of the EP&A Act. Authorisation will be required under the NPW Act for the proposal where it traverses land reserved under the NPW Act (see Figure 4-2) and other NPWS land.

State Environmental Planning Policy (Resilience and Hazards) 2021

State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) aims to, amongst other things, promote an integrated and co-ordinated approach to land use planning in the coastal zone.

In accordance with Clause 2.7 of the Coastal Management SEPP, development consent for the following is required within areas mapped as coastal wetland under the policy:

- (a) the clearing of native vegetation within the meaning of Part 5A of the Local Land Services Act 2013,*
- (b) the harm of marine vegetation within the meaning of Division 4 of Part 7 of the Fisheries Management Act 1994,*
- (c) the carrying out of any of the following:*
 - (i) earthworks (including the depositing of material on land),*
 - (ii) constructing a levee,*
 - (iii) draining the land,*

(iv) environmental protection works,

(d) any other development.

A small section of the trail near Pambalong Nature Reserve, within the Cessnock LGA, is mapped as coastal wetland. Development consent is required for proposal works in this area. This area has been assessed and approved separately in a development application and EIS (GHD, 2020) and is not included in this REF.

4.2.2 Environmental Planning and Assessment Regulation 2021

The factors to be taken into account when considering the environmental impact of an activity are listed in Clause 171 of the EP&A Regulation. Clause 171 factors are addressed in Table 4-2 with detailed assessment provided in Section 6. Impacts are classified as follows:

- **N/A** – the factor cannot be applied in any way to any aspect of the activity.
- **Negative** – the activity has an overall detrimental effect on the environment.
- **Nil** – there is neither a detrimental nor beneficial effect on the environment by the activity.
- **Positive** – the overall effect on the environment is beneficial.

Table 4-2 Clause 171 factors

Factor and comment	Impact
<p>a. Any environmental impact on the community? Comments: There is the potential for minor amenity impacts on the community during construction due to noise, dust, traffic and visual changes. Some operational impacts may also result for adjacent landowners and residents. These would be avoided or reduced through implementation of the proposed safeguards and management measures.</p>	Minor negative
<p>b. Any transformation of a locality? Comments: The proposal would represent a transformation of the local area. However the transformation would predominantly be positive due to the derelict nature of the existing railway. The proposal would provide improved access to natural and heritage areas for the entire locality. The detailed design would be sensitive to the existing locality.</p>	Positive
<p>c. Any environmental impact on the ecosystems of the locality? Comments: There is the potential for minor negative impacts during construction due to vegetation removal, dust, noise and vibration etc. However these impacts would be temporary and avoided or reduced through implementation of the proposed safeguards and management measures. Operational impacts may also occur due to increased visitation.</p>	Minor negative
<p>d. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? Comments: The proposal would result in a beneficial impact on the aesthetic and recreational values of the locality.</p>	Positive
<p>e. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? Comments: While the proposal would have an impact on the inherent heritage values of the railway, it would result in the preservation of the site, and prevent further degradation. It would also enable access for present and future generations to enjoy the scientific and cultural values of the site.</p>	Positive

Factor and comment	Impact
<p>f. Any impact on the habitat of any protected fauna (within the meaning of the BC Act 2016)?</p> <p>Comments: The proposal would have a negligible impact on native flora and fauna habitat.</p>	Negligible negative
<p>g. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>Comments: The proposal would not endanger any species.</p>	N/A
<p>h. Any long-term effects on the environment?</p> <p>Comments: The long term effects on the environment would be neutral. Negative impacts during construction and operation would be offset by positive impacts from improved access and management.</p>	N/A
<p>i. Any degradation of the quality of the environment?</p> <p>Comments: There would be no long term degradation of the environment due to the proposal. The proposal would protect and preserve the heritage railway and reduce inappropriate behaviour, such as dumping, in the area.</p>	Positive
<p>j. Any risk to the safety of the environment?</p> <p>Comments: Potential minor risk to the environment would occur during proposal construction and operation. However the risk would be avoided or reduced through implementation of the proposed safeguards and management measures.</p>	Minor negative
<p>k. Any reduction in the range of beneficial uses of the environment?</p> <p>Comments: The proposal would not reduce the beneficial uses of the environment.</p>	N/A
<p>l. Any pollution of the environment?</p> <p>Comments: There is the potential for minor air, noise, land and water pollution during construction and operation. However these impacts would be avoided or reduced through implementation of the proposed safeguards and management measures.</p>	Minor negative
<p>m. Any environmental problems associated with the disposal of waste?</p> <p>Comments: Waste volumes would be small and there are no problems anticipated with disposal.</p>	N/A
<p>n. Any increased demands on resources, natural or otherwise, which are, or are likely to become in short supply?</p> <p>Comments: The proposal would require use of resources, some non-renewal, however the quantities required would be relatively small and would not place resources in short supply.</p>	N/A
<p>o. Any cumulative environmental effect with other existing or likely future activities?</p> <p>Comments: The proposal is not likely to result in cumulative impacts due to it coinciding with other activities in the locality. Construction planning would consider other relevant activities in consultation with stakeholders.</p>	N/A
<p>p. Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?</p> <p>Comments: The proposal would have no impact on coastal process and hazards.</p>	N/A
<p>q. Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1?</p> <p>Comments: Applicable EPIs made under the EP&A Act are addressed in Section 4.2.1.</p> <p>The proposal meets one of the key directions of the Hunter Regional Plan 2036 to enhance access to recreational facilities and connect open spaces. It is also in keeping with a number of the objectives of the Community Strategic Plan Cessnock 2027 including:</p> <ul style="list-style-type: none"> Increasing tourism opportunities and visitation in the area 	Positive

