CUMBERLAND CITY COUNCIL

Toongabbie Road Improvements

Review of Environmental Factors

February 2026

Approval and authorisation

Title	Toongabbie Road Improvements
Accepted on behalf of Cumberland Council by:	
Signed	
Date:	

Document review tracking

Draft No.	Date	Comments
Rev A	10/11/2025	Draft for CCC review
Rev B	03/02/2026	Updated in response to CCC review
Rev 0	09/02/2026	Final for exhibition

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Executive summary

The proposal

Cumberland City Council (Council) proposes to undertake road improvements around Wentworth Avenue in the suburb of Toongabbie to reduce congestion and improve the flow of traffic in the area. The proposal is comprised of works at two locations throughout Toongabbie and would involve road widening to provide additional capacity for road users. Key features of the proposal include:

- Road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico:
  - Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
  - Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
  - Inclusion of a rigid safety barrier along the retaining wall
  - Installing of a crash barrier on the north-western verge of the intersection of Wentworth Avenue and Cornelia Road
  - Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout
  - Utility readjustments, both above and below ground
  - Permanent closure of Junia Avenue Service Road
- The provision of a pedestrian crossing on Portico Parade
  - Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
  - Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

Construction is expected to commence in Q1 2026 and be completed by Q2/Q3 2027.

Need for the proposal

The bridge crossing at Toongabbie was built in 1946. It has a single lane in each direction and is one of the few connections across the rail line on the local network. The existing network within the vicinity of the bridge is approaching its capacity. It is a well-known local network pinch point for motorists with extensive queues apparent along Wentworth Avenue, Station Road and Fitzwilliam Road. The network is expected to further deteriorate in performance, in particular along the Wentworth Avenue corridor. There is also limited active transport connectivity and accessibility within the Toongabbie Station precinct.

The proposal is supported under the policies, goals and objectives and targets of a number of strategic State and local planning documents:

- Future Transport Strategy (Transport for NSW, 2022)
- Greater Sydney Region Plan: A Metropolis of Three Cities (Greater Sydney Commission, 2018)
- Central City District Plan (Greater Sydney Commission, 2018)
- State Infrastructure Strategy 2018-2038: Building Momentum (Infrastructure NSW, 2018)
- Cumberland City Council Community Strategic Plan 2017-2027 (Cumberland City Council, 2017)

Proposal objectives

The objectives of the proposal are:

- Reduce congestion to improve travel time and reliability of the local road network for different road users
- Improve overall road safety for vulnerable road users and active transport accessibility travelling in and around Toongabbie Station precinct

Options considered

The following options were taken forward and assessed to determine an optimal development scenario. These are shown in Figure 2-1. It should be noted that Site 11 and Site 8 are within the Parramatta Local Government Area (LGA), and are not subject to this assessment or project.

Option 1 'Do Nothing'

The 'Do Nothing' option would involve not undertaking road improvements around Wentworth Avenue, and leaving the local road network in its current form. The risks and implications associated with the 'Do Nothing' option would continue to exacerbate the current network challenges. Peak period inefficiencies would remain for road users, including buses, impacting reliability and travel time delays. Opportunities to enhance safety and active transport access would be missed, either as responsive measures to prevent or mitigate incidents or promote active transport engagement.

This option was considered not feasible due to the future risk of the network not meeting requirements.

Option 2 – Single site (Site 4)

This option would only involve road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico. This would include:

- Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
- Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
- Inclusion of a rigid safety barrier along the retaining wall
- Installation of a crash barrier (or similar) on the north-western verge of the intersection of Wentworth Avenue and Cornelia Road
- Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout
- Utility adjustments (above and below ground)

This option would offer direct improvement in network efficiency and safety and would offer indirect benefits that contribute generally to sustainability, liveability, quality and equity imperatives. However, this option would not enhance the active transport connectivity of the local area.

Option 3 – The proposal (Site 4, Site 5 and Site 9)

Similar to Option 2, Option 3 would involve the road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico.

This option would also include provision of a pedestrian crossing on Portico Parade, including:

- Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
- Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

The installation of bike lockers adjacent to Toongabbie Train Station on the Parramatta Local Government Area (LGA) side of the station would also be included in this option.

Option 3 would have the same direct and indirect benefits as Option 2 but would also have a direct positive benefit on the active transport connectivity of the local area.

Option 3 was chosen as the preferred option.

Statutory and planning framework

The proposal is categorised as development for the purpose of a road and is being carried out by a public authority. The Proposal is not State Significant Infrastructure or State Significant Development and can be assessed under Division 5.1 of the EP&A Act. Cumberland City Council is the determining authority for the proposal.

A referral to Australian Government Department of Climate Change, Energy, the Environment and Water under the EPBC Act is not required.

Community and stakeholder consultation

Extensive consultation has been undertaken with Transport for NSW and Parramatta City Council to:

- build preparedness and strategic readiness for changes in traffic and parking arrangements to the local area and seek comment, feedback, ideas and suggestions on the proposal
- engage with relevant councils and stakeholders
- inform stakeholders on the proposal

Consultation for the Toongabbie Town Centre Public Domain Plan run by Cumberland City Council between 30 April 2024 and 28 May 2024 identified the need for the upgrades to and around Toongabbie Bridge. Community comments raised during this consultation period included concerns of safety regarding the current width of the railway overbridge, the need for footpath repairs to accommodate foot traffic and mobility needs and limited bike traffic.

Consultation with the community regarding the proposal will be undertaken through display of this REF. This display will provide an opportunity for individuals and stakeholders to review the proposal and respond via formal submissions. A Submissions Report would then be prepared to provide responses to key community concerns and questions and provide further information or clarification if required.

Key consultation activities will be undertaken in accordance with Council's Community Engagement Strategy 2025-2029 including; letter box drops, onsite signs and displays, online engagement on Council's Have Your Say website, meetings and briefings and public display of this REF.

Environmental impacts

Detailed technical investigations have been carried out to identify, assess, manage and minimise the proposal's potential impacts. The following outlines a summary of the proposal's main impacts on the environment and surrounding community. The safeguards and mitigation measures outlined in this REF would help minimise the expected adverse impact.

The main environmental impacts of the proposal are:

Biodiversity

The primary direct ecological impact of the proposed activity is clearing of native vegetation. The proposal would result in the following (worst case) impacts:

- Removal of 0.21ha of PCT 3320: Cumberland Shale Plains Woodland, and
- Removal of 0.06ha of Urban Native/Exotic

However, removal of these trees is not likely to significantly impact the biodiversity value of the area. If all mitigation measures are implemented, the proposal would have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

An arborist will be engaged prior to any vegetation removal, and this will be assessed under the Cumberland City Council Tree Works Application.

Noise and vibration

The construction of the proposal during standard hours presents a low risk of adverse impacts on sensitive receivers. Exceedances would be largely limited to 5dB above the NML with only a small group of receivers expected to experience

higher noise levels. Implementation of the recommended mitigation measures identified in Table 6-8 would reduce the number of affected receivers.

Outside standard hours the level of impact would expand substantially with similar works undertaken during these periods representing moderate to high noise impacts, with vegetation clearing and earthworks identified as the highest risk. Works should be completed during standard hours as far as practicable.

Operational traffic noise is precited to be imperceptible to most receivers as the road noise levels are predicted to increase between 0.1dB and 0.2dB with only a small number exceeding a 1dB increase.

Visual impacts

Temporary visual impacts as a result of the proposal are expected to road and footpath users, residents on Wentworth Avenue and surrounding roads and employees and visitors to commercial properties within the proposal area. The visual impacts to these groups are likely to stem from construction plant and equipment, ancillary facilities, material storage/stockpiling, temporary safety barriers and temporary traffic control equipment and signage.

Operational impacts as a result of the proposal are expected. These impacts are primarily due to the removal of trees and the erection of the retaining wall. The proposal would impact the surrounding landscape character given the introduction of a four-metre-high retaining wall on Wentworth Avenue at its intersection with Cornelia Road/The Portico. The widening of Wentworth Avenue to allow for additional turning lanes would also alter the visual landscape for residential, commercial and recreational receivers due to the removal of mature vegetation in these locations.

Justification and conclusion

The proposal is consistent with several strategic State and local planning documents include the *Future Transport Strategy, Greater Sydney Region Plan: A Metropolis of Three Cities, Central City District Plan, State Infrastructure Strategy 2018-2038: Building Momentum* and the *Cumberland City Council Community Strategic Plan 2017-2027.*

The proposal has been developed to:

- Reduce congestion to improve travel time and reliability of the local road network for different road users
- Improve overall road safety for vulnerable road users and active transport accessibility travelling in and around Toongabbie Station precinct.

The proposal would result in several environmental impacts which have been assessed and identified in this REF including, biodiversity, noise and vibration and visual impacts. The implementation of the safeguards and management measures within this REF would mitigate these impacts and ensure the benefits of the project outweigh any adverse impacts.

The benefits of the proposal are considered to outweigh the mostly temporary adverse impacts and risks associated with the proposal.

Display of the review of environmental factors

This REF is on display for comment between Mid-Feb and Mid-March. You can access the documents in the following ways:

Internet

The documents are available as pdf files on the Transport for NSW website at https://haveyoursay.cumberland.nsw.gov.au/toongabbie-bridge-upgrade

Printed copies

The documents can be viewed at the following locations:

Council Offices –

Merrylands Service Centre: 6 Memorial Avenue, Merrylands NSW 2160. Open 8 am -4:30 pm, Monday-Friday

Auburn Service Centre: 1 Susan Street, Auburn NSW 2144. Open 8 am – 4:30, Monday – Friday.

Copies by request

Printed and electronic copies are available by contacting Scott Kavanagh – Coordinator Engineering Services via phone (02) 8757 9000, noting that there may be a charge for hard copies or USB.

Staffed displays

Council will run 2 pop-up sessions to seek community feedback. Information relating to these sessions can be found on the 'Have Your Say' website - https://haveyoursay.cumberland.nsw.gov.au/toongabbie-bridge-upgrade

How can I make a submission?

To make a submission about this proposal, please send your written comments to:

https://haveyoursay.cumberland.nsw.gov.au/toongabbie-bridge-upgrade

or send your written comments to Council:

Via Email - council@cumberland.nsw.gov.au

Or Via Mail - PO Box 42, Merrylands NSW 2160

Submissions must be received by 17 March 2026. Submissions will be managed in accordance with the Cumberland City Council Privacy Policy. A copy can be made available upon request.

What happens next?

Cumberland City Council will collate and consider the submissions received during public display of the REF.

After this consideration, Council will determine whether or not the proposal should proceed as proposed and will inform the community and stakeholders of this decision.

If the proposal is determined to proceed, Council will continue to consult with the community and stakeholders prior to and during construction.

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1. Introduction

This chapter introduces the proposal and provides context for the environmental assessment. In introducing the proposal, the objectives and project development history are detailed and the purpose of the report provided.

1.1 Proposal identification

Cumberland City Council (Council) proposes to undertake local network enhancements within the Toongabbie Station precinct to improve performance and safety of the network. The proposal is located in the Cumberland LGA about 25 kilometres north-west of the Sydney central business district (CBD). Toongabbie is bordered by Seven Hills to the north and Pendle Hil and Girraween to the south. The proposal involves works on Wentworth Avenue, which is a north-east to south-west local road. The section of Wentworth Avenue subject of the proposal is under the care of Cumberland City Council. Wentworth Avenue is a key connector between Parramatta and Seven Hills and is crucial for access to Westmead Hospital.

The proposal is comprised of works at two locations (refer to Figure 1-1). Key features of the proposal would include:

- Road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico
    - Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
    - Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
    - Inclusion of a rigid safety barrier along the retaining wall
    - Installing of a crash barrier on the north-western verge of the intersection of Wentworth Avenue and Cornelia Road
    - Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout
    - Utility readjustments, both above and below ground
- The provision of a pedestrian crossing on Portico Parade
    - Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
    - Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

An overview of the proposal and the location is shown in Figure 1-1. Chapter 3 describes the proposal in more detail.

Figure 1-1 Location of the proposal

1.2 Purpose of the report

This review of environmental factors (REF) has been prepared by Hutchison Weller Pty Ltd on behalf of Council. For the purposes of these works, Council is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979 (NSW)* (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 proposed work and assessment of associated environmental impacts has been undertaken in the context of Section 171 of the Environmental Planning and Assessment Regulation 2021, the factors in *Guidelines for Division 5.1 assessments, (DPE 2022), Roads and Related Facilities EIS Guideline* (DUAP 1996), the *Biodiversity Conservation Act, 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act), and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)* (EPBC Act).

In doing so, the REF helps to fulfil the requirements of:

- Section 5.5 of the EP&A Act including 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 environmental impact statement to be prepared and approval 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, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report

- The significance of any impact on nationally-listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and if offsets are required and able to be secured.
- The potential for the proposal to significantly impact any other matters of national environmental significance or Commonwealth land and the need, subject to the EPBC Act strategic assessment approval, to make a referral to the Australian Department of Climate Change, Energy, the Environment and Water for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

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2. Need and options considered

This chapter describes the need for the proposal in terms of its strategic setting and operational need. It identifies the various options considered and the selection of the preferred option for the proposal.

2.1 Strategic need for the proposal

The existing network within the vicinity of the proposal is approaching its capacity with the network expected to further deteriorate in performance. The bridge crossing at Toongabbie which has a single lane in each direction was built in 1946 and is one of the few connections across the rail line (Cumberland and North Shore and Western) on the local network. It is also the only local crossing linking to the major arterial roads including Seven Hills Road, Prospect Highway and the Cumberland and Great Western Highways.

Currently motorists experience extensive queues and congestion, especially during peak periods. With significant population and economic growth predicted within Cumberland, Blacktown and Parramatta LGAs, further pressure on the local transport network surrounding Toongabbie is anticipated.

The proposal's alignment with strategic plans and policy documents is outlined in the following sections.

Future Transport Strategy

The *NSW Future Transport Strategy* (Transport for NSW, 2022) outlines a clear framework to address transport challenges in NSW and is an update of the *NSW Future Transport Strategy 2056* (Transport for NSW, 2018). It integrates planning for roads, freight and all other modes of transport and sets out initiatives, solutions and actions to meet NSW transport challenges.

The Future Transport Strategy works to deliver Transport for NSW's three high-level outcomes by setting 14 strategic directions which will guide how to achieve these outcomes. The Strategy considers every part of the transport system from planning to operations to ensure a fully integrated approach.

A key priority and direction under the strategy related to connecting customers' whole lives. A part of this outcome is that of a 30-minute city where anyone can reach their nearest Metropolitan and Strategic centre within 30 minutes by public transport. Enhanced centre to centre networks and movement corridors are identified as important to achieving this vision. This would include optimising the existing network and making better use of existing infrastructure. Congestion is identified as contributing to increased travel times, reduced reliability and poorer customer experience.

The proposal responds to this by improving movement within an existing bottleneck within the Wentworth Avenue road corridor which is forecasted to contribute to increased travel times. The proposed network enhancements would improve travel reliability for all road users and improve customer experience.

Central City District Plan

The Greater Sydney Commission's five District Plans support the implementation of *A Metropolis of Three Cities – the Greater Sydney Region Plan* at a District level which establishes the aspirations for the region over the next 40 years.

These 20-year plans are a bridge between regional and local planning initiatives. The District Plans inform local environmental plans, community strategic plans and the assessment of planning proposals. The District Plans also help councils to plan and deliver for growth and change, and to align their local planning strategies to place-based outcomes.

The Proposal is situated within the Central City District Plan. The Central City District Plan provides a 20-year plan to manage growth and achieve the 40-year vision, while enhancing Greater Sydney's liveability, productivity and sustainability into the future. The proposal responds to two priorities in particular:

- Liveability – a city for the people
- Productivity – a well-connected city

The proposal would improve the existing road infrastructure to support existing and forecast traffic and to meet the changing needs of the Cumberland LGA.

State Infrastructure Strategy 2018-2038: Building Momentum

The *State Infrastructure Strategy 2018-2038* developed by Infrastructure NSW provides the NSW Government with advice about infrastructure policy and investment priorities, in line with the requirements of the *Infrastructure NSW Act 2011*. Infrastructure NSW recommends the NSW Government continue the Easing Sydney's Congestion Program Office over the next 10 years with further progressive investment in targeted, small scale, high impact network programs (such as Pinch Points and Journey Optimisation).

This proposal would provide an investment in Sydney's roads and transport infrastructure as a part of the Easing Sydney's Congestion Program Office to provide a targeted, small scale but high impact solution benefiting the Southern Sydney road network.

Cumberland City Council Community Strategic Plan 2017-2027

The Cumberland City Council Community Strategic Plan was developed to establish a central plan for Cumberland and a series of supporting long-term strategic goals, outcomes, activities and measures. The plan balances a commitment to social and cultural cohesion, the local economy, the natural and built environment and recognises all members of the Cumberland community. The plan aims to guide Cumberland Council's endeavours to build a better region in partnership with its community. The proposal would contribute to achieving the plans priority areas of safety and a sense of community and liability of the area through a safer and more efficient road network.

2.2 Limitations of existing infrastructure

Limitations of existing infrastructure at the proposal site include:

- Local network pinch point for motorists with extensive queues apparent along Wentworth Avenue, Station Road and Fitzwilliam Road
- The network is expected to further deteriorate in performance, in particular along the Wentworth Avenue corridor
- Limited active transport connectivity and accessibility within the Toongabbie Station precinct.

2.3 Proposal objectives and development criteria

2.3.1 Proposal objectives

The objectives of the proposal include:

- Reduce congestion to improve travel time and reliability of the local road network for different road users
- Improve overall road safety for vulnerable road users and active transport accessibility travelling in and around Toongabbie Station precinct

2.3.2 Development criteria

The development criteria for the proposal include:

- Minimise land use and community impacts
- Minimise utility relocation and service impacts
- Minimise the scope of earthworks
- Minimise environmental impacts

2.3.3 Urban design objectives

The urban design objectives for the proposal have been developed in accordance with the *Urban Design Policy – Beyond the Pavement* (Transport for NSW, 2023).

The urban design objectives of the proposal, including the retaining wall are:

- Ensure high-quality urban design outcomes which are appropriate to the surrounding urban environment
- Be structurally sound, safe and practical to maintain
- Contribute positively to the urban environment
- Be visually integrated where possible through native plantings

These objectives were considered during development of the urban design strategy for the proposal.

2.4 Alternatives and options considered

2.4.1 Methodology for selection of preferred option

A number of potential concept interventions were identified, however these were all discounted as outlined in Table 2-1. Three options were assessed and reviewed against the proposal objectives and development criteria. Based on this assessment, a preferred option was identified and is presented in the following sections.

2.4.2 Identified options

A number of potential concept interventions were identified and subsequently discounted, as outlined in Table 2-1.

Table 2-1 List of concept interventions

Ref	Concept intervention	Description	Benefits	Rationale
1	Bridge upgrade	Widening bridge to two lanes each way	Improved travel times afforded by the increased capacity of the bridge	**Not feasible/discounted** Geometric constraints due to existing conditions and environment
2	New bridge (or tunnel)	New infrastructure to support a four lane bridge to replace the existing two lane bridge	Provide additional capacity over rail line. Travel time savings, reduced operation costs, safety, traffic diversion, development opportunities	**Not recommended** Amenity impacts, reduced open space, cycling route impacts, flooding, constructability, divided community perspectives, land acquisition
3	Signalisation or redesign of Wentworth Avenue/Wentworth Avenue roundabout	Signalisation or redesign of Wentworth Avenue/Wentworth Avenue roundabout	Reduce significant delays that spill back to upstream intersections	**Discounted** Raised safety concerns due to existing configuration, irregular design for signalling and driver confusion
4	Lane improvements at Wentworth Avenue roundabout	Dual entry lanes at south-west approach Dual northbound exit lanes to form two full northbound lanes between Wentworth and Station Road roundabouts	Increased throughput capacity to overcome delays and avoid queuing	**Not feasible** Significant property impacts Limited improvement in congestion

The following options were taken forward and assessed to determine an optimal development scenario. These are shown in Figure 2-1. It should be noted that Site 11 and Site 8 are within the Parramatta LGA and are not subject to this assessment or project.

Option 1 'Do Nothing'

The 'Do Nothing' option would involve not undertaking road improvements around Wentworth Avenue and leaving the local road network in its current form. The risks and implications associated with the 'Do Nothing' option would continue to exacerbate the current network challenges. Peak period inefficiencies would remain for road users, including buses, impacting reliability and travel time delays. Opportunities to enhance safety and active transport access would be missed, either as responsive measures to prevent or mitigate incidents or promote active transport engagement.

This option was considered not feasible due to the future risk of the network not meeting requirements.

Option 2 – Single site (Site 4)

This option would only involve road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico. This would include:

- Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
- Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
- Inclusion of a rigid safety barrier along the retaining wall
- Installation of a crash barrier (or similar) on the north western verge of the intersection of Wentworth Avenue and Cornelia Road
- Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout
- Utility adjustments (above and below ground)

This option would offer direct improvement in network efficiency and safety and would offer indirect benefits that contribute generally to sustainability, liveability, quality and equity imperatives. However, this option would not enhance the active transport connectivity of the local area.

Option 3 – The proposal (Site 4, Site 5 and Site 9)

Similar to Option 2, Option 3 would involve the road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico.

This option would also include provision of a pedestrian crossing on Portico Parade, including:

- Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
- Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

The installation of bike lockers adjacent to Toongabbie Train Station would also be included in this option.

Option 3 would have the same direct and indirect benefits as Option 2 but would also have a direct positive benefit on the active transport connectivity of the local area.

