

Central West Orana Renewable Energy Zone - Port to Renewable Zone Road Upgrade Program

Minor works review of environmental
factors – Package 2

April 2024

Acknowledgement of Country

Transport for NSW acknowledges the Wonnarua people, the traditional custodians of the land on which the Port to Renewable Energy Zone Upgrade Program (Package 2) is proposed.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

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

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





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Approval and authorisation

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Date	29/04/2024

Minor works review of environmental factors

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1. Introduction

The purpose of the minor works review of environmental factors (REF) is to describe the proposal, to document the likely impacts of the proposal on the environment, to detail mitigation measures to be implemented and to determine whether or not the proposal can proceed. For the purposes of this work Transport for NSW (Transport) is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The description of the proposed works and assessment of associated environmental impacts has been undertaken in the context of section 171 of the Environmental Planning and Assessment Regulation 2021, Guidelines for Division 5.1 Assessments (DPE, 2022), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act).

In doing so the REF helps to fulfil the requirements of section 5.5 of the EP&A Act including that Transport 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 potential for the proposal to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters, or the environment of Commonwealth land. Where a significant impact is considered likely on nationally listed biodiversity matters, either the proposal must be reconsidered or a project REF must be prepared.

2. The proposal

2.1 Strategic background

The NSW Government is leading the development of Renewable Energy Zones (REZ) to deliver renewable energy generation and storage, supported by high voltage transmission infrastructure across NSW. REZs will play a vital role in delivering clean, affordable and reliable electricity for homes, businesses and industry in NSW to help replace the State's existing coal power stations as they come to their scheduled end of operational life.

REZs will group new renewable energy generation infrastructure into locations where it can be efficiently stored and transmitted across NSW. Five regions have been identified for the development of REZs: the Central-West Orana, South-West, New England, Hunter-Central Coast and Illawarra regions of NSW. With some of the best renewable energy resources in the world, NSW is in a unique position to benefit from emerging low-cost technologies like wind, solar, batteries and pumped hydro.

The Central West Orana Renewable Energy Zone (CWO REZ) will unlock at least three gigawatts (GW) of new network capacity by the mid-2020s and the NSW Government is proposing to increase the intended network capacity to six gigawatts. Construction of the transmission infrastructure and generation projects in the CWO REZ will require delivery of large and heavy components, most notably wind turbine components, high-voltage transformers, and synchronous condensers.

The proposed generators will use common routes to transport over-sized and/or over-mass (OSOM) components from the Port of Newcastle to the Central West Orana Renewable Energy Zone (CWO REZ). Accordingly, the NSW Government has requested that Energy Corporation (EnergyCo) identify and carry out required upgrades to a number of intersections along the State Road Network to facilitate the transportation of OSOM components by individual generation projects (refer to Figure 2-1).

The proposed modifications of these intersections will be assessed and delivered as five different packages generally divided by local government area (LGA) where practicable. This Minor Works Review of Environmental Factors (MWREF) is the second package (Package 2) to be delivered and assesses four intersections in the Singleton LGA.

The proposal assessed in this report is for the modification of intersections only. The operation of the necessary OSOM vehicle movements will be assessed as part of the planning approval for individual generation projects.

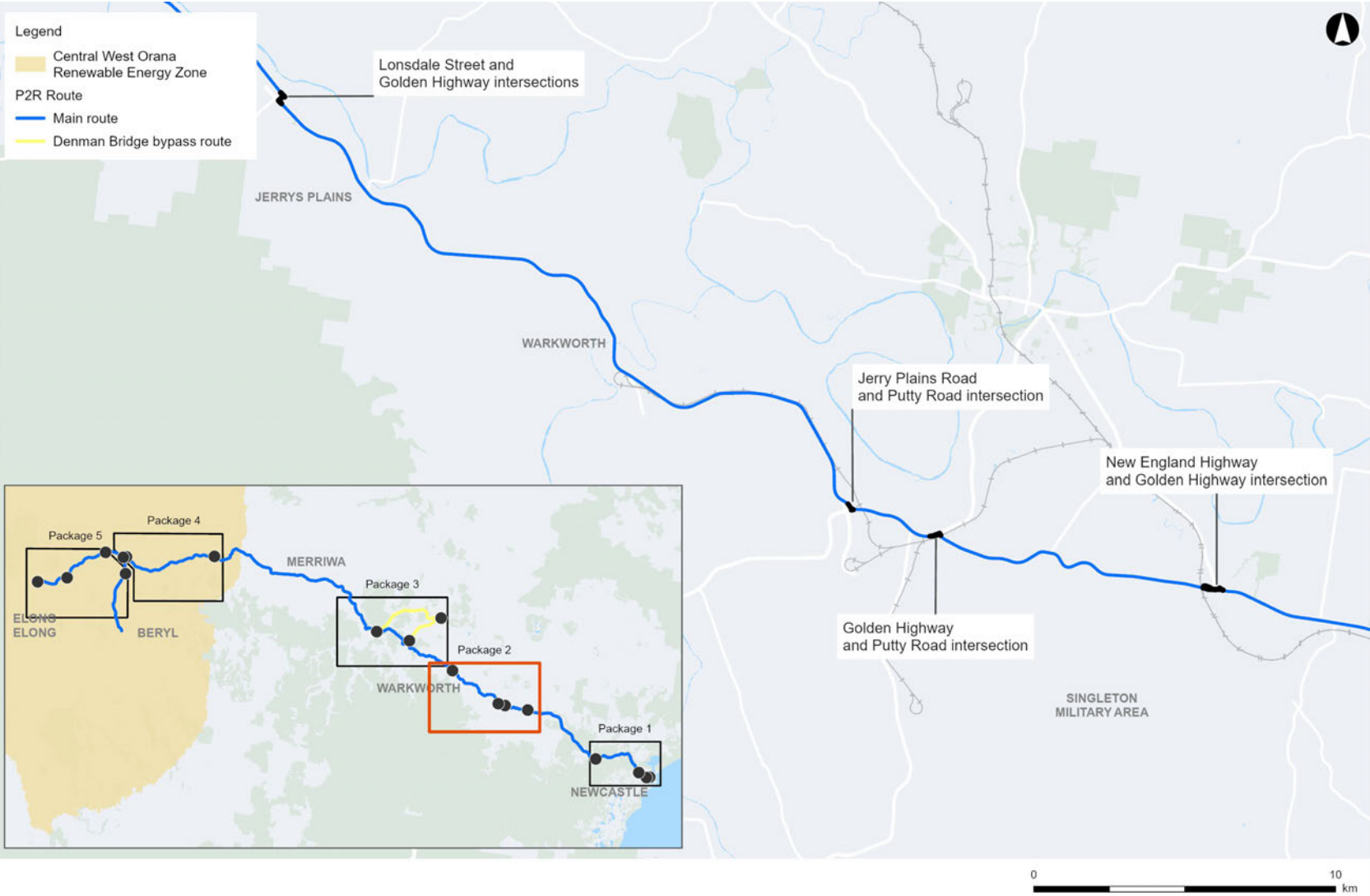


Figure 2-1: Proposed program of intersection upgrades

2.2 Description

2.2.1 Proposal location

Table 2-1 details the proposal road location and Transport for New South Wales (Transport) information.

Table 2-1: Proposal location details

Location details	
Title	Central West Orana Renewable Energy Zone – Port to REZ Road Upgrade Program – Minor Works Review of Environmental Factors – Package 2
Road name and number	New England Highway (HW9), Golden Highway (HW27), Putty Road (MR128), Lonsdale Street, Pringle Street, Pagan Street
Closest crossroad(s)	New England Highway, Mitchell Line of Road, Putty Road, Mount Thorley Road
Local government area	Singleton Local Government Area
Transport for NSW region	North

2.2.2 Proposal description

Transport for NSW (Transport), on behalf of EnergyCo, proposes to carry out minor modifications to four intersections in the Singleton LGA (refer to Figure 2-1). The modifications are necessary to facilitate the transportation of OSOM components from the Port of Newcastle to the CWO REZ. Key features of the proposal are shown in Figure 2-2 (New England Highway and Golden Highway intersection (I-005)), Figure 2-3 (Golden Highway and Putty Road intersection (I-006)), Figure 2-4 (Jerrys Plains Road and Putty Road intersection (I-007)) and Figure 2-5 (Lonsdale Street and Golden Highway intersection (H-009 and H-010)).

New England Highway and Golden Highway intersection, Whittingham (I-005)

- relocation of merge sign on splitter island at the New England Highway intersection
- relocation of two to three roundabout warning signs to avoid vehicle swept path
- two 'Keep left' signs to be made removable on medians
- relocation of one to two hazard board(s) in the central traffic island
- construction of a concrete hardstand in an existing central roundabout island to accommodate the wheel paths of the design vehicle
- protection of optic fibre asset below proposed hardstand.

Golden Highway and Putty Road intersection, Mount Thorley (I-006)

- 'Keep left', 'giveaway', 'merge warning' and 'cyclist crossing' signs to be made removable on the splitter island
- 'Kangaroo warning' sign to be set back about one metre
- 'Bridge hazard marking' signs to be lowered to allow for wind turbine blade overhang to pass over.

Jerrys Plains Road and Putty Road intersection, Mount Thorley (I-007)

- 'Merge warning' sign to be set back by one metre on splitter island
- 'Cyclist warning' sign to be set back by one metre on exit ramp.

Lonsdale Street and Golden Highway intersections, Jerrys Plains (H-009 and H-010)

- relocation of 'Curve warning' and 'speed advisory' sign closer to Bureen Street
- relocation of 'tourist destination' sign to Pagan Street intersection
- Wayfinding sign to be set back by four metres
- relocation of six hazard markers and one street sign to back of proposed hardstand
- construction of two hardstand areas to accommodate the wheel paths of the design vehicle north of Pagan Street and outside curve of Pringle Street
- construction of L-shaped retaining wall to accommodate the wheel paths of the design vehicle on the outside corner of Pringle Street/Golden Highway
- removal of one tree and pruning of five other trees
- relocation of water main where located under proposed hardstand.

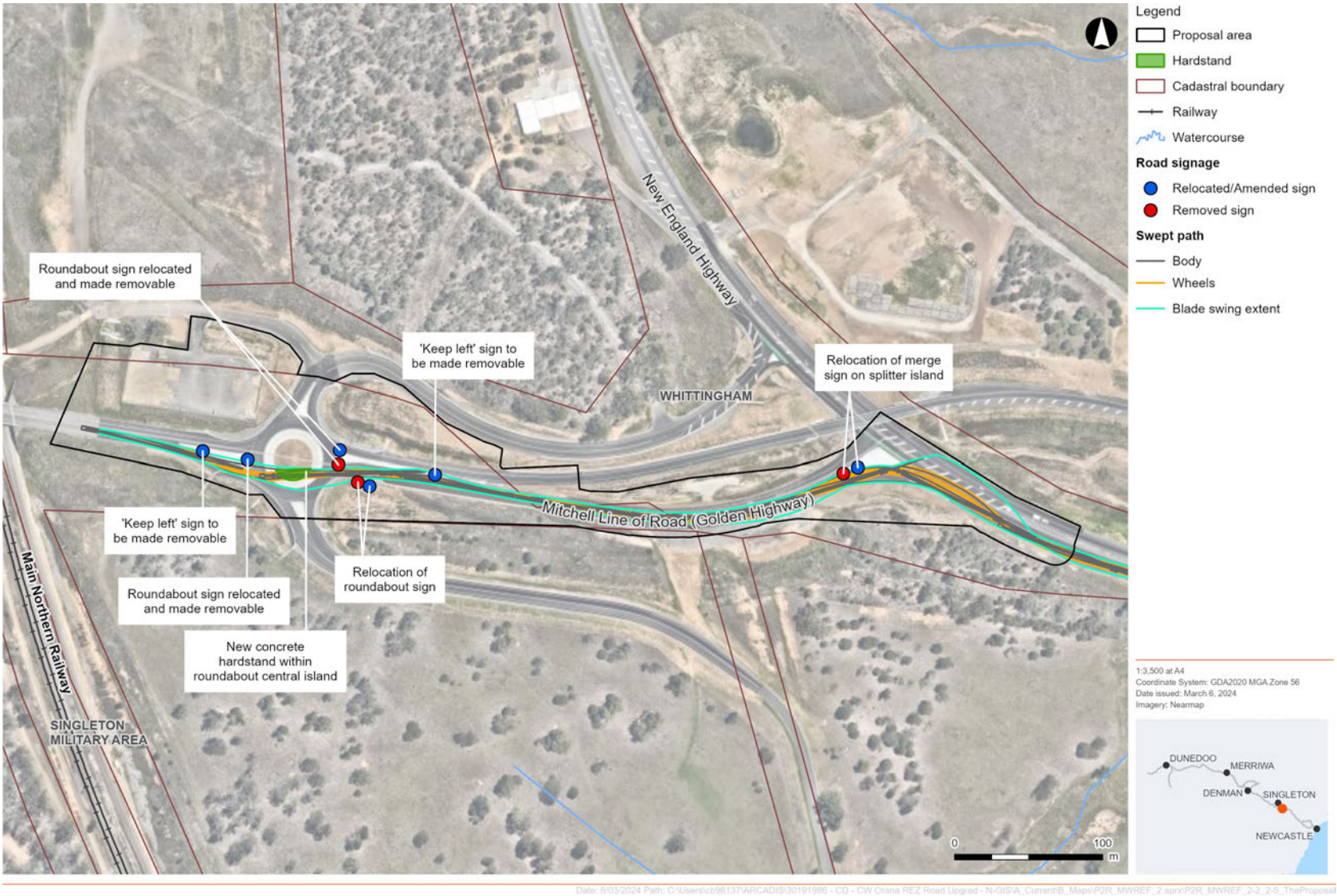


Figure 2-2: The proposal – New England Highway and Golden Highway intersection, Wittingham (I-005)

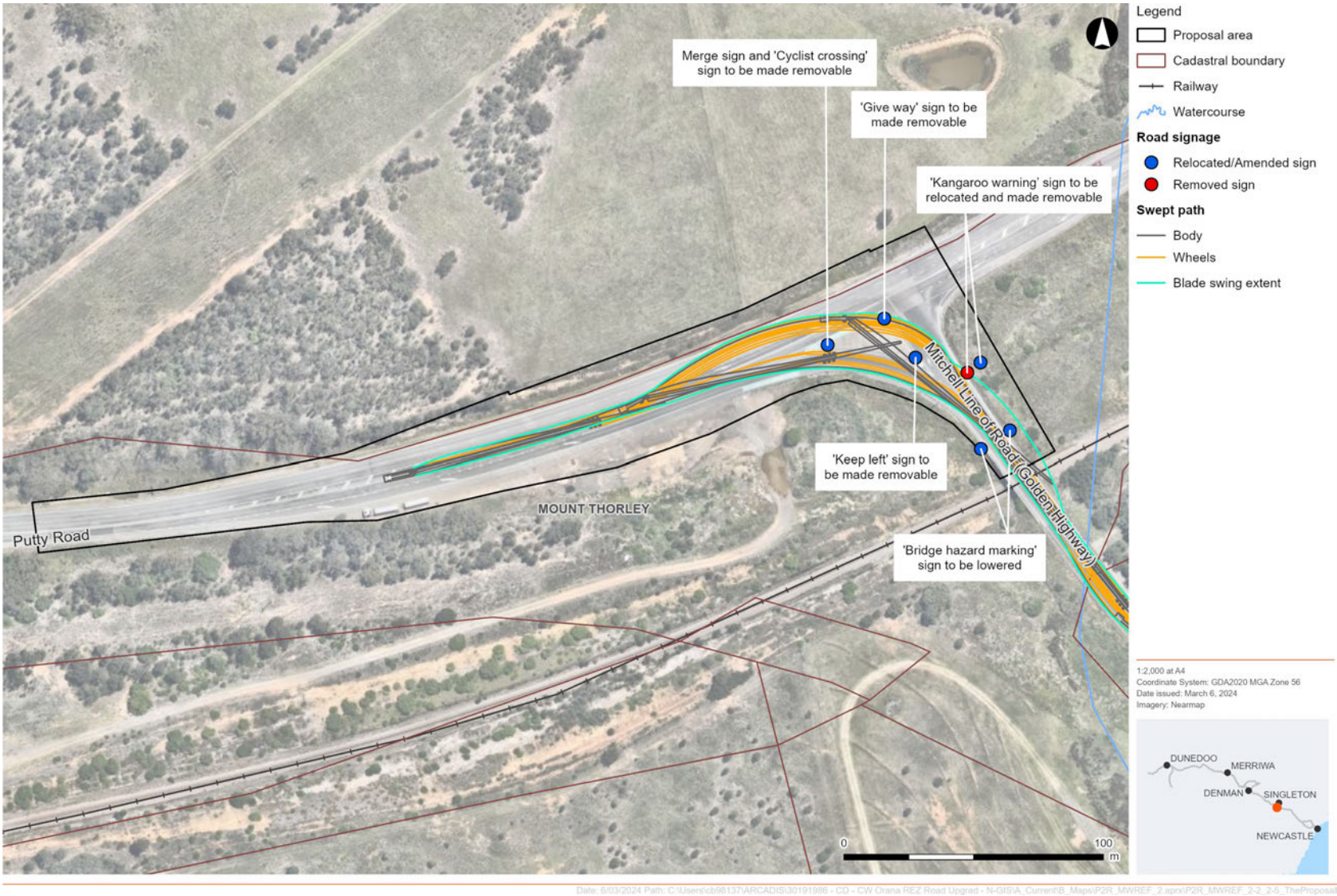


Figure 2-3: The proposal – Golden Highway and Putty Road intersection, Mount Thorley (I-006)