Factor and comment	Impact
<ul style="list-style-type: none"> Protecting and enhancing the natural environment and the rural character of the area Better utilisation of existing open space Better transport links 	
r. Any other relevant environmental factors? Comments: All relevant environmental factors are addressed in Section 6.	Refer to Section 6

4.2.3 National Parks and Wildlife Act 1974

As identified in Table 3-4, the proposal would impact on the Werakata SCA and a number of other land parcels owned and managed by the NPWS (including the yet to be gazetted Stockrington SCA). Approval for the proposal would be required under the NPW Act.

Works within the Warakata SCA are undertaken by NPWS in accordance with the Statement of Management Intent (SoMI) and Fire Management Strategy. The SoMI is an interim document before a plan of management is prepared and gazetted under the NPW Act. The proposal is not specifically referenced in the SoMI.

The purpose of reserving land as a SCA is to identify, protect and conserve areas:

(a) that contain significant or representative ecosystems, landforms or natural phenomena or places of cultural significance, and

(b) that are capable of providing opportunities for sustainable visitor or tourist use and enjoyment, the sustainable use of buildings and structures or research, and

(c) that are capable of providing opportunities for uses permitted under other provisions of this Act in such areas, including uses permitted under section 47J.

Management principles for SCAs are detailed in Division 2, clause 30G of the NPW Act and are addressed with respect to the proposal in Table 4-3.

Table 4-3 SCA management principles

Clause	Management principles	Response
(2)	A state conservation area is to be managed in accordance with the following principles:	
(a)	The conservation of biodiversity, the maintenance of ecosystem function, the protection of natural phenomena and the maintenance of natural landscapes,	The proposal is in accordance with these principles as follows: <ul style="list-style-type: none"> The proposal design has been developed to reduce impacts on biodiversity, cultural heritage and ecological integrity. The proposal will enable increased access for visitors and tourists, and provide additional information and educational opportunities. The proposal provides an opportunity for monitoring and research of this type of sustainable, active transport, recreation and tourist development but also better access for ecological research.
(b)	The conservation of places, objects and features of cultural value,	
(c)	Provision for the undertaking of uses permitted under other provisions of this Act in such areas (including uses permitted under section 47J) having regard to the conservation of the natural and cultural values of the state conservation area,	
(ca)	Provision for the carrying out of development in any part of a special area (within the meaning of the <i>Hunter Water Act 1991</i>) in the state conservation area that is permitted under section 185A having regard to the conservation of the natural and cultural values of the state conservation area,	

Clause	Management principles	Response
(d)	Provision for sustainable visitor or tourist use and enjoyment that is compatible with the conservation of the state conservation area's natural and cultural values and with uses permitted under other provisions of this Act in such areas,	<ul style="list-style-type: none"> The proposal does not preclude the carrying out of development or any other permitted use.
(e)	Provision for the sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation of the state conservation area's natural and cultural values and with uses permitted under other provisions of this Act in such areas,	
(f)	Provision for appropriate research and monitoring.	

Potential impacts on Aboriginal heritage are discussed further in Section 6.10. Potential impacts on native flora and fauna are discussed further in Section 6.7.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act requires that Commonwealth approval be sought for certain actions. These actions are those which have, or are likely to have, a significant impact on a matter of NES or Commonwealth land. Matters of NES include declared World Heritage areas, declared Ramsar wetlands, nationally listed threatened species and ecological communities, listed migratory species, nuclear actions and Commonwealth marine areas. A search of the Protected Matters Search Tool for matters of NES (and other matters) in the study area was undertaken on 26 May 2020 and the report is included in the flora and fauna assessment in Appendix F. The search results and their relevance to the proposal is summarised in Table 4-4.

