Olympic Highway (MR78) Route Safety Review Safety Improvements

Review of Environmental Factors

Transport for NSW | December 2022

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Prepared by EnviroKey and Transport for NSW

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Approval and authorisation

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Executive summary

The proposal

The Olympic Highway (MR78) is a two lane flexible pavement of mostly single carriageway that forms a state highway link starting with an intersection with the Hume Highway near Albury to Cowra, NSW.

Transport for NSW (Transport) did a Route Safety Review (RSR) that identified key roadside infrastructure and line marking safety improvements along the Olympic Highway which is about 318 kilometres long.

Key features of the proposal include:

Road edge repair and road widening at various locations including culvert and drainage structure widening works

Reinstatement of a hazard free roadside where possible by removing trees, maintenance of vegetation regrowth, batter flattening and table drain reshaping

Installation of roadside safety barriers at various locations where a hazard free roadside cannot be achieved (nominally 10m from the existing carriageway edge line)

Intersection upgrades at various locations

Road signage upgrades

Installation of new audio tactile line-marking in line with Transport policy

Reinstatement of line marking and raised pavement markers on completion

Beneficial re-use of surplus material

Need for the proposal

Transport and the NSW Sate government is committed to the Towards Zero initiative to reduce the road toll. To achieve this outcome, the Safe System approach has been adopted. The Safe System approach has four main pillars, Safer People, Safer Vehicles, Safer Speeds and Safer Roads. This project is focusing on the Safer Roads pillar of the Safe System approach.

The Safe Systems approach recognises that drivers are human and will make mistakes. A Safer Roads project aims to address the likelihood of a crash occurring through preventative safety measures such as wide centre line and audio tactile line marking. It aims to reduce the severity of a crash should it occur through the removal of roadside hazards and implementation of safety barrier. Safety barrier is a recognised primary treatment in addressing the severity of a crash by up to 95%.

A RSR has been carried out on the Olympic Highway (MR78). As part of the review, crash analysis for the six-year period between July 2013 and June 2019 revealed a total of 252 crashes occurred within the study area. It was identified that 62% of these were run off road type crashes and the remainder consisting of other crash types including intersections and head-ons. Crash analysis identified a need to prevent vehicles from leaving the carriageway, cross over a delineation marker and to address roadside hazards.

The review culminated in a nomination for road safety initiatives funded between 2020 and 2023 as part of the Saving Lives on Country Roads program. This program of works aims to provide a consistent safety standard along the full length of the route. The outcome of the program is to improve road safety through the installation of safety treatments, reducing the likelihood and severity of crashes along extensive lengths of the route. This is referred to as a mass-action approach.

Proposal objectives

The proposal forms part of a continuing process to improve road user safety on the Olympic Highway by carrying out a range of safety improvement work between the intersection of the Hume Highway near Albury to Cowra, NSW.

The objectives of the proposal include:

Align with the NSW Road Safety Plan 2021

Align with the NSW Towards Zero commitment to reduce road trauma

Target identified primary crash types

Reduce the likelihood and severity of fatal and serious injury type crashes

Minimising environmental impacts

Options considered

The options considered for the proposal included:

Option 1: Do nothing. Proposal outcomes would not be achieved and road user safety would not be improved. There would be no environmental impact should the proposal not proceed.

Option 2: Road edge repair and road widening at various locations, road signage upgrade, audio-tactile line marking and raised pavement marker installation, replacement and improvements to the road safety barriers

Option 3: Road edge repair and road widening at various locations, road signage upgrade, audio-tactile line marking and raised pavement marker installation, replacement and improvements to the road safety barriers, and tree removal and vegetation maintenance in the clear zone

Option 3 was the preferred option as it best meets the objectives of the proposal. This option would have some impact on vegetation and the surrounding environment. This option would have a higher construction cost but best meets the proposal objectives. The proposal is required to reduce the likelihood and severity of run-off-road type crashes along the Olympic Highway and to reduce trauma by providing a safer road side environment. The RSR was commissioned to assist with the identification and nomination of road safety projects as part of the Saving Lives on Country Roads program. This program funds safety improvements which contribute towards a standardised road cross-section and aims to improve road safety along extensive route lengths through mass-action upgrades such as audio tactile line marking, safety barrier installation, shoulder widening and median separation.

The impacts were deemed acceptable due to the improvements that would be made to the safety of road users of the Olympic Highway.

Statutory and planning framework

The proposal is for safety improvement work and is to be carried out by Transport and can therefore be assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. Development consent from council is not required.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP T & I) permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

Community and stakeholder consultation

All necessary community and stakeholder consultation would be carried out by Transport, in accordance with the *Community Involvement Practice Notes and Resource Manual* and in accordance with SEPP T & I.

Community consultation that would be carried out as part of this proposal includes the following activities:

Notification of property owners to be affected by the proposal such as the sensitive noise receivers adjacent to the proposal

Notifications would be placed in local print media prior to the commencement of work detailing the likely timing of the proposal, potential changes to traffic conditions and project management contact details to open communication channels to provide further details or address complaints

Temporary electronic Variable Message Signs (VMS) placed at both the western and eastern ends of the proposal to advise of the project and potential delays to motorists

Project updates on the Transport website: ***www.transport.nsw.gov.au/projects*** live traffic website.

Aboriginal consultation was carried out between 31 August and 1 September 2021. Consultation was initiated through a registration process conducted by Lantern Heritage where Aboriginal people and groups had the opportunity to register.

Environmental impacts

The main environmental impact of the proposal would be on biodiversity. The key impact from the proposal is the direct removal of up to 25.33 hectares of native vegetation, 2.22 hectares of native tree planting, 22.22 hectares of cleared/highly disturbed/non-native vegetation and up to 162 hollow-bearing trees. Temporary impacts are also likely to be about 2.76 hectares of native vegetation, cleared land and highly disturbed portions of the road reserve.

A Biodiversity Assessment (BA) has concluded that the proposal is '*unlikely*' to have a significant effect on remaining listed threatened flora and fauna species, communities, and their habitats in accordance with the *Biodiversity Conservation Act 2016*. Additional assessment has also determined that the proposal is '*unlikely*' to have a significant effect on any *Environment Protection and Biodiversity Conservation Act 1999* listed threatened and migratory biota and their habitats or other matters of national environmental significance. Therefore, a species impact statement is not required.

A series of mitigation measures are proposed that have been developed with specific regard to the proposal and the nationally threatened Superb Parrot and other hollow-dependant fauna using the Transport *Biodiversity Guidelines: Protecting and Managing Biodiversity on Transport projects* and site-specific safeguards to minimise potential impact to biodiversity.

Biodiversity impacts would be mitigated or offset in accordance the Transport Biodiversity Policy (2022).

Justification and conclusion

The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. The proposal would result in both positive and negative impacts. Safeguards are identified in this REF to manage and mitigate the identified negative impacts.

On balance, it is considered that the adverse environmental impact of the proposal is outweighed by the improvement to road user safety and that the proposal is therefore justified. This REF has determined that the proposal is unlikely to have a significant impact on the environment and therefore the preparation of an Environmental Impact Statement (EIS) is not required.

Contents

Appendices

1. Introduction

1.1 Proposal identification

The Olympic Highway (MR78) is a two lane flexible pavement of mostly single carriageway that forms a state highway link starting with an intersection with the Hume Highway near Albury to Cowra, NSW.

Transport have carried out a Routine Safety Review (RSR) which has identified key roadside infrastructure and line marking safety improvements along the Olympic Highway which is about 318 kilometres in length.

Key features of the proposal include:

- Road edge repair and road widening at various locations including culvert and drainage structure widening works
- Reinstatement of a hazard free roadside where possible by; removing trees, maintenance of vegetation regrowth, batter flattening and table drain reshaping
- Installation of roadside safety barriers at various locations where a hazard free roadside cannot be achieved (nominally 10m from the existing carriageway edge line)
- Intersection upgrades at various locations
- Road signage upgrades
- Installation of new audio tactile line-marking in line with Transport policy
- Reinstatement of line marking and raised pavement markers on completion
- Beneficial re-use of surplus material

The key objective of the proposal is to increase road user safety along three sections of the Olympic Highway. These sections being:

- Section 1: Hume Highway intersection to Wagga Wagga
- Section 2: Wagga Wagga to Cootamundra
- Section 3: Cootamundra to Cowra.

The location of the proposal is shown in Figure 1-1.

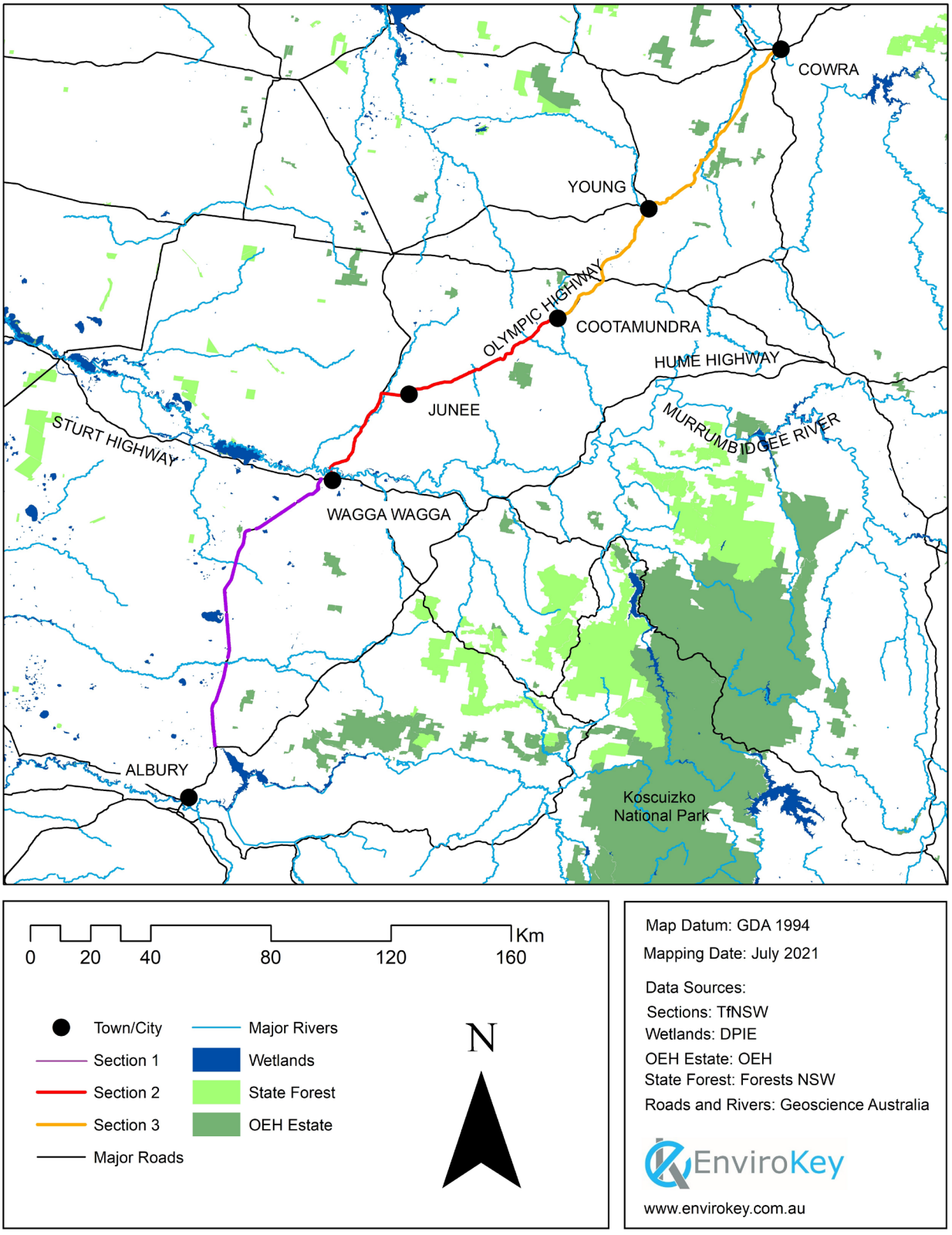


Figure 1-1: Location of the proposal

1.2 Purpose of the report

This review of environmental factors (REF) has been prepared by EnviroKey on behalf of Transport. For the purposes of these works, Transport is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of the REF is to describe the proposal, to document the likely impacts of the proposal on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposed work and assessment of associated environmental impacts has been undertaken in the context of clause 171 of the Environmental Planning and Assessment Regulation 2021, the factors in *Is an EIS Required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979* (Is an EIS required? guidelines) (DUAP, 1995/1996), *Roads and Related Facilities EIS Guideline (DUAP 1996)*, the *Biodiversity Conservation Act 2016 (BC Act), the Fisheries Management Act 1994* (FM Act), *and the Australian Government's Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

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

- Division 5.5 of the EP&A Act including that Transport for NSW examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The significance of any impact on nationally listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and whether offsets are required and able to be secured.
- The potential for the proposal to significantly impact any other matters of national environmental significance or Commonwealth land and the need, subject to the EPBC Act strategic assessment approval, to make a referral to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

2. Need and options considered

2.1 Strategic need for the proposal

Transport and the NSW State Government is committed to the Towards Zero initiative to reduce the road toll. To achieve this outcome, the Safe System approach has been adopted. The Safe System approach consists of four main pillars, Safe Roads, Safe People, Safer Vehicles and Safer Speeds, each of which is inherent to support the Towards Zero programme outcome.

The safe systems approach recognises that drivers are human and will make mistakes. A Safer Roads project aims to address the likelihood of a crash occurring through preventative safety measures such as wide centre line, Audio Tactile Line Marking and the severity of a crash should it occur through the removal of roadside hazards and implementation of safety barrier. Safety barrier is a recognised primary treatment in addressing the severity of a crash by up to 95%.

A route safety review has been carried out on the Olympic Highway (MR78). As part of the review, crash analysis for the five-year period between July 2013 and June 2019 revealed a total of 252 crashes occurred. It was identified that 62% were run off road type crashes and the remainder of crashes included head on crashes or crashes at an intersection. Crash analysis identified a need to prevent vehicles from leaving the carriageway and to address roadside hazards.

The review culminated in a nomination of road safety initiatives funded between 2020 and 2023 as part of the Saving Lives on Country Roads programme. This programme of works aims to provide a consistent safety standard along the full length of the route. The outcome of the programme is to improve road safety through the installation of safety treatments targeting the likelihood and severity of crashes along extensive lengths of the route. This is referred to as a mass-action approach.

The purpose of the proposed works is to reduce road trauma on the network and will be achieved by installing audio tactile line marking and wide centreline treatments along the full length of the route to reduce the likelihood of as crash occurring and by targeted roadside vegetation clearing at hazardous locations and installation of roadside safety barrier to shield road users from hazards that cannot be eliminated.

The locations identified under this programme is based on the Austroads Guide part 6 Road Design – Safety and Barrier to contain high risk roadside hazards. The installation appropriate hazard free areas and rollout of safety barriers aims to improve the Australian Risk Assessment Programme Star Rating by combining with other treatments such as wide centreline and audio tactile line marking.

A Safe Systems Assessment report has been undertaken in line with Austroads Safe Systems Assessment framework to ensure that the proposed interventions align with the Safe Systems Approach. Additionally, an economic analysis has been undertaken of the project scope to ensure that the project aligns with the Towards Zero programme guidelines and has an acceptable benefit cost ratio and safety performance indicator (serious and fatal injuries prevented per million dollar spend).

2.2 Limitations of existing infrastructure

The Olympic Highway forms part of the state road network and is mostly a single carriageway with a posted speed limit of 100 kilometres per hour. The road corridor and shoulders are of varying widths, and hazards within the desired hazard free area are very common. It is these inconsistencies in the pavement and hazards within the roadside corridor that is likely to contribute to the severity of run off road type crashes which form 62% of the crashes on the Olympic Highway.

2.3 Proposal objectives and development criteria

2.3.1 Proposal objectives

The proposal forms part of a continuing process to improve road user safety on the Olympic Highway by carrying out a range of safety improvement work between Albury and Cowra.

The objectives of the proposal include:

- Align with the NSW Road Safety Plan 2021
- Align with the NSW Towards Zero commitment to reduce road trauma
- Target identified primary crash types
- Reduce the likelihood and severity of fatal and serious injury type crashes
- Minimising environmental impacts.

2.3.2 Development criteria

The proposal forms part of a continuing process to improve road user safety on the Olympic Highway.

2.4 Alternatives and options considered

2.4.1 Methodology for selection of preferred option

The method used for the selection of the preferred option was to analyse the environmental, community, financial and safety outcomes of each option and whether they achieved the objectives of this proposal. The option which best achieved the outcomes was the selected option.

2.4.2 Identified options

The options considered for the proposal included:

Option 1: Do nothing. Proposal outcomes would not be achieved and road user safety would not be improved. There would be no environmental impact should the proposal not proceed.

Option 2: Road edge repair and road widening at various locations, road signage upgrade, audio-tactile line marking and raised pavement marker installation, replacement and improvements to the roadside safety barriers.

Option 3: Road edge repair and road widening at various locations, intersection upgrades, road signage upgrade, audio-tactile line marking and raised pavement marker installation, replacement and improvements to the roadside safety barriers, and tree removal and vegetation maintenance to remove hazards where possible.

2.4.3 Analysis of options

Option 1 – 'Do Nothing'

The do-nothing option involves not carrying out the proposal, continuing to use the highway.

Advantages:
- No impact on vegetation and the surrounding environment
- No community impact due to temporary traffic disruptions
- No property acquisition would be required
- No construction costs.