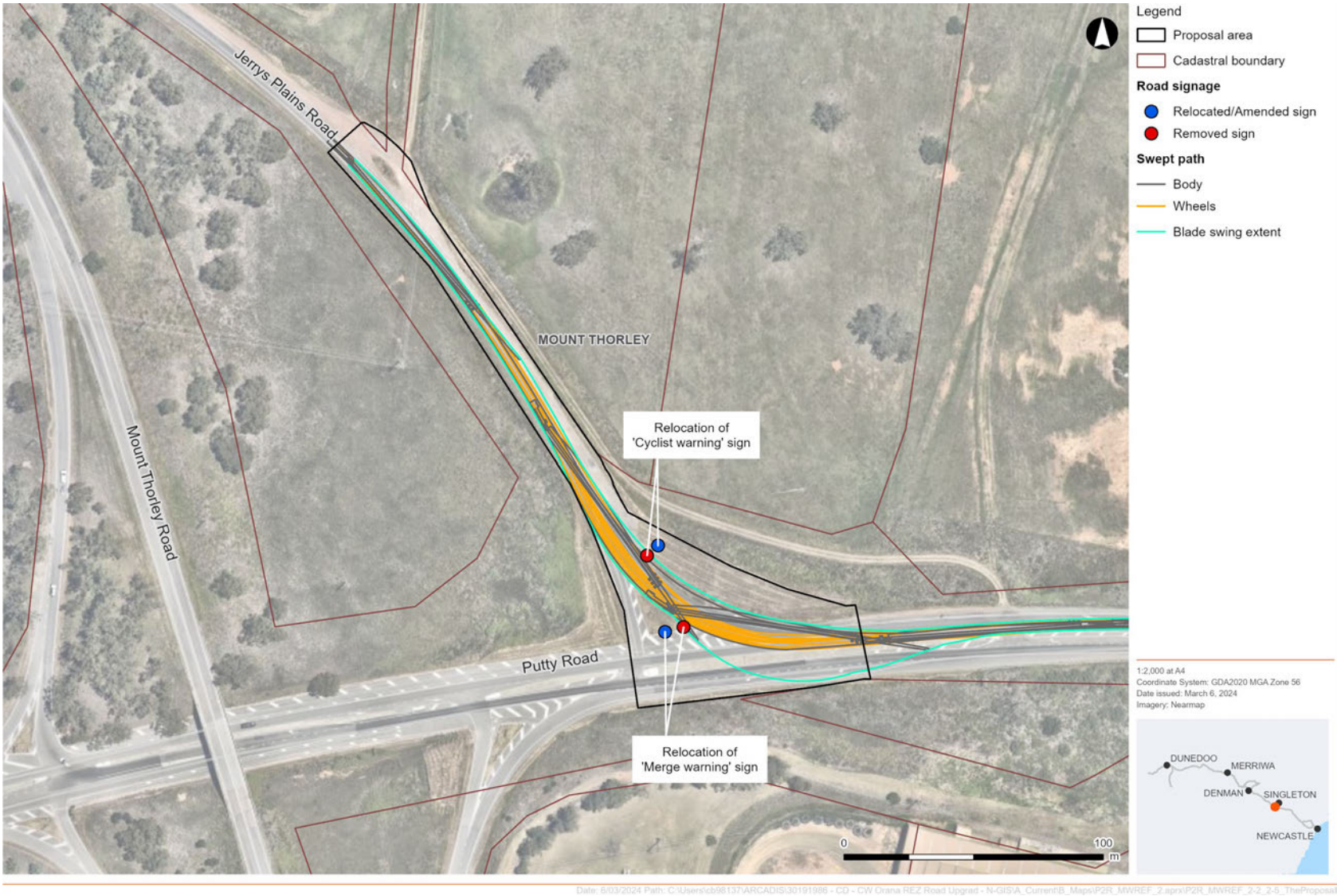


Figure 2-4: The proposal – Jerrys Plains Road and Putty Road intersection, Mount Thorley (I-007)

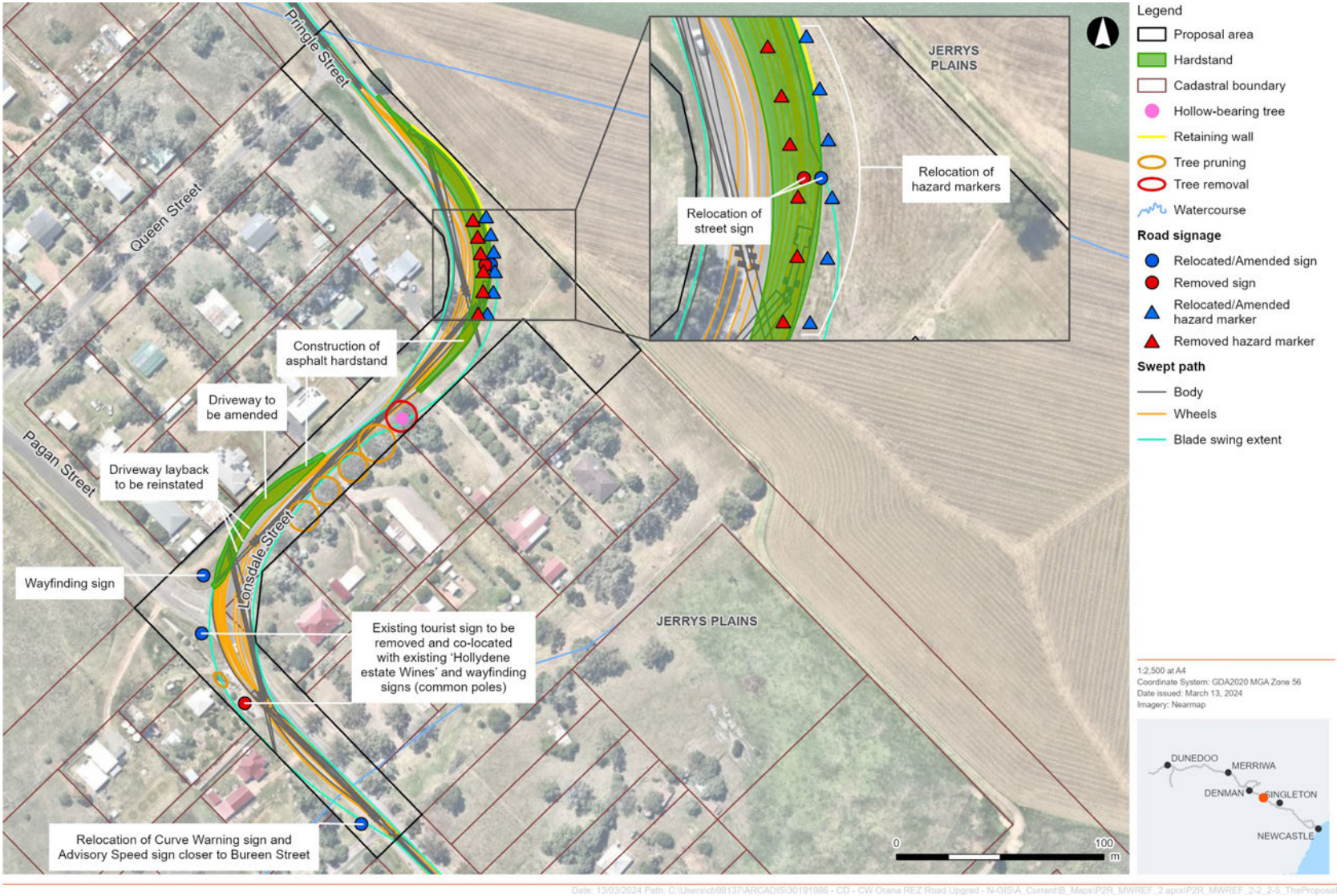


Figure 2-5: The proposal – Lonsdale Street and Golden Highway intersections, Jerrys Plains (H-009 and H-010)

Utility adjustments

Several services would be impacted by the proposed work. Impacted utilities within each proposal area, including the proposed actions are detailed in Table 2-2 and shown in Figure 2-6.

Utility relocations will be designed to meet service provider specifications and be certified as required. Any adjustments will be done in consultation with utility providers and wholly within the assessed study area.

Relocation of Ausgrid assets would be carried out in accordance with Ausgrid's internal environmental approvals process and would not be within the scope of this MWREF.

Table 2-2: Utility adjustments

Location	Owner	Asset	Proposed treatment
Lonsdale Street and Golden Highway intersection (H-009 and H-010)	Ausgrid	Distribution overhead, 415v 3 phase (4 cables)	Relocation required (subject to separate Ausgrid approvals). Would require new property connections after relocation.
	Singleton Council	Water utilities under Lonsdale Street/Pagan Street	Relocation of water main required where it is located under proposed hardstand

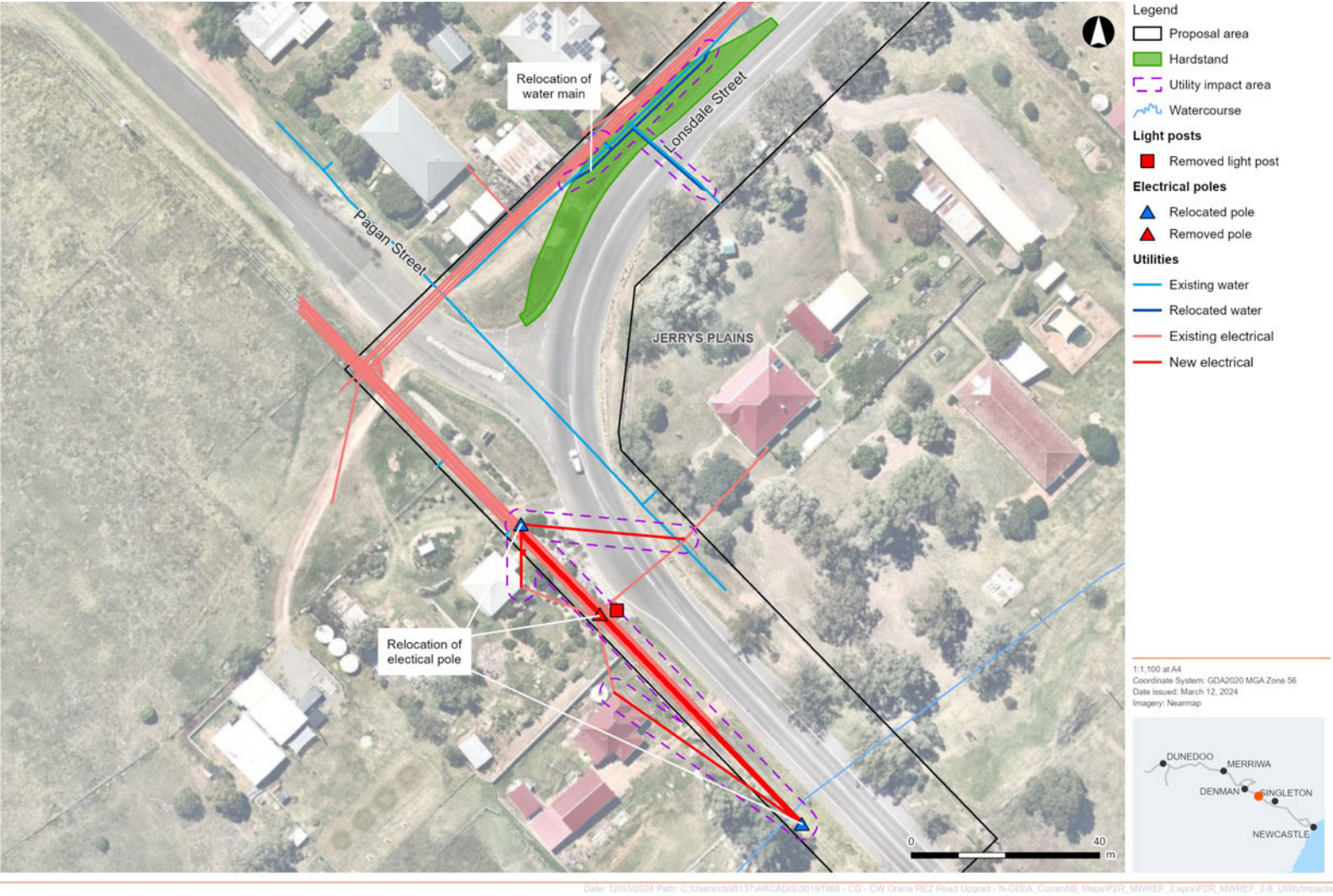


Figure 2-6: Utility impacts: Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Minor works review of environmental factors

Construction staging and methodology

The proposed construction staging and scope provided is indicative only and outlined in Table 2-3.

Table 2-3: Indicative construction staging and scope

Construction stage	Scope
Enabling works	• traffic redirection, control and management during works • establish environmental controls including exclusion zones, tree protection and erosion and sediment control measures (where required) • designation of parking, storage and laydown areas • tree removal and pruning at Lonsdale Street and Golden Highway intersection (H-009 and H-010) • utilities protection or adjustments (where required).
Intersection works	• relocation of existing signage and installation of removable signage • saw cutting and removal of sections of existing asphalt pavement and concrete kerbing (where required) • earthworks for hardstand areas (where required) • construction of retaining wall (specific to Lonsdale Street and Golden Highway intersection) • placement of engineered fill, compaction and seal of hardstand areas (where required) • construction of concrete kerbing and asphalt pavement (where required) • reinstatement of driveways at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) (where required) • complete any linemarking adjustments, traffic or wayfinding requirements • topsoil placement and rehabilitation of exposed areas with grass consistent with surrounding area (where required).
Finishing works	• remove temporary construction structures, equipment and temporary stockpiles • site cleanup including removal of environmental controls • remove any traffic controls.

Construction traffic access and management

Construction vehicles would access the proposal areas, including the New England Highway and Golden Highway intersection (I-005), Golden Highway and Putty Road intersection (I-006), Jerrys Plains Road and Putty Road intersection (I-007), and Lonsdale Street and Golden Highway intersection (H-009 and H-010) via the existing state network. Parking and temporary storage of plant and materials to facilitate the upgrade works would occur within the road corridor in the vicinity of each intersection.

Work outside standard construction hours (out of hours work) is proposed at the New England Highway and Golden Highway intersection (I-005), with the potential to also be undertaken at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) to minimise potential traffic disruption during the busier daytime period. Lane occupancy required for these intersections will be managed using traffic control. Proposed works for Golden Highway and Putty Road (I-006), and Jerry Plains and Putty Road (I-007) intersections would be carried out during daytime hours.

