Transport for NSW

Picton Road upgrade between Nepean River and Almond Street, Wilton

REF submissions report

November 2024

Artist impression view of shared path west of Janderra Lane

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Acknowledgement of Country

The Picton Road is on Dharawal Country. Transport for NSW recognises and celebrates the diversity of Aboriginal peoples and their ongoing culture, spiritual beliefs and connections to Country.

We acknowledge Aboriginal Elders past and present and thank Aboriginal stakeholders and Registered Aboriginal Parties for your continued communications and consultation during these early stages of development. As part of planning for the upgrade, Transport has carried out investigations and worked with Dharawal knowledge holders, Registered Aboriginal Parties, Traditional Owners and other Aboriginal stakeholders to understand potential impacts to Aboriginal heritage and cultural values.

These investigations have included workshops, interviews, walks on Country, consultation events and forums to collect information about cultural heritage in the Picton Road area.

Many of the transport routes we use today –from rail lines, to roads, to water crossings –follow the traditional Songlines, trade routes and ceremonial paths on Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

Executive summary

The proposal

Transport for NSW (Transport) proposes to upgrade Picton Road between the Nepean River and Almond Street in Wilton, New South Wales (NSW) (the proposal). The proposal includes upgrading the section of Picton Road from about 1.3 kilometres east of the bridge over the Nepean River to about 200 metres east of Almond Street, including the M31 Hume Motorway interchange.

The proposal forms the western section of the broader Picton Road upgrade, which involves upgrading about 30 kilometres of Picton Road between the Nepean River and the M1 Princes Motorway.

Key features of the proposal include:

- Widening and upgrading Picton Road for a distance of about five kilometres between the Nepean River and Almond Street to provide:
  - A minimum of two 3.5-metre-wide traffic lanes in each direction with a central median, increasing to three traffic lanes in each direction approximately between the Wilton Park Road and Aerodrome Drive intersection and the Pembroke Parade and Greenway Parade intersection.
  - Three-metre-wide shoulders on the left lane side in each direction.
- Upgrading the existing Picton Road and M31 Hume Motorway interchange into a diverging diamond layout, including:
  - Removing the existing Picton Road bridge and constructing two new bridges over the M31 Hume Motorway.
  - Upgrading and realigning on and off ramp connections with the M31 Hume Motorway to suit the new interchange layout and to allow free flow of traffic between Picton Road and the M31 Hume Motorway.
  - Providing a new four-metre-wide shared user path along the southern bridge.
  - Removing the existing traffic signals on Picton Road and installing new traffic signals with more efficient phasing and more traffic capacity.
- New and upgraded shared paths on Picton Road, including grade separation through the ramp connections with the M31 Hume Motorway, located:
  - Adjacent to the westbound slow lane of the proposal from the western extent to around 420 metres west of Almond Street to connect with planned active transport infrastructure to be delivered as part of the South East Wilton development.
  - Adjacent to the eastbound slow lane between Aerodrome Drive and the western extent of the proposal and between Pembroke Parade and Almond Street.
- Reconfiguring the existing Picton Road intersections with Wilton Park Road, Aerodrome Drive, Janderra Lane and Almond Street into left-in, left-out only (the timing of delivery of the reconfigured Almond Street intersection is subject to confirmation of timeframes for delivery of other road works planned at the intersection).
- Integration with new traffic signals and widening roadworks constructed in 2023 at the intersection of Picton Road, Pembroke Parade and Greenway Parade.
- Adjusting the posted speed from the western extent of the proposal, through the interchange and to the east of Pembroke Parade to 60 kilometres per hour.

Display of the Review of Environmental Factors

Transport prepared a Review of Environmental Factors (REF) for the Picton Road upgrade between Nepean River and Almond Street, Wilton. The REF was published on the Transport project website and made available

for download. Hard copies of the REF were also publicly displayed between Thursday 1 February 2024 and Thursday 14 March 2024 at:

- Wollondilly Shire Council – Frank McKay Building, 62-64 Menangle Street, Picton NSW 2571
- Wollondilly Library – 42 Menangle St, Picton NSW 2571

The public display period was advertised in the Illawarra Mercury and The District Reporter, as well as via radio ads on Wave FM, 2SM, i98 and C91.3. A 'Have your say' postcard, project update and Aboriginal community update were also distributed via post and to stakeholder mailing lists. Online engagement included the interactive portal, webpage updates and social media posts on the Transport Facebook page.

During the display period, drop-in community information sessions were held at:

- Wollondilly Shire Hall – 52 Menangle Street, Picton, NSW 2571
- Wilton Plaza – 1 Greenbridge Drive, Wilton NSW 2571
- Wilton Community Centre – 20 Broughton Street, Wilton NSW 2571.

During this time, Transport invited the public to provide feedback on the proposal. Transport also met with various residents, businesses and other stakeholders who would be directly and/or indirectly affected by the proposal.

This submissions report considers all submissions received during display of the REF.

Summary of issues and responses

Public display of the REF and the supporting consultation resulted in a total of 103 submissions, of which 89 were from the general community, one was from Wollondilly Shire Council, three were from State Government agencies, nine were from businesses and one was from a utility service provider.

The majority of submissions received were supportive of an upgrade to Picton Road with many requesting that the project be delivered as quickly as possible or fast tracked.

Of the submissions received, 23 per cent fully supported the proposal, and eight per cent objected to the proposal. Around half (52 per cent) raised concerns with elements of the design solution, with many still acknowledging that an upgrade to Picton Road was needed. The remaining 17 per cent of submissions offered no position on whether they supported or objected to the proposal.

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

Needs and options considered

Many respondents acknowledged a need for the upgrade of the M31 Hume Motorway and Picton Road interchange however disagreed with elements of the proposed Diverging Diamond Interchange design solution. About 21 per cent of respondents suggested alternative design solutions, including interchange layouts such as a cloverleaf, roundabout and signalised double point diamond with flyover.

Transport carried out a comprehensive options identification and assessment process to determine the preferred option for the interchange. A wide range of options were identified during the initial strategic phase, which were considered internally and in consultation with the then Department of Planning and Environment, now Department of Planning, Housing and Infrastructure. Following an initial assessment, many of these options, such as the cloverleaf and roundabout, were considered not feasible to progress due to their scale and potential impacts on biodiversity and land use.

Between 2011 and 2014, 13 potential options including options with flyovers, free flow from Picton Road to the M31 Hume Motorway, roundabouts instead of signals, and four-way signalisation of the interchange were identified. In 2018, these 13 options were then refined down to seven potential options including free flow trumpets, signalised double point diamond, single point fast diamond and the Diverging Diamond Interchange amongst others.

In 2021, a Value Management Workshop was held over two days through which three options were shortlisted. The workshop included Transport stakeholders, subject matter experts as well as a representative from Wollondilly Shire Council.

The preferred option was selected following a comprehensive multi-criteria analysis of these three shortlisted options carried out in 2022 in consultation with stakeholders, as outlined in section 2.4.1 of the REF, and presented in the Picton Road and M31 Hume Motorway Interchange Preferred Option Report. The assessment criteria considered during this process were:

- safety
- transport and performance
- environment and sustainability
- constructability.

The traffic and performance criteria was based on modelling completed using the latest available population and employment growth data from Department of Planning, Housing and Infrastructure for 2036 and 2056.

Overall, during the options assessment process, the Diverging Diamond Interchange was found to deliver the required capacity and have the least impact to the surrounding area while improving safety, reliability and efficiency when compared to other options.

Specifically, the Diverging Diamond was determined to be the best performing option overall as it:

- performs well in this situation where there is a strong peak flow, allowing for signal phasing to be adjusted to maximise green time for the peak direction
- allows for free flowing of traffic travelling south-east from the M31 Hume Motorway towards Wollongong and north-west from the M31 Hume Motorway towards Picton
- has sufficient capacity to perform well until at least 2046, taking into account traffic growth, with a maximum wait time of 34 seconds for the slowest movement during peak time in 2046
- reduces environmental and property impacts by having the smallest footprint of the shortlisted options
- provides for safer journeys by reducing conflicts from right-hand-turn movements
- improves freight efficiency now and into the future as freight volumes increase
- minimises impacts during construction by allowing the majority of construction to occur away from the live traffic environment, minimising disruptions and improving safety for road users and construction workers
- encourages active transport use by providing the shortest path for active transport access.

While a new design to NSW, Diverging Diamond Interchanges have been introduced in Queensland and are relatively common internationally where they have been found to operate safely and efficiently and be easy for road users to navigate. The design of the Diverging Diamond Interchange complies with international and Queensland Government guidelines.

Proposal description

Use of signals at the Picton Road/M31 Hume Motorway interchange

About 23 per cent of respondents acknowledged that the upgrade of the Picton Road/M31 Hume Motorway interchange was needed, however raised concerns about the inclusion of traffic signals in the design of the interchange. These concerns generally related to the current experience with queuing due to the need to go through two sets of signals and the impact this would have on the efficient operation of the interchange in the future.

The Diverging Diamond Interchange design provides additional lanes for through and right turning traffic to cross the opposing carriageway under the safety of signalised intersections, which facilitates free flowing turns when exiting Picton Road onto the M31 Hume Motorway.

The majority of traffic travelling through the interchange would be stopped at no more than one set of traffic signals. Traffic travelling south from the M31 Hume Motorway towards Wollongong and north from the M31 Hume Motorway towards Picton would be free flowing. Vehicles travelling from Wollongong to Sydney or from Picton to Goulburn would only be stopped at a maximum of one set of traffic signals.

The traffic signals in the Diverging Diamond Interchange would have simplified traffic light phasing which, together with the extra capacity, would also provide increased green time and improved traffic flow when compared to the existing arrangement, particularly for vehicles travelling in the peak direction.

The design of the Diverging Diamond Interchange has allowed for population and employment growth projections provided by the Department of Planning, Housing and Infrastructure for 2046, at which time the Wilton Growth Area is expected to have been developed in line with the Wilton 2040 plans.

The traffic modelling completed shows traffic flow efficiency through the Diverging Diamond Interchange is not compromised by the traffic lights, with the interchange performing at a good Level of Service with acceptable delays (up to 34 seconds for the slowest movement at peak time) with spare capacity in 2046.

The current interchange is already operating at capacity (as of 2022), with excessive delays for some movements. Without the proposal, it is projected that the current interchange would be operating well over capacity by 2046, with over 2.5 minute average delays at the eastern traffic signals during the afternoon peak.

The biggest delay currently experienced at the interchange is for vehicles traveling northbound on the M31 Hume Motorway, exiting onto Picton Road to travel east towards Wollongong during the morning peak. These vehicles currently experience an average delay of about 5 minutes (2022). Without the proposal, this would worsen to an average delay of about 12 minutes in 2046. In comparison, with the Diverging Diamond Interchange in place, it is projected that vehicles making this movement in the morning peak in 2046 would only experience a delay of 19 seconds.

Left-in, left-out arrangement at the Picton Road intersection with Almond Street

About 23 per cent of respondents raised concerns about the proposed left-in, left-out arrangement at the Almond Street intersection with Picton Road. The key concerns were generally related to:

- *Timing of the developer-funded grade-separated crossing, and concerns that the left-in, left-out arrangement may be in place ahead of the grade-separated crossing, in which case the following potential impacts were raised:*
  - *How it would affect the right turn movement onto Picton Road.*
  - *Longer travel distance would be required for opportunities to perform a safe right turn or U-turn onto Picton Road, adding to travel times and fuel consumption.*
  - *Restrictions could impact the safety of residents and effectiveness and safety of emergency services operations during bushfire evacuation and management.*
- *Current intersection layout is unsafe and requires intervention.*

Within the proposal as displayed, the reconfiguration of the Almond Street intersection to left-in, left-out movements would be staged if required to align with the developer-funded grade separated interchange at Almond Street (the Almond Street interchange) and Picton Road connections, as described in section 3.1.2 of the REF. As such, all traffic movements, i.e. right and left turns, would be maintained in the existing intersection layout until the grade-separated crossing at this location and new connections are constructed.

In response to community and stakeholder feedback through submissions, alternative intersection arrangements for Almond Street (a channelised turning lane) would be built as an interim measure as part of Stage 1 if the proposal precedes the delivery of Almond Street interchange. This updated configuration of the Almond Street and Picton Road intersection in Stage 1 improves safety while maintaining all existing movements, including the right turn out and left turn out of Almond Street onto Picton Road, the right turn onto Almond Street from Picton Road and a dedicated through lane onto Picton Road travelling westbound.

The updated configuration for this intersection would be constructed in Stage 1 of the proposal. The remaining construction work to be carried out in Stage 2, once the Almond Street interchange has been constructed, would involve the removal of the interim pavement markings and median for the channelised right turn, rehabilitation of the pavement, and installation of pavement marking, median barrier and road furniture for the ultimate arrangement.

Temporary traffic management arrangements and changes to allowable traffic movements may be required during construction for the safety of motorists. Transport would provide advanced notice of temporary arrangements during construction.

Left-in, left-out arrangement at the Picton Road intersection with Wilton Park Road

About 18 per cent of respondents raised concerns about the proposed left-in, left-out arrangement at the Wilton Park Road intersection with Picton Road. The key concerns were generally related to:

- *Long travel distance would be required for opportunities to perform a safe right turn or U-turn onto Picton Road, adding to travel times and fuel consumption.*
- *Restrictions could impact the safety of residents and effectiveness and safety of emergency services operations during bushfire evacuation and management.*

A left-in, left-out arrangement at Wilton Park Road would be implemented, however, in response to feedback, a U-turn facility would also be installed about 100 metres west of Wilton Park Road until such time as the new Wilton Park Road intersection, to be funded by developers, is installed. The U-turn facility would provide traffic from Wilton Park Road with a safe way to connect to the eastbound lanes on Picton Road without needing to use the longer detour proposed in the REF. This arrangement would be constructed as part of Stage 1 of the proposal and would remain in place until the new Wilton Park Road intersection has been constructed in accordance with the Wilton 2040 Infrastructure Phasing Plan.

To further support emergency response operations in this location, emergency service vehicles travelling east on Picton Road will also be permitted to make a U-turn at the lights in the Hume Motorway/Picton Road interchange to access Wilton Park Road.

Consultation during REF process

About 21 per cent of respondents raised concerns with aspects of the communications materials and/or the consultation process, with some of these respondents suggesting that Transport did not adequately communicate information or incorporate community feedback throughout development of the proposal.

Consultation carried out for the proposal prior to the REF display is summarised in section 5 of the REF, and has included print, radio and social media advertising, media releases, website updates, online surveys and interactive mapping tools, email updates to project subscribers and freight stakeholders, letterboxed postcards, project updates and notifications. The 'Have Your Say' engagement activities collected feedback that was considered in the development of the REF (see section 5 of the REF). Additional consultation was also completed to inform the Socio-Economic Impact Assessment (Appendix L of the REF).

The selection of the preferred option for the interchange as well as the development of the concept design and environmental assessment, integrated feedback from the community, Wollondilly Shire Council and the Department of Planning, Heritage and Infrastructure, as well as other stakeholders (see section 5.6 of the REF).

Transport has also carried out ongoing consultation with Wollondilly Shire Council, including the Wollondilly Local Emergency Management Committee, the Department of Planning, Housing and Infrastructure, local emergency services, NSW Ports and WaterNSW during and following development of the REF (see section 4 of this report). Transport will continue to work closely with local and State Government agencies as the development and delivery of the proposal progresses.

Transport will continue to actively engage with the community and key stakeholders to inform planning and development for the upgrade of Picton Road. Transport uses a mix of modern and traditional ways to engage with the community during options and design development to ensure we optimise opportunities for feedback. Transport has a dedicated project phone number, email, and website to assist managing and responding to customer enquiries during the project development and planning phases.

Biodiversity

About 16 per cent of respondents raised concerns about impacts to native vegetation and fauna, and the lack of fauna connectivity across the road corridors.

The proposal has the potential for some biodiversity impacts that would be managed by implementing the safeguards proposed in section 7.2 of this Submissions Report. Transport is committed to and is working with other State Government agencies in coordinating the management of cumulative impacts on threatened species and ecological communities across projects.

In response to submissions, drainage at the western extent of the proposal has been optimised and the proposal site has been refined. As a result, impacts to 144 square metres of 'avoided land' mapped under the Cumberland Plains Conservation Plan (CPCP) has been removed. This 'avoided land' comprised PCT1395

Shale Sandstone Transition Forest in the Sydney Basin Bioregion which is a Critically Endangered Ecological Community (CEEC) and habitat to threatened species such as Koalas and Large-eared Pied Bats. No revisions to the offset calculations as outlined in section 6.1.6 and Appendix C of the REF have been completed at this stage. A Biodiversity Offset Strategy would be completed during the detailed design phase based on final expected impacts.

The Biodiversity Assessment Report found that, given the connectivity of vegetation through the study area and region, and the nature of the proposed works being removal of linear areas of vegetation adjacent to existing road infrastructure, the current level of connectivity is considered to be maintained within the landscape and the proposed works are not expected to result in additional fragmentation of habitat for any species. A separate Transport project includes the delivery of fauna fences and biodiversity connectivity improvements along Picton Road and the M31 Hume Motorway directly adjacent to the proposal. Further information is available at: Koala Fencing – Hume Motorway, Wilton Review of Environmental Factors.

Traffic and transport

About 26 per cent of respondents raised concerns about existing and projected traffic within the region, impacts of the proposal on the surrounding road network and concerns about insufficient planning for future traffic growth.

Observations made by the community are reflective of issues of existing congestion and intersection performance outlined in Table 6-17 of the REF.

The proposal has been designed considering projected population and employment growth, changes in land use and traffic growth for 2046. Based on the forecast traffic demand in 2046, the M31 Hume Motorway and Picton Road Diverging Diamond Interchange is expected to provide a significant improvement in performance of the interchange when compared to the 'do nothing' scenario of retaining the existing arrangement.

Once operational, all intersections upgraded as part of the proposal, including the Diverging Diamond Interchange, are predicted to operate at an acceptable or higher Level of Service (LoS) in both the morning and afternoon peak periods in 2046 with a maximum delay of 34 seconds for the slowest movement at peak time.

The proposal would also:

- improve resilience by providing additional capacity to manage vehicle movements during disruptions
- improve accessibility by enabling longer combinations of large heavy vehicles and improved oversize and/or overmass vehicle access due to the improved road geometry, especially at the interchange
- improve safety as traffic movements controlled by traffic lights, with simplified traffic light phasing, providing increased green time within the interchange and more traffic capacity and free flow left turn to the M31 Hume Motorway.

Noise and vibration

About 10 per cent of respondents commented about the existing noise and vibration within the proposal site and at adjacent neighbours, with a further eight per cent raising concerns about how the proposal would result in operational noise and vibration from vehicles travelling along Picton Road, particularly heavy vehicle traffic. Some respondents also raised concerns about the potential for additional noise and vibration on local roads from increased traffic flows in the future.

Predicted noise levels at each receiver were assessed against existing conditions, including consideration of future and existing residents and noise mitigation measures based on approved development applications. The Transport's Road Noise Mitigation Guidelines were used to determine whether additional noise mitigation measures were required as a result of the proposal. Of the 26 identified residential receivers that may qualify for consideration of noise mitigation, 18 are future residential receivers located within the Stage 1 Wilton Greens development. Houses built in this development are subject to Development Approval requirements which include noise attenuation measures. Two non-residential buildings which are part of the Wilton Anglican Church would also qualify for consideration of mitigation.

The proposed noise mitigation measures, particularly safeguards NV08 and NV09, would be implemented to review and mitigate operational noise during detailed design and during operation. An operational noise and vibration review would be carried out during detailed design to review the potential for operational noise impacts based on the most current information and thereby confirm feasible and reasonable mitigation measures (safeguard NV08).

Post-construction operational compliance noise monitoring would also be carried out within 12 months of completion of the proposal and once traffic flows have stabilised (safeguard NV09). Noise mitigation measures would be revised at the completion of the monitoring period and additional measures would be considered should non-compliance be identified.

Sustainability and resilience

About 11 per cent per cent of respondents raised concerns that the proposal did not adequately consider the risks of bushfires and the need for safe emergency evacuation routes, as well as clear access for emergency services.

Transport provided a briefing to local emergency services during the preparation of the concept design and REF and again in May 2024 to present the proposal and proposed changes to the intersections at Wilton Park Road and Almond Street, which are discussed further below. Feedback from emergency services has been included in the refinement of the arrangements for these intersections, with no further concerns raised by these groups for their operations during emergencies. Further consultation with these groups would be carried out as per safeguard TT03.

Changes to the proposal

In response to feedback from the community and stakeholders during the REF display and following further design development, a number of changes to the REF proposal were identified. These changes comprise the following:

- Additional (second) lane on M31 Hume Motorway northbound off ramp at interchange with Picton Road. The additional lane would provide more throughput capacity for vehicles exiting the M31 Hume Motorway onto Picton Road and travelling eastbound towards Wollongong and would minimise the potential for vehicle queues extending south on the off ramp and potentially onto the M31 Hume Motorway. The additional lane would also increase the capacity to manage incidents within the Diverging Diamond Interchange. This arrangement would be permanent and would be constructed as part of Stage 1 of the proposal.
- Optimisation of the drainage design at the western end of the proposal to remove the need to impact on 144 square metres of 'avoided land' mapped under the Cumberland Plain Conservation Plan.
- Provision of channelised right and left turn lanes off Picton Road for vehicles entering Almond Street and a separate lane for vehicles turning right out of Almond Street to travel westbound. This would allow for right and left-hand turn movements into and out of Almond Street to be maintained under safer arrangements for motorists and would remain in place until the developer-funded Almond Street interchange is constructed.
- Provision of a U-turn facility about 100 metres west of the existing intersection at Wilton Park Road to allow vehicles exiting Wilton Park Road, via a left-out only arrangement, to make turns east towards the M31 Hume Motorway and Wollongong with minimal changes to travel times. This arrangement would remain until the new developer-funded Wilton Park Road intersection has been constructed and would be built as part of Stage 1 of the proposal. Emergency services would be able to complete a U-turn at the interchange cross-over when travelling from Picton onto Wilton Park Road.

Additional assessment

The following additional assessments have been carried out since the REF.

Biodiversity

A qualitative biodiversity assessment was undertaken to review the proposed reduction of impacts on avoided land at the western extent of the proposal site. The assessment identified that the reduction of the proposal site would result in positive outcomes by removing all direct impacts on avoided land, which also corresponds with reducing the impact on the PCT1395 Shale Sandstone Transition Forest in the Sydney Basin Bioregion CEEC and habitat for threatened species such as Koalas and Large-eared Pied Bats.

Traffic

A traffic assessment to consider the potential impacts of the proposed design changes since the REF was completed.

Additional (second) lane on M31 Hume Motorway northbound off ramp at the interchange with Picton Road

The inclusion of the second right turn lane for this movement would improve the LoS and reduce the delay from that assessed as part of the proposal. It would provide additional vehicle storage and reduce the queue lengths on the off ramp for northbound vehicles exiting the M31 Hume Motorway and heading east towards Wollongong and west towards Picton.

Channelised right turn at Almond Street intersection

With the inclusion of the upgraded channelised right turn from Almond Street to Picton Road in Stage 1, the intersection is expected to operate at an acceptable level (with a 33 seconds average delay resulting in a LoS C) for both peak periods at least until 2036. It is assumed the developer-funded Almond Street interchange would be built by this date, at which time a left-in, left-out arrangement would be installed as part of Stage 2. The intersection is expected to operate at a good Level of Service (20 to 25 seconds average delay) resulting in a good Level of Service with acceptable delays (16 to 28 seconds average delay) and spare capacity (LoS B) in both peak periods in 2046.

Vehicle U-turn facility for Wilton Park Road intersection

With the inclusion of the U-turn facility west of Wilton Park Road, the intersection is expected to operate at an acceptable LoS B for the morning peak period with an average delay of 28 seconds in 2036 and at LoS A in the afternoon peak for both design years (with an average delay of 14 seconds in 2036). The future developer-funded relocation and signalisation of the Wilton Park Road intersection would replace the interim U-turn facility to enable the developments of West Wilton, the new Wilton Town Centre and North Wilton.

Next steps

Transport as the determining authority will consider the information in the REF and this Submissions Report and make a decision whether or not to proceed with the proposal.

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

Table of contents

Figures

Tables

1. Introduction and background

1.1 The proposal

Transport for NSW (Transport) proposes to upgrade Picton Road between the Nepean River and Almond Street in Wilton, New South Wales (NSW) (the proposal). The proposal includes upgrading the section of Picton Road from about 1.3 kilometres east of the bridge over the Nepean River to about 200 metres east of Almond Street, including the M31 Hume Motorway interchange.

Picton Road is an important transport corridor linking the Illawarra-Shoalhaven region with Greater Sydney and the Wilton and Greater Macarthur Growth Areas. It is one of two major east–west links between the M31 Hume Motorway and the M1 Princes Motorway. Identified as a National Key Freight Route, Picton Road provides an important connection between Port Kembla and the Illawarra-Shoalhaven region and the rapidly expanding Western Sydney industrial precincts, the Western Sydney Parklands and Aerotropolis, Western Sydney International Airport, and Moorebank Intermodal Terminal (see Figure 1-1).

The key features of the proposal described in the Review of Environmental Factors (REF) include:

- Widening and upgrading Picton Road for a distance of about five kilometres between the Nepean River and Almond Street to provide:
  - A minimum of two 3.5-metre-wide traffic lanes in each direction with a central median, increasing to three traffic lanes in each direction approximately between the Wilton Park Road and Aerodrome Drive intersection and the Pembroke Parade and Greenway Parade intersection.
  - Three-metre-wide shoulders on the left lane side in each direction.
- Upgrading the existing Picton Road and M31 Hume Motorway interchange into a diverging diamond layout, including:
  - Removing the existing Picton Road bridge and constructing two new bridges over the M31 Hume Motorway.
  - Upgrading and realigning on and off ramp connections with the M31 Hume Motorway to suit the new interchange layout and to allow free flow of traffic between Picton Road and the M31 Hume Motorway.
  - Providing a new four-metre-wide shared user path along the southern bridge.
  - Removing the existing traffic signals on Picton Road and installing new traffic signals with more efficient phasing and more traffic capacity.
- New and upgraded shared paths on Picton Road, including grade separation through the ramp connections with the M31 Hume Motorway, located:
  - Adjacent to the westbound slow lane of the proposal from the western extent to around 420 metres west of Almond Street to connect with planned active transport infrastructure to be delivered as part of the South East Wilton development.
  - Adjacent to the eastbound slow lane between Aerodrome Drive and the western extent of the proposal and between Pembroke Parade and Almond Street.
- Reconfiguring the existing Picton Road intersections with Wilton Park Road, Aerodrome Drive, Janderra Lane and Almond Street into left-in, left-out only (the timing of delivery of the reconfigured Almond Street intersection is subject to confirmation of timeframes for delivery of other road works planned at the intersection as outlined in section 1.1.3 and chapter 3 of the REF).
- Integration with new traffic signals and widening roadworks constructed in 2023 at the intersection of Picton Road, Pembroke Parade and Greenway Parade.
- Adjusting the posted speed from the western extent of the proposal, through the interchange and to the east of Pembroke Parade to 60 kilometres per hour (km/h).

Ancillary work and construction activities associated with the proposal includes:

- Property works including acquisition, adjustment to existing accesses and fencing.
- Civil earthworks and drainage works.
- Construction and adjustment of retaining walls, road pavement, and water quality devices.
- Tie-in work to adjoining sections of Picton Road, M31 Hume Motorway and other local roads.
- Installing and adjusting roadside furniture and delineation, such as safety barriers, kerb and gutter, fencing, lighting, signage, noise treatment and pavement markings.
- Installing new intelligent transport systems including, but not limited to, closed circuit television and variable message signs.
- Protecting, adjusting and relocating existing utilities and associated structures.
- Landscaping and rehabilitation of disturbed areas.
- Adjustment and provision of noise treatments, including at-property works and noise mounds, as required.
- Establishment of temporary ancillary facilities to support construction including compound sites, site offices, stockpiles, access tracks, turning bays, median crossovers on the M31 Hume Motorway, and laydown areas.
- Site preparation works, including vegetation clearing and grubbing, site fencing, temporary drainage measures, traffic management, and implementation of environmental management measures.

An overview of the proposal is provided in Figure 1-2.

A more detailed description of the Picton Road upgrade between the Nepean River and Almond Street, Wilton, is found in the Picton Road upgrade REF prepared by Transport in February 2024.

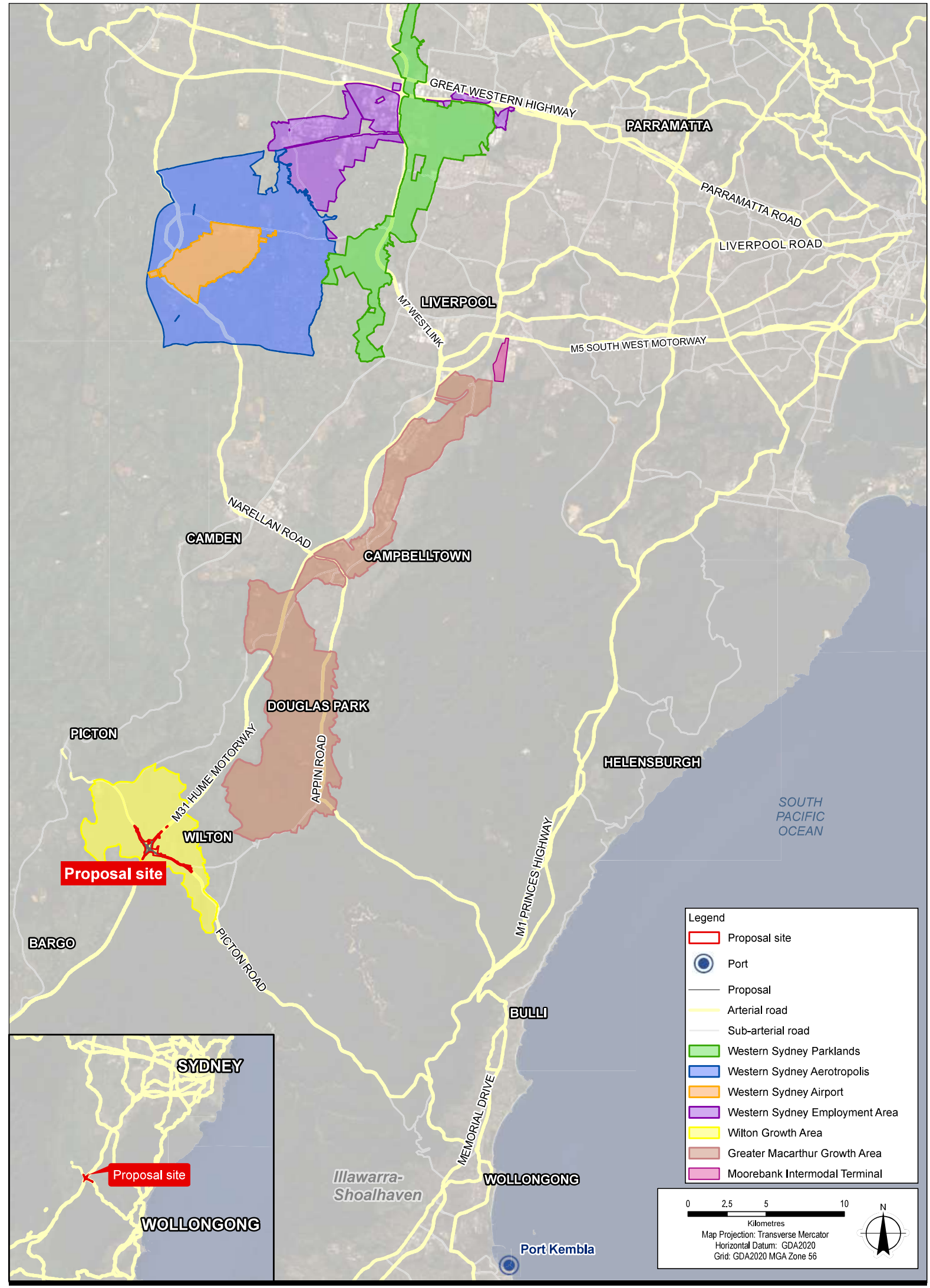

Figure 1-1 Proposal location

Data source: Earthstar GeographicsNSW SS-SDS, Topographic base data, 2023; Transport network - TfNSW, 2023. Created by:akildea N:\AU\Wollongong\Projects\23\12560200\GIS\Maps\12560200_PictonRoad_Stage1_ConceptDesign\12560200_REF_B.aprx12560200_REFX001_ProposalLocation_A4P. Print date: 25 Oct

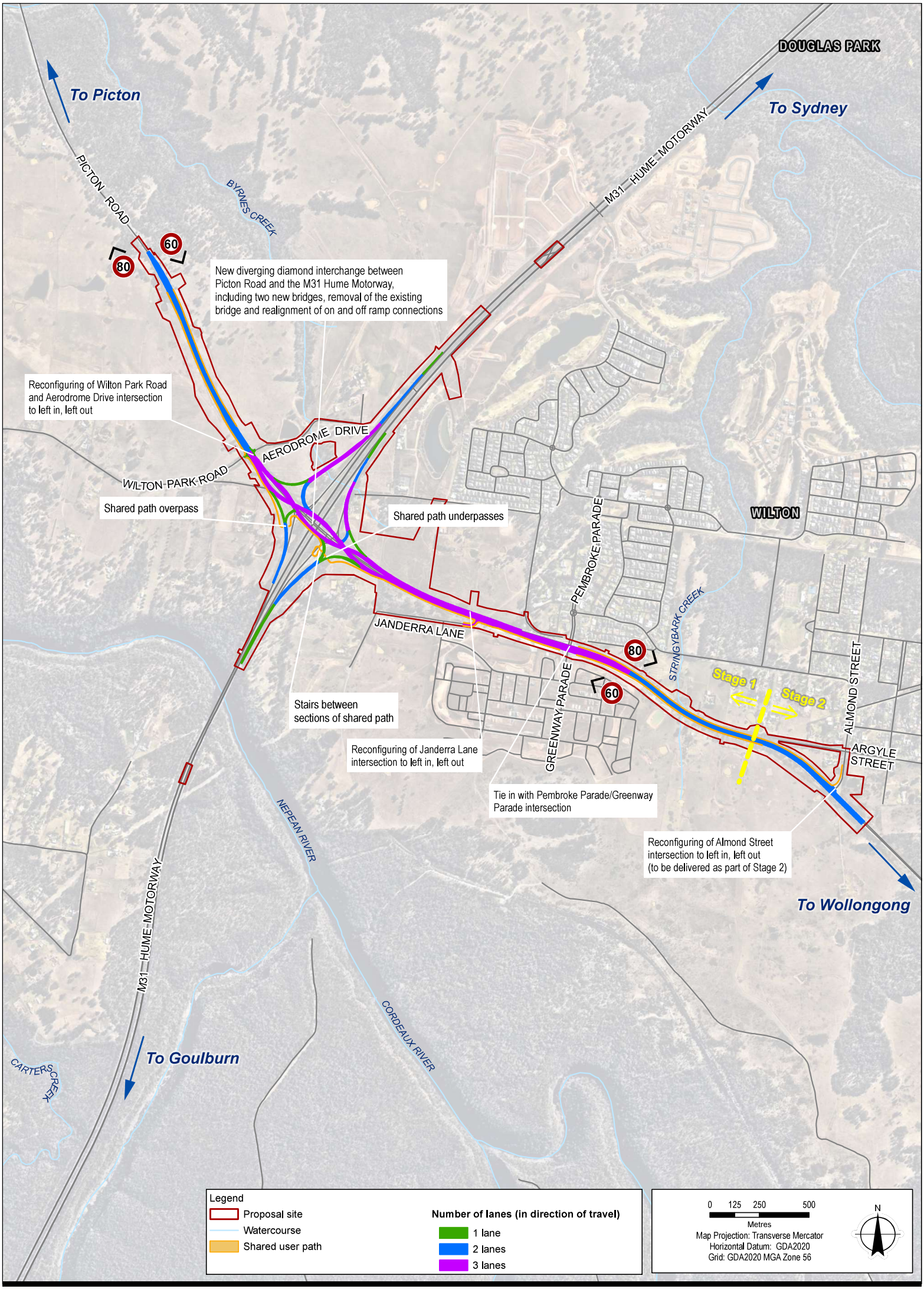

Figure 1-3 The proposal

Data source: Nearmap WMS Server; NSW SS-SDS, Topographic base data, 2023. Created by:akildea
N:\AU\Wollongong\Projects\23\12560200\GIS\Maps\12560200_PictonRoad_Stage1_ConceptDesign\12560200_REF_B.aprx
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1.2 REF display

Transport prepared a REF to assess the potential environmental impacts of the proposed works. The REF was publicly displayed for 42 days between Thursday 1 February 2024 and Thursday 14 March 2024 online and at locations shown in Table 1-1. The REF was placed on the Transport project website and made available for download. The display locations and website link were advertised in the Illawarra Mercury, and The District Reporter, as well as via radio ads on Wave FM, 2SM, i98 and C91.3 and via Transport's social media.

Table 1-1 Display locations

Location	Address
Wollondilly Shire Council	Frank McKay Building, 62-64 Menangle Street, Picton NSW 2571
Wollondilly Library	42 Menangle St, Picton NSW 2571

Community information sessions were held at Wollondilly Shire Hall on Saturday 10 February 2024, Wilton Plaza on Thursday 15 February 2024 and Wilton Community Centre on Wednesday 21 February 2024.

Transport also carried out letterbox delivery and door knocked impacted and adjacent properties, as well as Wilton and Picton businesses. A summary of the consultation and engagement tools and activities is provided in Table 1-2.

Table 1-2 Summary of consultation and engagement tools and activities / display activities

Activity/tool	Summary
Picton Road upgrade project website	The main website (see: Picton Road upgrade) and two project pages provide information on the overall Picton Road upgrade, including activities underway and undertaken, latest news, frequently asked questions, video and photographs, reports and community contact information. The website was updated during the REF display.
Toll free community enquiry number	A dedicated toll-free 1800 telephone number (1800 290 613) was used to receive and respond to queries from the community and interested stakeholders.
Project email address	A dedicated email address (*pictonroad@transport.nsw.gov.au*) was used to receive and respond to submissions and queries from the community and interested stakeholders.
Media releases and advertisements	During the REF display, a media release was published on 1 February 2024. Print advertisements were published on 2 February to advertise the REF public display in the Illawarra Mercury and The District Reporter. Radio advertisements were used to advertise the REF display period on 2, 9 and 23 February on Wave FM, 2SM, i98 and C91.3.
E-Blast	Email blasts and reminders were sent on 1, 15 and 26 February 2024 to registered project, freight and heavy vehicle subscribers. The emails contained links to the latest project update and REF documents.
Social media	During the public display period, Transport ran three social media campaigns on the Transport for NSW Facebook page. The campaigns were shared with Wollondilly Shire Council.