Table 4-4 Matters of NES

Matter	Search result	Comment
Matters of NES		
World Heritage Properties	None	N/A
National Heritage Places	None	N/A
Wetlands of International Significance	1	
Great Barrier Reef Marine Park	None	N/A
Commonwealth Marine Area	None	N/A
Listed Threatened Ecological Communities	5	Discussed in detail in Section 6.7
Listed Threatened Species	81	Discussed in detail in Section 6.7
Listed Migratory Species	62	Discussed in detail in Section 6.7
Other Matters		
Commonwealth Land	Commonwealth Land - Commonwealth Land - Airservices Australia Commonwealth Land - Australian Postal Corporation	The proposal would not impact on Commonwealth land

Matter	Search result	Comment
	Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Defence Housing Authority Commonwealth Land - Defence Service Homes Corporation Commonwealth Land - Director of Defence Service Homes Commonwealth Land - Director of War Service Homes Commonwealth Land - Telstra Corporation Limited	
Commonwealth Heritage Places	None	N/A
Listed Marine Species	72	The proposal would not impact on marine species or habitat
Whales and other Cetaceans	1	The proposal would not impact on marine species or habitat
Critical Habitats	None	N/A
Commonwealth Reserves Terrestrial	None	N/A
Australian Marine Parks	None	N/A

4.4 Confirmation of statutory position

The proposal is development permissible without consent pursuant to Clause 2.108 of Transport and Infrastructure SEPP. Assessment, in the form of this REF, is required in accordance with Division 5.1 of the EP&A Act and Clause 171 of the EP&A Regulation.

The proposal is not likely to have a significant impact on matters of NES within the meaning of the EPBC Act. A referral to the Australian Department of Agriculture, Water and the Environment is not required.

Additional approvals, and the relevant authority and required timing, are summarised in Table 4-5.

Table 4-5 Summary of additional approvals required

Legislation	Approval required	Administering authority	When approval required
Roads Act	Section 138 permit	Transport for NSW	Prior to any works on public roads
FM Act	Part 7 permit	Department of Primary Industries (DPI)	Prior to any works in waterways
NPW Act	Licence	NPWS	Prior to any works on NPWS estate
WM Act/Water Act	Licence	WaterNSW	If significant dewatering required

Legislation	Approval required	Administering authority	When approval required
CLM Act	Acquisition, lease or licence	Department of Planning and Environment (DPE)	Prior to any works commencing on crown land
Land Rights Act	Approval/agreement	LALC	Prior to any works commencing on land claim area
<i>Coal Mine Subsidence Compensation Act 2017</i>	Approval	Subsidence Advisory NSW	Prior to any works commencing within the mine subsidence district

5. Consultation

5.1 Transport and Infrastructure SEPP consultation

Part 2.2, Division 1 of the Transport and Infrastructure SEPP (clauses 2.10 to 2.17) outlines the requirements for consultation regarding public infrastructure projects. Clause 2.10, 2.11, 2.12 and 2.14 apply to consultation required with the Council. As Council is the proponent for the proposal, this consultation is not required although it is anticipated that Council would consult internally where required.

Clause 2.13 requires consultation with the State Emergency Services (SES) for certain types of developments on flood liable land. The proposal does not meet the definition of a development that requires consultation with the SES under this clause.

Clause 2.15 prescribes consultation required with authorities other than Council. The relevance of the requirements of this clause to the proposal are summarised in Table 5-1.

Clause 2.16 requires that a public authority, or a person acting on behalf of a public authority, must consider Planning for Bush Fire Protection before carrying out the development in an area that is bush fire prone land. The proposal is located in bush fire prone land. This is specifically addressed in Section 6.12.

Table 5-1 Infrastructure SEPP consultation

Clause 16 - Consultation with public authorities other than councils	Yes	No
Do the works involve:		
a. Development adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i> or to land acquired under Part 11 of that Act—the Office of Environment and Heritage	✓	
b. Development on land in Zone E1 National Parks and Nature Reserves or in a land use zone that is equivalent to that zone—the Office of Environment and Heritage	✓	
c. Development comprising a fixed or floating structure in or over navigable waters—Transport for NSW		✓
d. Development that may increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map—the Director of the Observatory		✓
e. Development on Defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument—the Secretary of the Commonwealth Department of Defence		✓
f. Development on land in a mine subsidence district within the meaning of the <i>Mine Subsidence Compensation Act 1961</i> —the Mine Subsidence Board	✓	

As summarised in Table 5-1, the following consultation in accordance with the Transport and Infrastructure SEPP is required for the proposal:

- The NPWS with respect to the adjacent Werakata SCA and the yet to be gazetted Stockrington SCA.
- The DPE with respect to land the proposal traverses in Stockrington that is zoned E1 under the Cessnock and Lake Macquarie LEPs.
- Subsidence Advisory NSW regarding the location of the proposal within a mine subsidence district.

5.2 Stakeholder and community consultation

Extensive community and stakeholder consultation has been completed for the proposal and is documented in the socio-economic assessment (refer Section 6.8). All feedback collected to date regarding the proposal has been collated and reviewed during design development and preparation of the REF.

Extensive ongoing consultation is and will be undertaken during the future design, construction and operational stages of the proposal. This would include negotiation with affected landowners, other stakeholders and the community.

A detailed Community and Engagement Plan has been developed for the proposal and will continue to be implemented as the proposal progresses.