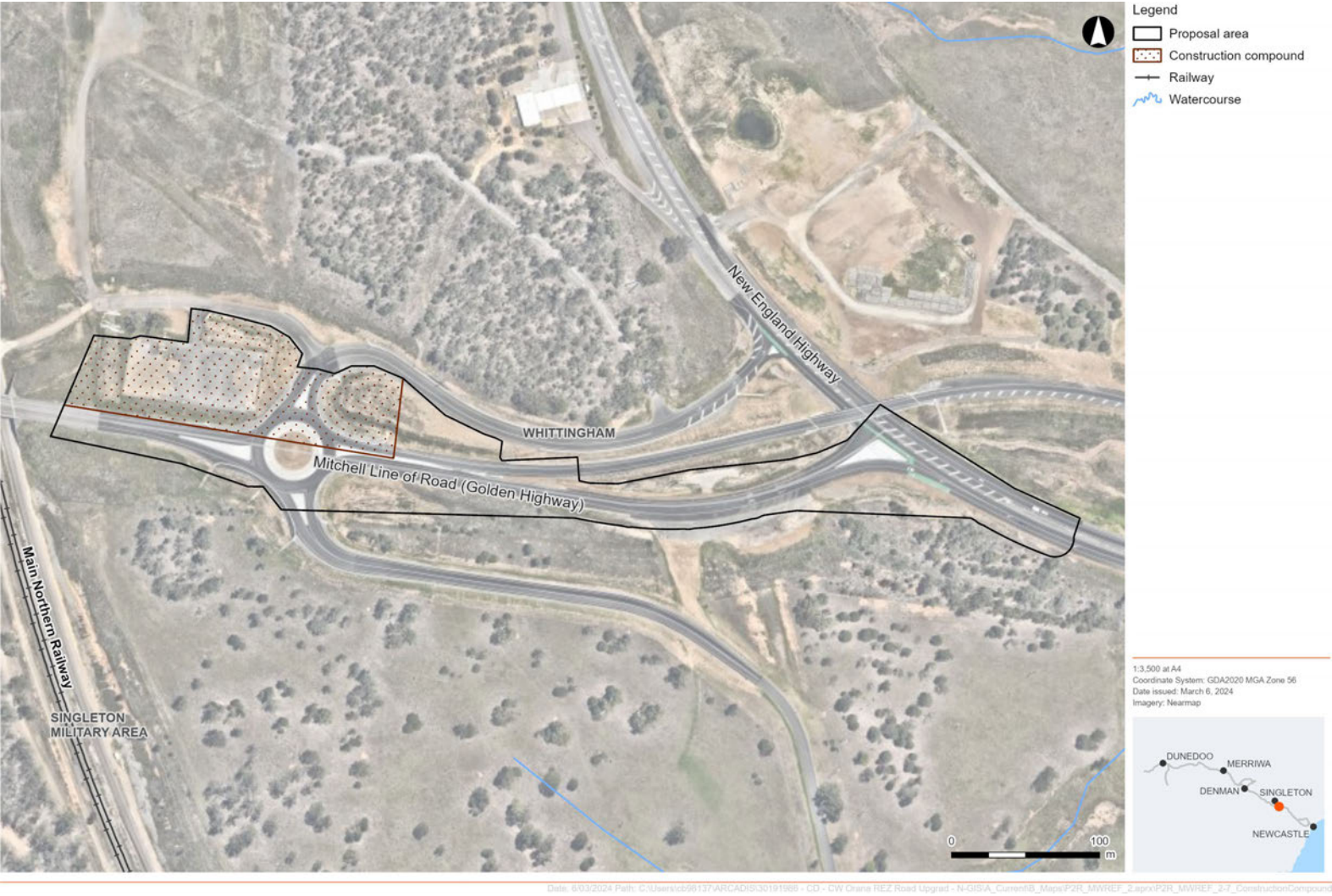


Figure 2-7: New England Highway and Golden Highway intersection (I-005) - Construction compound location

Construction equipment

A range of plant and equipment would be used during construction. The final equipment and plant requirements would be determined by the construction contractor. An indicative list of plant and equipment is provided below:

- hand tools
- excavators
- concrete vibrator
- road trucks
- vacuum truck
- dump truck
- concrete truck
- jackhammer
- pneumatic hammer
- backhoe
- plate compactor
- light vehicles
- concrete saw
- asphalt paver
- kerb machine
- power generator
- truck compressor
- vibratory roller
- asphalt truck and sprayer
- smooth drum roller

Construction hours

Works would be prioritised during standard construction hours as follows:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- Sunday and public holidays: No work.

To minimise traffic impacts and to ensure the safety of workers, it is expected that some activities carried out at the New England Highway and Golden Highway intersection (I-005), and potentially the Lonsdale Street and Golden Highway intersection (H-009 and H-010), would need to be undertaken outside of standard working hours. These hours would be in accordance with the applicable Road Occupancy Licence (ROL).

Any works with impulsive or tonal noise emissions, as well as any work outside of standard construction hours, will be carried out in accordance with the *Construction Noise and Vibration Guideline* (Transport for NSW, 2023) and *EPA Interim Construction Noise Guideline* (ICNG) (NSW DECC, 2009). The community would be kept informed of proposed upcoming work and contact information. Any impacted residents or businesses would be consulted regarding the proposed construction hours at least five working days prior to commencement of work.

Property adjustments

Temporary reinstatement of existing pavement layback (a narrow concrete ramp that connects the road to driveway) and driveways would be required during construction at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) to accommodate the swept paths of OSOM vehicles. Property adjustment would not be required to accommodate this activity, however, consultation with the landowners would be carried out by EnergyCo. The following properties would require reinstatement of laybacks or driveways:

- Lot 6/20 DP 758542
- Lot 7/20 DP 758542
- Lot 5/19 DP 758542
- Lot 2/19 DP 758542
- Lot 1/19 DP 758542.

Relocation of Ausgrid assets would require new property connections to Lot 12 DP509516 and Lot 10/18 DP758542. This would be carried out in accordance with Ausgrid's internal environmental approvals process, and is not within the scope of this MWREF.

2.2.3 Proposal objectives

The objective of the proposal is to facilitate the safe delivery of OSOM components for individual generation projects from the Port of Newcastle to the Central West Orana Renewable Energy Zone.

2.2.4 Ancillary facilities

Table 2-4: Ancillary facilities

Ancillary facilities		
Will the proposal require the use or installation of a compound site? Given the minor works proposed, installation of a separate compound site beyond the proposal areas would not be required for the proposal. Equipment laydown and workforce parking for the New England Highway and Golden Highway intersection (I-005) would utilise a small area of the existing Transport construction compound that was established for the Belford and the Golden Highway project. Works undertaken at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) would utilise a small, trailered office and portaloos, as well as laydown area, with all located in proximity to the works and within the road reserve. Works at the Putty Road and Golden Highway intersection (I-006) and Jerrys Plains Road and Putty Road intersection (I-007) are expected to only take several hours and would only require a small area for a truck to park. This would be carried out adjacent to the proposed intersection works, in areas of cleared land within the road reserve and construction boundary. The general locations of these laydown areas may include: - Putty Road and Golden Highway intersection (I-006): Existing stockpile area south of Golden Highway - Jerrys Plains Road and Putty Road intersection (I-007): Eastern side of the Jerrys Plains Road ramp - Lonsdale Street and Golden Highway intersection (H-009 and H-010): Eastern corner of Pringle Street and Lonsdale Street within the road reserve. The areas above are indicative only and would be confirmed by the construction contractor.	Yes ☐	No ☒
Will the proposal require the use or installation of a stockpile site? Any stockpiling required for the proposal would be carried out on the road verge, adjacent to the proposed works. Given the nature of the proposed works, any stockpiles will be relatively small and short-lived.	Yes ☒	No ☐
Are any other ancillary facilities required (e.g. temporary plants, parking areas, access tracks)? Where possible, equipment laydown and workforce parking would be located within road reserve areas adjacent to each of the proposed intersection works. Construction compound and stockpile areas would be confirmed prior to construction, but would be required to demonstrate compliance with the following criteria: - located in the road corridor - no vegetation removal - obvious previous disturbance - no ground disturbance required 50 metres from a permanent watercourse - AHIMS search carried out - away from sensitive receivers. If compliance with these criteria cannot be demonstrated, further assessment may be required.	Yes ☐	No ☒

2.2.5 Proposed date of commencement

Subject to approval, construction is expected to commence in quarter 3 of 2024.

2.2.6 Estimated length of construction period

Construction at each intersection, weather permitting, is expected to take about:

- New England Highway and Golden Highway intersection (I-005) – one month
- Golden Highway and Putty Road intersection (I-006) – one week
- Jerrys Plains Road and Putty Road intersection (I-007) - one week
- Lonsdale Street and Golden Highway intersection (H-009 and H-010) – six months.

2.3 Need and options

2.3.1 Strategic need

The following intersections along the state road network between the Port of Newcastle and the CWO REZ have space constraints on the safe manoeuvring of the OSOM vehicles including potential conflict with signage and roadside vegetation:

- New England Highway and Golden Highway intersection (I-005)
- Putty Road and Golden Highway intersection (I-006)
- Jerrys Plains Road and Putty Road intersection (I-007)
- Lonsdale Street and Golden Highway intersection (H-009 and H-010).

The proposal would provide additional hardstand, relocate signage, remove one tree and prune trees to facilitate the safe delivery of OSOM components from the Port of Newcastle to the CWO REZ.

The proposal would also align with the objectives of the Singleton Community Strategic Plan 2032 (Singleton Council, 2022). The Singleton Community Strategic Plan 2032 will be delivered through the themes of transport connectivity, support sustainable alternatives and increase the use of renewable energy. The proposal is aligned with the statement's themes through its support for transport connectivity and investment in the renewable energy sector.

2.3.2 Assessment background

A Traffic Impact Study and route assessment was carried out by AECOM (AECOM, 2023), on behalf of EnergyCo, to determine the preferred route to transport components to the wind farm development sites. The report concluded that the most efficient and minimal environmental impact route for the transportation of components from the Port of Newcastle to CWO REZ would be via the State Road Network, specifically the route shown in Figure 2-1. The study also identified intersections likely to require upgrades and provided recommendations for further design development.

The four intersections assessed in this report (Package 2) were identified as requiring modification works.

2.3.3 Options considered

Options considered, and the advantages and disadvantages associated with each, are identified below and summarised in Table 2-5.

- **Option 1 'Do nothing':** Undertake no modifications at intersections
- **Option 2 'The proposal':** Undertake intersection upgrades outlines in Section 2.3.2.

Table 2-5: Analysis of options

Objectives	Option 1 'Do-nothing'	Option 2 'The proposal'
To facilitate safe delivery of over-sized and/or over-massed components from the Port of Newcastle to the CWO REZ	Option 1 would involve not undertaking any modifications to the intersections. By not undertaking intersection modifications for the transport of components required for the	Option 2 would provide additional space for OSOM vehicles to manoeuvre through the four intersections while minimising disruption to the general traffic network and broader community.

Objectives	Option 1 'Do-nothing'	Option 2 'The proposal'
	development of renewable projects, projects would be delayed or cancelled. This option would not facilitate the safe delivery OSOM components from the Port of Newcastle to the CWO REZ. Does not meet objective.	Upgrading of intersections along the existing State Road Network is the most efficient and cost-effective way to meet timeframes for transportation of components for renewable energy projects in CWO. This option meets the objective to facilitate safe delivery of OSOM components from the Port of Newcastle to the CWO REZ. Meets objective.

2.3.4 Design refinements

Consideration was given to minimising impacts to property, existing infrastructure (including road, bridges, rail), utilities, and native vegetation. This process resulted in the following reduction in impacts at the proposal areas:

- New England Highway and Golden Highway (I-005) - avoidance of impacts to existing road signage and tree removal within road reserve
- Putty Road and Golden Highway intersection (I-006) - avoidance of impacts to existing road signage and vegetation
- Jerrys Plains Road and Golden Highway intersection (I-007) - avoidance of impacts to existing road signage and tree removal within road verge
- Lonsdale Street and Golden Highway intersection (H-009 and H-010) - reduction in hardstand required and avoidance of property acquisition.

2.3.5 Preferred option

Option 2 is the preferred option as it meets the proposal objective while Option 1 does not.

The preferred option has also been considered against the following design criteria provided in Table 2-6.

Table 2-6: Assessment against development criteria

Design criteria	Option 2 'The proposal'
Minimise construction impacts including to utilities and services	The proposal would impact existing utilities, including one power pole relocation at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). The proposal would also result in potential impacts to an additional power pole as well as communications and water services at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Construction of hardstand is required at the New England Highway and Golden Highway intersection (I-005) and Lonsdale Street and Golden Highway intersection (H-009 and H-010). The other proposal areas would only consist of signage relocation. Temporary disruptions to communication services are anticipated during relocation (if required), though the function of these services would be reinstated during construction. Impacts to utilities have been minimised through the design refinement process, including reduced impacts at Lonsdale Street and Golden Highway (H-009 and H-010), and avoidance of impact at all other proposal areas.

Design criteria	Option 2 'The proposal'
	Meets criterion.
Minimise property acquisition	No property acquisition is required at any of the proposal areas. This has been achieved by containing the proposal to the existing road reserve. All works required would occur within the road reserve and do not require property acquisition or adjustment. Meets criterion.
Minimise environmental and social impacts	Environmental impacts are expected from the proposal, such as traffic, noise, air quality, tree removal and pruning, and erosion and runoff. With the implementation of safeguards listed in Table 4-1, the environmental impacts would be minor. The proposal would be carried out primarily within the road reserve. No road closures are proposed, and lane occupancy would be managed to minimise traffic disruption. Access to properties within the vicinity would be maintained throughout construction. One tree would require removal and tree pruning would be required to five other trees to allow for the swept path of heavy vehicles at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Tree removal and pruning have been avoided at all other proposal areas. Social impacts would support the development of renewable energy projects by providing additional space for OSOM vehicles to manoeuvre through the proposed intersections upgrades along the existing State Road Network. Meets criterion.

2.3.6 Justification for the proposal

The proposal is required to facilitate the transportation of OSOM components from Port of Newcastle to the CWO REZ. The existing intersections along the project route are not designed for the transport of these components, hence the need for the proposed intersection works to support the development of renewable energy projects. The proposal would minimise disruption to traffic and the general community by providing sufficient space for the safe passage of OSOM vehicles through the intersections.

Design of the proposal has considered minimisation of impacts to existing infrastructure, utilities, property, and native vegetation. Residual impacts can be managed through the implementation of nominated safeguards.

2.4 Statutory and planning framework

2.4.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP (Transport and Infrastructure)) aims to facilitate the effective delivery of infrastructure across the state. This includes roads and road infrastructure facilities.

Section 2.109 of the SEPP (Transport and Infrastructure) permits development on any land for the purpose of road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. As the proposal is appropriately characterised as development for the purposes of a road or road infrastructure facilities and is to be carried out by or on behalf of Transport, it can be assessed under Division 5.1 of the EP&A Act. Development consent from Council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under:

- State Environmental Planning Policy (Resilience and Hazards) 2021
- State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021
- State Environmental Planning Policy (Precincts – Central River City) 2021
- State Environmental Planning Policy (Precincts – Western Parkland City) 2021
- State Environmental Planning Policy (Precincts – Regional) 2021
- State Environmental Planning Policy (Planning Systems) 2021.

2.4.2 Other relevant legislation and environmental planning instruments

Local Environmental Plan

The proposal is located within the Singleton Local Government Area (LGA) which is subject to the Singleton Local Environmental Plan 2013 (Singleton LEP). While SEPP (Transport and Infrastructure) provides that the proposal is development permitted without consent on any land, a discussion of zoning and planning provisions from the Singleton Local Environmental Plan 2013 is provided below.

Land occupied by the proposal is zoned in the Singleton LEP as follows:

- SP2 Infrastructure
- RU1 Primary production
- R5 Large lot residential.

As described above, Section 2.109 of SEPP (Transport and Infrastructure) permits Transport to carry out development for the purpose of a road without consent. As a result, development for roads is permissible in all land zones and consent from Singleton Council is not required for the proposal.

Notwithstanding this, the objectives of the land use zones and the proposal's consistency with these objectives are described in Table 2-7.

Table 2-7: Singleton LEP 2013 zoning applicable to the proposal

LEP zoning	Proposal area location	LEP objectives	Proposal consistency with objectives
SP2 Infrastructure	All proposal areas	• to provide for infrastructure and related uses • to prevent development that is not compatible with or that may detract from the provision of infrastructure.	• the proposal will required the upgrade of all proposal areas that remains consistent with the objectives of SP2 Infrastructure.
RU1	Golden Highway and Putty Road	• to encourage sustainable primary industry production by	• the Golden Highway and Putty Road Intersection (I-006)

LEP zoning	Proposal area location	LEP objectives	Proposal consistency with objectives
Primary production	intersection (I-006) Lonsdale Street and Golden Highway intersections (H-009 and H-010)	maintaining and enhancing the natural resource base. - to encourage diversity in primary industry enterprises and systems appropriate for the area. - to minimise the fragmentation and alienation of resource lands. - to minimise conflict between land uses within this zone and land uses within adjoining zones.	proposal is located within the footprint of an intersection that was recently upgraded but where zoning has not yet been adjusted. Nonetheless, the proposal will not impact upon the function of the zoning area and will remain consistent with the objectives of RU1 Primary production. in proximity to the curve of Pringle Street at the Lonsdale Street and Golden Highway Intersection proposal, part of the proposal area is located within RU1 zoning. Any impacts to this zoning is temporary for the duration of works and will remain consistent with the objectives of RU1 primary production.
R5 Large Lot Residential	Lonsdale Street and Golden Highway intersections (H-009 and H-010)	- to provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality. - to ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future. - to ensure that development in the area does not unreasonably increase the demand for public services or public facilities. - to minimise conflict between land uses within this zone and land uses within adjoining zones.	the zoning is partly located over the road corridor south of Pagan Street, however, it is understood zoning was not amended to reflect the full road corridor at the time it was last gazetted. The proposal is limited to the road corridor and will not impact upon the function of the zoning area.