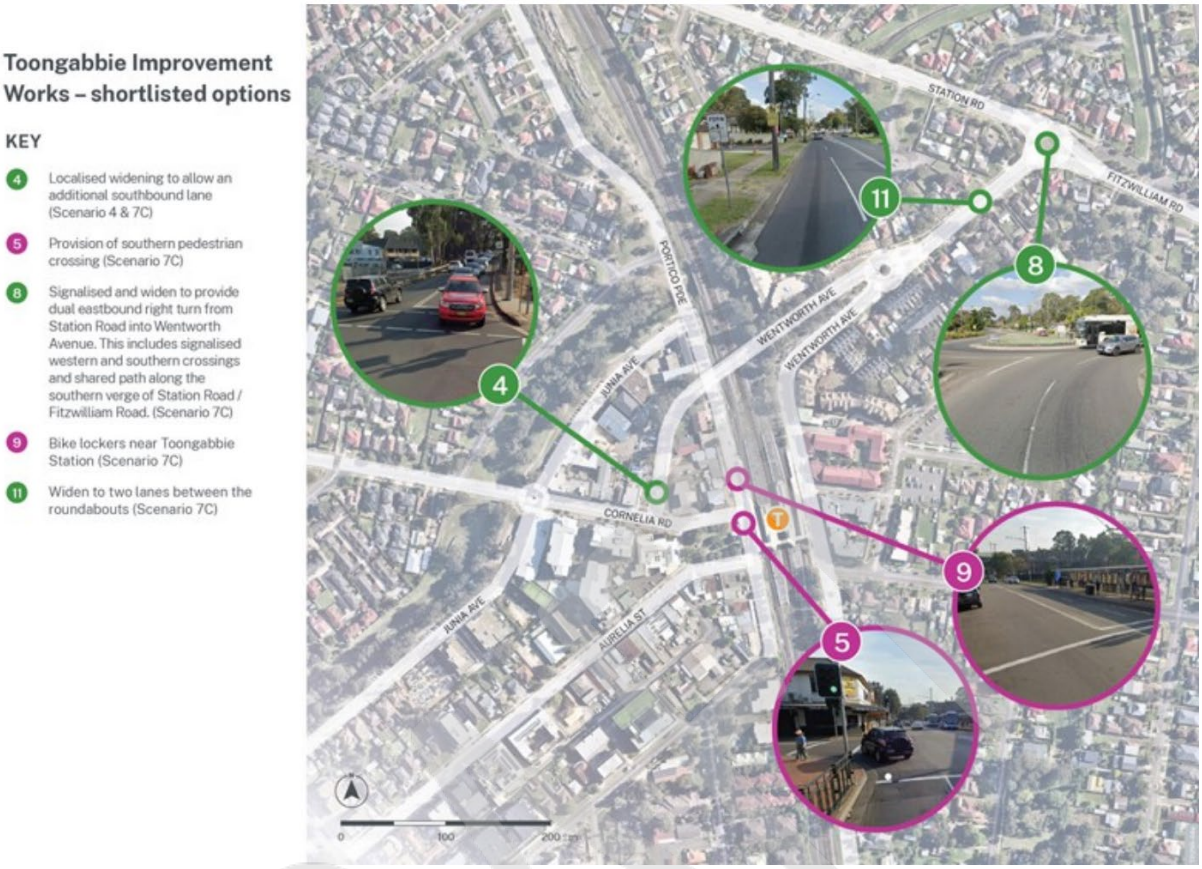


Figure 2-1 Shortlisted Options

2.5 Preferred option

Option 3 was chosen for the following reasons:

- meets all project objectives
- improves safety
- it is expected to reduce network delays, particularly during peak periods
- reduces potential community impacts through addressing key identified issues with the network at once rather than undertaking these works under separate approvals.

2.6 Design refinements

The design of the Toongabbie road improvements has been refined as per Table 2-2.

Table 2-2 Key design refinements

Difference	Reason for difference
Lane widths have been reduced to the minimum (3.2m width) on Wentworth Avenue	Reduce land take and impact to Junia Avenue service road to allow driveway access
Barriers have been detailed to the western side of the Wentworth Avenue	General design development

Junia Avenue service road is proposed to be a shared zone for local access only with appropriate signs in place	Junia Avenue will have very low traffic movements (one way access) and has restricted movements due to the reduced width
The pedestrian crossing across Cornelia Road has been shifted to the west	To improve pedestrian safety and allow a compliant kerb ramp. This also changes the pedestrian desire line to the shared zone/landscaped areas within Junia Avenue service road.
The installation of bike lockers adjacent to Toongabbie Train Station (Site 9) on the Cumberland LGA side of the station are no longer proposed in the location that was shown in the strategic design as part of the proposal. However, Cumberland City Council are still proposing to install alternate bicycle infrastructure near the Toongabbie Train Station.	Transport for NSW raised significant safety concerns around having a climbable structure next to the rail corridor. Bicycle lockers continue to be proposed on the Parramatta LGA side of the Toongabbie Train Station, however, these are not subject to this REF.

3. Description of the proposal

3.1 The proposal

Council proposes to undertake local network enhancements within the Toongabbie Station precinct. The site is located within the Cumberland City Council LGA and the suburb of Toongabbie, about 25 kilometres north-west of the Sydney CBD.

The existing network within the vicinity of the proposal is approaching its capacity with the network expected to further deteriorate in performance. Currently motorists experience extensive queues and congestion, especially during peak periods. With significant population and economic growth predicted within Cumberland, Blacktown and Parramatta LGAs, further pressure on the local transport network surrounding Toongabbie is anticipated.

Key features of the proposal would include:

- Road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico (Site 4)
  - Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
  - Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
  - Inclusion of a rigid safety barrier along the retaining wall
  - Installing of a crash barrier on the north-western verge of the intersection of Wentworth Avenue and Cornelia Road
  - Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout
  - Utility readjustments, both above and below ground
- The provision of a pedestrian crossing on Portico Parade (Site 5)
  - Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
  - Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

An overview of the proposal and the location is shown in Figure 1-1. The sections below describe the proposal in more detail.

3.2 Design

3.2.1 Design criteria

Design guides and policies used during the development of the proposal are dependent upon the scope of works. The guides and policies are described in the relevant subsections below.

Civil design

Civil design criteria for the proposal is outlined in Table 3-1.

Table 3-1 Design criteria - civil design

Design element	Criteria adopted
Posted Speed	Cornelia Road – 50km/h Wentworth Avenue – 60km/h
Design Speed	10km/h above posted speed

Design Vehicle	14.5m long rigid bus[1]
Check Vehicle	19m prime mover with semi-trailer
Minimum Lane Width	3.2m or 5m if single lane to bypass broken down vehicles
Desirable Lane Width	3.5m
Allowable Flooded Width on Carriageway	2.5m into traffic lane in 1% AEP (100-year ARI) rainfall event
Longitudinal Kerbside Drainage	Design flow 20% AEP Or maintain existing pipe network sizing where existing infrastructure is sufficient
Drainage Pipe Material	Reinforced Concrete Pipes (RCP)
Minimum Pipe Class (RCP)	Class 4
Minimum Pipe Size	375mm diameter Or maintain existing pipe network sizing where existing infrastructure is sufficient
Minimum Pipe Gradient	1% desirable 0.5% absolute minimum
Minimum Pipe Cover	300mm under pavement design level
Pit Freeboard to HGL	150mm

[1] Design vehicle allowed to straddle lanes as part of optioneering investigations

Pavement Design

Design traffic loadings were calculated in accordance with the procedure outlined in Section 7.4 of *Austroads Guide to Pavement Technology Part 2: Pavement Structural Design* Edition 4.4, 2024 (AGPT02-24). Traffic load distribution was based on the Transport for NSW Presumptive Urban Load distribution.

The pavement design adopted a design life of 30 years for the Wentworth Avenue widening.

Design criteria for the pavement design are contained in Table 3-2.

Table 3-2 Design criteria - pavements

Road	AADT	Growth rate %	Gr Fact	% Comm	ESA/HV	Dir. Split	Rel. Fact	Design Life	DLT ESA	DLT HVAG	ESA/HAG
Wentworth Avenue	14,593	1	34.78	2	2.5	0.5	1	30	24.6E+0.6	4.5E+0.6	1.037

Structures Design

A 530mm retaining wall will run along the western side of the road development. The layout of the structures consists of two sections as outlined in Figure 3-1. Type 1 is located from CH27 to CH70 and a Type RAO barrier and is supported by the foundation outlined in Figure 3-1.

Type 2 retaining wall continues from CH70 to where the proposed development meets the existing barriers. Type 2 uses the same barrier type as Type 1 and also requires a 530mm retaining wall but uses 750mm pile foundations.

The retaining system selection is driven by traffic barrier collision protection requirements. An integrated system provides a robust, safe, and effective solution that achieves both earth-retaining and collision protection outcomes.

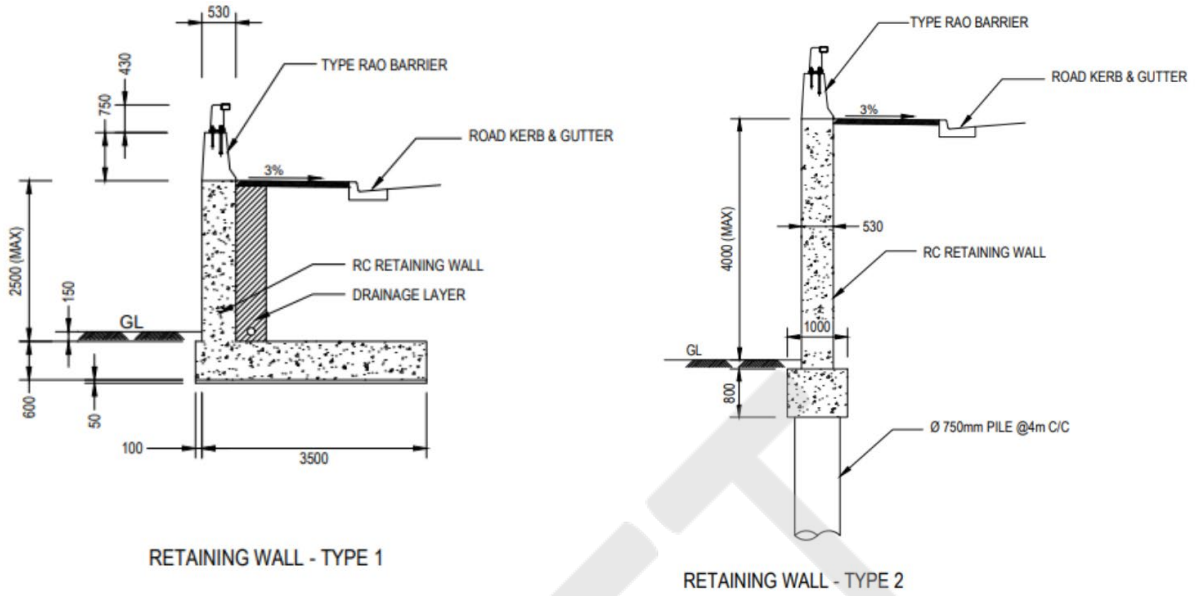


Figure 3-1 Structural design drawings

Lighting Design

Guides and policies used to develop the lighting design included:

- AS/NZS 1158.3.1:2020 Lighting for roads and public spaces

The design criteria for the lighting design are included in Table 3-3.

Table 3-3 Design criteria - lighting

Design Aspect	Design value/criteria
Lighting subcategory – Vehicular traffic (Site 4 and Site 5)	V3
Lighting subcategory – Pedestrian traffic	PX2

3.2.2 Engineering constraints

The proposal has several engineering-related constraints as detailed below:

- Need to maximise the available space within the site
- Proximity of sensitive receivers to the site
- Existing Sydney Water asset through the centre of Junia Avenue service laneway

3.2.3 Major design features

The major design features of the road widening on Wentworth Avenue at the intersection with Cornelia Road and The Portico (Site 4) includes the following:

- Road widening on Wentworth Avenue to allow an additional southbound lane on Wentworth Avenue at its intersection with Cornelia Road and The Portico
- Construction of a four-metre-high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for about 120 metres
- Inclusion of a rigid safety barrier along the retaining wall
- Installing of a crash barrier on the north-western verge of the intersection of Wentworth Avenue and Cornelia Road
- Mill and re-sheeting, line marking and signage changes within the road corridor to accommodate the new road layout

- Utility readjustments, both above and below ground
- Shared zone and carpark upgrade at Junia Avenue service road

The major design features of the pedestrian crossing on Portico Parade (Site 5) includes the following:

- Provision of a southern pedestrian crossing on Portico Parade, just south of the intersection with The Portico
- Mill and re-sheeting and signage changes within the road corridor to accommodate the new road layout

The major design features of the Junia Avenue Shared Zone includes the following:

- Closure of the left hand turn from Cornelia Avenue to Junia Avenue Service Road
- Reconfiguration of the Junia Avenue carpark
- Landscaping

3.3 Construction activities

3.3.1 Work methodology

The following works would be required for the proposal:

- Site 4:
    - site establishment and earthworks
    - traffic management
    - vegetation removal
    - excavation and earthworks
    - piling and erection of posts and panels for the retaining wall
    - structural construction (formwork, reinforcement, concrete)
    - utility adjustments
    - pavement, kerb, gutter and footpath works
    - landscaping works
    - signage and line marking
    - site demobilisation
- Site 5:
    - surface preparation
    - marking layout
    - traffic management
    - demolition of old kerb/ramp
    - excavation
    - formwork
    - reinforcement
    - concrete mixing/placing
    - kerb shaping
    - clean up/waste removal

The methodology is indicative and is subject to refinement following the engagement of a construction contractor.

3.3.2 Construction workforce

Construction of the proposal is expected to range from 10 to up to 30 workers during peak construction times.

3.3.3 Construction hours and duration

Subject to approval, construction is anticipated to commence in Q1 2026 and be completed by Q2/Q3 2027, weather permitting.

Construction work would primarily be carried out during standard hours, where possible:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sunday: No work
- Public holidays: No work

To minimise disruption to traffic for works within the roadway, some work would need to be carried out outside standard hours. These hours would be in accordance with a Traffic Management Plan (TMP) and, where applicable, a Road Occupancy Licence (ROL). Out of hours work may be undertaken up to five consecutive nights a week as follows:

- evening / night work– Sunday to Thursday
- no works on public holidays

Approval from Council would be required for out of hours works and the affected community would be engaged regarding the proposed construction hours at least five working days prior to works commencing in accordance with the *Construction Noise and Vibration Guideline* (Transport for NSW, 2023) and EPA's *Interim Construction Noise Guideline* (ICNG) (NSW DECC, 2009). The community would be kept informed of proposed upcoming work and contact information. For further details refer to Section 6.3 of this REF.

3.3.4 Plant and equipment

Plant and equipment to be used for construction would be confirmed during the construction planning process, but an indicative list of equipment expected to be used on site during construction of the proposal includes:

- Site 4:
  - Excavator (20T-30T)
  - Posi-track/Skid steer loader
  - Tipper trucks/Truck & dog
  - Watercart
  - Grader (small/medium)
  - Piling rig/Drill rig
  - Support crane (30T-50T)
  - Concrete pump (line or boom)
  - Pile augers and casings
  - Generator/power pack
  - Crane (25T-50T)
  - Formwork system (steel shutters, panels, props)
  - Rebar bender/cutter
  - Concrete vibrators (hand-held immersion)
  - Concrete pump and agitator trucks
  - Lighting towers

- Excavator (14T-20T)
- Padfoot and smooth drum rollers
- Plate compactor/trench rammer
- Dozer (medium)
- Boom lift/Scissor lift
- Power screeds/floats
- Concrete saw
- Survey equipment (total station, GPS rover)
- Truck-mounted attenuators
- Portable traffic signals or VMS boards
- Barriers/Bollards/Fencing
- Light vehicles

- Site 5:
  - Road sweeper
  - Pressure washer
  - Line-marking machine/Line-striping machine
  - Lighting towers
  - Jackhammer/breaker
  - Sledgehammer
  - Concrete saw
  - Excavator
  - Compaction plate/roller
  - Concrete truck
  - Concrete pump
  - Hand tools
  - Light vehicles

3.3.5 Earthworks

Earthworks would generally involve excavation for drainage, new road pavements and structural foundations. The estimated quantities of materials associated with earthworks are provided in Table 3-4.

Table 3-4 Indicative earthworks quantities

Proposal element	Approximate quantity (m^3)
Cut volume (excluding topsoil stripping)	300 m^3
Fill (excluding topsoil)	450 m^3
Topsoil	500 m^3

3.3.6 Source and quantity of materials

The proposal would require concrete and other select materials. The quantities of material required would not result in a regional or local supply shortage, and none are likely to be in short supply in the foreseeable future. Materials would be sourced from local commercial suppliers where available.

Non-renewable resources such as petroleum fuels would not be used in large quantities.

3.3.7 Traffic management and access

On average, the proposal is expected to generate up to 20 heavy vehicles and 20 light construction vehicle movements per day at the peak of construction activity, mainly associated with:

- movement of construction workers
- delivery of construction materials
- spoil and waste removal
- delivery and removal of construction equipment and machinery.

At times, for example during large concrete pours, there may be a requirement for a larger number of heavy vehicles per day, however this is likely to be uncommon.

Access to the ancillary facility would be via Junia Avenue Service Road off Junia Avenue. The entrance off Cornelia Road will be closed during construction.

Lane closures and traffic switches would be generally as described in Section 6.4 These would occur in accordance with a TMP and, where applicable, a ROL.

Standard traffic management measures would be used to minimise the short-term traffic impacts during construction. These measures would be identified in a TMP for the proposal and would be developed in accordance with the *Traffic Control at Works Sites Technical Manual* (Transport for NSW, 2021) and Transport for NSW *Specification G10 – Control of Traffic*.

Pedestrian and cyclist routes would be managed daily to suit construction activities.

Details of potential traffic and transport impacts are outlined in Section 6.4.

3.4 Ancillary facilities

Compound and stockpiling uses would be accommodated within the proposal footprint, as shown in Figure 3-2. This area would be used for the following during construction:

- site offices
- worker amenities
- equipment and materials storage
- carparking
- stockpiling.

Access to the ancillary facilities would be via Junia Avenue Service Road off Junia Avenue. The entrance off Cornelia Road will be closed during construction.

Approximately six public car spaces would be removed during construction as they are located in the ancillary facility footprint.

Several car parking spaces will be available within the proposed site compound for a small number of workers. Work vehicles will at times be able to park on-site. Any deficit in worker parking will be required to park in legal parking locations in surrounding streets. Workers will also be encouraged to catch public transport to work each day.

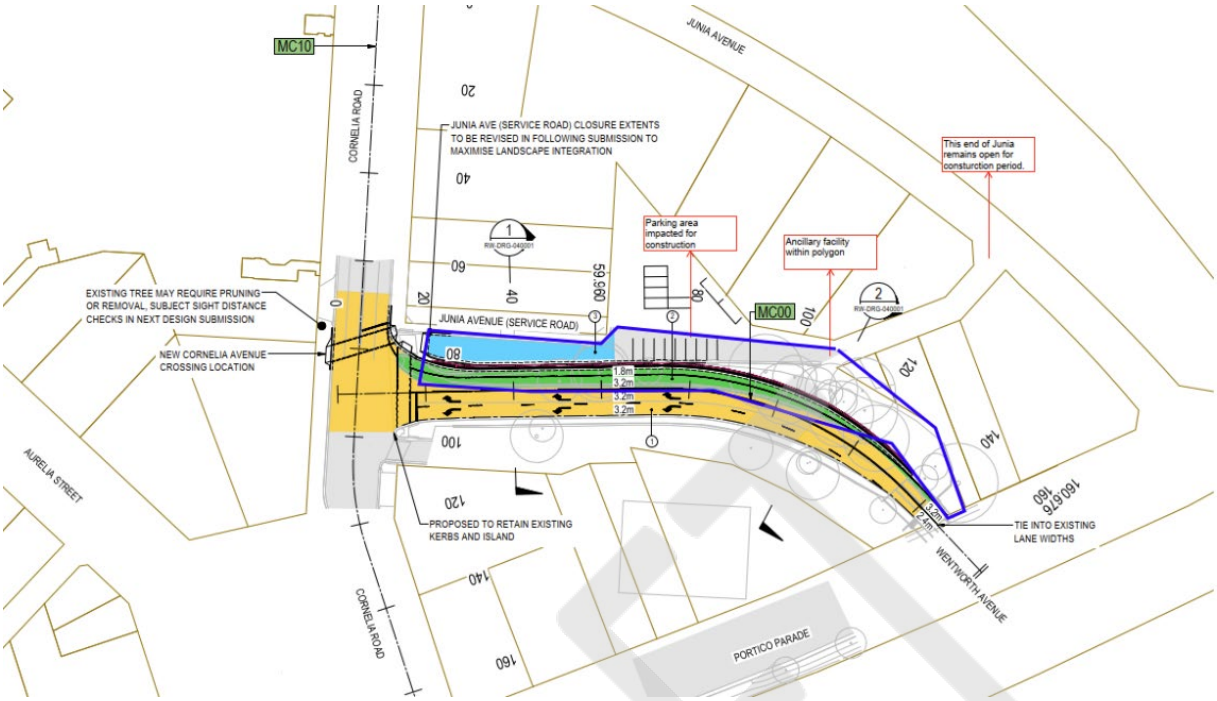


Figure 3-2 Ancillary facility

3.5 Public utility adjustment

Utility investigations were undertaken to determine the services and associated asset owners within the extents of the proposal location to identify which utilities would require relocation/protection to accommodate the proposal. This included a desktop study based on 'Before You Dig Australia' (BYDA) and a site visit.

Consultation with utility owners would be carried out throughout the detailed design phase and also during construction.

Based on a review of available information for subsurface utilities, Table 3-5 below details the utility impacts by the proposed works:

Table 3-5 Utility impacts register

Asset Type	Asset Owner	Impact	Proposed Treatment
Electrical	Endeavour Energy	Site 4 – Proposed intersection upgrade at Wentworth Avenue and Cornelia Road Site 5 – Presence of streetlighting ducts at the Portico Parade and Cornelia Road intersection	Site 4 – Retain or protect existing streetlight ducts on eastern verge of Wentworth Avenue. Conduits are not impacted and lights do not require upgrade. Site 5 – Upgrade street lighting ducts to enable connection to two new proposed lights. Retain and protect existing underground conduits.
Traffic Control Signal	Transport	Site 4 and Site 5 – A compliant TCS design is required	Site 4 – Relocate TCS posts at Wentworth Avenue and Cornelia Road intersection Site 5 – Compliant TCS design to be developed
Sewer	Sydney Water	Site 4 – Retaining wall construction within zone of influence of existing concrete-encased DN225 PVC gravity sewer	Site 4 – Protect sewer main to avoid relocation. Noting sewer is already concrete encased and maintenance-free. Bespoke retaining wall design and construction methodology will be required to mitigate impacts
Potable Water	Sydney Water	Site 5 – Proposed pram ramp upgrades adjacent to DN100 CICL and DN150 oPVC water mains	Site 5 – Retain or protect existing assets
Medium Pressure Gas (210kPa)	Jemena	Site 4 – Road works may impact 210kPa medium pressure gas main Site 5 – Likely no impact to 210kPa medium pressure gas main at the Portico Parade and Cornelia Road intersection	Site 4 – Exhume and replay (locally deepen) 100m of existing gas main to enable pavement construction Site 5 – Retain or protect existing assets
Comms	Telstra	Site 4 and Site 5 – For both sites, proposed works are not likely to impact Telstra pits or cables	Site 4 and Site 5 – Retain or protect conduits to avoid relocation

3.6 Property acquisition

No property acquisition is required for the project.