Activity/tool	Summary
Postcards	An A5 community postcard was delivered via letterbox to nearby residents and businesses in Wilton and Picton on 3 and 5 February 2024. An A5 community reminder postcard was delivered via letterbox to nearby residents and businesses in Wilton on 14 February 2024.
Project updates	An eight-page project update was released via the Picton Road upgrade project website on 1 February 2024. The project update was delivered via letterbox to nearby residents and businesses in Wilton on 3 February 2024. A targeted project update for Aboriginal stakeholders was also released in February 2024.
Interactive portal	An interactive portal was created as part of the public display and contained all information on the REF as well as an interactive map.
Video/animation	A flyover animation showing the operation of the Diverging Diamond Interchange was developed to support the release of the preferred option and is available on the project website. This animation was relied on during the REF display to depict how the interchange will work. An overview video of the project was also prepared to support the public display of the REF. This video outlined the overall scope of the proposal and its benefits.
Doorknocking	Doorknocking was carried out at impacted properties, nearby residents, Picton businesses and Wilton businesses between 7 and 10 February 2024.
Static displays	Static display locations with a copy of the REF and project updates were put up on 1 February 2024 at the following locations: • Wollondilly Shire Council • Wollondilly Library Posters were put up at two rest areas on Picton Road on 1 February 2024. The information poster invited the community to have their say, advertised the community information sessions and provided a QR code linking to the project website for the interactive portal.

1.3 Purpose of this report

This submissions report relates to the REF prepared for the Picton Road upgrade between the Nepean River and Almond Street in Wilton and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Transport. This submissions report summarises the issues raised and provides responses to each issue (sections 2 and 3). It details consultation, investigations and design changes carried out since finalisation of the REF (sections 4 and 5), describes and assesses the environmental impact of changes to the proposal (section 6) and identifies new or revised environmental management measures (section 7).

2. Response to community issues

Transport received 103 submissions, accepted from 1 February 2024 until 14 March 2024. Table 2-1 lists the respondents and each respondent's allocated submission number. The table also indicates where the issues from each submission have been addressed in sections 2 and 3 of this report.

Table 2-1 Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	1	2.3.1
Individual	2	2.2.1, 2.3.10
Individual	3	2.2.3
Individual	4	2.2.6, 2.3.1, 2.3.8
Individual	5	2.3.10
Individual	6	2.2.6, 2.3.1
Individual	7	2.5.3
Individual	8	2.2.1
Individual	9	2.3.2, 2.3.11, 2.11.1, 2.11.4, 2.16.1
Individual	10	2.3.1, 2.6.1
Individual	11	2.2.5, 2.3.10
Individual	12	2.3.1, 2.6.1
Individual	13	2.2.3, 2.2.5, 2.3.2, 2.3.3, 2.3.5
Individual	14	2.2.6, 2.3.1, 2.4.2
Individual	15	2.2.1, 2.2.6, 2.3.2, 2.3.6, 2.6.3, 2.11.3, 2.13.1, 2.16.1
Individual	16	2.2.3
Organisation – South32 Illawarra Metallurgical Coal	17	2.2.2, 2.4.3, 2.14.3
Individual	18	2.2.1, 2.3.3, 2.3.10, 2.3.11, 2.13.1, 2.17.1
Individual	19	2.3.1, 2.6.1
Individual	20	2.17.1
Agency – Subsidence Advisory NSW	21	3.6
Individual	22	2.2.1, 2.2.6, 2.3.2, 2.3.11, 2.17.1
Individual	23	2.3.3, 2.3.11, 2.4.1, 2.16.1
Individual	24	2.3.11, 2.17.1
Organisation – Picton Road Motorway Coalition (via Business Illawarra)	25	2.3.10, 2.4.3
Organisation – Sydney Basin Koala Network	26	2.5.1, 2.5.2, 2.5.3, 2.5.4
Individual	27	2.2.3, 2.3.1, 2.3.8, 2.3.10

Respondent	Submission No.	Section number where issues are addressed
Agency – Endeavour Energy	28	3.4
Organisation – Walker Corporation Pty Ltd	29	2.2.1, 2.3.2, 2.3.6, 2.3.9, 2.4.2, 2.9.1, 2.9.2, 2.11.4
Organisation – Flowers Freightline	30	2.3.10, 2.6.1, 2.6.3
Individual	31	2.3.3, 2.3.5
Individual	32	2.3.1, 2.4.2, 2.11.1
Individual	33	2.2.6, 2.3.1, 2.17.1
Individual	34	2.2.3, 2.3.3, 2.3.11, 2.4.1, 2.5.2
Individual	35	2.3.1, 2.4.1, 2.4.2
Individual	36	2.2.3, 2.3.1, 2.3.10, 2.5.2, 2.11.1, 2.17.3
Individual	37	2.2.1, 2.6.1, 2.11.4
Individual	38	2.2.6, 2.6.1
Individual	39	2.3.1, 2.5.4, 2.6.1, 2.6.2
Individual	40	2.3.1, 2.3.2, 2.6.1, 2.11.1
Individual	41	2.3.2, 2.3.7, 2.4.1, 2.6.1, 2.8.2, 2.11.2
Individual	42	2.3.3, 2.15.3
Individual	43	2.2.4, 2.3.9, 2.6.1, 2.8.1, 2.9.2, 2.10.1, 2.11.1, 2.11.3, 2.12.2, 2.15.1
Agency – Wollondilly Shire Council	44	3.2
Individual	45	2.3.11, 2.11.1, 2.11.4
Individual	46	2.3.2, 2.5.1, 2.17.1, 2.17.2
Individual	47	2.2.1, 2.3.1, 2.2.6, 2.5.4, 2.6.1, 2.8.1
Individual	48	2.3.1
Individual	49	2.2.1, 2.3.6, 2.7.1, 2.7.2,
Individual	50	2.2.6, 2.3.2, 2.3.3
Individual	51	2.2.3, 2.3.2, 2.3.3, 2.6.1, 2.6.3, 2.11.3
Individual	52	2.3.1, 2.3.2, 2.3.3, 2.3.11, 2.6.1, 2.6.3, 2.11.1
Individual	53	2.2.32.3.3
Individual	54	2.6.1, 2.6.2, 2.8.1, 2.11.3, 2.13.1
Individual	55	2.2.3
Individual	56	2.2.6, 2.6.1
Individual	57	2.5.3, 2.6.1, 2.16.1
Individual	58	2.2.1, 2.2.3, 2.2.5
Individual	59	2.2.1, 2.3.1, 2.6.1
Individual	60	2.3.1, 2.3.2

Respondent	Submission No.	Section number where issues are addressed
Individual	61	2.2.1, 2.3.12, 2.7.2, 2.13.1
Individual	62	2.2.2, 2.3.2, 2.3.4, 2.6.1
Individual	63	2.2.1, 2.2.6, 2.3.2, 2.3.3, 2.3.5, 2.4.2, 2.6.2, 2.16.1, 2.16.2
Individual	64	2.2.5, 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.5.2, 2.6.1, 2.11.1, 2.16.1
Individual	65	2.3.2, 2.3.11, 2.11.1
Individual	66	2.3.1
Individual	67	2.5.3
Individual	68	2.2.2, 2.3.1, 2.2.6, 2.3.3, 2.4.2, 2.5.3, 2.6.1, 2.11.3, 2.16.2, 2.16.3
Individual	69	2.4.2, 2.6.3, 2.17.2
Individual	70	2.3.1, 2.2.6, 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.3.11, 2.4.1, 2.16.1, 2.17.1, 2.17.2, 2.17.3
Individual	71	2.2.2, 2.6.1, 2.17.2
Individual	72	2.3.3, 2.6.1
Individual	73	2.3.2, 2.6.1
Individual	74	2.2.3, 2.3.1, 2.4.1, 2.6.1
Agency – WaterNSW	75	3.5
Individual	76	2.2.2, 2.3.4, 2.3.11, 2.6.1, 2.15.1
Individual	77	2.2.1, 2.2.6, 2.3.1
Individual	78	2.2.2, 2.3.10, 2.4.1
Individual	79	2.2.1, 2.3.11, 2.6.1, 2.6.2
Individual	80	2.3.1, 2.6.1
Individual	81	2.17.2
Individual	82	2.2.1, 2.3.1, 2.3.6, 2.3.7, 2.3.11, 2.5.1, 2.6.1, 2.8.1, 2.11.3, 2.16.2
Individual	83	2.2.2, 2.2.3, 2.2.6, 2.4.1, 2.17.2
Individual	84	2.2.6, 2.6.1
NA	85	Blank submission
Individual	86	2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.4.1, 2.16.1
Individual	87	2.3.1, 2.2.6, 2.6.1
Individual	88	2.3.6, 2.3.8, 2.3.10, 2.5.2, 2.5.4, 2.15.2, 2.16.3, 2.17.2
Individual	89	2.2.2, 2.6.1, 2.6.2, 2.12.1
Individual	90	2.2.3, 2.2.6
Individual	91	2.2.6, 2.3.1, 2.6.1

Respondent	Submission No.	Section number where issues are addressed
Organisation – Condell Park Landowners Group (via ARC Traffic and Transport)	92	2.6.1, 2.6.3, 2.14.3, 2.15.3, 2.17.2
Individual	93	2.2.1, 2.3.1, 2.3.2, 2.3.7, 2.3.10, 2.3.12, 2.4.1, 2.11.1, 2.11.3, 2.14.3, 2.17.2
Individual	94	2.3.3, 2.3.11, 2.4.1, 2.6.1, 2.16.1
Organisation – Cameron Brae Group	95	2.2.5, 2.3.3, 2.3.10, 2.3.11, 2.3.12, 2.6.1, 2.14.1, 2.17.1
Organisation – Risland Australia	96	2.3.11, 2.3.12, 2.4.3
Organisation – Barings	97	2.3.3, 2.3.11, 2.6.1
Individual	98	2.2.6, 2.4.2
Individual	99	2.3.1, 2.6.1
Individual	100	2.3.9, 2.14.2
Individual	101	2.2.5, 2.3.2, 2.3.3, 2.3.11, 2.16.1
Agency – NSW Ports	102	3.3
Individual	103	2.2.6, 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.3.10, 2.3.11, 2.5.3, 2.6.1, 2.6.2, 2.6.3, 2.15.3, 2.16.1

2.1 Overview of issues raised

A total of 103 submissions were received in response to the display of the REF. This included 89 submissions from the general community, one from Wollondilly Shire Council, three from government agencies, nine from businesses and one from a utility service provider.

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

The majority of respondents acknowledged the need for an upgrade to Picton Road. However, around half of respondents (52 per cent) raised concerns with some of the design elements of the proposal, with many still acknowledging that an upgrade to Picton Road was needed.

Around 23 per cent were in support of the proposal, and only eight per cent objected to the proposal entirely. The remaining 17 per cent of submissions offered no position on whether they supported or objected to the proposal.

The main issues raised in community submissions included:

- Impact of the proposed traffic lights in the proposed Diverging Diamond Interchange on traffic flow efficiency.
- Capacity of the proposed Diverging Diamond Interchange, in particular the capacity it would provide for future growth, especially heavy vehicles.
- Proposed left-in, left-out arrangements at the Picton Road intersection with Wilton Park Road.
- Proposed staging for the proposal at the intersection of Picton Road with Almond Street and concerns of the ultimate arrangement for this intersection being delivered ahead of the developer-funded infrastructure (the Almond Street interchange).
- Timing of the construction of developer-funded infrastructure such as the announced grade-separated intersections at Almond Street and Wilton Park Road.

- Fauna connectivity across the upgrade of Picton Road.
- Co-ordination between local and State Governments, utility providers and developers.

The main issues raised by government agencies included:

- Wollondilly Shire Council:
  - The need for the early integration of developer-funded infrastructure.
  - Proposed design solution at the Picton Road/M31 Hume Motorway and Picton Road/Almond Street intersections.
  - Proposed active transport throughout the proposal site.
  - Methodology used for the biodiversity assessment.
  - How hydrology and flooding has been assessed and considered in the design.
- NSW Ports:
  - The need for a dual carriageway for the entire Picton Road corridor.
  - The need to accommodate oversize and/or overmass (OSOM) vehicles and loads on Picton Road.
- Endeavour Energy
  - Integration of new proposed Endeavour Energy infrastructure into the proposal.
  - Recommendation of design guidelines and standards to be used for any interaction with Endeavour Energy infrastructure.
- WaterNSW
  - Potential impacts to non-Aboriginal heritage listed infrastructure.
  - Potential impacts during construction within aboveground easement of WaterNSW assets.
  - Incident and emergency response.

2.2 Need and options considered

2.2.1 Support for the proposal

Submission number(s)

2, 8, 15, 18, 22, 29, 37, 47, 49, 58, 59, 61, 63, 77, 79, 82, 93

Issue description

Many respondents indicated their support for the proposal, noting their desire that it be constructed as soon as possible, and acknowledging that it would be essential for addressing the increased future traffic that the area is expected to receive.

Several respondents noted that the proposed interchange design looked good and/or that it was in urgent need of upgrading.

Response

Transport acknowledges the support expressed for the proposal.

2.2.2 Object to the proposal

Submission number(s)

17, 62, 68, 71, 76, 78, 83, 89

Issue description

Several respondents expressed their objection to the proposal, requesting it be scrapped and that a completely different approach is needed. Reasons for their objections included the safety and functionality of the proposal, cost, traffic concerns, alternate non-road solutions such as rail and the perceived failure to meet the future growth needs of the area.

Response

Transport notes the objections to the proposal. Where specifics have been identified in a submission, they have been included in relevant sections of this report, particularly section 2.3.

In its current state, Picton Road would not be able to adequately service the forecast increases in traffic associated with new development and freight demand. The proposal was developed based on the project objectives to improve safety, accessibility and efficiency for transport customers and residents in new and emerging housing developments, better connecting them to diverse employment opportunities and to retail, health, education and recreation facilities. Non-infrastructure options and rail alternatives were considered in previous development phases. However, while some of these may be considered further as part of a complementary solution to further reduce congestion, it was considered that the nature of the challenges identified in the study area do not lend themselves to these solutions in isolation.

2.2.3 Disagrees with design solution

Submission number(s)

3, 13, 16, 27, 36, 51, 58, 74, 83, 90

Issue description

Some respondents acknowledge that the road upgrade was needed, however did not agree with the proposal generally.

Response

Transport acknowledges the disagreements to the proposal.

The proposal as outlined in the REF, with changes as proposed in this submissions report, would provide increased capacity on Picton Road and in the Picton Road/Hume Motorway interchange to support the projected population and employment growth for the region and improve safety while minimising impacts to land use and the environment as much as possible.

Where specific issues related to the design of the project have been identified in a submission, they have been responded to in relevant sections of this report.

2.2.4 Proposal need and justification

Submission number(s)

43

Issue description

One respondent felt that the proposal will generate more heavy vehicle movement through Wilton and will increase traffic along Mount Ousley.

Response

Identified as a National Key Freight Route, Picton Road provides an important connection between Port Kembla and the Illawarra-Shoalhaven, and the rapidly expanding Western Sydney industrial precincts and Moorebank Intermodal Terminal. Picton Road plays a significant role in the movement of supplies from key industries including manufacturing, construction, mining and logistics from the region to Melbourne, Canberra, Sydney and broader areas of western NSW, as described in section 2.1.1 of the REF.

The Illawarra-Shoalhaven is anticipating regionally significant growth in population and employment. It is home to the international trade gateway at Port Kembla, offering a link to domestic and export markets for a large

variety of products including coal, steel, agricultural products and imported vehicles. Having safe, reliable and capable transport links to the port is key to continued national economic prosperity.

Independent of the proposal, freight movements are forecast to increase at an annual rate of 1.4 per cent per year over the next 40 years to reach around 62 million tonnes by 2056. This would account for almost 70 per cent of the total road freight task associated with the region, as described in section 2.1.1 of the REF. The proposal is expected to cater for this projected growth and address the traffic congestion that would otherwise occur on Picton Road through Wilton from the population and industry growth expected from Sydney and the Illawarra-Shoalhaven.

2.2.5 Costs and funding

Concerns regarding costs and funding

Submission number(s)

11, 13, 58, 64, 95, 101

Issue description

A number of respondents raised concerns regarding costs and funding for the proposal, including:

- Clarification of the intended funding approval pathway and timing for the upgrade.
- Time and money spent on environmental assessment and community engagement was unnecessarily delaying the urgently needed upgrade of Picton Road.
- Amount of money spent on consultants.
- Perception that the preferred option was selected based on lowest cost.
- Perceived high cost of the proposal.

Response

The Picton Road upgrade currently has funding for design and planning work. The timing of construction of the proposal would be subject to future funding decisions by the NSW and Australian Governments following an investment assurance and prioritisation process. The NSW and Australian Governments co-fund a number of infrastructure projects across NSW through their respective budgets. Funding is balanced across the State depending on current issues and priorities.

The current funding would be spent over a number of years towards a wide array of costs including property acquisition, field investigations, purchase of biodiversity offset credits, as well as the design and construction planning components.

Transport acknowledges community concerns regarding the urgent need to upgrade Picton Road. As a public authority, Transport has statutory requirements under the *Environmental Planning and Assessment Act 1979* (EP&A Act), as well as its own policy guidelines. Under section 5.5 (1) of the EP&A Act, determining authorities must 'examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity'. To meet this legislative requirement, Transport procures specialised services through consulting firms.

The preferred option was selected following a comprehensive and multi-staged assessment of options between 2011 and 2022, as described in section 2.2.6 of this submissions report and in section 2.4.1 of the REF and presented in the Picton Road and M31 Hume Motorway Interchange Preferred Option Report.

The three shortlisted interchange options were assessed against the four key assessment criteria: safety, transport and performance, environment and sustainability and constructability. Balancing value for money with achieving the project objectives is a key criterion used to select and refine the scope at each phase of the proposal development. Value engineering to further improve value for money outcomes for the proposal would continue through detailed design and construction.

Query of NSW Government committed funding to growth areas

Submission number(s)

51

Issue description

One respondent queried where the funding promised to council areas affected by the growth plans was, stating that no real financial investment had been seen to date.

Response

Funding for infrastructure occurs at all levels of government and can take place over many years as development gains traction and funds accrue.

The NSW Government has established Housing and Productivity Contribution (HPC) under the EP&A Act to provide funding towards key state and regional infrastructure to support growing communities. The HPC is not a full cost-recovery fund and is not used cover all infrastructure needed across the four regions where it applies.

Allocation of funding is determined by a governance framework of State infrastructure agencies, informed by Urban Development Program committees with membership from State and local councils, development industry and utilities. New Infrastructure Opportunities Plans are being prepared which will help prioritise and sequence growth and funding allocation aligned to the annual NSW budget. Further information on the HPC can be found on this website.

Transport continues to work with the Department of Planning, Housing, and Infrastructure, Wollondilly Shire Council and developers on the essential transport infrastructure to support growth in the Wilton area.

2.2.6 Alternatives and options

Submission number(s)

4, 6, 14, 15, 22, 33, 38, 47, 50, 56, 63, 68, 70, 77, 83, 84, 87, 90, 91, 98, 103

Issue description

A range of alternatives to the proposed design of the M31 Hume Motorway and Picton Road interchange were suggested by respondents, including:

- cloverleaf
- roundabout
- unimpeded slip road from Picton Road leading to the northbound lanes of the M31 Hume Motorway
- flyovers and underpasses / fully grade-separated intersection
- fully controlled traffic lights in all directions at the intersection.

One respondent requested that:

- U-turn facilities be provided on Picton Road at either side of the interchange.

Response

The preferred option was selected following a comprehensive and multi-staged assessment of 13 options between 2011 and 2022, as outlined in section 2.4.1 of the REF, and presented in the Picton Road and M31 Hume Motorway Interchange Preferred Option Report (available at: Preferred Option Report).

A wide range of options were identified during the initial strategic phase, which were considered internally and in consultation with the then Department of Planning and Environment, now Department of Planning, Housing and Infrastructure. Following an initial assessment, many of these options such as the cloverleaf and roundabout, were considered not feasible to progress due to their scale and potential impacts on biodiversity and land use.

Between 2011 and 2014, 13 potential options including options with flyovers, free flow from Picton Road to the M31 Hume Motorway, roundabouts instead of signals, and four-way signalisation of the interchange were identified. In 2018, these 13 options were then refined down to seven potential options including free flow trumpets, signalised double point diamond, single point fast diamond and the Diverging Diamond Interchange amongst others.

In 2021, a Value Management Workshop was held over two days through which three options were shortlisted.

The workshop included Transport stakeholders, subject matter experts as well as a representative from Wollondilly Shire Council. The preferred option was then selected following a comprehensive and multi-criteria analysis of these three shortlisted options, carried out in 2022 in consultation with stakeholders, as outlined in section 2.4.1 of the REF, and presented in the Picton Road and M31 Hume Motorway Interchange Preferred Option Report. The assessment criteria considered during this process were:

- safety
- transport and performance
- environment and sustainability
- constructability.

The traffic and performance criteria was based on modelling using the latest available population and employment growth data from Department of Planning, Housing and Infrastructure for 2036 and 2056.

Overall, during the options assessment process, the Diverging Diamond Interchange was found to deliver the required capacity and have the least impact to the surrounding area while improving safety, reliability and efficiency when compared to other options.

Specifically, the Diverging Diamond was determined to be the best performing option overall as it:

- performs well in this situation where there is a strong peak flow, allowing for signal phasing to be adjusted to maximise green time for the peak direction
- allows for free flowing of traffic travelling south-east from the M31 Hume Motorway towards Wollongong and north-west from the M31 Hume Motorway towards Picton
- has sufficient capacity to perform well until at least 2046, taking into account traffic growth, with a maximum wait time of 34 seconds for the slowest movement during peak time in 2046
- reduces environmental and property impacts by having the smallest footprint of the shortlisted options
- provides for safer journeys by reducing conflicts from right-hand-turn movements
- improves freight efficiency now and into the future as freight volumes traffic increase
- minimises impacts during construction by allowing the majority of construction to occur away from the live traffic environment, minimising disruptions and improving safety for road users and construction workers
- encourages active transport use by providing the shortest path for active transport access.

While a new design to NSW, the Diverging Diamond Interchange layout has been relatively common internationally and there are three in Queensland where they have been found to operate safely and be easy for motorists to navigate. The design of the Diverging Diamond Interchange complies with international and Queensland Government guidelines.

In response to concerns raised by the community, Transport has identified an opportunity to provide an interim U-turn facility located about 100 metres west of the intersection with Wilton Park Road to allow westbound vehicles to make a U-turn towards the M31 Hume Motorway and Wollongong without having to travel further west to the existing roundabout on Picton Road and Maldon Bridge Road. Further details of this interim change are provided in section 5.4 of this report. The U-turn facility would remain in place until the developer-funded intersection relocation and signalisation is built which would provide full access movements to and from Picton Road at this location.

A second U-turn facility east of the interchange is not considered feasible given the constraints of the proposal. However, eastbound vehicles travelling along Picton Road wishing to complete a U-turn east of the interchange within the proposal site can use the roundabout located at the intersection of Pembroke Parade and Oxenbridge Avenue.

A traffic assessment of the proposed changes is provided in section 6.2.

2.3 The proposal

2.3.1 M31 Hume Motorway and Picton Road interchange

Use of traffic signals

Submission number(s)

4, 12, 14, 27, 32, 33, 35, 40, 47, 48, 52, 55, 59, 60, 66, 68, 74, 77, 80, 82, 87, 91, 93, 99

Issue description

A high number of respondents acknowledged that the upgrade of the Picton Road/M31 Hume Motorway interchange was needed, however raised concerns about the inclusion of traffic signals in the design. These concerns generally related to the current experience queuing on the interchange due to the need to go through two sets of signals and the impact this would have on the operations of the interchange in the future.

Issues raised included:

- Safety of traffic paths crossing for turning movements onto the M31 Hume Motorway.
- The perception that traffic lights would slow down traffic flow and increasing travel time.
- The perception that the use of traffic signals will increase delays and does not fully accommodate future growth.

Response

The preferred option was selected following a comprehensive and multi-staged assessment of 13 options between 2011 and 2022, as outlined in section 2.2.6 above and in 2.4.1 of the REF, and presented in the Picton Road and M31 Hume Motorway Interchange Preferred Option Report (available at: Preferred Option Report).

The design of the Diverging Diamond Interchange has allowed for population and employment growth projections provided by the Department of Planning, Housing and Infrastructure for 2046, at which time the Wilton Growth Area is expected to have been developed in line with the Wilton 2040 plans. This includes an expected traffic growth on Picton Road of about 70 to 90 per cent by 2046 when compared to 2022.

The Diverging Diamond Interchange design solution provides additional lanes for through and right turning traffic to cross the opposing carriageway at the interchange under the safety of traffic signals, this allows for free flowing turns when exiting Picton Road onto the M31 Hume Motorway. The majority of traffic travelling through the interchange would not be stopped at more than one set of traffic signals. Vehicles travelling from Wollongong to Sydney or from Picton to Goulburn would only be stopped at a maximum of one set of traffic signals. Traffic travelling south from the M31 Hume Motorway towards Wollongong and north from the M31 towards Picton would be free flowing. The traffic signals have simplified traffic light phasing which, together with the extra capacity, would also provide increased green time and improve traffic flow when compared to the existing arrangement particularly for vehicles travelling in the peak direction.

The Diverging Diamond Interchange also provides an improvement in safety, since right turn movements no longer need to wait for a safe gap or opposing through traffic to pass through the interchange.

The M31 Hume Motorway and Picton Road Diverging Diamond Interchange is predicted to provide a significant improvement to the performance of the interchange based on the forecast traffic demand in 2046, when compared to the existing arrangement. Table 6-17 of the REF summarises the existing interchange performance from 2022.

The traffic modelling completed shows traffic flow efficiency through the Diverging Diamond Interchange is not compromised by the traffic lights, with the interchange performing at a good Level of Service with acceptable delays (up to 34 seconds for the slowest movement at peak time) with spare capacity in 2046.

The current interchange is already operating at capacity (as of 2022), with excessive delays for some movements. Without the proposal, it is projected that the current interchange would be operating well over capacity by 2046, with over 2.5 minute average delays at the eastern traffic signals during the afternoon peak.

The biggest delay currently experienced at the interchange is for vehicles traveling northbound on the M31 Hume Motorway, exiting onto Picton Road to travel east towards Wollongong during the morning peak. These vehicles currently experience an average delay of about 5 minutes (2022). Without the proposal, this would

worsen to an average delay of about 12 minutes in 2046. In comparison, with the Diverging Diamond Interchange in place, it is projected that vehicles making this movement in the morning peak in 2046 would only experience a delay of 19 seconds.

Table 6-24 and Figure 6-5 in the REF shows the forecast performance of all individual movements at the M31 Hume Motorway and Picton Road interchange in the future years of 2031 and 2046.

The Diverging Diamond Interchange is expected to address queueing at the interchange ramps, preventing queue build-up and spillover onto the through traffic lanes of Picton Road and the M31 Hume Motorway, with both northbound and southbound facing ramps operating at an acceptable level in both the morning and afternoon periods in 2046.

Interchange ramps

Submission number(s)

1, 19, 36, 39, 82

Issue description

One respondent noted that the existing southbound turn off from the M31 Hume Motorway onto Picton Road is very dangerous, particularly where the road narrows to one lane to accommodate the Bingara Gorge turn off.

Within the overall comments that disagreed with the design solution (see section 2.2.3), issues were raised regarding the existing and proposed M31 Hume Motorway off ramps onto Picton Road, including:

- Southbound exit turning right onto Picton Road currently experiences traffic queuing which can block lanes and present risks to vehicle queuing. Dual turning and queuing lanes are need, and better traffic light phasing is needed.
- The length of vehicle queuing space on the Sydney to Picton off ramp is considered inadequate.

Response

The design of the Diverging Diamond Interchange and southbound off ramp incorporates two right turn lanes and more vehicle queuing space for vehicles exiting the M31 Hume Motorway and heading west towards Picton. Figure 3-2 in the REF shows this arrangement.

The Diverging Diamond Interchange design allows traffic movements to be controlled by traffic lights, with more lanes and simplified traffic light phasing, providing increased green time within the interchange. By grouping traffic approaches together, there is a significant reduction of signal phases when compared with conventional interchange layouts, reducing the wait time for traffic.

Further design development following public exhibition of the REF has identified an opportunity to provide an additional right turn lane at the interchange of the northbound off ramp from the M31 Hume Motorway. This change to the proposal would provide more throughput capacity for vehicles exiting the M31 Hume Motorway and travelling eastbound towards Wollongong and minimise the potential for vehicles queues extending south on the off ramp and potentially onto the M31 Hume Motorway. The additional lane would also provide additional capacity to manage incidents at this ramp. Further detail is provided in section 5.1.

Complexity of the Diverging Diamond Interchange

Submission number(s)

6, 10, 48, 68, 70

Issue description

Some respondents raised issues regarding the perceived complexity of the Diverging Diamond Interchange potentially compromising its safe use by motorists and resulting in added traffic congestion.

Response

While a new design to NSW, Diverging Diamond Interchanges have been introduced in Queensland and are relatively common internationally where they have been found to operate safely and efficiently and be easy for road users to navigate.

The design of the proposed Diverging Diamond Interchange is expected provide a net benefit to road safety by:

- reducing the number of conflict points
- improving of sight distances, and improving visibility for turning vehicles
- reducing of posted speed limits through the interchange which facilitates safer movements and allows road users more time to react to potential road hazards
- including wide road shoulders, allowing for safer management of traffic incidents and access for emergency vehicles
- providing dedicated active transport infrastructure in the form of shared user paths to provide separation between vehicles, cyclists and pedestrians
- providing sufficient acceleration and deceleration distances, clearly defined manoeuvring lanes, minimised conflict points, and lower speed limits
- reducing congestion and queuing, which contribute to rear-end crashes that make up 72 per cent of recorded crashes in the area
- allowing two-phase operation of signalised intersections which avoids long turns (e.g. right turns) needing to clear opposing traffic and making all movements discrete, with most controlled by traffic signals.

The above safety features are supported by international and Queensland guidelines such as the Diverging Diamond Interchange International Guide (National Academy of Science, 2021) and the Guidelines for Design of Innovative Intersections 'Diverging Diamond Interchange' (Queensland Government, 2021).

Additionally, road furniture, line marking, and signage in the proposal has been designed to ensure safe and intuitive navigation of the interchange with sufficient forewarning to avoid last minute lane changes and weaving movements. The proposal would also include the installation of new Intelligent Transport Systems (ITS) including, but not limited to, Closed Circuit Television (CCTV) and Variable Message Signs (VMS) which would provide improved monitoring, emergency management and response capabilities. The VMS devices will provide road users with up-to-date information on road conditions, incidents, planned future events and travel times which will further facilitate the navigation of the interchange.

2.3.2 Almond Street intersection

Objection to the left-in, left-out arrangement

Submission number(s)

9, 13, 15, 22, 29, 40, 41, 50, 51, 52, 60, 62, 63, 64, 65, 70, 73, 86, 93, 101, 103

Issue description

The intersection of Almond Street and Picton Road serves as a crucial thoroughfare for Wilton Village and its surrounding areas. The intersection has become increasingly congested and unsafe over time. As such, residents have noted that the Almond Street intersection requires urgent intervention. However, many residents find that the left-in, left-out treatment proposed as part of Stage 2 of the proposal is unsatisfactory if built without the developer-funded grade-separated intersection at Almond Street. Issues raised include:

- Longer travel distance on local roads would be required to access a safe right turn onto Picton Road, and these local roads would not be suited to the increased volume of traffic.
- Restrictions would impact bushfire evacuation safety.
- Design has failed to accommodate the existing and future traffic growth in Wilton, Appin, Douglas Park and Menangle, which access the M31 Hume Motorway via Almond Street and Picton Road.
- Opinion that the intersection should be fully signalised.
- The timing of the developer grade-separated crossing would impact the upgrade of the intersection.

Response

Within the proposal as displayed, the reconfiguration of the Almond Street intersection to left-in and left-out movements would be staged if required to align with the developer-funded grade separated interchange at

Almond Street (the Almond Street interchange) and Picton Road connections, as described in section 3.1.2 of the REF. As such, all traffic movements, i.e. right and left turns, would be maintained in the existing intersection layout until the developer-funded grade-separated crossing and new connections are constructed.

The Almond Street interchange is expected to feature a westbound off ramp and on ramp connections with Almond Street from Picton Road. The Almond Street interchange is outlined in the Wilton Growth Area infrastructure plan and the responsibility to design and deliver the infrastructure is with private developers, not Transport. As such, the timing of construction of this future grade-separated crossing is currently unknown.

Under the proposal in the displayed REF, the existing intersection, including the right-in and right-out turn at Almond Street, would not be removed until the grade-separated crossing between Almond Street and Picton Road (the Almond Street interchange) has been built.

In response to submissions, Transport has proposed an alternative interim intersection configuration at Almond Street (refer to section 5.3) to be built as part of Stage 1 of the proposal. Until the developer-funded Almond Street interchange has been built, the existing Almond Street intersection would be upgraded to provide a channelised right turn into Almond Street from Picton Road and a new channelised acceleration lane for vehicles turning right out of Almond Street onto Picton Road heading in the westbound direction. The left turn in and out of Almond Street would also be maintained as part of this alternative interim intersection configuration.

These upgrades would improve the performance and safety of the existing intersection, while maintaining right-in and right-out turning movements until such time as the Almond Street interchange is built and then the arrangement would revert to left-in, left-out.

The remaining construction work to be carried out in Stage 2, once the Almond Street interchange has been constructed, would involve the removal of the interim pavement markings and median for the channelised right turn, rehabilitation of the pavement, and installation of pavement marking, median barrier and road furniture for the ultimate arrangement.

During construction of the proposal it may not be possible to maintain all turning movements at the Picton Road /Almond Street intersection as temporary traffic management measures would be required at times.

The proposed design changes are described in section 5.3 and an assessment of the traffic impacts of this proposed change is provided in section 6.2.

Land use and traffic impacts around Almond Street

Submission number(s)

46

Issue description

One respondent noted that the REF proposal site area includes a property off Almond Street and questioned whether:

- this original access road through Wilton is being reopened in some form
- the business zoning on Argyle Steet would affect the traffic at the Almond Street intersection.

Response

The proposal includes sufficient area for construction vehicle access and movements. A temporary construction access only connection from Picton Road to the intersection of Argyle Street and Almond Street may be established during construction of the proposal. It would not be used for local traffic.

Modelling of the future road network identified that traffic growth between 2022 and 2046 is expected to be about 70 to 90 per cent and has considered the future land uses associated with Wilton Growth Area. As a result of the proposal and in the 2046 modelling scenario, the Picton Road and Almond Street intersection is predicted to operate at a LoS B (good with acceptable delays).

2.3.3 Wilton Park Road intersection

Submission number(s)

13, 18, 23, 31, 34, 42, 50, 51, 52, 53, 63, 64, 68, 70, 72, 86, 94, 95, 97, 101, 103

Issue description

Many respondents raised concerns that the reconfiguration of the intersection of Wilton Park Road and Picton Road to a left-in, left-out arrangement is unsatisfactory and would result in increased congestion, longer detours and delays to travel eastbound on Picton Road, unsafe and unauthorised U-turns, and impact evacuation routes and emergency access.

Response

The Wilton Growth Area infrastructure phasing plan includes the relocation and upgrade of the Wilton Park Road and Aerodrome Drive intersection to a signalised arrangement west of the existing location. The left-in, left-out arrangement included in the proposal is considered to be an interim arrangement to maintain access to existing properties until the developer-funded signalised intersection (the ultimate arrangement) is built.

The timing of the construction of this infrastructure is dependent on planning agreements between developers and the Department of Planning, Housing, Infrastructure linked to the rate of development and the prioritisation of this infrastructure for funding under the HPC. Transport is continuing to consult with the Department of Planning, Housing and Infrastructure and the respective developers; however, it is not possible to determine when the developer-funded works would occur.

In response to concerns raised by the community, Transport has identified an opportunity to provide an interim U-turn facility located about 100 metres west of the intersection with Wilton Park Road to allow westbound vehicles to make a U-turn towards the M31 Hume Motorway and Wollongong without having to travel further west to the existing roundabout on Picton Road and Maldon Bridge Road. Further details of this interim change are provided in section 5.4 of this report. The U-turn facility would remain in place until the developer-funded intersection relocation and signalisation is built which would provide full access movements to and from Picton Road at this location.

To further support emergency response operations in this location, emergency service vehicles travelling east on Picton Road will also be permitted to make a U-turn at the lights in the Hume Motorway/Picton Road interchange to access Wilton Park Road.

A description of the proposed change is provided in section 5.4 and a summary of the traffic impacts is provided in section 6.2.

2.3.4 Janderra Lane intersection

Submission number(s)

62, 64, 70, 76, 86, 103

Issue description

Several concerns were raised with regard to the proposed left-in, left-out treatment at Janderra Lane, including:

- Janderra Lane should be closed off to Picton Road and routed through the estate due to safety issues associated with the location near the crest of the hill.
- Right turn access out of Janderra Lane should be allowed.

Response

As outlined in section 3.1.1 of the REF, there is a planning agreement in place for a private developer to provide a grade-separated vehicular crossing over Picton Road that would connect South East Wilton to Bingara Gorge via Janderra Lane. Until the ultimate road network of South East Wilton is open to traffic, which would then provide access from Janderra Lane to Greenway Parade via the new Hepper Parkway, the interim U-turn facility at Wilton Park Road would allow vehicles exiting Janderra Lane to turn around and travel eastbound on Picton Road.

The proposed left-in, left-out arrangement at Janderra Lane would allow safe access to the properties located along Janderra Lane as well as to the future grade-separated crossing. The proposed arrangement of the Picton Road and Janderra Lane intersection is described in sections 3.1.1 and 3.2.3 of the REF.

2.3.5 Aerodrome Drive intersection

Submission number(s)

13, 31, 63, 64, 70, 86, 103

Issue description

Four respondents raised concerns with the proposed left-in, left-out treatment at Aerodrome Drive, noting the additional travel time that would be required for motorists to travel to achieve a safe U-turn.

It was also noted that given the future plans for Wilton Town Centre, it did not appear that the design fully accommodated this future land use and the traffic that would be generated.

Three respondents raised concerns regarding all left-in, left-out treatments within the proposal, including Aerodrome Drive.

Response

The proposal as exhibited included left-in, left-out configuration at the intersection of Aerodrome Drive and Picton Road. This would be an interim arrangement providing access to this existing local road until such time that it is connected to the internal road network of the Wilton Growth Area. The Wilton Growth Area infrastructure phasing plan includes the relocation and upgrade of the Wilton Park Road and Aerodrome Drive intersection to a signalised arrangement west of the existing location. This relocation and upgrade are based on future land use and to accommodate the Wilton Growth Area development.

The left-in, left-out configuration included in the proposal is considered an interim arrangement to maintain access to the Wilton Airport until the developer-funded signalised intersection is built to enable the construction of the relevant precincts.