The application of the Singleton LEP and other relevant legislation and environmental planning instruments is considered in Table 2-8.

Table 2-8: Review of other legalisation and environmental planning instruments

Legislation	Overview	Approval required?
NSW Legislation		
<i>Roads Act 1993</i>	Under this Act, state authorities such as Transport are given the ability to carry out activities such as construction and upgrades on roads in NSW. Section 138 of the Act provides that consent from the appropriate roads authority is required for road work and other work within a road corridor. Consent is typically provided in the form of a Road Occupancy Licence obtained by the construction contractor prior to work beginning. This may include temporary closures of roads and regulation of traffic to ensure construction can be completed. As well, this Act permits Transport to acquire land for the purposes of road work, in line with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .	Yes A Road Occupancy Licence (ROL) would need to be obtained by the construction contractor before beginning any work that requires road possession and closures. Transport is the relevant roads authority for all roads that would be affected.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	Under this Act, activities specified in 'scheduled activities' under Schedule 1 of the POEO Act require consent from the Environmental Protection Authority (EPA).	No The Proposal does not involve a 'scheduled activity' under Schedule 1 of the POEO Act. Accordingly, an Environment Protection Licence (EPL) is not required for the Proposal.
<i>National Parks and Wildlife Act 1974 (NPW Act)</i>	This Act provides for the conservation and management of nature and objects, places and features of cultural value. It is the primary legislation for the protection of Aboriginal cultural heritage in NSW. Part 6 of the NPW Act provides protection for all Aboriginal objects and Aboriginal places in NSW. Under Section 90 of the Act, where harm to an Aboriginal object or Aboriginal place cannot be avoided, an Aboriginal Heritage Impact Permit is required before the disturbance of Aboriginal objects or places.	No The proposal is unlikely to disturb any objects of Aboriginal cultural heritage significance (refer to Section 3.5 (Aboriginal cultural heritage)). The Transport Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI) was followed. A Stage 1 PACHCI assessment was carried out for the proposal by a Transport Aboriginal Cultural Heritage Advisor and is provided in Appendix D. The assessment concludes that the proposal is unlikely to have an impact on Aboriginal cultural heritage and may proceed in accordance with the environmental assessment.
<i>Heritage Act 1977 (Heritage Act)</i>	This Act provides for the conservation of buildings, work, relics and places that are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance to the state. Matters protected under the Heritage Act include items subject to an Interim Heritage Order and items listed on the State Heritage Register, the heritage schedules of local council LEPs, and the heritage and conservation registers established	No The proposal is unlikely to impact any heritage items (refer to Section 3.6 (Non-Aboriginal heritage)). There are two local heritage items within the proposal study areas: Golden Highway and Putty Road intersection (I-006): I39 'Abbey

Legislation	Overview	Approval required?
	under Section 170 of the Heritage Act by NSW state government agencies (Section 170 Registers). The Heritage Act also provides for the protection of archaeological 'relics', being any deposit, object or material evidence that relates to the non-Aboriginal settlement of NSW and is of State or local heritage significance.	Green' and outbuildings that holds local significance located immediately north of the intersection site. Lonsdale Street and Golden Highway intersections (H-009 and H-010): C2 Jerrys Plains Heritage Conservation Area that holds local significance. The proposal is not anticipated to impact the heritage-listed items due to the distance from excavation, limited scope of work, and lack of vibration intensive activities.
Environmental planning instruments		
<i>Singleton Local Environmental Plan 2013</i>	The relevant land zones and objectives apply to the proposal: - SP2 – Infrastructure (Road) - RU1 – Primary production - R5 – Large lot residential	No Developments comprising roads are permitted without consent on land zones SP2 Infrastructure, RU1 – primary production and R5 – large lot residential. Section 2.109 of Transport and Infrastructure SEPP enables the proposal to be carried out as development permitted without consent and assessed under Part 5 of the EP&A Act. Development consent from Council is not required.

2.5 Community engagement and agency consultation

2.5.1 State Environmental Planning and Policy (Transport and Infrastructure) consultation

Part 2.2 of the SEPP (Transport and Infrastructure) contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. An assessment in accordance with Part 2.2 of the Transport and Infrastructure SEPP as to whether the proposal is required to consult and or notify of works is provided in Table 2-9, Table 2-10 and Table 2-11 below.

Table 2-9: Council consultation requirements

Is consultation with Council required under sections 2.10 - 2.12 and 2.14 of the SEPP (Transport and Infrastructure)?		
Are the works likely to have a substantial impact on the stormwater management services which are provided by council? The proposed works would not impact the existing stormwater management services provided by Singleton Council.	Yes ☐	No ☒
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? The proposed intersection upgrades are minor in scale and as such, substantial traffic impacts during construction are not anticipated. The traffic capacity of the road network would remain as existing during operation of the proposal. Refer to Section 3.8 for more information.	Yes ☐	No ☒

Is consultation with Council required under sections 2.10 - 2.12 and 2.14 of the SEPP (Transport and Infrastructure)?		
Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system? No. The proposed works would not involve a connection to a council owned sewerage system.	Yes ☐	No ☒
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. Water usage would be required on site during construction activities such as earthworks, temporary bathrooms, and spray downs of the proposal areas. Water utilised for construction would be transported to the proposal areas when required.	Yes ☐	No ☒
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? Temporary structures would not be required for the proposal. All construction works would be carried out primarily within the road reserve or existing cleared areas, not within land under local council management or control. Where appropriate, ancillary activities including car parking and equipment laydown would be carried out adjacent to, or within, the road reserve. This is unlikely to cause more than a minor or inconsequential disruption to pedestrian or vehicular flow. Refer to Section 3.8 for more information.	Yes ☐	No ☒
Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance? The proposed works would primarily be limited to the road reserve, which is managed by Transport. Works would be minor and inconsequential and consultation with Council is therefore not required.	Yes ☐	No ☒
Is there 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? The Jerry Plains Conservation Area is located within the Lonsdale Street and Golden Highway intersection study area (H-009 and H-010) and the Singleton LEP 2013 heritage item I39 'Abbey Green' and outbuildings is located at the Putty Road and Golden Highway intersection (I-006). These heritage items will not be impacted upon during construction as all works will remain in the road reserve. The heritage assessment carried out in Section 3.6 (Non-Aboriginal heritage) has indicated that impacts to these heritage items are not anticipated.	Yes ☒	No ☐
Is the proposal within the coastal vulnerability area and inconsistent with a certified coastal management program applying to that land?	Yes ☐	No ☒
Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent? 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 Floodplain Development Manual: the management of flood liable land (nsw.gov.au). The assessment carried out in Section 3.2 (Waterways and water quality) has indicated that all proposal areas are outside of extents of a 1 in 100-year design flood. The proposed works would not impact future flooding events.	Yes ☐	No ☒

Table 2-10: Consultation with other public authorities

Is consultation with a public authority (other than Council) required under sections 2.13, 2.15 and 2.16 of the SEPP (Transport and Infrastructure)?		
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? 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 Floodplain Development Manual: the management of flood liable land (nsw.gov.au). The assessment carried out in Section 3.2 (Waterways and water quality) has indicated that all proposal areas are outside of the extents of a 1 in 100-year design flood. The proposed works would not impact future flooding events.	Yes ☐	No ☒
Are the works adjacent to a national park, nature reserve or other area reserved under the <i>National Parks and Wildlife Act 1974</i>, or on land acquired under that Act?	Yes ☐	No ☒
Are the works on land in Zone C1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	Yes ☐	No ☒
Do the works include a fixed or floating structure in or over navigable waters?	Yes ☐	No ☒
Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bush fire prone land?	Yes ☐	No ☒
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)	Yes ☐	No ☒
Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011).	Yes ☐	No ☒
Are the works on land in a mine subsidence district within the meaning of the <i>Mine Subsidence Compensation Act 1961</i>?	Yes ☐	No ☒
Are the works on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property?	Yes ☐	No ☒
Are the works within a Western City operational area specified in Schedule 2 of the <i>Western Parkland City Authority Act 2018</i> with a capital value of \$30 million or more?	Yes ☐	No ☒

Table 2-11: Notification of council and occupiers of adjoining land

Do Council and occupiers of adjoining land need to be notified under section 2.111 of the SEPP (Transport and Infrastructure)?		
Does the proposal include a car park intended for the use by commuters using regular bus services?	Yes ☐	No ☒
Does the proposal include a bus depot?	Yes ☐	No ☒
Does the proposal include a permanent road maintenance depot or associated infrastructure, such as garages, sheds, tool houses, storage yards, training facilities and workers amenities?	Yes ☐	No ☒

Do Council and occupiers of adjoining land need to be notified under section 2.111 of the SEPP (Transport and Infrastructure)?

No. Ancillary activities would be limited to temporary car parking and laydown areas on the road verge adjacent to each intersection.

Consultation with Singleton Council

An outcome of the assessment above has determined that consultation with local councils and other public authorities would not be required for this proposal given the minor scale of work proposed. Nonetheless, Singleton Council has been advised of the proposed works and consultation is ongoing.

Other agency and community engagement

Broad community engagement activities were not carried out with the local community due to the minor scope of work and short duration of activities and the general absence of sensitive residential receivers in most locations. However, prior to the commencement of works, Transport would communicate road closures to the local community within the area surrounding the proposal. Suitable signage would be installed to inform road users of any changes to traffic conditions prior to, and during, construction. Section 3.3 (noise and vibration), identifies the sensitive receivers subject to notification prior to the commencement of construction works.

Prior to the commencement of works, Transport would communicate with the community via the following communication methods:

- Transport’s website
- update to livetraffic NSW
- subscribers to regular emails on upcoming road closures.

3. Environmental assessment

This chapter 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 the factors specified in s171 of the Environmental Planning and Assessment Regulation 2021.

The Matters of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) are also considered in Appendix A. Site-specific safeguards are provided to ameliorate the identified potential impacts.

3.1 Soil

Table 3-1: Soil

Description of existing environmental and potential impacts		
Are there any known occurrences of salinity or acid sulfate soils in the area? A review of the SEED Map Viewer (Environment and Heritage Group, 2023) and Australian Soil Resource Information System's (ASRIS, 2018) online Acid Sulfate Soil risk map on 20 November 2023 indicates the proposal areas are not located within an area of potential or acid sulfate soils occurrence. Acid sulfate soils are not considered further due to the extremely low probability of occurrence and very low risk. Minimal excavations for the proposed intersection works may occur at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). This would require minor excavation for the construction of the hardstand at Pagan Street and Pringle Street. These areas would be re-instated with new road pavement. If potential or actual acid sulfate soils are encountered during construction, this would be managed in accordance with Transport's <i>Guidelines for the Management of Acid Sulphate Materials 2005</i>. A search of the eSPADE website (Environment and Heritage Group, 2023), conducted on the 4 December 2023 identified that the area south of the New England Highway and Golden Highway intersection (I-005) is located in an area mapped as high saline soils. No ground disturbance is anticipated at this proposal area and therefore it is unlikely to encounter saline soils.	Yes ☐	No ☒
Does the proposal involve the disturbance of large areas (e.g., >2ha) for earthworks? The proposal would require some minor excavation up to a depth of one metre and 0.087 ha to allow for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010).	Yes ☐	No ☒
Does the site have constraints for erosion and sedimentation controls such as steep gradients or narrow corridors? The proposal areas elevation ranges between about 60 metres to 90 metres Australian Height Datum (AHD). The proposed intersection works would be carried out on a generally flat topography within an existing road and vegetated verge and is unlikely to pose erosion and sediment risks or constraints for the implementation of erosion and sedimentation controls. The proposed laydown locations are all situated on flat grades and would not require any exposure of soils in order to establish.	Yes ☐	No ☒
Are there any sensitive receiving environments that are located in or nearby the likely proposal area or that would likely receive stormwater discharge from the proposal? Sensitive receiving environments include (but are not limited to) wetlands, state forests, national parks, nature reserves, rainforests, drinking water catchments).	Yes ☐	No ☒

Description of existing environmental and potential impacts		
Belford National Park is located 4.8 kilometres from the New England Highway and Golden Highway intersection (I-005) site and Wollemi National Park is located two kilometres from Lonsdale Street and Golden Highway intersection (H-009 and H-010). It is highly unlikely the proposal would impact upon either National Park due to the distance to the proposal areas. The nearest sensitive receiving environment within the vicinity of the proposal is the Hunter River. The following waterways are located near the proposal areas: an ephemeral drainage gully of the Hunter River is approximately 100 metres east of the New England Highway and Golden Highway intersection (I-005) an ephemeral drainage gully of Hunter River is approximately 30 metres south of the Golden Highway and Putty Road intersection (I-006) Doctors Creek is approximately 150 metres east of Putty Road and Jerrys Plains Road intersection (I-007) a drainage gully connected to Redmanvale Creek is present to the north of Pringle Street at the northern end of the Lonsdale Street and Golden Highway intersection (H-009 and H-010) a culvert crosses beneath Golden Highway at the southern end of Lonsdale Street and Golden Highway intersection (H-009 and H-010). All existing drainage connects to the Hunter River catchment which drains east towards Newcastle. The proposal is unlikely to impact these waterways due to their distance from the proposed intersection works and the nature of works at each proposal area. As detailed above, 0.087 hectares of exposed soil would be required for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). However, the limited extent of soil disturbance associated with the proposal, the flat topography between the intersection and the Hunter River to the northwest (across cropping land) and ponding along the drainage gully substantially minimises the risk of any sediment issues. Erosion and sediment controls measures (E1) would be implemented during construction to minimise sediment movement. No stormwater drainage relocations or sediment basins are required for the proposal. Therefore, due to the size and nature of the proposal, it would be unlikely to generate substantially increased stormwater volumes or reduced stormwater quality for nearby receivers during construction or operation.		
Is there any evidence within or nearby the likely footprint of potential contamination? A review of the NSW EPA Contaminated Land Register for the Singleton LGA was undertaken on 30 October 2023. There are no known contaminated sites located near the proposal areas. If contamination is encountered the unexpected finds of potential or actual contaminated soils would be managed in accordance with Transport's <i>QA Specification G36 Section 4.2 2022</i>.	Yes ☐	No ☒
Is the likely proposal footprint in or nearby highly sloping landform? Works will be limited mostly to the road reserve. There are no highly sloping landforms within or nearby the proposal areas that represent a significant erosion risk.	Yes ☐	No ☒
Is the proposal likely to result in more than 2.5ha (area) of exposed soil? The total area required for construction would be 8.5 hectares, of which only a limited area would involve soil disturbance of 0.087 hectares for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) and about 0.014 hectares for the New England and Golden Highway intersection (I-005). Safeguards are provided below which would be used to manage potential erosion and sediment impacts (E1) near the proposed works area.	Yes ☐	No ☒
Additional information pertaining to soil and contamination risk. A desktop database search and review of publicly available information was undertaken to identify the potential for soil impacts. The sources consulted included: - the NSW Department of Land & Water Conservation Acid Sulfate Soil Risk Maps (DLWC, 1998) - SEED (Sharing and Enabling Environmental Data) Map Viewer (Environment and Heritage Group, 2023) - the Australian Soil Resource Information System (ASRIS) maps (2023) - NSW eSpade Map Viewer (Environment and Heritage Group, 2023).		

Description of existing environmental and potential impacts

Construction activities would involve movement and use of vehicles across exposed earth, and transport of materials to and from the proposal areas. There is potential for soil erosion to occur across the proposal footprint. Safeguards would be in place to minimise the potential for soil erosion impacts.