4. Statutory and planning framework

This chapter provides the statutory and planning framework for the proposal and considers the provisions of relevant state environmental planning policies, local environmental plans and other legislation.

4.1 Environmental Planning and Assessment Act 1979

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP (Transport and Infrastructure)) aims to facilitate the effective delivery of infrastructure across the State.

Section 2.108 of SEPP (Transport and Infrastructure) permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposal is for a road and is to be carried out on behalf of Transport, it can be assessed under Division 5.1 of the EP&A Act. Development consent from council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under *State Environmental Planning Policy (Resilience and Hazards) 2021*, *State Environmental Planning Policy (Planning Systems) 2021, State Environmental Planning Policy (Precincts – Western Parkland City) 2021.*

Section 2.10 to 2.15 of SEPP (Transport and Infrastructure) contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Consultation, including consultation as required by SEPP (Transport and Infrastructure) (where applicable), is discussed in chapter 5 of this REF.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

Section 2.7(1) of this SEPP states that an authority to clear vegetation under this policy is not required if it is a clearing authorised under s60(O) of the Local Land Services Act 2013. Section 60(O) provides an exemption for clearing under Part 5 of the EP&A Act and therefore consent is not required under the SEPP (Biodiversity and Conservation).

4.1.2 Local Environmental Plans

Cumberland Local Environmental Plan 2021

The proposal is located within the Cumberland LGA and the land zoning surrounding the proposal area is shown in Figure 4-1. The provisions within the Cumberland LEP have been considered within this REF. Table 4-1 identifies the objectives for each of the affected zones under the Cumberland LEP and considers the consistency of the proposal with those objectives.

Table 4-1 Consistency with zone objectives - Cumberland LEP

Zone	Objective	Comment
E1	• To provide a range of retail, business and community uses that serve the needs of people who live in, work in or visit the area. • To encourage investment in local commerical development that generates employment opportunities and economic growth • To enable residential development that conribtes a vibrant and active local centre and is consistent with the Council's strategic planning for residential development in the area	This is the current zoning of the proposal area. The proposal aims to reduce congestion and increase reliability and safety of the local network for road users and pedestrians in the local area. These road network improvements will have indirect benefits to the community that are consistent with the objectives of zone E1. Additionally, the Junia Avenue Shared Zone proposal by creating a new public domain area, addressing impacts upon pedestrian amenity and town centre experience.

Zone	Objective	Comment
	• To encourage business,retail, community and other non-residential land uses on the ground floor of buildings • To promote active street frontages on the ground floor of buildings that attract pedestrian traffic and that facilitate active and vibrant centres with inviting public domain areas	

Figure 4-1 Land zoning

As noted in Section 4.1.1, the Transport and Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

4.2 Other relevant NSW legislation

4.2.1 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) seeks to conserve biological diversity and promote ecologically sustainable development; to prevent extinction and promote recovery of threatened species, populations and ecological communities; and to protect areas of outstanding biodiversity value.

The BC Act provides a listing of threatened species, populations and ecological communities, areas of outstanding biodiversity value, and key threatening processes.

Part 7 of the BC Act requires that the significance of the impact on threatened species, populations and endangered ecological communities listed under the BC Act or *Fisheries Management Act* 1994, are assessed using a five-part test. Where a significant impact is likely to occur, a Species Impact Statement or Biodiversity Development Assessment Report (BDAR) must be prepared. An assessment of the potential impact on biodiversity is provided in Section 6.1.

4.2.2 Biosecurity Act 2015

Under the *Biodiversity Act* 2015, which came into effect on 1 July 2017 and repealed the Noxious Weeds Act 1993, 'all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable'.

The proposed works would not impact upon biosecurity.

4.2.3 Contaminated Land Management Act 1997

The object of the *Contaminated Land Management Act 1977* (CLM Act) is generally to establish a process for investigating and where appropriate, remediating land that the EPA consider to be contaminated significantly enough to require regulation under Division 2 Part 3.

The proposed works are not anticipated to impact contaminated land. In accordance with the CLM Act, the proponent will report to the EPA if contaminated land is encountered during the works that meets the duty to report contamination requirements under Section 60 of this Act.

4.2.4 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) provides protection for items of state heritage significance that are listed on the State Heritage Register. Under Section 57(1) of the Heritage Act, the approval of the Heritage Council of NSW is generally required for development within a site included on the State Heritage Register, including works to the grounds or structures. The proposal would not affect a State Heritage Register listed item.

An excavation permit is required to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. A permit is also required to disturb or excavate any land on which the person has discovered or exposed a relic. Relics are not expected to be affected by the proposal. Refer to Section 6.7 for further details.

4.2.5 National Parks and Wildlife Act 1974

The harming or desecrating of Aboriginal objects or places is an offence under Section 86 of the *National Parks and Wildlife Act 1979*. Under Section 90, an Aboriginal Heritage Impact Permit (AHIP) may be issued in relation to a specified Aboriginal object, Aboriginal place, land, activity or person or specified types or classes of Aboriginal objects, Aboriginal places, land, activities or persons.

Aboriginal objects are not likely to be affected by the proposal. Refer to Section 6.7 for further details.

4.2.6 Protection of the Environment Operations Act 1997

Part 3.2 of the *Protection of the Environment Operations Act 1997* (POEO Act) requires an environmental protection licence for scheduled development work and the carrying out of scheduled activities (as set out in Schedule 1 of the POEO Act), which includes road construction. The proposal does not trigger these requirements.

Section 148 of the POEO Act requires immediate notification of pollution incidents causing or threatening material harm to the environment to each relevant authority. Incident reporting and notification processes will be documented in the CEMP in accordance with the Transport for NSW *Environmental Incident Procedure.*

4.2.7 Roads Act 1993

The *Roads Act 1993* (The Roads Act) provides guidance on the use and access of public roads, including procedures regarding the opening and closure of public roads. The Act also classifies roads and identifies the functions of road authorities.

Section 138 of the Roads Act requires consent from the relevant road authority for the carrying out of work in, on or over a public road. However, clause 5(1) in Schedule 2 of the Roads Act states that public authorities do not require consent for work on unclassified roads.

The proposal would involve work on Wentworth Avenue and The Portico which are local roads under the control of Cumberland City Council.

Road Occupancy Licence/s would be obtained from the relevant roads authority for road works and any temporary road closures where required (see Section 6.4 for more information).

4.2.8 Waste Avoidance and Resource Recovery Act 2001

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) seeks to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development. The WARR Act also ensure that resource management options are considered against a hierarchy in the following order: avoidance and reduction of waste; re-use of waste; recycling, processing or reprocessing waste, recovery of energy, and disposal.

Cumberland City Council would carry out the proposal having regard to the requirements of the WARR Act.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act, a referral is required to the Australian Government for proposed actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. These are considered in Appendix C – Biodiversity Assessment Report and chapter 6.1 of the REF.

A referral is not required for proposed road activities that may affect nationally-listed threatened species, endangered ecological communities and migratory species. This is because requirements for considering impacts to these biodiversity matters are the subject of a strategic assessment approval granted under the EPBC Act by the Australian Government in September 2015.

Potential impacts to these biodiversity matters are also considered as part of chapter 6 of the REF and Appendix C – Biodiversity Assessment Report

Findings - matters of national environmental significance

The assessment of the proposal's impact, on matters of national environmental significance and the environment of Commonwealth land, found that there is unlikely to be a significant impact on relevant matters of national environmental significance or on Commonwealth land. Accordingly, the proposal has not been referred to the Australian Government Department of Climate Change, Energy, the Environment and Water under the EPBC Act.

4.3.2 Native Title Act 1993

The *Native Title Act 1993* recognises and protects native title. The Act covers actions affecting native title and the processes for determining whether native title exists and compensation for actions affective native title. It establishes the Native Title Registrar, the National Native Title Tribunal, the Register of Native Title Claims and the Register of Indigenous Land Use Agreements, and the National Native Title Register. Under the Act, a future act includes proposed public infrastructure on land or waters that affects native title rights or interest.

A search of the Native Title Tribunal Native Title Vision website was undertaken on 15 September 2025, with no Native Title holders/claimants identified.

4.4 Confirmation of statutory position

The proposal is categorised as development for the purpose of a road and is being carried out by or on behalf of a public authority. Under section 2.108 of SEPP (Transport and Infrastructure) the proposal is permissible without consent. The proposal is not State significant infrastructure or State significant development. The proposal can be assessed under Division 5.1 of the EP&A Act.

Cumberland City Council is the determining authority for the proposal. This REF fulfils Council's obligation under section 5.5 of the EP&A Act including to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.

5. Consultation

This chapter discusses the consultation undertaken to date for the proposal and the consultation proposed for the future.

5.1 Consultation strategy

Extensive consultation has been undertaken with Transport for NSW and Parramatta City Council to:

- build preparedness and strategic readiness for changes in traffic and parking arrangements to the local area and seek comment, feedback, ideas and suggestions on the proposal
- engage with relevant councils and stakeholders
- inform stakeholders on the proposal

Further consultation with the community and key stakeholders will occur through the display of this REF.

5.2 Community involvement

Consultation for the Toongabbie Town Centre Public Domain Plan run by Cumberland City Council between 30 April 2024 and 28 May 2024 identified the need for the upgrades to and around Toongabbie Bridge. Community comments raised during this consultation period included concerns of safety regarding the current width of the railway overbridge, the need for footpath repairs to accommodate foot traffic and mobility needs and limited bike traffic.

Consultation with the community for the proposal will be undertaken through display of this REF. This display will provide the opportunity for individuals and stakeholders to review the proposal and respond via formal submissions. A Submissions Report would then be prepared to provide responses to key community concerns and questions and provide further information or clarification if required.

Key consultation activities will be undertaken in accordance with Council's Community Engagement Strategy 2025-2029 including; letter box drops, onsite signs and displays, online engagement on Council's Have Your Say website, meetings and briefings and public display of this REF.

5.3 Aboriginal community involvement

An AHIMS search was conducted for the proposal, as shown in Appendix G – AHIMS Search Results. No Aboriginal sites or Aboriginal places are recorded or have been declared in or near the proposal area.

The proposal is considered unlikely to have an impact on Aboriginal cultural heritage and therefore no consultation with the Aboriginal community is required.

Further information on Aboriginal heritage is provided in Section 6.7.

5.4 SEPP (Transport and Infrastructure) consultation

The proposal is being undertaken by Cumberland City Council and therefore no consultation with Cumberland City Council is required.

Consultation with Parramatta Council was undertaken. No issues were raised during consultation and Parramatta Council strongly supported the proposal.

5.5 Government agency and stakeholder involvement

Ongoing consultation is being undertaken with Transport for NSW and Parramatta Council.

To date, no issues have been raised by Transport for NSW or Parramatta Council.

5.6 Ongoing or future consultation

This REF will be on display to give members of the public further opportunity to respond to the proposal. Exhibition would occur for a minimum of two weeks and would consist of publishing the REF and supporting assessments online. All submissions to the proposal would be formally considered and responses provided in a Submissions Report, which would be made available to the public.

Nearby residents would be notified prior to the commencement of any construction, and surrounding stakeholders and residents would continue to be informed of the ongoing development of the proposal. This would be carried out using methods such as door knocking and letter box drops. Transport for NSW, Parramatta Council and other stakeholders would also continue to be consulted with as the proposal develops and during construction.

6. Environmental assessment

This section of the REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environment, potentially impacted upon by the proposal, are considered. This includes consideration of:

- Potential impacts on matters of national environmental significance under the EPBC Act.
- The factors specified in the Guideline for Division 5.1 assessments (DPE 2022) and as required under section 171 of the Environmental Planning and Assessment Regulation 2021 and the Roads and Related Facilities EIS Guideline (DUAP 1996). The factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021 are also considered in Appendix A.
- Site-specific safeguards and management measures are provided to mitigate the identified potential impacts.

6.1 Biodiversity

6.1.1 Methodology

East Coast Ecology Pty Ltd (ECE) was commissioned by Cumberland City Council c/ - Hutchison Weller to prepare a Flora and Fauna Assessment (FFA), including 5-Part Test and Assessment of Significance, for the proposed works associated with the road improvement works at Toongabbie (the proposed activity). The following sections are based on the findings of the Biodiversity Assessment attached as Appendix C – Biodiversity Assessment Report

The overarching objective of the FFA was to evaluate the ecological values that occur within the Subject Land and identify how the proposed activity satisfies the relevant planning framework. Figure 6-1 indicates the land subject to the assessment.

6.1.2 Existing environment

Plant community types and threatened ecological communities

The State Vegetation Type Map (NSW DCCEW, 2025d) indicated the presence of two Plant Community Types (PCT) within and surrounding the Subject Land:

- PCT 3320: Cumberland Shale Plains Woodland
- PCT 4025: Cumberland Red Gum Riverflat Forest

Of these, the following PCT's are associated with the below threatened ecological communities (TEC):

- PCT 3320:
    - BC Act Listed; Cumberland Plain Woodland in the Sydney Basin Bioregion (Critically Endangered)
    - BC Act Listed; Shale Gravel Transition Forest in the Sydney Basin Bioregion (Endangered)
    - EPBC Act Listed; Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Critically Endangered)
- PCT 4025:
    - BC Act Listed; Elderslie Banksia Scrub Forest (Critically Endangered)
    - BC Act Listed; River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (Endangered)
    - EPBC Act Listed; Elderslie Banksia Scrub Forest in the Sydney Basin Bioregion (Critically Endangered)
    - EPBC Act Listed; River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria (Critically Endangered)

The State Vegetation Type Map is presented in Figure 6-1 below.

Figure 6-1 NSW State Vegetation Type Map within and surrounding the Subject Land

The site assessment determined the presence of one PCT within the Subject Land:

- PCT 3320: Cumberland Shale Plains Woodland (0.21ha (worst case))

The vegetation within the Subject Land was generally in poor condition with both the mid and ground stratum completely absent. The canopy layer was dominated by both *Eucalyptus tereticornus* and *Eucalyptus moluccana* at the time of the assessment. Historical imagery dictates that the Subject Land has undergone historical clearing prior to 1965 (Spatial Services, 2025b), likely planted as roadside vegetation in 1975.

One novel vegetation type was also allocated to vegetation within the Subject Land that could not be reasonably assigned to a PCT:

- Urban Native/Exotic (0.06ha)

  Vegetation within and surrounding the Subject Land exists in a disturbed state due to historical clearing prior to 1965 (Spatial Services, 2025b) and the urban context of the area.

  The canopy layer was comprised of very few *Eucalyptus microcorys* and a stand of *Casuarina glauca* in the north-western corner of the Subject Land. The lower stratum layers were dominated by common ornamental species including *Lomandra longifolia, Lactuca serriola, Malva parviflora, Verbana littoralis, Solanum americanum, Lepidium didymium, Plantago lancelota, Sonchus oleraceus, Cardiospermum grandiflorum* and *Araujia sericifera.* Priority weed; *Senecio madagascariensis* was also ubiquitous throughout the Subject Land.

The vegetation within and surrounding the Subject Land, characteristic of PCT 3320, is associated with the following BC Act listed TEC:

- BC Act listed; Cumberland Plain Woodland in the Sydney Basin Bioregion (Critically Endangered).

The extent of the CEEC is provided in Figure 6-2.

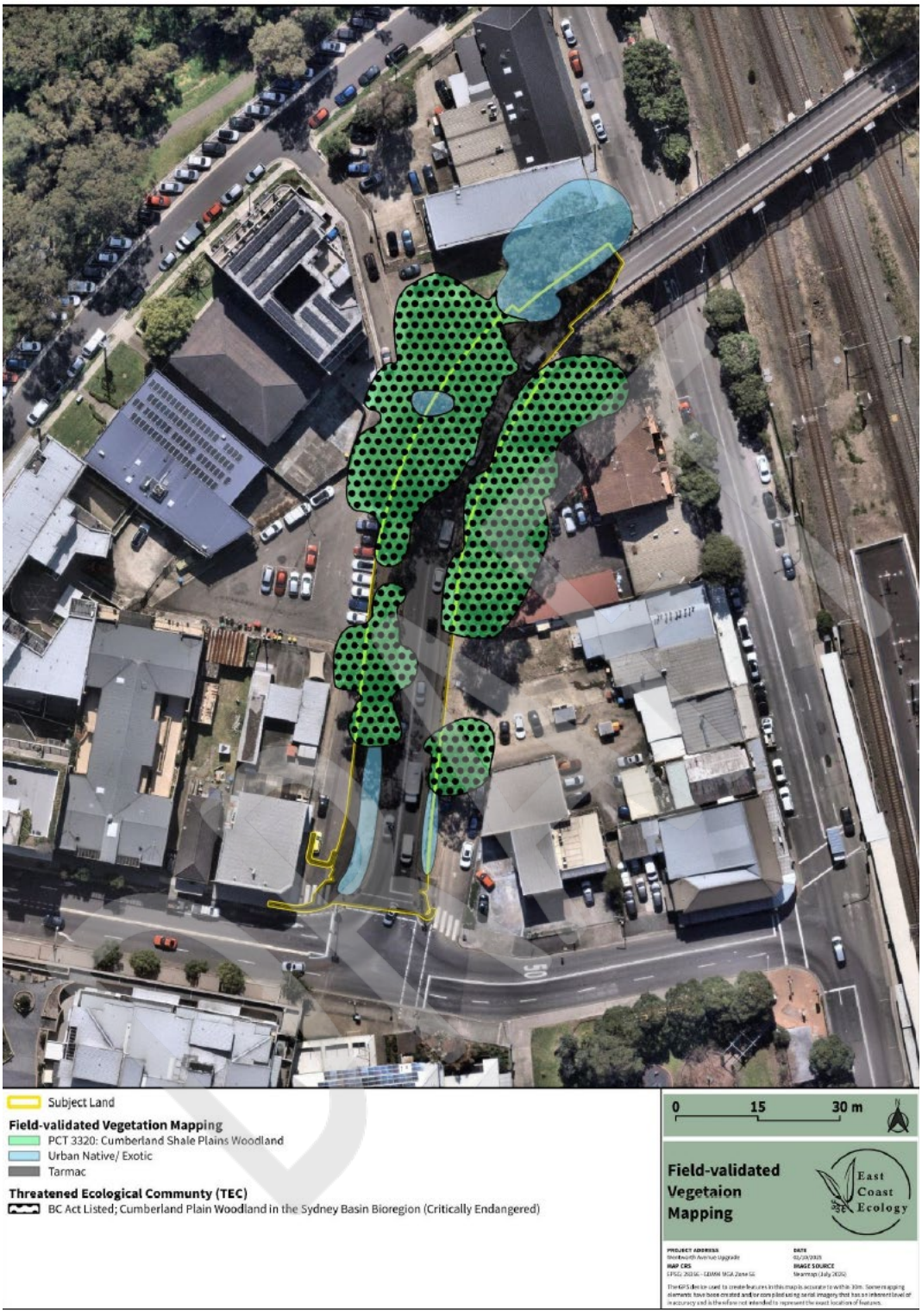


Figure 6-2 Field-validated vegetation communities within the Subject Land

Threatened flora

Database searches revealed 14 threatened flora have potential to occur within a ~5km radius of the Subject Land (Table 6-1).

Table 6-1 Threatened flora with potential to occur within the Subject Land

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Acacia pubescens	Downy Wattle	V	V	5
Epacris purpurascens var. purpurascens	-	V	-	8
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	14
Eucalyptus scoparia	Wallangarra White Gum	E	V	3
Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	V	-	5
Isotoma fluviatilis subsp. fluviatilis	-	-	X	1
Macadamia integrifolia	Macadamia Nut	-	V	3
Macadamia tetraphylla	Rough-shelled Bush Nut	V	V	1
Pimelea curviflora var. curviflora	-	V	V	8
Pimelea spicata	Spiked Rice-flower	E	E	207
Pomaderris prunifolia	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	EP	-	2
Pterostylis saxicola	Sydney Plains Greenhood	E	E	2
Pultenaea parviflora	-	E	V	8
Syzygium paniculatum	Magenta Lilly Pilly	V	V	8

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered; X – Extinct

No threatened flora species were identified within the Subject Land. Based on habitat constraints and targeted surveys, no threatened flora species were considered likely to occur within the Subject Land.

Threatened fauna

Database searches revealed 42 threatened fauna have the potential to occur within a ~5km radius of the Subject Land (Table 6-2).

Table 6-2 Threatened fauna with potential to occur within the Subject Land

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Anthochaera phrygia	Regent Honeyeater	E	CE	1
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	37
Botaurus poiciloptilus	Australasian Bittern	E	E	1
Burhinus grallarius	Bush Stone-curlew	E	-	1
Callocephalon fimbriatum	Gang-gang Cockatoo	E	E	1
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	4
Chalinolobus dwyeri	Large-eared Pied Bat	E	E	2
Circus assimilis	Spotted Harrier	V	-	3
Daphoenositta chrysoptera	Varied Sittella	V	-	55
Dasyurus maculatus	Spotted-tailed Quoll	V	E	2
Falco subniger	Black Falcon	V	-	2
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	22
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	25
Hieraaetus morphnoides	Little Eagle	V	-	8
Hirundapus caudacutus	White-throated Needletail	V	V	95
Lathamus discolor	Swift Parrot	E	CE	47
Litoria aurea	Green and Golden Bell Frog	E	V	2
Lophoictinia isura	Square-tailed Kite	V	-	9

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	1
Meridolum corneovirens	Cumberland Plain Land Snail	E	-	17
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	29
Miniopterus australis	Little Bent-winged Bat	V	-	24
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	66
Myotis macropus	Southern Myotis	V	-	11
Neophema pulchella	Turquoise Parrot	V	-	2
Ninox connivens	Barking Owl	V	-	5
Ninox strenua	Powerful Owl	V	-	171
Oxyura australis	Blue-billed Duck	V	-	1
Parvipsitta pusilla	Little Lorikeet	V	-	28
Petroica boodang	Scarlet Robin	V	-	2
Phascolarctos cinereus	Koala	E	E	5
Pluvialis squatarola	Grey Plover	V	V	2
Polytelis swainsonii	Superb Parrot	V	V	1
Pommerhelix duralensis	Dural Land Snail	E	E	6
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	793
Ptilinopus superbus	Superb Fruit-Dove	V	-	1
Rostratula australis	Australian Painted Snipe	E	E	1
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	4
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	11
Stagonopleura guttata	Diamond Firetail	V	V	1
Tyto novaehollandiae	Masked Owl	V	-	1
Tyto tenebricosa	Sooty Owl	V	-	1

No threatened fauna species were identified within the Subject Land, however this does not rule out the potential for threatened species to still exist within the Subject Land, particularly given no targeted surveys were undertaken.