The interim U-turn facility proposed west of Wilton Park Road (see section 5.4 of this report) would cater for vehicles heading westbound on Picton Road and wanting to make a right turn into Aerodrome Drive. This facility just to the west of the Aerodrome Drive intersection provides the same access arrangement into this local road as the current right-in turn, with a minor detour of around 200 metres.

Access from the Wilton Airport via Aerodrome Drive would have the potential to be impacted, with left-in, left-out restrictions requiring additional travel distance for vehicles wanting to turn right towards Picton. The volumes of traffic accessing the Wilton Airport, which is used for recreational skydiving activities only, is small. The nearest U-turn facility for these vehicles is at Pembroke Parade and Oxenbridge Avenue, a detour distance of about 4.2 kilometres in total. Due to the minor volumes of traffic accessing/egressing Aerodrome Drive, this detour distance is considered reasonable as an interim arrangement until the developer-funded signalised intersection is installed and Aerodrome Drive is connected to the internal road network of the Wilton Growth Area.

2.3.6 Active transport/shared paths

Submission number(s)

15, 29, 49, 82, 88

Issue description

One respondent commented that the shared user path from Almond Street through the M31 Hume Motorway/ Picton Road interchange does not provide a road crossing towards the Wilton Town Centre, on the north side of Picton Road.

Two respondents queried the extent of the shared path ending on Picton Road and commented that the shared paths need to link townships.

One respondent requested confirmation that the proposed shared path network can be delivered on both sides of Picton Road up to the Almond Street intersection and whether future connections for South East Wilton have been considered.

One respondent shared support for the active transport and suggested the shared pathway extend to Picton in the future.

Response

The proposed shared paths, as shown in Figures 3-1 to 3-4 of the REF, have been designed to align with the strategic walking and cycling network proposed in Wilton 2040 and the Wollondilly Bike Plan which would provide active transport connectivity between precincts. The Wilton Town Centre would be accessible via the at-grade crossing at the developer-funded Wilton Park Road intersection upgrade to be delivered once the new precinct construction commences.

The proposed shared user path on the northern side of Picton Road would extend from Aerodrome Drive to the location of the planned new Wilton Town Centre road, providing connectivity between these planned local roads once built. This shared path, included in the Wilton 2040 and shown in Figure 2.5 of the REF, would connect with future infrastructure as part of the Wilton Town Centre development.

Transport notes the support for the shared user path included in the proposal. The suggestion for the shared pathway extension to Picton has been noted however it is outside the scope of this proposal.

2.3.7 Number of lanes

Submission number(s)

41, 82, 93

Issue description

A few respondents raised concerns about the number of lanes to be provided on Picton Road, generally requesting more lanes to be added to a minimum of three lanes in each direction for the length of the proposal and additional turning lanes within the interchange.

Response

Traffic modelling was used to determine the appropriate midblock capacities (i.e. the number of lanes required on Picton Road between each of the intersections) for future years. For the portion of the proposal east of the Diverging Diamond Interchange, the traffic modelling showed that Picton Road needed to be upgraded by one lane in each direction to a maximum of three lanes in each direction. For the portion of the proposal west of the new developer-funded Wilton Town Centre road intersection, traffic modelling showed that no additional lanes would be required on Picton Road in the future years of both 2031 and 2046. These results informed the midblock lane configuration of the proposal as outlined in section 2.5.2 of the REF.

2.3.8 Posted traffic speed

Submission number(s)

4, 27, 88

Issue description

Two respondents raised the following issues regarding speed limits:

- The proposal to cut the speed limit from the existing 80 km/h to 60 km/h may be justified in the immediate area of the intersection but the existing speed limit works well currently and should be even more appropriate on a three-lane road.
- Speed limits need to slow down to 80 km/h the whole distance of Picton Road.

Response

The speed limit reduction is intended to mitigate any potential safety risks arising from the developing surrounding areas, and road geometry, particularly with increased urbanisation of the road environment and in anticipation of the future land use changes surrounding the proposal site.

As described in section 6.2.3 of the REF, the existing posted speed limit along Picton Road within the proposal site is 80 km/h, transitioning to 100 km/h east and west of the proposal site. The 100 km/h speed zone west of the proposal site is planned to be reduced to 80 km/h prior to the opening year of the proposal to meet the current NSW Speed Zoning Standards.

The speed zones east of the proposal would be assessed as part of the development of the central and eastern sections of the Picton Road upgrade.

2.3.9 Utilities

Submission number(s)

29, 43, 100

Issue description

One developer respondent required further detail regarding trunk utility infrastructure and crossings proposed across Picton Road as part of the proposal for future servicing of the wider Wilton Growth Precinct. The question was raised in the context of seeking to avoid future additional construction work and traffic impacts.

One respondent raised concerns that the proposal would cross the high-pressure gas mains which is extremely sensitive.

One respondent raised concerns that the proposal would impact power to their house.

Response

Some existing utility infrastructure would be impacted by the proposal. Above ground and underground utilities including trunk infrastructure may be relocated or protected as required (in consultation with the utility owner/operator) to minimise impacts to services. Existing utilities that are not feasible to avoid or protect, would be relocated in accordance with the utility provider's processes and requirements. Utility relocations would ensure that power to houses would be maintained, with any temporary works for power cut over being undertaken with advanced notification to property owners.

Transport would continue to liaise with developers and utility providers to coordinate and minimise impacts on existing and proposed infrastructure where feasible.

The proposal does cross over the ethane and methane high-pressure gas pipelines, which currently transversely cross underneath Picton Road near the intersection with Janderra Lane. Transport is aware of critical assets such as high-pressure gas mains and would implement protection measures for these assets in consultation with the asset owner.

2.3.10 Interface with other Transport for NSW projects

Upgrading the remainder of Picton Road

Submission number(s)

2, 11, 18, 25, 27, 30, 93, 95, 103

Issue description

A number of interrelated issues were raised in relation to the broader program of planned upgrades Transport intends for the remainder of Picton Road, including the following:

- The full extent of Picton Road should be upgraded in both directions from Mount Ousley Road to a motorway.
- Dual lanes each way for the full length of Picton Road should be provided as soon as possible.
- Other sections of Picton Road have enough width to be widened to accommodate extra lanes.
- The eastern section of the Picton Road upgrade is more urgently needed.
- advocating for Koala fencing to be reused on Picton Road if the road was widened, to reduce waste of resources and money.

- the full Picton Road upgrade should be completed by 2025 to meet projected traffic increases.
- the Macarthur Drive intersection with Picton Road is not a safe or compliant intersection, particularly for heavy vehicles.

Response

The Picton Road upgrade includes about 30 kilometres of Picton Road between the Nepean River and the M1 Princes Motorway, comprising three key sections:

- Western section - between the Nepean River and Almond Street, Wilton (the proposal)
- Central section - from Almond Street, Wilton to around Mount Keira Road
- Eastern section - from Mount Keira Road to the M1 Princes Motorway interchange.

The NSW and Australian Governments have committed funding to planning the upgrade of Picton Road, including the western, central and eastern sections.

The proposal forms the western section of the Picton Road upgrade.

The central and eastern sections of the Picton Road upgrade include consideration of the interchange of Picton Road and the M1 Princes Motorway and the intersection of Picton Road and Macarthur Drive.

The central and eastern sections of the Picton Road upgrade are in the early planning phase. Transport's next step for investigating the central and eastern sections is to award a contract to a qualified contractor to undertake field investigations, constraints definition and development of design options. The central and eastern sections would be developed via a staged approach based on funding allocations, progress of design, and constructability and safety considerations.

The western section (this proposal) was prioritised based on a multi-criterion needs and practicality assessment completed in 2021. This assessment included considerations such as road network efficiency and safety, resilience to natural disasters and road incidents, opportunities to support planned growth, linkages to other programs and planned upgrades, asset condition, and feedback from the community.

Due to the extensive development and approval processes required for major road infrastructure projects, as well as funding availability, it would not be possible to have the entire Picton Road upgraded by 2025.

There is no Koala fencing currently present within the western section of Picton Road upgrade (this proposal), although fauna connectivity structures are present within the southern extent of the proposal on the M31 Hume Motorway near Pheasants Nest. Fauna fencing is present along parts of the adjacent central section of the Picton Road upgrade. Transport is committed to incorporating sustainability and waste management practices in all projects, as detailed in section 6.14 and 6.15 of the REF, and would responsibly source, reuse or recycle materials where appropriate. This would be considered as part of the development of the central section design and environmental assessment, in accordance with Transport guidelines.

Transport is consulting with the adjacent fauna fencing projects to minimise the need for rework and replacement of fencing and to integrate all approved works where possible. If sections of the fauna fences planned along Picton Road and the M31 Hume Motorway are impacted by the proposal, the reuse for relocation would be considered during detailed design. Further information is available via: Koala Fencing – Hume Motorway, Wilton Review of Environmental Factors.

Picton Bypass

Submission number(s)

5, 36, 78, 88, 95

Issue description

Several respondents made the following comments about the Picton Bypass:

- The bypass should be built ahead of the M31 Hume Motorway interchange (the proposal).
- The bypass needs to be built for the health and safety of the public.
- The bypass should have been considered as part of the proposal, particularly as the associated flow of traffic volumes would include the road hierarchy and function of intersections with roads within the Wilton Town Centre.

- How the Picton Bypass physically interacts with the proposal.
- Whether the bypass will proceed as there has been no communication about it in recent times.

Response

The NSW and Australian Governments have committed over $18 million towards developing the concept design, environmental assessment, and Final Business Case of the Picton Bypass. Site investigation works are scheduled to be undertaken in late 2024. The bypass will ease congestion in Picton, remove some of the heavy vehicle traffic through the town centre, and provide an alternate route during times of emergencies such as fire and flooding. Transport will continue to consider the interfaces between the projects as planning progresses.

Further information is available on the Picton Bypass website.

2.3.11 Interface with other projects (by others)

Interface with private development projects

Submission number(s)

23, 24, 34, 45, 52, 65, 79, 82, 94, 95, 96, 97, 101

Issue description

Many respondents raised questions regarding the interface of the proposal with developments proposed by other non-government parties, such as private industrial development lots, and developer-funded housing release projects.

Some community members also felt that the timing of the construction of the ultimate arrangements for developer-funded intersection upgrades (including Wilton Park Road and Almond Street), should be brought forward so that they occur before or during construction of the Picton Road upgrade. The primary argument for this would be to alleviate the existing traffic congestion and safety issues as well as concerns around bushfire evacuation routes.

General questions were also raised about whether the proposal accounted for all of the proposed surrounding development plans, residential, commercial and industrial.

One respondent commented that there was confusion between the timelines presented in the documentation for different projects. The respondent suggested there should be a joint portal of information between government departments and the developers. They also felt that it should be the responsibility of Transport to ensure future private developments occur on schedule to match the proposal.

Several respondents requested Transport work more closely with developers to collaborate and co-ordinate staging and infrastructure design with surrounding developments.

Response

The timing for the delivery of developer-funded infrastructure or work in kind is outlined in planning agreements entered into with the Minister of Planning and Public Spaces (as administered by the Department of Planning, Housing and Infrastructure). Milestones for these contributions or work in kind are linked to the rate of development, which is developer-led. Transport is continuing to consult with the Department of Planning, Housing and Infrastructure and the respective developers; however, it is not possible to direct when they would occur. Refer to section 5.5.5 for more detail.

For interfacing infrastructure that is not secured under a Planning Agreement, funding will be considered as part of the HPC and Infrastructure Opportunities Plans (IOP) being led by the Urban Development Program which will help to prioritise the allocation of funding on an annual basis aligned to the NSW budget cycle.

The proposal has been developed as part of a wider whole of government approach to infrastructure planning. The proposal was identified as a priority in both the *Greater Sydney Services and Infrastructure Plan* (Transport for NSW, 2018a) and the *Regional NSW Services and Infrastructure Plan* (Transport for NSW, 2018b) which provide the long-term NSW Government blueprint for transport in regional NSW over the next 40 years.

The proposal is aligned with the infrastructure targets in Wilton 2040, and the traffic modelling for future road network performance has incorporated future projected traffic volumes in both 2031 and 2046, incorporating other known planned road network upgrades associated with the study area (see section 6.2 of the REF).

Transport acknowledges that for local residents and communities in growth areas where multiple projects are underway by a mix of both private and government agencies, the degree of uncertainty and constant change can be stressful and confusing. Transport also acknowledges that there are multiple stakeholders in this region, with a history of a diverse range of groups that would be impacted during development and construction of the upgrade. The proposal has been developed with reference to a wide range of strategic plans and policies, as detailed in section 2.1 of the REF, and Transport will continue to work closely with the Department of Planning, Housing and Infrastructure, Wollondilly Shire Council, other agencies and stakeholders to continue to anticipate and respond to future community needs, and coordinate and align projects and construction as much as possible.

Timing of ultimate arrangement of the Almond Street and Picton Road intersection

Submission number(s)

9, 22, 45, 65, 70, 101, 103

Issue description

A number of respondents raised questions regarding the timing of the ultimate arrangement at the Almond Street intersection. The ultimate arrangement would be the Almond Street interchange, which is expected to involve a grade-separated crossing of Picton Road with connections for traffic onto and off Picton Road, allowing for all traffic movements at this location. Respondents also raised questions about Transport's ability to influence the timing of its construction.

Response

The construction of developer-funded infrastructure, as described in section 5.5.5, is dependent on the timing of residential lot releases in North Wilton, and South East Wilton in accordance with the Planning Agreements between the Minister for Planning and relevant developer(s).

Transport continues to work with the Department of Planning, Housing and Infrastructure and developers on the essential transport infrastructure to support growth in the Wilton area. Transport acknowledges the delivery of such critical infrastructure is reliant on the developer(s) as a result of traffic generating development.

In response, the proposal has considered a potential staged delivery of the project to allow for different construction timing to complement adjacent infrastructure supporting the Wilton growth area. As a result of submissions and issues raised during the display of the REF, an interim arrangement has been included as part of Stage 1 featuring channelised right and left turn lanes off Picton Road for vehicles entering Almond Street and a separate lane for vehicles turning right out of Almond Street to travel westbound.

The proposed staging would not result in an impact for road users or the community, as the intersection upgrades presented in Figure 3-5 of the REF would already be operational at the time of the proposed left-in, left-out arrangement at Almond Street as part of Stage 2.

Alignment with regional planning and future growth plans

Submission number(s)

18, 70, 76

Issue description

Two respondents held a perception that the proposal was not aligned with regional plans, did not allow for future growth and development in the area, and was being designed without considering other projects in the area.

One respondent questioned how the proposal could be built without a comprehensive plan for the Wilton and Greater Macarthur growth areas.

Response

The proposal has been developed to align with the objectives of key strategic transport, infrastructure and land use plans, as described in sections 2.1.2 and 2.1.3 of the REF.

The proposal is aligned with Wilton 2040 as it would provide capacity improvements to Picton Road. It would contribute to the active transport connections between planned precincts through the provision of the proposed shared user paths. The proposal is also aligned to the Wilton Growth Area Update (DPE, 2023), which identified the need to reprioritise transport infrastructure and opportunities for improved transport services in anticipation of the future communities in the Wilton Growth Area.

Transport will work closely across divisions, government departments and local government to continue to anticipate and respond to future community needs and ensure the proposal is aligned with regional planning outcomes.

2.3.12 Construction activities

Submission number(s)

61, 93, 95, 96

Issue description

Some respondents raised questions regarding the construction program and overall construction commencement, and to the timing of delivery of the Diverging Diamond Interchange.

Additionally, one respondent also requested that construction hours be adjusted to minimise the morning peak disruption.

One respondent also raised concerns regarding the proposed location of a construction compound and its potential impacts on future development potential of employment lands due to uncertainty in the construction program.

One respondent raised concerns that the lack of certainty of funding, land acquisition process and construction commencement dates could potentially have a significant impact on adjoining developer works in both timing, design coordination and cost for both parties.

Response

Transport is aware of the importance of the proposal to support growing communities and businesses across Western Sydney, Wilton and the Illawarra-Shoalhaven. Transport currently has funding for the design and planning work for the Picton Road upgrade. As stated in section 3.3.3 of the REF, construction commencement is subject to approval and construction funding. The REF provided an indicative timing for the earliest commencement of construction between 2026 and 2027. At this stage of the design process, it is estimated to take about three years to deliver the proposal. Early works, such as utility protection and relocation work, boundary adjustments and at-property noise treatments, may be completed prior to commencement of the main construction work.

Construction of the proposal would generally be carried out during recommended standard working hours wherever possible, which does involve works during morning peak periods. Construction management plans, including the Construction Noise and Vibration Management Plan (CNVMP) and the Construction Traffic Management Plan (CTMP), would be implemented to review construction traffic movements and activities during morning peak periods and stage deliveries and works where possible (safeguards NV01 and TT01). The community would also be regularly consulted and notified of construction activities and the timing of construction works to assist with journey planning (safeguard NV02 and SE02). Additionally, Transport is considering extended working hours to reduce the overall construction timeframe of the proposal and to provide relief to the Wilton community. As outlined in section 3.3.3 of the REF, it is expected the extended working hours would benefit the community by reducing the volume of traffic on the roads during peak hours due to construction staff and some construction vehicles travelling to and from the work site outside peak traffic periods.

The CTMP would include measures to manage the staging of construction works to ensure that satisfactory capacity and minimum levels of service are maintained (safeguard TT01).

Certain work would still need to occur outside these hours (known as night or out-of-hours work) to minimise disruption to traffic and disturbance to surrounding landowners and businesses, and for the safety of the construction workforce.

All construction scenarios relevant to the proposal would involve some night works to facilitate safe working environments or minimise interruptions to the road network. Night works have been assessed in detail by the

Noise and Vibration Impact Assessment (see Appendix J of the REF) and are summarised in section 6.8 of the REF. Any night works would be undertaken in accordance with the *Construction Noise and Vibration Guideline (Roads)* (Transport for NSW, 2023h).

Transport will continue to consult with affected landowners and the community with respect to construction planning and land requirements.

2.4 Consultation

2.4.1 Adequacy of the process

Submission number(s)

23, 34, 35, 41, 70, 74, 78, 83, 86, 93, 94

Issue description

Several respondents believe that the government has not carried out sufficient community consultation or considered community concerns throughout development of the proposal. Key issues raised include:

- Lack of consultation with the community about the proposal or about traffic in the area.
- Progressing plans that the community expresses dissatisfaction with (not listening to community opinions).
- The proposal does not consider the opinions and sentiment of the local community and decisions around design have already been made.
- Frustration that an on-site meeting held for community members was during working hours, preventing some residents from attending.
- Dissatisfaction with the communication for the proposal and community consultation, including residents not receiving updates following the 'Have Your Say' in 2022 about the Picton Road upgrade.
- Not receiving mailed project updates or seeing newspaper advertisements.

Response

Transport ensures that community and stakeholder engagement processes are conducted with openness and integrity and that opportunities for engagement are provided to communities and stakeholders who are interested in, or may be impacted by, the activities and decisions of Transport.

Throughout the development of the proposal between 2021 and 2024, Transport has engaged regularly with key stakeholders including adjacent landowners, Wollondilly Shire Council, emergency services, utilities providers, other government agencies and the broader community to seek input on the development of the project's design and environmental assessment.

Consultation undertaken to date for the proposal is summarised in section 5 of the REF and sections 1.2 and 4 of this report, and has included print, radio and social media advertising, media releases, website updates, online surveys and interactive mapping tools, email updates to project subscribers, , letterboxed postcards, project updates and notifications. Additionally, three face-to-face drop-in sessions were held between 1 February and 29 February 2024 for the community to view the REF and speak to the project team about the proposal. One session was held on a Saturday and two were held on weekday afternoons/evenings. The REF and this Submissions Report present a balanced summary and consideration of all issues raised by the community and other stakeholders to date.

The 'Have Your Say' engagement activities collected feedback for consideration in the development of the REF (see section 5 of the REF).

2.4.2 Adequacy of the engagement tools

REF feedback process

Submission number(s)

14, 29, 69, 98

Issue description

Respondents noted that:

- The portal was too data heavy to thoroughly explore with the internet service available in some areas of the Picton region.
- It was difficult to provide feedback on the REF through the 'Have Your Say' process.
- A summary of impacts of the proposed infrastructure should be provided.

Response

The REF was initially placed on display on Thursday 1 February to Thursday 29 February 2024. However, following a request, the display period was extended for everyone until Thursday 14 March 2024. The extension of this period was displayed on the Transport web page and in the interactive web portal.

The REF for this proposal was a very large document, and Transport wanted to make key information from the document more accessible to the community through a web portal by using maps, graphics and summarised text. However, Transport understands that in some areas this may have been difficult to access due to internet connections or other technical issues.

To complement the online REF portal, Transport also made hard copies of the REF available at the offices of the Wollondilly Shire Council and Wollondilly Library and held three in person community sessions during the display period. Information was also provided via the community information phone line and email during the display period. An eight-page community update was also developed and delivered via letterbox to around 2,000 residents and business in Wilton containing a short summary of key information contained in the REF and links to where more information could be found.

A phone number and email address were also provided in all distributed material so that the community could make direct contact with the project team to ask questions and provide feedback.

Residents and businesses were able to have their say on the REF by post, email or directly through the web portal.

The REF provided a detailed analysis of all potential impacts of the proposal, as required by NSW legislation and guidelines. The executive summary at the beginning of the REF provides a summary of the potential impacts of the proposal and the proposed management and mitigation measures.

Visualisation of the design

Submission number(s)

32, 35, 63, 68

Issue description

Respondents made the following comments about the online visualisation of the design of the Diverging Diamond Interchange:

- The visualisation is not an accurate representation of how the design will function.
- The visualisation does not demonstrate the actual traffic flow through the traffic lights at the Picton Road/M31 Hume Motorway interchange, particularly around green light staging.
- The visualisation shows eastbound traffic on Picton Road on the right-hand side of the interchange and westbound traffic on the left-hand side of the interchange.
- The visualisation does not show the proposed travel routes with the introduction of left-in, left-out turns west of the Picton Road/M31 Hume Motorway interchange.

- Consultation material does not indicate how motorists will need to travel additional distances to achieve safe turning movements to complete their journeys where right turn movements have been removed.

Response

The visualisation provides viewers with a conceptual view of the proposal. Transport has endeavoured to make the video as accurate as possible and to show the proposal. The visualisation does not depict a particular time of day and is not intended to show traffic light phasing, rather it shows how motorists would travel through the proposal. To make it easier to watch the traffic flow, the view has been rotated 90 degrees with a northerly direction arrow to assist viewers.

The visualisation correctly shows the intended operation and vehicle movements through the interchange. The Diverging Diamond Interchange design results in westbound traffic crossing onto the right-hand side carriageway and the eastbound traffic crossing onto the left-hand side of the carriageway through the interchange. This design allows for right turn movements to occur without having to cross lanes of oncoming traffic.

The visualisation of the drive through of the interchange was intended to show traffic movements for the Diverging Diamond Interchange at Picton Road/M31 Hume Motorway. A focus on the interchange was chosen, as this type of interchange is new in NSW, however, this type of interchange is used in Queensland and internationally. The timing of developer-funded infrastructure was unknown when creating the visualisation, therefore it was not included.

While the visualisation has not mapped out all possible journeys motorists may need to take to move around the locality, the changes to traffic movement were discussed in the traffic and transport impact assessment (see section 8.5 of Appendix D to the REF).

Submission number(s)

68

Issue description

One respondent requested clarification about the location of the dedicated cycleway/footpath at the Picton Road/M31 Hume Motorway interchange as the visualisation shows two maps with different orientations cycleway/footpath.

Response

The proposed shared user path is described in sections 2.5.3 and 3.2.3 of the REF.

The proposal includes a shared user path along the southern side of Picton Road from the western extent of the proposal to around 420 metres west of Almond Street, and a shared user path on the northern side of Picton Road between Pembroke Parade and Almond Street, and between the future new intersections west of the M31 Hume Motorway. The provision of this infrastructure would improve active transport connectivity and safety, to support the proposed strategic cycle route identified in the Wollondilly Bike Plan.

Submission number(s)

29

Issue description

One respondent noted references in the REF that have been made to entity names for landowners or developers, requesting these be removed and replaced with the affected lot or approved development name.

Response

The information presented in the REF was correct at the time of preparation. The REF does not confer the legal delivery obligation of other infrastructure, that remains the responsibility of Wollondilly Shire Council or the Department of Planning, Housing and Infrastructure to implement with the responsible party at the relevant time.

Chapter 3 of the REF includes infrastructure upgrades to be delivered which are not part of this proposal. The Wilton Growth Area infrastructure phasing plan (Wilton: Building a great new town) (DPIE, 2020) identifies critical infrastructure upgrades that need to be delivered over the next 20 years to meet the needs of the Wilton Growth Area (see Table 3-1). Timeframes included in the REF are based on information provided in the Wilton Growth Area infrastructure phasing plan. Refer to section 5.5.5 for an updated version of this table.

Approved developments and applicants within the vicinity of the proposal site including Table 6-75 were correct as of February 2024. However, this information is subject to change with development approval issuing and variations. This may include changes to the responsibly for the associated infrastructure upgrades under voluntary planning agreements.

2.4.3 Further consultation

Submission number(s)

17, 25, 96

Issue description

Some respondents requested continued consultation with government agencies and the community as the proposal progresses, including consultation with Transport regarding their concerns.

Response

Transport will continue to keep the community updated through a variety of communication and engagement methods as the proposal progresses. Consultation with affected community members will continue throughout the planning of the proposal following the Community and Stakeholder Engagement Plan (CSEP) (safeguard SE01).

2.5 Biodiversity

2.5.1 Adequacy of assessment, including existing environment

Submission number(s)

26

Issue description

One respondent raised the following issues with the Biodiversity Assessment Report:

- The proposal has considered the Cumberland Plain Conservation Plan (CPCP) (DPIE, 2022), which is not yet approved and was considered to fall short in protecting Koalas and other species and will impact avoided areas.
- The Shale Sandstone Transition Forest in the Sydney Basin is continually referred to as endangered under the *Biodiversity Conservation Act 2016* (BC Act), when it was uplisted to Critically Endangered under the BC Act in November 2014.
- Monetary payment into a Conservation Fund cannot make up for loss of Critically Endangered Ecological Communities (CEEC), and the absence of offsetting measures for mature trees that have yet to develop hollows is insufficient for the needs of birds.
- Biodiversity offsets were calculated on incomplete data since the Biodiversity Assessment Report accessed BioNet records in April 2022 and therefore does not include 480,000 missing [State-wide] records which were incorporated into the database after April 2022.
- The proposal fails to align with objectives outlined in the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP (Biodiversity and Conservation)) to conserve Koala habitat and reverse population decline. To uphold commitments to biodiversity preservation, a holistic approach to infrastructure development is required, with wildlife considerations integrated as standard practice. Rigorous wildlife crossing studies, informed by local populations and best practices are essential to mitigate the barrier effect of roads and safeguard wildlife.

Response

CPCP applicability

The CPCP has been prepared by the NSW Government as a strategic conservation plan to protect the region's important biodiversity while supporting the delivery of housing, jobs and infrastructure.

At the time of preparation of the REF, the draft CPCP was the relevant guideline in place. NSW approval was given in August 2022. The Commonwealth approval was given in March 2024, shortly after public exhibition for the REF closed.

The assessment of significance prepared for the Koala (refer section 5.4 of Appendix C of the REF, Biodiversity Assessment Report) identified that a significant impact was not likely.

Impact on "avoided land"

Following public exhibition of the proposal, optimisation of the drainage design for the proposal has been carried out leading to changes to the proposal site to avoid the potential impacts to 144 square metres of 'avoided land' mapped under the CPCP as presented in the displayed REF (refer to section 5.2). The amended proposal site is presented in Figure 5-3 of this Submissions Report.

An assessment of this reduction in impacts on 'avoided land' under the CPCP is provided in section 6.1.

Shale Sandstone Transition Forest in the Sydney Basin

It is acknowledged that the summary of the biodiversity assessment findings in the REF reference the listing as endangered. However, the Biodiversity Assessment Report contains the correct designation of CEEC, and the assessment has been carried out on the basis of this level of assessment. The findings that the proposal is not likely to significantly impact threatened species, populations or ecological communities or their habitats within the meaning of the BC Act or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) remain correct.

Monetary payment into a Conservation Fund

Transport acknowledges that the 'Avoid, Minimise, Mitigate and Offset' hierarchy for the impacts on biodiversity is an essential component of the design process. Transport has incorporated a range of measures into the proposal design and have identified measures to be implemented during construction and operation to reduce impacts on biodiversity values. These measures are in accordance with the Biodiversity Assessment Method (BAM) (DPIE, 2020a) and are described in section 6.1.3 of the REF and section 4 of the Biodiversity Assessment Report. Commitments include the preparation of a biodiversity offset strategy (safeguard BI06), a tree and hollow replacement plan (safeguard BI04), as well as investigating opportunities to replant disturbed areas within the proposal site identified for landscaping (safeguard BI07).

Offsets required to compensate for the residual biodiversity impacts under the BC Act are summarised in section 6.1.6 of the REF and described in section 7 of the Biodiversity Assessment Report. The offset rules are established in the Biodiversity Conservation Regulation 2017 (Biodiversity Conservation Regulation). In accordance with the offset rules established by the Biodiversity Conservation Regulation, offset obligations can be achieved by retiring the appropriate biodiversity credits from a Biodiversity Stewardship Site, monetary payment directly into the Biodiversity Conservation Fund, or an approved biodiversity action.

Transport's preference is to purchase and retire biodiversity credits to compensate for the biodiversity loss. In seeking the appropriate credits, Transport would source and establish the same vegetation that would be impacted by constructing the proposal, generally within the same region, in accordance with NSW legislative requirements.

Under the Biodiversity Offsets Scheme, a proponent can choose to pay into the Biodiversity Conservation Fund to meet an offset obligation. This is an alternative to retiring credits. By doing this, the responsibility of finding an offset is transferred to the Biodiversity Conservation Trust. Transport would only pursue this option if it were unable to directly purchase and retire sufficient biodiversity credits from Biodiversity Stewardship Sites.

Biodiversity offsets would be finalised in accordance with the NSW Biodiversity Offsets Scheme and Transport's additional guidelines.

Offset calculations based on incomplete data

The Biodiversity Assessment Report was prepared in accordance with the BAM. A wide range of sources of information was used in the assessment, as detailed in section 2.2 of the Biodiversity Assessment Report. Local context was developed with reference to not just database searches, but spatial mapping and field surveys conducted by accredited ecologists and assessors. The offset calculations are based on the complete findings of the assessment, and in particular the results of the field survey findings, which are directed by the BAM, and present a greater influence on the assessment findings and offset calculations.

Transport is confident that the assessment presented in the REF and Biodiversity Assessment Report presents an accurate record of the findings in the local area.

Fails to align with objectives of the SEPP (Biodiversity and Conservation)

The SEPP (Biodiversity and Conservation) outlines the planning principles for development in NSW in relation to the protection and conservation of biodiversity. There are no specific objectives that are applicable to the whole of the SEPP. Rather, each chapter within the SEPP contains specific aims which are relevant to the provisions of a particular chapter. A detailed explanation of how the proposal has considered relevant provisions of the SEPP (Biodiversity and Conservation) is described in section 4.1.1 of the REF.

Chapter 3 of the SEPP (Biodiversity and Conservation) does not apply to the proposal as Wollondilly Shire Council is identified in Schedule 2 as a local government area (LGA) to which the chapter does not apply (see section 3.3(1) of Chapter 3 of the SEPP (Biodiversity and Conservation)).

Similarly, Chapter 4 of the SEPP (Biodiversity and Conservation) does not apply to the proposal, as it is an activity for the purposes of Division 5.1 of the EP&A Act. The aims of this chapter are to "encourage the conservation and management of areas of natural vegetation that provide habitat for Koalas to support a permanent free-living population over their present range and reverse the current trend of Koala population decline." Although the provisions do not apply to the proposal, the REF has considered the potential impacts on Koalas and core Koala habitat as part of the Biodiversity Assessment Report to ensure a holistic understanding of potential impacts of biodiversity are captured.

The existing Picton Road already presents a barrier to wildlife movement. The assessment of wildlife connectivity and habitat fragmentation presented in section 5.2.2 of the Biodiversity Assessment Report found that given the connectivity of vegetation through the study area and region, and the nature of the proposed works being removal of linear vegetation adjacent to existing infrastructure, the connectivity is considered to be maintained within the landscape and the proposed works are not expected to result in the fragmentation of habitat for any species. Fauna exclusion fencing is being completed as part of a separate proposal to assist in encouraging fauna movement through existing safe passages such as the Pheasant's Nest Bridge (located on the M31 Hume Motorway, over the Nepean River in the south of the study area). The proposal is considered to be consistent with the outcomes proposed in CPCP Sub-plan B: Koalas (DPE, 2022b).

The proposal has sought to minimise the impacts on habitat for Koala and the assessment has determined that a significant impact on Koalas is not likely. Measures have been included to mitigate and manage potential impacts on biodiversity.

Submission number(s)

46, 82

Issue description

Two respondents noted that current development has already changed the landscape and removed habitat within the area, and as such there are less species likely to be present.

Response

A description of existing vegetation and identified fauna species within the proposal site is provided in section 6.1.2 and is based on the results of database searches and numerous rounds of field investigation.

The proposal has the potential for some biodiversity impacts that would be managed by implementing the safeguards and management measures proposed in section 7.2 of this Submissions Report.

2.5.2 Construction impacts

Impacts to native vegetation and fauna, including cumulative impacts

Submission number(s)

26, 34, 64, 88

Issue description

Respondents raised several issues regarding native vegetation and fauna, including:

- The proposal will result in the loss of CEEC and other endangered habitat that provides habitat for Koalas and many other threatened species.
- The environment is being destroyed in increments, until eventually there will be nothing left.
- Greater protection of native vegetation and habitat is needed in the area, particularly as habitat has already been lost.
- The removal of native vegetation for walkways and road widening will be detrimental to biodiversity.

Response

Transport strives to protect and enhance biodiversity with the goal of achieving no net loss of biodiversity as a consequence of its infrastructure development activities.

The proposal would result in an impact on native vegetation. An important consideration during design development has been to minimise potential impacts on biodiversity, particularly native vegetation, including listed threatened ecological communities (TECs) and avoided land under the CPCP. As a result of the design refinement process described in section 2.5 of the REF and section 5.2 of this report, the potential impacts on native vegetation have been minimised wherever possible.

The REF includes two additional safeguards specifically identified to increase the biodiversity measures above those required by legislation.

BI06 provides that "*a biodiversity offset strategy will be developed and implemented to facilitate offsetting of impacts that exceed the thresholds within the No Net Loss Guidelines"* (Transport for NSW, 2022a).

BI07 requires that:

> *Opportunities to replant disturbed areas within the proposal site identified for landscaping will be defined by, and undertaken in accordance with, the Urban Design and Landscaping Plan. The plan will include:*
>
> - *where possible and appropriate, use of native vegetation of local provenance (commensurate with PCTs 849 and 1395), in accordance with the recommended species planting provided in Appendix F of the Biodiversity Assessment Report (Appendix C of the REF)*
> - *defining revegetation requirements in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects (Transport for NSW, 2024) and in consultation with a biodiversity specialist*
> - *identifying ongoing vegetation monitoring and maintenance requirements as needed*
> - *use of native species with cultural value identified through consultation with Aboriginal stakeholders, where appropriate*
> - *defining appropriate plants that would contribute to the ongoing health of trees to be retained, including trees with Aboriginal cultural value.*

The proposal has the potential for some biodiversity impacts that would be managed by implementing the safeguards and management measures proposed in section 7.2 of this Submissions Report. However, these impacts would be outweighed by long-term transport, connectivity and safety benefits once the proposal is operational.

Submission number(s)

36

Issue description

One respondent asked about the proposal's impact on native wildlife, in particular the Black Cockatoo.

Response

Potential biodiversity impacts are summarised in section 6.1 of the REF and in more detail in the Biodiversity Assessment Report provided in Appendix C to the REF.

The Biodiversity Assessment Report identified that the Glossy Black-cockatoo (*Calyptorhynchus lathami*), listed as Vulnerable under the BC Act and EPBC Act, had a moderate likelihood of occurrence based on existing records and presence of suitable habitat. Targeted surveys (conducted in breeding season) did not detect the species. Consequently, it was determined that it was unlikely that there would be a direct impact on this species.

2.5.3 Operational impacts

Fauna connectivity and fauna fencing

Submission number(s)

7, 26, 57, 67, 68, 103

Issue description

Several respondents commented that the proposal will worsen the barrier effect for wildlife, and that there is a lack of fauna crossings to allow wildlife, particularly Koalas, to migrate across the road corridors. Respondents requested the inclusion of fauna underpasses and fauna fencing to allow the safe movement of wildlife across the road corridor and improve fauna connectivity.

One respondent requested that the road should be elevated at locations of fauna fencing to allow wildlife to escape during bushfires.

Response

Wildlife connectivity and habitat fragmentation is discussed in detail in section 5.2.2 of the Biodiversity Assessment Report. The Biodiversity Assessment Report found that:

- Vegetation throughout the study area and region is relatively well connected.
- The proposal would predominantly remove linear areas of vegetation adjacent to existing road infrastructure.

The proposal is not expected to result in the further fragmentation of habitat for any species and connectivity of vegetation within the landscape would be maintained. Consequently, a need for fauna crossing structures was not identified. Furthermore, the proposed land use changes surrounding the proposal in the coming years are likely to further contribute to a reduction in wildlife movement across the landscape surrounding the proposal.

Specifically in relation to Koala, the assessment found that the Pheasants Nest Bridge (located on the M31 Hume Motorway over the Nepean River in the south of the biodiversity assessment study area) provides existing passage for fauna which may pass under these bridges. Vegetation below the bridges, along the Nepean River, would not be removed because of the proposal, and minor removal of vegetation adjacent to the roadways (above the edge of the Nepean River cliff line) is unlikely to reduce the width of the vegetated corridor such that Koala movement would be impeded.

The Biodiversity Assessment Report found that the function of the connective vegetation corridors within and adjacent to the study area is not likely to be impacted by the scale of vegetation removal proposed for the proposal and therefore the proposal would be unlikely to fragment or isolate the existing population of Koala.

Additionally, as stated in section 6.1.3 of the REF, fauna exclusion fencing is proposed to be erected along heavily vegetated sections of Picton Road and the M31 Hume Motorway prior to commencement of the proposal as part of a separate Transport proposal. Further information is available via: Koala Fencing – Hume Motorway, Wilton Review of Environmental Factors. There is no fauna fencing present within the existing western section of the Picton Road upgrade (this proposal), although fauna connectivity structures are present within the southern extent of the proposal on the M31 Hume Motorway near Pheasants Nest.

2.5.4 Safeguards and management measures

Rehabilitation measures

Submission number(s)

39

Issue description

One respondent suggested Transport find opportunities to transfer vulnerable plants to verges and the central strip of the M31 Hume Motorway.