Safeguards

Table 3-2: Soil safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
E1	Soils	Erosion and sediment control measures are to be implemented in accordance with the Landcom <i>Managing Urban Stormwater, Soils and Construction Guidelines</i> (the Blue Book)) and associated volumes and maintained to: • minimise 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 • divert clean water around the site.	Contractor	Construction
E2	Soils	Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request.	Contractor	Construction
E3	Soils	Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised.	Contractor	Construction
E4	Soils	Work areas are to be stabilised progressively during the works.	Contractor	Construction
E5	Soils	A progressive erosion and sediment control plan is to be prepared and implemented for the works as necessary.	Contractor	Pre-construction and Construction
E6	Soils	The maintenance of established stockpile sites is to be in accordance with Transport's <i>Stockpile Site Management Guideline</i> (EMS-TG-10).	Contractor	Pre-construction and Construction
E7	Soils	Potential or actual acid sulphate soils are to be managed in accordance with Transport's <i>Guidelines for the Management of Acid Sulphate Materials</i> 2005.	Contractor	Construction
E8	Soils	Saline soils are to be managed in accordance with <i>NSW Department of Primary Industries (2014) Salinity Training Handbook</i> .	Contractor	Construction
E9	Contamination	An unexpected finds procedure for potential or actual contaminated soils will be included in the construction environmental management documentation.	Contractor	Construction

3.2 Waterways and water quality

Table 3-3: Waterways and water quality

Description of existing environmental and potential impacts																			
Is the proposal located within, adjacent to or near a waterway? As outlined in Section 3.1 (Soil), the nearest sensitive receiving environment within the vicinity of the proposal is the Hunter River. The nearest water bodies and their location from the proposal areas are summarised in Table 3-4 and shown in Figure 3-1 to Figure 3-4. Table 3-4: Water bodies within the vicinity of the proposal <table><tr><th>Proposal area</th><th>Name of water body</th><th>Location from the proposal (approximate)</th></tr><tr><td>New England Highway and Golden Highway intersection (I-005)</td><td>Ephemeral drainage gully of Hunter River</td><td>100 metres east</td></tr><tr><td>Golden Highway and Putty Road intersection (I-006)</td><td>Ephemeral drainage gully of Hunter River</td><td>30 metres south</td></tr><tr><td>Putty Road and Jerrys Plains Road intersection (I-007)</td><td>Doctors Creek</td><td>150 metres east</td></tr><tr><td rowspan="2">Lonsdale Street and Golden Highway intersection (H-009 and H-010)</td><td>Drainage gully connected to Redmanvale Creek</td><td>North of Pringle Street at the northern end of the intersection</td></tr><tr><td>Culvert</td><td>Crosses beneath Golden Highway at the southern end of intersection</td></tr></table>			Proposal area	Name of water body	Location from the proposal (approximate)	New England Highway and Golden Highway intersection (I-005)	Ephemeral drainage gully of Hunter River	100 metres east	Golden Highway and Putty Road intersection (I-006)	Ephemeral drainage gully of Hunter River	30 metres south	Putty Road and Jerrys Plains Road intersection (I-007)	Doctors Creek	150 metres east	Lonsdale Street and Golden Highway intersection (H-009 and H-010)	Drainage gully connected to Redmanvale Creek	North of Pringle Street at the northern end of the intersection	Culvert	Crosses beneath Golden Highway at the southern end of intersection
Proposal area	Name of water body	Location from the proposal (approximate)																	
New England Highway and Golden Highway intersection (I-005)	Ephemeral drainage gully of Hunter River	100 metres east																	
Golden Highway and Putty Road intersection (I-006)	Ephemeral drainage gully of Hunter River	30 metres south																	
Putty Road and Jerrys Plains Road intersection (I-007)	Doctors Creek	150 metres east																	
Lonsdale Street and Golden Highway intersection (H-009 and H-010)	Drainage gully connected to Redmanvale Creek	North of Pringle Street at the northern end of the intersection																	
	Culvert	Crosses beneath Golden Highway at the southern end of intersection																	
All existing drainage connects to the Hunter River catchment which drains east towards Newcastle. The proposal is unlikely to impact these waterways due to their distance from the proposed intersection works and the nature of works at each proposal area. As detailed above, 0.087 ha of exposed soil would be required for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). However, the limited extent of soil disturbance associated with the proposal, the flat topography between the intersection and the Hunter River to the northwest (across cropping land) and ponding along the drainage gully minimises the risk of any sedimentation issues. Erosion and sediment controls measures (E1) would be implemented during construction to minimise sediment movement.																			
Yes ☒ No ☐																			

Description of existing environmental and potential impacts



Figure 3-1: Water bodies within the vicinity of the proposal - New England Highway and Golden Highway intersection (I-005)

Description of existing environmental and potential impacts



Figure 3-2: Water bodies within the vicinity of the proposal – Golden Highway and Putty Road intersection (I-006)

Description of existing environmental and potential impacts



Figure 3-3: Water bodies within the vicinity of the proposal – Putty Road and Jerrys Plains Road intersection (I-007)

Description of existing environmental and potential impacts



Figure 3-4: Water bodies within the vicinity of the proposal – Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Is the location known to flood or be prone to water logging?

A review of the Singleton Floodplain Risk Management Plan (Singleton Council, 2012) indicates the proposal areas are not located near or within a known to flood or be prone to water logging locations.

Yes ☐

No ☒

Description of existing environmental and potential impacts		
Is the proposal located within a regulated catchment covered by chapter 6 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP (Biodiversity and Conservation))?	Yes ☐	No ☒
Would the proposal be undertaken on a bridge or ferry?	Yes ☐	No ☒
Is the proposal likely to require the extraction of water from a local water course (not mains)? All water required for the proposal including but not limited to dust suppression and fill compaction would be sourced from potable town water.	Yes ☐	No ☒

Safeguards

Table 3-5: Waterways and water quality safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
W1	Water quality	Weather forecasts (probability and amount of rain) will be considered when programming works. Works involving ground disturbance will be planned to avoid wet weather wherever practicable.	Contractor	Construction
W2	Water quality	An emergency spill kit will be kept onsite at all times during works. All staff are to be made aware of the location of the spill kit and trained in its use.	Contractor	Construction
W3	Water quality	If a spill occurs, Transport’s Environmental Incident Procedure 2021 will be followed and the Transport Project Manager notified as soon as practicable.	Contractor	Construction

3.3 Noise and vibration

Table 3-6: Noise and vibration

Description of existing environmental and potential impacts		
Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (i.e., church, school, hospital)? The location of existing noise sensitive receivers is shown in the key environmental constraints map in Figure 3-5 to Figure 3-8. The proposal is surrounded by the following sensitive receivers that may be impacted during construction near the construction boundary, including: • New England Highway and Golden Highway intersection (I-005): The surrounding land is zoned as primary production (RU1), heavy industrial (E5) and infrastructure (SP2). One residential receiver is located about 200 metres northwest from the proposal area. A beef abattoir is located about 650 metres south, Singleton Military Area is located about 55 metres southwest, and a BP truckstop is located about 220 metres north of the proposal area. • Golden Highway and Putty Road intersection (I-006): The surrounding land is zoned as primary production (RU1). One residential receiver is located about 520 metres southeast of the proposal area. No other sensitive receivers are present near the proposal area. • Jerrys Plains Road and Putty Road intersection (I-007): The surrounding land is zoned as primary production (RU1) and heavy industrial (E5). One residential receiver is located about 380 metres east of the proposal area. A large commercial and industry area is located about 50 metres south of the proposal area and Mount Thorley Warkworth Coal Mine is located 400 metres west of the proposal area. • Lonsdale Street and Golden Highway intersection (H-009 and H-010): The surrounding land is zoned as large lot residential (R5), primary production (RU1) and village (RU5). Twelve (12) residential receivers are located adjacent to the proposal area. St James' Anglican Church is located about 85 metres southeast of the proposal and the Jerrys Plains Public School is located about 300 metres south from the proposal. A BP service station is located about 420 metres and Robin Hood Bar & Bistro located about 560 metres southeast of the proposal area. No other residential property or other sensitive receivers are in close proximity to the proposal.	Yes ☒	No ☐

Description of existing environmental and potential impacts



Figure 3-5: Noise sensitive receivers in proximity to the New England Highway and Golden Highway intersection (I-005)

Description of existing environmental and potential impacts



Figure 3-6: Noise sensitive receivers in proximity to Putty Road and Golden Highway intersection (I-006)

Description of existing environmental and potential impacts



Figure 3-7: Noise sensitive receivers in proximity to Jerrys Plains Road and Putty Road intersection (I-007)

Minor works review of environmental factors

Description of existing environmental and potential impacts



Figure 3-8: Noise sensitive receivers in proximity to Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Description of existing environmental and potential impacts																			
Is the proposal going to be undertaken only during standard working hours? Standard working hours - Monday-Friday: 7:00am to 6:00pm - Saturday: 8:00am to 1:00pm - Sunday and Public Holidays: no work. Construction works that could result in noise affected receivers are proposed to occur during standard working hours (daytime) as identified above. Road occupancy licences (ROLs) issued for on or adjacent to the carriageway, however, could specify that the works must occur outside standard working hours to minimise potential traffic and road safety impacts. A ROL may be required at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) and at the New England Highway and Golden Highway intersection (I-005). Any works defined as out of hours as per Table 3-7 will be carried out in accordance with the requirements of the applicable ROLs. Table 3-7: Out-of-hours construction time periods <table border="1"> <thead> <tr> <th>Period</th> <th>Monday-Friday</th> <th>Saturday</th> <th>Sunday</th> </tr> </thead> <tbody> <tr> <td>Out-of-hours (day)</td> <td>-</td> <td>7:00 am – 8:00 am</td> <td>-</td> </tr> <tr> <td>Out-of-hours (day and evening)</td> <td>6:00 pm – 10:00 pm</td> <td>1:00 pm – 6:00 pm</td> <td>6:00 pm – 10:00 pm</td> </tr> <tr> <td>Out-of-hours (night)</td> <td>10:00 pm – 7:00 am</td> <td>6:00 pm – 10:00 pm</td> <td>10:00 pm – 7:00 am</td> </tr> </tbody> </table>		Period	Monday-Friday	Saturday	Sunday	Out-of-hours (day)	-	7:00 am – 8:00 am	-	Out-of-hours (day and evening)	6:00 pm – 10:00 pm	1:00 pm – 6:00 pm	6:00 pm – 10:00 pm	Out-of-hours (night)	10:00 pm – 7:00 am	6:00 pm – 10:00 pm	10:00 pm – 7:00 am	Yes ☐	No ☒
Period	Monday-Friday	Saturday	Sunday																
Out-of-hours (day)	-	7:00 am – 8:00 am	-																
Out-of-hours (day and evening)	6:00 pm – 10:00 pm	1:00 pm – 6:00 pm	6:00 pm – 10:00 pm																
Out-of-hours (night)	10:00 pm – 7:00 am	6:00 pm – 10:00 pm	10:00 pm – 7:00 am																
Is any explosive blasting required for the proposal?		Yes ☐	No ☒																
Would construction noise or vibration from the proposal affect sensitive receivers? The Transport Construction Noise Estimator tool has been used to assess construction noise and vibration impacts for the New England Highway and Golden Highway intersection (I-005) and Lonsdale Street and Golden Highway intersection (H-009 and H-010) for the construction of the hardstand. The other proposal areas have been excluded from this assessment as only signage relocation would occur at these sites. This assessment has been carried out to consider the impacts from multiple construction equipment operating at the same time. The results of the assessment are available in Appendix B: Noise and Vibration Calculator Tool Results. The assessed locations were categorised based on noise area types (i.e. number of noise sensitive receivers in proximity to works) as per the Transport Construction Noise Estimate tool. The noise area categories selected for each of the assessed areas are detailed below: New England Highway and Golden Highway intersection (I-005): The R2 category has been selected as the representative noise area category for this intersection. The R2 category (Example 1) is most representative of an area with isolated residences adjacent to a large road. There is a band of vegetation and a shed between the proposal and the nearest sensitive receiver, located about 200 metres northwest. Lonsdale Street and Golden Highway intersection (H-009 and H-010): The R1 category was selected as the representative noise area category for this intersection. The R1 category is representative of a rural area with a posted speed limit of 50 kilometres per hour (Example 2). As noted above, 10 residential receivers are located adjacent to the proposal area. St James' Anglican Church is located 86 metres south of the proposal and the Jerrys Plains Public School is located 300 metres south from the proposal. Construction noise assessment A distance based (scenario) assessment was selected for both intersections, with 'local road works' and 'paving / asphaltting' selected as the applicable construction scenarios for the intersection: - New England Highway and Golden Highway intersection (I-005) – Paving / asphaltting (Standard and out of hours) - Lonsdale Street and Golden Highway intersection (H-009 and H-010) – Local road works (Standard and out of hours).		Yes ☒	No ☐																

Description of existing environmental and potential impacts

Residential receivers

Residential receivers located within noise affected distances have the potential to experience construction noise levels above the construction noise management levels (NMLs). Noise affected distances for paving / asphaltting and local road works are provided in Table 3-8 for each assessment time period and applicable noise category. Developed settlements (urban and suburban) have been assumed in estimating construction noise impacts.

Table 3-8: Construction noise affected distances for residential receivers – Paving / asphaltting and local road works

Noise area category and scenario		Noise affected distances (metres)				
		Standard hours (Day)	Out of hours (Day)	Out of hours (Evening)	Out of hours (Night)	Highly affected distance
R2 (Paving / asphaltting)	Without line of sight	105	155	230	335	10
R1 (Local Road works)	With line of sight	500	740	1085	1560	45
	Without line of sight	330	500	740	1090	25

Based on Table 3-8, the following impacts are expected for receivers without line of sight to the proposed work:

- R2 category:
 - During paving / asphaltting activities in the day period, those within 105 metres of the proposal area have the potential to experience levels above the NML. Night period works are expected to impact residential receivers within 335 metres. Receivers within 10 metres may be highly noise affected.
- R1 Category:
 - During local road works in the day period, those within 330 metres of the proposal area have the potential to experience levels above the NML. Night period works are expected to impact residential receivers within 1090 metres. Receivers within 25 metres may be highly noise affected.

The following impacts are expected for receivers with line of sight to the proposed work at Lonsdale Street and the Golden Highway intersection (H-009 and H-010):

- R1 category:
 - During local road works, those within 500 metres during the day period and 1560 metres during the night period have the potential to experience levels above the NML. Receivers within 45 metres may be highly noise impacted.

New England Highway and Golden Highway intersection (I-005)

Table 3-9 and Table 3-10 provides the recommended additional mitigation measures for each perception category for residential receivers without line of sight to the proposal area. Table 3-9 and

Table 3-10 is based on the predicted construction noise impacts during standard construction hours (day-time period) and night-time for paving / asphaltting and undeveloped, green fields, rural areas with isolated dwellings. Figure 3-9 and Figure 3-10 shows the impact distances for each perception level of this intersection.

Description of existing environmental and potential impacts

Table 3-9: Predicted noise impact during standard hours for paving / asphaltting works – R2 category

Perception	Noise management level, $L_{Aeq}(15 \text{ min})$ dBA			
	NML, dBA	Predicted noise level, dBA	Impact distance (metres)	Recommended additional mitigation measure
Noticeable	55	-	-	-
Clearly audible		-	-	-
Moderately intrusive		65	25	N
Highly intrusive		75	10	N, PC, RO
Highly noise affected		75	10	N, PC, RO

N=Notification, PC=Phone calls, RO=Respite offer

Table 3-10: Predicted noise impact during night-time hours for paving / asphaltting works – R2 category

Perception	Noise management level, $L_{Aeq}(15 \text{ min})$ dBA			
	NML, dBA	Predicted noise level, dBA	Impact distance (metres)	Recommended additional mitigation measure
Noticeable	40	40	335	N
Clearly audible		45	230	N, R2, DR
Moderately intrusive		55	105	N, PC, SN, R2, DR
Highly intrusive		65	25	AA, N, PC, SN, R2, DR
Highly noise affected		75	10	N, PC, RO

N=Notification, SN=Specific notifications, PC=Phone calls, RO=Respite offer, R2=Respite period 2, DR=Duration respite, AA=Alternative accommodation

The nearest residential receiver to the New England Highway and Golden Highway intersection (I-005) is located about 200 metres northwest of the intersection and the receiver is not within line of sight of the proposal area. The residential receiver is located beyond the 105 metre range for standard hours, indicating that this receiver is not expected to experience noise levels above the NML. However, during night-time works this receiver is within the 335 metre range where potential noise levels above the NML would be experienced. Based on Table 3-10, noise impacts from this receiver are anticipated to be 'clearly audible' (construction noise levels between 10 and 20 dBA) during night-time hours.

As a result, mitigation measures are required, in line with *Construction Noise and Vibration Guideline*. This is summarised in Table 3-15.