Given the large areas of potential habitat in the surrounding locality and urban context of the area, it was determined that the proposed activity is not likely to significantly impact directly or indirectly upon any threatened fauna.

Migratory species

Database searches revealed seven migratory terrestrial species, or their habitat, are known to occur within the Subject Land (Table 6-3). These species do not breed in Australia.

Table 6-3 Migratory terrestrial species with potential to occur in the Subject Land

Species	EPBC Act Status
Cuculus optatus (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
Hirundapus caudacutus (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
Monarcha melanopsis (Black-faced Monarch)	Migratory, Bonn
Monarcha trivirgatus (Spectacled Monarch)	Migratory, Bonn
Motacilla flava (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA
Myiagra cyanoleuca (Satin Flycatcher)	Migratory, Bonn
Rhipidura rufifrons (Rufous Fantail)	Migratory, Bonn

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals.

6.1.3 Potential impacts

Construction

Impacts to Plant Community Types

The primary direct ecological impact of the proposed activity is clearing of native vegetation. The proposed activity will result in the following (worst case) impacts:

- Removal of 0.21ha of PCT 3320: Cumberland Shale Plains Woodland
- Removal of 0.06ha of Urban Native/Exotic

Based on the information provided by historical imagery (Spatial Services, 2025b) all vegetation is likely to have been planted based on location i.e. in a cluster and their usage throughout Sydney region as a common street planting species. Removal of these trees is not likely to significantly impact the biodiversity value of the area.

Impacts to Protected Fauna

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/or specialist fauna habitats that would be impacted by the activity include:

- Nectar/lerp-bearing trees
- Seed-bearing shrubs and trees
- She-oak fruit

No other specialist habitat types, including hollow-bearing trees were identified within or in the vicinity of the Subject Land. Within the context of the surrounding landscape, these habitat types are unlikely to offer suitable breeding habitat for threatened fauna given the extensive habitat offered nearby. As such, it is unlikely that threatened fauna are to occupy the Subject Land in preference of surrounding areas.

Impacts to Threatened Species and Communities

The proposed activity will result in the removal of 0.21ha (worst case) of native trees characteristic the following BC Act Listed TEC:

- Cumberland Plain Woodland in the Sydney Basin Bioregion (Critically Endangered).

No threatened species were identified during the site assessment. The proposed activity has the potential to impact low quality foraging habitat for some highly mobile species that may occur within the Subject Land. However, based on the urban setting of the area and the ongoing operational impacts of the road, no species are considered to be dependent on the vegetation proposed for removal within the Subject Land.

Given the proposed impacts by the activity to the TEC, a 5-Part Test was completed. The result of the 5-Part Test was that the proposed activity will not result in a 'significant impact' on the TEC and therefore the BOS is not triggered.

Operation

No direct impacts would occur during operation.

Indirect impacts occur when the proposal or activities relating to the operation of the proposal affect native vegetation, threatened ecological communities and threatened species habitat beyond the Subject Land. Indirect impacts may also result from changes to land-use patterns, such as an increase in vehicular access and human activity on native vegetation, threatened ecological communities and threatened species habitat.

Impacts to adjacent vegetation can be prevented or minimised through appropriate exclusion fencing, implementation of a site-specific Construction Environmental Management Plan detailed best practice environmental protection measures, struct water quality practices and stormwater controls. Weeds occurring within the Subject Land are common with those occurring within adjacent vegetation to be retained. Increased transport of pathogens and weeds is unlikely to occur, however this would be managed by biosecurity measures outlined in the Construction Environmental Management Plan.

Conclusion on significance of impacts

The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act, 2016* or *Fisheries Management Act 1994* and therefore a *Species Impact Statement* or Biodiversity Development Assessment Report is not required.

The proposal is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the EPBC Act.

6.1.4 Tree removal

Tree removal cannot be avoided to facilitate the proposal and therefore the FFA has outlined the number of native and amenity trees and individual hollows to be removed, and calculated the replacement trees and hollows required for the proposal. The results of this assessment are outlined in Table 6-4 below. Information specific to the trees requiring removal from within the proposal area, including species and tree size category, is provided in Appendix B of the FFA.

Opportunities for delivery of tree replacement within the project boundary or on land in the proximity will be determined by CCC. If all replacement trees cannot be planted in the vicinity of the project boundary, the remaining requirement will be met by providing replacement trees in surrounding areas where possible.

Based on the information provided by historical imagery (Spatial Services, 2025b) all vegetation (i.e. PCT 3320 and Urban Native/Exotic) is likely to have been planted since they are in a cluster and their usage throughout the Sydney region is as a common street planting species. Removal of these trees is not likely to significantly impact the biodiversity value of the area.

Table 6-4 Summary of trees required for removal

Species	Number	'Native' or 'Amenity' Tree	Hollow-bearing	Alive or Dead	Notes/Removal status
Eucalyptus moluccana	19	Native	No hollows present	Alive	Proposed for Removal
Eucalyptus tereticornis	12	Native	No hollows present	Alive	Proposed for Removal
Eucalyptus microcorys	1	Native	No hollows present	Alive	Proposed for Removal
Casuarina glauca	25	Native	No hollows present	Alive	Proposed for Removal

6.1.5 Safeguards and management measures

Table 6-5 Biodiversity safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Biodiversity	Flora and Fauna management measures will be included in the CEMP in accordance with Transport for NSW's *Biodiversity Guidelines: Protecting and Managing Biodiversity on Projects* (RMS, 2011) and implemented as part of the CEMP. It will include, but not be limited to: • Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • Requirements set out in the *Landscape Design Guideline* (Transport for NSW, 2023) • Pre-clearing survey requirements • Procedures for unexpected threatened species finds and fauna handling • Protocols to manage weeds and pathogens	Contractor	Detailed design/pre-construction
Biodiversity	Prior to works, the contractor should commission the services of a qualified and experienced Ecologist (minimum 3 years' experience). The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to implement the following measures in accordance with best-practice, publicly available guidelines: • Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the *Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects* (Transport, 2024) • Vegetation and Habitat removal should be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the *Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects* (Transport, 2024) • Fauna will be managed in accordance with Guide 9: Fauna handling of the *Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects* (Transport, 2024) The unexpected species find procedure is to be followed under Guide 1: Pre-clearing process of the *Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects* (Transport, 2024) if threatened flora and fauna, not assessed in the biodiversity assessment, are identified in the Subject Land.	Contractor	Prior to construction
Biodiversity	Exclusion zones will be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the *Biodiversity Guidelines: Protecting and managing*	Contractor	During construction

	biodiversity on Transport for NSW projects (Transport, 2024)		
Biodiversity	Appropriate erosion and sediment control should be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. Erosion and sediment controls would be established in accordance with an erosion and sedimentation plan to be produced for the works. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom, 2004)	Contractor	During construction
Biodiversity	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilized according to industry standards prior to importation to site.	Contractor	During construction
Biodiversity	No priority or environmental weeds, pathogens or other biosecurity issues (e.g. fireants) are to be imported on to the site prior to or during construction works	Contractor	During construction
Biodiversity	Control measures (e.g. the directional lighting and task lighting) are to be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species	Contractor	During construction and operation
Biodiversity	Only trees identified for removal on the site map are to be removed. No other trees are to be pruned or removed.	Contractor	During construction

6.2 Soils, contamination and water

6.2.1 Methodology

A desktop review of available soils, contamination and water information has been undertaken for the Project area. This included searches of the EPA contaminated lands register, acid sulfate mapping and geological series mapping.

6.2.2 Existing environment

Soils

The Penrith 1:100,000 Geological Series Sheet (NSW Department of Climate Change, Energy, the Environment and Water, 2010) indicates that the project area is underlain by geological units associated with the South Creek Landscape Group.

A review of available geological references for the area suggests he site is underlain by Alluvial valley deposits comprising silt, clay, lithic to quartz-lithic sand and gravel, underlain by Mesozoic rocks (Sydney Basin) dominantly comprising Siltstone and Sandstone.

Geotechnical investigations were undertaken in July 2025 which included sampling from two boreholes and two pavement cores, the locations of these are shown in Figure 6-3.

Figure 6-3 Borehole and pavement coring investigation locations

Table 6-6 summarises the soil classifications from these samples. The ground conditions encountered and inferred from the site investigation were generally consistent with the published geology for the area and can be generalized according to the following sequence of units.

- Unit 1 Fill – CLAY (CL)/Sandy SILT (ML) typically low plasticity, brown
- Unit 2 Alluvium – CLAY(CL/CI)/Sandy CLAY typically medium plasticity, brown-grey
- Unit 3 Residual Soil – Clayey GRAVEL (CG) typically fine to medium grained, angular to sub-angular, dark grey
- Unit 4 Bedrock – SILTSTONE, distinctly laminated with SANDSTONE.

Table 6-6 Summary of the soil classification laboratory testing

BH ID	Sample depth (m)	Sample description	Emerson Class number	Moisture content (%)	Atterberg Limits		Linear shrinkage (%)	% Particle Size Distribution		
					LL (%)	PI (%)		FINES	SAND	GRAVEL
BH01	2.5-2.95	Clayey Gravel	N/A	12.4	42	18	9.5	33	28	39
BH02	4.0-4.45	Clayey Gravel	N/A	12.7	47	22	9.5	N/A	N/A	N/A
PC01	1.0-1.5	Clay	2	14.0	34	15	7.5	89	3	8
PC02	1.0-1.5	Clay	2	12.9	40	15	9.5	71	22	7

Preliminary waste classification

Based on results of field observations, initial laboratory testing and TCLP analysis, the material at each location was preliminary classified. The results of this classification are shown in Table 6-4 of the Geotechnical Investigation Report (Appendix E).

All sampled and analysed locations were classified as General Solid Waste (GSW) except for two instances:

- PC02 was classified as Restricted Solid Waste (RSW) at a depth of 0.3-0.45 mBGL
- PC03 was classified as Hazardous Waste (HA) at a depth of 0.3-0.6 mBGL.

The Geotechnical Investigation Report notes that material at PC02 (0.3-0.45 mBGL) and material at PC03 (0.3-0.6 mBGL) have been classified as RSW and HA respectively due to elevated Benzo(a)pyrene and/or total PAH concentrations. It is considered possible that the elevated concentration of these analytes could be due to pieces of bitumen (from the above subbase/asphalt layers) being collected in the sample, thereby resulting in a 'false positive' being reported. Further testing of these materials is recommended to ensure that the results reported are repeatable.

Separation and stockpiling of soils into layers during the excavation phase, followed by further assessment by appropriately qualified personnel should be undertaken to finalise waste classifications in accordance with the NSW *EPA Waste Classification Guidelines* (2014).

Acid sulfate soils

Acid sulfate soils (ASS) are the common name given to naturally occurring sediments and soils containing iron sulfides (principally iron sulfide or iron disulfide or their precursors). The exposure of the sulfide in these soils to oxygen by drainage or excavation can lead to the generation of sulfuric acid. Areas of ASS can typically be found in low lying and flat locations which are often swampy or prone to flooding.

No ASS are identified within or near the proposal area.

Groundwater

The groundwater associated with Girraween Creek is inferred to be shallow to moderate depth. During the geotechnical investigations that were undertaken in July 2025, groundwater was encountered at borehole BH02 at 4.5m below ground level (mBGL).

Water

The closest waterway to the proposal area is Girraween Creek, located approximately 70 metres north of Wentworth Avenue at its closest point. Girraween Creek is a tributary of Toongabbie Creek, which is a tributary of Parramatta River.

The Cumberland LEP 2021 does not identify the proposal area to be within flood prone land. There is a formalised stormwater network along Wentworth Avenue and surrounding roads which includes kerbside drainage pits.

The land within and adjoining the proposal area is not identified as a 'special area'' in terms of drinking water catchments under the *State Environmental Planning Policy* (*Sydney Drinking Water Catchment) 2011.*

Contamination

A search of the NSW EPA contaminated land public records did not identify any contaminated sites surrounding the proposal area within the suburb of Toongabbie.

There is potential for contaminants to be present within and surrounding Toongabbie Train Station due to the historical use of the station as a rail corridor. Historic activities associated with rail corridors that have the potential to result in contamination include fuel or oil spills and accidental leaks or spills from maintenance and operational activities.

6.2.3 Potential impacts

Construction

The potential impacts on soils would primarily result from erosion of exposed soils during earthwork activities during the construction phase as well as associated potential sedimentation of surround land and stormwater infrastructure.

Construction of the proposal would involve disturbance to the ground surface and subsurface. Soil stockpiles and other exposed areas would be created during construction.

Erosion and sedimentation

Earthworks and excavations are required across the proposal area. The majority of excavations are expected to be less than two metres in depth, with the exception of the retaining wall footings.

The potential impacts on soils would be mainly due to erosion of soils exposed during the earthwork activities and stockpiling. Erosion hazard is directly related to factors such as disturbance area; slope length and gradient; soil properties; climatic factors and management practices including surface condition and cover.

If not adequately managed, earthworks, stockpiling and transportation of spoil could potentially have the following impacts:

- alteration to the existing and natural surface slope and topography
- erosion of exposed soil and stockpiled materials, with potential for off-site movement
- generation of sediment laden run-off that may enter waterways and receiving stormwater systems
- tracking of soil off-site by construction vehicles
- dust generation from excavation and vehicle movement over exposed soils.

It is considered that these potential impacts can be adequately managed by the implementation of safeguards and management measures contained in Table 6-7.

Acid sulfate soils

As no areas of ASS are within or near the proposal area it is unlikely they will be encountered during excavation. However, if ASS are encountered, they would be effectively managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998b). The manual includes procedures for the investigation, handling, treatment and management of such soils.

Contaminated land

If unexpected contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Cumberland Council Environment Team and/or EPA.

Groundwater

The majority of earthworks for the proposal are not expected to be at a depth where groundwater interception would occur. Groundwater may be encountered during the installation of the footings for the retaining wall, however, this would be confirmed during detailed design. If groundwater is encountered during construction, the implementation of the safeguards contained in Section 6.2.4 would ensure that any potential impacts are managed.

Operation

The operation of the proposal would be unlikely to impact soils, contamination or water. The risk of soil erosion during operation would be minimal as all areas impacted during construction would be stabilised with landscaping or turf.

6.2.4 Safeguards and management measures

Table 6-7 Soils, contamination and water safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Soil and water	Soil and water management measures will be included as part of the CEMP prior to the commencement of construction. The measures will address the following: • Transport for NSW *Code of Practice for Water Management* • *The Blue Book- Managing Urban Stormwater: Soils and Construction, Volume 1 and 2* Transport for NSW Technical Guideline – *Temporary Stormwater Drainage for Road Construction.*	Contractor	Detailed design / pre-construction
Soil and water	Erosion and sediment control measures are to be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water courses, drainage lines or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transport from site to surrounding pavement surfaces	Contractor	Construction

	• Divert clean water around the site (in accordance with the Blue Book).		
Soil and water	An Erosion and Sediment Control Plan (ESCP) will be prepared and progressively updated throughout the proposed works as required. The ESCP will be prepared in accordance with the Blue Book.	Contractor	Detailed design/pre-construction
Soil and water	Work areas are to be stabilised progressively during the works.	Contractor	Construction
Soil and water	Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised.	Contractor	Construction
Soil and water	All stockpiles will be designed, established, operated and decommissioned in accordance with the Blue Book.	Contractor	Construction
Soil and water	Separation and stockpiling of soils into layers during the excavation phase, followed by further assessment by appropriately qualified personnel should be undertaken to finalise waste classifications in accordance with the *NSW EPA Waste Classification Guidelines* (2014).	Contractor	Construction
Soil and water	Controls would be implemented at construction zones exit points to minimise the tracking of material onto the road.	Contractor	Construction
Groundwater	Should the final design include exposure to groundwater or dewatering, a groundwater investigation undertaken to assess potential groundwater contamination. Should dewatering be required, a Dewatering Management Plan (DMP) is prepared that outlines monitoring procedures regarding the periodic measurements of estimated groundwater levels, flow and discharge volume, as well as the required measures to minimise risks of contamination, or other interference of the local aquifer system. The DMP will provide management procedures that will ensure any pumped-out groundwater discharged from site will be of an acceptable quality and comply with the requirements of the *Protection of the Environment Operations Act* 1997 (POEO 1997)	Council	Detailed design
Contaminated land	If unexpected contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Council Senior Manager Environment and Sustainability and/or EPA.	Contractor	Construction
Accidental Spill	A site-specific emergency spill plan will be developed and include spill-management measures in accordance with the relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities.	Contractor	Construction

6.3 Noise and vibration

6.3.1 Methodology

Construction and operational noise and vibration impacts were assessed for the proposal in general accordance with the following guidelines:

- Construction:
  - NSW Department of Environment and Climate Change (DECC*) Interim Construction Noise Guidelines* (ICNG) 2009
  - Transport for NSW *Construction Noise and Vibration Guidelines - Roads* (CNVG-R) 2023
- Operational:
  - NSW Department of Environment, Climate Change and Water (DECCW) *Road Noise Policy* (RNP) 2011
  - Transport for NSW *Road Noise Criteria Guideline* (RNCG) 2025

A predictive noise model was developed using SoundPlan noise modelling software, considering ISO9613 *Acoustics — Attenuation of sound during propagation outdoors* for construction noise and ISO9613 combined with the UK Department of Transport's *Calculation of Road Traffic Noise (CRTN) 1998* for operational noise assessment.

Predictions include geometric spreading, air and ground absorption, as well as topographical and structural screening and reflection. The model included:

- topography – digital elevation model based on LPI Lidar data
- individual buildings for façade calculations and to account for shielding and reflections. Building heights are also taken from Lidar data
- individual sensitive receivers – façade noise levels calculated for each residential dwelling located 1.5 metres above each affected floor level at 1 metre from each facade
- construction and operational noise sources
- meteorology – worst-case conditions: gentle breeze (3-5 m/s) source to receiver and stable conditions (conducive of temperature inversion).

A Noise and Vibration Impact Assessment has been prepared for the proposal, shown in Appendix D – Noise and Vibration Impact Assessment.

6.3.2 Existing environment

Sensitive receivers

The proposal consists of two sites, the main site on Wentworth Avenue (Site 4), and the pedestrian crossing site on Portico Parade (Site 5) (illustrated in Figure 6-4).

Receivers potentially sensitive to noise and vibration can be categorized as residential dwellings, commercial/industrial buildings (including small businesses and transport), or other sensitive land uses which include educational.

Land uses surrounding Site 4 include residential receivers to the north east and north west of Wentworth Avenue, with the nearest residents to the east at 25 Portico Parade and to the west at 1 and 2 Junia Avenue. Commercial receivers are in Portico Parade and Junia Avenue, and an educational receiver (tutoring service) is on Junia Avenue.

Site 5 is bounded by the Toongabbie Train Station to the east and the nearest residential receivers are 60m away at Toongabbie Hotel. Commercial receivers are adjacent to the site on The Portico and Aurelia Street.

Figure 6-4 Proposal location and sensitive receivers

Background noise levels

Given the scope of the proposal, background noise was not measured to establish the existing acoustic environment. Instead, typical background noise levels applicable to an urban area have been adopted from Table D1 of the CNVG-R (reproduced in Table 2-2 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment)). Considering the busy road with heavy peak hour traffic, proximity to rail transport and concentration of commercial land uses, an urban area type is an appropriate selection.

6.3.3 Potential impacts

Construction

Anticipated construction activities and equipment are summarized in Table 4-1 and Table 4-2 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

Works are proposed primarily during standard construction hours; however, to minimise traffic disruption, or where safety and quality factors demand, works may take place outside standard hours including evenings, nights and weekends.

Predicted noise levels – Wentworth Avenue - Site 4

Standard hours

Predicted noise levels and exceedances of the NML for standard hours are detailed in Section 4.3.1 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

Peak earthworks, vegetation removal and concrete finishing are the activities with the most predicted receivers likely to be highly noise affected (>75dB(A)). The closest sensitive receivers to the proposal footprint are between 30 metres and 50 metres from the proposal boundary. Predictions indicate the nearest receivers would experience moderate levels of noise when works are at, or close to the boundary.

For three activities a handful of receivers would be highly noise affected (noise levels above 75 dBA). Most construction activities present a low to moderate risk of impact, with the NML for standard hours likely to be exceeded by 0-10dB and 10-20dB. Minor impacts are predicted during construction activities 1h, 3b, 3c, and 4.

Outside standard hours

Where works are required outside standard hours, although the predicted noise levels would be similar, the level of impact would increase due to lower background noise and a higher sensitivity of sensitive receivers at those times, i.e. lower NML.

Predicted noise levels and exceedances of the NML for outside standard hours are detailed in Section 4.3.2 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).The closest sensitive receivers on Wentworth Avenue are likely to experience high levels noise when work is at or close to the boundary. Full details are provided in Appendix D – Noise and Vibration Impact Assessment.

Spreading bulk fill and cutting joints & trimming edges are the noisiest activities impacting the most receivers during the evening and night period. Most of the construction activities present a moderate risk of impact at all receivers, with the OOH NML likely to be exceeded by between 0 to 25 dB. Approximately half of the construction activities present a high risk of impact at up to 7 receivers, likely to be exceeded by 25+ dB.

Sleep disturbance

For works outside standard hours, predicted exceedances of the sleep disturbance screening and awakening criteria are summarized in Table 4-5 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment). The sleep disturbance screening criteria would be exceeded for all activities proposed during the night.

The awakening noise level, >65dBA, would likely be exceeded by up to 33 nearby receivers during peak earthworks.