Response

Transport would identify opportunities to replant disturbed areas within the proposal site identified for landscape, in accordance with the Urban Design and Landscaping Plan (safeguard BI07).

Biodiversity offsets

Submission number(s)

94

Issue description

One respondent raised the following concerns regarding biodiversity offsets:

- Biodiversity offsets are the bare minimum that should be considered.
- The rehabilitation or creation of replacement habitat for cleared ecological communities should be local, and preferably adjacent to the destroyed habitat.
- Offset credits in other areas do not help maintain the local environment.
- Maintaining the health of local flora and fauna should be the goal when planning for offsets and biodiversity management.

Response

Transport has incorporated a range of measures into the planning and design of the proposal to reduce impacts on biodiversity, using a hierarchy starting with Avoiding, Minimising, Mitigating and finally Offsetting. These measures, as outlined in section 7.2 of this report, include minimising threatened fauna habitat removal during detailed design, establishing exclusion zones and tree protection measures during construction, and replanting of disturbed areas following completion of construction. Additionally, it is estimated that up to about 399 trees would be offset based on the proposed vegetation removal in eligible vegetation zones, as detailed in Table 6-10 of the REF. Tree replacement and other relevant conservation measures would be carried out in accordance with the Transport Tree and Hollow Replacement Guideline (EMF-BD-GD-0129).

Offsets are required to compensate for the residual biodiversity impacts which are unable to be avoided, minimised or mitigated. The offset rules are established in the Biodiversity Conservation Regulation. In accordance with the offset rules established by the Biodiversity Conservation Regulation, offset obligations can be achieved by retiring the appropriate biodiversity credits from a Biodiversity Stewardship Site, monetary payment directly into the Biodiversity Conservation Fund, or an approved biodiversity action.

In seeking the appropriate credits, Transport would source and establish the same vegetation that would be impacted by constructing the proposal, generally within the same area, in accordance with NSW legislative requirements. Transport would also develop and implement a Biodiversity Offset Strategy to facilitate the offsetting, which would include additional targeted flora surveys in areas not previously surveyed due to access constraints to confirm species presence and the amount of non-statutory offsets required (safeguard BI06).

Under the Biodiversity Offsets Scheme, a proponent can choose to pay into the Biodiversity Conservation Fund to meet an offset obligation. This is an alternative to retiring credits. By doing this, the responsibility of finding an offset is transferred to the Biodiversity Conservation Trust. Transport would only pursue this option if it were unable to directly purchase and retire sufficient biodiversity credits from Biodiversity Stewardship Sites.

In addition, requirements to provide biodiversity offsets, conservation measures or tree hollow replacement have been developed in accordance with:

- *No Net Loss Guidelines* (Transport for NSW, 2022a) and supporting resources
- *Tree and Hollow Replacement Guidelines* (Transport for NSW, 2022d) and supporting resources.

The replacement requirements under these guidelines take into consideration tree age and size to allow for appropriate compensation for future habitat requirements, such as hollows (see Table 6-10 in the REF).

Biodiversity offsets would be finalised in accordance with the NSW Biodiversity Offsets Scheme and Transport's additional guidelines.

Opportunity to improve outcomes for wildlife

Submission number(s)

26, 47, 88

Issue description

Three respondents suggested that the proposal should be used as an opportunity to improve outcomes for wildlife and biodiversity.

Response

Transport strives to protect and enhance biodiversity with the goal of achieving no net loss of biodiversity as a consequence of its infrastructure development activities.

The REF includes two additional safeguards specifically identified to increase the biodiversity measures above those required by legislation:

- BI06 provides that "a biodiversity offset strategy will be developed and implemented to facilitate offsetting of impacts that exceed the thresholds within the No Net Loss Guidelines" (Transport for NSW, 2022a)."
- BI07 requires that: "Opportunities to replant disturbed areas within the proposal site identified for landscaping will be defined by, and undertaken in accordance with, the Urban Design and Landscaping Plan." This will include specific requirements around local provenance and consideration of Aboriginal cultural values.

2.6 Traffic and transport

2.6.1 Adequacy of assessment, including existing environment

Existing and projected traffic within the proposal site and adequacy of the assessment

Submission number(s)

10, 12, 19, 30, 37, 38, 40, 41, 43, 47, 51, 52, 54, 56, 57, 59, 62, 64, 71, 72, 73, 74, 76, 79, 80, 82, 84, 87, 89, 91, 92, 94, 97, 99, 103

Issue description

The following issues were raised about the existing and projected traffic within the proposal site:

- The intersections are permanently busy as the traffic signals do not allow enough time for vehicles to move through, and the signalling needs improving.
- The traffic lights at housing developments slow traffic and cause congestion.
- Traffic on Picton Road and onto the M31 Hume Motorway has dramatically increased in the last few years since the establishment of Bingara Gorge and will continue to increase with planned local and regional growth when the Wilton Greens estate is established.

- Traffic in the Wollondilly region has increased with no road infrastructure planned to support development, with the exception being the Wilton end of Picton Road. As such there are long traffic queues, particularly in Picton during school drop off and pick up.
- Traffic heading from the Wollongong area on Picton Road to the M31 Hume Motorway northbound is highly congested between 3.30pm and 5pm which results in long queues on Picton Road.
- Traffic in the Picton area is very busy from around 4pm to 5.30pm, particularly as there are no trains and only school buses.
- Traffic is very congested as public transport is not adequate in the area.
- The proposal and the traffic assessment does not adequately consider the projected future growth, and therefore the proposal will not be able to sufficiently meet the traffic demands of the area. It was suggested infrastructure would need to be rebuilt in a few years' time to adequately manage traffic.
- The REF does not consider the significant impacts on the road network as a result of the proposal.
- The proposal would constrain or prevent viable development of surrounding development precincts.
- The proposal has only focussed on residential housing development and does not appear to have considered impacts on Wilton Village and Douglas Park residents and movement of large private vehicles, such as horse floats and larger trailers.

Response

The M31 Hume Motorway and Picton Road Diverging Diamond Interchange is predicted to provide a significant improvement to the performance of the interchange based on the forecast traffic demand in 2046, when compared to the existing arrangement.

Table 6-17 of the REF summarises the existing interchange performance from 2022. This table shows that the northbound on and off ramps at the interchange are currently significantly congested in both the morning and afternoon peak periods and operate at a LoS E in the afternoon peak.

Modelling of the future road network identified that traffic growth between 2022 and 2046 is expected to be about 70 to 90 per cent. This takes into account projected population growth from regional development plans, including in Wilton 2040 (see section 6.2 of the REF) and population and employment growth projections provided by the Department of Planning, Housing and Infrastructure for 2046.

With this forecast projected growth in traffic, the Diverging Diamond Interchange is predicted to operate at a LoS B (good, with acceptable delays) in both the morning and afternoon peak periods in 2046.

Figure 6-3 of the REF presents the wider road network modelled as part of the Traffic and Transport Impact Assessment. The extent of the traffic model covered the Wilton Growth Area, the M31 Hume Motorway between Pheasants Nest in the south and Douglas Park in the north, Picton Road as far west as Maldon, and as far east as the administrative boundary of the suburb of Wilton, including the full length of MacArthur Drive. While the results reported on the Traffic and Transport Impact Assessment focused on the proposal site, Figure 8.2 of this assessment presents minimal traffic congestion for the surrounding network in 2046.

The proposal would result in improved accessibility enabling longer combinations of large heavy vehicles and improved OSOM access due to the improved road geometry and bridge load capacity, especially at the interchange.

Deviation from published traffic plans

Submission number(s)

92

Issue description

One respondent queried why Transport has deviated from the traffic plans outlined in the *Wilton Junction Development Transport Management and Accessibility Plan 2014* (PB, 2014), which much of Wilton planning has been based on. The main differences outlined by this respondent include:

- The relocation of the southbound off ramp from the M31 Hume Motorway to Fairway Drive, rather than the proposed north-south road bridge as outlined in the Transport Management and Accessibility Plan.

- Removal of direct access to/from Picton Road from Condell Park Road Precinct, especially since there is no further information and/or justification for removing direct access of Condell Park Road Precinct to/from Picton Road.

The respondent was also concerned that not including direct access to/from Picton Road for the potential future Condell Park Road Precinct would:

- Restrict access to the precinct and therefore adversely impact the viability of the future development of the precinct and other employment lands within the Wilton Growth Area.
- Impact the operation and safety of local roads and intersections as the existing road network would be unable to accommodate additional vehicle trips generated by the Condell Park Road Precinct.
- Restrict truck route to and from the precinct for vehicles larger than 10.7 metres.
- Result in amenity impacts for residents as additional vehicles, including trucks, would need to use local roads to access the Condell Park Road Precinct.
- Delay development of the Condell Park Road Precinct for up to 20 years prior to the construction of a north-south bridge road over the M31 Hume Motorway, as outlined in the 2014 Traffic Management and Accessibility Plan.

Response

The Wilton Growth Area surrounds Picton Road and the M31 Hume Motorway in the vicinity of the proposal. The Department of Planning, Housing and Infrastructure and Wollondilly Shire Council are planning for Wilton to become a new town providing about 15,000 homes and 15,000 jobs across seven precincts, including a town centre (the Wilton Town Centre) adjoining the north-western side of the Picton Road and M31 Hume Motorway interchange. *Wilton 2040 – a Plan for the Wilton Growth Area* (DPE, 2018) (Wilton 2040) would guide the growth of the Wilton community over the next 20 years. Wilton 2040 supports the strategic planning for the Wilton Growth Area since 2011 and provides a high-level planning framework for the Wilton Town Centre, its supporting residential neighbourhoods, infrastructure, and commercial and employment areas.

The proposal is aligned with Wilton 2040 as it would provide the above capacity improvements and would, via the provision of the proposed shared user paths, contribute to the active transport connections across the M31 Hume Motorway between development areas to the south-west and south-east of the Picton Road and M31 Hume Motorway interchange. A direct access from Condell Park Road to Picton Road is not part of the Wilton 2040 infrastructure upgrades nor is it part of the proposal.

An updated list of infrastructure upgrades in accordance with Wilton 2040 can be found in Table 5-1of this Submissions Report. The southbound off ramp from M31 Hume Motorway to Fairwater Drive is part of the North Wilton grade-separated crossing over the M31 Hume Motorway, including north facing on and off ramps infrastructure upgrade.

Basis of traffic modelling and traffic assessment

Submission number(s)

92, 95

Issue description

Two respondents raised detailed concerns regarding the traffic modelling and traffic assessment for the proposal, including the following:

- The traffic modelling carried out to date by Transport, including the 2046 Project Case Hybrid Meso-Micro forecast volumes (Base 2046 volumes) and traffic modelling for the REF, does not consider the Condell Park Road Precinct or other sub-precincts in the Wilton Growth Area.
- There are differences between the volume forecasts and sub-precinct developments in the Wilton Growth Area, which are based on the same data and modelling completed by Transport.
- The Base 2046 volumes do not appear to include sufficient allowances for all movements to and from the potential Condell Park Road Precinct or the Wilton South East Precinct.
- The estimated vehicle trips for the Condell Park Road Precinct would need to use local residential roads and intersections to access the sub-regional road network, and the local roads are not designed for this capacity.

- Whether SIDRA was used in the traffic modelling and the reason for additional traffic modelling being proposed in the safeguards.
- No reference has been made to the Greater Macarthur Mesoscopic Model (referred to as G3M) which has been developed by Transport to provide common and holistic assumptions for the region.

One respondent requested that Transport carry out:

- New traffic modelling for the entire Wilton Growth Area to ensure the proposal does not impact future development of the Condell Park Road Precinct and other future employment lands within the Wilton Growth Area.
- Comprehensive modelling of the entire Wilton Growth Area prior to construction.

The other respondent noted that while sensitivity testing has been done in the 2046 assessment year, the whole traffic assessment should be based on the G3M, which is consistent with other strategic level assessments occurring within the area.

Response

All volumes for the operational assessment are derived from Transport's Strategic Transport Forecast Model, which reflects travel zone projections (TZP19-Hybrid and TZP22) and planned transport infrastructure projects. The volumes consider the latest land-use data at the time of the assessment, which included data in relation to all precincts of the Wilton Growth Area. As inputs for these models are updated, additional traffic modelling with the latest information could be required (safeguard TT04) to refine the design during detailed design.

The values reported in the REF are based on the TZP19-Hybrid projections, however modelling using the TZP22 projections was also undertaken, with similar results to those reported.

A microsimulation traffic model was developed to determine the performance of the road network under different future scenarios. This traffic model was prepared using the software program Aimsum for the operational assessment, which allows for more detailed network wide modelling to be done. SIDRA was used for the construction staging modelling. Aimsum can perform the modelling function for a corridor, hence it is not always necessary to include SIDRA when modelling traffic. This approach is in accordance with Transport's Traffic Modelling Guidelines.

The year 2046 was selected to be modelled as this corresponds to the planning horizon when future growth in Wilton and the surrounding region is anticipated to be fully realised.

Further traffic modelling incorporating the G3M would be completed as a sensitivity test to inform detailed design, capturing the latest information on demand forecasts and timing of other network upgrades where required (refer to safeguard TT04 from Table 7-1of this report). An initial comparison has been made between the TZP22 and G3M inputs and outputs. At this stage, it is not expected that the results would greatly differ between the two modelling efforts.

The traffic modelling for Picton Road includes a microsimulation model that was deemed more appropriate to assess the impact of the corridor performance, including the M31 Hume Motorway interchange. Further, when the traffic modelling for the proposal commenced in 2022, the G3M did not exist.

The developer of the Condell Park Road precinct will be responsible for assessing and mitigating any traffic and transport related impacts from this development on the local road network, including access onto Picton Road, if applicable.

Pembroke Parade intersection

Submission number(s)

39

Issue description

One respondent commented that the left-hand turn into Pembroke Parade eastbound is inadequate and does not provide sufficient time for vehicles to merge into the eastbound lane towards Wollongong.

The respondent suggested that the left-hand turn into Pembroke Parade should be extended further west to at least 100 metres, and two uninterrupted lanes of traffic should proceed eastbound towards Wollongong from the Picton Road/M31 Hume Motorway interchange.

Response

The recent upgrade works to the Pembroke Parade/Picton Road/Greenway Parade intersection involved the upgrade of the intersection from a priority-controlled intersection to a signalised intersection. The proposal would provide three through lanes in the vicinity of Pembroke Parade.

Table 6-24 of the REF shows that forecast intersection performance of the Pembroke Parade/Picton Road/ Greenway Parade intersection in 2046 with the proposal in place is predicted to operate at an acceptable level (LoS C) in both the morning and afternoon peak periods. Traffic modelling of the existing arrangement of this intersection demonstrates that the left turn lane into Pembroke Parade has sufficient vehicle queuing length for vehicles travelling eastbound on Picton Road wanting to turn left into Pembroke Parade for the intersection to operate at an acceptable level in 2046.

Submission number(s)

68

Issue description

One respondent commented that Pembroke Parade should go over Picton Road due to the traffic heading west and the number of serious collisions at the intersection of Pembroke Parade and Picton Road.

Response

Grade separation of the Pembroke Parade/Picton Road intersection is not currently being considered and is outside the scope of the proposal.

The speed limit on Picton Road near the intersection with Pembroke Parade is proposed to be reduced from 80 km/h to 60 km/h which will help improve the safety of this intersection.

2.6.2 Construction impacts

M31 Hume Motorway interchange closure

Submission number(s)

39

Issue description

One respondent queried whether the proposal would require closure of the M31 Hume Motorway interchange for prolonged periods as the bridge is being replaced.

Response

It is not envisaged that a full closure of the M31 Hume Motorway and Picton Road interchange would be required during construction of the proposal.

There would be temporary disruptions to normal traffic flows during construction of the proposal to enable safe conditions for construction workers and road users. Construction would be carried out in stages (as described in section 3.3 of the REF) and would involve different traffic management arrangements for each construction stage to facilitate safe movements of vehicles within and around the interchange and the proposal site.

To enable the construction of the interchange, short term M31 Hume Motorway carriageway closures would be required. These short-term closures would be managed to maintain traffic flows through the proposal site and would be likely to include special management provisions for OSOM vehicles. Works impacting the M31 Hume Motorway would be undertaken at night where necessary, to minimise traffic disruptions (safeguards TT01 and NV02).

Traffic delays during construction

Submission number(s)

54, 63, 79

Issue description

One respondent queried whether the 60 km/h speed limit be during construction only or remain during operation. One respondent commented that construction for a project of this size would result in short-term issues without long-term solutions.

One respondent noted that the construction will be good for traffic flow.

Response

The proposal includes a reduction in the posted speed from the western extent of the proposal, through the interchange and to the east of Pembroke Parade from the current 80 km/h to 60 km/h. The existing speed limit would be maintained from just east of Pembroke Parade through to the eastern end of the proposal and east of Almond Street. During construction, traffic movements in the area may be altered and temporary increases to travel times for road users would occur. Construction would be carried out in stages (as described in section 3.3 of the REF) and would involve different traffic management arrangements for each construction stage to facilitate safe movements of vehicles within and around the proposal site as well as a safer working environment for construction crews.

Construction staging and management strategies for these impacts would be described in a Construction Traffic Management Plan (safeguard TT01). Appropriate traffic arrangements would be implemented to maintain access through and around the proposal and ensure safe travel movements and would involve temporary devices such as signage and devices, speed limits and traffic signals. Road users would also be kept informed of temporary arrangements.

The proposal, once operational, aims to provide long-term improved road safety and performance outcomes including:

- increased intersection performance
- increased average vehicle speed across the network
- reduced vehicle delay across the network
- reduced travel time and vehicle hours travelled between the Nepean River Bridge and Macarthur Drive.

Management of amenity impacts during construction

Submission number(s)

89

Issue description

One respondent commented that construction needs to be better managed than the previous widening into Wilton as the dust and traffic management was not adequate.

Response

The recent upgrade works to the Picton Road/Pembroke Parade/Greenway Parade intersection were managed by a private developer not Transport.

Table 7-1 of this report provides the environmental safeguards and management measures that would be strictly adhered to during the detailed design, construction and operational phases of the proposal. These safeguards include a range of traffic and transport and air quality safeguards (denoted as TT01-TT04 and AQ01 respectively in Table 7-1 of this report) that, when implemented, would minimise any potential adverse impacts arising from the proposed works on the surrounding environment.

Local road 'rat-run' impacts during construction

Submission number(s)

103

Issue description

One respondent commented that consideration during construction planning should be given to the potential 'rat-run' that might be created when the Wilton North off ramp is commissioned. It is suggested that

southbound vehicles will travel through Bingara Gorge and Wilton to avoid construction at the Picton Road/M31 Hume Motorway interchange. Increased traffic volumes using this potential rat-run would impact the safety of Bingara Gorge and Wilton.

Response

The North Wilton road overbridge over the M31 Hume Motorway (Nyloc Bridge), including northbound on and off ramps, is an infrastructure upgrade to be delivered by developers and is expected to commence construction in 2026. This infrastructure upgrade has been assumed to be operational during construction of the proposal.

Safeguard TT01 states that a CTMP will be prepared and implemented prior to and during construction, by the construction contractor. The CTMP will include site-specific traffic control measures to manage and regulate traffic movement as well as consideration of other developments to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic.

Safeguard TT02 includes further consultation with Wollondilly Shire Council during pre-construction and construction with regards to the use of local roads for construction traffic, including detours and temporary traffic routes that would be detailed in the CTMP.

Further consideration of this issue would be captured as part of the detailed design traffic modelling and the CTMP prepared prior to construction of the proposal commencing.

2.6.3 Operational impacts

Impact on local roads

Submission number(s)

51, 52, 92

Issue description

Some respondents raised concerns that the proposal, particularly the proposed left-in, left-out at Almond Street if delivered ahead of the Almond Street interchange, will force traffic onto Hornby and Oxenbridge streets and Pembroke Parade, which are not designed to carry a large amount of traffic nor suitable for heavy vehicles.

In addition to the intersection specific comments addressed in sections 2.3.2, 2.3.3, 2.3.4, 2.3.5, several respondents commented more generally that the additional travel distance for vehicles approaching from the north west to Picton Road as a result of the proposed left-in, left-out treatments at Almond Street, Aerodrome Drive and Wilton Park Road is unacceptable. The additional travel would have considerable environmental and safety implications for the existing residents, proposed business precinct and other residential development proposals in West Wilton.

One respondent commented that the extra traffic will result in additional costs for Wollondilly Shire Council to maintain the roads.

Response

In response to concerns raised by the community, Transport has identified an opportunity to provide an upgraded channelised right turn into and out of Almond Street if the delivery of the developer-funded interchange is delayed with respect to the proposal. This arrangement would be built as part of Stage 1 of the proposal and remain in place until the ultimate arrangement is constructed in Stage 2. Further detail on this design change is provided in section 5.3 and an assessment of the traffic impact is provided in section 6.2. This interim arrangement at Almond Street would provide for channelised right turn movements, which would minimise traffic otherwise using alternate local road routes, such as Hornby Street, Oxenbridge Street and Pembroke Parade, to access/egress Picton Road.

Transport has also identified an opportunity to provide an interim U-turn facility located about 100 metres west of the intersection with Wilton Park Road to allow westbound vehicles to make a U-turn towards the M31 Hume Motorway and Wollongong without having to travel further west to the existing roundabout on Picton Road and Maldon Bridge Road. Further details of this interim change are provided in section 5.4 of this report. The U-turn facility would remain in place until the developer-funded intersection relocation and signalisation is built. This

interim arrangement would minimise traffic otherwise using alternate local roads. More information about the intersection of Picton Road with Aerodrome Drive can be found in section 2.3.5.

Picton Road is a classified road and is maintained by Transport. Potential maintenance costs to Wollondilly Shire Council are addressed in section 3.2.8 of this report.

Parking arrangements

Submission number(s)

15, 30, 69, 103

Issue description

Four respondents commented about parking along Picton Road:

- Truck parking on Picton Road is insufficient for the existing heavy vehicle movements a day.
- There needs to be clear sightlines throughout the proposal site and appropriate signage to prevent vehicles and other transport equipment from parking within the shoulders of Picton Road.
- The proposal needs to preserve the economic function of the Wilton commercial area in Camden Street to not disrupt customer access. Consideration should be given to trucks and other heavy vehicles that use Wilton as a rest stop, as it is an approved B-double route, and sufficient alternative truck parking should be factored into the proposal.

Response

Picton Road currently has no formal parking areas within the proposal site.

Picton Road would be signed as Emergency Stopping Lane Only and parking on road shoulders would not be permitted. This would reduce potential obstructions to sight distance and emergency access. Safer opportunities for parking for light vehicles are available within nearby local roads including along Pembroke Parade, Oxenbridge Avenue and Almond Street.

Existing heavy vehicle rest/parking demand would be accommodated by existing rest areas located near the proposal site. Providing additional heavy vehicle parking areas is outside of the scope of this proposal however, Transport would continue to investigate the provision of heavy vehicle facilities as a part of the Picton Road upgrade central and eastern sections.

2.7 Aboriginal heritage

2.7.1 Adequacy of assessment, including existing environment

Submission number(s)

49

Issue description

One respondent supported the inclusion of an Aboriginal cultural heritage assessment to reduce the potential impacts of the proposal on Aboriginal heritage.

Response

Transport acknowledges the respondent's support of the Aboriginal cultural heritage assessment in section 6.3 and Appendix E of the REF.

2.7.2 Construction impacts

Submission number(s)

49, 61

Issue description

One respondent supported that local Aboriginal heritage was being included and ways to reduce impacts on Aboriginal heritage were included in the proposal.

One respondent queried whether the Aboriginal artefacts could be excavated in consultation with the local community and given to custodians.

Response

Safeguard AH01 requires the preparation of an Aboriginal Cultural Heritage Management Plan which would provide specific guidance on measures and controls to be implemented for managing impacts on Aboriginal heritage, including the salvage of artefacts. The plan would be prepared in consultation with Registered Aboriginal Parties, and they will determine the appropriate management and ownership of the artefacts.

Consultation undertaken as part of the Aboriginal Heritage Impact Permit (AHIP) (safeguard AH06) would also inform the decisions made about appropriate management and ownership of artefacts. Aboriginal archaeological material excavated for the preparation of the Aboriginal cultural heritage assessment will be returned to Country as soon as practicable, in a process to be agreed upon in consultation with the Registered Aboriginal Parties (safeguard AH08).

2.8 Non-Aboriginal heritage

2.8.1 Construction impacts

Submission number(s)

43, 47, 54, 82

Issue description

One respondent commented that restrictions should be carefully considered when carrying out activities over the Upper Canal System (Pheasants Nest Weir to Prospect Reservoir).

One respondent commented that there did not appear to be any heritage items to be impacted, and one noted that if there are any heritage items that they should be preserved. One commented that the heritage of the area is being used by developers in promoting their projects.

Response

Section 6.4 and Appendix F of the REF assesses the proposal's impacts on non-Aboriginal heritage. Transport acknowledges that construction activities associated with the proposal have the potential to indirectly impact the curtilage of the Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) State heritage item. No direct impacts to the item itself are anticipated, as the item is 90 metres below ground level. As discussed in section 6.4.3 of the REF, the overall impact of the proposal to the Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) was assessed as minor. No specific mitigation or management measures were identified as being required during construction of the proposal. Furthermore, it is noted that WaterNSW in their submission indicated that they were satisfied with the design and proposed management measures (see section 3.5 of this report).

Safeguards and management measures would be implemented to address these impacts. Safeguards include but are not limited to inclusion of sensitive environmental areas including non-Aboriginal heritage (safeguard NH01) in mapping in the CEMP, exclusion zones (safeguard GEN5), minimisation of construction footprint where possible to avoid potential impacts to sensitive areas (safeguard GEN4), and monitoring of ground disturbance and vibration works (safeguard NV04).

2.8.2 Impact assessment and mitigation by third party projects

Submission number(s)

41

Issue description

One respondent expressed concern that the heritage of the original Wilton Village is not being preserved nor recognised through the design of the proposal.

Response

The Wilton Village area is undergoing substantial change. The Wilton Growth Area surrounds Picton Road and the M31 Hume Motorway in the vicinity of the proposal. The Department of Planning, Housing and Infrastructure and Wollondilly Shire Council are planning for Wilton to become a larger town providing about 15,000 homes and 15,000 jobs across seven precincts, including a new town centre (the Wilton Town Centre) adjoining the north-western side of the Picton Road and M31 Hume Motorway interchange.

The landscape character and visual impact assessment presented in section 6.10 and Appendix K of the REF, identified two viewpoints in the vicinity of Almond Street, and the existing Wilton Village. The findings of the visual impact assessment were that there would be negligible impacts to residents in the area as works would generally be confined to the road corridor and would be consistent with the existing character landscape.

There would be opportunity to include local character and amenity considerations in Urban Design and Landscaping Plan that will be prepared to support the final detailed project design and implemented as part of the CEMP (safeguard LV01).

2.9 Hydrology and flooding

2.9.1 Adequacy of assessment, including existing environment

Stormwater modelling and design

Submission number(s)

29

Issue description

One respondent requested information relating to stormwater modelling, reporting and design for the existing watercourses along Picton Road near the Almond Street intersection.

Response

Information relating to stormwater modelling for the existing watercourse near the Picton Road and Almond Street intersection can be found in Appendix G – Hydrology and Hydraulics Assessment of the REF.

2.9.2 Operational impacts

Additional soil deposition and stormwater flow

Submission number(s)

43

Issue description

One respondent suggests road stormwater designs are creating unwanted soil deposition and directing stormwater into adjacent residential lots.

Response

Design of the proposal includes open drains, known as swales, as well as an underground network of pits and pipes that convey and direct surface water from the proposal to water quality treatment devices. The water quality treatment devices are described in section 3.2.3 of the REF and may include bio-retention media and planting, swales, spill basins and other treatment devices. These treatments would manage runoff from the road surface during operation to capture stormwater and reduce soil deposition and the impact of spills and pollutants on water quality (safeguard SW03).

Flood management by proposed basins

Submission number(s)

29

Issue description

One respondent requested confirmation that the one per cent annual exceedance probability (AEP) flood extent for catchment areas along Picton Road near the Almond Street intersection will be managed by the proposed basins on the northern side of Picton Road.

Response

The one per cent AEP flood extents with the proposal is shown in Figure 6-14 of the REF. As a result of the proposal, culverts which cross transversely underneath Picton Road (i.e. in a generally north south alignment) would be upgraded in size and hydraulic performance as required. The upgraded culverts would reduce the likelihood of one per cent AEP flooding events on Picton Road within the proposal site (safeguard HF01).

The one per cent AEP extents with the proposal near the Picton Road and Almond Street intersection are generally contained to the existing drainage line with the tributary of Allens Creek known as Tributary 9.

2.10 Surface water and groundwater

2.10.1 Operational impacts

Surface water runoff and pollution

Submission number(s)

43

Issue description

One respondent raised the following concerns about surface water runoff and pollution:

- The proposal would result in a higher likelihood of diesel spills and soil entering the Sydney Water Catchment Area.
- The design lacks the inclusion of sediment control measures or oil separators.

Response

The Greater Sydney Drinking Water Catchment is upstream of the proposal site and consequently it is not in the drinking water catchment, as shown in Figure 6-11 of the REF. However, the catchment is located about 500 metres south of the proposal site at its closest point.

The proposal site drains to the Nepean River downstream of the Sydney Drinking Water Catchment. The assessment indicated that the proposal would result in greater pollutant loads in stormwater if no treatment measures were incorporated into the design. However, with the installation of the proposed water quality treatment devices (see section 3.2.3 of the REF) the annual average pollutant load in stormwater runoff from Picton Road would be substantially lower than the annual average pollutant loads under existing conditions. In particular, the pollutant loads from the operation of Picton Road within the proposal site would be between 18 per cent and 79 per cent of the existing loads for the different parameters assessed. As such, the proposal would result in overall beneficial outcomes for the water quality of the receiving environment compared to the existing conditions.

The water quality treatment devices are described in section 3.2.3 of the REF and may include bio-retention media and planting, swales, spill basins and other treatment devices (safeguard SW03). These treatments would manage runoff from the road surface during operation to capture stormwater and reduce soil deposition and the impact of spills and pollutants on water quality. The proposed water quality treatment devises would cater for spill containment of a minimum volume of 30,000 litres.

2.11 Noise and vibration

2.11.1 Adequacy of assessment, including existing environment

Existing noise within the proposal site and adjacent neighbourhoods

Submission number(s)

9, 32, 36, 40, 43, 45, 52, 64, 65, 93

Issue description

Several respondents commented on the existing noise within the proposal site and adjacent neighbourhoods, with comments including:

- Too many heavy vehicles currently using Picton Road, which results in loud compression braking during the day and at night and the noise levels are unacceptable for residents.
- Noise barriers have not been erected to mitigate current heavy vehicle noise, particularly for residents not part of Bingara Gorge or Wilton Green.
- Development in the area has resulted in heavier congestion and an increase of noise pollution.
- Noise has increased from truck compression braking since the new intersection at Pembroke Parade has been constructed, as well as from the concrete roads.
- The sound barriers placed alongside Wilton Green are now funnelling the noise from Picton Road into Wilton Village.
- The noise reports show that no noise barriers are needed on the north side of Picton Road, however it was a requirement of the South Wilton development.
- There is constant noise and considerable vibration on the existing bridge.
- Traffic from the M31 Hume Motorway can be heard now. Increased traffic on Picton Road will compound noise and destroy rural living.
- The noise levels since the Wilton Green development have commenced, coupled with the noise from Picton Road, the traffic lights at Pembroke Parade and the Wilton Green noise barrier, has increased so dramatically that it is disrupting sleep.
- Heavy vehicles and larger amounts of traffic are travelling through Oxenbridge and Hornby Streets, which are residential streets. The existing vehicle movements are causing noise and vibration in these streets and impacting the use of rooms closest to the road.

Response

Transport acknowledges that the existing noise environment is dominated by road traffic noise from vehicles travelling along Picton Road and the M31 Hume Motorway. It is also acknowledged that the development of adjacent neighbourhoods and precincts can also result in additional noise for existing sensitive receivers and the local community.

A Noise and Vibration Impact Assessment (Appendix J of the REF) was carried out to evaluate potential impacts due to the construction and operation of the Picton Road upgrade between Nepean River and Almond Street based on existing and predicted noise levels. The results of this modelling and assessment indicate that mitigation treatments including additional noise barriers or mounds are not considered feasible mitigation measures. As such, at-property treatments have been recommended for some receivers (see section 6.8.4 of the REF). This mitigation approach would be confirmed as part of the Operational Noise and Vibration Review (ONVR) (safeguard NV08), which would be done as part of detailed design. The Noise and Vibration Impact Assessment included an assessment of maximum noise events, which covers heavy vehicle noise and compression braking. The maximum noise event results are discussed in section 6.8.4 and Appendix J of the REF.

Post-construction operational compliance noise monitoring would be carried out within 12 months of completion of the proposal and would be completed once traffic flows have stabilised (safeguard NV09). Noise mitigation measures would be revised at the completion of the monitoring period and additional measures would be considered should non-compliance be identified.

The potential for noise being reflected from the noise barriers at Bingara Gorge and Wilton Green would also be further investigated during detailed design as part of the ONVR to identify the need for noise mitigation, such as noise walls.

The development approval for the Wilton Greens subdivision includes a 3.6 metre high (1.8 metre mound plus a 1.8 metre acoustic fence) noise barrier along the site's frontage with Picton Road and architectural treatment packages. These mitigation treatments have been constructed by the developer, to reduce noise for the future residences fronting Picton Road. These measures would also mitigate projected operational noise from the proposal.

Transport is mindful of the problems associated with excessively noisy heavy vehicle compression brakes in the vicinity of residential areas. Transport checks heavy vehicles for faulty noise emission control equipment at periodic inspections or following complaints and can issue defect notices where warranted. The proposal improved geometry and traffic flow would also assist in reducing the use of compression braking. The proposal includes two new bridges over the M31 Hume Motorway which should result in an improvement in vibration compared to what is currently experienced with the existing bridge, which is nearing end of its current life.

Noise readings from monitoring results

Submission number(s)

9, 43

Issue description

Two respondents commented that the proposal fails to consider the increase in noise readings to residential lots and that the noise monitoring results are inaccurately estimating the impact on residents.

Response

The methodology used to determine the noise and vibration criteria, modelling, and results for the noise and vibration impact assessment is provided in section 6.8.1 and Appendix J of the REF. Construction noise was assessed in accordance with the *Construction Noise and Vibration Guideline (Roads)* (Transport for NSW, 2022) and operational noise in accordance with the *NSW Road Noise Policy* (DECCW, 2011).

The results from the noise monitoring, existing traffic counts, construction scenario modelling and operational noise modelling are assessed against the relevant noise and vibration criteria, depending on the sensitive receiver type. The modelling determines the potential noise and vibration impacts to sensitive receivers and identify which noise catchment areas (NCAs) and/or sensitive receivers qualify for mitigation. This process considers both the increase in existing road traffic noise levels as a result of the proposal and future noise levels.

The mitigation type, including at-property treatments and noise barriers would be determined in detailed design in accordance with the *Road Noise Mitigation Guideline* (Transport for NSW, 2022b) and the *At-Receiver Noise Treatment Guideline* (Transport for NSW, 2022c). The proposed noise mitigation measures, particularly safeguards NV08 and NV09, would be implemented to review and mitigate operational noise during detailed design and during operation. An ONVR would be carried out to review the potential for operational noise impacts based on the most current information and thereby confirm feasible and reasonable mitigation measures (safeguard NV08).

Post-construction operational compliance noise monitoring would also be carried out within 12 months of completion of the proposal and would be completed once traffic flows have stabilised (safeguard NV09). Noise mitigation measures would be revised at the completion of the monitoring period and additional measures would be considered should non-compliances be identified.

2.11.2 Construction impacts

Submission number(s)

41

Issue description

One respondent queried how construction noise and vibration will disrupt the daily commute to work, upset pets and impact property.

Response

Section 6.8 and Appendix J of the REF provides an assessment of the noise and vibration impacts during construction. During construction, noise impacts would generally be either 'noticeable' or 'clearly audible' for all activity groups in all NCAs. Some 'moderately intrusive' impacts are also predicted for some receivers as a result of the following activity groups (AGs):

- AG1 (site establishment and earthworks) at NCA03 and NCA06
- AG4 (bridge demolition and pavement works) at NCA06.

Impacts at NCA06 includes some impacts on future residential receivers which are yet to be constructed within the Wilton Greens development.

The greatest number of receivers would have the potential to be affected by works conducted as part of AG1 (site establishment and earthworks), AG2 (utilities and drainage) and AG4 (bridge demolition and pavement works) in NCA07, which consists of future residential receivers yet to be constructed as part of the Wilton Greens development.

Potential construction traffic impacts were also assessed by considering the increase in traffic volumes along each construction access route. The increase in traffic is not expected to result in an increase in noise levels greater than 2.0 dBA, with the maximum increase in noise due to construction traffic predicted to be 0.3 dBA for movements along Picton Road during the day. Therefore, construction traffic noise impacts are not anticipated.

Safeguard NV01 states that a CNVMP would be prepared prior to construction commencing and would include further detail on:

- the proposed construction works
- potentially high noise and vibration generating activities
- sensitive receivers within 600 metres of the proposal site
- the monitoring program to assess performance against relevant criteria
- standard and additional mitigation measures to minimise impacts.

The CNVMP would also detail how consultation with affected neighbours and sensitive receivers would be carried out and procedures for handling complaints.

Safeguards NV02 (community notification) and NV03 (construction noise and vibration statement) would also be implemented to manage potential construction noise and vibration impacts.

2.11.3 Operational impacts

Operational noise from the proposal

Submission number(s)

15, 43, 51, 54, 68, 82, 93

Issue description

Several respondents raised the following concerns regarding the proposal and operational noise:

- Trucks will use compression braking to slow down from 80 km/hr to 60 km/hr or slower, depending on conditions at the traffic lights.
- There will be increased traffic numbers, resulting in unacceptable heavy vehicle noise levels for residents, including children.
- There will be higher noise levels from Picton Road being a major thoroughfare for heavy vehicles and increase accidents due to the interaction with heavy and light vehicles.
- There will be higher noise levels when combined with overhead aeroplane noise.
- Noise and vibration levels will be increased by heavy vehicles compression braking for traffic lights, when the free movement of vehicles (such as via a roundabout) would reduce noise.

- Increased traffic flows will compound noise from existing levels and impact rural living.

Response

Section 6.8.4 of the REF discusses the potential operational impacts from the proposal. The potential operational impacts from the proposal are summarised below.

Road traffic noise

The proposal is not expected to increase traffic volumes on its own, rather the upgrade is necessary to accommodate the traffic volume forecasts across the region.

A Noise and Vibration Impact Assessment (Appendix J of the REF) was carried out to evaluate potential impacts due to the construction and operation of the Picton Road upgrade between Nepean River and Almond Street, Wilton based on existing and predicted traffic noise levels.