Disadvantages:
- No improvements in road user safety.

Option 2 – Road Edge Repair at various locations, road widening at various locations, road signage upgrade, audio tactile line marking and raised pavement marker installation, replacement and improvements to the roadside safety barriers.

Advantages:
- No impact on vegetation and the surrounding environment
- Minor community impact due to temporary traffic disruptions
- No property acquisition would be required
- Minor construction costs.

Disadvantages:
- Minor improvements in road user safety

Option 3 – The proposal as described within this REF

Advantages:
- The likelihood and severity of run off road type crashes would be reduced
- Significant improvements to road user safety
- No property acquisition required

Disadvantages:
- Greater impact on vegetation and the surrounding environment than Options 1 and 2

- Higher construction cost
- Community impact due to temporary traffic disruptions

2.5 Preferred option

Option 3 was the preferred option as it best meets the objectives of the proposal. This option would have some impact on vegetation and the surrounding environment. This option would have a higher construction cost but best meets the proposal objectives. The proposal is required to reduce the likelihood and severity of run-off-road type crashes along the Olympic Highway and to reduce trauma by providing a safer road side environment.

The impacts were deemed acceptable due to the improvements that would be made to the safety of road users of the Olympic Highway as well as reduced environmental impacts with consideration of the 'integration' principle of ecologically sustainable development (ESD).

2.6 Scope refinements

A key part of Transports management of biodiversity for this proposal is the application of the 'avoid, minimise, mitigate and offset' hierarchy as follows:

1. Avoid and minimise impacts.
2. Mitigate impacts.
3. Offset impacts in accordance with Transport guidelines.

Avoidance and minimisation of impacts to biodiversity have been incorporated at the strategic design stage of planning. This has resulted in avoiding areas of high biodiversity value (where possible), and minimising the areas of impact in these areas (where not possible to avoid). Some areas or features were avoided for reasons other than protecting biodiversity values. This includes avoiding landscape features that may contain Aboriginal Sites or Places or roadside memorials. The primary reason for avoiding these areas may not have been to avoid biodiversity impacts but biodiversity impacts may have been avoided by this process as well.

For this proposal, extensive redesign of the scope of the proposed work occurred once the field survey data was collected and analysed. This allowed Transport to avoid areas of high biodiversity value where possible, or if not possible, minimise the level of impact to an appropriate level if the objectives of the proposal could still be met. Notably, any proposed work outside the disturbed zone has been removed from the Olympic Highway for the southernmost 1km of segment 78020. This identified area contained the Crimson Spider Orchid that is listed as vulnerable under the NSW *Biodiversity Conservation Act 2016 and Environment Protection and Biodiversity Conservation Act 1999*.

Originally, the proposed design would have resulted in the removal of up to:

- 94.19 hectares of native vegetation
- 4.22 hectares of native tree planting
- 55.45 hectares of cleared/highly disturbed/non-native vegetation
- 829 hollow-bearing trees.

With significant redesign by Transport to avoid and minimise biodiversity impacts, the proposed work would result in the removal of up to:

- 24.53 hectares of native vegetation
- 2 hectares of native tree planting
- 22.66 hectares of cleared/highly disturbed/non-native vegetation
- 162 hollow-bearing trees.

3. Description of the proposal

3.1 The proposal

Transport propose to carry out a range of safety improvement work on the Olympic Highway (MR78) between Albury and Cowra.

Key features of the proposal include:

- Road edge repair and road widening at various locations (including required ancillary works) including culvert and drainage structure widening
- Reinstatement of a hazard free roadside where possible by; removing trees, maintenance of vegetation regrowth, batter flattening and table drain reshaping
- Installation of roadside safety barriers at various locations where a hazard free roadside cannot be achieved (nominally 10m from the existing carriageway edge line)
- Intersection upgrades at various locations
- Road signage upgrades
- Installation of new audio tactile line-marking in line with Transport policy
- Reinstatement of line marking and raised pavement markers on completion
- Beneficial re-use of surplus material

For the purpose of this REF, the proposal description above, and a GIS shapefile of the proposal footprint provided by Transport (221107_MR78_Culvert_Impacts, 221107_MR78_Impact_Polygon) was used to determine the footprint for likely impacts.

3.2 Design

3.2.1 Design criteria

The design criteria for the proposal is to carry out safety improvement work based on detailed design through the Route Safety Review (RSR) of the Olympic Highway.

Hazard identification and remediation optioneering was undertaken by suitably experienced and qualified road safety engineering staff. Locations where hazards have been identified, interventions have been designed to minimise the likelihood and severity of a fatal or serious injury crash occurring. These designs have been refined to avoid, minimise and mitigate the impacts of proposed development and land use change on biodiversity.

3.2.2 Engineering constraints

There are no known engineering constraints associated with this proposal.

3.3 Construction activities

3.3.1 Work method

The proposal is anticipated to involve the following work methodology:

- Establish compounds, stockpiles sites, laydown areas and exclusion zone fencing
- Implement temporary traffic control
- Install erosion and sediment controls
- Clear and mulch vegetation identified for removal
- Slash vegetation
- Widen of the road formation, culvert structures and construction of table drains
- Edge repairs to pavement
- Install roadside safety barrier
- Where possible, provide 6:1 or flatter batters
- Install audio tactile marking in areas located further than 300 metres from any residence
- Reinstate road signage, line marking, guide posts and other delineation
- Site clean-up, stabilisation and rehabilitation of disturbed areas
- Remove traffic controls.

Any stockpile sites would be subject to the criteria set out in the Transport document *Stockpile Site Management Guideline EMS-TG-10*.

It is anticipated that vehicles would be stored overnight in site compounds.

3.3.2 Construction workforce

The proposal would result in the utilisation of contractors, Transport personnel and other construction personnel.

3.3.3 Construction hours and duration

Work is expected to start in 2023 and take up to 24 months.

Construction would primarily occur during the following standard work times:

• 7am to 6pm Monday to Friday

• 8am to 1pm Saturday.

However, to minimise the overall duration of works (and the duration of impacts on nearby residences), works may be required to be completed outside of these hours.

Additionally, to minimise impacts on the road network, all work would also need to be in accordance with road occupancy licence (ROL) requirements and this may require some evening and/or night work.

For scheduled out-of-hours work, potentially impacted sensitive receivers would be consulted and kept informed of construction progress to minimise any impacts. In addition, management and mitigation measures detailed within the CEMP would be implemented as required to further mitigate any construction impacts.

Out-of-hours work would be carried out in accordance with the Noise Criteria Guideline (Roads and Maritime Services, 2015), Construction Noise and Vibration Guideline (Roads and Maritime Services, 2016) and Construction and Maintenance Noise Estimator Tool. Prior advice would be given to the community regarding work hours, and any planned out of hours work.

3.3.4 Plant and equipment

The following plant and equipment would be used for the proposed work:

- Excavators and loaders
- Trucks
- Rollers
- Water carts
- Graders
- Bitumen spray truck
- Aggregate spreaders
- Back-hoe
- Bobcat
- Light vehicles
- Concrete trucks
- Line-marker Plant/Truck
- Road profiler
- Vibrating compactors
- Road stabiliser
- Lime spreader
- Material transfer vehicle
- Elevated work platform
- Lighting tower
- Portable toilet/crib room/site officer
- Mulcher
- Generator
- Guardrail installation equipment
- Cranes
- Hand tools
- Temporary traffic lights

3.3.5 Earthworks

Earthworks would be undertaken to carry out the proposal. As the proposal is still subject to detailed design, earthwork quantities (cut and fill) are unknown. Any excess material would be managed according to the Environment Technical Direction ETD 2015l 020 dependent on historical road or other construction work in the area.

3.3.6 Source and quantity of materials

Material for earthworks would be required. Some fill, base, sub-base, select gravel and bridging rock would be sourced from existing commercial quarries in the local area. Additionally, materials for barriers, culverts and other drainage structures such as concrete would also be required

3.3.7 Traffic management and access

A Traffic Control Management Plan would be prepared in line with the Roads and Maritime *Traffic Controls and Work Sites Manual- Version 5 (2018).* In general, the Olympic Highway is a two lane single carriageway; therefore lane closures would be required during the construction activities. For example, the north bound lane would be closed while work is carried out on the western side of the road. This would most likely require a timed traffic light system to effectively manage the length of time required for the traffic queues which would occur in both directions on the Olympic Highway with no longer than 10-minute delays.

It is likely that construction work would also impact on traffic movements due to an increase in truck and machinery movements accessing the site. Increased truck/vehicle movements are likely to be restricted to the area of the proposal during construction hours. However, additional movements would be required when constructing the new road formation. Impact from construction activities would cease at the completion of work. It is not expected that additional vehicular tracks would be required on either side of the proposed construction area.

3.4 Ancillary facilities

Site compounds, stockpile sites and other ancillary facilities would be required during construction.

Areas suitable for site compound/stockpile sites are identified in this REF with existing Transport registered stockpile sites to be used where possible. A total of 27 existing stockpile sites were identified along the length of the proposal (Table 3-1). Examples of these shown in Figure 3-1 and each is identified in Appendix 3 (Figure 3-1 to 3-54). Ancillary facilities have been assessed as part of this REF. All stockpile sites would be subject to the Stockpile Site Management Procedure and QA Specification R44 – Earthworks.

The stockpile sites would be subject to the criteria set out in Roads and Maritime's 'Stockpile Site Management Guideline' (Roads and Maritime 2015c). Stockpile sites would be managed in line with the following guidelines where practicable:

- Located in areas not prone to flash flooding and more than 50 metres from a watercourse
- Have ready access to the road network or direct access to the construction corridor
- Located in previously disturbed areas that do not require the clearing of native woodland vegetation
- Located in areas of low ecological and heritage conservation significance
- Located outside the drip line of trees
- Located on relatively level land.

Stockpile sites would be used to store plant and equipment, to provide a site office, limited parking and amenities for construction staff. Chemicals and fuels for construction would be stored in appropriate storage areas within the site compound.

Table 3-1: Number of existing stockpile sites identified within each section of the proposal

Section of the proposal	No of existing stockpile sites identified
1	8
2	9
3	10

Figure 3-1: Examples of stockpile sites along the length of the proposal

3.5 Public utility adjustment

There is some potential that public utility adjustment would be required however, this is currently unknown and currently under investigation by Transport.

3.6 Property acquisition

The proposal would not require property acquisition.

4. Statutory and planning framework

4.1 Environmental Planning and Assessment Act 1979

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

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

Clause 2.109 of SEPP T & I permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposal is for the safety improvement work on the Olympic Highway and is to be carried out by Transport, it can be assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. Development consent from council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under State Environmental Planning Policy (Coastal Management) 2018, State Environmental Planning Policy (State and Regional Development) 2011 or State Environmental Planning Policy (State Significant Precincts) 2005.

Part 2 of the SEPP T & I contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Consultation, including consultation as required by SEPP T & I(where applicable), is discussed in chapter 5 of this REF.

4.1.2 Local Environmental Plans

Albury Local Environmental Plan 2010, Greater Hume Local Environmental Plan 2012, Lockhart Local Environmental Plan 2012, Wagga Wagga Local Environmental Plan 2010, Junee Local Environmental Plan 2012, Cootamundra Local Environmental Plan 2013, Young Local Environmental Plan 2010, draft Hilltops Local Environmental Plan 2020 and Cowra Local Environmental Plan 2012.

Given the length of the proposal, seven (and one draft) Local Environment Plans (LEP), are of relevance. The proposal would be carried out on land zoned SP2 Infrastructure within the road reserve and should acquisition be required, this is likely to be on land zoned Rural. Within these zones, road work is permitted with consent. However, Clause 2.109 of the SEPP T & I permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

There are no other restrictions associated with these planning instruments.

4.2 Other relevant NSW legislation

4.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the framework for the assessment of Transport activities. Transport proposals are assessed and approved or determined under the following regimes:

1. **Division 5.1 of Part 5** applies to the majority of Transport road projects. Usually a review of environmental factors (REF) is prepared to assess the environmental impact of a project prior to commencing the work.
2. **Division 5.2 of Part 5** applies to State significant infrastructure. These major projects require approval from the Minister for Planning. An environmental impact statement is prepared in accordance with the requirements of the Director-General of the Department of Planning and Environment.

Part 4 applies to projects that require development consent from a consent authority (usually a local development) and is not relevant to this proposal.

4.2.2 Biodiversity Conservation Act 2016

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community.

The threatened species assessment process under Section 1.7 of the EP&A Act includes a Test of Significance (also known as the Five-part test). These factors must be considered by decision makers regarding the effect of a proposed development or activity on threatened species or ecological communities, or their habitats.

An assessment of the potential impacts of the proposal on threatened species, ecological communities and Outstanding Biodiversity Values listed on the BC Act was carried out in accordance with Section 1.7 of the EP&A Act and Section 7.3 of the BC Act. A Test of Significance was conducted to characterise the significance of any potential impacts within Appendix 3 and concluded that there would be no significant impact on threatened species or ecological communities, or their habitats. On this basis, additional assessment through a species impact statement, BDAR and/or referral to the Commonwealth is not warranted.

4.2.3 Fisheries Management Act 1994

The NSW *Fisheries Management Act 1994* aims to conserve fish stocks, key habitats, threatened species, populations and ecological communities of fish and marine vegetation. It also aims to promote viable commercial fishing, aquaculture industries and recreational fishing.

The provisions of the *Fisheries Management Act 1994* relating to the development approval process operate similarly to the above BC Act. The Act identifies threatened aquatic species, populations and ecological communities and requires an identical test of significance.

Significant impact triggers the need for a species impact statement for Part 4 and Part 5 projects. Activities relevant to this proposal that trigger the requirement for Transport to notify the Minister for Fisheries are as follows:

- Dredging or reclamation of waterways, including removal of snags (28 days notification) (sections 198 and 199).

As the proposed work would not be undertaken within any waterway, the proposal does not require consultant with DPI Fisheries.

An evaluation for the potential for biota listed under the FM Act and significance assessment where appropriate was carried out in Appendix 3.

4.2.4 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides an integrated system of licensing for certain activities within the objective of protecting the environment. The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment. The Act provides for the issuing of three types of environment protection notices: clean-up, prevention and prohibition notices.

Clean-up notices can be issued to deal with pollution incidents (e.g. a spill of pollutants). Prevention notices can be issued where an activity is being carried out in an environmentally unsatisfactory manner. Clean-up and prevention notices are issued by the regulatory authority for the activity or premises concerned. In emergencies, the EPA can issue a clean-up notice even though it is not the regulatory authority in the circumstances.

4.2.5 National Parks and Wildlife Act 1974

The objectives of this Act are the conservation of nature, objects, places or features of cultural value within the landscape, fostering public appreciation understanding and enjoyment of nature and cultural heritage and their conservation and providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation. The objects are to be achieved by applying the principles of ESD.

This proposal would not impact on any land, objects, places or features of cultural value (Aboriginal and non-Aboriginal) reserved under this Act. Nonetheless, this REF considers the principles of ESD.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) a referral is required to the Australian Government for proposed actions that have the potential to significantly impact on matters

of national environmental significance or the environment of Commonwealth land. These are considered in Appendix 3 and chapter 6 of the REF.

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

Potential impacts to these biodiversity matters are also considered as part of chapter 6 of the REF and Appendix 3.

Findings – matters of national environmental significance

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

4.3.2 Native Title Act 1993

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

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

4.4 Confirmation of statutory position

The proposal is categorised as development for the purpose of safety improvement work along the Olympic Highway and is being carried out by or on behalf of a public authority. Under clause 2.109 of SEPP T& I the proposal is permissible without consent. The proposal is not State significant infrastructure or State significant development. The proposal can be assessed under Division 5.1 of the EP&A Act.

Transport for NSW is the determining authority for the proposal. This REF fulfils Transport for NSW's obligation under Division 5.1 of the EP&A Act including to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.

5. Consultation

5.1 Consultation strategy

All necessary community and stakeholder consultation would be carried out by Transport in accordance with the *Community Involvement Practice Notes and Resource Manual*.

5.2 Community involvement

Community consultation that would be carried out as part of this proposal includes the following activities:

- Notification of property owners to be affected by the proposal such as the sensitive receivers adjacent to the proposal and property owners affected by proposed property acquisition
- Notifications would be placed in local media prior to the commencement of work detailing the likely timing of the proposal, potential changes to traffic conditions and project management contact details (to open communication channels to provide further details or address complaints)
- Temporary electronic Variable Message Signs (VMS) placed at both the southern and northern ends of the proposal to advise of the project and potential delays to motorists
- Meetings and briefings with stakeholders, businesses and residences (as required)
- Letters, phone calls, emails and targeted correspondence
- Project updates on the Transport website: ***www.transport.nsw.gov.au/projects*** live traffic website.

5.3 Aboriginal community involvement

Aboriginal community involvement and heritage impact was considered in accordance with the *Roads and Maritime Procedure for Aboriginal Cultural Heritage Consultation and Investigation (Resource 7)* (PACHCI)

Consultation was carried out as part of the Aboriginal Cultural Heritage Constraints Mapping report by Lantern Heritage. Summaries of the various stages in the consultation process are provided within Appendix 4, together with inputs received to date by registered Aboriginal parties (RAPs. Examples of correspondence and notifications sent out to Aboriginal groups and individuals are provided in the Aboriginal Cultural Heritage Constraints Mapping Report provided in Appendix 4.