Predicted noise levels – Pedestrian Crossing – Site 5

Standard hours

Predicted noise levels and exceedances of the NML for standard hours are detailed in Section 4.3.4 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

Most construction activities present a low to moderate risk of impact at the sensitive receivers. Moderate/high noise impacts are anticipated at 1 receiver during surface preparation, demolition, and concrete/mixing placing. Demolition/Removal (old kerb ramp) is the activity with the is noisiest activity, however no residential receivers are predicted to be highly noise affected, with the highest prediction 65dBA.

Outside standard hours

Where works are required outside standard hours, although the predicted noise levels would be similar, the level of impact would increase due to lower background noise and a higher sensitivity of sensitive receivers at those times, i.e. lower NML.

Predicted noise levels and exceedances of the NML for outside standard hours are detailed in Section 4.3.5 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

Construction activities presenting a low to moderate impact to the surrounding receivers are surface preparation, demolition/removal, excavation/site preparation, concrete mixing, and finishing tools. Construction activities presented a low risk of impact to the surrounding receivers are line marking, traffic control, formwork, and reinforcement.

Sleep disturbance

For works outside standard hours, predicted exceedances of the sleep disturbance screening and awakening criteria are summarised in Table 4-8 of the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment). The sleep disturbance screening criteria would be exceeded for all activities proposed during the night.

The awakening noise level, >65dBA, would likely be exceeded by up to 7 nearby receivers during six of the construction activities. Where practicable, the noisy activities should be scheduled outside sensitive night-time periods, or additional mitigation (e.g., use of quieter equipment, temporary noise barriers, or reduced operating duration) should be implemented to reduce the likelihood of awakenings at nearby receivers.

Vibration Impact Assessment

Vibration-intensive works would include compacting and rolling as well as pile break-back. At this stage no impact piling or rock breaking is anticipated.

As a guide, Transport for NSW (2023) published minimum working distances for typical items of vibration intensive plant outside which cosmetic damage and human comfort impacts are not expected and should be complied with at all times. Maps showing projected safe working distances in relation to nearby sensitive receivers are presented in the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

Operation

Modelling Method and Inputs

Assessment of changes to road traffic noise has been undertaken to establish whether any nearby sensitive receivers are likely to experience an increase of more than 2 dBA due to the proposal. Where this is the case, mitigation would be considered, where reasonable and feasible, in line with the Noise Mitigation Guidelines. Where increases are projected to be lower than 2dB, road traffic noise levels would not require consideration of mitigation.

To establish the change in road traffic noise, an operational noise model was developed using SoundPlan v 9.0 acoustic modelling software with the Calculation of Road Traffic Noise (CoRTN) algorithm (UK Department of Transport 1988) with an adaptation to NSW conditions.

Two scenarios were compared:

1. 'No build' – assuming the proposal did not go ahead and taking into account projected increases in traffic volumes for the Year of Opening (2027)
2. 'Build' – assume the proposal did go ahead and taking into account projected increases in traffic volumes for the Year of Opening (2027)

Road noise levels were predicted based on the vertical and horizontal alignment of the proposal (including the new bridge), traffic volumes, compositions and speeds, road gradients and pavement surface types. Propagation from source to receiver incorporated the intervening distance, source and receiver heights, shielding and reflections from topographical and structural barriers, ground and air absorption, and worst-case meteorological conditions with gentle breeze from source to receiver and a temperature inversion.

A summary of key modelling parameters is provided in the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment). No model validation was undertaken since this is a minor works assessment and is based on a simple comparison between two road alignments.

Predicted noise levels

Predicted road noise levels are expected to increase by less than 2 dB for all receivers. The highest predicted increase would be 1.2 dB to the east of the proposal on The Portico and Wentworth Avenue and at the intersection of Cornelia Road and Wentworth Avenue. Noise is likely to decrease to the northeast. A map depicting relative increases in noise, which accounts

for the maximum predicted increase, for each receiver building is shown the Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment).

The Noise and Vibration Impact Assessment (Appendix D – Noise and Vibration Impact Assessment) concluded most road noise level increases would be between 0.1 and 0.2 dB with only a small number exceeding a 1dB increase. This demonstrates the proposal represents minor works and that the increases in traffic noise should be imperceptible to most people.

Vibration Impact Assessment

Ground vibration levels from traffic travelling along surface roads are generally very low. The main factors that influence the level of vibration experienced by receivers close to a road include:

- the distance from the house to the road,
- the road surface condition,
- traffic conditions (volume, speed and mix of heavy vehicles)

The nearest receiver to the proposal (2 Junia Avenue) is circa 20 metres from the nearside lane. Therefore, with a well-maintained surface, the risk of human impacts and building damage are low. Any rattling of windows perceived by building occupants are likely due to airborne acoustic excitation from low frequency noise radiated from large truck or bus exhausts rather than from ground vibration.

The following measures would help to avoid unnecessary vibration generation:

- ensure finished pavement surfaces are smooth,
- avoid placement of service pits in traffic wheel paths,
- select appropriate expansion joints such as finger plate types, which allow for large movements in structures, and aluminium strip seal systems, which can be installed to provide a flush surface true to the profile of any ramp / bridge decks.

6.3.4 Safeguards and management measures

Table 6-8 Noise and vibration safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
General construction noise and vibration	A construction noise and vibration management plan (CNVMP) would be prepared for the proposal to mitigate and manage noise and vibration impacts during construction and would form part of the Construction Environmental Management Plan (CEMP). The CNVMP would be implemented for the duration of construction of the proposal and would: • Identify nearby sensitive receivers • Include a description of the construction equipment and working hours • Identify relevant noise and vibration performance criteria for the project and license and approval conditions • Identify relevant sleep disturbance screening levels • Outline noise and vibration objectives, standard and additional mitigation measures from the *Construction Noise and Vibration Guideline* (CNVG) (Roads and Maritime Services, 2025) and information about when each would be applied • Outline requirements for noise and vibration monitoring that would be carried out to monitor project performance associated with the noise and vibration criteria	Contractor	Prior to commencement of construction, and during construction

	• Describe community consultation and complaints handling procedures in accordance with the Community Communication Strategy to be developed for the project • Outline measures to manage sleep disturbance during night time work • Outline measures to manage noise impacts associated with construction heavy vehicle movements both on and off site. All personnel working on site would receive training to ensure awareness of requirements of the CNVMP. Site-specific training would be given to personnel when working in the vicinity of sensitive receivers		
Construction hours	Proposed works should be completed during standard hours as much as practicable.	Contractor	During construction
High noise activities and out of hours work	Location and activity specific noise and vibration impact assessments should be carried out prior to activities: • With the potential to result in noise levels above 75 dBA at any receiver • Required outside Standard Construction Hours likely to result in noise greater than the relevant Noise Management Levels • With potential to exceed relevant criteria for vibration. The assessments should be performed once detailed construction methods have been developed to confirm the predicted impacts at the relevant receivers in the vicinity of the activities to aid the selection of appropriate management measures, consistent with the requirements of the CNVG	Contractor	Prior to commencement of construction, and during construction
High noise activities and out of hours work	Concrete cutting and mulching of cleared vegetation should be limited to standard hours where possible.	Contractor	During construction
General vibration impacts	Where works are within the minimum working distances for vibration intensive equipment and considered likely to exceed the cosmetic damage objectives in the CNVG at adjacent receivers, construction work would not proceed unless: • A different construction method with lower source vibration levels is used, where feasible • Attended vibration measurements are carried out to determine any exceedances and if further mitigation is required.	Contractor	During construction
Buried utilities	Where works are within 25 metres of buried utilities (e.g. water, power, gas, telecoms), consult with asset owners to establish appropriate vibration limits and management requirements, prepare a detailed vibration assessment for buried assets once detailed construction methods have been developed.	Contractor	During construction
Heritage items	Heritage items within the safe working distances of vibration intensive work are to be considered on a case-by-case basis to establish structural integrity of each item and determine reasonable and feasible mitigation measures.	Contractor	During construction

6.4 Traffic and Transport

6.4.1 Methodology

A traffic impact assessment was prepared by Stantec in 2025 to assist in preparing detailed design and documentation for the wider Toongabbie Local Road Network Enhancement proposal (Appendix F – Traffic Impact Assessment. This assessment includes the intersection upgrades subject to this REF. It should be noted that the additional intersections assessed in the traffic assessment report are not subject to this REF and will be assessed under their own environmental assessment documentation.

The purpose of the traffic impact assessment is to summarise the model development including calibration and validation outcomes, demand development and impacts of the proposed design on the traffic and transport network. The scope of work of the traffic impact assessment includes the following:

- Collect traffic survey data for one typical weekday during AM and PM peak periods for the following intersections:
    - Station Road/Fitzwilliam Road/Wentworth Avenue
    - Wentworth Avenue/Wentworth Avenue
    - Wentworth Avenue/Cornelia Road/The Portico
    - Cornelia Road/Junia Avenue
    - The Portico/Portico Parade
    - Aurelia Street/Portico Parade
- Develop, calibrate and validate existing base models in accordance with Traffic Modelling Guidelines (Roads and Maritime Services, 2013), SIDRA intersection 9.1 User Guide and traffic survey data
- Prepare future traffic demand for the opening year and 10 years post opening for AM and PM peak hours
- Undertake future traffic modelling to determine the intersection performance for the existing and future traffic volumes with and without the project
- Report the impacts of the proposed design on the traffic and transport network.

6.4.2 Existing environment

The study area is located in Toongabbie which is within the LGA boundary of City of Parramatta and Cumberland City Council. The study corridor consists of six intersections along Wentworth Avenue from Station Road and Fitzwilliam Road, and further south-west along Wentworth Avenue to Cornelia Road and Portico Parade at the Toongabbie town centre. The study intersections are summarised in Table 6-9 and shown in Figure 6-5.

Intersection ID 3 and ID 5 are the two intersections subject to this REF, these shown as bold in Table 6-9, and noted as the two red squares in Figure 6-5.

Table 6-9 Study intersection types

ID	Intersection	Type
1	Station Road/Fitzwilliam Road/Wentworth Avenue	Roundabout
2	Wentworth Avenue roundabout	Roundabout
3	**Wentworth Avenue/Cornelia Road/The Portico**	**Signalised**
4	Cornelia Road/Junia Avenue	Roundabout
5	**The Portico/Portico Parade**	**Signalised**
6	Aurelia Street/Portico Parade	Priority

Figure 6-5 Study intersections

Table 6-10 lists the main roads within the study area, their classification, speed limit and describes their route and function.

Table 6-10 Main roads within the study area

Road	Classification	Description
Wentworth Avenue	Regional	Wentworth Avenue is approximately 600 metres in length and is bound by Cornelia Road / The Portico and Station Road / Fitzwilliam Road. Wentworth Avenue is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Station Road	Regional	Station Road is approximately 2.2 kilometres in length and is bound by Prospect Highway / Seven Hills Road and Wentworth Avenue. Station Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Fitzwilliam Road	Regional	Fitzwilliam Road is approximately 1.8 kilometres in length and is bound by Old Windsor Road and Wentworth Avenue. Fitzwilliam Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Cornelia Road	Regional	Cornelia Road is approximately 2.5 kilometres in length and is bound by Wentworth Avenue and Elam Drive. Cornelia Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
The Portico	Local	The Portico is approximately 70 metres in length and is bound by Wentworth Avenue and Portico Parade. The Portico is one lane in both direction with both divided and undivided segments. The speed limit is 50 kilometres per hour.

Portico Parade	Local	Portico Parade is approximately 1 kilometre in length and is bound by McCoy Street and Targo Road. Portico Parade is one lane in the eastbound direction and two lanes in the westbound direction with both divided and undivided segments. The speed limit is 50 kilometres per hour.
Aurelia Street	Local	Aurelia Street is approximately 470 metres in length and is bound by Octavia Street Portico Parade. Aurelia Street is an undivided road with one lane in each direction with a speed limit is 50 kilometres per hour.

Public transport

A number of public bus routes service the Toongabbie town centre, which are as follows:

- 705 – Parramatta to/from Blacktown via Pendle Hill
- 711 – Parramatta to/from Blacktown via Constitution Hill
- N70 – Penrith to/from City Town Hall via Parramatta (Night Service)
- N71 – Richmond to/from City Town Hall via Parramatta (Night Service)

The bus timetables for daytime regular bus routes 705 and 711 indicate an average frequency of 30 to 35 minutes on weekdays and Saturdays, and 55 minutes on Sundays and public holidays. Meanwhile, the night bus routes N70 and N71 operate at a frequency of 60 minutes on all days.

Toongabbie train station is located within the town centre, with access points via Portico Parade (west) and Wentworth Avenue (east). There are four operational platforms where commuters can catch two train lines. These are:

- T1 Western Line – operates between Emu Plains/Richmond and Central Station
- T5 Cumberland Line – operated between Richmond and Leppington

Public transport facilities surrounding the study area are shown in Figure 6-6.

Figure 6-6 Public transport facilities

Traffic survey and traffic profile

Classified intersection counts (CICs) were conducted on Wednesday 28 May 2025 for the six study intersections. It was recorded that the weather was fine. The surveys were conducted for the AM peak and PM peak periods, which are as follows:

- AM peak period – 6.00am to 10.00am
- PM peak period – 2.30pm to 6.30pm

The surveys captured the number of light vehicles, heavy vehicles and buses performing each manoeuvre at the intersections at 15-minute intervals.

The AM peak and PM peak hours were determined based on the highest hourly traffic volumes across all intersections along the corridor. Based on the traffic profile the peak hours are:

- AM peak hour – total of 10,295 vehicles between 7.45am and 8.45am
- PM peak hour – total of 11,055 vehicles between 4.45pm and 5.45pm

The traffic profile is shown in Figure 6-7.

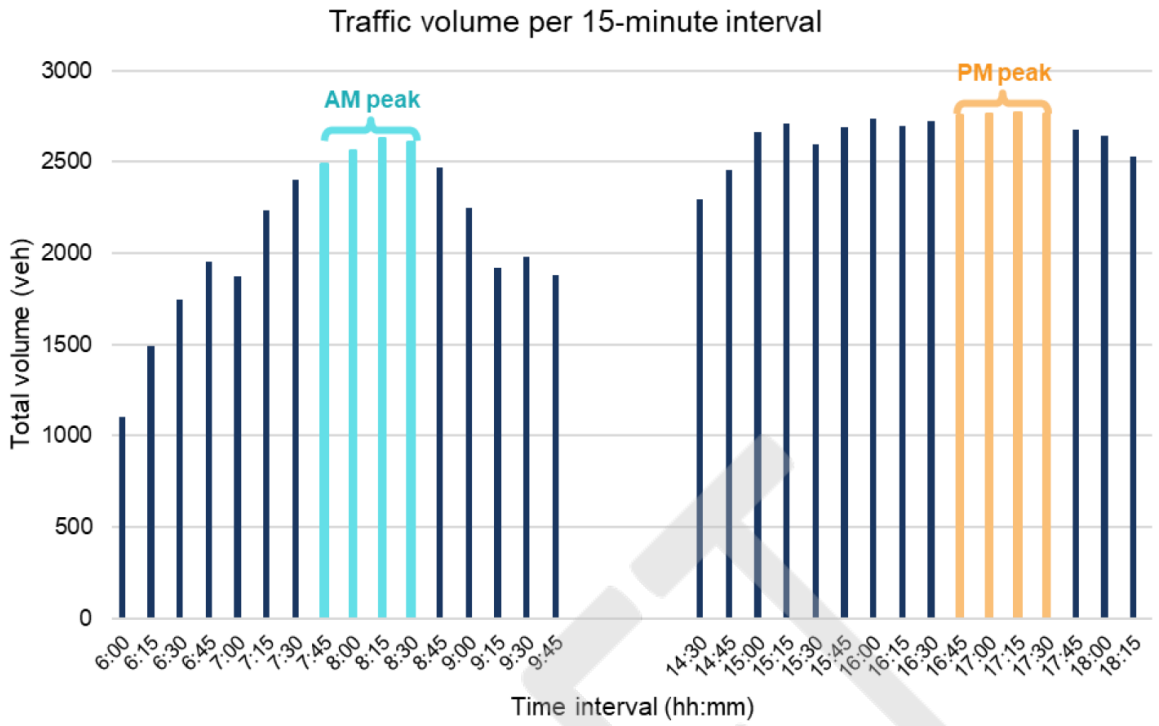


Figure 6-7 Traffic profile in 15-minute intervals

Queue lengths

Queue lengths were determined based on survey video footage that was undertaken on 28 May 2025. Longest queues were observed at the Wentworth Avenue roundabout and Cornelia Road/Junia Avenue in the AM peak, and at Station Road/Fitzwilliam Road/Wentworth Avenue and the Wentworth Avenue roundabout in the PM peak.

In the AM peak, the longest queue (approximately 49+ vehicles) was observed on Cornelia Road, on the western approach of Cornelia Road/Junia Avenue. In the PM peak, the longest queue (approximately 46+ vehicles) was observed on Station Road, on the north-western approach of Station Road/Fitzwilliam Road/Wentworth Avenue. It should be noted the observed queue lengths may not fully reflect the maximum extents of queues due to limitation with the survey camera's field of view.

Traffic signals

Traffic signal data was used in modelling to ensure that all realistic traffic signal operation was modelled. The following forms of signal data for all signalised intersections in the study area to code the base year models:

- TCS graphic plots
- Region LX files
- SCATS history files

Table 6-11 lists the signalized intersections within the study area used in the traffic modelling.

Table 6-11 Signalised intersection within the study area

ID	Intersections	TCS number
3	Wentworth Avenue/Cornelia Road/The Portico	2334
5	The Portico/Portico Parade	2611

6.4.3 Potential impacts

Construction

Road network and traffic

Minor impacts on the road network and local traffic are anticipated during construction of the proposal. Approximately 20 light vehicles, as well as approximately 20 heavy vehicles, per day will be used during construction to support the delivery of the proposal. Construction traffic would be associated with a number of work activities, including:

- delivery of construction materials
- material removal
- delivery of construction plant and equipment
- movement of construction personnel, including contractors, site labour force and other work force members.

The ancillary facility would be accessed via Junia Avenue Service Road off Junia Avenue. The other entrance off Cornelia Road will be closed during construction. The construction workforce would vary depending on the phase of construction and associated activities. A typical on-site workforce of around 10 to 30 people is estimated during the construction period. It is expected that construction staff accessing the construction site would use a combination of public transport and personal light vehicles.

Construction vehicles would cause some impact to the local road network and traffic; however, impacts are anticipated to be minor. The quantity of vehicles required for the proposal represents a negligible increase to existing traffic counts on Wentworth Avenue and surrounding streets. Construction traffic movements would occur outside of peak periods where possible and are predicted to have a minor impact on the surrounding road network and public transport services. Short term closures to Wentworth Avenue may occur during activities including asphalting and milling.

Traffic impacts to Wentworth Avenue, Cornelia Road, Junia Avenue, Portico Parade and The Portico would be managed via the implementation of standard mitigation measures, including the scheduling of deliveries during non-peak periods and minimising queuing.

During works at Site 5, on Portico Parade, traffic control will be implemented and there will be minimal disturbance on the traffic. A partial road closure is required during line marking, and the shoulder will be closed for construction of a new concrete kerb ramp.

Oversize vehicles may be required for prefabricated / precast elements such as retaining wall components and would require specific permits and advance route planning (i.e. identifying a suitable route with sufficient geometric capacity / turning circles for the vehicle). Oversize deliveries may require short-term closures of Wentworth Avenue whilst the delivery is occurring.

Parking

During construction, approximately six parking spaces would be removed at the Junia Avenue carpark for the ancillary facility.

Operation

Road network and traffic

Traffic modelling was undertaken to determine the intersection performance for existing and future traffic volumes to understand the impacts of the proposed upgrades. This modelling takes into consideration the wider Toongabbie Local Road Network Enhancement project, not just the upgrades proposed under this REF. The results between the Future Base scenario ('Do Nothing') were compared to the Project Case scenario in 2027 and 2037.

The modelling results of the local network performance for 2027 can be summarised as:

- AM Peak
    - The intersections either maintained or improved their performance in the 2027 Project Case scenario compared to the 2027 Future Base scenario except for the following locations:
        - The Station Road/Fitzwilliam Road/Wentworth Avenue intersection (located in Parramatta LGA) decreased to LoS C from LoS B with the average delay increasing by approximately 15 seconds. This change is attributed to the signalised upgrade which has some inherent delay. While the performance of the intersection has decreased, the signalised upgrade offers other benefits such as improved safety and the inclusion of dedicated pedestrian crossing facilities
        - The Wentworth Avenue roundabout (located in Parramatta LGA) increases in delay significantly from 184 seconds to 471 seconds. This is due to the southwest approach interrupting the west approach traffic more in the Project Case scenario as there are more

opportunities for the southwest approach to enter the roundabout as Station Road/Fitzwilliam Road/Wentworth Avenue is signalised which provides intermittent gaps

- PM Peak
    - The signalisation of the Station Road/Fitzwilliam Road/Wentworth Avenue intersection (located in Parramatta LGA) along with the introduction of an additional lane for the southbound direction on Wentworth Avenue has improved the LoS from F to C. The additional southbound lane on Wentworth Avenue reduces the queues that spill back into the Station Road/Fitzwilliam Road/Wentworth Avenue intersection.
    - The Wentworth Avenue roundabout (located in Parramatta LGA) increases in delay significantly from 333 seconds to 912 seconds. This is due to the northeast approach interrupting the southwest approach as the signalised upgrade of Station Road/Fitzwilliam Road/Wentworth Avenue and the additional southbound lane has increased the traffic flow for the northeast approach reducing opportunities for the southwest approach to enter the roundabout
    - The Wentworth Avenue/Cornelia Road/The Portico intersection worsens from LoS E to Los F due to improved upstream traffic flow resulting from the project upgrades allowing for a greater volume of vehicles to reach the Wentworth Avenue/Cornelia Road/The Portico intersection
    - At the Cornelia Road/Junia intersection, the average delay times decreased by 34 seconds with the level of service improving from F to D. This improvement is primarily attributed to reduced queuing and delays at downstream intersection which has allowed traffic to flow more freely through this location
    - The Portico/Portico Parade and Aurelia Street/Portico Parade maintain their performance in the Project Case

The modelling results of the local network performance for 2037 can be summarised as:

- AM Peak
    - Most intersections performed at the same or improved levels except for the following locations:
        - The Wentworth Avenue roundabout (located in Parramatta LGA) increases in delay significantly from 162 seconds to 512 seconds in the Project Case scenario. This is due to the southwest approach interrupting the west approach traffic more in the Project Case scenario as there are more opportunities for the southwest approach to enter the roundabout as Station Road/Fitzwilliam Road/Wentworth Avenue is signalised which provides intermittent gaps
        - The overall intersection average delay at the Wentworth Avenue/Cornelia Road/The Portico intersection increased from 94 to 147 seconds in the Project Case. The increase in delay is attributed to the west approach to the Wentworth Avenue roundabout being interrupted as mentioned above which results in longer queues spilling back into and beyond the Wentworth Avenue/Cornelia Road/The Portico intersection.
- PM Peak
    - The signalisation of the Station Road/Fitzwilliam Road/Wentworth Avenue intersection (located in Parramatta LGA) along with the introduction of an additional lane for the southbound direction on Wentworth Avenue has improved the LoS from F to D. The additional southbound lane on Wentworth Avenue reduces the queues that spill back into the Station Road/Fitzwilliam Road/Wentworth Avenue intersection.
    - The Wentworth Avenue roundabout (located in Parramatta LGA) increases in delay significantly from 391 seconds to 1156 seconds. This is due to the northeast approach interrupting the southwest approach as the signalized upgrade of Station Road/Fitzwilliam Road/Wentworth Avenue and the additional southbound lane has increased the traffic flow for the northeast approach reducing opportunities for the southwest approach to enter the roundabout.
    - The Wentworth Avenue/Cornelia Road/The Portico intersection worsens from LoS E to LoS F. This is due to improved upstream traffic flow resulting from the project upgrades allowing a greater volume of vehicles to reach the Wentworth Avenue/Cornelia Road/The Portico intersection as well as queueing from the Wentworth Avenue roundabout impacting the performance

- At the Cornelia Road/Junia Avenue intersection, The Portico/Portico Parade and Aurelia Street/Portico Parade maintain their performance in the Project Case.