The results from the noise monitoring, existing traffic counts, construction scenario modelling and operational noise modelling are assessed against the relevant noise and vibration criteria, depending on the sensitive receiver type. The modelling determines the potential noise and vibration impacts to sensitive receivers and identifies which NCAs and/or sensitive receivers qualify for mitigation. This process considers both the increase in existing road traffic noise levels, as a result of the proposal, and future noise levels.

The mitigation type, including at-property treatments and noise barriers would be determined in detailed design in accordance with the *Road Noise Mitigation Guideline* (Transport for NSW, 2022b) and the *At-Receiver Noise Treatment Guideline* (Transport for NSW, 2022c). The proposed noise mitigation measures, particularly safeguards NV08 and NV09, would be implemented to review and mitigate operational noise during detailed design and during operation. An ONVR would be carried out to review the potential for operational noise impacts based on the most current information and thereby confirm feasible and reasonable mitigation measures (safeguard NV08).

Maximum noise levels

Transport acknowledges that potential maximum noise level events would occur during heavy vehicle pass-bys and as a result of compression braking. The locations where these events would occur would be on sections of the road where there are high road gradients such as interchange ramps and at signalised intersections. Away from these sections, the frequency of maximum noise level events would be lower as heavy vehicles would generally be travelling at constant speeds. The proposal is predicted to provide a significant improvement to the performance when compared to the existing conditions.

Currently, the number of receivers where maximum noise levels exceed 65 dBA for heavy vehicle pass-bys, and compression are:

- heavy vehicle pass-bys: 20
- compression braking: 524.

Up to 20 additional receivers are predicted to experience potential maximum noise level impacts as a result of the proposal (compared to those that currently experience exceedances of the maximum noise level). Of these, 17 are future residential receivers.

Maximum noise level impacts would be expected at the majority of sensitive receivers located adjacent to the proposal alignment (as discussed in section 6.8.4 of the REF). In general, the maximum noise levels are expected to decrease at residences to the north of Picton Road and increase at residences to the south of Picton Road. The additional impacts are generally located beyond the first three rows of residential structures as the residences closer to Picton Road are predicted to experience existing maximum noise level impacts.

The proposed noise mitigation measures, particularly safeguards NV08 and NV09, would be implemented to review and mitigate operational noise during detailed design and during operation. An ONVR would be undertaken to review the potential for operational noise impacts based on the most current information and thereby confirm feasible and reasonable mitigation measures (safeguard NV08).

Post-construction operational compliance noise monitoring would be undertaken within 12 months of completion of the proposal and would be completed once traffic flows have stabilised (safeguard NV09). Noise mitigation measures would be revised at the completion of the monitoring period and additional measures would be considered should non-compliance be identified.

2.11.4 Noise mitigation

Noise attenuation measures

Submission number(s)

9, 29, 37

Issue description

Three respondents requested confirmation that Transport are planning to deliver noise attenuation measures (i.e. a noise wall or concrete barrier) along Picton Road and/or at Wilton Village to mitigate existing and projected noise impacts.

One respondent requested the opportunity to assist Transport with soundproofing to mitigate existing and projected noise levels at their property.

Response

Noise mounds/walls or concrete noise barriers are not required to be delivered as part of the proposal. As detailed in section 6.8.2 of the REF, the existing noise environment includes two 3.6 metres high noise walls which form part of the approved Wilton Green Subdivision Development Approval. These mitigation treatments would be constructed by the developer, to reduce noise for the future residences fronting Picton Road within this precinct. These measures would mitigate projected operational noise from the proposal for most residents.

The noise and vibration impact assessment forecasted noise levels at sensitive receivers within and adjacent to the proposal site. The forecast considered the increase from existing road traffic noise levels from the proposal and the cumulative (future) noise levels, and detailed modelling was undertaken to identify sensitive receivers that qualify for noise mitigation. Some residents may be eligible for at-property treatment to provide additional mitigation for noise resulting from the proposal (see section 6.8.4 of the REF).

Mitigation measures to minimise potential operational noise and vibration impacts are discussed in section 6.8.5 of the REF. During the detailed design stage, an ONVR would be carried out to review the potential for operational noise impacts based on the most current information and confirm feasible and reasonable mitigation measures to be incorporated into the design (safeguard NV08). The identification and implementation of noise mitigation measures would be undertaken in accordance with the *Road Noise Mitigation Guideline* (Transport for NSW, 2022b) and the *At-Receiver Noise Treatment Guideline* (Transport for NSW, 2022c). Transport would consult with sensitive receivers who qualify for noise mitigation. All procurement of contractors and materials for noise mitigation would follow Transport procedures for procurement and opportunities to engage local business would be explored where reasonable, feasible and appropriate to do so.

Furthermore, following the completion of construction and the opening of the road, operational compliance noise monitoring would be undertaken to validate projected noise levels and revise noise mitigation measures. Additional noise mitigation would be considered should non-compliance be identified.

Change to road surface to mitigate noise impacts

Submission number(s)

45

Issue description

One respondent noted that consideration should be made to upgrade the concrete road due to the noise created from the trucks.

Response

The road pavements for the proposal are expected to include a flexible pavement with asphaltic concrete (asphalt) wearing surface, subject to further consideration during detailed design. The asphaltic concrete wearing surface is different to reinforced concrete.

As detailed in the Noise and Vibration Impact Assessment (Appendix J of the REF), the results of the noise modelling and assessment indicate that additional low noise pavements are not considered reasonable and feasible mitigation measures.

The residential receivers located within the Stage 1 Wilton Greens development were identified as an area where additional noise mitigation (e.g. pavement treatments or noise barriers) were considered. However, pavement treatments are not considered appropriate due to the 60 km/h speed limit proposed along Picton Road in this area.

2.12 Air quality

2.12.1 Construction impacts

Submission number(s)

89

Issue description

One respondent expressed concern over the potential for air quality impacts during construction, in particular increased dust.

Response

Transport acknowledges that the primary risk to local air quality during construction would be the generation of dust, as outlined in section 6.9.4 of the REF. Dust emissions during construction would be monitored and mitigated through implementation of the Construction Air Quality Management Plan (CAQMP) as outlined in section 6.9.5 of the REF (safeguard AQ01). The CAQMP would include:

- A map identifying locations of sensitive receptors.
- Potential sources of air pollution.
- Air quality management objectives consistent with any relevant published NSW Environment Protection Authority guidelines.
- Mitigation and suppression measures to be implemented, including measures to manage potential silica emissions from concrete processing, cutting and grinding if required.
- Methods to manage work during strong winds or other adverse weather conditions.
- A process for monitoring dust on-site and weather conditions.
- A progressive rehabilitation strategy for exposed surfaces.

Additionally, the REF identified that minor vehicle exhaust emissions are also expected during construction. However, vehicle emissions would be intermittent and transient in nature and limited to the construction phase. Therefore, any potential impacts are considered to be minor.

2.12.2 Operational impacts

Submission number(s)

43

Issue description

One respondent expressed concern over the potential for air quality impacts during operation, in particular that increased traffic and congestion during operation would lead to increased diesel exhaust emissions.

Response

A qualitative air quality assessment was prepared as part of the REF, which did not find additional air quality impacts above existing conditions were expected during operation as a result of the proposal.

2.13 Landscape character and visual impacts

2.13.1 Safeguards and management measures

Additional recommendations for mitigation measures

Submission number(s)

15, 54, 61

Issue description

One respondent recommended considering public art installations on acoustic walls, lane barriers and other infrastructure.

One respondent queried whether there would be sufficient green space following the completion of the proposal.

One respondent requested that replacement trees are planted along Picton Road to provide more flora, maintain the semi-rural landscape and also act as a sound shield.

Response

An Urban Design and Landscaping Plan would be prepared to support the final detailed design (safeguard LV01), presenting an integrated urban design for the proposal. The plan would include landscaping and rehabilitation of disturbed areas, opportunities for buffer planting to screen views and also to reinforce the existing landscape and character of the area. Consideration of public art along the proposal corridor would also incorporate Connecting with Country principles to guide the design.

While the proposal for this major arterial road does not include provision of green space, it would deliver tree planting, new landscape and revegetation, including along shared paths within the road corridor. Residents using the new shared paths will be able to link to green spaces provided within the Wilton Growth Area. Corridor elements such as bridge panels, retaining walls and spaces along the shared paths would have opportunities to create place specific visual markers at designated locations.

Road signage

Submission number(s)

18

Issue description

One respondent suggested the installation of overhead signs and specific lane-markings to provide clearer directions for traffic flow.

Response

Section 3.2.3 of the REF outlines that pavement marking, and signage would be implemented to ensure ease of use and safety for all transport users. Opportunities to provide clear directions would continue to be considered during the detailed design phase.

2.14 Property and land use

2.14.1 Adequacy of assessment, including existing environment

Impact on existing land uses at the Wilton Town Centre site

Submission number(s)

95

Issue description

One respondent identified a concern that the REF did not identify the specific land uses and commercial operations or current activities on the Wilton Town Centre site and did not consider the temporary and long-term impacts of the proposal. In particular, a concern was raised regarding the lack of categorisation of these land uses under the air quality, noise and vibration, and traffic and transport assessments.

Response

Chapter 6.11 of the REF presents a summary of the Socio-Economic Impact Assessment (SEIA) provided in Appendix L of the REF.

Figure 5.1 in Appendix L of the REF shows key community and social features of the study area, and Table 5.2 in Appendix L of the REF presents a list of all businesses near the proposal site, including the Wilton Airport and Sydney Skydivers.

The SEIA identified that the edge of the site occupied by Wilton Airport/Sydney Skydivers is located within the proposal site. During construction there is the potential for some changes to access to this site, which may be an inconvenience to employees and customers, however it is anticipated that access to the site would be maintained throughout the construction period, as a requirement of the CTMP. This was also noted in section 6.12.3 of the REF.

The SEIA also identifies that Wilton Airport and Sydney Skydivers businesses are currently subject to a lease with a developer, and the businesses may cease operating prior to the proposal commencing operation, depending on future planning in relation to the site, which is not directed by Transport. As the potential operational impact was assessed as low, it was not included in the summary in the REF.

Characterisation of the existing environment for each environmental aspect (i.e. air quality, noise and vibration and traffic and transport) has been developed in accordance with the relevant guidelines and best practice for each discipline. The respective assessments have considered the existing land uses to the extent required and mitigation measures have been developed as required, based on the assumption that the existing businesses may still be operational at the time of the road upgrade becoming operational. Other than the potential for construction traffic impacts, no other impacts requiring mitigation or management were identified with respect to the existing land uses on the Wilton Town Centre site.

2.14.2 Property impacts

Submission number(s)

100

Issue description

One respondent made several comments about property impacts, including:

- Not wanting any impacts on their property or to experience any inconvenience.
- Request for permanent fencing to be installed between the proposal and their property.
- Concerns about impact on private dam used for livestock and gardening.
- Concerns about impacts to power connection to their property.

Response

Transport understands and acknowledges that finding out your property will be impacted can be stressful and confusing, and that it is often a challenging time.

All acquisitions from private property owners would be carried out in consultation with landowners and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*, as outlined in section 6.11.5 of the REF.

In accordance with NSW Government guidelines, property owners affected by property acquisition are assigned a Personal Relationship Manager, who would act as a primary point of contact within Transport throughout the property acquisition process. The Personal Relationship Manager provides various support services throughout the acquisition process, tailored to individual circumstances.

Partial acquisition and/or temporary use of properties during construction could require adjustments to property infrastructure, such as fencing, driveways, landscaping, letter boxes, utility connections and other structures that could be impacted by the proposal. Any adjustments would be carried out in consultation with the property owner as part of the proposal. Transport would consult with the relevant utility providers and property owners to minimise any potential disruptions to services.

2.14.3 Land use impacts

Impact in mine subsidence and mining operations areas

Submission number(s)

17, 93

Issue description

One respondent commented that a portion of the proposal site falls within an existing mining tenure, noting that the potential adverse interaction between the proposed infrastructure, specifically the twin bridges over the M31 Hume Motorway, and mitigating subsidence impacts that could occur.

One respondent noted that the proposal is located in a mine subsidence area and should not be approved. The respondent expects that they will only receive more cracks and movement.

Response

A mine subsidence assessment has been completed for the proposal, and provided to Subsidence Advisory NSW, to ensure the proposal appropriately addresses design requirements in a mine subsidence area. An overview of how the potential for mine subsidence would be managed as part of the design of the proposal is provided in section 3.2.3 of the REF.

A response was received from Subsidence Advisory NSW (refer section 3.6 of this report), raising no issues or concerns.

Transport will continue to work closely with Subsidence Advisory NSW and other relevant stakeholders through all appropriate stages of development of the proposal.

Proposal restricts future economic viability of employment lands

Submission number(s)

92

Issue description

One respondent expressed concerns that the proposal would restrict the economic viability of the future development of surrounding employment precincts which would depend on high standard access to the regional road network.

Response

Picton Road is a key connection from the Illawarra and the South Coast to Sydney and the Sydney's south-west and Greater Macarthur Priority Growth Areas. It is a significant route for inter-regional business, tourism and leisure travel. The proposal would support future population and employment growth in surrounding areas in Western Sydney and the Illawarra, as well as contributing to the economic viability of the region through improved access for residents and freight operators.

The proposal has been developed to align with the objectives of key strategic transport, infrastructure and land use plans, as described in sections 2.1.2 and 2.1.3 of the REF.

The proposal is aligned with Wilton 2040 as it would provide the above capacity improvements and would, via the provision of the proposed shared user paths, contribute to the active transport connections precincts. The proposal is also aligned to the *Wilton Growth Area Upgrade* (DPIE, 2023), which identified the need to reprioritise transport infrastructure and opportunities for improved transport services in anticipation of the future communities in the Wilton Growth Area.

2.15 Socio-economic

2.15.1 Adequacy of assessment, including existing environment

Submission number(s)

43, 76

Issue description

Two respondents commented that the proposal has not considered the social and economic impacts to existing residences or landowners not part of Bingara Gorge or Wilton Green.

Response

Section 2.2.2 of the SEIA (see Appendix L of the REF) described the study area used for the assessment, incorporated an area greater than Bingara Gorge and Wilton Green. The study area included the communities that are most likely to experience socio-economic impacts (both positive and negative) resulting from the proposal, as well as the extent and scale of potential impacts. The study area for the SEIA is shown in Figure 2.1 of Appendix L of the REF and comprised:

- Local study area:
  - Wilton suburb and locality
- Regional study area
  - Wollondilly local government area (LGA)
  - Douglas Park/Appin Region Statistical Area 2
  - Sydney – Outer South-West Regional Statistical Area 4.

A wide range of government agencies, industry groups and key stakeholders were consulted as part of the preparation of the REF and the SEIA, as outlined in section 5.6 of the REF. The social and economic impacts were assessed for the whole study area.

2.15.2 Construction impacts

Potential for local employment opportunities

Submission number(s)

88

Issue description

One respondent queried whether there would be opportunities offered to local businesses or if there would be any local job opportunities. It was also questioned whether there would be any developer contributions or social enterprise opportunities for services in Wollondilly.

Response

Transport projects (including this proposal) are subject to Industry Skills and Diversity Policies and Regulations which are focused on enhancing the skills, knowledge, and abilities of the existing and potential workforce. Working with our delivery partners, Transport aims to promote skills development and employment pathways across projects, supporting labour market growth, diversity, and sustainability outcomes. Local employment policies would apply to the proposal which is expected to require a peak on-site construction workforce of about 100 personnel per day, with employment opportunities for workers from the region.

The proposal may also result in an increase for local businesses close to the proposal site from the increase in construction personnel in the region and procurement opportunities. These businesses may include retail, food and beverage shops, and services located within Bingara Gorge and Wilton.

Employment opportunities for personnel, businesses and to enhance the local economy would be identified in the Sustainability Implementation Management Plan (safeguard CC03). All engagements would be subject to Transport's procurement requirements.

Developer contributions are a funding mechanism under local planning instruments for private developments to contribute to community infrastructure in the localities in which they operate. As a public authority, constructing public infrastructure, Transport is neither a developer nor required to facilitate developer contributions through the proposal.

Transport is committed to providing positive contributions in the communities in which it operates. The proposal would provide opportunities through the provision of goods and services required for construction. Opportunities to work with local service providers and community organisations would be identified in the next phases of the proposal.

2.15.3 Operational impacts

Impact on local residential amenity

Submission number(s)

92

Issue description

One respondent raised concerns that local residential amenity would be diminished on many local roads which will become key precinct access roads accommodating thousands of vehicles each day, which could have the flow on effect of precincts becoming less suitable for development for employment lands.

Response

The area surrounding the proposal site is subject to urban growth and development as part of the Wilton Growth Area in accordance with the Wilton 2040 strategy. This growth would be associated with an increase in the volume of traffic on the road network, particularly Picton Road as the main access route to and from many of the precincts within the Wilton Growth Area. By increasing capacity for traffic movement on Picton Road, the proposal is expected to reduce congestion and improve the traffic network performance, resulting in shorter queues at key intersections and provide shorter travel times. Consequently, local residential amenity on local roads, or development potential for employment lands, is not expected to be diminished as a consequence of the proposal.

Transport will continue to consult with Wollondilly Shire Council, developers and the Department of Planning, Housing and Infrastructure regarding the delivery of developer-funded infrastructure.

Impacts on economic function of Wilton

Submission number(s)

103

Issue description

One respondent commented that the proposal needs to preserve the economic function of the Wilton commercial area in Camden Street and not disrupt customer access. Trucks use Wilton for food and rest stops as Picton Road is a B-double route and are a key contributing factor to the successful business of the shops in Camden Street.

Response

As detailed in section 6.2.3 of the REF, there are no formal parking areas within the proposal site. Vehicle access to Wilton would be maintained during construction and operation.

Picton Road would be signed as Emergency Stopping Lane Only and parking on road shoulders would not be permitted. This would reduce potential obstructions to sight distance and emergency access. Existing heavy vehicle rest/parking demand would be accommodated by existing rest areas located near the proposal site. Safer opportunities for parking for light vehicles are also available within nearby local roads within Wilton.

It is not expected that the proposal would negatively contribute to the current economic function of the Wilton commercial area.

2.16 Sustainability and resilience

2.16.1 Bushfire and emergency services

Submission number(s)

9, 15, 23, 57, 63, 64, 70, 86, 94, 101, 103

Issue description

Many respondents commented that the inclusion of the proposed left-in, left-out arrangements in the proposal does not adequately consider the risks of bushfires and the need for safe emergency evacuation routes, as well as clear access for emergency services once the proposal is operational.

Response

The proposal would improve the performance and capacity of Picton Road and the M31 Hume Motorway interchange, aiding the resilience of the network during incidents and events. The proposal includes additional lanes in both directions and a three-metre-wide shoulder, all of which would be available for emergency access and provide additional capacity for the management of emergency scenarios. The proposal also allows traffic movements to be controlled by traffic lights within the interchange.

The removal of right-in and right-out turns at Almond Street would not be carried out until the Almond Street interchange has been built providing alternative access to maintain these movements. The interim design change proposed in section 5.3 at Almond Street would enhance egress out of Almond Street until the Almond Street interchange is constructed, including vehicle evacuation movements, if required in the event of a bushfire.

The provision of an interim U-turn facility at Wilton Park Road would also provide turning capacity for emergency services. This arrangement is an interim arrangement that would be constructed as part of Stage 1 of the proposal and would remain until the relocation and upgrade of the developer-funded Wilton Park Road intersection. Further detail on the design change is provided in section 5.4.

The proposal would include the installation of new Intelligent Transport Systems (ITS) including, but not limited to, Closed Circuit Television (CCTV) and Variable Message Signs (VMS) which would provide improved monitoring, emergency management and response capabilities. The VMS devices will provide road users with up-to-date information on road conditions, incidents, planned future events and travel times.

Transport provided a briefing to the Wollondilly Local Emergency Services Committee during the preparation of the concept design and REF and following the display period to present the changes to the proposal outlined in section 5 of this Submissions Report. A summary of consultation is provided in section 5 of the REF and section 4 of this report. No objections were raised by any emergency services groups consulted. Transport and the construction contractor (once awarded) will continue to consult with emergency services prior to and during construction, as committed to in safeguard TT03.

The proposal is consistent with relevant bushfire management plans, including the *Wilton Growth Area - Bushfire Early Development Areas* (Blackash Bushfire Consulting, 2021) and would not constrain the objectives of protection of life, property and the environment as required under the *Rural Fires Act 1997*.

2.16.2 Design impacting greenhouse gas generation

Submission number(s)

63, 68, 82

Issue description

Several respondents raised concerns that the design of the proposal would require motorists to travel further to reach their destination, and the inclusion of traffic lights would require vehicles to stop and start more, both of which would increase fuel consumption and contribute to the increase of the generation of greenhouse gases. Respondents were particularly concerned about the impacts from the left-in, left-out arrangements at the Wilton Park Road and Picton Road intersection.

Response

Table 6-21 of the REF shows the forecast network performance in 2031 and 2046 and compares the existing arrangement (i.e. without proposal) with the proposal. As shown in Table 6-21, the proposal is predicted to result in an improvement of network performance in both 2031 and 2046 with key indicators showing a beneficial change. Where increased vehicle kilometres travelled and decreased vehicle hours travelled are evident, this indicates improved network performance as a result of increased average speeds and decreased delays i.e. a more efficient overall road network.

The greenhouse gas assessment prepared as part of the REF found that, during operation, the proposal may alleviate vehicle emissions through increased efficiency of the road network, reducing congestion and travel times. Although traffic growth in the region may result in an increase in vehicle emissions, this trend would not be a consequence of the operation of the proposal.

The design changes proposed in section 5 comprising of an upgraded channelised right turn intersection at Almond Street as part of Stage 1 and a U-turn facility immediately to the west of Wilton Park Road as interim arrangements, would contribute to reduce distances for vehicle movements and minimal changes to the emissions from additional travel.

Safeguard CC03 provides that a proposal-specific Sustainability Implementation Management Plan would be developed and implemented during detailed design and construction. This plan would investigate further opportunities to embed sustainable outcomes and outline an implementation plan for those that are feasible and practicable, including reduction of greenhouse gas emissions during construction and operation.

2.16.3 Sustainability of the proposal

Submission number(s)

68, 88

Issue description

One respondent noted that the proposed traffic lights will require ongoing and costly maintenance.

One respondent asked that details regarding the use of reclaimed materials in the proposal be communicated and promoted.

Response

The proposal includes the installation of new traffic signals at the Diverging Diamond Interchange and removal of the existing traffic signals. Ongoing maintenance of the traffic signals is not anticipated to be significant.

The Sustainability Implementation Management Plan (safeguard CC03) would consider further opportunities to embed sustainable outcomes during detailed design. The use of reclaimed material would be considered in accordance with Transport's sustainability guidelines. Transport is committed to ensuring the responsible management of unavoidable waste and promotes the reuse or recycling of such waste in accordance with the resource management hierarchy principles outlined in the *Waste Avoidance and Resource Recovery Act 2001* (see section 4.2.14 of the REF). As identified in safeguard OI01, a Waste Management Plan would be prepared for the proposal, which would include measures to avoid and minimise waste generation.

2.17 Out of scope

2.17.1 Road upgrade suggestions

Submission number(s)

18, 20, 22, 24, 33, 46, 70, 95

Issue description

Several respondents provided suggestions for upgrades to other areas of the road network, including:

- improve the two-lane bridge that goes towards Picton over Nepean River
- widen the M31 Hume Motorway to three lanes each direction between Picton Road and Narellan Road
- widen the M31 Hume Motorway to three lanes each direction along the length of the road
- provide a more suitable route through Bingara Gorge to Pembroke Parade
- reduce speed limit on the Nepean River Bridge
- highway upgrade through to Campbelltown
- northern bridge on the freeway near Moolgun Creek
- installation of permanent traffic lights on Broughton Pass bridge
- Douglas Park Road through connections
- reclassification of the Western Road/future West Wilton road from a collector road to a sub-arterial road.

Response

This proposal is focussed on providing improved safety, accessibility and efficiency for the western section of Picton Road upgrade. The above suggestions are not within scope of this proposal, however, have been noted by Transport for future consideration. Wollondilly Shire Council is responsible for planning and managing local roads in Wilton, and Transport will communicate the relevant above suggestions to Council for consideration.

Notwithstanding this, the design of the Picton Road bridges over the M31 Hume Motorway provides adequate spacing to allow for a third lane on each carriageway of the M31 Hume Motorway to potentially be constructed in the future.

Independent of the proposal, the speed limit at the Nepean Bridge would be reduced from the current 110 km/h to 80 km/h to meet the updated NSW Speed Zoning Standards.

2.17.2 Rail network and public transport upgrade suggestions

Submission number(s)

46, 69, 70, 71, 81, 83, 88. 92, 93

Issue description

Many respondents raised questions or made comments regarding rail and public transport, including:

- Whether the Maldon to Dombarton Railway Line will be completed, and if so, would it affect the proposal.
- The proposal does not consider the Maldon to Dombarton Railway Line.
- Electrify the railway from Macarthur to Maldon and provide a decent parking area.
- Reconsider using the Maldon Dombarton Rail bypass for a road diversion.
- Build a train station in Wilton.
- Public transport options are not sufficient, so road dependence is high.
- The proposal does not include park and ride share services to allow people to carpool.
- Bus lanes should be incorporated to allow for public transport options between Picton and Wollongong for commuters and university students.
- Designated bus lanes should be provided on the M31 Hume Motorway.
- Questioned why the proposal does not include bus lanes or other public transport infrastructure.
- Questioned why road upgrades are being prioritised over rail transport.

Response

This proposal is focussed on providing a road transport solution, however broad options addressing the needs of Picton Road in the Wilton Growth Area were considered and assessed during the strategic development phase. Transport's Future Transport Strategy sets the direction of continuing to improve every part of the transport system for the benefit of customers, community and the economy. It sets a benchmark for resilience and sustainability, expands connectivity across cities and regions and envisages new levels of digital and technological innovation.

The planning and construction of the proposal and subsequent sections under the Picton Road upgrade, would lead the way in enabling and advocating for additional services (such as public transport bus services) along the corridor – with a focus on moving people not just moving vehicles.

While the above suggestions are not within scope for this proposal, they have been noted by Transport for future consideration.

2.17.3 Impacts in Picton

Submission number(s)

36

Issue description

One respondent commented that there are too many heavy vehicles using the main street of Picton and it is a noise hazard due to brakes being used at night, especially if vehicles are going up a hill. They also questioned if the proposal would ease the traffic in Picton.

Response

The proposal is focussed on upgrading Picton Road between the Nepean River and Almond Street in Wilton. Transport acknowledges the noise and traffic concerns within the Picton township; however, it is outside the scope of this proposal. The proposal is not expected to impact existing traffic flows in Picton.

Bridge capacity on the Broughton Pass

Submission number(s)

70

Issue description

One respondent noted that there are issues regarding communication (signage) of size and weight limits on the bridge on the Broughton Pass that is used as a bypass when Picton Road is blocked, particularly for heavy vehicles.

Response

Transport acknowledges the stated concerns regarding Wilton Road capacity and signage at the Broughton Pass, however Wilton Road it is out of the scope of this proposal.

Broughton Pass is a restricted access section of the road network and is identified on the National Heavy Vehicle Register. There is permanent signage stating the mass and length limits on both approaches to Broughton Pass. Transport is aware of Heavy Vehicle constraints associated with detours via Wilton Road and has mitigations in place as part of Transport's incident response plans. This includes communications that Wilton Road/ Broughton Pass is suitable for light vehicles only.

The proposal features would improve safety and capacity on Picton Road and at the Picton Road and M31 Hume Motorway interchange. The second bridge, added lanes, and ramps on the interchange would provide additional flexibility to manage traffic when there are accidents or breakdowns which may reduce instances of detours.

The proposal would also include the installation of new intelligent transport systems on Picton Road and M31 Hume Motorway including, but not limited to, closed circuit television and variable message signs which would provide improved monitoring, emergency management and response capabilities.

3. Response to agency issues

Of the 103 submissions received, 89 were from the community and nine from businesses which are addressed in section 2 of this report. Additionally, Transport received five agency submissions in response to the display of the REF. Table 3-1 lists the agencies and their respective allocated submission number. The table also indicated where the issues from each submission are addressed in this report.

3.1 Overview of agency issues raised

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. The issues raised by agencies and Transport's response to these issues forms the basis of this section.

All agencies supported the proposal. The most common issues raised by agencies are listed in Table 3-1.

Table 3-1 Key issues raised by agencies

Respondent	Submission number	Section addressed	Issues raised
Wollondilly Shire Council	44	Section 3.2	• Early integration of developer-funded infrastructure • M31 Hume Motorway interchange • Active transport • Almond Street intersection • Biodiversity assessment methodology • Hydrology and flooding
NSW Ports	102	Section 3.3	• Dual carriageway for entire corridor • Consideration of OSOM cargo
Endeavour Energy	28	Section 3.4	• Integration of new proposed Endeavour Energy infrastructure into the proposal • Recommendation of design guidelines and standards to be used for Endeavour Energy infrastructure
WaterNSW	75	Section 3.5	• Potential impacts to heritage listed infrastructure • Potential impacts during construction within aboveground easement • Incident and emergency response
Subsidence Advisory NSW	21	Section 3.6	• No issues raised

3.2 Wollondilly Shire Council

3.2.1 Costs and funding

Issue description

Council indicated that they welcomed the next stage in the planning and delivery for the Picton Road corridor between the Nepean River and Almond Street, including the M31 Hume Motorway interchange, however wanted to see a firm commitment from State and Australian Governments to fund its construction.

Council requested a commitment to ensure:

- Transport fast-track the development of a business case for the Picton Road upgrade to submit to the Federal Infrastructure Minister for funding to enable housing supply.
- Transport commits to fully fund construction of the Picton Road Interchange and associated intersection upgrades.
- An appropriate road classification review of existing and greenfield roads is undertaken to ensure responsibility for maintenance of state significant infrastructure is not shifted to Council as is being proposed through the proposal REF.
- A timeline be provided for the delivery of the Diverging Diamond Interchange.

Response

Transport acknowledges the support expressed for the proposal.

The proposal currently has funding for design and planning work. The timing of construction of the proposal would be subject to future funding decisions by the NSW and Australian Governments following an investment assurance and prioritisation process. The NSW and Australian Governments co-fund a number of infrastructure projects across NSW through their respective Budgets. Funding is balanced across the state dependent on current issues and priorities.

Wollondilly Shire Council will continue to be informed and consulted about the proposal as it progresses, including discussions on maintenance agreements and road classifications.

3.2.2 Early integration of developer-funded infrastructure and development synergies

Issue description

Early integration of developer-funded infrastructure in the Wilton Growth Area and the design work being led by Transport for the Picton Road upgrade is essential to ensure that transport infrastructure is in place to support jobs and housing growth in the Wilton Growth Area.

Council is seeking assurance that Transport will work with developers across the Wilton Growth Area to accelerate the planning and concept plan approval to maximise the early delivery of developer-funded infrastructure, including:

- Almond Street grade-separated crossing be brought forward and delivered in line with proposed Picton Road upgrade and that the proposed left-in, left-out intersection treatment is not acceptable outcome for the existing residents of Wilton without the grade-separated crossing being in place.
- Condell Park and Janderra Lane grade-separated crossings, Wilton Town Centre/Wilton Park Road intersection are planned and delivered in line with proposed upgrades to ensure residents have safe access to Picton Road without left-in, left-out restrictions being proposed that will create safety hazards for residents.
- Council noted that developers are eager to engage with Transport to progress the concept designs for developer-funded infrastructure within the Wilton Growth Area. Now is the opportune time for the State Government to capitalise this momentum and deliver on its commitment for housing and job growth in the Wilton Growth Area.

- Synergies would assist in attracting third party investment in funding or delivering works on the states behalf and should hopefully minimise, through efficiencies, disruption to the corridor due to excessive duration of construction activities.

Response

The timing of the construction of the developer-funded infrastructure is dependent on agreements with the Department of Planning, Housing and Infrastructure linked to the rate of development and is unknown at this time (see section 3.1.1 of the REF). Transport is continuing to consult with the Department of Planning, Housing and Infrastructure and the respective developers; however, it is not possible for Transport to control when they would occur.

As detailed in section 3.1.2 of the REF, the proposal may be delivered in stages if needed to complement adjacent developer-funded works and reduce the potential for adverse impacts on the community and road users. The approximate locations of the infrastructure upgrades to be delivered by private developers are shown in Figure 3-5 of the REF. These are referred to in the REF as 'ultimate arrangements' at intersections.

A summary of developer-funded infrastructure upgrades is provided in Table 3-1 of the REF and section 5.5.5 of this report.

The proposed staging would not result in a material impact to road users or the community, as the ultimate intersection upgrades presented in Figure 3-5 of the REF would already be operational at the time the proposed left-in, left-out at Almond Street is constructed. Notably, in response to submissions, interim arrangements are proposed by Transport at Almond Street and adjacent to Wilton Park Road as part of Stage 1 to address concerns raised during display of the REF in the event that the ultimate arrangements are delayed with respect to the proposal. These are described in section 5 of this report.

The change to left-in, left-out at the Janderra Lane and Wilton Park Road intersections remains as described in the REF.

Transport will continue to consult with Wollondilly Shire Council, developers and the Department of Planning, Housing and Infrastructure regarding the delivery of developer-funded infrastructure.

3.2.3 M31 Hume Motorway and Picton Road interchange

Issue description

For some time, Council has been advocating for a significant upgrade to the M31 Hume Motorway/Picton Road interchange. The interchange plays a pivotal role connecting the local community to Wollongong and the south coast, Sydney and the Southern Highlands.

It also plays a crucial role for freight movements with Picton Road creating the connection from Wollongong and the ever-expanding Port Kembla to the M31 Hume Motorway.

The interchange is already failing, and formally noted in the REF documents as performing at a LoS E in 2022. The performance of the interchange would continue to decline quickly with development underway (current and future) in the Wilton Growth Area on each side of the corridor and increased freight movements from Port Kembla.

Council notes the proposed Diverging Diamond Interchange is a relatively new concept in NSW and differs to the clover leaf design that was suggested some time ago. It was acknowledged that Transport has briefed Council on the proposed interchange when first mooted and Council officers have researched similar intersections completed in Queensland advocating its suitability.

Response

Council's support for the proposal and the proposed Diverging Diamond Interchange is noted.

3.2.4 Active transport

Issue description

As part of its review of the REF, Council urges Transport to ensure appropriate active transport linkages through the interchange noting the future developments occurring on both sides of the M31 Hume Motorway, particularly the Wilton Town Centre situated north-west of the Diverging Diamond Interchange.

Response

As outlined in section 3.2.3 of the REF, a four-metre-wide off-road shared user path would be provided through the interchange to offer a connection between the West Wilton and South West Wilton precincts over the M31 Hume Motorway. The shared path would cross the M31 Hume Motorway on the southern side including grade-separated crossings of the southern ramps to safely separate the shared path from the interchange traffic.

Shared paths are also proposed on the southern side of Picton Road east and west of the M31 Hume Motorway/Picton Road interchange to provide a connection between the West Wilton and South West Wilton precincts, and on the northern side of Picton Road between Aerodrome Drive and the location of the planned new Wilton Town Centre road (west of the M31 Hume Motorway/Picton Road interchange) and between Pembroke Parade and Almond Street.

3.2.5 Urban design

Issue description

Council also feels this is a key opportunity to deliver strong urban design and landscaping element, acknowledging our Indigenous heritage, noting this is the key entry to the Wollondilly Shire and Sydney. Council has recently exhibited its concept designs for welcome signage which it will be soon rolling out more broadly.

Response

An Urban Design and Landscaping Plan would be prepared to support the final detailed design (safeguard LV01), presenting an integrated urban design for the proposal. The plan would include landscaping and rehabilitation of disturbed areas, opportunities for buffer planting to screen views and also to reinforce the existing landscape and character of the area. Consideration of public art along the proposal corridor would align with Connecting with Country principles to guide the design.

Safeguard AH05 provides that the Urban Design and Landscaping Plan would be further developed in consultation with Aboriginal Knowledge Holders during detailed design. The plan would incorporate measures to integrate appropriate native vegetation around trees with Aboriginal cultural value. Where feasible, the proposal would integrate First Nations Knowledge, stories, and practices within the development of the final Urban Design and Landscaping Plan.

Safeguard AH09 also requires that an Aboriginal heritage interpretation strategy would be developed to guide the incorporation of appropriate interpretation and integration of Aboriginal cultural heritage in the design.

Transport would continue to consult with Wollondilly Shire Council through all stages of the proposal.

3.2.6 Public transport

Issue description

Transport needs to demonstrate how public transport can be accommodated through the proposal, particularly rapid bus, which is a crucial need for the existing and future community, to avoid further cars on the already congested road network.

Response

The proposal considered integration with, and impacts on, existing and currently planned public transport services that use Picton Road within the proposal site (see section 6.2 of the REF). Although not part of the proposal, Transport is investigating opportunities to provide public transport routes in the future that service the planned new precincts in the Wilton Growth Area.

Transport has no current Rapid Bus plans for the proposal, as these buses are best suited to densely populated areas where the limited stops allow faster travel times when compared to all stop services. However, the proposal would deliver improved traffic efficiency on the arterial road network which would be complementary to any future bus network that may be considered in the region.

3.2.7 Almond Street intersection

Issue description

Council requests the State Government accelerate the planning and concept design approval of the Almond Street grade-separated interchange, enabling the proponent of South East Wilton to deliver on its obligation under the State Voluntary Planning Agreement by 1,500 lots.

Council has continuously advocated for a grade-separated interchange to be delivered at this intersection as soon as possible. The recent sale of the Wilton Greens Estate only further heightens lack of certainty to timing, strengthening the role of the State Government to take the lead and ensure safe accessibility for our community.

The REF notes the current Almond Street and Picton Road intersection is performing at a LoS D. This would decline quickly as development proceeds and already presents safety issues for our community and commuters. The REF is also silent on the delivery of the grade-separated interchange but notes the restriction of the intersection to left-in, left-out. This restriction is unacceptable to the community when it was recently mooted with significant formal submission against the proposal.

Response

The timing of the construction of this developer-funded infrastructure is dependent on agreements with the Department of Planning, Housing and Infrastructure linked to the rate of development and is unknown at this time (see section 3.1.1 of REF). Transport is continuing to consult with the Department of Planning, Housing and Infrastructure and the respective developers; however, it is not possible for Transport to direct when they would occur.

As detailed in section 1.1.3 of the REF, the restriction of the Almond Street intersection to only left-in and left-out movements would not be permanently implemented until such time as the developer-funded grade-separated crossing and Picton Road connections are in place at this location.

In response to community concerns raised during the public exhibition process, Transport has identified an opportunity to provide an upgraded channelised right turn into/out of Almond Street as an interim arrangement as part of Stage 1 of the proposal if the developer-funded Almond Street interchange is planned to be constructed after the proposal. Further detail on this design change is provided in section 5.3 and an assessment of the traffic impact is provided in section 6.2.