5.4 SEPP T & I consultation

Council consent would not be required for this proposal. Transport needs to take into account the items listed in Clauses 2.10 to 2.16 of the SEPP T & I. These clauses relate to consultation requirements for work which may be carried out without consent but which trigger the items listed in Appendix 2. If any of these items are triggered, the public authority, or persons representing the public authority would not be able to carry out the work. Once the items in the following table are triggered, the public authority must give written advice to the council of the intention to carry out the development and also take into consideration any response to the notice received from the council. Appendix 2 outlines items in clause 2.10 to 2.16 of the SEPP T & I and the potential impact.

Based on the assessment undertaken in Appendix 1, the proposal does not trigger the need for consultation under SEPP T & I. Nonetheless, Transport would also notify the General Manager of Wagga Wagga City Council, Albury City Council, Greater Hume Shire Council, Junee Shire Council, Cootamundra-Gundagai Regional Council, Hilltops Council, and Cowra Shire Council of the proposed work.

5.5 Ongoing or future consultation

Transport would advise residents and road users of the potential delays to motorists with the use of temporary electronic Variable Message Signs (VMS) that would be placed along the Olympic Highway to advise of the project and potential delays to motorists. The work would also be added to the Transport Live Traffic Website as 'scheduled road work' to provide advance notice to motorists to inform them of the potential for delays and to allow for travel time adjustment where possible. Notifications would also be placed in local media advising the community of the proposed work and, where possible contact via email, letters and phone calls would be made. A stakeholder database and issues register would also be managed by Transport. Meetings and briefings would also be arranged for ongoing consultation as needed. A communication strategy would be developed in consultation with Transport's Community and Customer Engagement team.

6. Environmental assessment

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

- Potential impacts on matters of national environmental significance under the EPBC Act
- The factors specified in the guidelines Is an EIS required? (DUAP 1995/1996) as required under the Environmental Planning and Assessment Regulation 2021 and the *Roads and Related Facilities EIS Guideline (DUAP 1996)*. The factors specified in clause 171 of the Environmental Planning and Assessment Regulation 2021 are also considered in Appendix 1.

Site-specific safeguards and management measures are provided to mitigate the identified potential impacts.

6.1 Biodiversity

A biodiversity assessment has been done for the project and is included in this REF as Appendix 3. Section 6.1 is a summary of the biodiversity assessment.

6.1.1 Methodology

A series of database searches were carried out to identify the diversity of flora and fauna potentially occurring in the study area. The database searches conducted are included in Table 6-1.

Table 6-1: Database searches

Database	Search For	Search Area	Timing
BioNET Atlas	Threatened species, migratory species, JAMBA, CAMBA, ROKAMBA	10 kilometre radius	01/07/2021
OEH Threatened species profile search	Threatened flora, fauna and ecological communities	Study area	01/07/2021
EPBC Act Protected Matters Search	Threatened flora and fauna, endangered populations, ecological communities and migratory species	10 kilometre radius	01/07/2021
OEH vegetation information system (VIS)	Vegetation communities and descriptions	Study area	01/07/2021

Database	Search For	Search Area	Timing
OEH Vegetation Types Database	Vegetation communities	Study area	01/07/2021
Department of Environment's directory of important wetlands	Important wetlands	Along the length of the proposal	01/07/2021
Priority weeds database	Declared priority weeds	Riverina and Western DPI search areas	03/05/2021

Additionally, a literature review for any relevant local information was conducted on 1 July 2021. Where appropriate, the contents of these documents are considered throughout the REF.

The database searches identified a number of threatened ecological communities, threatened flora and/or threatened or migratory fauna species within a 10 kilometre buffer of the proposed work (OEH, 2021a, OEH, 2021d) (Appendix 3). A threatened and migratory species evaluation for the potential for these species to occur onsite has been undertaken (Appendix 3).

6.1.2 Existing environment

A field survey was undertaken on 12 July – 20 July 2021 by experienced ecologists, during which 13 Plant Community Types (PCT) including two threatened ecological communities (TEC) were recorded (Appendix 3). The TEC were as follows:

- Box-gum Woodland (BC Act & EPBC Act)
- Inland Grey Box Woodland (BC Act &EPBC Act)

Targeted threatened flora surveys were also conducted by three experienced ecologists for Crimson Spider orchid and Pine Donkey orchid during the following survey periods:

- 13-17 September 2021 (Crimson Spider Orchid surveys)
- 11-15 October 2021 (Pine Donkey Orchid surveys).

Targeted microbat surveys of culverts where work is proposed, were carried out between 15-18 May 2022.

A total of 1,168 Hollow Bearing Trees (HBT) were identified within 10 metres of the existing edge line. Many of these occurred within a single PCT (PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland) with 551 HBT present. Interestingly, there were 418 HBT mapped within Cleared land/Highly-disturbed land respectively. Many of the HBT within these areas occurred as isolated trees and/or dead trees (stags) and their scattered extent meant that they were not assigned to a PCT given the scale of the mapping applied to such a long, lineal proposal.

Within the study area (ie, the road reserve) but outside of the 10 metre buffer applied to the edge line, HBT were estimated based on density per PCT (based on data collection from inside of the 10 metre buffer line).

Using this method, a total of 3,067 HBT were estimated outside of the 10 metre buffer but within the road reserve boundary

A review of DPIE regional mapping in accordance with the FBA and BAM (OEH, 2014) shows that both TEC are relatively widespread within the locality, including within a 550 metre buffer (OEH, 2018, OEH, 2017, OEH, 2021b).

MR78 intersects the Murrumbidgee River (at Wagga Wagga). Olympic Highway traverses numerous minor creeks and is directly adjacent to numerous waterways along the length including Billabong Creek, Burkes Creek and Yerong Creek (Section 1), Houlaghans Creek and Cootamundra Creek (Section 2), Wambanumba Creek, Murringo Creek, Bendick Murrell Creek, and Bang Bang Creek (Section 3). With consideration of the DPI document *Policy and guidelines for fish habitat conservation and management*, Billabong Creek, Burkes Creek and Yerong Creek (Section 1), Cootamundra Creek (Section 2), Wambanumba Creek, Murringo Creek, Bendick Murrell Creek, and Bang Bang Creek (Section 3) are best considered to be Class 2 Moderate key fish habitat, as they area named waterways with intermittent flow and sporadic refuge, breeding or feeding areas with semi-permanent pools forming within the waterway after rain events and contain freshwater aquatic vegetation. Houlaghans Creek (Section 2) and the Murrumbidgee River (Section 2) would be considered Class 1 Major key fish habitat given the permanent nature of these waterways and their potential to contain threatened or protected fish species.

All waterways have some level of degradation given the largely agricultural nature of the landscape that these waterways occur within. There has been widespread clearing that has occurred across their catchments resulting in increased water velocity overland and subsequently bank erosion and sediment load into each waterway. Despite all of this, water quality appeared relatively good in all waterways, although no specific water quality testing was carried out.

A detailed Biodiversity Assessment was prepared for the proposal and is included as Appendix 3.

6.1.3 Potential impacts

Construction

The BA in Appendix 3 details the direct and indirect impacts of the proposal that includes:

- Permanent loss of 24.53 hectares of native vegetation
- Permanent loss of 22.66 hectares of cleared land dominated by non-native vegetation
- Permanent loss of 162 hollow-bearing trees
- Temporary loss of 6.22 hectares of native vegetation
- Temporary loss of 0.73 hectares of cleared land dominated by non-native vegetation

Operation

No operational impacts are anticipated as a result of the proposal.

Conclusion on significance of impacts

Assessments of significance under the BC Act and EPBC Act were conducted for any threatened species that are known to, or have a moderate to high likelihood of occurring within the study area, and therefore, be potentially impacted by the proposal. These concluded that the proposal is unlikely to have a significant

impact on any threatened biota. Therefore, a species impact statement or a referral to the Commonwealth is not required.

6.1.4 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Removal of native vegetation	Native vegetation removal will be minimised through detailed design.	Project Engineer	Detailed design	
	Only vegetation assessed within this BA is to be removed. Should any additional clearing be necessary, further onsite assessment is required	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
	Parking options should be limited to existing hard stand areas	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
	Vegetation removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
	Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees.	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
	Biodiversity impacts would be mitigated or offset in accordance the Transport Biodiversity Policy (2022) and Transport tree and hollow replacement guideline (2022)	Project Engineer	Detailed design / pre-construction	
Removal of threatened flora habitat	No clearing of any habitat as identified as Critical for Crimson Spider Orchid would occur (Figure 3-41)	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
Removal of fauna habitat	Removal of any HBT would only be carried out in accordance with a HBT Removal Procedure. The Procedure must specifically include actions to minimise potential	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*

Impact	Environmental safeguards	Responsibility	Timing	Reference
	impacts to Superb Parrot, Squirrel Glider and microchiropteran bats and must include procedures for supervision, salvage and relocation by a suitable qualified and experienced person.			
	Habitat removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
	The unexpected species find procedure is to be followed under *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) if threatened fauna, not assessed in the biodiversity assessment, are identified in the proposal site.	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
	Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Project Engineer	Pre-construction	Section 4.8 of QA *G36 Environment Protection*
Waterways and water quality	Works will only be carried out in waterways that have been identified in the proposed scope	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
	Aquatic habitat will be protected in accordance with *Guide 10: Aquatic habitats and riparian zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) and *Section 3.3.2 Standard precautions and mitigation measures* of the *Policy and guidelines for fish habitat conservation and management Update 2013* (DPI (Fisheries NSW) 2013).	Project Engineer	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*

Impact	Environmental safeguards	Responsibility	Timing	Reference
Injury and mortality	Fauna will be managed in accordance with *Guide 9: Fauna handling* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011)	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
Invasion and spread of weeds	Weed species will be managed in accordance with *Guide 6: Weed management* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*
Invasion and spread of pathogens and disease	Pathogens will be managed in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Project Engineer	Construction	Section 4.8 of QA *G36 Environment Protection*

6.1.5 Biodiversity offsets

Biodiversity impacts would be mitigated or offset in accordance with the Transport Biodiversity Policy (2022) and the Transport Tree and Hollow Replacement Guidelines (2022). Further information is provided within Appendix 3.

6.2 Surface water

6.2.1 Existing environment

The Olympic Highway is largely located on the lower slopes of the NSW South West Slopes Bioregion. MR78 intersects the Murrumbidgee River (at Wagga Wagga). The Olympic Highway traverses numerous minor creeks and is directly adjacent to numerous waterways along the length including Billabong Creek, Burkes Creek and Yerong Creek (Section 1), Houlaghans Creek and Cootamundry Creek (Section 2), Wambanumba Creek, Murringo Creek, Bendick Murrell Creek, and Bang Bang Creek (Section 3). Numerous minor waterways are also present.

6.2.2 Potential impacts

Construction

No impacts to any water way is proposed based on the likely scope of work proposed. Further, any proposed site compounds or stockpile sites would be located well distant of any watercourse in accordance with the Transport *Stockpile Site Management Guideline, 2015*.

Operation

No operational impacts are anticipated as a result of the proposal.

6.2.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Water Quality	• There must be no release of dirty water into drainage lines and/or waterways • Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) must be carried out on a regular basis to identify any potential spills or deficient erosion and sediment controls • Water quality control measures must be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways • Construction water will be managed within sustainable limits of the area and catchment. It may be necessary to reduce or limit water extraction and some construction activities if water supply is heavily constrained. Contact the Regional (Program) Environmental Manager when water supply becomes an issue and direction will be provided. • Potable water will be used for wash down. • Containment material will be used to capture/filter water used in vehicle washdowns.	Project Engineer/Works Supervisor	Construction	

Impact	Environmental safeguards	Responsibility	Timing	Reference
Accidental spill	• A site specific emergency spill plan will be developed, and include spill management measures in accordance with the Transport for NSW *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport for NSW and EPA officers).	Project Engineer/Works Supervisor	Detailed design / Pre-construction	Section 4.3 of QA *G36 Environment Protection*
Accidental spill	• An Emergency spill kit must be kept onsite at all times. All staff must be made aware of the location of the spill kit and trained in its use • If an incident (e.g. spill) occurs, the Transport Environmental Incident Classification and Management Procedure would be followed and the Transport Contract Manager notified as soon as practicable.	Transport	Construction	Section 4.3 of QA G36 Environment Protection
Chemical runoff	• Fuels, chemical and liquids must be stored in an impervious bunded area a minimum of 50 metres away from: – Rivers, creeks, or any areas of concentrated water flow. – Flooded or poorly drained areas. – Slopes above 10%. • Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g. not table drains) and not cause water pollution	Contractor	Construction	

Impact	Environmental safeguards	Responsibility	Timing	Reference
	• Refuelling of plant and equipment must occur in impervious bunded areas located a minimum of 50 metres away from drainage lines of waterways unless within a bunded stockpile site • Vehicle wash down and/or cement truck washout must occur in a designated bunded area • Moveable plant such as pumps and generators must be bunded. • Machinery will be checked daily for leaks of oil, fuel or other liquids			

6.3 Groundwater

6.3.1 Existing environment

According to the Atlas of Groundwater Dependant Ecosystems (GDE), the Olympic Highway traverses a number of major to moderate waterways and (Figure 6-1 to Figure 6-5). The proposal does not involve excavation or any other activity that is likely to interfere with groundwater The field survey did not identify any potential ground water seepages in the vicinity of the proposed work however, they are possible considering the presence of subterranean ground water.

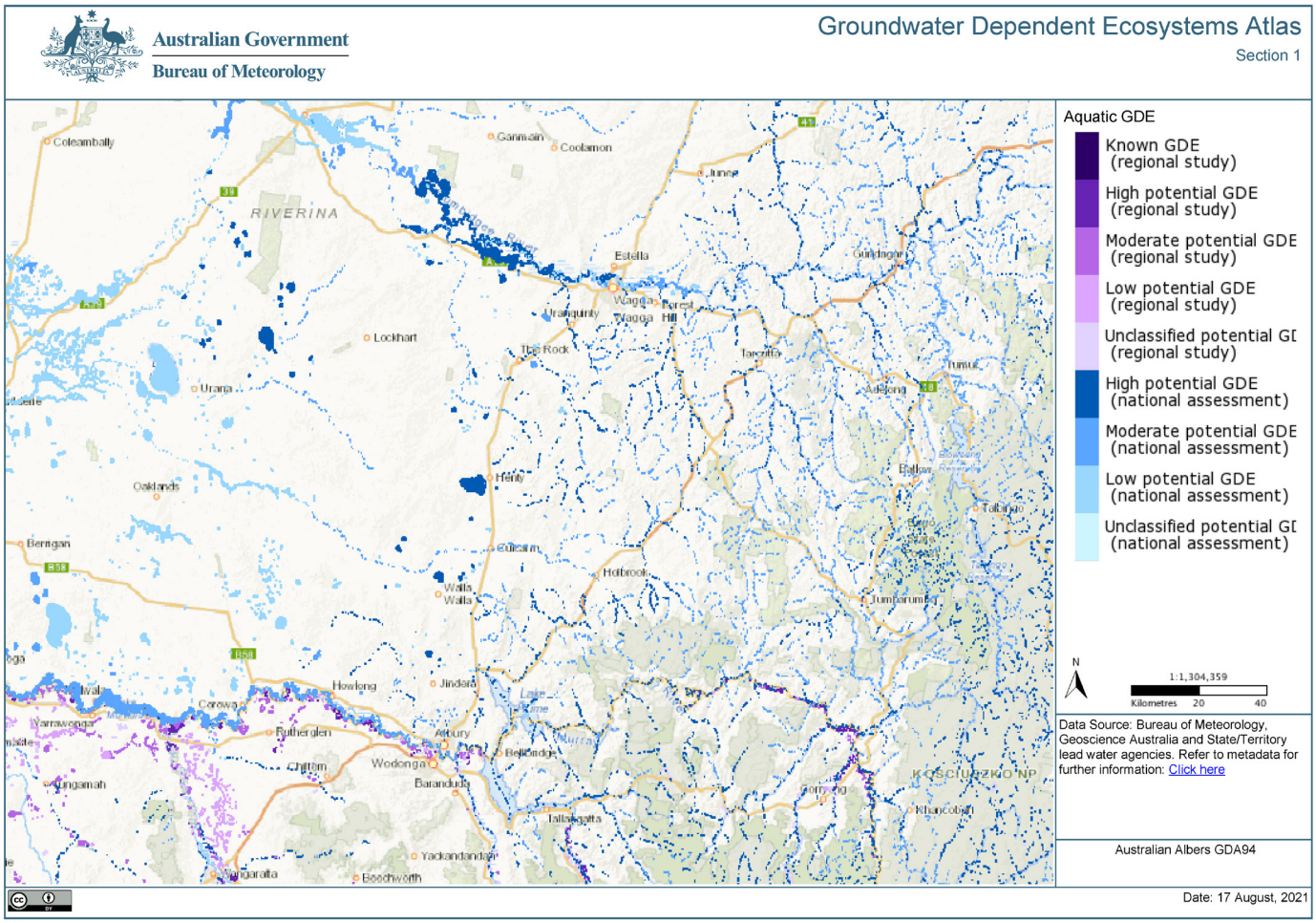


Figure 6-1: Aquatic GDE as identified by the Groundwater Dependent Ecosystems Atlas within section 1