Transport for NSW and Parramatta City Council are continuing to develop the design within the Parramatta LGA to mitigate the level of service decreases at the Station Road/Fitzwilliam Road/Wentworth Avenue intersection and the Wentworth Avenue roundabout. Any notable changes in the outcomes of the traffic analysis would be documented in the REF(s) that is subject to these intersection upgrades.

Junia Avenue Service Road shared zone

The carpark at Junia Avenue Service Road will be maintained where possible, however the following changes would be implemented:

- Due to the reduced width of Junia Avenue Service Road, parking along the shared zone will be prohibited with no stopping signs in place to highlight this. This results in losing two car spaces on the side of Junia Avenue Service Road which are currently marked with 1P signs.
- The parking spaces perpendicular to Wentworth Avenue will be moved slightly due to the proposed road widening, and to provide additional space to access the shared zone.
- The five parking spaces in the centre of the carpark will be moved slightly to allow the service vehicle movements
- An 8.8m service vehicle will need to perform a three-point turn at Junia Avenue to collect rubbish and exit the carpark via Junia Avenue
- A 5.2m passenger vehicle can enter the shared zone and reverse into the gate access

6.4.4 Safeguards and management measures

Table 6-12 Traffic and Transport safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Traffic and transport	Traffic Management Plan (TMP) must be developed prior to the commencement of construction. The TMP will be in accordance with the Transport *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The measures will include: • confirmation of haulage routes • measures to maintain access to local roads and properties • site-specific traffic control measures (including signage) to manage and regulate traffic movement • measures to maintain pedestrian and cyclist access • requirements and methods to consult and inform the local community of impacts on the local road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • a response plan for any construction traffic incident • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur	Contractor	Detailed design / Pre-construction

	due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms.		
Traffic and transport	Requirements for any changes to existing access arrangements shall be confirmed in consultation with the local road authority and any affected landowners.	Contractor	Pre-construction/ Construction
Traffic and transport	Heavy vehicle traffic generated through construction shall be constrained to the arterial road network to minimise impacts on local roads.	Contractor	Construction
Traffic and transport	Property access will be maintained including access to residences and commercial premises. Where property access will be impacted during construction: • property owners will be notified at least five business days prior to the access impact • alternative access will be provided if available access impacts will be minimised and access will be returned to the property owners as soon as possible	Contractor	Pre-construction/ Construction

6.5 Visual impacts and amenity

6.5.1 Methodology

The Visual Impact Assessment (VIA) has been undertaken in accordance with Transport for NSW's *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment* (Transport for NSW, 2023).

The method to measure impact was based on a combination of the sensitivity of the existing area to change and the magnitude (scale, contrast, quality, distance) of the proposal on that area. The assessment matrix within the guideline was then used to determine the overall impact of the proposal on landscape character and visual impacts in the proposal area. This matrix is contained within Figure 6-8.

Sensitivity \ Magnitude	High	Moderate	Low	Negligible
High	High	High-Moderate	Moderate	Negligible
Moderate	High-Moderate	Moderate	Moderate-low	Negligible
Low	Moderate	Moderate-low	Low	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Figure 6-8 Visual impact assessment matrix

The sensitivity of an area is determined by the qualities of an area, the number and type of receivers and how sensitive the existing character of the setting is to the proposed nature of change. The design quality of the proposed development does not make the area less sensitive to change but instead affects the magnitude of the impact (Transport for NSW, 2023).

Magnitude refers to the physical scale of the proposal, how distant it is and the contrast it presents to the existing condition. The magnitude also considers the cumulative impact of other past current and known likely future activity which may cumulatively alter an area.

Visual Impact Assessment Method

The visual impact assessment helps define the day-to-day visual effects of a proposal on representative viewpoints within the proposal area (Transport for NSW, 2023). Representative viewpoints have been selected based on the visual catchment of the proposal, factoring in topographical features, landmarks, intersections, buildings and other items within the catchment.

The visual impact assessment determines the impact of the proposal by:

- defining an assessment area
- providing contextual information on the existing environment
- detecting representative viewpoints within the visual catchment
- assessing how sensitive the viewpoints are considering the capacity to absorb change, type and number of viewers and length of exposure to that view
- identifying changes to each viewpoint as a result of the proposal
- assessing the magnitude of change
- providing an overall assessment based on the measures of sensitivity and magnitude, as shown in Figure 6-8

6.5.2 Existing environment

The surrounding environment within and adjacent to the Proposal is an urban area comprising of medium and low density residential and local commercial and recreational activities. The topography of the land is generally flat and buildings within residential properties are typically one to two storeys in height and set back from the road with landscaped front yards. Commercial properties have limited landscaping and are set back from the road with paved areas.

Most of the road corridor is lined on either side by an arrangement of a mixture of native and exotic trees and shrubs which have been previously planted for amenity purposes.

Potential visual receivers in the area include:

- residents on Wentworth Avenue and surrounding roads
- employees and visitors to commercial properties within the proposal area
- recreational users of Portico Park
- users of Toongabbie train station
- road users in vehicles

A Visual Envelope Map (VEM) has been developed to define the visual catchment of the proposal and the representative viewpoints. The VEM is shown in Figure 6-9.

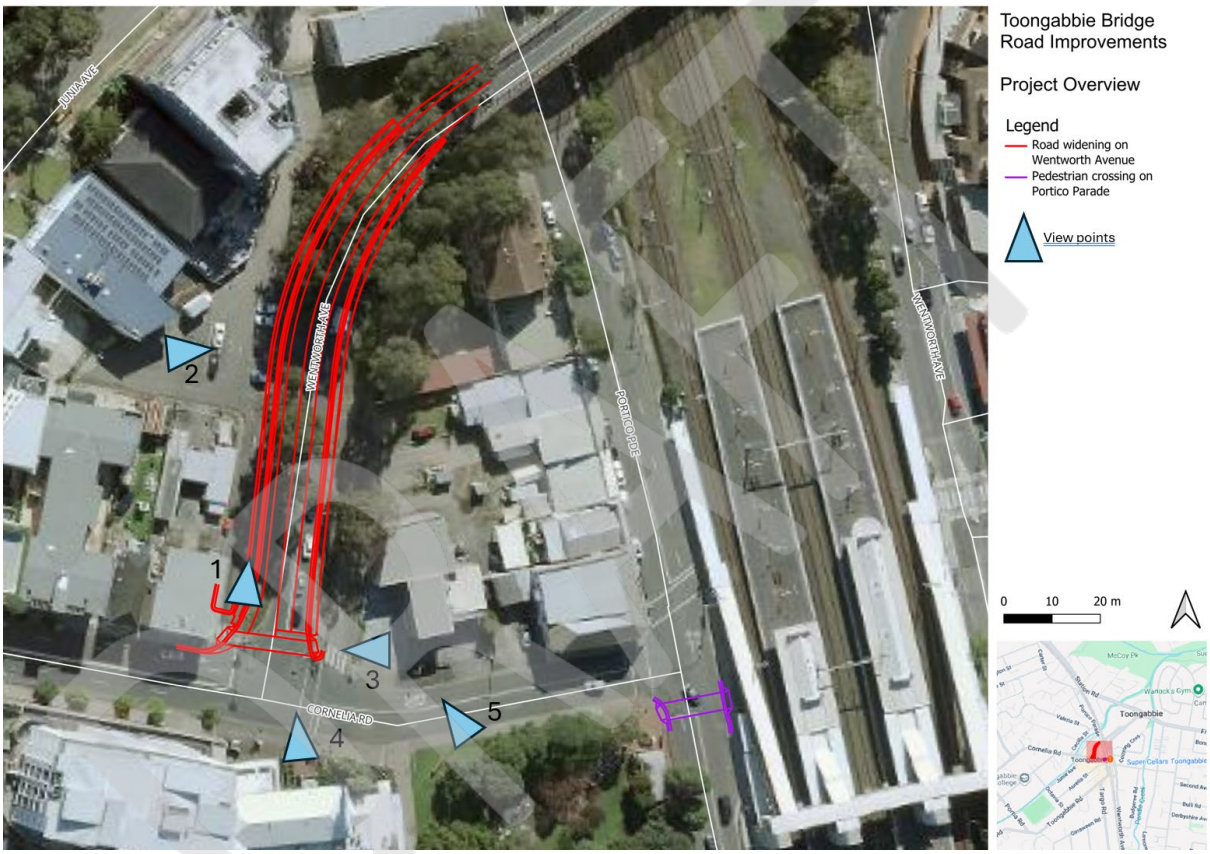
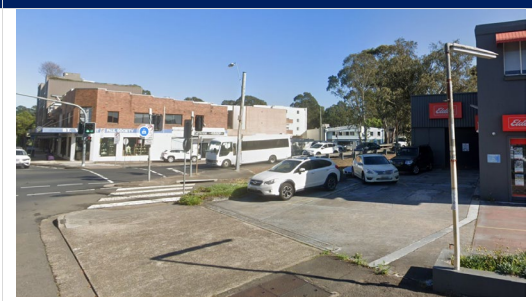


Figure 6-9 Visual envelope map

Each viewpoint shown in the VEM is described and given a sensitivity rating in Table 6-13.

Table 6-13 Description of assessed viewpoints

Viewpoint	Description	Image	Sensitivity of view
1	View looking toward the proposal along Junia Avenue Service Road		Low This view is transient and representative of road users and pedestrians. A low sensitivity is given due to the temporary exposure road users and pedestrians would experience as they are either driving or walking down Junia Avenue Service Road. This Road is used for either parking or as a thoroughfare.
2	View looking toward the proposal from Junia Avenue Service Road/carpark		High This view is representative of carpark users or residents on Junia Avenue whose residences back onto this carpark area. A high sensitivity is given due to multiple windows that face directly onto the proposal area.
3	View looking toward Cornelia Road from the intersection of Cornelia Road and Junia Avenue Service Road		Low. This view is representative of the business (Elders Real Estate) that would be visually impacted by the proposal. A low sensitivity is given due to the temporary exposure patrons of the business would experience and the distance to the retaining wall. This intersection is heavily trafficked, and this view would be interrupted by passing vehicles.
4	View looking toward the proposal from Cornelia Road (Toongabbie Hotel)		Low. This view is representative of the patrons to Toongabbie Hotel, opposite the proposal area. A moderate sensitivity is given due to the highly trafficked intersection that is between the Hotel and the proposal. This view would be interrupted by passing vehicles.

Viewpoint	Description	Image	Sensitivity of view
5	View from Portico Park toward to proposal		Low This view is representative of the patrons to Toongabbie Hotel, opposite the proposal area. A low sensitivity is given due to the highly trafficked intersection that is between the Park and the proposal. This view would be interrupted by passing vehicles.

6.5.3 Potential impacts

Construction

Temporary visual impacts as a result of the proposal are expected to road and footpath users, businesses along The Portico, Cornelia Road and Junia Avenue Service Road, and to residents living in Junia Avenue and Wenworth Avenue. The visual impacts are likely to stem from:

- construction plant and equipment
- ancillary facilities and material storage/stockpiling
- temporary safety barriers
- temporary traffic control equipment and signage

The majority of these impacts would be confined to the construction phase. Following the completion of construction, any visual impacts from plant/equipment, ancillary areas, temporary barriers and traffic control would be removed. The areas used for construction will be restored to an equivalent pre-construction standard.

Longer-term operational impacts such as the removal of trees will occur during site establishment.

Operation

Operational impacts from the proposal are related to the following key design features:

- the removal of the existing trees and vegetation
- a four-metre high retaining wall adjacent to the northbound carriageway on Wentworth Avenue for 120 metres
- aboveground structures such as traffic signals, traffic signal mast arms and signposting

Operational impacts from the proposal have been assessed and summarised in Table 6-14

Table 6-14 Visual impact assessment

Viewpoint	Sensitivity	Magnitude	Impact
1	Low	Moderate	**Moderate-Low** The removal of vegetation and within the proposal area would impact this viewpoint, as shown in Table 6-13. The retaining wall will also interrupt this view. However, the Junia Avenue shared zone would include new garden beds and plantings and provide an opportunity to address the impacts upon pedestrian amenity in the local area.
2	High	High	**High** The removal of vegetation and within the proposal area would impact this viewpoint, as shown in Table 6-13. The retaining wall will also interrupt this view. The carpark reconfiguration may also impact this viewpoint.

Viewpoint	Sensitivity	Magnitude	Impact
			However, the Junia Avenue shared zone would include new garden beds and plantings and provide an opportunity to address the impacts upon pedestrian amenity in the local area.
3	Low	Low	**Low** The road reconfiguration at this intersection would not result in an impact to the viewpoint as shown in Table 6-13. This intersection is heavily trafficked and the view is interrupted by passing vehicles. The Junia Avenue shared zone would include new garden beds and plantings and provide an opportunity to address the impacts upon pedestrian amenity in the local area. This may positively impact this viewpoint.
4	Low	Moderate	**Moderate-Low** The removal of vegetation and within the proposal area would impact this viewpoint, as shown in Table 6-13. The retaining wall will also interrupt this view. However, the Junia Avenue shared zone would include new garden beds and plantings and provide an opportunity to address the impacts upon pedestrian amenity in the local area.
5	Low	Low	**Low** The removal of vegetation and within the proposal area may impact this viewpoint however the proposal from this viewpoint would be interrupted by the traffic and the buildings on the corner of The Portico and Wentworth Avenue. The Junia Avenue shared zone would include new garden beds and plantings and provide an opportunity to address the impacts upon pedestrian amenity in the local area.

Junia Avenue shared zone

The project presents an opportunity to create Junia Avenue Service Road into a pedestrian plaza space. This would create an experience of a shared space across the laneway, with pedestrian traffic as a priority. Garden beds and plantings would be introduced as an opportunity to buffer the experience of the roadways in the area. Figure 6-10 shows the indicative masterplan of the Junia Avenue Service Road pedestrian plaza space. This landscape concept design would be an opportunity to address the impacts upon pedestrian amenity and town centre experience.

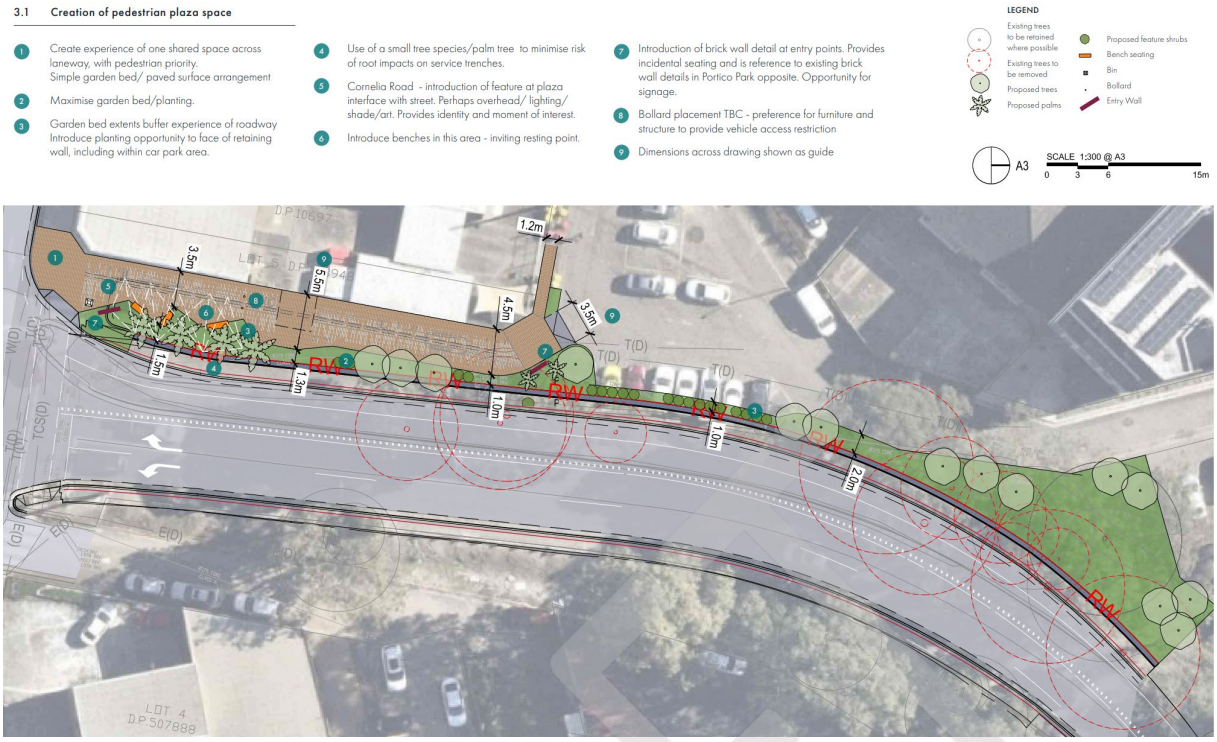


Figure 6-10 Masterplan of Junia Avenue Service Road pedestrian plaza space

Lighting

Existing lighting at both Site 4 and Site 5 currently represents minor non-conformances with the assumed lighting standards when considering the proposed road upgrades. The updated lighting design for the proposal focuses on achieving the design criteria while minimising impacts to the existing infrastructure. This would have a positive impact on the amenity of the local area.

At Site 4, compliance is reached by replacing the luminaire on the existing light pole. The resultant existing network enables sufficient luminosity for the proposed road widening and lane expansion.

At Site 5, additional lights are required to satisfy PX2 lighting category for the pedestrian crossing. Two additional 7.5 metre high floodlights are proposed in order to comply with this requirement.

The lighting infrastructure will consider potential light spill impacts on adjacent properties, be coordinated with landscaping design and be designed and operated in accordance with *AS4282:2023 Control of the Obtrusive Effect of Outdoor Lighting*.

6.5.4 Safeguards and management measures

Table 6-15 Visual impact and amenity safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Visual impacts	Opportunities to minimise visual impacts from the proposal will be explored during detailed design. These measures may include architectural treatment of the amenities building, landscaping/hardscaping, public artwork, consideration of materiality for retaining wall, and replacement planting. Advice from a suitably qualified urban designer, architect and/or landscape designer will be sought to determine these measures.	Contractor	Detailed design / Pre-construction
Visual impacts	Where architectural treatment or artwork is proposed to be painted of the retaining wall, relevant stakeholders will be consulted.	Contractor	Detailed design / Pre-construction
Visual impacts	Following the completion of construction works, plant/equipment will be removed, and disturbed areas	Contractor	Construction

	will be revegetated, turfed or otherwise restored as appropriate.		
Visual Impacts	Work sites including all ancillary facilities will be managed to minimise visual impacts including consideration of screening, placement of facilities and storage areas and maintaining sites in a clean state with minimal visual clutter.	Contractor	Pre-construction / Construction
Street trees	Trees will be replaced in accordance with Cumberland Council's tree removal application.	Contractor	Construction
Lighting	Temporary site lighting will be shielded and directed away from sensitive receivers.	Contractor	Pre-construction / Construction
Lighting	The design of new street lighting will consider potential light spill impacts on adjacent properties and be designed and operated in accordance with *AS4282:2023 Control of the Obtrusive Effect of Outdoor Lighting*.	Contractor	Detailed design / Pre-construction

6.6 Socio-economic

6.6.1 Methodology

This socio-economic assessment was prepared in accordance with the *Environmental Impact Assessment Practice Note: Socio-economic assessment* (Transport for NSW, 2020). The proposal is anticipated to have some localised impacts to the communities surrounding the proposal and therefore a basic level of socio-economic assessment was carried out.

The assessment:

- identified the characteristics of the surrounding environment through a desktop review of 2021 Census data
- identified the location and type of social infrastructure surrounding the proposal that may be impacted
- identified any nearby businesses that could be affected by the proposal.

6.6.2 Existing environment

Population and demographics

The proposal is located within the suburb of Toongabbie which falls within the Cumberland LGA. The Cumberland LDA has a population of 235,439 people and a median age of 34 (ABS, 2021). Toongabbie is a comparatively large suburb from a population perspective, with 16,177 residents and a median weekly household income of $2106 (ABS, 2021). A summary and comparison of key demographic indicators is contained in Table 6-16.