Description of existing environmental and potential impacts

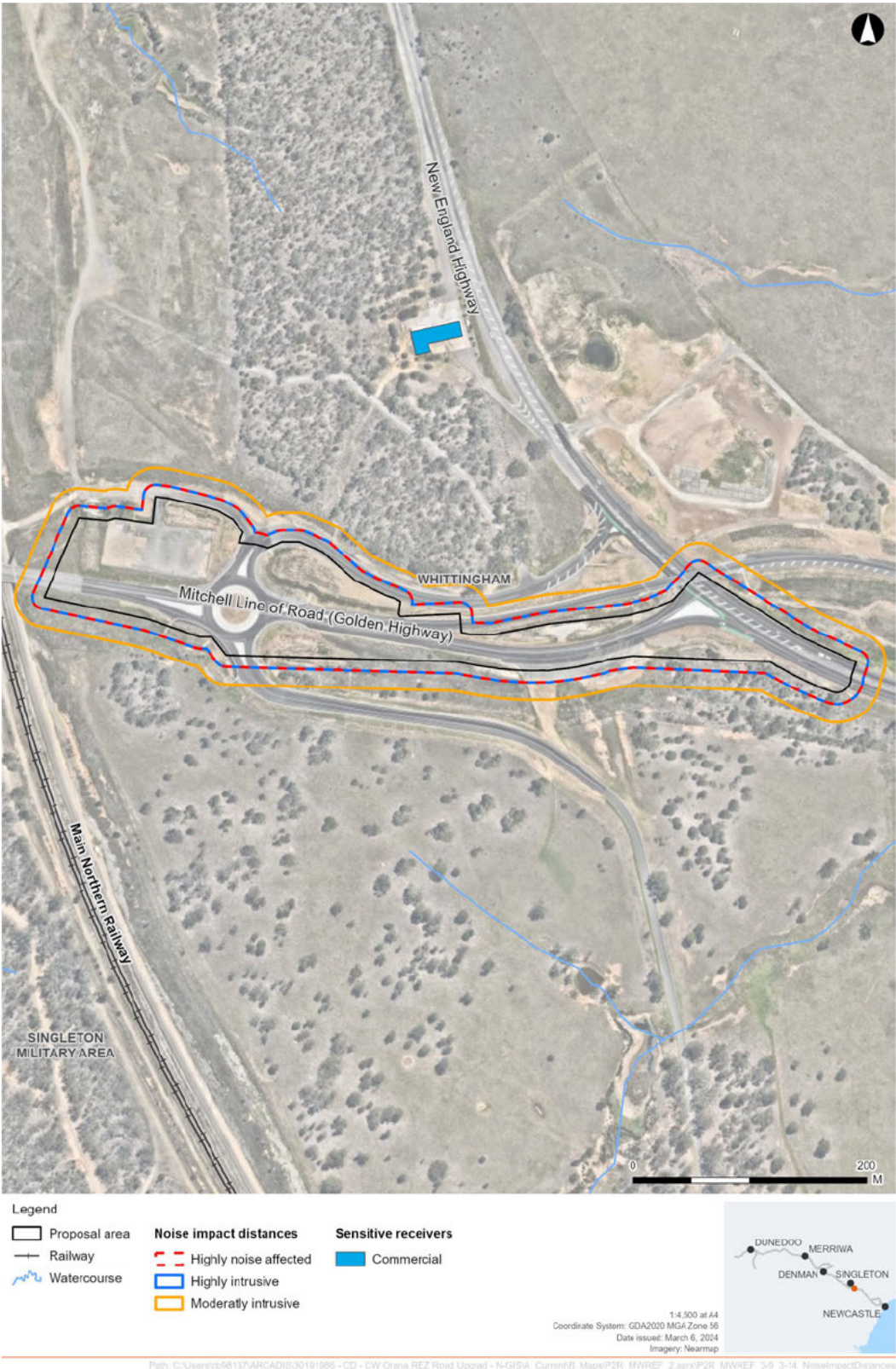


Figure 3-9: Construction noise impact distances during the day-time period (without line of sight) – New England Highway and Golden Highway intersection (I-005)

Minor works review of environmental factors

Description of existing environmental and potential impacts



Figure 3-10: Construction noise impact distances during the night-time period (without line of sight) – New England Highway and Golden Highway intersection (I-005)

Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Description of existing environmental and potential impacts

Table 3-11 and Table 3-12 provides the recommended additional mitigation measures for each perception category for residential receivers with line of sight and without line of sight to the proposal area. Table 3-9 and Table 3-10 is based on the predicted construction noise impacts during standard construction hours (day-time period) and night-time for local road works and developed settlements (urban and suburban). Figure 3-11 and Figure 3-12 shows the impact distances for each perception level of this intersection.

Table 3-11: Predicted noise impact during standard hours for local road works – R1 category

Perception	Line of sight (yes/no)	Noise management level, $L_{Aeq}(15 \text{ min})$ dBA			
		NML, dBA	Predicted noise level, dBA	Impact distance (metres)	Recommended additional mitigation measure
Noticeable	Yes	50	-	-	-
	No		-	-	-
Clearly audible	Yes		-	-	-
	No		-	-	-
Moderately intrusive	Yes		60	215	N
	No			140	
Highly intrusive	Yes		70	85	N
	No			45	
Highly noise affected	Yes		75	45	N, PC, RO
	No			25	

N=Notification, PC=Phone calls, RO=Respite offer

Table 3-12: Predicted noise impact during night-time hours for local road works – R1 category

Perception	Line of sight (yes/no)	Noise management level, $L_{Aeq}(15 \text{ min})$ dBA			
		NML, dBA	Predicted noise level, dBA	Impact distance (metres)	Recommended additional mitigation measure
Noticeable	Yes	50	35	1560	N
	No			1090	
Clearly audible	Yes		40	1085	N, R2, DR
	No			740	
Moderately intrusive	Yes		50	500	N, PC, SN, R2, DR
	No			330	
Highly intrusive	Yes		60	215	AA, N, PC, SN, R2, DR
	No			140	
Highly noise affected	Yes		75	45	N, PC, RO
	No			25	

Description of existing environmental and potential impacts

N=Notification, SN=Specific notifications, PC=Phone calls, RO=Respite offer, R2=Respite period 2, DR=Duration respite, AA=Alternative accommodation

Twelve residential receivers are located adjacent to the proposal area. St James’ Anglican Church is located about 85 metres southeast of the proposal and the Jerrys Plains Public School is located about 300 metres south from the proposal. Based on Table 3-11 and Table 3-12, noise impacts to surrounding residential receivers are anticipated to range from ‘noticeable’ to ‘highly noise affected’. Worst-case noise levels would occur when the works are immediately adjacent to the receiver and would reduce with increasing separation distance as the noisy activities occur in other locations within the footprint. As a result, mitigation measures are required, in line with the *Construction Noise and Vibration Guideline* (TfNSW, 2022). This is summarised in Table 3-15. The works at this location are anticipated to take around six months to complete. The noisiest activities, which account for the worst-case noise predictions, would only occur intermittently during this period.

Description of existing environmental and potential impacts



Figure 3-11: Construction noise impact distances during the day-time period (without line of sight) – Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Description of existing environmental and potential impacts



Figure 3-12: Construction noise impact distances during the night-time period (without line of sight) – Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Non-residential receivers

Description of existing environmental and potential impacts

The noise affected distances for non-residential receivers all assume direct line of sight to the proposal areas and the construction noise impacts on non-residential receivers would only apply when the premises are in use.

Noise affected distances for non-residential receivers, R2 category for the New England Highway and Golden Highway intersection (I-005) and R1 category for the Lonsdale Street and Golden Highway intersection (H-009 and H-010), are outlined in Table 3-14.

Table 3-13: Noise affected distances for non-residential receivers.

Noise category	Scenario	Noise affected distance (metres)			
		Classroom at schools	Industrial Premise	Offices, retail outlets	Place of Worship
R2	Paving / asphalting	155	20	30	155
R1	Local road works	330	45	85	330

A BP truck stop is located about 220 metres north of the New England Highway and Golden Highway intersection (I-005) and is open 24 hours. This receiver does not fall within the 30-metre range established in Table 3-13, and as such is not predicted to be noise affected by construction.

There are four non-residential receivers surrounding the Lonsdale Street and Golden Highway intersection (H-009 and H-010). The St James' Anglican Church (located 85 metres southeast of the proposal area) and Jerrys Plains Public School (located about 300 metres south of the proposal) both fall within the 330-metre range established in Table 3-13. This indicates that these receivers would be noise affected during construction. The BP service station is located about 420 metres and Robin Hood Bar & Bistro is located about 560 metres southeast of the proposal area. Both receivers are outside of the 85-metre noise affected distance, and as such, are not anticipated to be noise affected by construction. Mitigation measures, in line with the *Construction Noise and Vibration Guideline* (Transport for NSW, 2023), would be in place to minimise noise impacts to receivers. These are summarised in Table 3-15.

Construction vibration assessment

Construction vibration impacts have been considered based on the minimum working distances for equipment causing vibration. These distances provided in the *Construction Noise and Vibration Guideline* (Transport for NSW, 2023) are given in Table 3-14.

Table 3-14: Minimum working distances for construction vibration

Plant	Appropriate size	Minimum working distance (metres)		
		Structural damage (standard structures)	Structural damage (heritage structures)	Human comfort
Vibratory roller	1-2 tonne	5	14	15 to 20
	2-4 tonne	6	16	20
	4-6 tonne	12	33	40
	7-13 tonne	15	41	100
	13-18 tonne	20	54	100
	>18 tonne	25	68	100
Jackhammer	Hand held	1	2	3

Description of existing environmental and potential impacts		
To provide a conservative assessment, potential impacts have been assessed using a vibratory roller (>18 tonnes) with a minimum working distance of 25 metres for standard structures and 68 metres for heritage structures. <u>New England Highway and Golden Highway intersection (I-005)</u> No structures or heritage items would be impacted at this intersection as no structures are located within the minimum working from construction activities. <u>Golden Highway and Putty Road intersection and Jerrys Plains Road and Putty Road intersection (I-006 and I-007)</u> No structures or heritage items would be impacted at these intersections as construction works would be limited to signage relocation and/or removal. <u>Lonsdale Street and Golden Highway intersection (H-009 and H-010)</u> Two houses and one shed are located within 25 metres of hardstand construction works and as such are at risk of structural damage (if a vibratory roller in excess of 18 tonnes is used). The use of smaller vibratory rollers could avoid the potential for structural damage. 11 residences are located within the 100 metre human annoyance range in the scenario that a vibratory roller in excess of 18 tonnes is used. Even with the use of smaller vibratory rollers, vibration might be perceptible at certain adjacent sensitive receivers. This would only occur when the vibration generating activities are occurring, which would only be a certain time during the anticipated one-month construction period. Any vibration experienced by receivers in the vicinity of the Lonsdale Street and Golden Highway intersection (H-009 and H-010) during any compaction activities required during hardstand creation would be minor, temporary and short-lived. Environmental safeguards outlined in Table 3-15 would be in place to mitigate any potential vibration impacts.		
Would operation of the proposal alter the noise environment for sensitive receivers? This might include, but not be limited to, altering the line or level of an existing carriageway, changing traffic flow, adding extra lanes, increasing traffic volume, increasing the number of heavy vehicles, removing obstacles that provide shielding including changing the angle of view of the traffic, changing the type of pavement, increasing traffic speeds by more than 10 kilometres per hour or installing audio-tactile line markings. There are no anticipated operational impacts associated with the proposal and will be considered to remain at the background noise levels. Any noise impacts from OSOM movements for individual generator projects using the proposed upgrades will be assessed and approved as part of their consent requirements.	Yes ☐	No ☒
Would the proposal result in vibration being experienced by any surrounding properties or infrastructure during operation? The proposal would not result in operational vibration impacts as it would not result in changes to the day to day operation of the road network.	Yes ☐	No ☒

Safeguards

Table 3-15: Noise and vibration safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
NV1	Noise and vibration	Construction noise and vibration will be managed in accordance with the <i>Construction Noise and Vibration Guideline</i> (CNVG) (Transport for NSW,	Contractor	Construction

Numbering	Impact	Environmental safeguards	Responsibility	Timing
		2023) and <i>Interim Construction Noise Guideline</i> (ICNG) (NSW DECC, 2009).		
NV2	Noise and vibration	All sensitive receivers (e.g. schools, local residents) likely to be affected will be notified at least five working days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: - the project - the construction period and construction hours - impacts and mitigation measures, - contact information for project management staff - complaint and incident reporting how to obtain further information.	Contractor	Construction
NV3	Noise and vibration	Any work with impulsive or tonal noise emissions will be carried out in accordance with the Construction Noise and Vibration Guideline (Roads) (Transport for NSW, 2023) and EPA Interim Construction Noise Guideline (ICNG) (NSW DECC, 2009).	Contractor	Construction
NV4	Noise and vibration	Recommended noise mitigation measures, as identified in Table 3-9 to Table 3-12, are to be implemented where appropriate.	Contractor	Pre-construction Construction
NV5	Noise and vibration	Construction methods must consider safe working distances for rollers and other vibration producing equipment when working adjacent to structures, including heritage structures. Equipment and methods will be selected to avoid structural damage and minimise the potential for amenity impacts for adjacent receivers.	Contractor	Construction

3.4 Air quality

Table 3-16: Air quality

Description of existing environmental and potential impacts		
Is the proposal likely to result in large areas (>2ha) of exposed soils? The total area required for construction would be 8.5 hectares, of which only a limited area would involve soil disturbance of 0.087 hectares for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Safeguards are provided below which would be used to manage potential erosion and sediment impacts near the proposed works area.	Yes ☐	No ☒
Are there any dust-sensitive receivers located within the vicinity of the proposal during the construction period? As discussed in Section 3.3 (Noise and vibration), the following sensitive areas located near the proposal areas: - New England Highway and Golden Highway intersection (I-005): residential receiver is located 200 metres northwest, a beef abattoir is located about 650 metres south, Singleton Military Area is located about 55 metres southwest, and a BP truckstop is located about 220 metres north of the proposal area. - Golden Highway and Putty Road intersection (I-006): residential receiver is located about 520 metres southeast of the proposal area - Jerrys Plains Road and Putty Road intersection (I-007): a residential receiver is located about 380 metres east of the proposal area. A large commercial and industry area is located about 50 metres south of the proposal area and Mount Thorley Warkworth Coal Mine is located 400 metres west of the proposal area. - Lonsdale Street and Golden Highway intersections (H-009 and H-010): Twelve (12) residential receivers are located adjacent to the proposal area. St James' Anglican Church is located 85 metres southeast of the proposal and Jerrys Plain Public School is located 300 metres south of the proposal area. A BP service station is located about 420 metres and Robin Hood Bar & Bistro located about 560 metres southeast of the proposal area. The main activities that may generate dust during construction include: - vehicles during earthworks associated with construction: - Excavators - Front end loaders - Dump trucks - wind erosion from exposed ground - vehicle movements on unsealed sections of road may cause dust. Dust impacts at the Golden Highway and Putty Road intersection (I-006) and Jerrys Plains Road and Putty Road intersection (I-007) are highly unlikely to occur as construction would consist of sign removal and/or relocation only. Dust impacts are unlikely to occur at the New England Highway and Golden Highway intersection (I-005) due to the distance between the intersection and the nearest sensitive receiver. There is potential for construction-related dust impacts at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) as earthworks would be carried out on dry days where wind speeds are elevated. Potential dust emissions would be managed through the implementation of environmental management measures during construction. These include, but are not limited to, covering vehicles transporting waste or other materials, avoiding works that could generate dust during strong winds or unfavourable weather conditions.	Yes ☒	No ☐
Is there likely to be an emission to air during construction? Emissions from plant and equipment would be generated during construction. This is not expected to be discernible from the existing vehicle emissions on the roads.	Yes ☒	No ☐

Safeguards

Table 3-17: Air quality safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
A1	Air quality	Vehicles transporting waste or other materials that have a potential to produce odours or dust will be covered during transportation.	Contractor	Construction
A2	Air quality	At the Lonsdale Street and Golden Highway intersection, works (including the spraying of paint and other materials) will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely to impact sensitive receivers.	Contractor	Construction
A3	Air quality	Plant, vehicles and equipment will be maintained in good condition and in accordance with manufacturer's specifications.	Contractor	Construction
A4	Air quality	Plant and machinery will be turned off when not in use.	Contractor	Construction
A5	Air quality	Visual monitoring of air quality will be undertaken to verify the effectiveness of controls and enable early intervention.	Contractor	Construction
A6	Air quality	Work activities will be reprogrammed if the management measures are not adequately restricting dust generation.	Contractor	Construction