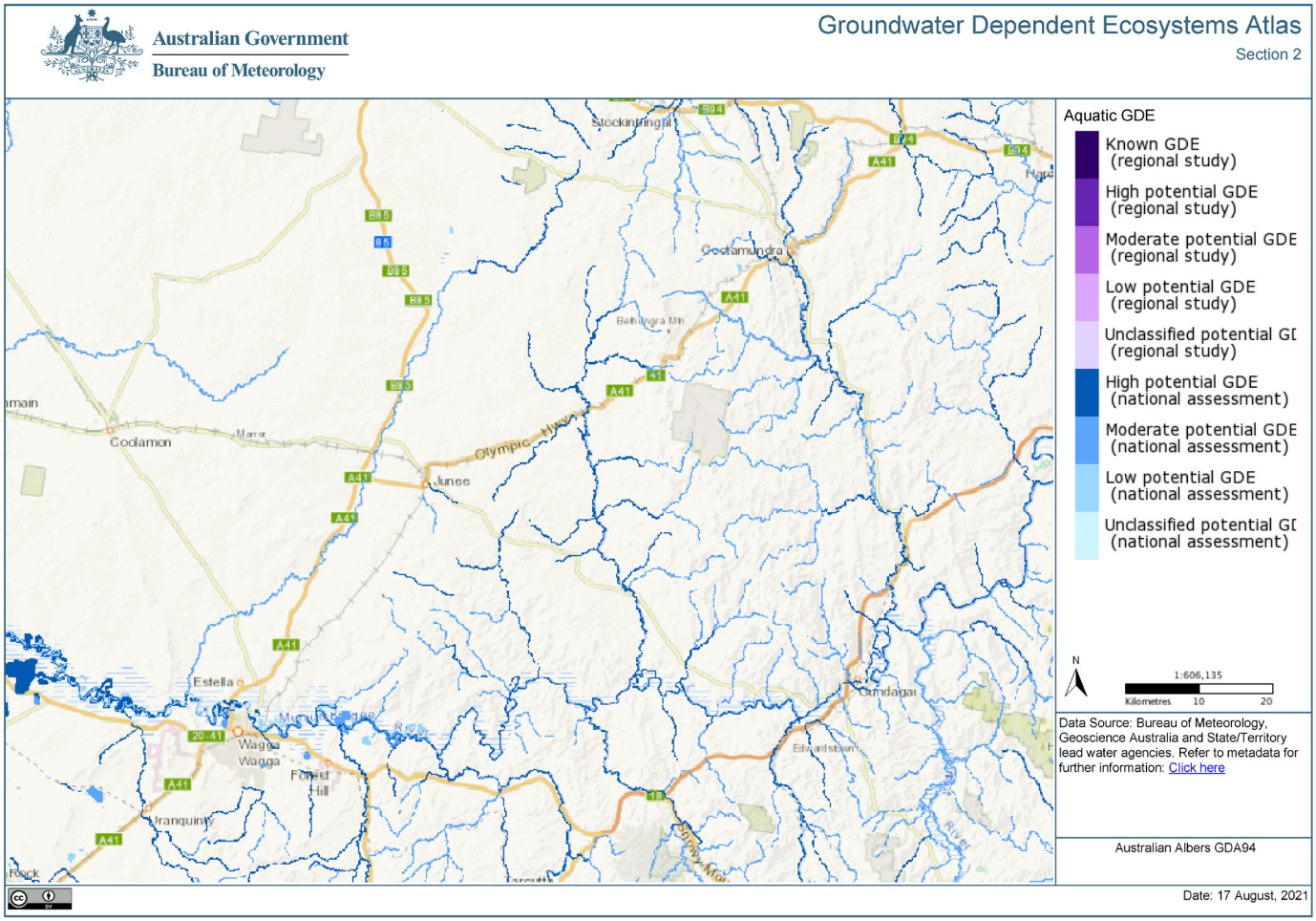


Figure 6-2: Aquatic GDE as identified by the Groundwater Dependent Ecosystems Atlas within section 2

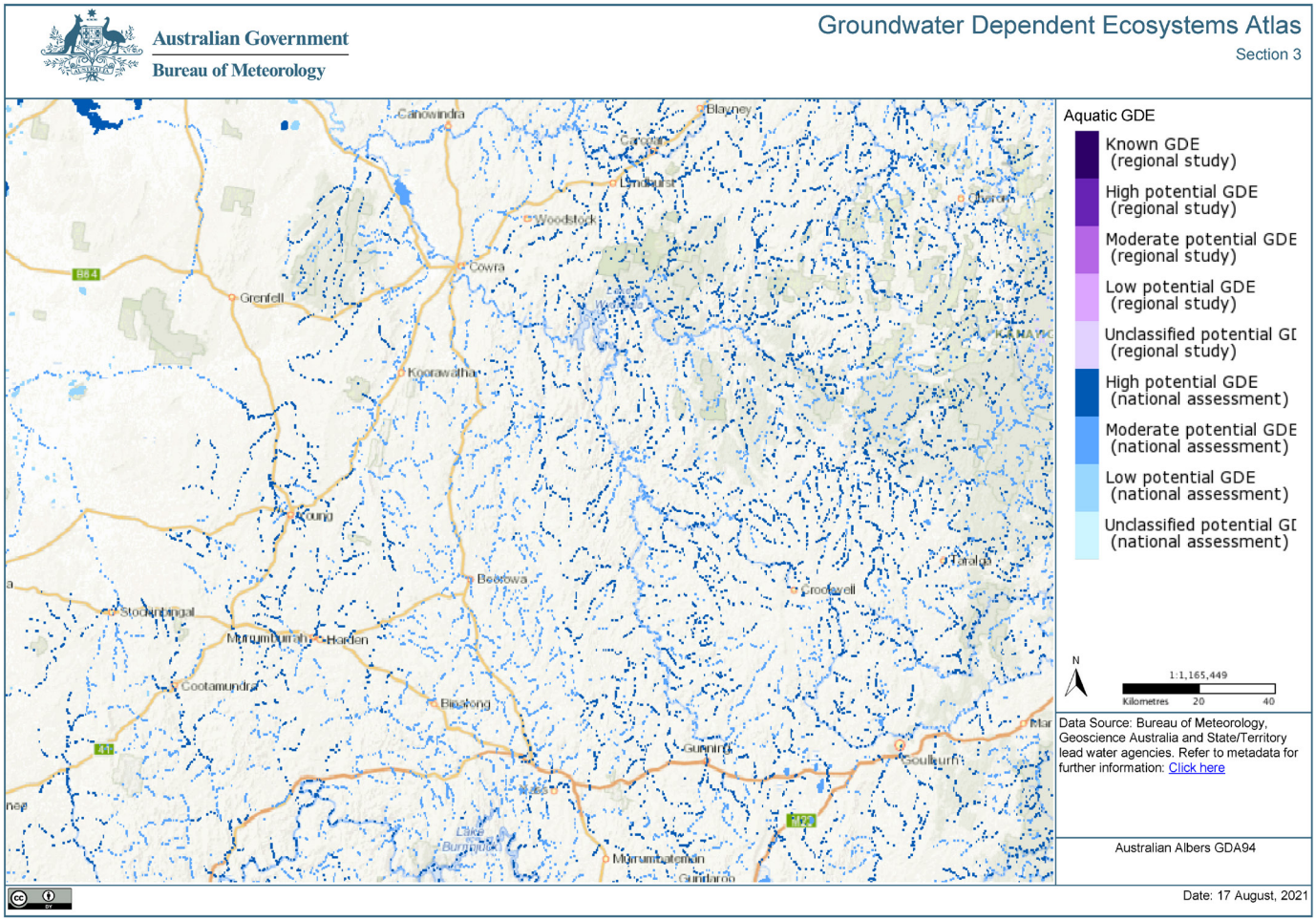


Figure 6-3: Aquatic GDE as identified by the Groundwater Dependent Ecosystems Atlas within section 3

6.3.2 Potential impacts

Construction

No potential impacts are likely given the proposed construction methodology.

Operation

No potential impacts are anticipated.

6.3.3 Safeguards and management measures

No specific safeguards or management measures are considered necessary.

6.4 Soils

6.4.1 Existing environment

According to the Mitchell Landscapes dataset (Mitchell, 2002), the proposal is located within numerous Mitchell Landscape systems (Table 6-2). The distribution of these is provided on Figure

Table 6-2: Mitchell landscapes along the proposal

Mitchell Landscapes	
Section 1	**Length (km)**
Brookong Plains	70.2
Wonga Hills and Ranges	18.1
Table Top Ranges	56.0
Section 2	**Length (km)**
Murrumbidgee - Tarcutta Channels and Floodplains	26.3
Springdale Hills	14.6
Junee Hills and Slopes	30.0
Frampton Hills	19.6
Ulandra – Narrabulla Hills and Slopes	0.4
Section 3	**Length (km)**
Springdale Hills	2.0
Weddin Range and Slopes	7.3
Eugowra Plains	50.9
Frampton Hills	11.2
Young Hills and Slopes	33.7

Mitchell Landscapes	
Murrumbidgee – Tarcutta Channels and Floodplains	10.6

Soils are generally moderately erodible in these landscapes and the potential for soil erosion and sedimentation have been considered in this REF.

6.4.2 Potential impacts

Construction

The proposal would require the removal of vegetation, excavation and the deposition of fill and the resulting soil disturbance would expose these areas to erosion, runoff and sedimentation hazards during rainfall events. This would occur across each of the proposal sections.

Impact could result from strong winds blowing over exposed soils causing dust disturbances. It is not expected that any fill material would require long term stockpiling within the proposal area as excavated material would be required in the fill areas.

Machinery and the fuel storage areas for machinery could become potential sources of contamination. Leakage or spillage of fuels from construction machinery could result in soil contamination which is most likely to occur where construction machinery is repeatedly used or parked periodically while not in use.

Operation

No potential impacts are anticipated.

6.4.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Erosion and sediment	Erosion and sediment control measures must be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site	Project Engineer/Works Supervisor	Construction	Section 4.3 of QA *G36 Environment Protection*

Impact	Environmental safeguards	Responsibility	Timing	Reference
	• Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site. (In accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)).			
	Erosion and sedimentation controls must be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*
	Erosion and sediment control measures must not be removed until the work is complete and areas are stabilised	Project Engineer/Works Supervisor	During construction	
	A progressive erosion and sediment control plan is to be prepared for the works.	Project Engineer/Works Supervisor	Pre-construction	
	The maintenance of established stockpile sites during construction must be in accordance with the TfNSW Stockpile Site Management Guideline, (EMS-TG-10)	Project Engineer/Works Supervisor	During construction	
Soil contamination	If soil contamination is discovered during construction, works will cease immediately, the site will be temporarily fenced and access would be restricted. Soil sampling and analysis would be conducted to assess the extent and nature of the contamination.	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*

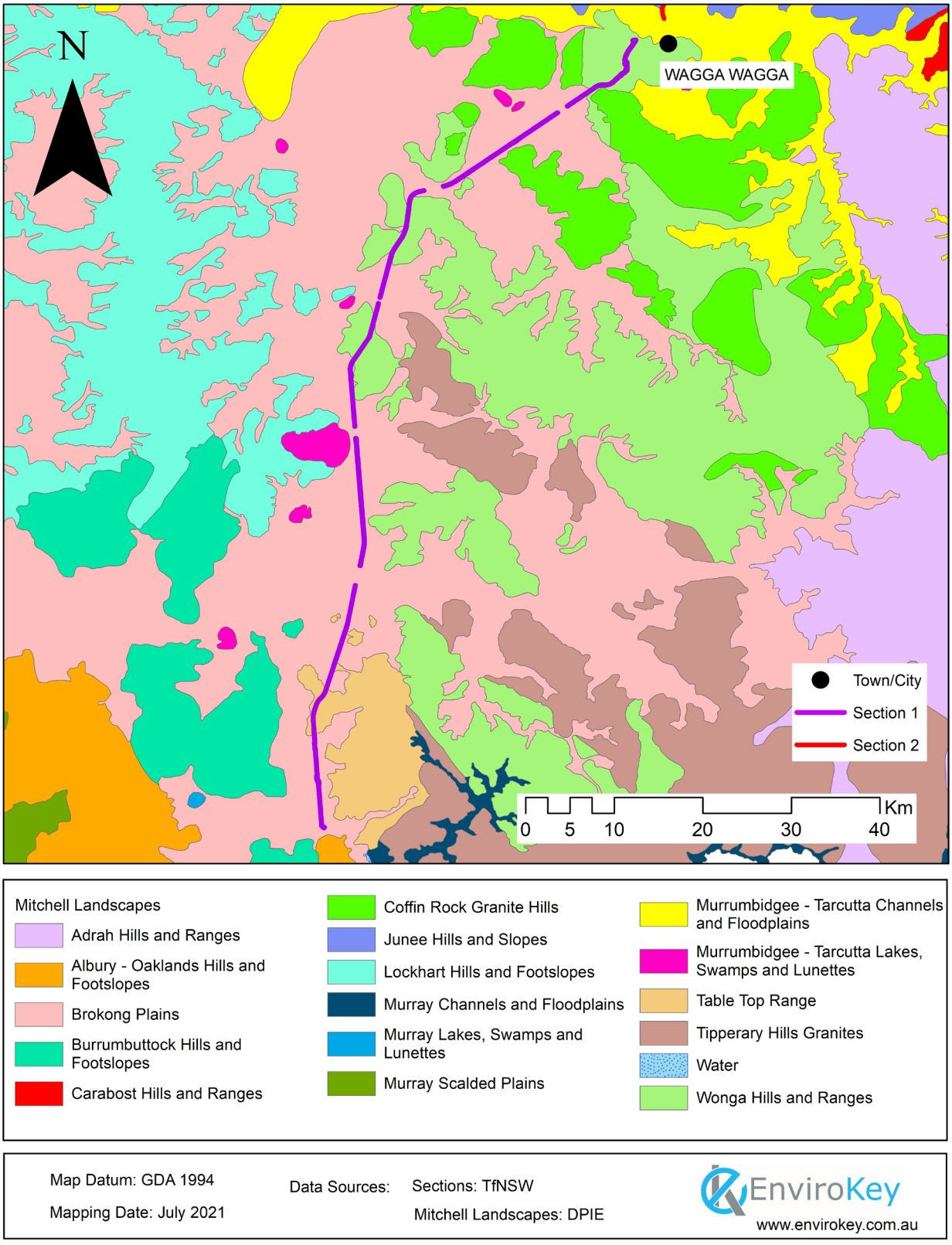
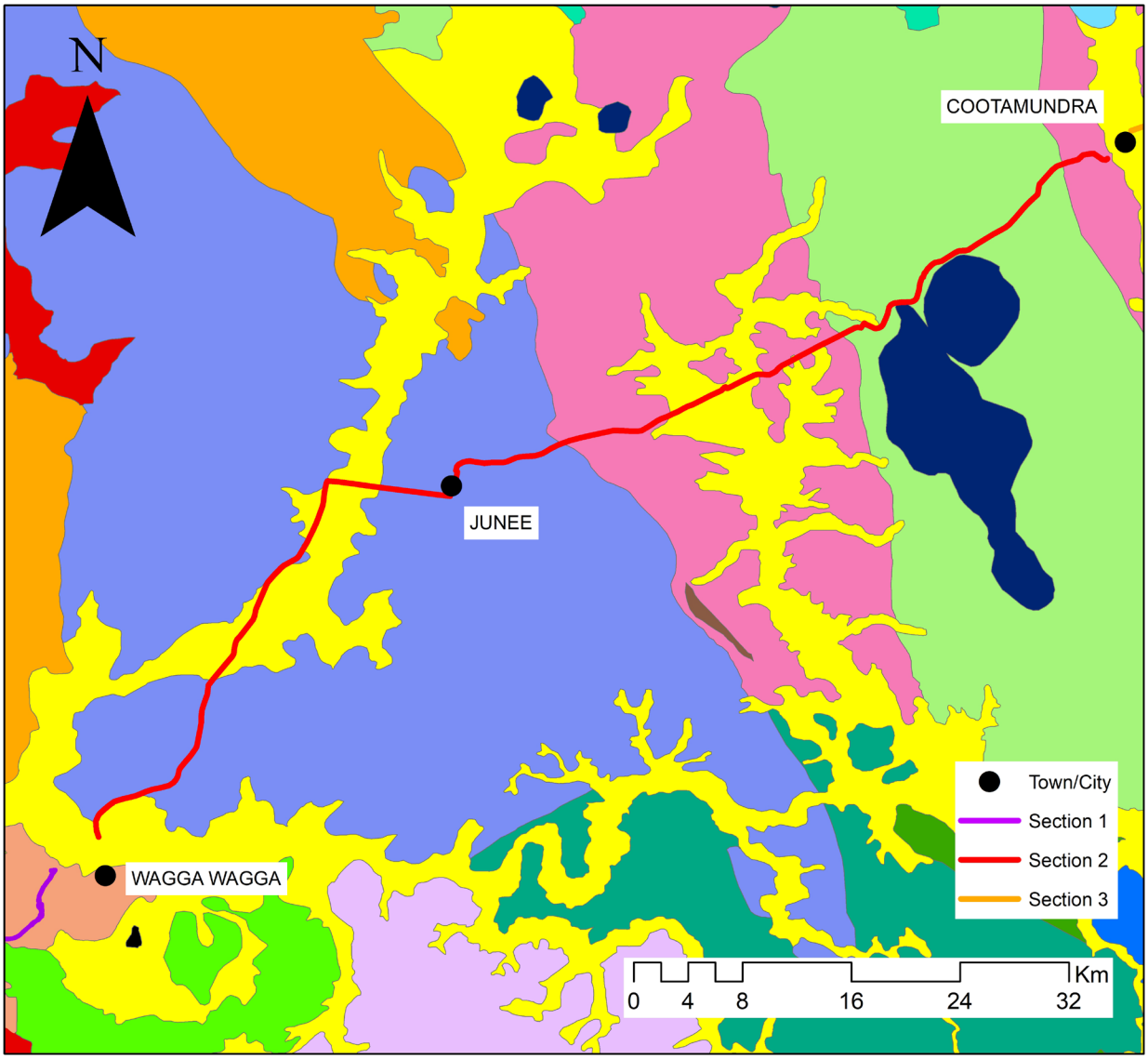