Table 6-16 Census data for Toongabbie and Cumberland LGA (source: 2021 Census Quickstats, ABS)

Indicator	Toongabbie	Cumberland LGA
Population	16,177	235,439
Gender	Female 49.3% Male 50.7%	Female 48.4% Male 51.6%
Median age	35	34
Travel to work	By car (as driver or passenger) – 38.6% By public transport – 6.4% Walked only – 1% Worked at home – 35.8%	By car (as driver or passenger) – 39.6% By public transport – 8.6% Walked only – 1.7% Worked at home – 29.8%
Median household income	$2,106	$1,678
Employment	Unemployment rate – 6.3% Industry (top) – Hospitals 5.7%	Unemployment rate – 8.3% Industry (top) – Hospitals 4.2%

Social infrastructure

Social infrastructure near the proposal site includes:

- Toongabbie Railway Station
- Toongabbie Station bus stops
- Jirramba Reserve
- Portico Park

Commercial and business properties

Commercial and business properties near the proposal include:

- Portico Plaza
- Bridgeview Medical Practice
- Hearing Australia
- InspireEd Academy
- St Vincent De Paul Society

- Toongabbie Hotel
- JS Car wash and Premium Detailing
- Elders Real Estate Toongabbie
- A D Barnett & Co
- Agema Constructions Pty Ltd
- The Girls' Brigade and The Boys' Brigade Australia NSW Headquarters
- Ceylon Cut Hairdresser

Residential properties

Residential properties along Wentworth Avenue, Junia Avenue, Cornelia Road and Portico Parade have a partial or direct line of sight onto the proposal area. Figure 6-4 identified the location of the residential properties in the locality.

6.6.3 Potential impacts

Construction

Construction of the proposal may lead to temporary impacts to nearby residents, businesses and road users. These impacts are expected to be as follows:

- Residential properties in the vicinity of the proposal footprint could be impacted during construction of the project. Construction may result in noise and vibration, landscape character and visual impact, traffic and transport and other impacts (see Section 6).
- No property acquisition is required for the proposal
- No changes to population and demography are anticipated as a result of the project. The construction workforce required for the project is insignificant in the broader context of the area and is unlikely to change the demographic of the area in a perceivable manner. The workforce is described in Section 3.3.2.
- Direct impacts to businesses are not anticipated to occur. Benefits to local cafes and restaurants during construction are expected from workers purchasing and using these businesses.
- No impacts to any identified social infrastructure have been identified. The bus stops along Cornelia Road and Portico Parade would continue to function during construction of the proposal.
- Short-term impacts to access for residential properties may occur. Temporary pedestrian and cycle diversions may be in place periodically during construction to ensure the safety of workers and members of public. Consultation on any changes would occur and suitable alternative access provided where required and if possible.
- Parking reduction during construction as a result of the permanent removal of parking along Junia Avenue and the temporary removal of parking to facilitate the establishment of the ancillary facility at Junia Avenue Carpark.

Operation

Operation of the proposal may lead to long-term impacts to nearby residents, businesses and road users. These impacts are expected to be as follows:

- The proposal involves a net reduction in parking within the area.
    - Due to the reduced width of Junia Avenue Service Road, parking along the shared zone will be prohibited with "No Stopping" signs in place to highlight this. This results in the loss of two car spaces on the side of Junia Avenue Service Road which are currently marked with 1P signs.
    - The parking spaces perpendicular to Wentworth Avenue will be moved slightly due to the proposed road widening and to provide additional space to access the shared zone.
    - Five parking spaces in the centre of the carpark will be moved slightly to allow the service vehicle movements.
- The proposal involves removal of 0.21ha of PCT 3320 and 0.06ha of Urban Native/Exotic vegetation (worst case) to allow for the road widening and retaining wall construction. This may have a visual impact to local residents.

6.6.4 Safeguards and management measures

Table 6-17 Socio-economic safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Socio-economic	A Communication Strategy (CS) will be prepared and implemented to help provide timely and accurate information to the community during construction. The CS will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions • contact name and number for complaints.	Contractor	Pre-construction/ construction
Access	Access to businesses and residents will be maintained during construction. Where temporary changes to access arrangements are necessary, the contractor will advise owners and tenants and consult with them in advance with regards to alternative access arrangements.	Contractor	Detailed design/ Construction
Access	Access to bus stops will be maintained during construction. Where changes to access arrangement are necessary, the contractor will advise those impacted.	Contractor	Detailed design/ Construction

6.7 Other impacts

6.7.1 Existing environment and potential impacts

Table 6-18 Other potential impacts

Environmental factor	Existing environment	Potential impacts
Flooding and hydrology	A review of the Cumberland LEP 2021 does not identify the proposal area to be within flood prone land.	Flooding impacts as a result of construction or operation are not expected.
Air Quality	The proposal sits within an area comprised of a mix of land uses, including residential, industrial, commercial, recreation, and transport infrastructure. Air quality in the area is primarily influenced by vehicular traffic along nearby regional and local roads, along with the operation of the nearby railway and other industrial premises. Air quality within the proposal area is also influenced at a regional scale. Background conditions have been established using data collected by the nearest EPA air quality monitoring site at Prospect air quality monitoring station, approximately 3.5km south west of the proposal area. The air quality concentration data at Prospect Station was obtained for 9 September 2025 (DPHI, 2025) as outlined below. All the concentrations are rated good. • O3 (1 hour average) – 3.5 • NO2 (1 hour average) – 2.8 • NEPH (1 hour average) – 0.22 • CO (8 hour average) – 0.1 • SO2 (1 hour average) – 0.3 • PM2.5 (24 hour average) – 12.9 • PM10 (24 hour average) – 6.9 Sensitive receivers for air quality identified include any nearby residences, businesses and users of open space or outdoor areas.	**Construction** Air quality impacts from the proposal could occur during the undertaking of certain activities, however, impacts would be minor and short-term. Dust could be generated from a variety of activities including: • Clearing vegetation • Demolition • Earthworks and piling • Stripping, stockpiling and managing topsoil • Pavement works • Transportation and handling of soils and materials The total amount of dust would depend on the silt and moisture content in the soil, prevailing weather conditions and the types of activities being carried out. Depending on wind speed and direction, short-term impacts could be experienced at all nearby sensitive receivers. The mobilisation of dust associated with the proposal is expected to be minor due to the small scale of work and following the implementation of appropriate mitigation measures. During the application of asphalt and line marking, odours may be generated that impact adjacent areas during the asphalting or other odour generating activities. These impacts will be short term in nature and the overall impact is anticipated to be minor. **Operation** The proposal would not result in substantial changes to traffic volumes or changes to the traffic mix in the locality and therefore the proposal would not result in an increase in air quality impacts to the local area.

Waste and resource usage	The proposal would involve the generation of waste materials during construction, however, these quantities are not expected to be significant. Waste and resource usage during construction is expected to occur during the following activities: • Excavation, piling, trenching • Utility relocation • Pavement construction • Site establishment and vegetation clearing • Other activities required as part of the proposal. The works would be undertaken in accordance with the resource management principles outlined in the *Waste Avoidance and Resource Recovery Act 2001*. The following hierarchy would be followed, listed in terms of priority: • Waste generation is to be avoided or reduced. • Where avoidance or reduction is not possible, resource recovery (including reuse of materials, reprocessing, recycling and energy recovery) is to occur. • Where waste reuse, recycling or recovery is not possible, waste will be treated and/or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation* 2014, or to any other place that can lawfully accept such waste.	The following waste streams have been identified: • Spoil from excavation and other ground disturbance activities • Green waste from vegetation clearing • Waste concrete and asphalt • General construction waste • Recyclable construction waste The handling of these waste streams will be done in accordance with the following: • Where waste reuse, recycling or recovery is not possible, waste will be treated and/or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste. • All waste generated during construction will be classified in accordance with the *Waste Classification Guidelines* (EPA 2014). • Waste generated offsite will not be received onsite for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the POEO Act, if such a licence is required in relation to that waste.
Aboriginal cultural heritage	An AHIMS basic search was conducted on 12 September 2025 applying a 50-metre radius around the proposal. No Aboriginal heritage sites were identified in this search. A copy of this search is included in Appendix G – AHIMS Search Results The proposal area has been subject to significant land use disturbance previously.	**Construction** Activities during construction which involve ground disturbance include excavation, trenching, utility relocation and piling. Despite this, no direct or indirect impacts to items of Aboriginal cultural heritage are expected as a result of the proposal as there were no sites identified during a search of the AHIMS register and the proposal area has undergone significant previous disturbance. In the event unexpected heritage items are identified the safeguards in Section 6.7.2 would be implemented, including the Unexpected Finds Procedure. **Operation** There are no anticipated Aboriginal cultural heritage impacts during operation of the proposed bus layover.

Non-Aboriginal heritage

The method for assessment of Non-Aboriginal heritage impacts included a review of the relevant heritage databases and statutory lists within the study area. This review was completed on 12 September 2025.

This included a review of the following:

- World Heritage List
- Commonwealth Heritage List
- National Heritage List
- NSW State Heritage Register
- Section 170 Heritage and Conservation Registers for Transport for NSW
- Cumberland LEP

No State or Commonwealth non-Aboriginal heritage items are located within 500 metres of the proposal area.

A search of Cumberland LEP (2021) confirmed the presence of no listed heritage items within the project area, but four within the vicinity of the proposal area as outlined in Table 6-19 and Figure 6-11.

Table 6-19 Non-Aboriginal heritage items in study area

Fig Ref	Item	Significance	Distance from proposal
A	Toongabbie Railway Station (I102)	Local	Adjacent to Site 5
B	Portico Park (I103)	Local	Adjacent to Site 5
C	Railway Duct (I104/A9)	Local – Archaeological	120 metres north of Site 4
D	St Edna's Church Hall (I101)	Local	150 metres south west of Site 4

Construction

No direct impacts to the identified heritage listed items are anticipated during construction. There is the potential for vibration impacts to the buildings and structures located close to the proposal area, however, adhering to the safe working distances as outlined in the *Construction Noise and Vibration Guideline* (CNVG) would mitigate the risk of indirectly impacting the known heritage items. .

Operation

No direct impacts to the identified listed heritage items are anticipated during operation of the proposed project.

Hazards and Risks

Existing hazards and risks within the proposal area are primarily associated with the surrounding road network and the interaction between vehicles and other road users. The proposal is not within land zoned as bush fire prone.

Hazards and risks during construction of the proposal could include:

- Working adjacent to trafficable areas
- The use of heavy machinery and equipment
- Working near existing live services such as power lines, water mains and gas mains.
- The use, handling and storage of hazardous materials.

Construction hazards and risks are manageable through the application of standard mitigation measures, which would be developed by the construction contractor prior to construction.

Hazards and risks during operation would primarily be related to the interaction between road users, buses and pedestrians/cyclists. Traffic calming measures or controls to minimise these

		risks will be finalised during detailed design.

Figure 6-11 Non-Aboriginal heritage

6.7.2 Safeguards and management measures

Table 6-20 Other impacts Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Air quality	Air Quality Management measures will be included and implemented as part of the CEMP. These will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or Office of Environment and Heritage (OEH) guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces.	Contractor	Pre-Construction/ Construction
Waste	Waste management measures will be included and implemented as part of the CEMP. The waste management measures will include but not be limited to: • measures to avoid and minimise waste associated with the project	Contractor	Pre-Construction/ Construction

Impact	Environmental safeguards	Responsibility	Timing
	• classification of wastes and management options (re-use, recycle, stockpile, disposal) • statutory approvals required for managing on- and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting. The measures will align with the *Environmental Procedure - Management of Wastes on Transport for NSW Land* (Transport for NSW, 2014) and relevant Transport Waste fact sheets.		
Aboriginal cultural heritage	• The *Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. • Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Construction
Non-Aboriginal heritage	• The *Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. • Work will only re-commence once the requirements of that Procedure have been satisfied. • Heritage awareness training will be carried out for all site personnel in the form of a site induction or toolbox talk. This will include information and location of the known heritage sites in the vicinity of the proposal area and the Unexpected Heritage Items Procedure. • The non-Aboriginal heritage items in the vicinity of the proposal will be marked on Environmental Control Maps or Sensitive Area Plans to be avoided. • Safe working distances outlined in the *Construction Noise and Vibration Guideline* (CNVG) should be adhered to where possible. Where safe working distances cannot be adhered to, advice from the Council Environmental Officer or a Noise and Vibration subject matter expert would be sought before proceeding with the work.	Contractor	Construction
Hazards and risk management	Hazard and Risk management measures will be included and implemented as part of the CEMP. The CEMP will include, but not be limited to: • details of hazards and risks associated with the activity • measures to be implemented during construction to minimise these risks	Contractor	Pre-Construction/ Construction

Impact	Environmental safeguards	Responsibility	Timing
	• record keeping for materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • contingency measures to be implemented in the event of unexpected hazards, risks arising and emergency situations. • The CEMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or OEH publications.		
Hazards and risk	If an incident (e.g. spill) occurs, the site-specific emergency spill plan is to be followed and the Council Environmental Manager notified as soon as practicable.	Contractor	Construction

6.8 Cumulative impacts

6.8.1 Study area

The cumulative impact assessment considered the area surrounding the proposal area to determine the potential for and likelihood of cumulative impacts on the environment.

6.8.2 Other projects and developments

Table 6-21: Past, present and future projects

Project	Construction impacts	Operational impacts
Pendle Hill High School Redevelopment (and Modification) The Pendle Hill High School Redevelopment project is an upgrade of the existing Pendle Hill High School to increase the capacity of the school to 1,320 students to meet the growth demands. This includes construction of a new building, external transport infrastructure upgrades, new covered walkways, upgraded landscaping, remediation works and reconfiguration of the existing carpark.	Construction activities associated with this proposal are unlikely to have a considerable overlap with the Toongabbie Road Improvements project due to the distance from Pendle Hill High School.	Both the Pendle Hill High School Redevelopment and Toongabbie Road Improvements projects are both in response to the projected population growth demands of the Toongabbie local area. As the proposal will improve the performance and safety of the network, this will have a direct positive impact on the growing demand of students at Pendle Hill High School.

6.8.3 Safeguards and management measures

Table 6-22 Cumulative safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Cumulative impacts	• Coordination with other projects will occur where required to ensure any potential cumulative impacts to nearby stakeholders are managed.	Community Manager Project Manager	Construction

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7. Environmental management

7.1 Environmental management plans (or system)

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

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

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by the Cumberland Council Environment Team prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

7.2 Summary of safeguards and management measures

Environmental safeguards and management measures outlined in this REF will be incorporated into the detailed design phase of the proposal and during construction and operation of the proposal, should it proceed. These safeguards and management measures will minimise any potential adverse impacts arising from the proposed works on the surrounding environment. The safeguards and management measures are summarised in Table 7 1.

Table 7-1: Summary of safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Cumberland Council Environment Team prior to commencement of the activity. As a minimum, the CEMP will address the following: • any requirements associated with statutory approvals • details of how the project will implement the identified safeguards outlined in the REF • issue-specific environmental management plans • roles and responsibilities • communication requirements • induction and training requirements • procedures for monitoring and evaluating environmental performance, and for corrective action • reporting requirements and record-keeping • procedures for emergency and incident management • procedures for audit and review. The endorsed CEMP will be implemented during the undertaking of the activity.	Contractor	Pre-construction / detailed design
GEN2	General - notification	All businesses, residential properties and other key stakeholders (eg schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor	Pre-construction
GEN3	General - environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular "toolbox" style briefings. Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include: • management of contaminated soils • adjoining residential areas requiring particular noise and vibration management measures pedestrian and traffic management around the work zone	Contractor	Pre-construction / Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
BIO1	Biodiversity	Flora and Fauna management measures will be included in the CEMP in accordance with Transport for NSW's *Biodiversity Guidelines: Protecting and Managing Biodiversity on Projects* (RMS, 2011) and implemented as part of the CEMP. It will include, but not be limited to: • Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • Requirements set out in the *Landscape Guideline* (RMS, 2008) • Pre-clearing survey requirements • Procedures for unexpected threatened species finds and fauna handling • Procedures addressing relevant matters specified in the DPI *Policy and guidelines for fish habitat conservation and management* (2013) • Protocols to manage weeds and pathogens	Contractor	Detailed design/pre-construction
BIO2	Biodiversity	Prior to works, the contractor should commission the services of a qualified and experienced Ecologist (minimum 3 years' experience). The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to implement the following measures in accordance with best-practice, publicly available guidelines: • Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) • Vegetation and Habitat removal should be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) • Fauna will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) • Habitat will be replace or re-instated in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) The unexpected species find procedure is to be followed under Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) if threatened flora and fauna, not assessed in the biodiversity assessment, are identified in the Subject Land.	Contractor	Pre-construction/Construction
BIO3	Biodiversity	Exclusion zones will be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024)	Contractor	Construction
BIO4	Biodiversity	Appropriate erosion and sediment control should be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. Erosion and sediment controls	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		would be established in accordance with an erosion and sedimentation plan to be produced for the works. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom, 2004)		
BIO5	Biodiversity	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilized according to industry standards prior to importation to site.	Contractor	Construction
BIO6	Biodiversity	No priority or environmental weeds, pathogens or other biosecurity issues (e.g. fireants) are to be imported on to the site prior to or during construction works	Contractor	Construction
BIO7	Biodiversity	Control measures (e.g. the directional lighting and task lighting) are to be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species	Contractor	Construction and operation
BIO8	Biodiversity	Only trees identified for removal on the site map are to be removed. No other trees are to be pruned or removed.	Contractor	During construction
SW1	Soil and water	Soil and water management measures will be included as part of the CEMP. The measures will address the following: • Transport for NSW *Code of Practice for Water Management* • *The Blue Book- Managing Urban Stormwater: Soils and Construction, Volume 1 and 2* • Transport for NSW Technical Guideline – Temporary Stormwater Drainage for Road Construction.	Contractor	Detailed design / pre-construction
SW2	Soil and water	Erosion and sediment control measures are to be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water courses, drainage lines or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transport from site to surrounding pavement surfaces Divert clean water around the site (in accordance with the Blue Book).	Contractor	Construction
SW3	Soil and water	An Erosion and Sediment Control Plan (ESCP) will be prepared and progressively updated throughout the proposed works as required. The ESCP will be prepared in accordance with the Blue Book.	Contractor	Detailed design/pre-construction
SW4	Soil and water	Work areas are to be stabilised progressively during the works.	Contractor	Construction
SW5	Soil and water	Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
SW6	Soil and water	All stockpiles will be designed, established, operated and decommissioned in accordance with the Blue Book.	Contractor	Construction
SW7	Soil and water	Separation and stockpiling of soils into layers during the excavation phase, followed by further assessment by appropriately qualified personnel should be undertaken to finalise waste classifications in accordance with the NSW EPA Waste Classification Guidelines (2014).	Contractor	Construction
SW8	Soil and water	Controls would be implemented at construction zones exit points to minimise the tracking of material onto the road.	Contractor	Construction
SW9	Groundwater	Should the final design include exposure to groundwater or dewatering, a groundwater investigation undertaken to assess potential groundwater contamination. Should dewatering be required, a Dewatering Management Plan (DMP) is prepared that outlines monitoring procedures regarding the periodic measurements of estimated groundwater levels, flow and discharge volume, as well as the required measures to minimise risks of contamination, or other interference of the local aquifer system. The DMP will provide management procedures that will ensure any pumped-out groundwater discharged from site will be of an acceptable quality and complies with the requirements of the *Protection of the Environment Operations Act* 1997 (POEO 1997)	Council	Detailed design
SW10	Contaminated land	If unexpected contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Council Senior Manager Environment and Sustainability and/or EPA.	Contractor	Construction
SW11	Accidental Spill	A site-specific emergency spill plan will be developed and include spill-management measures in accordance with the Transport for NSW *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities.	Contractor	Construction
N1	General construction noise and vibration	A construction noise and vibration management plan (CNVMP) would be prepared for the proposal to mitigate and manage noise and vibration impacts during construction and would form part of the Construction Environmental Management Plan (CEMP). The CNVMP would be implemented for the duration of construction of the proposal and would: • Identify nearby sensitive receivers • Include a description of the construction equipment and working hours • Identify relevant noise and vibration performance criteria for the project and license and approval conditions • Identify relevant sleep disturbance screening levels • Outline noise and vibration objectives, standard and additional mitigation measures from the Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime Services, 2025) and information about when each would be applied	Contractor	Prior to commencement of construction, and during construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		• Outline requirements for noise and vibration monitoring that would be carried out to monitor project performance associated with the noise and vibration criteria • Describe community consultation and complaints handling procedures in accordance with the Community Communication Strategy to be developed for the project • Outline measures to manage sleep disturbance during night time work • Outline measures to manage noise impacts associated with construction heavy vehicle movements both on and off site. All personnel working on site would receive training to ensure awareness of requirements of the CNVMP. Site-specific training would be given to personnel when working in the vicinity of sensitive receivers		
N2	Construction hours	Proposed works should be completed during standard hours as much as practicable.	Contractor	During construction
N3	High noise activities and out of hours work	Location and activity specific noise and vibration impact assessments should be carried out prior to activities: • With the potential to result in noise levels above 75 dBA at any receiver • Required outside Standard Construction Hours likely to result in noise greater than the relevant Noise Management Levels • With potential to exceed relevant criteria for vibration. The assessments should be performed once detailed construction methods have been developed to confirm the predicted impacts at the relevant receivers in the vicinity of the activities to aid the selection of appropriate management measures, consistent with the requirements of the CNVG	Contractor	Prior to commencement of construction, and during construction
N4	High noise activities and out of hours work	Concrete cutting and mulching of cleared vegetation should be limited to standard hours where possible.	Contractor	During construction
N5	General vibration impacts	Where works are within the minimum working distances for vibration intensive equipment and considered likely to exceed the cosmetic damage objectives in the CNVG at adjacent receivers, construction work would not proceed unless: • A different construction method with lower source vibration levels is used, where feasible • Attended vibration measurements are carried out to determine any exceedances and if further mitigation is required.	Contractor	During construction
N6	Buried utilities	Where works are within 25 metres of buried utilities (e.g. water, power, gas, telecoms), consult with asset owners to establish appropriate vibration limits and management requirements, prepare a detailed vibration assessment for buried assets once detailed construction methods have been developed.	Contractor	During construction
N7	Heritage items	Heritage items within the safe working distances of vibration intensive work are to be considered on a case-by-case basis to establish structural integrity of each item and determine reasonable and feasible mitigation measures.	Contractor	During construction