Interim traffic management arrangements and changes to allow traffic movements would be required during construction for the safety of motorists. Transport will provide advanced notice of interim arrangements during construction.

3.2.8 Maintenance agreement

Issue description

Council requested a renegotiation of the current maintenance agreement for the Picton Road corridor, which would not be reflective of the proposed infrastructure.

The updated agreement should consider Council's resourcing, staff and budget.

Ongoing maintenance of fauna fences and other infrastructure would be considered in terms of the ongoing burden to Council. The scope for increased visual message signs/boards along corridor to alert drivers to native fauna should form part of any solution.

Response

Under the *Roads Act 1993*, all public roads except Freeways and Crown roads are managed by the council of the LGA. For State Roads, including Picton Road, Transport may exercise the functions of a road authority with respect to a classified road. The M31 Hume Motorway is a Freeway and, as such, Transport is responsible for all maintenance and operational activities within the road reserve, including the on and off ramps of the Diverging Diamond Interchange.

Picton Road is a State road, hence Transport would continue to be responsible for managing and maintaining the roadway including infrastructure related to the carriageway such as structures, guardrail, signposting, drainage assets and retaining walls supporting the formation. This would include the existing and additional fauna fencing along Picton Road. The maintenance of the road reserve and other assets behind back of kerb such as footpaths, noise walls and streetlighting (excluding interchange) would normally continue to be a Council responsibility.

Consultation with Wollondilly Shire Council on maintenance agreements would be ongoing as the proposal progresses.

3.2.9 Consideration and consistency of the REF with Department of Planning Guidelines

Issue description

The REF is considered to have inconsistencies with the following aspects of the *Guidelines for Division 5.1 assessments* (DPE, 2022):

- The preparation of (in effect a Biodiversity Development Assessment Report (BDAR)), is inconsistent with the purpose of an REF as stated in the Guidelines "to fulfil duties under section 5.5 of the EP&A Act to consider, to the fullest extent possible all matters affecting or likely to affect the environment". The purpose of the REF in this context is to identify whether a BDAR or Environmental Impact Statement (EIS) is required
- The document has not adequately addressed Clause 171(2) "Factors to be Considered" in the Environmental Planning and Assessment Regulation 2000.
- The document does not contain a description of the attributes for each identified environmental impact under Stage 2 of the Assessment Guidelines.

The BC Act has provisions for an application being lodged under Part 5 to opt in to the Biodiversity Offset Scheme in the event of potential impacts being identified as significant through the application of the Test of Significance (discussed below). If the REF identifies the impact as being significant (based on amendments requested by these comments), then a BDAR would be appropriate. If this does not eventuate, then an expanded REF based on Transport policies would be appropriate.

Response

Transport is a self-determining authority. The REF was prepared using the Transport *Environmental Assessment Procedure* (EMF-PA-PR-0070) which has been developed to meet Transport's responsibilities under the NSW EP&A Act. This procedure addresses the requirements of Stage 2 of the DPE Guidelines (2022).

Confirmation of need for a BDAR or SIS

As stated on page 113 of the REF (see section 6.1.3 of the REF) "the proposal is not likely to significantly impact threatened species, populations, ecological communities or their habitats, within the meaning of the BC Act 2016 or *Fisheries Management Act 1994* and therefore a Species Impact Statement (SIS) or Biodiversity BDAR is not required."

Further detail on the decision-making steps to conclude that a SIS or BDAR was not required can be found in section 8 of the Biodiversity Assessment Report.

Section 8.3 of the REF states "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 BDAR or SIS is not required. The proposal is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required."

Addressing clause 171(2) factors

Section 171 factors from the Environmental Planning and Assessment Regulation 2021 are presented in Appendix A of the REF. These factors are also addressed throughout the body of the REF and the accompanying technical specialist studies which have been prepared in accordance with relevant guidelines, policies and legislation.

In the absence of the identification of specific issues that Council finds to be absent, Transport does not see a need to make any further amendments to the REF.

Provision of the detail indicated in Stage 2: Assessment and consultation of the guidelines

The DPE Guidelines (2022) are intended to provide a guidance as to the form and content of REFs prepared under Division 5.1. As noted in Section 4 of the guidelines "the scope and detail of the assessment process... will depend on the scale and complexity of the proposal and the sensitivity of the receiving environment".

Transport has reviewed the REF and is confident that all relevant matters have been identified and assessed to an appropriate level. In the absence of the identification of specific issues that Wollondilly Shire Council finds to be absent, Transport does not see a need to make any further amendments to the REF. However, Transport will continue to consult with Wollondilly Shire Council should any further clarifications be required.

3.2.10 Interaction of the EP&A Act and BC Act

Issue description

In regard to Part 5 activities (preparation of REF), the EP&A Act states that an Environmental Impact Statement (EIS) is to be accompanied by a SIS, or (if the proponent elects), a BDAR. The DPE Guidelines (2022) requires the preparation of an EIS if a proponent identifies that non-biodiversity impacts are significant. The submitted REF is recommended to be amended to contain such an assessment in regard to potential impacts in regard to Aboriginal cultural heritage, traffic and social considerations to ensure consistency of the document with applicable statutory requirements.

Response

The Aboriginal cultural heritage assessment findings are summarised in section 6.3 of the REF.

The traffic assessment findings are summarised in section 6.2 of the REF.

The social assessment findings are summarised in section 6.12 of the REF.

The REF did not find that the proposal would be likely to significantly affect the environment for any aspects and therefore it is not necessary for an EIS to be prepared under Division 5.2 of the EP&A Act, or an SIS or a BDAR.

3.2.11 Consideration of the Biodiversity Offset Scheme within the BC Act

Issue description

The REF has correctly considered the application of this Scheme to the REF by only including Test of Significances for potentially impacted threatened species and ecological communities. However, a number of inconsistencies between the Test of Significance in the Biodiversity Assessment Report and the Application for each item contained in the Test of Significance Guidelines.

An example of an application where inconsistencies are considered to exist are in regard to Item (b) "When evaluating the significance of the impact, consideration must be given to whether the life cycles of the species which make up the ecological community will be disrupted". The amendment of the Tests of Significance to fully reflect the Guidelines is consequently recommended. In accordance with comments above, an updated BDAR would be appropriate if impact to biodiversity is likely significant and an expanded REF appropriate if not identified as significant.

Response

The *Threatened Species Test of Significance Guidelines* (OEH, 2018) were prepared under section 7.3(2) of the BC Act and relate to the determination of whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats, within the meaning of that phrases in section 7.3.

Council's reference to Section 3.2 of the guidelines "Adverse effects on ecological communities" references section 7(1)(b)(i-ii) of the BC Act regarding whether the proposed development or activity is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction or modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction, noting this relates to ecological communities, and not to individual flora or fauna species.

The Tests of Significance for Threatened Ecological Communities (Cumberland Plain Woodland and Shale Sandstone Transition Forest) presented in Appendix C of the Biodiversity Assessment Report included site specific consideration of the conditions and context in which the CEECs are found. The justification included the consideration that the impacts would be primarily linear in nature, affecting the edges of larger patches of CEECs, and already subject to disturbance from the proximity to the existing road corridor and farming practices in the adjacent lots. Inherent in the finding that the local occurrence is unlikely to be placed at risk of extinction is that the vegetation removal is unlikely to disrupt the lifecycles of the species that make up the CEECs.

Furthermore, the Tests of Significance for Threatened Ecological Communities (Cumberland Plain Woodland and Shale Sandstone Transition Forest) presented in Appendix C of the Biodiversity Assessment Report includes consideration as to the "importance of the habitat to be removed, modified fragmented or isolated to the long-term survival of the species or ecological community in the locality". The assessment found that vegetation to be removed primarily exists on the edges of the community and that areas contiguous to that being removed would be retained post-works, and biotic processes such as seed dispersal would continue to occur. It concluded that it was unlikely that the vegetation to be removed is critical to the long-term survival of the CEEC within the locality. This finding is concomitant with any consideration of potential disruption to the life cycle of the species which make up the two CEECs. The findings of the Biodiversity Assessment Report include that no significant impact on Cumberland Plain Woodland and Shale Sandstone Transition Forest is likely to remain, and a BDAR or an SIS is not required.

3.2.12 Consideration of Council's Sustainability Policy

Issue description

Council would expect that the REF has broad consistency with the following key principles of this policy:

- Evidence based: The precautionary principle will be applied when there is a risk of potential harm to the environment, community or local economy. Decisions must be evidence-based with a localised and regional focus, consistent, transparent and supported by the best available recognised scientific research, monitoring and reporting.
- Protecting biodiversity: considering the broader planning framework, all decisions are made in accordance with the avoid, mitigate, offset hierarchy (in that order of priority, where achievable.
- Mitigating loss: all decisions are made to mitigate adverse impacts on Wollondilly's diverse environment, economic and social values and any residual impacts be offset locally.

Response

As outlined in section 8.1 of the REF, the proposal has been considered in the context of its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal has also been 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 EP&A Regulation.

Sections 6.1.3 and 6.3.3 of the REF provide summaries of how the avoidance hierarchy was used to avoid and minimise biodiversity and Aboriginal cultural heritage impacts respectively.

The REF has been prepared in accordance with Transport's sustainability guidelines and policies, which are also aligned with the NSW Government's sustainability guidelines and policies.

3.2.13 Biodiversity

Biodiversity Assessment Report methodology

Issue description

The utilisation of aspects of the BAM by the submitted report is viewed as appropriate in identifying the biodiversity values of the site given its generally recognised strong ecological basis. However, the Biodiversity Assessment Report is not a BDAR but is a document designed to determine the need for such a Report or SIS based on the identified significance of impact in accordance with the Guidelines and Legislation. The submitted document is consequently recommended to be amended as follows:

- The species surveyed by the Biodiversity Assessment Report is based on analysis for selected species under the BAM. The surveys need to be in accordance with applicable Guidelines given the document is not a BDAR.
- The number of survey plots is noted to be based on the BAM. The numbers and location of the plots should be as required by the applicable Guidelines per above.
- The Biodiversity Assessment Report is noted to have utilised the avoidance measures within the BAM. The statement over the high limitation in any avoidance measures by the proposal as a consequence of design is acknowledged. However, any measures should be based on applicable guidelines as well as any relevant Transport policy/guidelines.
- Transport is recognised as having a Biodiversity Offset Policy and therefore inclusion of biodiversity credits in the document is appropriate. It is however requested that the credits be readjusted to reflect the additional surveys as per above as requested.

Response

As outlined in section 1.1.4 of the Biodiversity Assessment Report, the Biodiversity Assessment Report was prepared in accordance with the BAM. The BAM is part of the Biodiversity Offset Scheme. The Biodiversity Offset Scheme is a legislated framework that is required when assessing impacts on terrestrial biodiversity from development and clearing. The application of the BAM is not required for activities subject to assessment and approval in accordance with Division 5.1 of the EP&A Act; however, Transport has adopted guidelines under the BAM to ensure best practice survey methods are used. The BAM provides a consistent method to assess impacts on biodiversity values from a proposed development or activity. The survey and assessment effort required by the BAM is scaled according to the extent and risk of impacts on biodiversity from a proposal, the availability and quality of existing information, and the area of land being assessed.

The threatened biodiversity survey and assessment guidelines Wollondilly Shire Council refers to were prepared as working drafts in 2004 by the then NSW Department of Environment and Conservation. Transport is confident that the BAM provides the most current, best practice survey methods, which also aligns with Transport's commitment to providing biodiversity offsets. Mitigation measures have been developed based on relevant government guidelines and Transport policies. The Biodiversity Assessment Report will not be amended.

Consideration of the Cumberland Plain Conservation Plan

Issue description

Previous comments provided by Environmental Services requested consideration of the implications of the CPCP to the proposal given parts of the site are mapped as urban certified and avoided under this Plan. The submitted Report is viewed as containing a sufficient description of the framework associated with this Plan for the purposes of this REF.

The Biodiversity Assessment Report is noted to state that "*the urban capable land on the site is biodiversity certified under Part 8 of the BC Act, and as such, development under Part 5 of the EP&A Act does not require an assessment of likely impact of development on biodiversity to the extent that the development is carried out on biodiversity certified land*. It is noted to further state "*therefore, development in these areas does not require further site by site biodiversity assessment or approval under the BC Act, if consistent with the CPCP and its approvals, which includes application of the CPCP's mitigation measures*.". Both of these statements are questioned from a technical perspective on the following grounds based on the experiences of staff in the application of the CPCP on urban certified land:

- The statement that no biodiversity considerations is required is inconsistent with a number of statements in the CPCP and accompanying Assessment Report that the consideration of indirect and prescribed impacts associated with vegetation clearance on certified land is required. Relevant prescribed impacts as detailed in Section 8.3 of the BAM to the proposal is viewed as being Habitat Connectivity and Water Bodies and Hydrological Processes.
- While referencing the CPCP Mitigation Guidelines, the Biodiversity Assessment Report has not addressed the Objectives of both Part 1 Koalas and Part 2 Threatened Species and Ecological Communities of these Guidelines. These Objectives replicate the Commitments of the CPCP which are required to be implemented by the Conferral (the approving document for the CPCP).

It is recommended that the above considerations be investigated and responded to prior to the approval of the REF.

Response

The legal effect of certification is that proponents are not required to apply the BAM in undertaking development or activities within certified land. Proponents are required to apply any planning or other controls as required by the biodiversity certification order. This does not include the CPCP Mitigation Measure Guidelines, which only apply to Part 4 development (see page 5 of the Mitigation Measure Guidelines) and are therefore not applicable to the proposal.

Transport also notes that a draft version Biodiversity Assessment Report was reviewed by the Department of Planning and Environment (now NSW DCCEEW) in July 2023 and no issues were raised.

Threatened ecological community mapping

Issue description

The approach and methodology of vegetation mapping in the REF is agreed with. The produced mapping of vegetation communities is also agreed with.

Comments have been provided above in regard to the viewed incorrect basing of surveys for threatened ecological communities and species on the BAM given the document is not a BDAR. The amendment of the surveys is consequently requested to include all threatened flora and fauna species identified within an appropriate distance of the site in accordance with applicable guidelines utilised for proposals where the BAM is not activated. The updating of the mapping of recordings reflects the additional surveys as appropriate is also recommended.

Response

Transport biodiversity assessments for proposals being assessed under Division 5.1 of the EP&A Act are carried out in accordance with the Transport *Biodiversity Assessment Guidelines* (EMF-BD-GD-0010). While adherence to the BAM is only required for a BDAR, Transport closely follows the BAM as an industry standard when setting survey and assessment requirements for proposals that do not require a BDAR.

As shown by the Biodiversity Assessment Report, and consistent with Transport guidelines, assessors are required to carry out database searches for records and modelled habitat of threatened species within a certain distance of the proposal (typically a 10-kilometre radius). Assessors then carry out a habitat suitability assessment (summarised in Appendix B of the Biodiversity Assessment Report) to determine the likelihood of each species occurring in the study area. Targeted surveys can then be carried out to further assess species considered to have a moderate to high likelihood of occurrence.

Transport is satisfied that the survey and assessment undertaken in the Biodiversity Assessment Report is consistent with Transport guidelines. Safeguards in the Biodiversity Assessment Report, REF and in section 7.2 of this report, require a range of measures including a flora and fauna management plan (B06), and pre-clearing surveys.

Threatened ecological community impacts

Issue description

The report is noted as stating the proposal would require the removal of up to about: 11.50 hectares of native vegetation, (subject to assessment), and 19.4 hectares of urban/exotic vegetation. There is an apparent difference of these figures to those contained in Table 5-1 of the Biodiversity Assessment Report, (recognising this table is restricted to threatened ecological communities). The REF is recommended to be adjusted to provide a precise an area as practically possible of the direct impacts of the proposed activity on threatened ecological communities.

Response

As stated in the REF, the proposal would require the removal of up to about:

- 11.50 hectares of native vegetation subject to assessment
- 19.40 hectares of urban native/exotic vegetation
- 50.76 hectares of non-offsetable grassland (including grassed paddocks and roadside vegetation).

Table 5-1 in the Biodiversity Assessment Report presents the total impacts on native vegetation (TECs), including CPCP certified land, which comprises 13.10 hectares (noting that some areas are not required to be subject to assessment as a consequence of the CPCP certification).

As outlined in section 5.1.2 of the Biodiversity Assessment Report, the proposal would result in the removal of up to 13.10 hectares of native vegetation in total, comprising two PCTs in various condition states. The Biodiversity Assessment Report however only assesses impact to "excluded" and "avoided" land under the EPBC Act and BC Act and impacts on 'certified-urban capable land' under the EPBC Act only.

A summary of the direct impacts on TECs is provided in Table 6-7 in the REF, which shows the total impact assessed as 11.50 hectares, due to the removal of areas already assessed under the CPCP.

Indirect impacts

Issue description

The statement in the Biodiversity Assessment Report that "road widening can result in an increased barrier to dispersal for fauna species' is agreed" with, from a technical perspective. The statement in the document that Koala exclusion fencing will be installed prior to the commencement of any works is supported provided this timing is achieved. However, the document is requested to contain a description over the potential impacts the actual widening (including its use) on the connectivity and movement of applicable fauna species.

The consideration of a range of indirect potential impacts to biodiversity by the document is sufficient. However, it is considered that the document has not adequately considered potential impacts of lighting during and after construction with reference restricted to "artificial light impacts will be minimised through detailed design". There is potential for such light to impact on the mapped Koala corridor to the south of the subject site. The document is consequently recommended to be amended to contain an assessment of this potential impact consistent with applicable guidelines and scientific research.

Response

Potential impacts of widening on the connectivity and movement of applicable fauna species

As stated in section 6.1.3 of the REF, fauna exclusion fencing is proposed to be erected along heavily vegetated sections of Picton Road and the M31 Hume Motorway prior to commencement of the proposal as part of a separate Transport project. There is no fauna fencing present within the existing western section of Picton Road (this proposal), although fauna connectivity structures are present within the southern extent of the proposal on the M31 Hume Motorway near Pheasants Nest.

Wildlife connectivity and habitat fragmentation is discussed in detail in section 5.2.2 of the Biodiversity Assessment Report. The Biodiversity Assessment Report found that:

- Vegetation throughout the study area and region is relatively well connected.
- The proposal would predominantly remove linear areas of vegetation adjacent to existing road infrastructure.

The proposal is not expected to result in the further fragmentation of habitat for any species and current connectivity of vegetation within the landscape would be maintained. Consequently, a need for fauna crossing structures was not identified. Furthermore, the proposed land use changes surrounding the proposal in the coming years are likely to further contribute to a reduction in wildlife movement across the landscape.

Specifically in relation to Koala, the assessment found that the Pheasants Nest Bridge (located on the M31 Hume Motorway over the Nepean River in the south of the study area) provides existing passage for fauna which may pass under these bridges. Vegetation below the bridges, along the Nepean River, would not be removed because of the proposal, and minor removal of vegetation adjacent to the roadways (above the edge of the cliff line) is unlikely to reduce the width of the vegetated corridor such that Koala movement would be impeded.

The Biodiversity Assessment Report found that the function of the connective corridors within and adjacent to the study area is not likely to be impacted by the scale of vegetation removal proposed for the proposal and therefore the proposal would be unlikely to fragment or isolate the existing population of Koala.

Potential impacts of artificial lighting during construction and operation on the mapped Koala corridor

Protected Koala habitat is present on the southern extent of the proposal site, on the road verge of the M31 Hume Motorway. The motorway and existing lighting, already present a barrier to Koala movement and use of the area.

The Significant Impact Criteria assessment for Koala presented in Appendix D of the Biodiversity Assessment Report found that it was unlikely that the disturbance from noise or lighting associated with the short-term impacts from construction would substantially interfere with the species ability to reproduce in the locality given the high level of noise, vibration and light disturbance from existing roads.

Impact on mapped Koala corridors

Issue description

The approach of the document in stating that Chapter 4 of the SEPP (Biodiversity and Conservation) 2022 does not apply to Division 5.1 Activities but contain an assessment of impacts to comply with the EPA regulation is agreed with. The statement that this Chapter does not apply to certified land under the CPCP is also agreed with.

Section 5.2.2 - Wildlife Habitat Connectivity and Fragmentation of the REF in relation to this matter is noted to refer to CPCP Koala Plan as a basis for applying mitigation measures for any potential impact to Koala habitat. Such measures are recommended to have a broader focus than this Plan given the CPCP only has direct application to the certified land on the subject site. Such a localised assessment has consistency with the following limitation statement in the Assessment Report that supports the CPCP "The model (utilised by the Report) only considers the length and arrangement of dispersal pathways; it does not consider other important factors which impact corridor usage (such as corridor width). The model is therefore useful as a support tool which enables more detailed analysis".

The intrusion of the footprint into mapped Koala corridors is acknowledged as being restricted to the southern extension of the freeway access. It is noted in this regard, that this extension however extends into Koala corridors mapped for Council by the Department of Planning and Environment that can be viewed on the Sharing and Enabling Environmental Data Portal. It is further noted to intrude within a 250-metre-wide corridor that Council staff have received specialist advice as a minimum to retain ecological functionality. The Biodiversity Assessment Report is consequently recommended to include a localised assessment of potential impacts to Koala corridors consistent with the above statement in the CPCP Assessment Report, available mapping and specialist advice referred to above.

Response

The 'Koala corridors in south-west Sydney' mapping was prepared by the then Department of Planning, Industry and Environment in 2019 to inform the development of priority areas for Koala conservation and to develop key actions required to avoid and minimise impacts and threats from the new development proposed in the Wilton and Greater Macarthur Growth Areas. This work has subsequently informed the CPCP, which includes a specific sub-plan for Koala habitat protection.

In May 2021, the Office of the NSW Chief Scientist and Engineer provided expert advice on the adequacy of the draft CPCP's Koala protection measures. All recommendations from the expert advice were adopted in the final CPCP. The Koala corridors are included in the 'avoided land' mapping, with planning controls to protect Koala in 'avoided land' in place.

An assessment of the proposal against the requirements of the CPCP, including impact on Koalas, is provided in Table 3-16 in section 3.11.3 of the Biodiversity Assessment Report.

The proposal does not impact on any 'avoided land' at the southern extent of the M31 Hume Motorway off ramps (see Figure 5-2 in this report). The proposal site was specifically shaped to avoid this important vegetation.

Assessment of the proposal impacts on Koala habitat connectivity in the Biodiversity Assessment Report (see section 5.2.2, Appendix C and Appendix D) acknowledges the importance of the mapped habitat corridor along the Nepean River and the existing barrier presented by the M31 Hume Motorway. The existing Pheasants Nest Bridge over the Nepean River provides the only safe connection across the M31 Hume Motorway through this habitat corridor. Given this underbridge passage would be maintained, the proposal is unlikely to reduce the ecological functionality of the Koala corridor.

Furthermore, the Biodiversity Assessment Report acknowledges that permanent exclusion fencing would be in place prior to commencement of construction as part of a separate project, preventing Koalas from accessing the Motorway and directing them underneath the bridge. That fencing would be maintained or replaced (if required) by this proposal, meaning overall improvements to Koala habitat connectivity and vehicle strike mitigation are expected.

The proposal has been developed to be consistent with the CPCP and while some minor edge clearing of Koala habitat would occur, Transport is confident that sufficient assessment of the potential impacts to Koala corridors has been undertaken and no impact on ecological functionality is expected.

Impact mitigation

Issue description

Statement in the Biodiversity Assessment Report to the effect that the ability to avoid impacts is significantly constrained by design and operational constraints is acknowledged. In addition, the statement "a range of impact mitigation strategies would be included in the proposal to mitigate potential impacts on ecological values prior to consideration of offsetting requirements is also acknowledged".

However, Council Environmental Staff as a broad position would have an expectation that the proposal has broad consistency with the Protecting Biodiversity Principle of Council's Sustainability Policy:

> *Considering the broader planning framework, all decisions are made in accordance with the following order of priority, where achievable:*
>
> - *Avoidance of potential impacts to biodiversity. Where avoidance cannot be achieved then.*
> - *Mitigation of any unavoidable impacts of the decision on the site affected. Where mitigation cannot be achieved then.*
> - *Offsetting of any residual impacts of the decision within the Wollondilly LGA.*

The consistency of the proposal with the above position is recognised as not being feasible based on constraints referred to above within the context of the subject site is recognised. Environmental Staff would consequently appreciate the holding of discussions with Transport and engaged consultants over mitigating, (probably in part), biodiversity losses on the site through like for like enhancement at a suitable Council owned land or possibly Crown Land where it has care and control responsibilities.

Response

The REF was prepared in accordance with the Transport *Environmental Assessment Procedure* (EMF-PA-PR-0070).

Transport is committed to applying best practice environmental impact assessment for all Transport projects including commitments to apply the ''avoid, minimise, mitigation and offset'' hierarchy. As outlined in section 6.1.3 of the REF and section 4 of the Biodiversity Assessment Report, in accordance with the BAM, Transport has incorporated a range of measures into the proposal design and planning or would employ during construction or operation of the proposal, to reduce impacts on biodiversity values. Transport will avoid

unnecessary impacts by continuing to refine the design and during construction through the preparation and implementation of the Flora and Fauna Management Plan (safeguard BI01).

Safeguard BI06 includes the requirement for the preparation of a biodiversity offset strategy. Safeguard BI07 contains a commitment that Transport will investigate opportunities to replace disturbed areas within the proposal site identified for landscaping.

Rehabilitation and offsetting inherently contain maintenance periods and are preferentially completed in locations where long-term benefits are realised. Operational maintenance by asset managers (Council, Transport or others) must always aim to sustain and protect any offsetting activities for long-term survival and success.

Transport will continue to consult with Wollondilly Shire Council through all stages of the proposal and would be pleased to explore opportunities for mitigating biodiversity losses within suitable land under Council control.

3.2.14 Hydrology and flooding

Issue description

The provision of specific comments on this report is outside the technical expertise of Council Environmental Officers. The comments below are consequently provided from an environmental perspective. Transport for NSW and engaged consultants are welcomed to hold discussion with Council Environment and Engineer Staff regarding this matter as part of the finalisation of the proposal and development of detailed design.

Response

Transport will continue to consult with Wollondilly Shire Council through all stages of the proposal.

Consistency with Council's Integrated Water Management Policy

Issue description

The reference of the Hydrology Report to NSW Water Quality Objectives in the document is agreed as being appropriate in defining outcomes and a framework at a broad perspective. In a more localised scale, the design is also requested to be consistent with the Zero Impact outcome of Council's Integrated Water Management Policy and Section 4.2 of the related Water Sensitive Urban Design Guidelines.

Response

As stated in Table 5-6 in section 5.4 of the REF, the consideration of Wollondilly Shire Council Integrated Water Management Policy and Guidelines has been included in the water quality assessment in the REF (refer section 6.6 of the REF) and in section 2.2.4 of Appendix H.

Potential runoff impacts to the Bargo River

Issue description

The Bargo River is viewed of high importance from an ecological perspective (in-stream, riparian and habitat corridors) by Council and the local community. The protection of these components of this waterway from runoff associated with the works during and subsequent to construction is therefore a strong position of Council Environmental Staff. Any shortcomings in such protection are considered to have the potential to result in Council having the cost/resource burden of managing impacts such as increased erosive pressure, pollutant load and weed growth in riparian areas of the waterway. In relation to this matter, the Environmental Officer that prepared these comments experienced firsthand runoff from both sides accumulating to a dangerous depth from a traffic management perspective on this bridge during an intense rainfall event. It is recommended that the stormwater system and related mitigation measures be designed to prevent adverse impacts to the ecological health of this water both during routine and high intensity rainfall events.

Response

The receiving environment is identified in the REF, and Appendix G and H of the REF, as the Nepean River and a number of ephemeral watercourses that are tributaries of Byrnes Creek, Stringybark Creek and Allens Creek.

The Bargo River is located about 3.5 kilometres outside of the proposal site and joins the Nepean River downstream of the proposal. The proposal is not anticipated to have any direct impact on the Bargo River.

Safeguards and management measures to manage the potential water quality impacts of the proposal are detailed in section 7 of the REF and include safeguards SW01 and SW02 which require the preparation of a Construction Soil and Water Management Plan to be prepared and implemented in accordance with the Blue Book, including site specific Erosion and Sediment Control Plans.

Water quality monitoring program

Issue description

The intended undertaking of a water quality monitoring program by the applicant is supported and welcomed. As a basic position, Council Environmental Officers would expect the program involve ongoing monitoring of potential impacts to the ecological health of Bargo River during the construction and operation of the proposal. The Program should involve collection of data prior to construction commencing to obtain baseline data.

Response

As outlined in safeguard SW04, a surface water quality monitoring program would be developed and implemented as part of the Construction Soil and Water Management Plan in accordance with the *Guidelines for Construction Water Quality Monitoring* (RTA, 2003). The program would include pre-construction water quality sampling and testing. Sampling locations would be proposed at nominated receiving environments and would be confirmed in the plan and captured in the Environment Protection Licence (EPL).

3.3 NSW Ports

Issue description

NSW Ports supports the proposal's dual carriageway, two or three lanes in each direction with sealed shoulders, safety barrier containment and verges as proposed. Ultimately, the upgrade of Picton Road should achieve a minimum of dual carriageway for the entire corridor. In doing so, this would provide long-term dual carriageway access for the entirety of the route from Port Kembla to the National Highway and beyond, including to Western Sydney and the broader Sydney Motorway Network.

Picton Road is utilised for OSOM cargo, such as wind farm componentry, destined for Renewable Energy Zones and regional NSW more broadly. NSW Ports urges Transport to consider the requirements of oversized cargo, including in the provision of signalling and other infrastructure at the new Picton Road interchange with the M31 Hume Motorway. As a minimum, Transport should ensure that designs allow for future wind farm componentry including blades up to 110 metres in length and tower segments up to six metres in diameter, aligning with work undertaken by EnergyCo.

Response

NSW Ports' support for the proposal is noted.

Picton Road is a National Key Freight Route, and the proposal has been designed to current design standards aligning with the route classification. Intersection turn movements have been designed to accommodate a Performance Base Standards (PBS) level 2 vehicle (26-metre-long B-double) and checked for a PBS level 3 vehicle (36.6 metre long A-double).

Transport will consult with NSW Ports, Department of Planning, Housing and Infrastructure and EnergyCo throughout the following development stages of the proposal regarding routes, likely OSOM configurations, and the proponents' Transport Management Plans for the wind farm componentry to assess what OSOM configurations can be accommodated by the proposal.

When OSOM combinations do not comply with mass, dimension and operating requirements set out in a gazette notice for the route, the proponent is responsible for applying to the National Heavy Vehicle Regulator to obtain a Permit. The wind farm componentry described would be classified as a 'High Risk' OSOM movement which requires a Transport Management Plan to support permit applications which are then reviewed on a case-by-case basis.

The proposal forms the western section of the Picton Road upgrade. The central and eastern sections of the upgrade are in the early planning and design options development phase. This includes the Macarthur Drive intersection with Picton Road. Transport is continuing with site investigations and preliminary studies for these sections. The western section was prioritised based on a multi-criterion needs and practicality assessment completed in 2021. This assessment included considerations such as road network efficiency and safety, resilience to natural disasters and road incidents, opportunities to support planned growth, linkages to other programs and planned upgrades, asset condition, and feedback from the community.

3.4 Endeavour Energy

Issue description

Endeavour Energy currently has an existing (Wilton) zone substation (ZS) located on Condell Park Road, Wilton.

To service the upcoming precincts of Wilton Town Centre, North Wilton and West Wilton, Endeavour Energy would be running feeders from the existing Wilton ZS east and then south following Condell Park Rd to Picton Road. And then from Picton Road, crossing the M31 Hume Motorway to the western side of the M31 Hume Motorway.

To facilitate the servicing of this demand, Endeavour Energy would require two sets of Type 06 ducts running east west across the M31 Hume Motorway, and an additional set of Type 06 ducts heading east along the southern side of Picton Road from Greenway Parade. It is Endeavour Energy's preference that these ducts be located in the proposed new bridges over the M31 Hume Motorway as part of the proposal.

Endeavour Energy has provided a standardised response to the NSW planning portal referral, noting that they appreciate that not all of the issues in their submission may be directly or immediately relevant or significant to the proposal. Their response included the following documents, which should be included in utilities design considerations moving forwards on the proposal:

- standard conditions for DAs and planning proposals
- work near overhead power lines – Code of Practice (WorkCover NSW, 2006)
- work near underground assets
- building construction
- living with easements
- easements and property tenure
- safety clearances
- safety on the job.

Endeavour Energy's preference is for early engagement with proponents/applicants to alert them of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

Response

Transport will continue to consult with Endeavour Energy and developers through all stages of the proposal development and delivery.

Transport would follow Endeavour Energy's asset protection/relocation process by engaging ASP3. This includes early consultation with Endeavour's Property Group on easement, and potential existing network augmentation for power supply during road construction.

The proposed future works by Endeavour Energy to service upcoming precinct development in the Wilton Growth Area is important to Transport due to the interface with the Picton Road upgrade. Transport would liaise and coordinate with Endeavour Energy to deliver the best practicable outcome for both organisations. Prior to the public exhibition of the REF, Transport has engaged Endeavour Energy through technical enquiry, to understand the scope of the existing Endeavour Energy asset potentially impacted by the proposal.

3.5 WaterNSW

Issue description

WaterNSW has reviewed the REF and conclude that the proposal is unlikely to significantly impact on WaterNSW lands or bulk water supply infrastructure. Notwithstanding, the following comments were provided:

- WaterNSW Guideline – the proposal is consistent with the *Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines* (WaterNSW, 2021). The REF has considered how the proposal's design meets the Guideline requirements. Further, WaterNSW is supportive of safeguard GEN6, which ensures continued consideration of the Guideline throughout the design and construction of the proposal.
- European Heritage – It is noted that all works are to be contained within the existing road corridor (where it passes over the Upper Canal), however it has been identified in the REF that there is potential for the proposal to affect parts of the aboveground easement of the listed heritage item and that a heritage exemption will be sought for works within the curtilage. WaterNSW requests further information and consultation on what that potential affect will be.
- Unexpected finds protocol – WaterNSW supports the provision of an unexpected finds protocol for both non-Aboriginal heritage and Aboriginal heritage. Any unexpected finds found at or near the Upper Canal during construction are also to be reported to WaterNSW.
- Asset impacts – It is noted that no anticipated impact is expected from vibration due to the distance of the item from the ground surface. WaterNSW also noted and supports airshaft #9 associated with the Upper Canal (SHR 01373) being included in the CEMP environmental sensitive area map (mitigation measure NH01). The acknowledgement and recognition of these assets will ensure continued consideration during planning and construction.
- Incident and emergency response – It is critical that during construction, WaterNSW is notified of any incidents that affect or could affect WaterNSW bulk water supply infrastructure to WaterNSW on the 24-hour Incident Notification Number 1800 061 069.

It is of utmost importance to WaterNSW that during the detailed design, construction and ongoing use of the roadway that there is no impact to the structural integrity of this WaterNSW asset and that it remains safe and serviceable at all times. Therefore, if the design changes, where the Upper Canal corridor will be either directly or indirectly impacted, then WaterNSW must be given the opportunity to review further.

Response

WaterNSW's support for the proposal and the assessment presented in the REF is acknowledged.

The Upper Canal is located about 90 metres below ground level where the proposal crosses it. There is an associated airshaft located about 80 metres from the proposal site. The overall impact to these assets from the proposal has been assessed as minor and there are no anticipated direct or vibration impacts to either the Upper Canal due to the distance from the ground surface and the air shaft due to it being located outside of the proposal site.

Safeguard GEN7 requires notification to WaterNSW in the event of any incidents occurring during construction that may affect bulk water supply infrastructure. Transport will continue to consult with WaterNSW through all stages of the proposal.

Additional safeguards have been included in section 7.2 of this Submissions Report to further address WaterNSW's submission, including notifications for unexpected finds and consultation should design changes have the potential to impact the Upper Canal heritage item.

3.6 Subsidence Advisory NSW

Issue description

The proposal is within the Wilton mine subsidence district.

We acknowledge that ongoing consultation with Subsidence Advisory NSW has been noted as requirement in the REF document. We look forward to further discussion with Transport as the detailed design phases of the proposal progresses.

There is no additional comment from Subsidence Advisory at this time in relation to the proposal.

Response

Transport will continue to consult with Subsidence Advisory NSW through the development stages of the proposal, or as required.

4. Consultation

Transport will continue to seek feedback from the community and key stakeholders as the proposal progresses, including during detailed design and construction, in accordance with the CSEP (safeguard SE01).

Since the public display of the REF, consultation has continued with a number of key government agencies, as summarised in Table 4-1.

Table 4-1 Further consultation

Stakeholder	Summary of issues	Outcome
Department of Planning, Housing and Infrastructure – Biodiversity Conservation and Science Directorate	• The need to coordinate with other projects providing Koala-exclusion fencing installed along Picton Road and the M31 Hume Motorway. • Seed harvesting from salvaged mature trees. • Woody materials for ecological restoration projects under the CPCP.	• The Picton Road upgrade project team will continue coordination with other Transport teams planning fauna fencing on Picton Road and the M31 Hume Motorway. • Transport and Department of Planning, Housing and Infrastructure will continue collaborating on potential outcomes for preventing Koalas from entering the road corridor. • Transport will consider seed collection and harvesting woody material as part of its biodiversity offset strategy for proposal and continue to consult with Department of Planning, Housing and Infrastructure.
Wollondilly Local Emergency Management Committee (incl. NSW Rural Fire Services, NSW Police, NSW State Emergency Services, NSW Health, Fire and Rescue NSW, among other)	• Proposal scope. • Proposed changes to the proposal (discussed in section 5). • Summary of submissions related to speed limit enforcement and emergency services.	• Wollondilly Shire Council and emergency services were supportive of these changes and did not raise any issues regarding the proposal impacting their operations once built.
Wollondilly Shire Council	• Summary of submissions received. • Response to submission received during REF display. • Maintenance agreement.	• Transport will continue to consult with Wollondilly Shire Council regarding issues raised in their submission as required. • Asset responsibility plans will be prepared for consultation with Council.
WaterNSW	• Response to submission received during REF display. • Unexpected finds notification safeguards in REF. • Potential design changes, where the Upper Canal corridor may be either directly or indirectly impacted.	• WaterNSW was satisfied with the changes to safeguards proposed by Transport in response to the issues raised in their submission.

Stakeholder	Summary of issues	Outcome
NSW Ports	• Ability to cater for OSOM and wind turbine components along Picton Road from Port Kembla. • Templates available for OSOM movements assessments. • Main current and planned routes for wind turbines affecting the proposal.	• NSW Ports confirmed that most wind turbine components would be expected to travel out of Port Kembla, westbound on Picton Road, then southbound on the M31 Hume Motorway. • Previous movements of componentry up to 70m long OSOM combinations have occurred. • NSW Ports cannot provide design, or OSOM transport configuration details related to componentry sizes noted in their submission at this stage. However, further contacts were provided for obtaining the relevant information. • Transport will continue to consult with NSW Ports, Energy Co and the Department of Planning, Housing and Infrastructure with regards to planned transport of wind turbine componentry.