Figure 6-4: Mitchell landscapes within section 1 of the proposal



Mitchell Landscapes

- Adelong Granite Ranges
- Adrah Hills and Ranges
- Ardlethan Hills
- Bimbi Plains
- Brokong Plains
- Carabost Hills and Ranges
- Coffin Rock Granite Hills
- Cootamundra - Tumut Serpentinite and Ultramafics
- Frampton Hills
- Junee Hills and Slopes
- Minjary Hills and Ranges
- Murrumbidgee - Tarcutta Channels and Floodplains
- Murrumbidgee - Tarcutta Lakes, Swamps and Lunettes
- Springdale Hills
- Ulandra - Narrabulla Hills and Slopes
- Weddin Range and Slopes
- Wonga Hills and Ranges

Map Datum: GDA 1994
Mapping Date: July 2021

Data Sources: Sections: TfNSW
Mitchell Landscapes: DPIE

EnviroKey
www.envirokey.com.au

Figure 6-5: Mitchell landscapes within section 2 of the proposal

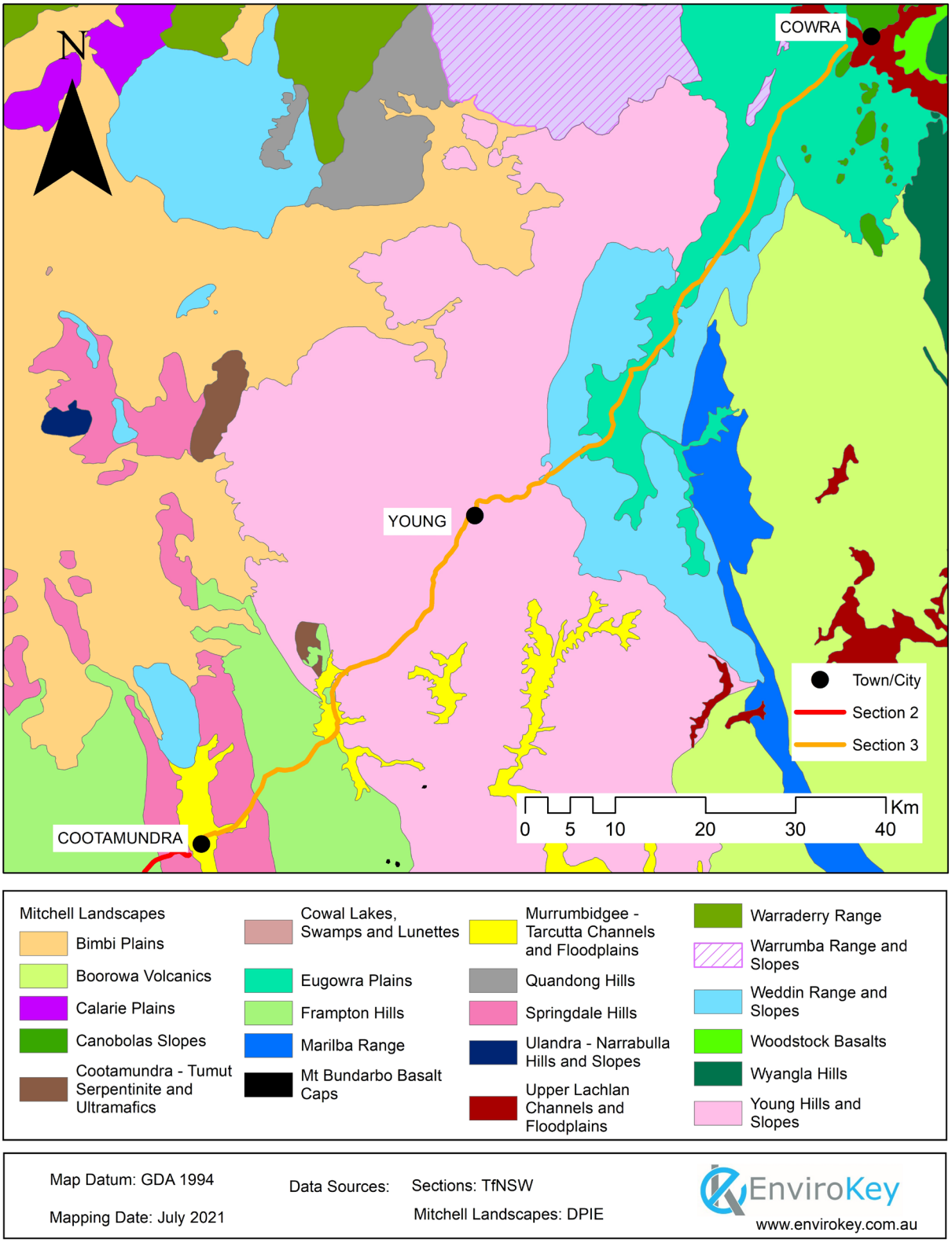


Figure 6-6: Mitchell landscapes within section 3 of the proposal

6.5 Traffic and transport

6.5.1 Existing environment

The Olympic Highway provides a state highway link between the Hume Highway north of Albury to the Mid-western Highway at Cowra in NSW. As expected over a 318-kilometre proposal length, there are thousands of private property accesses consisting of partially sealed and gravel surfaces and hundreds of intersections with other highways, main roads and local roads. There are no traffic volume viewer sites on the Olympic Highway.

6.5.2 Potential impacts

Construction

The proposal would require the temporary closure of one lane as work proceeds on one side of the road. For example, the north bound lane would be closed, with a contraflow put in place with traffic control at either end directing north bound traffic into the south bound lane. This would disrupt traffic flow at the proposal site causing short delays for traffic. These short delays would only be temporary for the length of time taken to complete the proposal. Short, temporary delays are also anticipated at the access point to any stockpile site.

Operation

There would be no operational impacts as a result of the proposal.

6.5.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Transport for NSW *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The TMP will include: • A road occupancy license (ROL) • confirmation of haulage routes • measures to maintain access to local roads and properties • measures to maintain pedestrian and cyclist access	Project Engineer	Detailed design / Pre-construction	Section 4.8 of QA *G36 Environment Protection*

Impact	Environmental safeguards	Responsibility	Timing	Reference
	• site specific traffic control measures (including signage) to manage and regulate traffic movement • requirements and methods to consult and inform the local community of impacts on the local road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • a response plan for any construction traffic incident • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms.			

6.6 Noise and vibration

6.6.1 Existing environment

The existing environment is characterised by undulating agricultural areas north of Wagga Wagga, while south of the city, the landscape is relatively flat. Along the length of the proposal, it is estimated that there would be more than several thousand residences. For those receivers closer to the highway, the general background noise levels are expected to be moderate in the context of existing highway traffic.

Generally, the existing environment near the proposal is mostly influenced by road traffic and bird and animal noise with the established background noise level reflective of the relatively quiet surrounds typical of rural settings. Along the Olympic Highway, a reasonably moderate level of traffic consisting of light and heavy vehicles would contribute most to this existing environment.

With consideration of the Transport Construction and Maintenance Noise Estimator, the noise category based on AS 1055.3-1997 is R1. Based on R1, relative background noise levels (RBL (LA90) during the day would be 40 dBA, 35 dBA during the evening, and 30 dBA during the night. It is expected that the noise levels experienced at the sensitive receivers would be lower than this, given that they are a further distance from the existing road pavement. Background noise levels near the proposal are considered to be moderate with consideration of the proximity to the road.

6.6.2 Potential impacts

Construction

Work associated with the proposal would be carried out near residences located in a rural setting but at varied distances and aspects from the construction work. Construction activities would likely result in an increase in noise levels for residences located in close proximity due to the operation of construction machinery. The *Interim Construction Noise Guidelines* (2009) sets out management levels for construction noise while the NSW EPA *Road Noise Polic*y (2011) guides the road traffic noise assessments.

Noise impacts associated with the proposal would only occur for the construction period. Therefore, the potential noise levels as a result of the proposed work would be considered the worst-case scenario at the closest receiver. Additionally, the noise levels of individual machinery and/or activities would be below the interim guidelines and it is unlikely that all plant would be used at the same time. Therefore, any potential impacts are unlikely to be significant in the short term. With thousands of potentially sensitive receivers along the proposal length, this REF includes an assessment not on an individual receiver, but to identify a distance for when notification and verification measures during standard working hours are not required.

To identify when additional measures are required, this REF has assessed the representative distance for various scenarios based on the R1 representative noise environment for when notification and verification measures during standard hours are not required (Table 6-3). Based on Table 6-3, any sensitive receivers that are less than the distances provided, would require notification and verification.

Table 6-3: Representative distance identified using the Transport Construction and Maintenance Noise Estimator and adopting the R1 noise environment assuming line of site for when no additional mitigation measures are needed for work in standard hours

SCENARIO	Representative Distance for when no additional mitigation measures (notification and verification) are needed for work in Standard hours (metres)
Site establishment	132
Compound site establishment	181
Compound operation	121
Corridor clearing	211
Utility, property and service adjustment	143
Drainage infrastructure	132
Bulk earthworks	246
Profiling	154
Local road works	195
Paving/asphalting	112
Road furniture installation	84

Operation

It should also be noted that there will be some operational noise from the audio tactile line marking (ATLM). However, no ATLM would be placed within 200 metres of a residence in accordance with the Installation of Audio Tactile Linemarking Technical Direction (TTD 2020/04).

6.6.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Noise and vibration	• Works would be carried out during normal working hours (ie, 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). OOHW may also	Project Engineer/Works Supervisor	Construction	Section 4.6 of QA *G36 Environment Protection*

Impact	Environmental safeguards	Responsibility	Timing	Reference
	be required and would be managed in accordance with Transport guidelines. • Noise impact will be minimised in accordance with Transport Noise Mitigation Guidelines • Measures including allowing adequate distance that rollers can come to adjacent buildings and/or using non-vibrating rollers will be used to minimise or prevent vibration impact • All plant must be shut down when not in use and parked / started as far as possible from sensitive receivers • Where practical, site noise must be minimised including radio use, yelling, impact noise, simultaneous noise and plant operation.			
Noise and vibration	All sensitive receivers (eg schools, local residents) likely to be affected will be notified prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: • the project • the construction period and construction hours • contact information for project management staff • complaint and incident reporting • how to obtain further information.	Project Engineer	Detailed design / pre-construction	

6.7 Aboriginal cultural heritage

6.7.1 Existing environment

An extensive site search was conducted of the Aboriginal Heritage Information Management System (AHIMS) database on the 22th March 2021 by Heritage NSW. The search area was a buffer of 1km either side of the Olympic Highway.

It must be noted that the number of sites physically located within the road corridor may be significantly different to what is recorded on AHIMS. This is the result of errors in the translation of site coordinates from earlier mapping systems, as well as the lack of spatial information recorded on AHIMS that shows the physical extent of site boundaries. For example, the GPS coordinates of a site recording may show that the site is located outside the road reserve, however, the actual dimensions of the site boundary may extend within the reserve. As such, Lantern Heritage has expanded the limits of the AHIMS search results to include sites within a 100m buffer of proposed impacts. This brings the total number of sites recorded within the road reserve and within 100m of proposed impacts to 35.

The existing environment is described in detail in Appendix 4.

6.7.2 Potential impacts

Construction

Various aspects of the proposed works for the Olympic Highway project have the potential to result in direct and/or indirect harm to 35 recorded AHIMS sites. Table 11 of Appendix 4 provides a summary of the anticipated impacts in terms of where sites are relative to the road reserve. This impact assessment considers all sites located within the road reserve according to AHIMS as well as sites recording within 100m of the Olympic Highway road reserve.

As discussed previously, it must be noted that the number of sites physically located within the road corridor may be significantly different to what is recorded on AHIMS. This is the result of errors in the translation of site coordinates from earlier mapping systems as well as the lack of spatial information relating to site boundaries. As such, Lantern is taking a conservative approach to considering the sites that may be impacted by the proposed works and including sites within 100m of proposed tree removal and road improvements.

Areas of sensitivity were mapped by Lantern Heritage and provided in Appendix 4 and these have been used to develop safeguards in accordance with the Transport PACHCI procedure.

A PACHCI Stage 1 assessment was carried out by the Transport Aboriginal Cultural Heritage Officer between August 2022 and October 2022 (Appendix 6). This assessment concluded that the proposed work is unlikely to have an impact on Aboriginal cultural heritage.

Operation

No operational impacts are likely.

6.7.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Aboriginal Heritage	• *The Standard Management Procedure - Unexpected Heritage Items* (Roads and Maritime, 2015) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. This applies where Transport does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place • Work will only re-commence once the requirements of that Procedure have been satisfied.	Project Engineer	During construction	Section 4.9 of QA *G36 Environment Protection*

6.8 Non-Aboriginal heritage

6.8.1 Methodology

To enable an understanding of the existing environment, a search of relevant online databases was carried out in August 2021. The databases consulted included:

- EPBC Act Protected Matters Search Tool (Appendix 6) within a 10 kilometres radius of the proposal (DoE, 2021)
- Australian Heritage Database (searches of Albury LGA, Wagga Wagga LGA, Junee LGA, Greater Hume LGA, Lockhart LGA, Cootamundra LGA, Young LGA (Hilltops not acknowledged in database) and Cowra LGA and using the term 'Olympic Way, and Olympic Highway') (AHPI, 2021)
- State Heritage Inventory (using the term 'Olympic Way and Olympic Highway')
- s.170 NSW State Agency Heritage Register, using the term 'Olympic Way and Olympic Highway' (OEH, 2021c).

The relevant results of the searches are provided in Appendix 5.

6.8.2 Existing environment

Along and within close proximity to the Olympic Highway, 117 heritage items were identified from the NSW State Heritage Inventory which includes local government and state government listings. Additional listings were also identified on the Australian Heritage Database. By removing the listings that are located outside of the proposal study area (ie, within some towns), 18 items are of potential relevance (Table 6-5).

Table 6-4: Non-aboriginal heritage items, their listing status and relevant section of the proposal

Item Name	Listing Status	Relevant Section of the proposal
Koorawatha Water Tank	Young LEP	Section 3
Koorawatha Hotel	Young LEP	Section 3
Crowther War Memoria Wildman Park	Young LEP	Section 3
Woodonga Uniting Church (former)	Young LEP	Section 3
Phil Holmes Packing Shed	Young LEP	Section 3
Mackay Park, Barry Grace Oval, trees (not buildings)	Cootamundra LEP	Section 2
Presbyterian Church Wallendbeen (former)	Cootamundra LEP	Section 2
Jindalee Church (former)	Cootamundra LEP	Section 2
Lebanese Graves, Cootamundra Cemetery	Cootamundra LEP	Section 2
Cootamundra former No 3 AIFD (World War 2 Aviation Fuel Depot)	State Heritage Register	Section 2
Flour mill – brick buildings	Cootamundra LEP	Section 2
Bethungra Spiral	State Heritage Register	Section 2
Yathella Park	Junee LEP	Section 2

Item Name	Listing Status	Relevant Section of the proposal
Brucedale Hall and Tennis Courts	Wagga Wagga LEP	Section 2
Brucedale Public School (former)	Wagga Wagga LEP	Section 2
Holy Family Chapel	Wagga Wagga LEP	Section 2
Hopevale	Wagga Wagga LEP	Section 2
Gerogery Railway Station Group	State Heritage Register	Section 1

6.8.3 Potential impacts

Construction

The proposed activity is located fully within the existing road reserve and so in most cases, the proposal is unlikely to have a significant effect on heritage items or curtilages of heritage items. Additionally, no stockpile or compound sites would be located on land identified as heritage items.

However, one heritage item, the Bethungra Spiral, a State Heritage item is located both adjacent to and it the curtilage extends into the road reserve of the Olympic Highway. Any proposal for work in this location would need to be assessed with a Historic Heritage Assessment. A second State Heritage Item, the Gerogery Railway Station Group, is located directly adjacent to the proposal. However, the curtilage of that item does not appear to include the road reserve. All stockpiling of materials should avoid the curtilage of any heritage item.

Both state heritage items are located beyond the boundaries of the proposal footprint, so are unlikely to be impacted.