No.	Impact	Environmental safeguards	Responsibility	Timing
TT1	Traffic and transport	Traffic Management Plan (TMP) must be developed prior to the commencement of construction. The TMP will be in accordance with the Transport for NSW *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The measures will include: • confirmation of haulage routes • measures to maintain access to local roads and properties • site-specific traffic control measures (including signage) to manage and regulate traffic movement • measures to maintain pedestrian and cyclist access • requirements and methods to consult and inform the local community of impacts on the local road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • a response plan for any construction traffic incident • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic monitoring, review and amendment mechanisms.	Contractor	Detailed design / Pre-construction
TT2	Traffic and transport	Requirements for any changes to existing access arrangements shall be confirmed in consultation with the local road authority and any affected landowners.	Contractor	Pre-construction/ Construction
TT3	Traffic and transport	Heavy vehicle traffic generated through construction shall be constrained to the arterial road network to minimise impacts on local roads.	Contractor	Construction
TT4	Traffic and transport	Property access will be maintained including access to residences and commercial premises. Where property access will be impacted during construction: • property owners will be notified at least five business days prior to the access impact • alternative access will be provided if available • access impacts will be minimised and access will be returned to the property owners as soon as possible	Contractor	Pre-construction/ Construction
VI1	Visual impacts	Opportunities to minimise visual impacts from the proposal will be explored during detailed design. These measures may include architectural treatment of the amenities building, landscaping/hardscaping, public artwork, consideration of materiality for retaining wall, and replacement planting. Advice from a suitably qualified urban designer, architect and/or landscape designer will be sought to determine these measures.	Contractor	Detailed design / Pre-construction
VI2	Visual impacts	Where architectural treatment or artwork is proposed to be painted of the retaining wall, relevant stakeholders will be consulted.	Contractor	Detailed design / Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
VI3	Visual impacts	Following the completion of construction works, plant/equipment will be removed, and disturbed areas will be revegetated, turfed or otherwise restored as appropriate.	Contractor	Construction
VI4	Visual Impacts	Work sites including all ancillary facilities will be managed to minimise visual impacts including consideration of screening, placement of facilities and storage areas and maintaining sites in a clean state with minimal visual clutter.	Contractor	Pre-construction / Construction
VI5	Street trees	Trees will be replaced in accordance with Cumberland Council's tree removal application.	Contractor	Construction
VI6	Lighting	Temporary site lighting will be shielded and directed away from sensitive receivers.	Contractor	Pre-construction / Construction
VI7	Lighting	The design of new street lighting will consider potential light spill impacts on adjacent properties and be designed and operated in accordance with AS4282:2023 Control of the Obtrusive Effect of Outdoor Lighting.	Contractor	Detailed design / Pre-construction
SE1	Socio-economic	A Communication Strategy (CS) will be prepared and implemented to help provide timely and accurate information to the community during construction. The CS will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions • contact name and number for complaints.	Contractor	Pre-construction/ construction
SE2	Access	Access to businesses and residents will be maintained during construction. Where temporary changes to access arrangements are necessary, the contractor will advise owners and tenants and consult with them in advance with regards to alternative access arrangements.	Contractor	Detailed design/ Construction
SE3	Access	Access to bus stops will be maintained during construction. Where changes to access arrangement are necessary, the contractor will advise those impacted.	Contractor	Detailed design/ Construction
AQ1	Air quality	Air Quality Management measures will be included and implemented as part of the CEMP. The AQMP will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or Office of Environment and Heritage (OEH) guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions a progressive rehabilitation strategy for exposed surfaces.	Contractor	Pre-Construction/ Construction
WA1	Waste	Waste management measures will be included and implemented as part of the CEMP. The waste management measures will include but not be limited to: • measures to avoid and minimise waste associated with the project • classification of wastes and management options (re-use, recycle, stockpile, disposal)	Contractor	Pre-Construction/ Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		• statutory approvals required for managing on- and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting.		
ACH1	Aboriginal cultural heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Construction
NAH1	Non-Aboriginal heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Construction
NAH2	Non-Aboriginal heritage	Heritage awareness training will be carried out for all site personnel in the form of a site induction or toolbox talk. This will include information and location of the known heritage sites in the vicinity of the proposal area and the Unexpected Heritage Items Procedure.	Contractor	Pre-Construction
NAH3	Non-Aboriginal heritage	The non-Aboriginal heritage items in the vicinity of the proposal will be marked on Environmental Control Maps or Sensitive Area Plans to be avoided.	Contractor	Pre-Construction
NAH4	Non-Aboriginal Heritage	Safe working distances outlined in the *Construction Noise and Vibration Guideline* (CNVG) should be adhered to where possible. Where safe working distances cannot be adhered to, advice from the Council Environmental Officer or a Noise and Vibration subject matter expert would be sought before proceeding with the work.	Contractor	Pre-Construction/ Construction
HZ1	Hazards and risk management	Hazard and Risk management measures will be included and implemented as part of the CEMP. The CEMP will include, but not be limited to: • details of hazards and risks associated with the activity • measures to be implemented during construction to minimise these risks • record keeping for materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • contingency measures to be implemented in the event of unexpected hazards, risks arising and emergency situations. • The CEMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or OEH publications.	Contractor	Pre-Construction/ Construction
HZ2	Hazards and risk	If an incident (eg spill) occurs, the site-specific emergency spill plan is to be followed and the Council Environmental Manager notified as soon as practicable.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
CI1	Cumulative impacts	Coordination with other projects will occur where required to ensure any potential cumulative impacts to nearby stakeholders are managed.	Community Manager Project Manager	Construction

7.3 Licensing and approvals

Table 7-2: Summary of licensing and approvals required

Instrument	Requirement	Timing
Roads Act 1993 (s138)	Road occupancy licence	Prior to start of the activity.

8. Conclusion

This chapter provides the justification for the proposal taking into account its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal is also considered in the context of the objectives of the EP&A Act, including the principles of ecologically sustainable development as defined in Section 193 of the Environmental Planning and Assessment Regulation 2021.

8.1 Justification

The proposal is consistent with several government strategic plans including *Future Transport Strategy, Central City District Plan, State Infrastructure Strategy 2018-2023: Building Momentum* and *Cumberland City Council Community Strategic Plan 2017-2027*. The proposal has been developed to:

- Reduce congestion to improve travel time and reliability of the local road network for different road users
- Improve overall road safety for vulnerable road users and active transport accessibility travelling in and around Toongabbie Station precinct

The proposal would result in several environmental impacts which have been assessed and identified in this REF including, biodiversity, traffic and transport, soils and contamination, noise and vibration and visual impacts. The implementation of the safeguards and management measures within this REF would mitigate these impacts and ensure the benefits of the project outweigh any adverse impacts.

8.2 Objects of the EP&A Act

A review of the proposal against the objectives of the EP&A Act is contained in Table 8-1.

Table 8-1 Objects of the Environmental Planning and Assessment Act 1979

Instrument	Requirement
1.3(a) To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The proposal would improve the provision and efficiency of the local network. Environmental impacts have been assessed and minimised.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	The principles of ESD are considered in Section 8.2.1.
1.3(c) To promote the orderly and economic use and development of land.	The proposal is consistent with strategic plans for growth within the economic corridor.
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the project.
1.3(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	There would be environmental impacts as a result of the proposal however no significant impacts to threatened native flora and fauna are anticipated.
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	Impacts on Aboriginal and non-aboriginal heritage are assessed in Section 6.7. No impacts to heritage are anticipated.
1.3(g) To promote good design and amenity of the built environment.	Impacts on visual impacts and amenity are assessed in Section 6.5. The proposal presents an opportunity to create Junia Avenue Service Road into a pedestrian plaza space,

Instrument	Requirement
	which would address the impacts upon pedestrian amenity and town centre experience.
1.3(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	Not relevant to the project.
1.3(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	Not relevant to the project.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	Consultation with the community will be undertaken through display of this REF as identified in Section 5.

8.2.1 Ecologically sustainable development

Ecologically sustainable development (ESD) is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The principles of ESD have been an integral consideration throughout the development of the project.

ESD requires the effective integration of economic and environmental considerations in decision-making processes. The four main principles supporting the achievement of ESD are discussed below.

The precautionary principle

The precautionary principle deals with reconciling scientific uncertainty about environmental impacts with certainty in decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

This principle was considered during route options development (refer to Chapter 2). The precautionary principle has guided the assessment of environmental impacts for this REF and the development of mitigation measures. In particular, it is noted:

- The best-available technical information, environmental standards and measures have been used to minimise environmental risks.
- Specialist studies were incorporated to gain a detailed understanding of the existing environment.

Intergenerational equity

Social equity is concerned with the distribution of economic, social and environmental costs and benefits. Inter-generational equity introduces a temporal element with a focus on minimising the distribution of costs to future generations.

Benefits that the project provides to current and future generations of local communities and the surrounding region, that would maintain or enhance the health, diversity and productivity of the environment, were identified. These include:

- Improved safety for pedestrians, cyclists and road users
- Optimisation of the network and improving movement within the existing infrastructure

Conservation of biological diversity and ecological integrity

The design of the proposal was chosen to minimise the impact on vegetation. Where this was not possible, measures have been included for compensatory planting. The proposal is not expected to have significant impacts on biological diversity or ecological integrity.

Improved valuation, pricing and incentive mechanisms

The principle of internalising environmental costs into decision making requires consideration of all environmental resources that may be affected by the carrying out of a project, including air, water, land and living things.

The assessment undertaken for the proposal included the following:

- environmental issues were considered as key matters in the route selection process and in the economic and financial feasibility assessments for the project
- the value of the project to the community in terms of improved safety was recognised

- mitigation measures for the avoidance, reuse, recycling and management of waste during construction and operation are to be implemented.

8.3 Conclusion

The proposed local network enhancements at Toongabbie Station precinct is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

This has included consideration impacts on threatened species and ecological communities and their habitats, and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the EPBC Act.

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal, as described in the REF, best meets the project objectives but would still result in some impacts on traffic and transport, biodiversity, noise and vibration and visual amenity. Safeguards and management measures as detailed in this REF would ameliorate or minimise these expected impacts. The proposal would also improve safety and performance of the local network. On balance, the proposal is considered justified and the following conclusions are made.

Significance of impact under NSW legislation

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared nor approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required. The proposal is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required.

Significance of impact under Australian legislation

The proposal is not likely to have a significant impact on matters of national environmental significance nor the environment of Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999 (*Commonwealth). A referral to the Australian Department of Climate Change, Energy, the Environment and Water is not required.

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9. Certification

This review of environmental factors provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposal.

Name:	Ellen Folwer/Cameron Weller
Position:	Environmental Consultant/Principal Environmental Consultant
Company name:	Hutchison Weller Pty Ltd
Date:	04 February 2026

I certify that I have reviewed and endorsed the contents of this REF and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under Section 170 of the EP&A Regulation, and the information is neither false nor misleading. I accept it on behalf of Cumberland City Council

Name:

Position:

Date:

10. EP&A Regulation publication requirement

Table 10-1 EP&A Regulation publication requirement

Requirement	Yes/No
Does this REF need to be published under section 171(4) of the EP&A Regulation?	Yes

11. References

Transport for NSW (2022) *Future Transport Strategy*. Sydney: Transport for NSW

Greater Sydney Commission (2018) *Greater Sydney Region Plan: A Metropolis of Three Cities.* Sydney: Greater Sydney Commission

Greater Sydney Commission (2018) *Central City District Plan.* Sydney: Greater Sydney Commission

Infrastructure NSW (2018) *State Infrastructure Strategy 2018-2038: Building Momentum.* Sydney: Infrastructure NSW

Cumberland City Council (2017) *Cumberland City Council Community Strategic Plan 2017-2027.* Sydney: Cumberland City Council

Transport for NSW (2023) *Urban Design Policy - Beyond the Pavement.* Sydney: Transport for NSW

Austroads (2024) *Guide to Pavement Technology Part 2: Pavement Structural Design.* Sydney: Austroads

Transport for NSW (2023) *Construction Noise and Vibration Guideline.* Sydney: Transport for NSW

Department of Environment and Climate Change (2009) *Interim Construction Noise Guideline.* Sydney: Department of Environment and Climate Change

Environment Protection Authority. (2017). *Noise Policy for Industry*. Sydney: Environment Protection Authority.

Terms and acronyms used in this REF

Table 11-1 Terms and acronyms used in this REF

Term / Acronym	Description
AEP	Annual exceedance probability
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ARI	Average Recurrence Interval
ASS	Acid Sulfate Soils
BC Act	*Biodiversity Conservation Act 2016 (NSW)*
CBD	Central Business District
CEMP	Construction environmental management plan
CICs	Classified Intersection Counts
CLM Act	*Contaminated Land Management Act 1997 (NSW)*
CO	Carbon Monoxide
CS	Communication Strategy
EIA	Environmental impact assessment
EP&A Act	*Environmental Planning and Assessment Act 1979 (NSW).* Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*. Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	*Fisheries Management Act 1994 (NSW)*
Heritage Act	*Heritage Act 1977 (NSW)*
ICNG	*Interim Construction Noise Guideline (NSW DECC 2009)*
Km	Kilometre
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LGA	Local Government Area
LoS	Level of Service. A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers
M	Metre
mBGL	Metres below ground level
Mm	Millimetre
MNES	Matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
NEPH	NEPH represents measurements reported by a nephelometer, as a measure of light scattering or reduction due to atmospheric particulate matter

NML	Noise Management Level
NO2	Nitrogen Dioxide
NPW Act	*National Parks and Wildlife Act 1974 (NSW)*
NSW	New South Wales
O3	Ozone
OEH	Office of Environment and Heritage within the Department of Planning and Environment.
OSR	Other sensitive receivers
POEO Act	*Protection of the Environment Operations Act 1997 (NSW)*
PM	stands for 'particulate matter', which is an airborne mixture of solid particles and liquid droplets.
PM2.5	Fine particles less than 2.5 µm in diameter.
PM10	Particles less than 10 micrometers (µm) in diameter.
PNTL	Project noise trigger level
RCP	Reinforced Concrete Pipe
REF	Review of Environmental Factors
RMS	NSW Roads and Maritime Services, now Transport for NSW
ROL	Road Occupancy Licence
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
SEPP (Biodiversity and Conservation)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SEPP (Planning Systems)	State Environmental Planning Policy (Planning Systems) 2021
SEPP (Precincts – Central River City)	State Environmental Planning Policy (Precincts – Central River City) 2021
SEPP (Precincts – Eastern Harbour City)	State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021
SEPP (Precincts – Regional)	State Environmental Planning Policy (Precincts – Regional) 2021
SEPP (Resilience and Hazards)	State Environmental Planning Policy (Resilience and Hazards) 2021
SEPP (Transport and Infrastructure)	State Environmental Planning Policy (Transport and Infrastructure) 2021
SO2	Sulfur Dioxide
T	Tonne
TCS	Traffic Control Signal
TMP	Traffic Management Plan
VDV	Vibration Dose Value
VEM	Visual Envelope Map
WARR Act	*Waste Avoidance and Resource Recovery Act (2001) NSW*

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Appendix A - Consideration of section 171 factors and matters of national environmental significance and Commonwealth land

Section 171 Factors

In addition to the requirements of the Guideline for Division 5.1 assessments (DPE 2022) and the Roads and Related Facilities EIS Guideline (DUAP 1996) as detailed in the REF, the following factors, listed in section 171 of the Environmental Planning and Assessment Regulation 2021, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a Any environmental impact on a community? The proposal would have impacts during construction (noise, visual, traffic) but would improve the efficiency of the local network and improve public domain over the longer term	Short-term negative Long-term positive
b Any transformation of a locality? The proposal would have a positive impact by improving the public domain with Junia Avenue Shared Zone	Short-term negative Long-term positive
c Any environmental impact on the ecosystems of the locality? The proposal involves the removal of trees and vegetation that do not support ecosystems due to their heavily fragmented nature.	Minor short-term negative
d Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposal would have visual impacts associated with the retaining wall and removal of trees. These would reduce over time with the implementation of appropriate landscaping and design measures from the Junia Avenue Shared Zone	Moderate short-term Long-term positive
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? The proposal is not expected to affect Aboriginal or non-Aboriginal heritage.	Nil
f Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)? The proposal is not expected to impact the habitat of protected fauna.	Nil
g Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The project includes the removal of 0/21ha of PCT 3320 and 0.06ha of Urban Native/Exotic vegetation. The vegetation within the proposal area is generally in poor condition and located within a disturbed landscape that makes potential use by threatened fauna species unlikely.	Minor short-term negative
h Any long-term effects on the environment? The proposal would improve the safety of road users and lead to improved provision of public transport services in the area.	Long-term positive
i Any degradation of the quality of the environment? Some degradation on the quality of the environment is expected during construction (noise, visual). Mitigation measures proposed in the REF would minimise these impacts	Minor short-term negative
j Any risk to the safety of the environment? The proposal does not represent a risk to the safety of the environment.	Nil
k Any reduction in the range of beneficial uses of the environment? The proposal would not reduce the range of beneficial uses of the environment.	Nil
l Any pollution of the environment?	Nil

Factor	Impact
No pollution of the environment is expected as a result of the construction or operation of the proposal following implementation of the proposed management measures.	
m Any environmental problems associated with the disposal of waste? No major impacts associated with the disposal of waste are expected with the implementation of the proposed management measures. Any waste generated on site would be disposed of in accordance with the relevant legislation.	Nil
n Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The proposal would not increase the demand on resources that are, or are likely to become, in short supply. .	Nil
o Any cumulative environmental effect with other existing or likely future activities? No cumulative impacts are expected as a result of the proposal.	Nil
p Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? No impact on coastal processes and coastal hazards are expected as a result of the proposal.	Nil
q Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1, The relevant regional strategic plan is the Greater Sydney Region Plan: A Metropolis of Three Cities (Greater Sydney Commission, 2018). The relevant district plan is the Eastern City District Plan (Greater Sydney Commission, 2018). The relevant local strategic planning statement is Cumberland City Council Community Strategic Plan 2017-2027	Consistent
r Other relevant environmental factors.	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to Chapter 6 of this assessment.

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Department of Climate Change, Energy, the Environment and Water.

A referral is not required for proposed actions that may affect nationally-listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor	Impact
s Any impact on a World Heritage property? The proposal would have no impact on a World Heritage property.	Nil
t Any impact on a National Heritage place? The proposal would not have any impact on a National Heritage Place.	Nil
u Any impact on a wetland of international importance? No impacts on a wetland of international importance as a result of the proposal are expected.	Nil

Factor	Impact
v Any impact on a listed threatened species or communities? Assessments of significant impact under BC Act and EPBC Act were undertaken, and it was determined that no significant impact to any threatened species or communities was likely occur. Further details are contained in Section 6.1	Nil
w Any impacts on listed migratory species? No impact on list migratory species is expected as a result of the proposal.	Nil
x Any impact on a Commonwealth marine area? The proposal would not have any impact on a Commonwealth marine area.	Nil
y Does the proposal involve a nuclear action (including uranium mining)? The proposal does not involve a nuclear action.	Nil
z Additionally, any impact (direct or indirect) on the environment of Commonwealth land? The proposal would not impact Commonwealth land.	Nil

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Appendix B - Statutory consultation checklists

Transport and Infrastructure SEPP

Certain development types

Development type	Description	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Car Park	Does the project include a car park intended for the use by commuters using regular bus services?	No		Section 2.110
Bus Depots	Does the project propose a bus depot?	No		Section 2.110
Permanent road maintenance depot and associated infrastructure	Does the project propose a permanent road maintenance depot or associated infrastructure such as garages, sheds, tool houses, storage yards, training facilities and workers' amenities?	No		Section 2.110

Development within the Coastal Zone

Development type	Description	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Development with impacts on certain land within the coastal zone	Is the proposal within a coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land?	No		Section 2.14

Note: See interactive map at ***Planning Portal NSW spatial viewer - find a property***. Note the coastal vulnerability area has not yet been mapped.

Note: a certified coastal zone management plan is taken to be a certified coastal management program.

Council related infrastructure or services

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Stormwater	Are the works likely to have a *substantial* impact on the stormwater management services which are provided by council?	No		Section 2.10
Traffic	Are the works likely to generate traffic to an extent that will *strain* the capacity of the existing road system in a local government area?	No		Section 2.10
Sewerage system	Will the works involve connection to a council owned sewerage system? If so, will	No		Section 2.10

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
	this connection have a *substantial* impact on the capacity of any part of the system?			
Water usage	Will the works involve connection to a council owned water supply system? If so, will this require the use of a *substantial* volume of water?	No		Section 2.10
Temporary structures	Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a *minor* or *inconsequential* disruption to pedestrian or vehicular flow?	Yes	The proposal will involve the installation of temporary structures on a public place under the control of the Cumberland City Council. No more than a minor or inconsequential disruption to pedestrian or vehicular flow is expected.	Section 2.10
Road & footpath excavation	Will the works involve more than *minor* or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	No		Section 2.10

Local heritage items

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Local heritage	Is there is a local heritage item (that is not also a State heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?	No		Section 2.11

Flood liable land

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Flood liable land	Are the works located on flood liable land? If so, will the works change flood patterns to more than a *minor* extent?	No		Section 2.12

Flood liable land	Are the works located on flood liable land? (to any extent). If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?	No		Section 2.13

Note: Flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled Floodplain Development Manual: the management of flood liable land published by the New South Wales Government.

Public authorities other than councils

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
National parks and reserves	Are the works adjacent to a national park or nature reserve, or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	No	Environment and Heritage Group, DPE	Section2.15
National parks and reserves	Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	No	Environment and Heritage Group, DPE	Section 2.15
Navigable waters	Do the works include a fixed or floating structure in or over navigable waters?	No	Transport for NSW - Maritime	Section 2.15
Bush fire prone land	Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional centre or group home in bush fire prone land?	No	Rural Fire Service (RFS) [Refer to the NSW RFS publication: *Planning for Bush Fire Protection (2006)*]	Section 2.15
Artificial light	Would the works 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? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	No	Director of the Siding Spring Observatory	Section 2.15
Defence communications buffer land	Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in section 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011.	No	Secretary of the Commonwealth Department of Defence	Section 2.15
Mine subsidence land	Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	No	Mine Subsidence Board	Section 2.15

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SEPP (Precincts – Central River City) 2021 and SEPP (Precincts – Western Parkland City) 2021

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP section
Clearing native vegetation	Do the works involve clearing native vegetation (as defined in the *Local Land Services Act 2013*) on land that is not **subject land** (as defined in cl 17 of schedule 7 of the *Threatened Species Conservation Act 1995*)?	No	Department of Planning and Environment	Section 3.24

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Appendix C – Biodiversity Assessment Report

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Appendix D – Noise and Vibration Impact Assessment

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Appendix E – Geotechnical Investigation Report

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Appendix F – Traffic Impact Assessment

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Appendix G – AHIMS Search Results

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