3.5 Aboriginal cultural heritage

Table 3-18: Aboriginal cultural heritage

Description of existing environmental and potential impacts		
Would the proposal involve disturbance in any area that has not been subject to previous ground disturbances? The proposed intersection works would primarily be limited to the road corridor. Minor excavation works would be undertaken as part of the construction of hardstand at the Lonsdale Street and Golden Highway. This area has been previously disturbed and impacts to Aboriginal heritage are considered unlikely.	Yes ☒	No ☐
Has an online Aboriginal Heritage Information Management System (AHIMS) search been completed? Searches of the Aboriginal Heritage Information Management System (AHIMS) were undertaken on 23 November 2023 (refer to Appendix C). The following Aboriginal heritage items were identified within a 500-metre radius of the proposal areas: - New England Highway and Golden Highway intersection (I-005): Six Aboriginal heritage items are located within 100 metres to the south and east of the proposal area. A total of 39 Aboriginal heritage items are within one kilometre of the proposal area. - Putty Road and Golden Highway intersection (I-006): One Aboriginal heritage item (37-6-2055) is located 290 metres west of the proposal area - Jerrys Plains Road and Putty Road intersection (I-007): Two Aboriginal heritage items are located 230 metres east (37-6-1435) and 330 metres west (37-6-2062) of the proposal area. No Aboriginal heritage items were identified within or in close proximity to the work locations associated with the proposal. No other Aboriginal heritage items were identified at the other proposal areas.	Yes ☒	No ☐
Is there potential for the proposal to impact on any items of Aboriginal cultural heritage? Extensive searches of the Aboriginal Heritage Information Management System were undertaken on 23 November 2023 (refer to Appendix C) and their proximity to the proposal areas is outlined in response to previous query. The proposal area would be located on existing developed land that is currently used as a roadway. The proposed works at this location includes the relocation of existing signs and no excavation is proposed therefore, it is highly unlikely to encounter Aboriginal cultural heritage items. No known sites would be impacted by the proposal. Due to the disturbed nature of each site and the locations of the required physically works, the potential of the proposal to impact any previously unknown items of Aboriginal cultural heritage is very low. The Transport's <i>Standard Management Procedure: Unexpected Heritage Items</i> will be followed if Aboriginal heritage is encountered during construction.	Yes ☐	No ☒
Would the proposal involve the removal of mature native trees? One tree removal and tree pruning of five other trees would be required at Lonsdale Street and Golden Highway intersection (H-009 and H-010). All trees are considered to be in a healthy condition, about 20 metres in height and average Diameter at Breast Height (DBH) of 57 cm. Further assessment of potential impacts of these trees is provided in Section 3.7 (Biodiversity). The locations and species (non-endemic in this locality) of the trees present suggest that they are planted and are, consequently, unlikely candidates as Aboriginal scarred trees.	Yes ☐	No ☒
Is the proposal consistent with the requirements of Transport's Procedure for Aboriginal cultural heritage consultation and investigation (PACHCI)?	Yes ☒	No ☐

Description of existing environmental and potential impacts

A Procedure for Aboriginal Cultural Heritage Investigation (PACHCI) was conducted in March 2024. The proposal was assessed as being unlikely to have an impact on Aboriginal cultural heritage based on the following considerations:

- the project is unlikely to harm known Aboriginal objects or places
- the AHIMS search did not indicate moderate to high concentrations of Aboriginal objects or places in the study area
- the study area does not contain landscape features that indicate the presence of Aboriginal objects, based on the Office of Environment and Heritage’s Due diligence Code of Practice for the Protection of Aboriginal objects in NSW and the Roads and Maritime Services’ procedure
- the cultural heritage potential of the study area appears to be reduced due to past disturbance
- There is an absence of sandstone rock outcrops likely to contain Aboriginal art.

The Stage 1 PACHCI assessment is provided in [Appendix D](#).

Additional information pertaining to Aboriginal cultural heritage risk.

A review of the National Native Title Tribunal was reviewed on 30 October 2023. It was confirmed the proposal areas are not located within a Native Title Claim area.

Safeguards

Table 3-19: Aboriginal cultural heritage safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
AH1	Aboriginal cultural heritage	If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Transport for NSW Aboriginal cultural heritage officer and regional environment manager contacted immediately. Steps in Transport’s <i>Standard Management Procedure: Unexpected Heritage Items</i> must be followed.	Contractor	Construction

3.6 Non-Aboriginal heritage

Table 3-20: Non-Aboriginal heritage

Description of existing environmental and potential impacts		
Have online heritage database searches been completed? • Transport (including legacy Roads and Maritime) section 170 register • NSW Heritage database • Commonwealth Heritage List, established under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) • Maritime heritage database • Australian Heritage Places Inventory • Local Environmental Plan(s) heritage items. The above searches were completed on 20 November 2023 and are attached in Appendix E. A search of the Transport Section 170 register, NSW State Heritage Register, Commonwealth Heritage List, Marine heritage database and Australian Heritage Places Inventory did not return any heritage items within the proposal area. Several Local Environmental Plan heritage items with local significance were identified within and surrounding the proposal areas. These are discussed below.	Yes ☒	No ☐
Are there any items of non-Aboriginal heritage or heritage conservation areas listed on relevant heritage databases/registers that are located within the vicinity of the proposal? A review of the Singleton LEP 2013 was undertaken on 30 October 2023. The following Non-Aboriginal heritage items were identified within the site boundary: • Golden Highway and Putty Road intersection (I-006): 'I39 'Abbey Green' and outbuildings (I39) that holds local significance and commonwealth (ID 1433) significance, its curtilage encroaches beyond the cadastral boundary and into the proposal area along its northern edge, which is aligned with the road easement, however, the heritage curtilage is primarily located north of the intersection (refer to Figure 3-13) • Lonsdale Street and Golden Highway intersection (H-009 and H-010): Jerrys Plains Heritage Conservation Area (C2) that holds local significance (refer to Figure 3-15). The following Non-Aboriginal heritage items were identified nearby the proposal area: • Jerrys Plains Road and Putty Road intersection (I-007): I40 Brick Farm House located 370 metres north-west from the intersection (refer to Figure 3-14) • Lonsdale Street and Golden Highway intersections (H-009 and H-010): Jerry Plains Catholic Church (I29) holds local and commonwealth (ID 14409) significance located about 60 metres south of the proposal area (refer to Figure 3-15), and Strawn (I32), a country house, holds local and commonwealth (ID 1395) significance located about five kilometres northwest of the proposal area. Construction activities at the Golden Highway and Putty Road intersection (I-006) are limited to the road reserve and consist of signage installations and relocations. The proposal area does overlap with the curtilage of the Abbey Green heritage item; however, no work is proposed within the curtilage area. The overlap could simply be a misalignment with the cadastral boundary, as both boundaries look offset from each other in the desktop review and seem to align elsewhere. However, construction would not impact the curtilage of the Abbey Green heritage items or the nearest buildings associated with the heritage items, which are located in excess of one kilometre north of the proposal area. None of the identified items are within or directly adjacent to the proposed construction activities at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Given the distance, limited works, and lack of vibration intensive activities within the specified minimum working distances, the proposal is not anticipated to impact the heritage-listed Jerrys Plains Conservation Area or Jerrys Plains Catholic Church.	Yes ☒	No ☐

Description of existing environmental and potential impacts

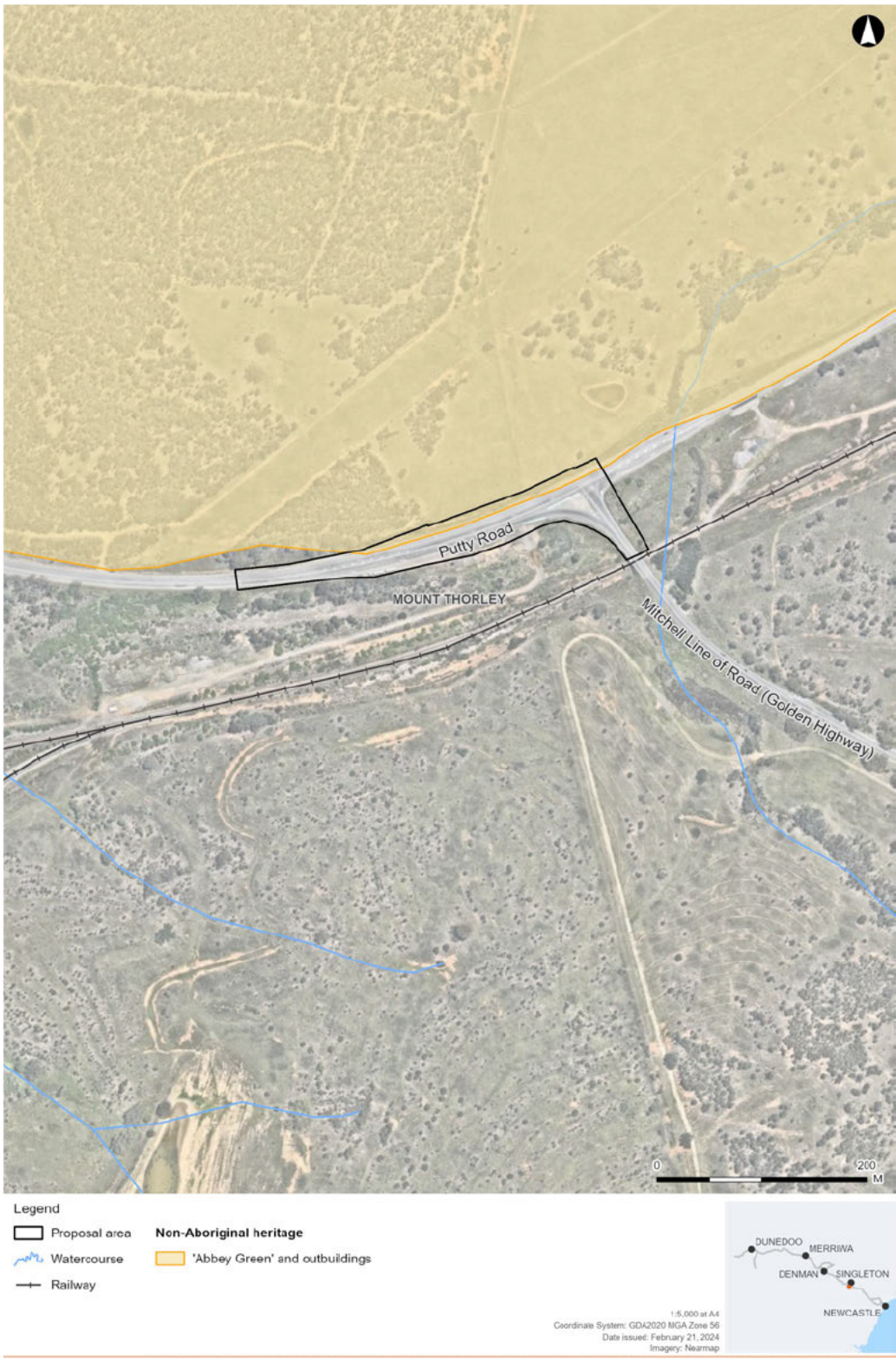


Figure 3-13: Non-Aboriginal heritage items within the vicinity of the proposal – Putty Road and Golden Highway intersection (I-006)

Description of existing environmental and potential impacts



Figure 3-14: Non Aboriginal heritage items within the vicinity of the proposal –Jerrys Plains Road and Putty Road intersection (I-007)

Description of existing environmental and potential impacts



Figure 3-15: Non-Aboriginal heritage items within the vicinity of the proposal – Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Description of existing environmental and potential impacts		
Is the proposal likely to impact trees that form part of a heritage listing or have other heritage value? The trees proposed to be removed and pruned, as outlined in Section 3.7 (Biodiversity), are not listed under the LEP or form part of a heritage listing or have other heritage value.	Yes ☐	No ☒
Is the proposal likely to occur in or near features that indicate potential archaeological remains? Due to the developed nature of the locality and past disturbance associated with the road construction, the risk of discovery of heritage items during any excavation works are considered low. Nevertheless, The Transport for NSW unexpected heritage items procedure (2024) would be included in the CEMP in the event that a heritage item is discovered.	Yes ☐	No ☒

Safeguards

Table 3-21: Non-Aboriginal heritage safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
H1	Non-Aboriginal heritage	If unexpected archaeological remains are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in Transport’s <i>Standard Management Procedure: Unexpected Heritage Items</i> must be followed. Transport for NSW Senior Environment Specialist – Heritage must be contacted immediately.	Contractor	Construction
H2	Non-Aboriginal heritage	If any items defined as relics under the <i>NSW Heritage Act 1977</i> are uncovered during the works, all works must cease in the vicinity of the find and the Transport for NSW Senior Environment Specialist – Heritage contacted immediately.	Contractor	Construction

3.7 Biodiversity

Table 3-22: Biodiversity

Description of existing environmental and potential impacts				
Have relevant database searches been carried out? - BioNet threatened species records within the locality (e.g. 10km radius) - Regional vegetation mapping and BioNet Vegetation Classification database (including a search by the relevant CMA/s to identify potential TECs present) NSW WeedWise (DPI) website. - Commonwealth EPBC Act Protected Matters Search Tool (PMST) - NSW DPI Fisheries Spatial Data Portal - NSW State Vegetation Type Map (SVTM) (DPE, 2023). The above desktop searches were carried out on 7 November 2023 and are included in Appendix F. Field surveys were carried out by ecologists on 20 and 21 November 2023, and 31 January to 2 February 2024.			Yes ☒	No ☐
Did the database searches identify any endangered ecological communities, threatened flora and/or threatened or protected fauna, or migratory species in or within the vicinity of the proposed works? Both Commonwealth and State listed matters must be considered. The NSW OEH BioNet Wildlife Atlas (NSW Government, 2023) search did not identify endangered ecological communities, threatened flora and/or threatened or protected fauna, or migratory species in or within one kilometre of the proposal area. A review of threatened species databases records within 10 kilometres of the proposal area using NSW OEH BioNet Wildlife search identified threatened fauna species as occurring or having potential to occur within the Proposal area (Appendix F). Habitat preferences and distribution was reviewed for these species and following determinations were made for each proposal area: - New England Highway and Golden Highway intersection (I-005): 17 potential threatened fauna species present under the BC Act and five threatened fauna species present under the EPBC Act - Putty Road and Golden Highway intersection (I-006): 20 potential threatened fauna species present under the BC Act and six threatened fauna species present under the EPBC Act - Jerrys Plains Road and Putty Road intersection (I-007): 25 potential threatened fauna species present under the BC Act and six threatened fauna species present under the EPBC Act - Lonsdale Street and Golden Highway intersection (H-009 and H-010): 20 potential threatened fauna species present under the BC Act and four threatened fauna species present under the EPBC Act. The nearest recorded sightings of fauna species within one kilometre radius of the proposal area are summarised in Table 3-23. All the recorded species are highly mobile. Table 3-23: Recorded sightings of species listed under the BC Act or EPBC Act within the vicinity of the proposal areas (Source: NSW OEH BioNet Wildlife Atlas)			Yes ☐	No ☒
Scientific and common name	Status *	Type of listing (BC Act or EPBC Act)	Distance from works	Potential impacts
Grey-crowned Babbler (eastern subspecies) (<i>Pomatostomus temporalis temporalis</i>)	V	BC Act	200 metres north of the New England Highway and Golden Highway intersection (I-005) 360 metres west and 860 metres south of the Jerrys Plains Road and Putty Road intersection (I-007) 530 metres south-west and 560 metres south of the Lonsdale Street and Golden Highway intersection (H-009 and H-010).	None anticipated

Description of existing environmental and potential impacts

Grey-headed Flying-fox (<i>Pteropus poliocephalus</i>)	V (BC Act) V (EPBC Act)	BC Act and EPBC Act	180 metres north-east of the New England Highway and Golden Highway intersection (I-005)	None anticipated
Little Lorikeet (<i>Glossopsitta pusilla</i>)	V	BC Act	350 metres south-west from Putty Road and Golden Highway intersection (I-006)	None anticipated
Eastern Coastal Free-tailed Bat (<i>Micronomus norfolkensis</i>)	V	BC Act	850 metres north of Jerrys Plains Road and Putty Road intersection (I-007)	None anticipated

*V= vulnerable, E = endangered, CE = critically endangered, VEC = vulnerable ecological community EEC = endangered ecological community, CEEC = critically endangered ecological community M = Migratory

The proposed intersection works are limited to the road corridor, one tree would be removed, and tree pruning is proposed at Lonsdale Street and Golden Highway intersection (H-009 and H-010) to allow for the swept path of the heavy vehicles manoeuvring around the bends. As a result, impacts to nationally listed species, ecological communities and migratory species are unlikely.

The EPBC Protected Matters Search Tool (DCCEEW, 2023) identified the following Matters of National Environmental Significance (MNES) within a one-kilometre radius of the proposal areas. This is summarised below in Table 3-24.

Table 3-24: Matters of National Environmental Significance (Source: Protected Matters Search Tool)

Intersection	Wetlands of international importance (Ramsar)	Threatened ecological community	Threatened species	Migratory species
New England Highway and Golden Highway intersection (I-005)	None	7	36	13
Putty Road and Golden Highway intersection (I-006)	None	6	36	12
Jerrys Plains Road and Putty Road intersection (I-007)	None	6 (the closest being 210 metres west of the proposal area, consisting of Central Hunter Ironbark Grassy Woodland)	36 (the closest being 80 metres west of the proposal area, consisting of Central Hunter Slaty Gum Grassy Forest)	12
Lonsdale Street and Golden Highway intersections (H-009 and H-010)	None	4	39	11

Weeds

Description of existing environmental and potential impacts

A review of the DPI Weedwise website was undertaken for the Hunter region. A list of ‘priority weeds’ present within the Hunter region is provided in Appendix F.

Does the proposal involve pruning, trimming or removal of any tree/s?