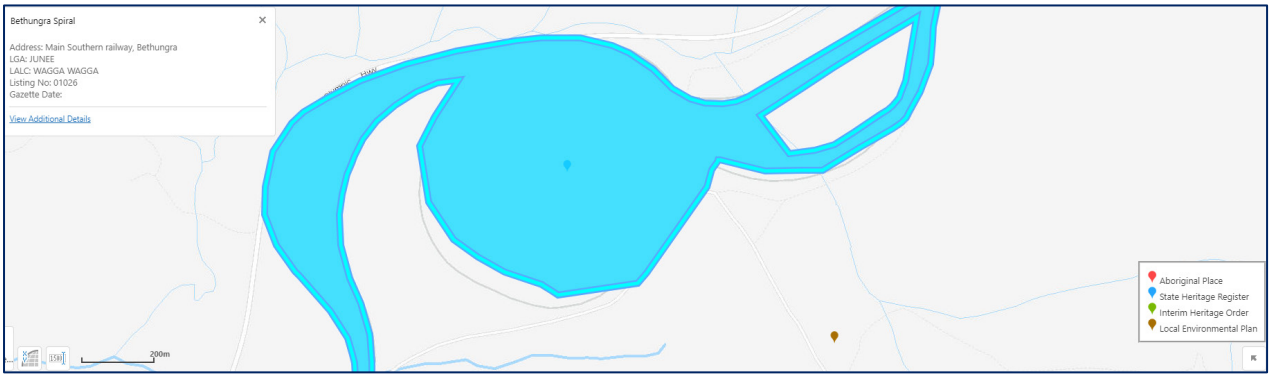


Figure 6-7: Extract from the Bethungra Spiral heritage listing on the State Heritage Register showing boundary of the curtilage extending onto the Olympic Highway

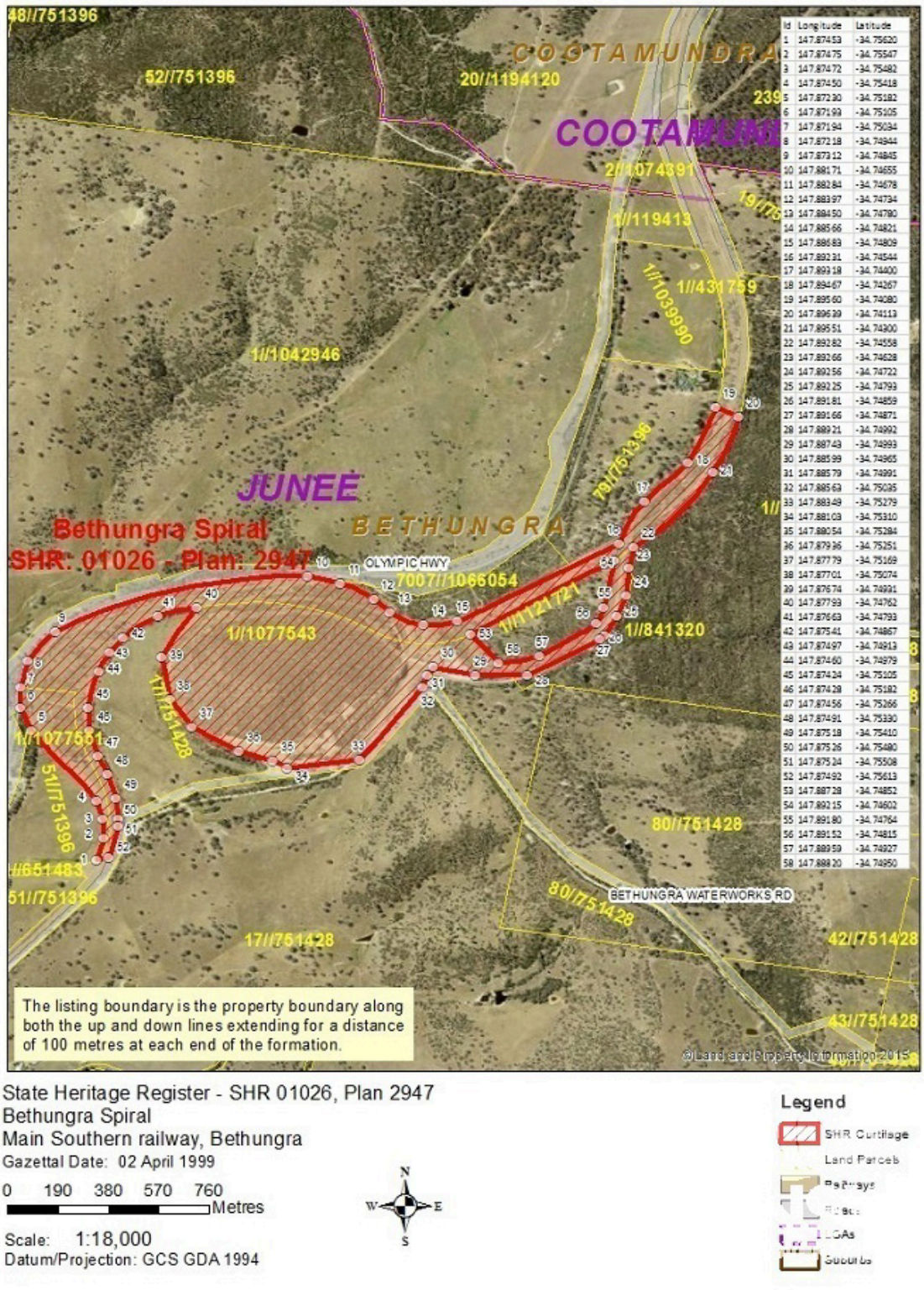


Figure 6-8: Extract from the Bethungra Spiral heritage listing on the State Heritage Register showing boundary of the curtilage extending onto the Olympic Highway over an air photo.

Operation

There would be no operational impacts as a result of the proposal.

6.8.4 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Non-Aboriginal heritage	• No machinery or materials for the proposal would be placed near any heritage item listed in Table 6-5. • Should any impact, including intrusion into the curtilage of the Bethungra Spiral or Gerogery Railway Station Group State Heritage Items being proposed, a Heritage Assessment would be required. • *The Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. • Work will only re-commence once the requirements of that Procedure have been satisfied.	Project Engineer	Detailed design / pre-construction	Section 4.10 of QA *G36 Environment Protection*

6.9 Landscape character and visual impacts

6.9.1 Existing environment

The existing environment and the potential impact of the proposal is considered in the context of the Transport *Landscape character and visual amenity Guidance Note* (EIA-N04).

Landscape Character

The landscape character is predominantly an open modified landscape that has been shaped by historical clearing and generally consists of agricultural land with scattered native vegetation and non-native vegetation. As with many areas in the South-west Slopes region, the road corridor in many instances contains the majority of native vegetation in the direct vicinity of the highway. However, in some areas along the proposal, extensive stands of native vegetation do occur.

Structures within the landscape generally comprise dwellings and agricultural sheds. The Olympic Highway generally runs north-south through this rural landscape. Examples of the general landscape are provided (Figures 6-9 to 6-12).

Figure 6-9: The general landscape south of Gerogery

Figure 6-10: The general landscape between Wagga Wagga and Junee

Figure 6-11: The general landscape north of Bethungra

Figure 6-12: The general landscape near Wallendbeen

Visual Catchment

The visual catchment of the proposed work is defined by the area within which the work would be clearly visible. Topography and large tracts of vegetation has an influence on the visual catchment and in many parts of the proposal, the land is generally undulating and has some native vegetation.

For the purpose of this REF, the primary zone is considered the area that includes properties in close proximity to the site of the proposed work as well as immediately adjacent the site to road users. The secondary zone covers properties and places that will have distant views of the proposed work.

6.9.2 Potential impacts

Construction

Landscape Character

The proposal would be visible to motorists travelling on the road and those in adjoining properties. However, these impacts would be minimal in the context of the wider landscape. The magnitude of the project is therefore considered to be low, giving a rating of low impact on landscape character.

Visual Catchment

The potential level of impacts is detailed in Table 6-6. This table details the magnitude of the proposed work in terms of visual change in the landscape, as well as the degree of sensitivity based on the quality of the view. A rating is then given based on magnitude and sensitivity.

Table 6-5: Summary of potential impacts

Setting	Magnitude	Sensitivity	Rating
Landscape Character	Low	Moderate	Low
Visual Catchment	Low	Moderate	Low

The potential visual amenity impacts of the proposed work would include the removal of vegetation (native and introduced) and exposed soil surfaces. The removal of native vegetation (trees and groundcover) would expose areas of bare soils, which would represent a short-term, temporary change to visual amenity while regeneration occurs. Exposure of soils can also increase the potential for weeds to spread due to the disturbance which is often beneficial to many of these species. The properties most affected by the proposed work are those in the primary zone and those directly adjacent to the proposal. Other viewpoints within the primary zone should experience low impact largely due to landscape character and the presence of screening vegetation.

Residents and road users would be the main receivers of these changes to the visual amenity. Road users would only be subject to fleeting views as they pass the proposal. Given these factors, the magnitude of the potential impact is considered to be low overall.

The proposed works are unlikely to degrade the existing landscape character of the locality, given the relatively minor nature of the proposal in context of the surrounding land and the landscape which covers a proposal length of 318 kilometres.

Operation

There would be no operational impacts as a result of the proposal.

6.9.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Landscape character and visual impact	Landscaping is to be managed in accordance with Roads and Maritime Landscape guideline, 2013		Post-construction	

6.10 Property and land use

6.10.1 Existing environment

Land use along the Olympic Highway is varied, particularly in the context of the long length of this proposal (318 kilometres). The existing land tenure includes freehold, leasehold, crown, with the majority of land adjacent to the Olympic Highway being used for agricultural purposes (zoned RU1).

6.10.2 Potential impacts

Construction

The current proposal does not include any plans for property acquisition and property and land use adjacent to the Olympic Highway road reserve is not anticipated to change during construction.

Operation

It is unlikely that any operational impacts would occur as a result of the proposal.

6.10.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Property acquisition	Should any property acquisition be needed, all property acquisition will be carried out in accordance with the *Land Acquisition Information Guide* (Transport for NSW, 2012) and the *Land Acquisition (Just Terms Compensation) Act 1991.*	Project manager	Pre-construction and construction	

6.11 Socio-economic

6.11.1 Existing environment

The Olympic Highway is an important freight haulage road and therefore has a high proportion of heavy vehicle usage. Primarily the highway is for interstate and regional commuter travel and for goods brought along the Olympic Highway to Sydney including fresh produce from the region.

While the Olympic Highway along the 318-kilometre length of the proposal has extensive land use, the dominant land use is agricultural grazing and cropping. Numerous main roads and local roads intersect the Olympic Highway, and there are likely to be thousands of property access points along the proposal length. Closer to towns, the Olympic Highway is likely to have daily commuters travelling to Wagga Wagga, Junee, Cootamundra, Young, Cowra and other towns and regional centres for work.

Nine roadside memorials were identified along the proposal (Figure 6-13). The locations of these are detailed in Appendix 3 on Figure 3-1 to Figure 3-40.

Figure 6-13: Examples of roadside memorials within the Olympic Highway road reserve

6.11.2 Potential impacts

Construction

The potential impact to socio-economic factors that are related to this proposal include the disruption to local businesses and farmers reducing their ability operate on a normal basis and delays in commuter travel times. This would be associated with the traffic disruptions caused by the proposed work.

These disruptions are considered to be minor and offset by the improvement in the road safety which would increase safety of the road in the long term. The mitigation measures to minimise the impact including a traffic management plan have been considered further in Section 6.4 - Traffic and Transport.

Any potential impact to any tribute would only be in accordance with the Transport *Roadside Tribute Policy (PN148)*.

Operation

It is unlikely that any operational impacts would occur as a result of the proposal.

6.11.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Socio-economic	Potential impact to any roadside tribute must only be in accordance with the Transport Roadside Tribute Policy (PN148).	Project Engineer/Work Supervisor	Pre-construction	
Socio-economic	All complaints are to be recorded on a complaint register and attended to promptly	Project Engineer/Work Supervisor	Construction	
Socio-economic	Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner.	Project Engineer/Work Supervisor	Construction	
Socio-economic	Local council will be consulted prior to removal of any native tree plantings	Project Engineer/Work Supervisor	Pre-construction	

6.13 Other impacts

6.13.1 Existing environment and potential impacts

Environmental factor	Existing environment	Potential impacts
Air quality	A review of the National Pollutant Inventory website (http://www.npi.gov.au) revealed that there are no listed sources of pollution within the locality of the proposal. Given that there are no pollution sources listed in the locality, there are unlikely to be any large scale facilities that affect air quality within the vicinity of the proposal. It is likely that dust and exhaust fumes from vehicular traffic from the Olympic Highway would be the main source of air pollution in the vicinity of the proposal given the rural setting. Accordingly, air quality within the vicinity of the proposal is considered to be moderate to good.	The proposal would be unlikely to generate significant dust or air quality impact. Small quantities of dust could occur from cutting and filling activities. Stockpiled material may also generate dust. There is the potential that a lime spreader would be utilised where needed for the proposal. Levels of dust are unlikely to impact any private residences. Construction equipment and plant used on site would emit exhaust fumes and would contribute to local air quality. However, in the context of the existing vehicular movements along the Olympic Highway, this is expected to be negligible.
Waste	Transport are committed to ensuring responsible management of unavoidable waste and to promoting the reuse of such waste through appropriate measures. This is done in accordance with the resource management hierarchy principles contained in the *Waste Avoidance and Resource Recovery Act 2001*. The resource management hierarchy principles in order of priority as outlined in the *Waste Avoidance and Resource Recovery Act 2001* are: • Avoidance of unnecessary resource consumption • Resource recovery (including reuse, reprocessing,	The proposed work is expected to result in the following waste, some of which would be able to be recycled or reused: • Excess or unsuitable excavated materials • Paper and office waste from project management activities • Waste from staff and construction personnel (food, packaging) • Vegetation removed from the road corridor • Redundant barrier rail • Waste concrete removed from culverts

Environmental factor	Existing environment	Potential impacts
	recycling and energy recovery) • Disposal. By adopting the above principles, Transport encourages the most efficient use of resources and reduces cost and environmental harm in accordance with the principles of ESD.	The proposed work would result in the use of a number of resources, including but not limited to: • Bitumen • Concrete • Select fill • Water • Resources associated with the operation of construction machinery, and motor vehicles.

6.13.2 Safeguards and management measures

Table 6-6 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Air quality	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or OEH guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces.	Project Engineer/Works Supervisor	Detailed design / pre-construction	Section 4.4 of QA *G36 Environment Protection*
Waste	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 project • classification of wastes and management options (re-use, recycle, stockpile, disposal) • statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting. The WMP will be prepared taking into account the *Environmental Procedure - Management of Wastes on Transport for NSW Land* (Transport for NSW, 2014) and relevant Transport for NSW Waste Fact Sheets.	Project Engineer	Detailed design / pre-construction	Section 4.2 of QA *G36 Environment Protection*
Waste	Resource management hierarchy principles will be followed: - Avoid unnecessary resource consumption as a priority. - Recover resources as far as is practicable (including reuse of materials, reprocessing, and recycling and energy recovery). - Disposal is undertaken as a last resort (in accordance with the Waste Avoidance and Resource Recovery Act 2001).	Project Engineer/Works Supervisor	Construction	

Impact	Environmental safeguards	Responsibility	Timing	Reference
Waste	• Bulk project waste (eg fill) sent to a site not owned by Transport (excluding EPA licensed landfills) for land disposal is to have prior formal written approval from the landowner in accordance with Transport Environment Technical Direction ETD 2015l020 • If coal tar asphalt is identified and is to be removed, it is to be disposed of to landfill in accordance with Transport Environmental Direction No.21 – Coal Tar Asphalt Handling and Disposal. • All waste will be disposed of at appropriately approved and licensed facilities. • Cleared weed free vegetation will be mulched and reused on-site to stabilise disturbed soils where possible. Weedy mulch will either be composted to sterilise propagules and seeds, or not reused. • Waste will not be burned at the site • All wastes will be managed and disposed of in accordance with the Waste Classification Guidelines (DECC 2008b) and managed in accordance with the POEO Act • Garbage receptacles will be provided and recycling of materials encouraged. Rubbish will be transported to an appropriate waste disposal facility • Where appropriate, excess roadside materials will be disposed of according to the following (in order): - Transfer to nearby Transport projects for immediate use. - Transfer to an approved Transport stockpile site for future use during projects or routine maintenance. - Transfer to a Transport approved site for reuse on concurrent private/local government project. - Disposal at an approved materials recycling or waste disposal facility. - As otherwise provided for by the relevant waste legislation. • Waste material, other than vegetation and tree mulch, will not be left on site once the works have been completed.	Project Engineer/Works Supervisor	Construction	

6.14 Cumulative impacts

6.14.1 Broader program of work

The proposal is part of a broader program of work to carry out safety improvement work along the full length of the Olympic Highway. This would result in a significant safety improvement for road users.

6.14.2 Potential impacts

Environmental factor	Construction	Operation
Biodiversity	Impacts to vegetation for other proposals along the Olympic Highway is likely to occur as a result of ongoing safety improvement works. This would be both permanent and temporary impacts.	It is unlikely that cumulative impact from operations would occur.