5. Changes to the proposal

In response to submissions and following further design development, a number of changes to the REF proposal were identified. These changes are shown in Figure 5-1 and described in the following sections. Environmental assessments, where required, are provided in section 6.

Figure 5-1 Overview of the revised proposal

5.1 Additional (second) lane on M31 Hume Motorway northbound off ramp at interchange with Picton Road

5.1.1 Description

The concept design presented in the REF included the provision of a single right turn lane at the interchange of the northbound off-load ramp from the M31 Hume Motorway and Picton Road.

Further design development following public exhibition of the REF has identified an opportunity to provide an additional right turn lane at the interchange of the northbound off-load ramp from the M31 Hume Motorway and Picton Road, as shown in Figure 5-2. This change to the proposal would provide more throughput capacity for vehicles exiting the M31 Hume Motorway and travelling eastbound towards Wollongong and minimise the potential for vehicle queues extending south on the off-load ramp and potentially onto the M31 Hume Motorway. The additional lane would also provide additional capacity to manage incidents at this ramp.

This arrangement is a permanent arrangement and would be constructed as part of Stage 1 of the proposal. A traffic assessment of the proposed changes is presented in section 6.2 of this report.

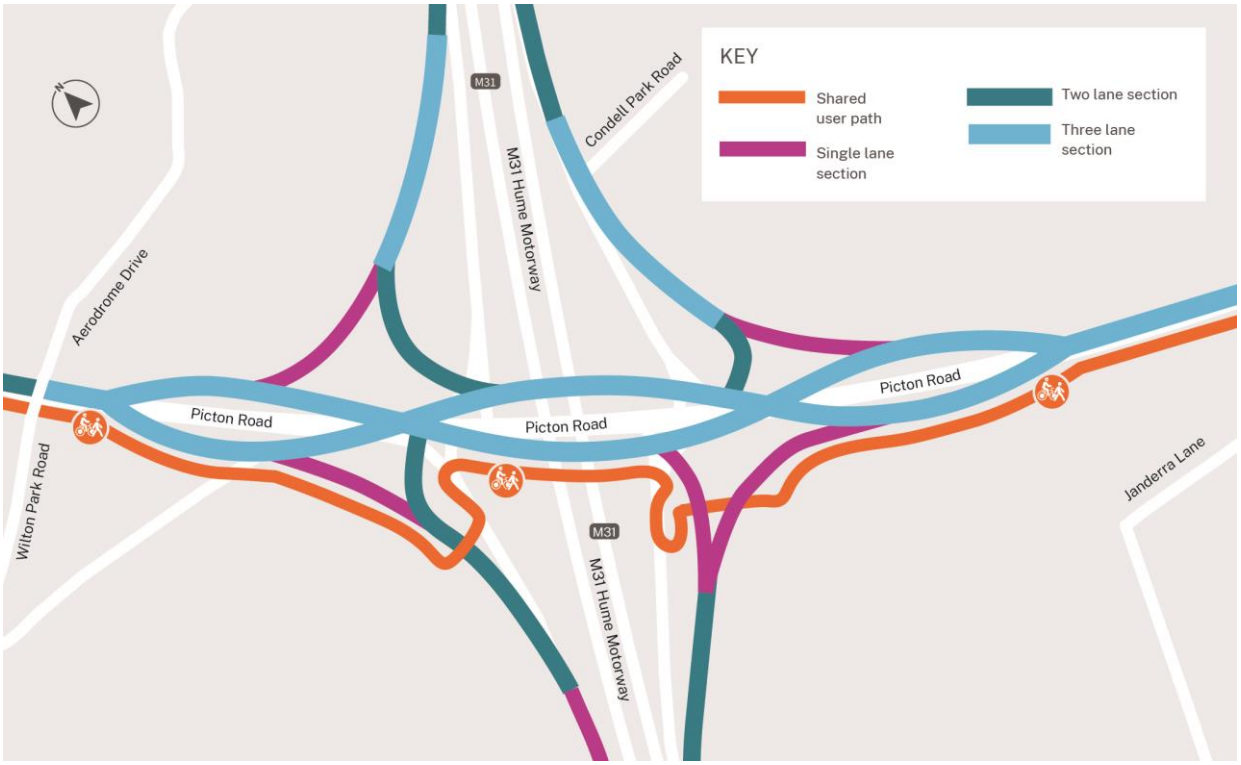

Figure 5-2 Additional (second) lane on M31 Hume Motorway northbound off ramp

5.2 Removal of impacts on 'avoided land'

5.2.1 Description

The REF identified that, based on the concept design, the proposal has the potential to impact on about 144 square metres of land mapped as 'avoided land' within the Cumberland Plain Conservation Plan and SEPP (Biodiversity and Conservation) 2021. A commitment was made in the REF that further design development and construction planning would aim to minimise the area needed for construction, including the impact on mapped 'avoided land'.

Optimisation of the drainage design for the proposal has meant that the potential impacts to 144 square metres of 'avoided land' mapped under the Cumberland Plain Conservation Plan have now been removed from the proposal scope. Realignment of the drainage channels at the western extent of the proposal on Picton Road has meant that these channels, which would take clean water and water discharged from the water quality basin, can now be contained within either the Excluded land (i.e. road corridor land) or Certified – urban capable land mapped under the CPCP. The amended proposal site is presented in Figure 5-3.

An assessment of this reduction in impacts on 'avoided land' under the CPCP is provided in section 6.1.

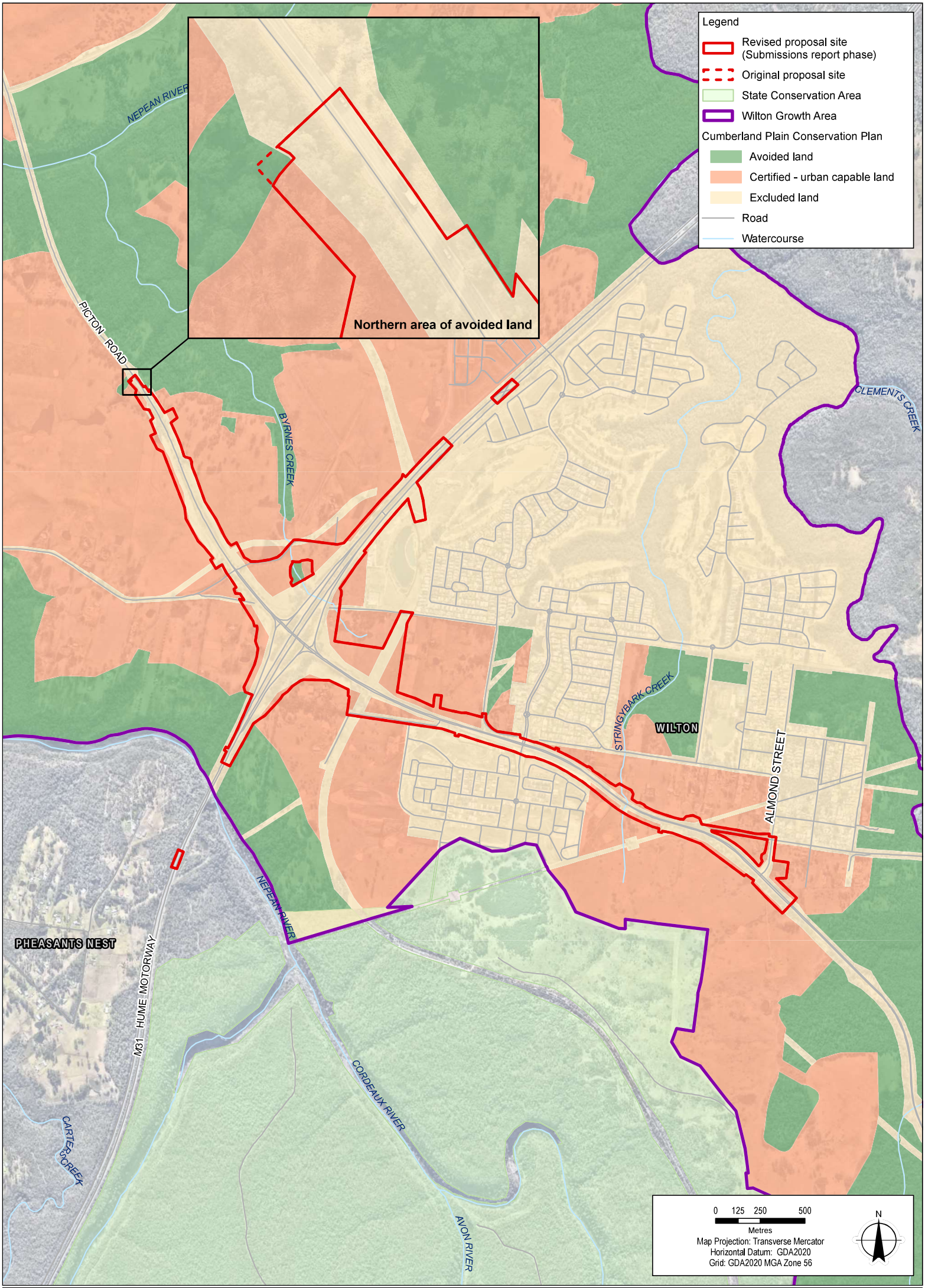

Figure 5-3 Reduction in impacts on avoided land

Data source: Nearmap WMS Server; NSW SS-SDS, Topographic base data, 2023. Created by:akildea
N:\AUWollongong\Projects\23\12560200\GIS\Export\20240613_DRAFT docs for 80pc submission\PRUP1_DesignChanges\PRUP1_DesignChanges.aprx
12560200_DC001_CPCP_A4P. Print date: 19 Aug

5.3 Channelised right turn at Almond Street intersection included in Stage 1

5.3.1 Description

As detailed in section 1.1.3 of the REF, the restriction of the Almond Street intersection to left-in and left-out movements only as part of Stage 2 of the proposal would not be implemented until such time as the developer-funded Almond Street interchange is in place at this location. All traffic movements, i.e. right and left turns, would be maintained in the existing intersection layout until the Almond Street interchange is constructed.

Consequently, if the Almond Street interchange is delayed, the proposal would potentially be built in two stages, with Stage 2 comprising the upgrade of Picton Road from about one kilometre east of Pembroke Parade to about 200 metres east of Almond Street. This stage would be timed to align with the developer-funded works for the Almond Street interchange.

Following feedback from the public exhibition process, further consideration was given to the opportunities to address safety concerns the community held regarding the Almond Street intersection with Picton Road current functionality.

An opportunity was identified to provide channelised right and left turn lanes off Picton Road for vehicles entering Almond Street and a separate lane for vehicles turning right out of Almond Street to travel westbound, as shown in Figure 5-4. This would provide safer movements for motorists and would remain in place until the developer-funded Almond Street interchange is constructed.

The interim channelised right turn movements at the Almond Street and Picton Road intersection provide safety improvements, no additional environmental impacts and value for money. The channelised right turns would be constructed as part of Stage 1, including all earthworks, utility relocation and pavement works required for the proposal.

The remaining construction work to be completed in Stage 2, once the developer-funded Almond Street interchange has been constructed, would consist of the rehabilitation of the existing pavement, removal of the interim pavement marking and median islands for the channelised right turns, and installation of pavement marking, median barrier and road furniture for the ultimate arrangement (left-in, left-out at grade Almond Street and Picton Road intersection with the developer-funded Almond Street interchange providing the right turn in and out traffic movements).

This change in staging would deliver the following benefits to road users:

- Safer right turn movements into and out of Almond Street at the intersection with Picton Road.
- Reducing the length of construction disruption during Stage 2 by bringing forward the more disruptive activities to be carried out concurrently with those proposed in the REF for Stage 1.

A traffic assessment of the proposed changes is presented in section 6.2 of this report.

Consultation with Wollondilly Shire Council and the Wollondilly Emergency Services Committee has raised no concerns with this proposed change to the proposal.

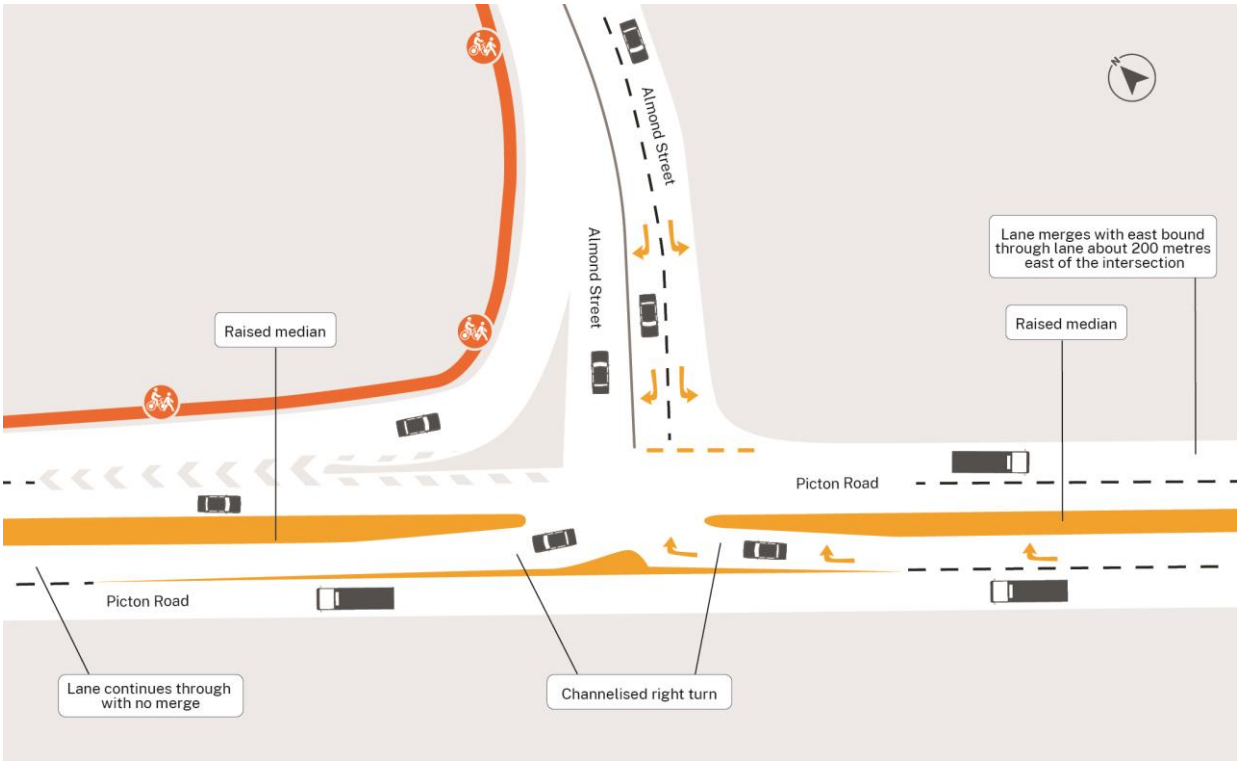

Figure 5-4 Channelised right turn at Almond Street intersection

5.4 Vehicle U-turn facility for Wilton Park Road intersection

5.4.1 Description

The proposal as exhibited included left-in and left-out configuration at the intersection of Wilton Park Road and Picton Road to provide safer access to this existing local road. The Wilton Growth Area Infrastructure Phasing Plan includes the relocation and upgrade of the Wilton Park Road and Aerodrome Drive intersection to a signalised arrangement west of the existing location. The arrangement included in the proposal for this intersection is considered to be an interim arrangement to maintain access to the existing properties until the developer-funded signalised intersection is built.

Following feedback on the public exhibition, an interim U-turn facility would be provided to allow vehicles travelling west on Picton Road, including people exiting Wilton Park Road, to make a U-turn movement outside of the eastbound carriageway to travel eastbound towards the M31 Hume Motorway and Wollongong, as shown in Figure 5-5. A right turn lane would be provided to allow vehicles to access a U-turn facility located off the eastbound shoulder about 100 metres west of the existing intersection with Wilton Park Road. Once the U-turn movement has been made, vehicles would be able to merge onto the eastbound carriageway under a give way priority.

This arrangement is an interim arrangement that would be constructed as part of Stage 1 of the proposal and would remain until the relocation and upgrade of the developer-funded Wilton Park Road intersection has been constructed.

Emergency services, when travelling east on Picton Road between the Nepean River bridge and the Diverging Diamond Interchange would also be able to complete a U-turn at the western intersection of the Diverging Diamond Interchange while using emergency flashing lights and can then turn left into Wilton Park Road when travelling west on Picton Road. General daily traffic travelling east on Picton Road between the Nepean River bridge would need to continue east through the interchange to turn around at the Oxenbridge Avenue and Pembroke Parade intersection. Traffic volumes predicted to make this U-turn at Oxenbridge Avenue and Pembroke Parade are considered to be very low.

Consultation with the Wollondilly Emergency Services Committee has raised no concerns with this proposed change to the proposal.

A traffic assessment of the proposed changes is presented in section 6.2.

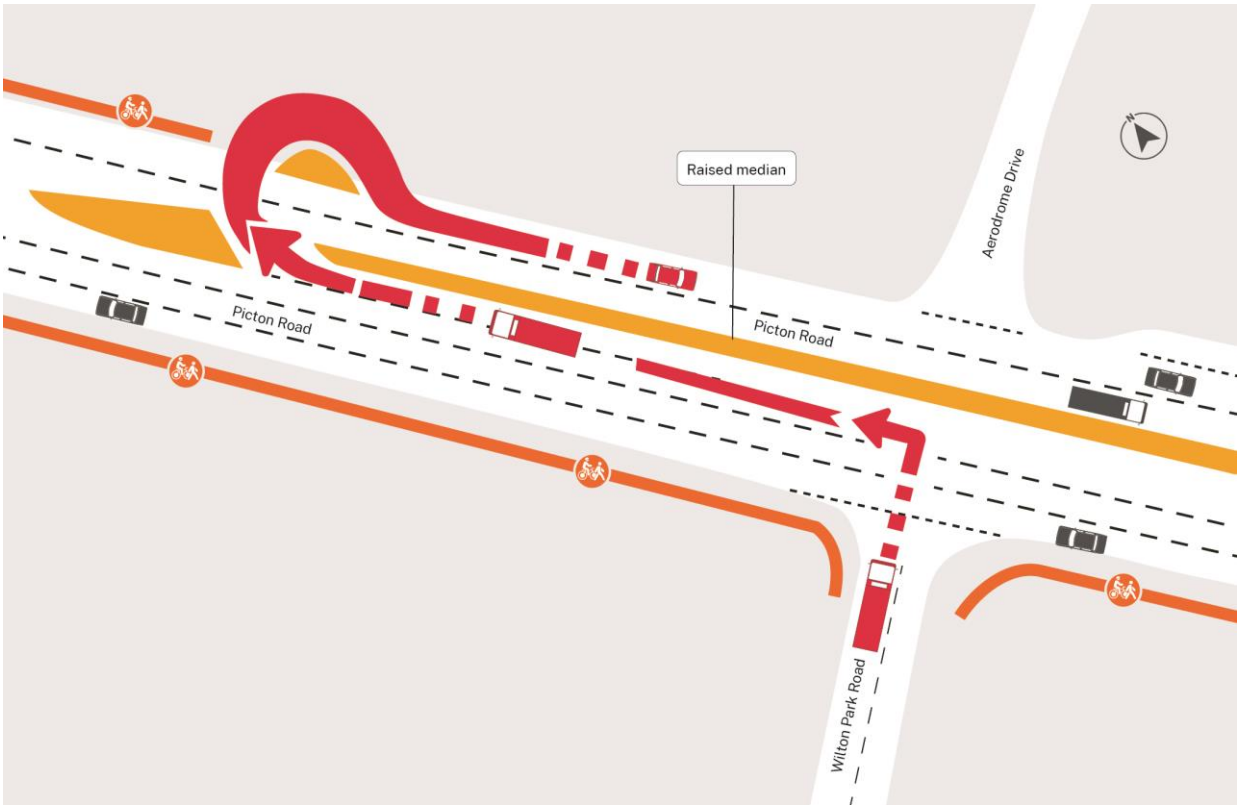

Figure 5-5 Vehicle U-turn facility for Wilton Park Road intersection

5.5 REF clarifications

5.5.1 Works outside the boundary

The proposal would require some works outside the approved proposal site, including temporary and permanent signage and traffic control devices, pavement marking and delineation, and utility works. The installation of temporary and permanent signage and pavement marking and delineation, such as advanced warning or direction signage and devices, would be located within the road reserve and may require excavation, concrete footings, elevated work platforms or crane operations, and traffic control.

Work to rectify surface damage during construction, such as milling and re-sheeting, may also be required in places. Temporary traffic management strategies would be detailed in a Construction Traffic Management Plan (safeguard TT01). Utility works are likely to include traffic control, elevated working platforms, stringing out and welding of new conduits, access to manholes or fibre access points for cable hauling, and cutover at fibre joints. Connection to overhead poles outside the proposal site may also be required. Ground disturbing utility works would likely include excavation and backfilling of trenches and pits, and non-destructive digging within previously disturbed areas where no native vegetation removal would be required. These works would be completed under an Environmental Work Method Statement.

Any ground disturbing works other than above that would result in additional environmental impacts would be assessed in accordance with the Transport Environmental Assessment procedure.

5.5.2 Private developer-funded infrastructure upgrades

Chapter 3 of the REF includes infrastructure upgrades to be funded by private developers which are not part of this proposal. The Wilton Growth Area infrastructure phasing plan (Wilton: Building a great new town) (DPIE, 2020) identifies critical infrastructure upgrades that need to be delivered over the next 20 years to meet the needs of the Wilton Growth Area (see Table 3-1). Timeframes included in the REF are based on information provided in the Wilton Growth Area infrastructure phasing plan and are an estimate only.

Approved developments and applicants mentioned in the REF, including Table 6-75, were correct as of February 2024. However, this information is subject to change as development approvals (including modifications) are achieved. This may include changes to the responsibility for the associated infrastructure upgrades under voluntary planning agreements.

5.5.3 Existing noise wall – Picton Road north-west of Pembroke Parade, Wilton

A private noise wall about 25 metres long and 3.6 metres high on the north side of Picton Road immediately west of the Pembroke Parade intersection was not included in the noise model completed for the REF. A qualitative assessment was carried out to assess the impacts of the existing noise wall against the assessment in the Noise and Vibration Impact Assessment and REF. The assessment concluded that the existing noise wall would provide additional noise attenuation above that simulated in the original model in the Noise and Vibration Impact Assessment and REF. Therefore, the noise impacts likely to be experienced during construction and operations by properties affected by this wall are likely to be lower than those discussed in the Noise and Vibration Impact Assessment.

A summary of the Noise and Vibration Impact Assessment is provided in section 6.8 of the REF. This section includes an overview of the existing noise environment, construction and operational impacts and recommended safeguards, including the completion of an ONVR.

This existing noise mitigation wall would result in a more conservative noise impact assessment than is likely to be experienced during construction and operation, with some residents expected to experience less impact than identified in the REF.

No additional assessments or changes to safeguards are required at this stage.

5.5.4 Configuration of shared user path

Section 3.1 of the REF outlines the key features of the proposal. Notably, the configuration of shared user paths crossing the road alignment is presented as grade-separated crossings in Figure 3-2 of the REF. The ultimate configuration and level of shared user paths would be developed further in detailed design in response to site constraints, and road geometry, and may involve other types of grade-separated structures than those stated in the REF. However, the overall function and intent of the shared user paths would be retained.

5.5.5 Staging and interface with developer-funded works

Since the REF display, the NSW Government policies that determined how infrastructure upgrades outlined as developer-funded in the Wilton Growth Area infrastructure phasing plan have progressed to include additional arrangements.

Requirements for the delivery of these infrastructure upgrades (as work in kind) and monetary contributions towards other infrastructure are outlined in planning agreements entered into with the Minister of Planning and Public Spaces (as administered by the Department of Planning, Housing and Infrastructure). Milestones for work in kind infrastructure and/or contributions are linked to the rate of development which is developer-led.

For interfacing infrastructure that is not secured under a planning agreement as work in kind, funding would be considered as part of the HPC and IOP being led by the Urban Development Program which would help to prioritise the allocation of funding on an annual basis aligned to the NSW budget cycle. An updated summary of these interfacing infrastructure upgrades is provided in Table 5-1 below.

Table 5-1 Planned infrastructure upgrades included in the Wilton Growth Area infrastructure phasing plan that may interface with the proposal

Infrastructure upgrade	Description of upgrade	Funding and assumed timing[1]
Western intersection with planned new Wilton Town Centre road	• intersection to be upgraded to a four-way signalised intersection with a planned new local road accessing the West Wilton and North Wilton precincts	Developer contribution via HPC &IOP – by around 2031

Infrastructure upgrade	Description of upgrade	Funding and assumed timing[1]
Wilton Park Road realignment and intersection upgrade	• intersection to be relocated to a new alignment of Wilton Park Road and upgraded to a four-way signalised intersection providing access to the new Wilton Town Centre and West Wilton precinct	Developer contribution via HPC &IOP – by around 2031[2]
Town Centre Link Road overbridge over the M31 Hume Motorway	• a road overbridge for local traffic would be provided over the M31 Hume Motorway (to the north of the Picton Road and M31 Hume Motorway interchange) to provide a direct connection between the Wilton Town Centre and the Bingara Gorge and South Wilton precincts • a pedestrian and active travel route would be included as part of the overbridge	Developer contribution via HPC &IOP – by around 2031
North Wilton road overbridge over the M31 Hume Motorway, including north facing on and off ramps	• a grade-separated vehicular crossing would be provided over the M31 Hume Motorway (to the north of the Picton Road and M31 Hume Motorway interchange) to provide a direct connection between the North Wilton and Bingara Gorge precincts • a northbound on ramp onto the M31 Hume Motorway and southbound off ramp from the M31 Hume Motorway would be provided • a pedestrian and active travel route would be included as part of the overbridge	Delivered by developer under State Voluntary Planning Agreement – by around 2031
Janderra Lane overpass	• a grade-separated vehicular crossing would be provided over Picton Road at Janderra Road for local traffic connecting the South East Wilton precinct to the Town Centre Link Road	Delivered by developer under State Voluntary Planning Agreement – by around 2031
Almond Street intersection upgrade	• an overbridge over Picton Road and new grade-separated intersection would be constructed for local traffic, providing a direct connection between the South East Wilton, South Wilton and Bingara Gorge precincts • westbound and eastbound connections onto Picton Road would be provided for all movements onto and off Picton Road • existing right turn movements at Almond Street would be removed • a pedestrian and active travel route would be included as part of the overbridge	Delivered by developer under State Voluntary Planning Agreement – by around 2031[2]

Note: 1. The timing shown is that assumed in the traffic models completed for the REF which was based on the timing outlined in the Wilton Growth Area infrastructure phasing plan (DPIE, 2020).
Note 2. Traffic modelling completed for the REF assumes this upgrade would be in place by 2031. However, additional traffic modelling completed to support the proposed changes to the proposal (outlined in section 5 of this report) considered a potential delay to 2036.

Consultation with the Department of Planning, Housing and Infrastructure during preparation of the Submissions Report indicates that some of the works detailed in section 3.1.1 of the REF *(Infrastructure upgrades to be delivered by private developers (not part of the proposal))* may potentially be developer-funded, rather than developer-led. The proposal may be delivered in stages to complement adjacent developer-funded works and reduce the potential for adverse impacts on the community and road users.

The approximate locations of these infrastructure upgrades which are not part of the proposal are shown in Figure 3-5 of the REF. These are referred to in the REF as 'ultimate arrangements' at intersections.

The potential proposed staging would not result in a material impact to road users or the community, as the intersection upgrades presented in Figure 3-5 of the REF would already be operational at the time the proposed left-in, left-out at Almond Street is constructed. Notably, in response to submissions, interim arrangements are proposed by Transport as part of Stage 1 at Almond Street to address concerns raised during display of the REF. Refer to section 5.3 of this report for further details.

6. Environmental assessment

An assessment of the changes to the proposal described in section 5 is presented in the following sections. Only aspects of relevance to the proposed changes have been considered.

6.1 Biodiversity

6.1.1 Methodology

A review of the proposal site was carried out following the REF exhibition process to identify areas where the proposal site intersects land mapped as avoided land under the CPCP and to identify opportunities to reduce impacts where possible. The assessment was desktop based only.

6.1.2 Description of existing environment

The proposal site is located along the existing road corridors of Picton Road and the M31 Hume Motorway. It is located north of the Upper Nepean State Conservation Area, south-east of the Dharawal National Park and west of the Nattai National Park. The Nepean River flows to the south and west of the proposal site.

The majority of the proposal site is located on land mapped as excluded land by the CPCP (see Figure 4-1 of the REF) as it is located within an existing road corridor. Some areas of the proposal site are located on land mapped as certified-urban capable land (see Figure 4-1 of the REF), which is land identified for future urban development. This land is biodiversity certified under Part 8 of the BC Act, and as such, development under Part 5 of the EP&A Act on biodiversity certified land does not require assessment of the potential impact on biodiversity. Additionally, development in these areas does not require further site-by-site biodiversity assessment or approval under the BC Act, as long as it is consistent with the CPCP and its approvals (including mitigation measures).

Land mapped as avoided land has been identified in the CPCP for biodiversity conservation. The proposal as presented in the REF initially identified a small area (144 square meters) of land mapped as avoided land (see Figure 4-1 of the REF). The land mapped as avoided land is comprised of the PCT1395 - Narrow leaved Ironbark – Broadleaved Ironbark - Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin Bioregion. PCT1395 corresponds with Shale Sandstone Transition Forest in the Sydney Basin Bioregion CEEC listed under both the BC and EPBC Acts.

6.1.3 Potential impacts

The western extent of the proposal site has been refined to completely remove the requirement to directly impact on any land mapped as avoided land, which would result in the clearing of about 144 square metres of avoided land. As such, the direct impacts on avoided land have been prevented.

The adjustment of the proposal site also results in reduction in direct impacts on 144 square metres of PCT1395 Shale Sandstone Transition Forest in the Sydney Basin Bioregion CEEC, listed under the BC Act and the EPBC Act.

The reduction of the western extent of the proposal site would result in a positive outcome by removing direct impacts on land mapped as avoided land under the CPCP. However, no revisions to the offset calculations as outlined in section 6.1.6 and Appendix C of the REF have been completed at this stage. A Biodiversity Offset Strategy would be completed during the detailed design phase based on final expected impacts.

6.1.4 Revised safeguards and management measures

No changes to the biodiversity safeguards and management measures presented in the REF are required.

6.2 Traffic and transport

6.2.1 Methodology

Further traffic modelling using SIDRA, as well as a desktop-based assessment, was undertaken to assess the impacts of the changes on the traffic and transport performance of the proposal.

6.2.2 Description of existing environment

No changes from that described in the REF.

6.2.3 Potential impacts

Additional (second) lane on M31 Hume Motorway northbound off ramp at the interchange with Picton Road

This movement is predicted to operate at a worst case LoS C, with a maximum average delay of 31 seconds in the PM peak period of the 2046 design year, based on a single right turn movement. Figure 6-5 from the REF shows the future performance of this movement in both the morning and afternoon peak periods at the Picton Road and M31 Hume Motorway interchange in the design years of 2031 and 2046.

The inclusion of the second right run lane for this movement would improve the LoS and reduce the delay from that assessed as part of the proposal. It would provide additional vehicle storage and reduce the queue lengths on the off ramp for northbound vehicles exiting the M31 Hume Motorway and heading east towards Wollongong and west towards Picton.

No other options were considered as part of this change.

Channelised right turn at Almond Street intersection

Further traffic modelling has been undertaken to assess the performance of this change. To assess the performance of the proposed interim intersection layout in the 2031 and 2036 horizon years, traffic demand volumes were extracted from the AIMSUN models developed for the REF. The 2036 horizon year was used for the assessment as this change is an interim measure and the ultimate arrangement (the Almond Street interchange) is expected to be constructed and operational by that timeframe.

With the inclusion of the upgraded channelised right turn, the intersection is expected to operate at an acceptable LoS B and LoS C for both peak periods in 2031 and 2036 respectively. The average delay for the intersection is predicted to be low, with the right turn movements into and out of Almond Street experiencing the highest delay of up to 33 seconds in 2036 (refer to Table 6-1).

Table 6-1 Future year LoS and average traffic delay results for channelised right turn arrangement at Almond Street intersection

Year	Peak period	Average traffic delay (seconds)	Level of service
2031	AM	20	B
	PM	24	B
2036	AM	33	C
	PM	33	C

Vehicle U-turn facility west of Wilton Park Road intersection

Further traffic modelling has been undertaken to assess the performance of the intersections of Picton Road with Wilton Park Road and Aerodrome Drive once the U-turn facility described in section 5.4 has been built. To assess the performance of the proposed interim intersection layout in the 2031 and 2036 design years, traffic demand volumes were extracted from the AIMSUN models developed for the REF. The 2036 horizon year was used for the assessment as this change is an interim measure and the ultimate arrangement (the Wilton Park Road signalised intersection) is expected to be constructed and operational by that timeframe.

With the inclusion of the U-turn facility at Wilton Park Road, the intersection is expected to operate at an acceptable level (LoS B) for the morning peak period in 2031 and 2036 and at LoS A in the afternoon peak for both design years. The average delay for the intersection is low, with the left turn out of Aerodrome Drive experiencing the highest delay of up to 28 seconds (refer to Table 6-2).

Table 6-2 Future year LoS and average traffic delay results for Wilton Park Road intersection including the new U-turn facility

Year	Peak period	Average traffic delay (seconds)	Level of service
2031	AM	24	A
	PM	12	B
2036	AM	28	A
	PM	14	B

6.2.4 Revised safeguards and management measures

No changes to the traffic and transport safeguards and management measures presented in the REF are required.

7. Environmental management

The REF for the Picton Road upgrade between Nepean River and Almond Street, Wilton, identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7 of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, the safeguard and management measures have been revised. Additional measures were provided to address WaterNSW's requests for consultation should there be any design changes. Other minor changes were made to update references to guidelines, provide further clarification on responsibilities or to amend minor typographical errors.

Should the proposal proceed, environmental management will be guided by the framework and measures outlined below.

7.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified 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 management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

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

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

7.2 Summary of safeguards and management measures

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

After consideration of the issues raised in the public submissions, the environmental management measures for the proposal (refer to section 7 of the REF) have been revised. Should the proposal proceed, the environmental management measures in Table 7-1 will guide the subsequent phases of the proposal. Additional and/or modified environmental safeguards and management measures to those presented in the REF have been underlined and deleted measures, or parts of measures, have been struck out.