6.14.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Biodiversity	Biodiversity impacts would be mitigated or offset in accordance with the Transport Biodiversity Policy (2022).	Project Engineer	During the course of safety improvements along the Olympic Highway	

7. Environmental management

7.1 Environmental management plans (or system)

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

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

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by the Transport Environment and Sustainability Manager, South West 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*, QA Specification *G10 – Traffic Management.*

7.2 Summary of safeguards and management measures

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

Table 7-1: Summary of safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport Environment and Sustainability Manager prior to commencement of the activity. As a minimum, the CEMP will address the following: • any requirements associated with statutory approvals • details of how the project will implement the identified safeguards outlined in the REF • issue-specific environmental management plans • roles and responsibilities • communication requirements • induction and training requirements • procedures for monitoring and evaluating environmental performance, and for corrective action • reporting requirements and record-keeping • procedures for emergency and incident management • procedures for audit and review. The endorsed CEMP will be implemented during the undertaking of the activity.	Contractor / Transport for NSW project manager	Pre-construction / detailed design	
GEN2	General - notification	All businesses, residential properties and other key stakeholders (eg schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor / Transport for NSW project manager	Pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
GEN3	General – environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular "toolbox" style briefings. Site-specific training will be provided to personnel engaged in activities or areas of higher risk.	Contractor / Transport for NSW project manager	Pre-construction / detailed design	
BIO1	Biodiversity	Native vegetation removal will be minimised through detailed design.	Project Engineer	Detailed design	
BIO2		Only vegetation assessed within this BA is to be removed. Should any additional clearing be necessary, further onsite assessment is required	Transport	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO3		Parking options should be limited to existing hard stand areas or within any area mapped as Pavement/Highly disturbed or Cleared land	Contractor	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO4		Vegetation removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO5		Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees.	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO6		Biodiversity impacts would be mitigated or offset in accordance the Transport Biodiversity Policy (2022) and Transport tree and hollow replacement guideline (2022)	Project Engineer	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
BIO7		No clearing of any habitat as identified as Critical for Crimson Spider Orchid would occur (Figure 3-41 of BA, Appendix 3)	Transport	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO8		Removal of any HBT would only be carried out in accordance with a HBT Removal Procedure. The Procedure must specifically include actions to minimise potential impacts to Superb Parrot, Squirrel Glider and microchiropteran bats and must include procedures for supervision, salvage and relocation by a suitable qualified and experienced person.	Transport	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO9		Habitat removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO10		The unexpected species find procedure is to be followed under *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) if threatened fauna, not assessed in the biodiversity assessment, are identified in the proposal site.	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO11		Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Transport	Pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO12	Waterways and water quality	No work is to be carried out within any of the waterways within the road reserve the subject of the proposed work	Transport	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*
BIO13		Aquatic habitat will be protected in accordance with *Guide 10: Aquatic habitats and riparian zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) and *Section 3.3.2 Standard precautions and mitigation measures* of the *Policy and guidelines for fish habitat conservation and management Update 2013* (DPI (Fisheries NSW) 2013).	Transport	Detailed design / pre-construction	Section 4.8 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
BIO14	Injury and mortality	Fauna will be managed in accordance with *Guide 9: Fauna handling* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011)	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO15	Invasion and spread of weeds	Weed species will be managed in accordance with *Guide 6: Weed management* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Transport	Construction	Section 4.8 of QA *G36 Environment Protection*
BIO16	Invasion and spread of pathogens and disease	Pathogens will be managed in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Contractor	Construction	Section 4.8 of QA *G36 Environment Protection*
WAQ1	Water Quality	• There must be no release of dirty water into drainage lines and/or waterways • Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) must be carried out on a regular basis to identify any potential spills or deficient erosion and sediment controls • Water quality control measures must be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways Construction Water will be managed within sustainable limits of the area and catchment. It may be necessary to reduce or limit water extraction and some construction activities if water supply is heavily constrained. Contact the Regional (Program) Environmental Manager when water supply becomes an issue and direction will be provided	Contractor	Construction	
WAQ2	Accidental spill	A site specific emergency spill plan will be developed, and include spill management measures in accordance with the Transport for NSW *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport for NSW and EPA officers).	Contractor	Detailed design / Pre-construction	Section 4.3 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
WAQ3	Accidental spill	• An Emergency spill kit must be kept onsite at all times. All staff must be made aware of the location of the spill kit and trained in its use • If an incident (e.g. spill) occurs, the Transport *Environmental Incident Classification and Management Procedure* would be followed and the Transport Contract Manager notified as soon as practicable.	Transport	Construction	Section 4.3 of QA G36 Environment Protection
WAQ4	Chemical runoff	• Fuels, chemical and liquids must be stored in an impervious bunded area a minimum of 50 metres away from: – Rivers, creeks, or any areas of concentrated water flow. – Flooded or poorly drained areas. – Slopes above 10%. • Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g. not table drains) and not cause water pollution • Refuelling of plant and equipment must occur in impervious bunded areas located a minimum of 50 metres away from drainage lines of waterways unless within a bunded stockpile site • Vehicle wash down and/or cement truck washout must occur in a designated bunded area • Moveable plant such as pumps and generators must be bunded.	Contractor	Construction	
GRW	Groundwater	• No specific safeguards or management measures are considered necessary.			
SOI1	Erosion and sediment	Erosion and sediment control measures must be implemented and maintained to: • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces	Project Engineer/Works Supervisor	Construction	Section 4.3 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		• Divert clean water around the site. (In accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)).			
SOI2		Erosion and sedimentation controls must be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*
SOI3		Erosion and sediment control measures must not be removed until the work is complete and areas are stabilised	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*
SOI4		A progressive erosion and sediment control plan is to be prepared for the works.	Project Engineer/Works Supervisor	Pre-construction	Section 4.3 of QA *G36 Environment Protection*
SOI5		The maintenance of established stockpile sites during construction must be in accordance with the TfNSW Stockpile Site Management Guideline, (EMS-TG-10)	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*
SOI6	Soil contamination	If soil contamination is discovered during construction, works will cease immediately, the site will be temporarily fenced and access would be restricted. Soil sampling and analysis would be conducted to assess the extent and nature of the contamination.	Project Engineer/Works Supervisor	During construction	Section 4.3 of QA *G36 Environment Protection*
TRA1	Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Roads and Maritime, 2008). The TMP will include: • A road occupancy license (ROL) • confirmation of haulage routes	Project Engineer	Detailed design / Pre-construction	Section 4.8 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		• measures to maintain access to local roads and properties • site specific traffic control measures (including signage) to manage and regulate traffic movement • requirements and methods to consult and inform the local community of impacts on the local road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • a response plan for any construction traffic incident • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms.			
NOI1	Noise and vibration	• Works would be carried out during normal working hours (ie, 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). OOHW may also be required and would be managed in accordance with Transport guidelines. • Noise impact will be minimised in accordance with Transport Noise Mitigation Guidelines • Measures including allowing adequate distance that rollers can come to adjacent buildings and/or using non-vibrating rollers will be used to minimise or prevent vibration impact • All plant must be shut down when not in use and parked / started as far as possible from sensitive receivers Where practical, site noise must be minimised including radio use, yelling, impact noise, simultaneous noise and plant operation.	Transport	Construction	Section 4.6 of QA *G36 Environment Protection*
NOI2	Noise and vibration	All sensitive receivers likely to be affected will be notified at least 7 days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of:	Transport	Detailed design / pre-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		• the project • the construction period and construction hours • contact information for project management staff • complaint and incident reporting • how to obtain further information.			
ABR1	Aboriginal heritage	• *The Standard Management Procedure - Unexpected Heritage Items* (Roads and Maritime, 2015) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. This applies where Transport does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place • Work will only re-commence once the requirements of that Procedure have been satisfied.			
HER1	Non-Aboriginal heritage	• No machinery or materials for the proposal would be placed near any heritage items as listed in Table 6-5. • Should any impact, including intrusion into the curtilage of the Bethungra Spiral or Gerogery Railway Station Group State Heritage Items being proposed, a Heritage Assessment would be required. • *The Standard Management Procedure - Unexpected Heritage Items* (Roads and Maritime, 2015) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. • Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Detailed design / pre-construction	Section 4.10 of QA *G36 Environment Protection*
LAN1	Landscape character and visual impact	The works area would be progressively rehabilitated where required	Transport	Post-construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
ACQ1	Property acquisition	Should any property acquisition be needed, all property acquisition will be carried out in accordance with the Land Acquisition Information Guide (Transport for NSW, 2012) and the Land Acquisition (Just Terms Compensation) Act 1991.	Transport for NSW project manager	Pre-construction and construction	
SOC1	Socio-economic	Potential impact to any roadside tribute must only be in accordance with the Transport Roadside Tribute Policy (PN148).	Transport	Pre-construction	
SOC2		All complaints are to be recorded on a complaint register and attended to promptly			
SOC3		Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner.			
SOC4		Local council will be consulted prior to removal of any native tree plantings	Project Engineer/Work Supervisor	Pre-construction	
AIR1	Air quality	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or OEH guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces.	Contractor	Detailed design / pre-construction	Section 4.4 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
WAS1	Waste	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 project • classification of wastes and management options (re-use, recycle, stockpile, disposal) • statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting. The WMP will be prepared taking into account the *Environmental Procedure - Management of Wastes on Roads and Maritime Services Land* (Roads and Maritime, 2014) and relevant Transport Waste Fact Sheets.	Contractor	Detailed design / pre-construction	Section 4.2 of QA *G36 Environment Protection*
WAS2		Resource management hierarchy principles will be followed: - Avoid unnecessary resource consumption as a priority. - Recover resources as far as is practicable (including reuse of materials, reprocessing, and recycling and energy recovery). - Disposal is undertaken as a last resort (in accordance with the Waste Avoidance and Resource Recovery Act 2001).	Project Engineer/Works Supervisor	Construction	
WAS3		• Bulk project waste (eg fill) sent to a site not owned by Transport (excluding EPA licensed landfills) for land disposal is to have prior formal written approval from the landowner in accordance with Transport Environment Technical Direction ETD 2015l020 • If coal tar asphalt is identified and is to be removed, it is to be disposed of to landfill in accordance with Transport Environmental Direction No.21 – Coal Tar Asphalt Handling and Disposal. • All waste will be disposed of at appropriately approved and licensed facilities. • Cleared weed free vegetation will be mulched and reused on-site to stabilise disturbed soils where possible. Weedy mulch will either be	Project Engineer/Works Supervisor	Construction	

No.	Impact	Environmental safeguards	Responsibility	Timing	Reference
		composted to sterilise propagules and seeds, or not reused. • Waste will not be burned at the site • All wastes will be managed and disposed of in accordance with the Waste Classification Guidelines (DECC 2008b) and managed in accordance with the POEO Act • Garbage receptacles will be provided and recycling of materials encouraged. Rubbish will be transported to an appropriate waste disposal facility • Where appropriate, excess roadside materials will be disposed of according to the following (in order): - Transfer to nearby Transport projects for immediate use. - Transfer to an approved Transport stockpile site for future use during projects or routine maintenance. - Transfer to a Transport approved site for reuse on concurrent private/local government project. - Disposal at an approved materials recycling or waste disposal facility. - As otherwise provided for by the relevant waste legislation. • Waste material, other than vegetation and tree mulch, will not be left on site once the works have been completed.			
	Cumulative impact – biodiversity	Consideration should be given to supplementary or compensatory measures for biodiversity along the Olympic Highway as required by the Transport Biodiversity Offset Policy (2022).	Transport	During the course of safety improvements along the Olympic Highway	

7.3 Licensing and approvals

A road occupancy licence (ROL) would be required prior to any work commencing.

Water extraction license (s) may be required from the Natural Resources Access Regulator (NRAR) and would be obtained where necessary in consultation with the Transport Environment and Sustainability Manager

8. Conclusion

8.1 Justification

The “do nothing” option would result in no impact to vegetation, threatened species and the surrounding environment. It also means that the safety of the Olympic Highway would not be improved for road users in the foreseeable future. Transport has an obligation to provide safe conditions for road users. The proposal would improve the safety of the Olympic Highway by carrying out the proposed work.

This overall improvement in safety is considered to outweigh the potential impact associated with the proposal and therefore the proposal is justified.

8.2 Objects of the EP&A Act

Object	Comment
1.3(a) To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State’s natural and other resources.	The proposal encourages proper management of the road network and would improve the social and economic welfare of the community by improving the safety of the Olympic Highway.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	Ecologically sustainable development is considered in Sections 8.2.1 – 8.2.4 below.
1.3(c) To promote the orderly and economic use and development of land.	Not relevant to the proposal.
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the proposal.
1.3(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	This REF lists safeguards and management measures to mitigate and minimise the potential impact on the environment including native animals and plants including threatened species.
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	Not relevant to the proposal.
1.3(g) To promote good design and amenity of the built environment.	Not relevant to the proposal.
1.3(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	Not relevant to the proposal.
1.3(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	Not relevant to the project.

Object	Comment
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	Not relevant to the proposal.

8.2.1 Ecologically sustainable development

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

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

The precautionary principle

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

This REF has been prepared using the precautionary principle. That is, if threats are perceived as possibly leading to serious or irreversible environmental damage, then either the non-development of the proposal would occur, or that the proposal would need to be modified to ensure that such threats do not exist. Comprehensive field survey and the subsequent identification of biodiversity values including threatened ecological communities and threatened species habitat, has informed the final design of the proposal and led to minimising potential impacts to threatened biota.

This has been the approach in relation to proposed safeguards detailed in Chapter 6 and summarised in Chapter 7.

Intergenerational equity

Social equity is concerned with the distribution of economic, social and environmental costs and benefits. Inter-generational equity introduces a temporal element with a focus on minimising the distribution of costs to future generations. The proposal would lead to significant safety improvements to road users of the Olympic Highway while maintaining environmental values within the road corridor.

The proposal would not impact on natural or cultural features to a level that would compromise the health, diversity or productivity of the environment to a level that would impact on future generations.

Conservation of biological diversity and ecological integrity

This principle requires that "*costs to the environment should be factored into the economic costs of a project*".

Throughout the REF process, field survey results have informed design to minimise impacts to the environment where possible. The REF has examined the environmental consequences of the proposal and identified mitigation measures for areas which have the potential to experience adverse impact. Requirements imposed in terms of implementation of these mitigation measures would result in an economic cost to Transport. The implementation of mitigation measures would increase both the capital and operating costs of the proposal. This signifies that environmental resources have been given appropriate valuation.

The design for the proposal has been developed with an objective of minimising potential impact on the surrounding environment. This indicates that the concept design for the proposal has been developed with an environmental objective in mind.

Improved valuation, pricing and incentive mechanisms

The principle of internalising environmental costs into decision making requires consideration of all environmental resources which may be affected by the carrying out of a project, including air, water, land and living things. This REF has considered abiotic and biotic ecosystem factors together with social values in identifying potential impact and providing a range of environmental safeguards to minimise the impact of the proposal.

These factors ensure that the proposed activity is consistent with the principles of ESD.

8.3 Conclusion

The proposal to carry out a range of safety improvement work on the Olympic Highway (MR78) between Albury and Cowra is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

This has included consideration (where relevant) of conservation agreements and plans of management under the NPW Act, biodiversity stewardship sites under the BC Act, wilderness areas, areas of outstanding value, impacts on threatened species and ecological communities and their habitats and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Federal EPBC Act.

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal as described in the REF best meets the project objectives but would still result in some impacts on native vegetation. Safeguards and management measures as detailed in this REF would ameliorate or minimise these expected impacts. The proposal would also improve road user safety of the Olympic Highway. On balance the proposal is considered justified and the following conclusions are made.

Significance of impact under NSW legislation

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required. The proposal is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required.

Significance of impact under Australian legislation

The proposal is not likely to have a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*. A referral to the Australian Department of Agriculture, Water and the Environment is not required.

9. Certification

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

Steve Sass

Director

EnviroKey Pty. Ltd.

Date: 20/11/2022

I have examined this review of environmental factors and accept it on behalf of Transport for NSW.

Jesse Baaner

Project/Contract Manager

Project Services South Date: 20/12/2022

10. References

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OEH 2014. Framework for Biodiversity Assessment: NSW Biodiversity Offsets Policy for Major Projects. ***http://www.environment.nsw.gov.au/resources/biodiversity/140675fba.pdf***.

OEH 2017. State Vegetation Type Map: Western Region DRAFT v0.1 (VIS_ID 4492). ***www.data.environment.nsw.gov.au***

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OEH. 2021a. *BioNET: The website for the Atlas of NSW Wildlife: A whole-of-government system for flora and fauna sightings information* [Online]. Available: ***www.bionet.nsw.gov.au*** [Accessed].

OEH 2021b. NSW Vegetation Information System: Classification. ***http://www.environment.nsw.gov.au/NSWVCA20PRapp/default.aspx***.

OEH 2021c. State Heritage Inventory. ***http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx***.

OEH 2021d. Threatened species, populations and ecological communities of NSW. *NSW Office of Environment & Heritage.* , ***www.threatenedspecies.environment.nsw.gov.au***.

Terms and acronyms used in this REF

Term / Acronym	Description
BC Act	*Biodiversity Conservation Act 2016* (NSW).
CEMP	Construction environmental management plan
EIA	Environmental impact assessment
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW). Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	*Fisheries Management Act 1994* (NSW)
Heritage Act	*Heritage Act 1977* (NSW)
ISEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LoS	Level of Service. A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers.
MNES	Matters of national environmental significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
Transport	Transport for NSW
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
CM SEPP	State Environmental Planning Policy (Coastal Management) 2018
QA Specifications	Specifications developed by Transport for NSW for use with road work and bridge work contracts let by Transport for NSW.

Appendix 1

Consideration of clause 228(2) factors and matters of national environmental significance and Commonwealth land

Clause 228(2) Checklist

In addition to the requirements of the *Is an EIS required?* guideline (DUAP 1995/1996) and the *Roads and Related Facilities EIS Guideline* (DUAP 1996) as detailed in the REF, the following factors, listed in clause 228(2) of the Environmental Planning and Assessment Regulation 2000, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a) Any environmental impact on a community? Positive socio-economic impact on freight and commuters using the Olympic Highway (see Section 6.10). Safeguards include clear delineation of vegetation removal where vegetation to be retained would be fenced. See Section 6.1.	Minor positive/ minor negative
b) Any transformation of a locality? Removal of vegetation, excavation and fill deposition and road construction would result in a temporary reduction in visual amenity. All measures would be carried out to minimise this impact. See Section 6.9.	Minor negative – short term
c) Any environmental impact on the ecosystems of the locality? Native and non-native vegetation would be removed as part of the proposal. Safeguards include the clear delineation of the vegetation removal area. An assessment of significance has been carried out for potential threatened biota in the BA, Appendix 3. Also see Section 6.1.	Moderate negative
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? Removal of vegetation, excavation and fill deposition and construction would result in a temporary reduction in visual amenity. All measures would be carried out to minimise this impact. See Section 6.9.	Minor negative – short term
e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? Removal of vegetation, excavation and fill deposition and construction would result in a temporary reduction in visual amenity. All measures would be carried out to minimise this impact It is unlikely that this proposal would have a significant impact on visual amenity. See Section 6.9.	Minor negative -short term
f) Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974)?* There is the potential for removal a small amount of habitat and of a minor amount of potential foraging habitat for some threatened and migratory species. An assessment of the significance has been carried out in the BA, Section 6.1 and Appendix 3.	Minor negative
g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? A test of significance has been carried out, for threatened species which occur or have the potential to occur in the area in the BA, Section 6.1 and Appendix 3. The test of significance concluded that a significant impact is unlikely.	Nil
h) Any long-term effects on the environment? The proposed work would have positive long-term effects on the environment due to improvement in safety and efficiency for road users as well as the removal of dust pollution from roadside vegetation.	Long term positive
i) Any degradation of the quality of the environment?	Minor negative

Factor	Impact
The proposal would have a minimal impact on the quality of the environment. Safeguards and management measures area described in Section 6 to mitigate potential impact.	
j) Any risk to the safety of the environment? The work would increase the safety of the environment by creating a safe road environment for road users.	Long term positive
k) Any reduction in the range of beneficial uses of the environment? Vegetation removal would result in the reduction of fauna habitat however this is considered a very minor reduction of beneficial uses of the natural environment considering the marginal nature of the habitat present. See Section 6.1.	Minor negative
l) Any pollution of the environment? There is the potential for pollution of the environment however mitigation measures described in Section 6 would mitigate this potential impact.	Minor negative -short term
m) Any environmental problems associated with the disposal of waste? The proposal would not create any environmental problems associated with the disposal of waste.	Nil
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The proposal would not increase demands on resources in short supply.	Nil
o) Any cumulative environmental effect with other existing or likely future activities? Cumulative environmental effects include the improvement to the safety of this section of the Olympic Highway.	Minor negative -short term, Positive long term
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? There would be no impact to coastal processes or hazards.	Nil

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act 1999, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water, and the Environment.

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

Factor	Impact
a) Any impact on a World Heritage property?	Nil
b) Any impact on a National Heritage place?	Nil
c) Any impact on a wetland of international importance?	Nil
d) Any impact on a listed threatened species or communities? An assessment of the significance has been carried out in the BA, Section 6.1 and Appendix 3. The impact is considered to be minor and unlikely to significantly impact these species.	Minor
e) Any impacts on listed migratory species? An assessment of the significance has been carried out in the BA, Section 6.1 and Appendix 3. The impact is considered to be minor and unlikely to significantly impact these species.	Minor
f) Any impact on a Commonwealth marine area?	Nil
g) Does the proposal involve a nuclear action (including uranium mining)?	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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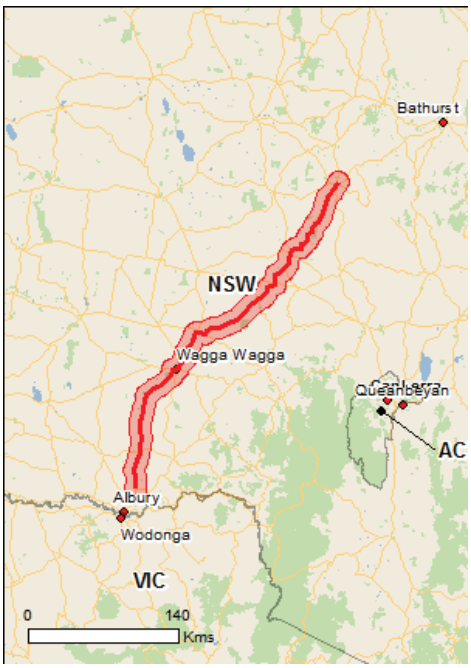

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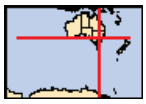

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	42
Listed Migratory Species:	12

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	12
Commonwealth Heritage Places:	1
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	11
Regional Forest Agreements:	1
Invasive Species:	43
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	600 - 700km upstream
Barmah forest	100 - 150km upstream
Gunbower forest	200 - 300km upstream
Hattah-kulkyne lakes	400 - 500km upstream
Nsw central murray state forests	100 - 150km upstream
Riverland	500 - 600km upstream
The coorong, and lakes alexandrina and albert wetland	600 - 700km upstream

Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		
Name	Status	Type of Presence
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Fish		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat likely to occur within area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Nannoperca australis Murray-Darling Basin lineage Southern Pygmy Perch (Murray-Darling Basin lineage) [91711]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat known to occur within area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Insects		
Synemon plana Golden Sun Moth [25234]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Ammobium craspedioides Yass Daisy [20758]	Vulnerable	Species or species habitat known to occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area
Austrostipa wakoolica [66623]	Endangered	Species or species habitat likely to occur within area
Brachyscome muelleroides Mueller Daisy [15572]	Vulnerable	Species or species habitat may occur within area
Caladenia arenaria Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat likely to occur within area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Prasophyllum validum Sturdy Leek-orchid, Mount Remarkable Leek-orchid [10268]	Vulnerable	Species or species habitat may occur within area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -
Commonwealth Land - Australian Broadcasting Corporation
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Australian Telecommunications Corporation
Commonwealth Land - Commonwealth Bank of Australia
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Defence Service Homes Corporation

Name
Commonwealth Land - Director of War Service Homes
Commonwealth Land - Telstra Corporation Limited
Defence - BLAMEY BARRACKS - KAPOOKA
Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Junee Post Office	NSW	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Benambra	NSW
Bendick Murrell	NSW
Dananbilla	NSW
Doodle Comer Swamp	NSW
Jindalee	NSW
Koorawatha	NSW
South West Woodland	NSW
Tabletop	NSW
The Rock	NSW
Ulandra	NSW
Young	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
Southern RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Austrocylindropuntia spp. Prickly Pears [85132]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Bethungra Dam Reserve	NSW
Doodle Corner Swamp	NSW
Lake Hume	VIC

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-33.825141 148.692956,-33.889005 148.64901,-33.930035 148.599572,-34.043903 148.56112,-34.098506 148.522667,-34.116699 148.500695,-34.148527 148.478722,-34.171254 148.478722,-34.193975 148.44027,-34.221233 148.434777,-34.230317 148.434777,-34.248481 148.412804,-34.257562 148.390832,-34.28026 148.379845,-34.28026 148.341393,-34.298414 148.308434,-34.361921 148.275475,-34.384591 148.275475,-34.411787 148.253502,-34.438973 148.23153,-34.448034 148.21505,-34.466151 148.171105,-34.502374 148.165612,-34.529532 148.171105,-34.55668 148.105187,-34.583819 148.099694,-34.619992 148.066735,-34.629032 148.039269,-34.651629 148.00631,-34.660666 147.984337,-34.692289 147.940392,-34.728413 147.90194,-34.76001 147.868981,-34.778059 147.836022,-34.791594 147.78109,-34.809637 147.753624,-34.827675 147.704186,-34.832184 147.638268,-34.854726 147.599816,-34.868248 147.583336,-34.859234 147.539391,-34.863741 147.500939,-34.877262 147.489953,-34.922314 147.473473,-34.971843 147.446007,-34.998846 147.418541,-35.039334 147.418541,-35.057323 147.396569,-35.093287 147.36361,-35.10677 147.358117,-35.111264 147.308678,-35.160679 147.303185,-35.187619 147.25924,-35.228014 147.198815,-35.245961 147.15487,-35.286326 147.094445,-35.331153 147.083458,-35.384913 147.066979,-35.443112 147.050499,-35.478906 147.039513,-35.528096 147.039513,-35.577257 147.050499,-35.630852 147.045006,-35.684411 147.03402,-35.729017 147.01754,-35.795878 146.990075,-35.840421 147.006554,-35.871586 147.006554,-35.924983 147.001061

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Appendix 2

Statutory consultation checklists

Transport and Infrastructure SEPP

Council related infrastructure or services

Issue	Potential impact	Yes / No	If 'yes' consult with	SEPP Section
Stormwater	Are the works likely to have a *substantial* impact on the stormwater management services which are provided by council?	No	-	Section 2.10
Traffic	Are the works likely to generate traffic to an extent that will *strain* the capacity of the existing road system in a local government area?	No	-	Section 2.10
Sewerage system	Will the works involve connection to a council owned sewerage system? If so, will this connection have a *substantial* impact on the capacity of any part of the system?	No	-	Section 2.10
Water usage	Will the works involve connection to a council owned water supply system? If so, will this require the use of a *substantial* volume of water?	No	-	Section 2.10
Temporary structures	Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a *minor* or *inconsequential* disruption to pedestrian or vehicular flow?	No	-	Section 2.10
Road & footpath excavation	Will the works involve more than *minor* or *inconsequential* excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	No	-	Section 2.10

Local heritage items

Issue	Potential impact	Yes / No	If 'yes' consult with	SEPP Section
Local heritage	Is there is a local heritage item (that is not also a State heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than *minor* or *inconsequential?*	No	-	Section 2.10

Flood liable land

Issue	Potential impact	Yes / No	If 'yes' consult with	SEPP Section
Flood liable land	Are the works located on flood liable land? If so, will the works change flood patterns to more than a *minor* extent?	No	-	Section 2.12
Flood liable land	Are the works located on flood liable land? (to any extent). If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance	No	-	Section 2.13

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

Public authorities other than councils

Issue	Potential impact	Yes / No	If 'yes' consult with	SEPP Section
National parks and reserves	Are the works adjacent to a national park or nature reserve, or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	No	Environment, Energy and Science, DPIE	Section 2.15
National parks and reserves	Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	No	Environment, Energy and Science, DPIE	Section 2.15
Navigable waters	Do the works include a fixed or floating structure in or over navigable waters?	No	Transport for NSW - Maritime	Section 2.15
Bush fire prone land	Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional centre or group home in bush fire prone land?	No	Rural Fire Service *[Refer to the NSW Rural Fire Service publication Planning for Bush Fire Protection (2006)]*	Section 2.15
Artificial light	Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	No	Director of the Siding Spring Observatory	Section 2.15
Defence communications buffer land	Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence	No	Secretary of the Commonwealth	Section 2.15

Issue	Potential impact	Yes / No	If 'yes' consult with	SEPP Section
	Communications Facility Buffer Map referred to in clause 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011.		Department of Defence	
Mine subsidence land	Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	No	Mine Subsidence Board	Section 2.15

Appendix 3

Biodiversity assessment

Appendix 4

Aboriginal cultural heritage constraints mapping report

Appendix 5

Non-aboriginal heritage database searches

Search Results

25 results found.

ANZ Bank (former) 500 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albury Courthouse 564 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albury Post Office 570 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albury Post Office 570 Dean St	Albury, NSW, Australia	(Listed place) Commonwealth Heritage List
Albury Public School (1861) 468 Olive St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albury Railway Station Railway Pl	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Albury Railway Station and Yard Hume Hwy	Albury, NSW, Australia	(Nomination now ineligible for PPAL) National Heritage List
Bellevue 592 Kiewa St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Bungambrawatha Creek Road Bridge Smollett St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
CML Building 499 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Civic Precinct Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Hall Next to the Town Hall Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Headmasters Cottage 653 Kiewa St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hume Dam and Pondage	Hume Weir, VIC, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Lawn Cemetery Union Rd	Albury, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Murray River Rail Bridge	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Murray Valley Flood Plain (part) Riverina Hwy	Howlong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Public School, 1892 Building 465 David St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
S M Abikhair Haberdashery Store 558-560 Olive St	Albury, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Sodens Hotel Australia 459 Wilson St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Station Masters Residence Young St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
T and G Building 555 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Technical College 502 Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Town Hall Dean St	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Turks Head Museum Wodonga Pl	Albury, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

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Search Results

14 results found.

Bimbadeen Bible College Rinkin Street	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Bradmans Birthplace 89 Adams St	Cootamundra, NSW, Australia	(Place not included in NHL) National Heritage List
Bradmans Birthplace Museum 89 Adams St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
CBC Bank (former) Wallendoon St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cootamundra Courthouse Parker St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cootamundra Drill Hall Parker St	Cootamundra, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)
Cootamundra Post Office Cooper St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cootamundra Post Office Group Cooper St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cootamundra Railway Station Hovell St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cullinga Mines Cullinga Mines Rd	Cullinga via Wallendbeen, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Flagstaff Memorial Nature Reserve	Stockinbingal, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Linda and Ernie Betts Old House 12 Hoskins St	Wallendbeen, NSW, Australia	(Nominated place) National Heritage List
Ulandra Nature Reserve	Bethungra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Westpac Bank 250 - 252 Parker St	Cootamundra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:36:32 2021

Search Results

12 results found.

ANZ Bank 125 Kendal St	Cowra, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Calare (former) 105 Brisbane St	Cowra, NSW, Australia	(Destroyed) Register of the National Estate (Non-statutory archive)
Cliefden Caves and Needles Gap Areas	Cliefden Caves via Lyndhurst, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Conimbla National Park Kangarooby Rd	Gooloogong, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cowra Courthouse Kendal St	Cowra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cowra Japanese Garden and Cultural Centre Binni Creek Rd	Cowra, NSW, Australia	(Nominated place) National Heritage List
Cowra Prisoner of War Camp (former) Evans St	Cowra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Bungerellingong via Gooloogong, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lachlan River Rail Bridge at Cowra Blayney Harden Railway Line	Cowra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lachlan River Road Bridge at Cowra (former) Mid Western Hwy	Cowra, NSW, Australia	(Removed from Register or IL) Register of the National Estate (Non-statutory archive)
Morongla Creek Cemetery Wattamondara Morongla Creek Rd	Morongla Creek via Wattamondara, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Woodstock Cemetery Woodland Remnant	Woodstock, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:37:17 2021

Search Results

13 results found.

Billabong Creek (in part) Rand Walbundrie Rd	Walbundrie, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Holbrook Conservation Area Albury St	Holbrook, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Hume Dam and Pondage	Hume Weir, VIC, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Murray Valley Flood Plain (part) Riverina Hwy	Howlong, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Pioneer Museum Urana Rd	Jindera, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Pioneer Museum Group Urana Rd	Jindera, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Railway Station Group Olympic Way	Gerogery, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
School of Arts and War Memorial Main Street	Brocklesby, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tabletop Nature Reserve	Table Top, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagners Store Urana Rd	Jindera, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Walbundrie School (former)		Walbundrie, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Woomargama Dora Dora Forest	Woomargama Dora Dora Rd	Holbrook, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Yarra Yarra Homestead and Outbuildings	Yarra Yarra Rd	Holbrook, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:35:49 2021

Search Results

14 results found.

Commercial Hotel	Lorne St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
E A Commins Building	Seignior St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hotel Junee	Seignior St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hotel Junee Group	Seignior St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Junee Courthouse	Belmore St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Junee Post Office	119 Lorne St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Junee Post Office	119 Lorne St	Junee, NSW, Australia	(Listed place) Commonwealth Heritage List
Junee Railway Station	Main St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Loftus Hotel	Main St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Railway Hotel (former)	Main St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Town Group	Lorne St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Ulandra Nature Reserve		Bethungra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Universal Provider General Store (former)	Seignior St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Westpac Bank	80 Lorne St	Junee, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:35:23 2021

Search Results

3 results found.

Cape York Peninsula Peninsula Developmental Rd	Weipa, QLD, Australia	(Nominated place) National Heritage List
St Marys Catholic Church 55 Ferrier St	Lockhart, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
The Rock Nature Reserve	The Rock, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:36:13 2021

Search Results

20 results found.

CBC Bank (former) Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Church and Cathedral Group Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Civic Group Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Estella Homestead, Outbuildings and Barn Old Narrandera Rd	Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Hambledon Homestead Hume Highway	Tarcutta, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hampden Bridge Hampden Ave	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
House Cobden La	Malebo via Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Murrumbidgee River Rail Bridge	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Police Station Sturt St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Railway Station Station Pl	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

St Andrews Manse Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Andrews Presbyterian Church Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Johns Anglican Church Church St	Wagga Wagga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
St Michaels Cathedral Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Michaels Cathedral Johnston St	Wagga Wagga, NSW, Australia	(Nomination now ineligible for PPAL) National Heritage List
St Michaels Presbytery (The Bishops House) Church St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tarcutta Hills Woodland Remnant	Tarcutta, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga South Public School Edward St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga Wagga Courthouse Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wagga Wagga Post Office (former) Fitzmaurice St	Wagga Wagga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

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Search Results

7 results found.

Dananbilla Nature Reserve		Bendick Murrell, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Monteagle Cemetery Woodland Remnant	Monteagle - Young Rd	Monteagle, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Marys Catholic Church Precinct	Cambell St	Young, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Young Courthouse (former)	Campbell St	Young, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Young Gaol (former)	Caple St	Young, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Young Public School (former)	Campbell St	Young, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Young Railway Station	Lovell St	Young, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

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Search Results

2 results found.

Railway Station Group	Olympic Way	Gerogery, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Marys Catholic Church Precinct	Cambell St	Young, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Aug 17 15:34:03 2021

Appendix 6

PACHCI Stage 1 assessments

December 2022