Table 7-1 Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
General					
GEN1	General – minimise environmental impacts during construction	A Construction Environment Management Plan (CEMP) will be prepared and submitted for review and endorsement by Transport for NSW Senior nominated Environment and Sustainability Officer (or nominated delegate) 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 proposal will implement the identified safeguards outlined in determined environmental impact assessments • 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 and record-keeping requirements • procedures for emergency and incident management • unexpected finds procedures for issues such as heritage and contamination. These will be prepared in accordance with the relevant guidelines (e.g. *Unexpected Heritage Items Guidelines* (Transport for NSW, 2023)) • an environmental sensitive areas map • procedures for audit and review. The endorsed CEMP will be implemented during construction.	Transport/ contractor	Pre-construction/ construction	Section 3.1 of QA *G36 Environment Protection (TS 01450.2)*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
GEN2	General – notification	Local businesses, residents and other key stakeholders (e.g. schools, local councils and community groups) affected by disruptions, amenity impacts or access to properties and local roads will be notified at least five working days prior to commencement of the activity.	Transport/ contractor	Pre-construction/ construction	Section 3.7 QA *G36 Environment Protection*
GEN3	General – environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements and the project cultural safety protocol to be implemented during construction. 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: • areas of Aboriginal cultural heritage and value as identified in the Aboriginal Cultural Heritage Working Paper and non-Aboriginal heritage as identified in the Non-Aboriginal Heritage Impact Assessment • threatened species habitat • adjoining residential areas requiring particular noise management measures • erosion and sediment controls.	Transport/ contractor	Pre-construction/ construction	QA *G36 Environment Protection*
GEN4	General – minimise construction footprint	Further design development and construction planning will aim to minimise the area needed for construction, with a particular focus on avoiding and minimising potential impacts on properties, native vegetation and threatened species habitat including mature trees, sites of Aboriginal and non-Aboriginal heritage significance, and trees with Aboriginal cultural value, as far as reasonably practicable. This process will include an assessment of native vegetation and threatened species habitat, including trees with cultural value and surrounding vegetation, within the proposal site that can be retained through careful consideration of design, construction ancillary facilities layout, access and fencing, and construction methods.	Transport/ contractor	Pre-construction/ detailed design	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
GEN5	General – limit of works and exclusion zones	The limit of works will be delineated. Exclusion zones would be installed around sensitive areas as identified in the CEMP. Extent of exclusion zones will be dependent on the feature and associated licences and approvals.	Contractor	Pre-construction/ construction	Additional safeguard
GEN6	General – Bulk water supply	WaterNSW's *Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines* (WaterNSW, 2021) will be considered during detailed design and construction planning. WaterNSW will be consulted if any interactions with bulk water supply infrastructure are anticipated such as ground disturbance near airshaft #9, potential impacts on access to WaterNSW assets, and changes to drainage or water quality impacts that could impact the bulk water supply infrastructure.	Transport/ contractor	Detailed design/ construction	Additional safeguard
GEN7	General – Incident notification	WaterNSW will be notified as soon as practicable via the Incident Notification Number 1800 061 069 in the event of any incidents occurring during construction that may affect bulk water supply infrastructure.	Contractor	Construction	Additional safeguard
GEN8	General – Heritage unexpected finds notification.	If potential heritage items are uncovered, all works in the vicinity of the find must cease and notification must occur in accordance with Transport Unexpected heritage items procedure (EMF-HE-PR-0076). WaterNSW must also be notified as soon as practicable of any unexpected Aboriginal and Non-Aboriginal finds.	Contractor	Construction	Additional safeguard
GEN9	General – Incident notification	For any design changes which may directly or indirectly impact the Upper Canal corridor, WaterNSW would be consulted with as soon as practicable, including the provision of an opportunity for WaterNSW to review the design.	Transport/ contractor	Detailed design/ construction	Additional safeguard
GEN10	General – Proposal modification and further assessment	Any modification to the proposal from the approved design in the REF may be subject to further assessment. This assessment would need to demonstrate that any environmental impacts resulting from the modifications have been minimised. The assessment shall be subject to approval under delegated authority by Transport.	Transport/ contractor	Detailed design/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Biodiversity					
BI01	Biodiversity	A Flora and Fauna Management Plan will be prepared in accordance with Transport for NSW's *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024) 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 • fauna management requirements (in accordance with Guide 9: Fauna handling of the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024) • requirements set out in the Landscape Design Guideline (Transport for NSW, 2023d) pertinent to construction • pre-clearing survey requirements in accordance with the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024) • procedures for unexpected threatened species finds and fauna handling following Guide 1: Pre-clearing process of the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024) • protocols to manage weeds and pathogens • tree protection measures in accordance with *Australian Standard AS 4970-2009 Protection of trees on development sites* • a microbat management sub-plan if microbats are found present during pre-clearance survey or prior to removal of infrastructure.	Contractor	Detailed design/ pre-construction	Section 4.8 of QA *G36 Environment Protection* QA *G40 Clearing and Grubbing*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
BI02	Habitat removal	Vegetation and habitat removal, including removal of hollow-bearing trees and logs, will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024).	Contractor	Pre-construction/ construction	Additional safeguard QA *G40 Clearing and Grubbing*
BI03	Impacts on trees	A tree inventory will be prepared by a qualified arborist for trees proposed for clearing that do not require offsetting under the *No Net Loss Guidelines* (Transport for NSW, 2022f). This will include confirming the number of trees and hollows to be removed and replacement ratios in accordance with the *Tree and Hollow Replacement Guidelines* (Transport for NSW, 2022g).	Contractor	Detailed design/ pre-construction	Additional safeguard
BI04	Impacts on trees	Prior to commencing vegetation clearing, a tree and hollow replacement plan will be developed outlining the approach to replacing trees and hollows in accordance with the Tree and Hollow Replacement Guidelines (Transport for NSW, 2022g), Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024). This will include considering options for tree and hollow replacement within and in the vicinity of the proposal site in consultation with landowners. Where tree and hollow replacement cannot be accommodated locally or can only be partially accommodated, payment will be made to the Transport for NSW Conservation Fund prior to the commencement of works in accordance with the *Tree and Hollow Replacement Guidelines* (Transport for NSW, 2022g).	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard
BI05	Impacts on trees	Trees to be retained will be protected prior to the commencement of construction in accordance with Australian Standard *AS 4970–2009 Protection of trees on development sites*.	Contractor	Pre-construction/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
BI06	Habitat loss	A biodiversity offset strategy will be developed and implemented to facilitate offsetting of impacts that exceed the thresholds within the *No Net Loss Guidelines* (Transport for NSW, 2022f). Where possible, this will include completing additional targeted flora surveys in areas not surveyed due to access constraints (see section 2.4.5 of the Biodiversity Assessment Report) to confirm species presence and the amount of non-statutory of biodiversity offset credits required in accordance with the *No Net Loss Guidelines*.	Transport	Detailed design	Additional safeguard
BI07	Residual impacts on native flora and fauna (excluding certified land under the CPCP)	Opportunities to replant disturbed areas within the proposal site identified for landscaping will be defined by, and undertaken in accordance with, the Urban Design and Landscaping Plan. The plan will include: • where possible and appropriate, use of native vegetation of local provenance (commensurate with PCTs 849 and 1395), in accordance with the recommended species planting provided in Appendix F of the Biodiversity Assessment Report • defining revegetation requirements in accordance with Guide 3: Re-establishment of native vegetation of the *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects* (Transport for NSW, 2024) and in consultation with a biodiversity specialist • identifying ongoing vegetation monitoring and maintenance requirements as needed • use of native species with cultural value identified through consultation with Aboriginal stakeholders, where appropriate • defining appropriate plants that would contribute to the ongoing health of trees to be retained, including trees with Aboriginal cultural value.	Transport/ contractor	Detailed design/ construction	Additional safeguard QA *R179 Landscape Planting*
BI08	Fauna fences	Prior to the removal of existing fauna fences, an alternative fauna barrier will be implemented.	Transport/ contractor	Pre-construction/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Traffic and transport					
TT01	Traffic and transport	A Construction Traffic Management Plan (CTMP) will be prepared and implemented ~~as part of the CEMP~~. The CTMP will be prepared in accordance with Transport for NSW's Traffic Control at Work Sites Manual and Transport's Specification G10 Control of Traffic and with consideration of recommendations included in the Traffic and Transport Impact Assessment. The CTMP will include: • confirmation of haulage routes • measures to maintain access to local roads and properties. Where temporary disruption to access cannot be avoided, consultation will be undertaken with the owners, occupants and managers of affected properties and infrastructure, to confirm their access requirements and determine alternative arrangements • site-specific traffic control measures (including signage) to manage and regulate traffic movement • measures to maintain freight access including oversize and/or overmass movements • measures to maintain and manage 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 • measures to manage staging of construction works to ensure that satisfactory capacity and minimum levels of service are maintained • measures to manage high risk oversize and/or overmass movements	Contractor	Detailed design/ pre-construction/ construction	Section 4.8 of QA *G36* Environment *Protection* QA *G10 Traffic Management*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• monitoring, review and amendment mechanisms • Traffic Guidance Schemes updated as the works progress, prepared and implemented by suitably qualified personnel.			
TT02	Impact on local roads	Dilapidation surveys will be completed for all local roads used for construction traffic prior to commencement of construction and following completion of works. Further consultation with Wollondilly Shire Council will be undertaken during pre-construction and construction regarding the use of local roads for construction traffic, including detours and temporary traffic routes detailed in the CTMP.	Contractor/ Transport	Pre-construction/ construction	Additional safeguard
TT03	Impact on emergency services	Consultation will be undertaken with emergency services prior to and during construction regarding any access arrangement changes, diversions during construction and other operational road network changes.	Contractor	Pre-construction/ construction	Additional safeguard
TT04	Traffic and transport	Further traffic modelling will be completed to inform detailed design capturing the latest information on demand forecasts and timing of other network upgrades where required.	Transport/ contractor	Detailed design	Additional safeguard
Aboriginal heritage					
AH01	Aboriginal heritage management	An Aboriginal Cultural Heritage Management Plan (ACHMP) will be prepared in accordance with the *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (Roads and Maritime Services, 2011a) and the *Unexpected Heritage Items Procedure* (Transport for NSW, 2022p) and implemented as part of the CEMP. The ACHMP will provide specific guidance on measures and controls to be implemented for managing impacts on Aboriginal heritage. The ACHMP will be prepared in consultation with Registered Aboriginal Parties.	Contractor	Detailed design/ pre-construction	Section 4.9 of *QA G36 Environment Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
AH02	Aboriginal heritage	Opportunities to minimise impacts on PRUP PAD 7 will be investigated during detailed design and construction planning due to its association with AHIMS 52-5-4079.	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard
AH03	Aboriginal heritage	An Arboricultural Impact Assessment report will be prepared during detailed design for the trees with Aboriginal cultural value, including AHIMS registered trees, in accordance with AS 4970-2009 Protection of Trees on Development Sites to inform exclusion zones and other protection measures in the ACHMP. The report will be prepared by a suitably qualified Arborist (minimum AQF level 3 or above) in consultation with Registered Aboriginal Parties. Minimum working distances by types of construction activities and associated management measures will be developed based on the results of the report and included in the relevant CEMP sub-plans.	Transport/ contractor	Detailed design	Additional safeguard
AH04	Aboriginal heritage	Further design development will be completed during detailed design to avoid impacts on trees with Aboriginal cultural value where possible. Impacts on AHIMS-registered trees will be avoided in accordance with *AS 4970-2009 Protection of Trees on Development Sites*, with effective exclusion zones established prior to construction.	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard
AH05	Aboriginal heritage	The Urban Design and Landscaping Plan will be further developed in consultation with Aboriginal knowledge holders during detailed design. The plan will incorporate measures to integrate appropriate native vegetation around trees with Aboriginal cultural value, including AHIMS-52-2-3590 and AHIMS 52-5-4079.	Transport/ contractor	Detailed design	Additional safeguard
AH06	Aboriginal heritage	An Aboriginal Heritage Impact Permit (AHIP) will be sought under section 90 of the National Parks and Wildlife Act 1974 for Aboriginal sites expected to be directly impacted by the proposal. Overlapping impact areas with other existing AHIPs will be resolved as required.	Transport	Detailed design/ pre-construction	Additional safeguard QA *G36 Environment Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
AH07	Aboriginal heritage	If any activities associated with the proposal are required in the exclusion zone of PRUP PAD 34 area, the *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (Roads and Maritime Services, 2011a) would be followed prior to any works taking place at this location.	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard
AH08	Aboriginal archaeological material	Aboriginal archaeological material excavated for the preparation of the Aboriginal cultural heritage assessment will be returned to Country and repatriated as soon as practicable in a secure location in accordance with requirements 16b and 26 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b) or an alternative method agreed upon in consultation with the Registered Aboriginal Parties.	Transport	Detailed design/ pre-construction	Additional safeguard
AH09	Aboriginal heritage interpretation	An Aboriginal heritage interpretation strategy will be developed to guide incorporation of appropriate interpretation and integration of Aboriginal cultural heritage in the design. The strategy will be prepared and implemented with regard to the following: • *Interpreting Heritage Places and Items: Guidelines* (NSW Heritage Office, 2005a) • *Heritage Interpretation Policy* (NSW Heritage Office, 2005b) • *Connecting with Country Framework* (Government Architect, 2023) • *Signposting Country Technical Manual* (Transport for NSW, 2021d) • *Aboriginal Art Strategy* (Transport for NSW, 2022i) • *Aboriginal Cultural Heritage Framework* (Transport for NSW, 2022j) • *Heritage Interpretation Guideline* (Transport for NSW, 2016).	Transport	Detailed design/ pre-construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		The strategy will also: • be developed in consultation with relevant stakeholders, including Registered Aboriginal Parties and nominated Aboriginal cultural Knowledge Holders • be prepared in accordance with the urban design objectives and principles for the proposal • include measures to ensure a meaningful design response to Aboriginal heritage and cultural values. The design will include appropriate interpretation of Aboriginal heritage in accordance with the heritage interpretation strategy.			
AH10	Cultural safety	A cultural safety protocol will be developed prior to construction that includes measures recommended by Knowledge Holders for implementation during pre-construction and construction activities.	Transport/ contractor	Pre-construction/ construction	Additional safeguard
AH11	Cultural practices	Options to make culturally significant plant species identified in the Aboriginal Cultural Heritage Working Paper to be cleared available to Aboriginal stakeholders for cultural practices will be investigated during detailed design in consultation with Registered Aboriginal Parties.	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard
Non-Aboriginal heritage					
NH01	Minimising impacts on non-Aboriginal heritage	Cottage (I275), St Luke's Anglican Church (I276) and airshaft #9 associated with Upper Canal (SHR 01373) will be included in the CEMP environmental sensitive area map.	Contractor	Pre-construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Hydrology and flooding					
HF01	Flooding impacts	Further flood modelling and investigations will be undertaken to inform detailed design development to mitigate potential impacts resulting from the proposal on properties where flooding impacts exceed acceptable levels as defined by the *Guide to Road Design Part 5: Drainage – General and Hydrology Considerations* (Austroads, 2023) – Table 6.19 Acceptable impact for major transport infrastructure acceptable levels.	Transport/ contractor	Detailed design	Additional safeguard
HF02	Watercourse and flow path impacts	All ancillary facility temporary buildings and stockpiles will be located above the 20 per cent AEP flood level.	Contractor	Construction	Additional safeguard
HF03	Watercourse and flow path impacts	Temporary drainage infrastructure will be constructed and implemented in accordance with *Technical Guideline: Temporary stormwater drainage for road construction* (Roads and Maritime Services, 2011c).	Contractor	Construction	Additional safeguard
Surface water and groundwater					
SW01	Managing potential impacts on surface water and groundwater quality	A Construction Soil and Water Management Plan (CSWMP) will be prepared in accordance with Managing Urban Stormwater: Soils and Construction, Volume 1 and 2d (Landcom, 2004) (the 'Blue Book') and implemented as part of the CEMP. The CSWMP will identify reasonably foreseeable risks relating to soil erosion and surface and groundwater quality and describe how these risks will be addressed during construction. The CSWMP will be prepared by or reviewed and endorsed by a soil conservationist on the Transport for NSW list of Registered Contractors for Erosion, Sedimentation and Soil Conservation Consultancy Services. The CSWMP will then be revised to address the outcomes of the review.	Contractor	Detailed design/ pre-construction	Section 2.1 of QA *G38 Soil and Water Management*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
SW02	Managing potential impacts on surface water and groundwater quality	Site-specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the CSWMP. The plan/s will include: • arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather • erosion and sediment controls appropriate for dispersive soils • stabilisation measures to control discharge from stormwater outlets to manage erosion and scour • dewatering in accordance with the *Technical Guideline - Environmental Management of Construction Site Dewatering* (Roads and Maritime, 2011b) • progressive rehabilitation of disturbed sites in accordance with the rehabilitation strategy for exposed surfaces prepared as part of the Construction Air Quality Management Plan (safeguard AQ01).	Contractor	Detailed design/ pre-construction	Section 2.2 of QA *G38 Soil and Water Management*
SW03	Managing potential impacts on surface water and groundwater quality	Stormwater management infrastructure will be designed and implemented to meet proposed operational water quality pollutant reduction targets (90% Gross Pollutant, 85% Total Suspended Solids, 65% Total Phosphorous and 45% Total Nitrogen).	Contractor	Detailed design/ construction	Additional safeguard
SW04	Water quality monitoring	A surface water quality monitoring program will be developed and implemented as part of the CSWMP in accordance with the *Guidelines for Construction Water Quality Monitoring* (RTA, 2003). The program will define: • monitoring parameters • monitoring locations • frequency and duration of monitoring. The monitoring program will include monitoring prior to the commencement of and during construction.	Contractor	Pre-construction/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
GW01	Groundwater impacts	Impacts on groundwater during construction will be minimised as far as practicable by: • avoiding the need to extract groundwater • minimising groundwater inflows and volumes into excavations • managing any groundwater encountered during excavations in accordance with the *Technical Guideline – Environmental Management of Construction Site Dewatering* (Roads and Maritime, 2011b).	Contractor	Construction	Additional safeguard
Soils and contamination					
SC01	Soil erosion and sedimentation	During any construction and maintenance work where soils are exposed, sediment and erosion control devices will be installed in accordance with the CSWMP, *Managing Urban Stormwater: Soils and Construction*, Volume 1 and 2d (Landcom, 2004) and the Urban Design and Landscaping Plan.	Contractor	Construction/ operation	Additional safeguard
SC02	Contaminated land	A detailed site investigation (DSI) will be undertaken during detailed design to further assess risks to human health and the environment. The DSI will involve, but not be limited to, the assessment of areas of environmental concern within the proposal site where the likelihood of contamination is moderate to high or high, and hazardous materials associated with bridge demolition and existing infrastructure. The results of the DSI will be assessed against the criteria contained with the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC, 2013) to determine the need for any remediation.	Contractor	Detailed design/ pre-construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
SC03	Contaminated land	If contaminated land is found within the proposal site, a Contaminated Land Management Plan (CLMP) will be prepared in accordance with the *Guideline for the Management of Contamination* (Transport for NSW, 2013) and implemented as part of the CEMP. The plan will include, but not be limited to: • management of the remediation and subsequent validation of any contaminated land, including any certification required • measures to ensure the safety of site personnel and local communities during construction • procedures for managing contamination on site, including unexpected contamination finds (an unexpected finds procedure). The procedure will be incorporated into the CEMP and will outline the process for identification, assessment and management of potentially contaminated material • measures that address additional recommendations resulting from the DSI • a plan for encapsulating suitable contaminated materials within the formation of road embankments, below pavement levels and above groundwater levels.	Contractor	Detailed design/ pre-construction	Section 4.2 of QA *G36 Environment Protection*
SC04	Removal of infrastructure containing hazardous materials	Prior to disturbing existing infrastructure potentially containing hazardous material, a hazardous material survey will be undertaken. If hazardous material is identified, it will be managed in accordance with CEMP, CLMP and WMP. The contractor must engage an appropriate licensed hygienist during activities involving hazardous materials to assist with classification and management of materials on site.	Contractor	Detailed design/ pre-construction/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
SC05	Accidental spills	A site-specific emergency spill management plan will be developed and include spill-management measures in accordance with Transport for NSW's *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport for NSW and NSW EPA). The site-specific emergency spill plan will also identify when notification to WaterNSW is required, in accordance with safeguard GEN7.	Contractor	Detailed design/ pre-construction	Section 4.3 of QA *G36 Environment Protection* Additional safeguard
SC06	Contaminated material	If encapsulation of contaminated material within the formation occurs, a separate operations management plan will be developed.	Transport/ contractor	Construction	Additional safeguard
Noise and vibration					
NV01	Construction noise and vibration management	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared and implemented as part of the CEMP. The CNVMP will generally follow the approach outlined in the Interim Construction Noise Guideline (ICNG) (DECC, 2009) and the Construction Noise and Vibration Guideline (Roads) (Transport for NSW, 2023h) and identify: • all sensitive receivers within 600 metres of the proposal site following a land use review to capture new developments that have not been identified in the REF • all potentially high noise and vibration generating activities associated with the construction of the proposal • standard and additional mitigation measures from the *Construction Noise and Vibration Guideline* (Roads) (Transport for NSW, 2023h) • a monitoring program to assess performance against relevant noise and vibration criteria • arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures	Contractor	Pre-construction	Section 4.6 of QA *G36 Environment Protection* *Interim Construction Noise Guideline* (ICNG) (DECC, 2009) *Construction Noise and Vibration Guideline (Roads)* (Transport for NSW, 2023h)

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• contingency measures to be implemented in the event of non-compliance with noise and vibration criteria • outline requirements for the development and implementation of an out-of-hours work protocol.			
NV02	Community notification	All sensitive receivers (e.g. schools, local residents) likely to be affected by high noise producing activities or out-of-hours work will be notified in accordance with the *Construction Noise and Vibration Guideline (Roads)* (Transport for NSW, 2023h) and ICNG at least five working days prior to commencement of the works. The notification will provide details of: • the project • the construction period and construction hours • contact information for project management staff • complaint and incident reporting • how to obtain further information.	Contractor	Pre-construction	Additional safeguard
NV03	Construction noise and vibration statement	Location and activity specific construction noise and vibration impact assessments will be undertaken: • prior to works with the potential to generate noise levels above 75 dBA at residences • prior to works that need to occur outside recommended standard working hours and are likely to result in noise levels greater than the relevant noise management levels • prior to works with the potential to exceed relevant performance criteria for vibration • prior to works where an alternative construction methodology is proposed that would result in: – activity sound power levels higher than those assumed in the assessment; or – use of vibration intensive equipment not assessed previously.	Contractor	Construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		The assessments will confirm predicted impacts at relevant receivers in the vicinity of the activities to assist with the selection of appropriate management measures in accordance with the *Construction Noise and Vibration Guideline (Roads)* (Transport for NSW, 2023h). The measures will be detailed in the CNVMP and implemented for the duration of the activity.			
NV04	Vibration impacts	Building condition inspections will be undertaken prior to and after construction works that are predicted to exceed the screening criteria for structural damage to buildings or structures and/or would be required within the minimum working distances listed in Table 2 of the *Construction Noise and Vibration Guideline* (Transport for NSW, 2023h) and the Noise and Vibration Impact Assessment. Where required, the vibration management level will be refined based on the type and condition of the structure. The survey will consider the heritage value of the structure in consultation with a structural engineer and heritage specialist for the following listed heritage items: • Cottage (I275) • St Luke's Anglican Church (I276) • WaterNSW airshaft #9 associated with the Upper Canal (SHR 01373).	Contractor	Construction	Additional safeguard
NV05	Relocation of noise wall east of Pembroke Parade (north of Picton Road)	Additional noise modelling will be carried out during detailed design to determine whether additional noise mitigation measures are required during the relocation of the existing noise wall. Required mitigation measures will be included in the CNVMP.	Contractor	Detailed design	Additional safeguard
NV06	Blasting	In the event that blasting is required, the blast parameters will be designed, and allowable charge mass confirmed, to achieve the airblast overpressure and ground vibration requirements of the *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* (ANZECC, 1990). This will include trial blasting and airblast/vibration monitoring to confirm site-specific constants and to refine the safe blasting distances.	Contractor	Construction	Additional safeguard Section 4.7 of QA *G36 Environmental Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
NV07	Early implementation of operational treatments	At-property treatments required to mitigate operational noise will be implemented prior to construction noise impacts, where reasonable and feasible.	Contractor	Pre-construction/ construction	Additional safeguard
NV08	Operational noise and vibration review	An operational noise and vibration review (ONVR) will be undertaken as part of detailed design to review the potential for operational noise impacts based on the most current information and confirm feasible and reasonable mitigation measures to be incorporated into the design. The identification and implementation of noise mitigation measures will be undertaken in accordance with the *Road Noise Mitigation Guideline* (Transport for NSW, 2022m) and the A*t-Receiver Noise Treatment Guideline* (Transport for NSW, 2022n).	Contractor	Detailed design	Additional safeguard
NV09	Post-construction operational compliance	Post-construction operational compliance noise monitoring using a validated post-construction operational noise model will be undertaken following road opening. This program will be undertaken within 12 months of completion of the proposal and will be completed once traffic flows have stabilised. Noise mitigation measures will be revised at the completion of the monitoring period in accordance with *Road Noise Mitigation Guideline* (Transport for NSW, 2022m) and the A*t-Receiver Noise Treatment Guideline* (Transport for NSW, 2022n).	Transport	Operation	Additional safeguard
Air quality					
AQ01	Air quality	A Construction Air Quality Management Plan (CAQMP) will be prepared and implemented as part of the CEMP. The plan will detail processes, responsibilities and measures to manage air quality and minimise the potential for impacts during construction. The CAQMP will include, but not be limited to: • a map identifying locations of sensitive receptors • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA guidelines	Contractor	Detailed design/ pre-construction/ construction	Section 4.4 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• mitigation and suppression measures to be implemented, including measures to manage potential silica emissions from concrete processing, cutting and grinding if required. • methods to manage work during strong winds or other adverse weather conditions • a process for monitoring dust on-site and weather conditions • a progressive rehabilitation strategy for exposed surfaces.			
Landscape character and visual impacts					
LV01	Landscape character and visual impacts	An Urban Design and Landscaping Plan will be prepared to support the final detailed project design and implemented as part of the CEMP. The Urban Design and Landscaping Plan will present an integrated urban design for the project, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The Plan will include design treatments for: • location and identification of existing vegetation and proposed landscaped areas, including species to be used • built elements including retaining walls, bridges and noise walls • pedestrian and cyclist elements including footpath location, paving types and pedestrian crossings • fixtures such as seating, lighting, fencing and signs • details of the staging of landscape work including early vegetation establishment, taking account of related environmental controls such as erosion and sedimentation controls and drainage • procedures for monitoring and maintaining landscaped or rehabilitated areas • consideration of buffer planting to screen views for dwellings located adjacent to the Picton Road and M31 Hume Motorway interchange	Transport/ contractor	Detailed design/ pre-construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• maximising opportunities for revegetation with native species of local provenance to complement and integrate with existing remnant vegetation, where appropriate • batters, which will be vegetated as far as practicable • rounding of batters to integrate into the existing landform and create a more natural appearance. The Urban Design and Landscaping Plan will be prepared in accordance with the heritage interpretation strategy and relevant guidelines, including: • *Connecting with Country* (Government Architect NSW, 2023) • *Biodiversity Policy* (Transport for NSW, 2022e) • *Water Sensitive Urban Design Guideline* (Transport for NSW, 2023a) • *Beyond the Pavement urban design policy, process and principles* (Transport for NSW, 2023c) • *Landscape Design Guideline* (Transport for NSW, 2023d) • *Bridge Aesthetics* (Transport for NSW, 2023e) • *Noise Wall Design Guidelines* (Transport for NSW, 2023f) • *Shotcrete Design Guideline* (Transport for NSW, 2023g) • *Pedestrian Underpass Design Guideline* (Transport for NSW, 2023i). The Urban Design and Landscaping Plan will be developed in consultation with Wollondilly Shire Council.			
LV02	Landscape character and visual impacts	Lighting will be designed and sited to minimise glare and light spill into adjoining areas in accordance with Australian/New Zealand Standard *AS/NZS 4282 Control of the obtrusive effects of outdoor lighting* and relevant standards in the series *AS/NZS 1158 Lighting for roads and public spaces*.	Transport	Detailed design	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
LV03	Visual impacts of construction work area	Any construction ancillary facilities with hoarding and fencing will be designed, erected and maintained to minimise visual impacts. This will include: • erecting hoarding/fencing as early as possible in the site establishment phase to provide visual screening • featuring graphics, artwork or project information in accordance with Transport guidelines and specifications • maintaining hoarding/fencing regularly, including the prompt removal of graffiti.	Contractor	Pre-construction/ construction	Additional safeguard
LV04	Site restoration and rehabilitation	All temporary infrastructure will be removed at the completion of construction, unless otherwise agreed with relevant stakeholders.	Contractor	Construction	Additional safeguard
LV05	Planning with Country	Options will be investigated to integrate planning and designing with Country elements in the urban design and other aspects of the proposal in consultation with Aboriginal stakeholders.	Transport/ contractor	Detailed design	Additional safeguard
Property and land use					
PL01	Property acquisition	Property owners and occupants affected by acquisition will be consulted, and acquisition will be undertaken, in accordance with the: • *Land Acquisition (Just Terms Compensation) Act 1991* • Property acquisition publications and forms | NSW Government	Transport	Pre-construction/ construction	Additional safeguard
PL02	Impacts on land use and property	To support the property acquisition process, Property Adjustment Plans will be developed and agreed to with impacted landowners.	Transport	Detailed design/ pre-construction/ construction	Additional safeguard
PL03	Temporary leased land	Areas of land leased for the purposes of construction will be reinstated at the end of the lease to at least equivalent standard as the land was at the commencement of the lease or as otherwise agreed with the landowner. Reinstatement works will be undertaken as soon as practicable following completion of construction works on the land.	Contractor	Construction	Sections 4.15 and 4.16 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Socio-economic impacts					
SE01	Socio-economic impacts	A Community and Stakeholder Engagement Plan (CSEP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CSEP will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected stakeholders, including changed traffic and access conditions • additional consultation specific to traffic impacts for freight and emergency service providers, including frequency and method for notices • toll free number and email address for enquiries and complaints • how the project webpage will be maintained for the duration of the proposal • a complaint's handling procedure • consultation activities to be carried out.	Transport/ Contractor	Detailed design/ construction	Additional safeguard QA *G36 Environment Protection*
SE02	Socio-economic impacts	Transport will continue to consult with the community until completion of the proposal. This will include: • engaging with landowners, landholders and businesses in close proximity to the proposal to notify them about the proposal design, construction activities and timing of construction works • identifying and engaging with vulnerable persons that might be affected by the proposal.	Transport	Pre-construction/ construction	Additional safeguard
SE03	Socio-economic impacts	Opportunities for Aboriginal employees and procurement will be prioritised in accordance with the *Aboriginal Procurement Policy* (NSW Government, 2021b) and *Aboriginal Participation Strategy* (Transport for NSW, 2023j).	Transport/ contractor	Detailed design/ pre-construction/ construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Climate change and sustainability					
CC01	Climate change	The climate change risk assessment review will be completed at each design stage in accordance with Australian Standard *AS 5334–2013 Climate change adaptation for settlements and infrastructure – A risk-based approach* and the *Transport for NSW Climate Risk Assessment Guidelines* (Transport for NSW, 2021c). This review will also confirm that adopting the RCP 4.5 scenario as the culvert design criteria appropriately addresses the risks and consequences of future climate change on the operation of the proposal.	Transport/ contractor	Detailed design	Additional safeguard
CC02	Climate change	Hazards and risks associated with climate change in the surrounding environment will be further considered during detailed design development.	Transport/ contractor	Detailed design	Additional safeguard
CC03	Sustainability	A project-specific sustainability implementation management plan will be developed and implemented during detailed design and construction. The plan will investigate further opportunities to embed sustainable outcomes and outline an implementation plan for those that are feasible and practicable, including reduction of greenhouse gas emissions during construction and operation. Measures in the plan will be implemented during construction.	Contractor/ Transport	Detailed design/ Construction	Additional safeguard
Other impacts					
OI01	Waste management	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • measures to avoid and minimise waste associated with the proposal • 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.	Contractor	Detailed design/ pre-construction	Section 4.2 of QA *G36 Environment Protection* Section 4.11 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		The WMP will align with the *Waste Management Guideline* (Transport for NSW, 2023k), the *Waste Classification Guidelines* (NSW EPA, 2014), and relevant Transport waste fact sheets, and will adopt the circular economy principles and the waste hierarchy contained in the *Waste Avoidance and Resource Recovery Act 2001*.			
OI02	Utilities	The location of existing utilities and relocation details will be confirmed following consultation with affected utility owners, including searches of Before You Dig Australia and utility locators prior to commencement of construction works.	Contractor	Detailed design/ pre-construction	Additional safeguard
OI03	Hazards and risk management	A Hazard and Risk Management Plan (HRMP) will be prepared and implemented as part of the CEMP. The HRMP will include, but not be limited to: • details of hazards and risks associated with construction • measures to be implemented during construction to minimise and manage these risks • record keeping for materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • a monitoring program to assess performance in managing identified risks • consultation and notifications requirements for different hazard scenarios • contingency measures to be implemented in the event of unexpected hazards, risks arising and emergency situations. The HRMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work NSW Codes of Practice, and NSW EPA and DPE publications.	Contractor	Detailed design/ pre-construction	Additional safeguard

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Cumulative impacts					
CI01	Cumulative impacts	Ongoing coordination and consultation will be undertaken with the proponents of nearby projects to identify the potential for cumulative impacts to occur.	Transport/ contractor	Pre-construction/ construction	Additional safeguard
CI02	Cumulative impacts	The CEMP will be revised to consider potential construction cumulative impacts from surrounding projects, including measures to manage these impacts, as they become known.	Contractor	Construction	Additional safeguard

7.3 Licensing and approvals

Table 7-2 identifies the permits, licences and notifications that would be required to construct the proposal.

Table 7-2Summary of licensing and approval required

Instrument	Requirement	Timing
Protection of the Environment Operations Act 1997 (s43)	EPL for scheduled activities (road construction) from the EPA.	Prior to start of the activity
Heritage Act 1977 (s57)	Exemption notification for works to an item on the State Heritage Register from the Director OEH.[1]	Prior to start of the activity
National Parks and Wildlife Act 1974 (s90)	Aboriginal heritage impact permit from the Coordinator General of EES under DPIE	Prior to start of the activity
Roads Act 1993 (s138)	Road occupancy licence under Section 138.	Prior to start of the activity
Environmental Planning and Assessment Regulation 2021 (s201)	Notification about works affecting avoided land to the Planning Secretary. The publicly exhibited REF identified that this would be needed. However, the proposal has now been amended to remove this impact and notification would no longer be required.	30 days after a decision has been made

Note 1: Notification of this exemption will also be issued to WaterNSW for information.

8. Definitions

Term	Definition
Aboriginal object	Defined by the *National Parks and Wildlife Act 1974* (NSW) as: 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains'.
Aboriginal place	Any place declared to be an Aboriginal place under section 94 of the *National Parks and Wildlife Act 1974*.
ACHMP	Aboriginal Cultural Heritage Management Plan
AEP	Annual Exceedance Probability - the chance of a flood if a nominated size occurring in a particular year. The chance of the flood occurring is expressed as a percentage and, for large floods, is the reciprocal of the ARI. For example, the one per cent AEP flood event is equivalent to the 100-year ARI flood event.
AG	Activity group
AHIP	Aboriginal heritage impact permit
Alignment	The vertical and horizontal location of the road
BAM	Biodiversity Assessment Method
Base 2046 volumes	2046 Project Case Hybrid Meso-Micro forecast volumes
BC Act	*Biodiversity and Conservation Act 2016* (NSW)
BDAR	Biodiversity Development Assessment Report
Biodiversity Conservation Fund	This fund is used to hold the funds set aside and invested to be used to make annual stewardship payments to holders of biodiversity stewardship agreements.
Biodiversity Offsets	Measures that benefit biodiversity by compensating for the adverse impacts elsewhere of an action, such as clearing for development. Biodiversity offsets work by protecting and managing biodiversity values in one area in exchange for impacts on biodiversity values in another.
Biodiversity Stewardship Site	Land that is designated by a biodiversity stewardship agreement to be a biodiversity stewardship site for the purposes of the *Biodiversity Conservation Act 2016* (NSW).
Blue Book	Managing Urban Stormwater: Soils and Construction, Volume 1 and 2D
CAQMP	Construction Air Quality Management Plan
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CLMP	Contaminated Land Management Plan
CNVMP	Construction Noise and Vibration Management Plan
Concept design	Initial functional layout design for a road or road system, to establish feasibility, to provide a basis for estimating, and to determine further investigations needed for detailed design.
Construction	Includes all physical work required to construct the proposal.
Council	Wollondilly Shire Council

Term	Definition
CPCP	Cumberland Plain Conservation Plan
CSEP	Community and Stakeholder Engagement Plan
CSWMP	Construction Soil and Water Management Plan
CTMP	Construction Traffic Management Plan
Cumulative impacts	Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own.
DA	Development Application
dB	Decibels
dBA	Used as a measure of A-frequency weighed sound levels. A-weighting is applied to instrument-measured sound levels in effort to account for the relative loudness perceived by the human ear, as the ear is less sensitive to low audio frequencies.
DCCEEW	Department of Climate Change, Energy, the Environment and Water (NSW)
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	NSW Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPL	Environment Protection Licence
FM Act	*Fisheries Management Act 1994* (NSW)
G3M	Greater Macarthur Mesoscopic Model
Heritage listed	An item, building or place included on statutory heritage lists maintained by local, State and/or the Australian Government.
HPC	Housing and Productivity Contribution
HRMP	Hazard and Risk Management Plan
Impact	Influence or effect exerted by a proposal or other activity on the natural, built and community environment.
ICNG	Interim Construction Noise Guideline (DECC 2009)
IOP	Infrastructure Opportunities Plans
Km/h	Kilometres per hour
Landscape	The overall character and function of a place and includes all elements within the public realm, and the interrelationship between these elements and the people who use it.
LGA	Local Government Area
LoS	Level of Service
NCAs	Noise Catchment Areas
NSW	New South Wales
ONVR	Operational Noise and Vibration Report
OSOM	Oversize and/or overmass (vehicles)
PBS	Performance Base Standard

Term	Definition
Proposal	Picton Road Upgrade (between Nepean River and Almond Street) REF
QA Specifications	Specifications developed by Transport for use with road work and bridge work contracts let by Transport.
REF	Review of Environmental Factors
Riparian	Relating to or living or located on the bank of a natural watercourse (such as a lake or river).
Road reserve	A legally defined area of land within which facilities such as roads, footpaths and associated features may be constructed for public travel.
RTA	Road Traffic Authority (NSW) (former)
SEIA	Socio-economic Impact Assessment
SEPP (Biodiversity and Conservation)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SIC	Special Infrastructure Contribution
SIDRA	Micro-analytical traffic evaluation software that uses lane-based traffic and vehicle drive cycle models to design and evaluate single intersections and networks of intersections.
SIS	Species Impact Statement
Study area	The study area is defined as the wider area including and surrounding the proposal site, with the potential to be directly or indirectly affected by the proposal (e.g. by noise and vibration, visual or traffic impacts). The actual size and extent of the study area varies according to the nature and requirements of each impact assessment technical report.
TEC	Threatened ecological community
Transport	Transport for NSW
Waste	Includes any matter (whether liquid, solid, gaseous or radioactive) that is discharged, emitted or deposited in the environment in such volume, constituency, or manner as to cause an alteration to the environment.
Wilton 2040	Wilton 2040 – a Plan for the Wilton Growth Area (DPE 2018)
Wilton North 2036 volumes	North Wilton Stage 2 & 3 Traffic Impact Assessment (2022)
WMP	Waste Management Plan
ZS	Zone substation

9. References

Blackash Bushfire Consulting (2021). *Wilton Growth Area - Bushfire Early Development Areas.*

DECCW (2011). *NSW Road Noise Policy.*

DPE (2018). *Wilton 2040 – a Plan for the Wilton Growth Area* (Wilton 2040).

DPE (2022). *Guidelines for Division 5.1 assessments*. Retrieved from: Guidelines for Division 5.1 assessments – June 2022 (nsw.gov.au).

DPE (2022b.) *Sub-Plan B: Koalas - Cumberland Plain Conservation Plan*, https://www.planning.nsw.gov.au/Policy-and-Legislation/Strategic-conservation-planning/Cumberland-Plain-Conservation-Plan/Final-report.

DPIE (2020). *Wilton: Building a great town* (The *Wilton Growth Area Infrastructure Phasing Plan),* Retrieved from: Wilton: Building a great new town (nsw.gov.au).

DPIE (2022). The Cumberland Plain Conservation Plan: A conservation plan for Western Sydney to 2056.

DPIE (2023). *Wilton Growth Area Update: Update to Wilton 2040: A plan for the Wilton Growth Area*. Retrieved from Wilton Growth Area Update (nsw.gov.au)

Landcom (2004). Managing Urban Stormwater: Soils and Construction, Volume 1 and 2D, March 2004, ISBN 0-9752030-3-7. Retrieved from: Managing Urban Stormwater: Soils and Construction Volume 1 Fourth edition (nsw.gov.au).

National Academy of Science (2021) Diverging Diamond Interchange International Guide.

OEH (2018). *Threatened Species Test of Significance Guidelines.*

PB (2014). *Wilton Junction Development Transport Management and Accessibility Plan 2014*, report prepared for the Wilton Rezoning Landowners Group.

Queensland Government (2021) Technical Note 181: Guidelines for Design of Innovative Intersections 'Diverging Diamond Interchange.

RTA (2003). Guidelines for Construction Water Quality Monitoring, n.d. Retrieved from: Guideline for Construction Water Quality Monitoring (nsw.gov.au).

Transport for NSW (2024). *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects*

Transport for NSW (2018a). *Greater Sydney Services and Infrastructure Plan*, March 2018, ISBN: 978-0-6482978-1-9. Retrieved from: Greater Sydney Services and Infrastructure Plan (nsw.gov.au).

Transport for NSW (2018b). *Regional NSW Services and Infrastructure Plan*, March 2018, ISBN: 978-0-6482978-2-6. Retrieved from: Regional NSW Services and Infrastructure Plan.

Transport for NSW (2022a). *Biodiversity Policy - No Net Loss Guidelines* (CP22004), August 2022 Retrieved from: Biodiversity Policy (nsw.gov.au).

Transport for NSW (2022b). *Road Noise Mitigation Guideline*.

Transport for NSW (2022c). *At-Receiver Noise Treatment Guideline*.

Transport for NSW (2022d). *Tree and Hollow Replacement Guidelines.*

Transport for NSW (2023h). *Construction Noise and Vibration Guideline (Roads),* July 2023.

Transport for NSW (2024). *Biodiversity Management Guideline: Protecting and managing biodiversity on Transport for NSW projects*.

WaterNSW (2021). *Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines.*

WorkCover NSW (2006). *Work near overhead power lines – Code of Practice*, Retrieved from: Work Near Overhead Power Lines: Code of Practice (nsw.gov.au).

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