Yes
☒

No
☐

Native vegetation has been mapped under the NSW State Vegetation Type Map (SVTM) (DPE, 2023) and shows the plant community types (PCTs) surrounding the proposal areas. Ground truthing carried out during the ecology surveys confirmed the presence of PCTs as shown in Figure 3-16 to Figure 3-18, and Figure 3-22. A description of PCTs within the vicinity of the proposal areas is provided below. PCTs located within or near the proposal areas would be demarcated with an exclusion zone.

New England Highway and Golden Highway intersection (I-005)

No tree removal is proposed at this intersection. As shown in Figure 3-16, PCTs mapped within the vicinity of the proposal area include:

- PCT 3431 – Central Hunter Ironbark Grassy Woodland
- PCT 4023 – Coastal Valleys Swamp Oak Riparian Forest

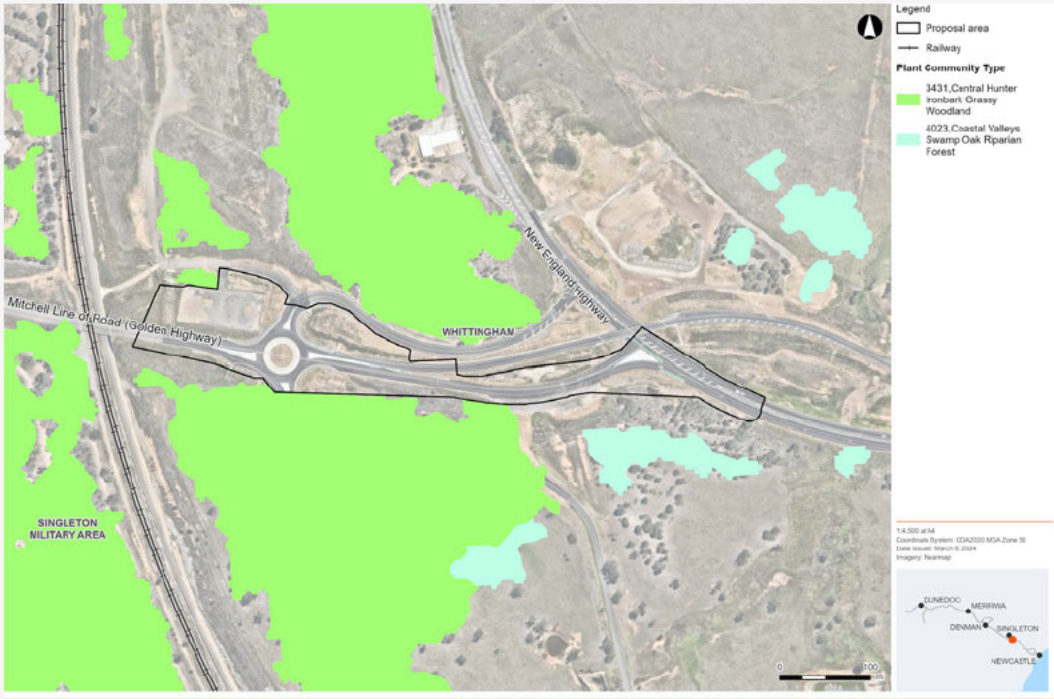


Figure 3-16: PCT mapping – Golden Highway and New England Highway intersection (I-005)

Golden Highway and Putty Road intersection (I-006)

No tree removal is proposed at this intersection. As shown in Figure 3-17, PCTs within the vicinity of the proposal area include:

- PCT 3431 – Central Hunter Ironbark Grassy Woodland
- PCT 4015 – Central Hunter Swamp Oak Riparian Forest

No PCTs would be impacted by the proposal.

Description of existing environmental and potential impacts

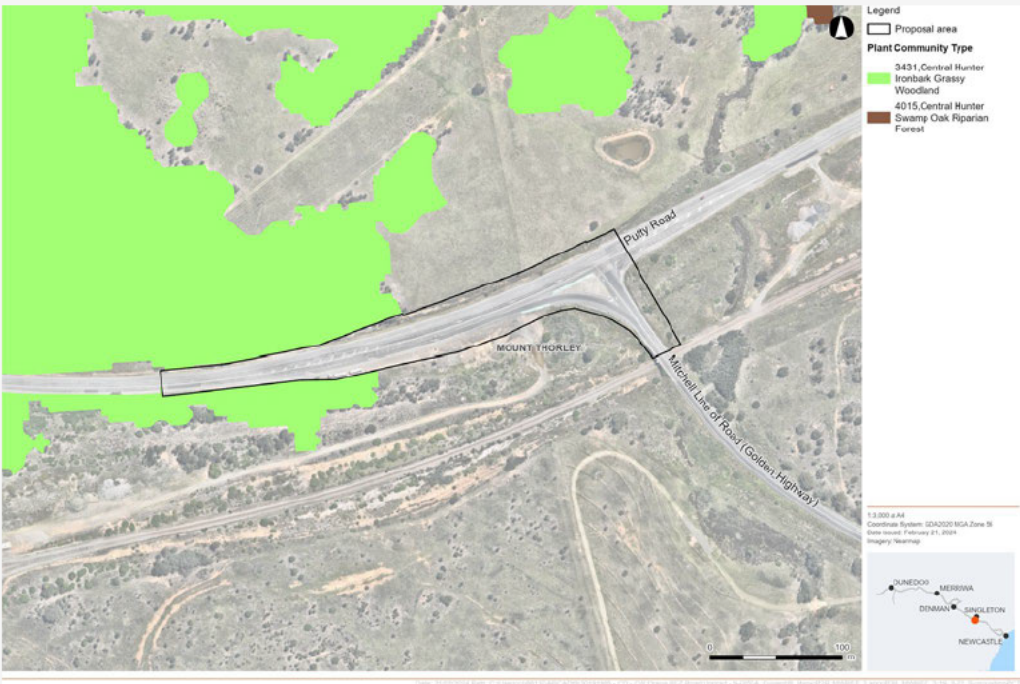


Figure 3-17: PCT mapping – Golden Highway and Putty Road intersection (I-006)

Jerrys Plains Road and Putty Road intersection (I-007)

No tree removal is proposed at this intersection. As shown in Figure 3-18, PCT 3431 Central Hunter Ironbark Grassy Woodland is mapped within the vicinity of the proposal. No PCTs would be impacted by the proposal.



Figure 3-18: PCT mapping – Jerrys Plains Road and Putty Road intersection (I-007)

Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Description of existing environmental and potential impacts

Five lemon-scented gum trees (*Corymbia citriodora*), native but not endemic at this location, were identified as planted trees along Lonsdale Street. An additional planted native tree, located at 59 Pagan Street was also identified. It was determined that one tree would require removal and tree pruning would be required for the five other trees to allow for the swept path of OSOM vehicles (refer to Figure 3-19 to Figure 3-21). These trees are not mapped as PCTs.

All trees are considered to be in a healthy condition, with the trees along Lonsdale Street about 20 metres in height and average Diameter at Breast Height (DBH) of 57 centimetres. The tree that would be required to be removed contains hollows (two small and one medium sized hollows). Approximately 20 per cent of the canopy would need to be removed for the five remaining trees.

At the time of the survey (21 November 2023), the affected trees along Lonsdale Street were flowering and may offer occasional foraging habitat to woodland bird species and the Grey Headed Flying Fox as they move across the landscape. However foraging habitat resources within the site would not be critical to the survival of these species in the locality, given the small area and disturbed nature of the proposal; the loss of such would be considered to have a negligible impact.

As shown in Figure 3-22, the following PCTs are mapped as being within the vicinity of the Lonsdale Street and Golden Highway intersection (H-009 and H-010):

- PCT 3431 – Central Hunter Ironbark Grassy Woodland
- PCT 3485 – Central Hunter Slaty Gum Grassy Forest
- PCT 4089 – Namoi-Upper Hunter River Red Gum Forest
- PCT 4104 – Central Hunter Weeping Myall Forest

The proposal would not impact upon any of these PCTs.

Description of existing environmental and potential impacts



Figure 3-19: Tree removal and tree pruning requirements – Lonsdale Street and Golden Highway intersections (H-009 and H-010)

Description of existing environmental and potential impacts



Figure 3-20: Tree pruning and removal required on Lonsdale Street (Google Earth, 2023)



Figure 3-21: Tree pruning required on Pagan Street (Google Earth, 2023)

Description of existing environmental and potential impacts



Figure 3-22: PCT mapping – Lonsdale Street and Golden Highway intersection (H-009 and H-010)

Is the proposal likely to impact nationally listed threatened species, ecological communities or migratory species?

Yes ☐ No ☒

Would the proposal require the removal of any other vegetation?

Yes ☒ No ☐

Exotic and native grasses and some small shrubs would be required to be removed at the following intersections:

- Golden Highway and Putty Road intersection (I-006): Native/exotic grasses along the northern side of the proposal area
- Jerrys Plains Road and Putty Road intersection (I-007): Native/exotic grasses along the eastern extent of the proposal area.

Weeds which would need to be appropriately cleared and disposed of in accordance with requirements under the *Biosecurity Act 2015* and Guide 6 (Weed Management) of Transport's *Biodiversity Guidelines 2011*.

Would the proposal require the removal of any tree hollows?

Yes ☒ No ☐

The tree that would be required to be removed at Lonsdale Street and Golden Highway contains hollows (two small and one medium sized hollow). Removal of the tree is required due to it being a traffic hazard to OSOM movements during operation, and removal is not required to facilitate construction of the hardstand areas, retaining wall or relocation of impacted signage. The works are exempt from providing biodiversity offsets under the *TfNSW No Net Loss Guidelines (2023)* (our new offsetting policy) and/or the *TfNSW Tree and Hollow Replacement Guideline (2023)* as the trees in question are within the disturbed zone (extends to the outside of the table drain).

Are there any known areas of outstanding biodiversity value or areas mapped as 'littoral rainforest' or 'coastal wetland' under chapter 2 of SEPP (Resilience and Hazards) in or within the vicinity of the proposed work?

Yes ☐ No ☒

The proposal areas are not located within areas of outstanding biodiversity value or mapped as 'littoral rainforest' or 'coastal wetland'.

Description of existing environmental and potential impacts		
Would the proposal provide any additional barriers to the movement of wildlife? The proposed works would not provide any additional barriers to the movement of wildlife during construction or operation.	Yes ☐	No ☒
Would the proposal disturb any natural waterways or aquatic habitat? As described in Section 3.2 (Waterways and water quality), the following waterways are located near the proposal areas: - a tributary (ephemeral drainage gully) of the Hunter River is approximately 100 metres east of the New England Highway and Golden Highway intersection (I-005) - a tributary (ephemeral drainage gully) of Hunter River is approximately 30 metres south of the Golden Highway and Putty Road intersection (I-006) - Doctors Creek is approximately 150 metres east of Putty Road and Jerrys Plains Road intersection (I-007) - a drainage gully connected to Redmanvale Creek is located north of Pringle Street at the northern end of the Lonsdale Street and Golden Highway intersection (H-009 and H-010) - a culvert crosses beneath Golden Highway at the southern end of Lonsdale Street and Golden Highway intersection (H-009 and H-010). All existing drainage connects to the Hunter River catchment which drains east towards Newcastle. The proposal is unlikely to impact these waterways due to their distance from the proposed intersection works and the nature of works at each proposal area. Approximately, 0.087 ha of soil would be exposed for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). The limited extent of soil disturbance associated with the proposal, the flat topography between the intersection and the Hunter River to the northwest (across cropping land) and ponding along the drainage gully minimises the risk of any sedimentation issues substantially. Erosion and sediment controls measures would be implemented during to minimise sediment movement.	Yes ☐	No ☒
Would the proposal impact (directly or indirectly) any potential microbat roosting or breeding habitat such as on bridges and culverts? One culvert is present at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) but is too small to provide essential habitat for microbat roosting or breeding habitat.	Yes ☐	No ☒

Safeguards

Table 3-25: Biodiversity safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
B1	Biodiversity	If unexpected threatened fauna or flora species are discovered, works will be stopped immediately and follow Transport's <i>Unexpected Threatened Species Find Procedure</i> in Transport's <i>Biodiversity Guidelines 2011 – Guide 1</i> (Pre-clearing process).	Contractor	Construction
B2	Biodiversity	All construction work will be undertaken in accordance with Transport's <i>Biodiversity Guidelines, Protecting and Managing Biodiversity on RMS Projects, 2011</i> .	Contractor	Construction
B3	Biodiversity	The location and extent of all works will be clearly demarcated and communicated to all staff and contractors working within the area during site inductions and daily toolbox talks.	Contractor	Construction
B4	Biodiversity	Vegetation to be retained will be protected in accordance with AS 4970-2009 – <i>Protection of trees on development sites</i> and may require exclusion fencing of the Tree Protection Zones.	Contractor	Pre construction and construction

Numbering	Impact	Environmental safeguards	Responsibility	Timing
B5	Trees	Any tree pruning will be no more than 20% of the canopy cover for each tree.	Contractor	Construction
B6	Trees	Any additional construction activities not identified in this MWREF within the tree protection zone of the subject trees will be assessed and approved by the project arborist and must comply with <i>AS 4970-2009 – Protection of trees on development sites</i> .	Contractor	Pre construction and construction
B7	Trees	Tree removal and pruning will be undertaken by a suitably qualified arborist.	Contractor	Pre-construction
B8	Biodiversity	The hollows in the tree to be removed at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) will be inspected for the presence of fauna immediately prior to planned removal. If present, the fauna will be removed and relocated by a suitably qualified and experienced fauna handler prior to tree removal.	Contractor	Construction

3.8 Traffic and transport

Table 3-26: Traffic and transport

Description of existing environmental and potential impacts		
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during construction? Construction would be undertaken during the window of time permitted under road occupancy licences (ROLs) with most of the works to be carried out during standard construction hours where possible. Works are expected to be undertaken outside of standard work hours at the New England Highway and Golden Highway intersection (I-005). These out of hours works would be in line with the window of time permitted under ROLs, where required. There is the potential for short-term disruptions to traffic through detours, traffic control and reduced speed limits. There is the potential for temporary delays to occur for motorists accessing businesses and residential properties at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) during construction. However, access would be maintained throughout construction with signage provided to divert motorists away from construction activities. Where lane occupancy, including partial lane occupancy, is required to undertake the works they would be managed with traffic control to minimise disruptions to traffic flow. No bus zones are in the vicinity of the proposed intersection works. School buses may run between Singleton and Jerry Plains. It is unlikely the proposal will cause substantial delays to these services. There would be some minor impact to pedestrian traffic to redirect them safely around the proposed works zone during construction. Access to all properties would be maintained throughout the construction period.	Yes ☒	No ☐
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation? Due to the locations of the intersections on the State Road network and the nature of the works outside the existing carriageways, detours will not be required. The proposal would have minimal impact on existing road infrastructure. The most substantial work proposed includes the extension of asphalt at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Accordingly, operational traffic flow would remain as existing traffic flow.	Yes ☐	No ☒
Is the proposal likely to affect any other transport nodes or transport infrastructure (e.g., bus stops, bus routes) in the surrounding area? Or result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation? Existing bus stops and bus routes would remain as the existing traffic environment. No detours or disruptions to traffic flow or access would be affected during operation.	Yes ☐	No ☒

Safeguards

Table 3-27: Traffic and transport safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
T1	Traffic and transport	Current traffic movements and property accesses will be maintained during the works. Any short-term lane closures would require notifications to the community.	Contractor	Construction
T2	Traffic and transport	Where works affect the free flow of traffic, a ROL will be obtained and, for all works, a Traffic Management Plan (TMP) will be prepared in accordance with Transport's <i>Traffic Control at Work Sites Technical Manual</i> .	Contractor	Construction
T3	Traffic and transport	Appropriate temporary traffic signage (such as variable message signs) and supervision will be provided at all times to ensure that all construction work areas are	Contractor	Construction

Numbering	Impact	Environmental safeguards	Responsibility	Timing
		controlled and that unauthorised personnel (e.g. pedestrians) are excluded from work areas.		
T4	Traffic and transport	Vehicle movement plans (VMPs) will be developed to limit impacts on other road users (including pedestrians, vehicles and cyclists) and the environment, with specific regard to other road works in the area, local traffic movement requirements and peak traffic volumes during construction. A TMP shall be prepared by the Contractor prior to any changes to road user movements and access.	Contractor	Construction
T5	Traffic and transport	Designated work areas within any road reserve will be delineated prior to the work commencing. This area would be the minimum required for safely undertaking the activity.	Contractor	Construction
T6	Traffic and transport	If required, pedestrian access around the intersection works area would be provided and maintained at all times. Where this cannot be achieved a safe diversion for pedestrians will be provided. Provision for pedestrians will be detailed in the TMP.	Contractor	Construction

3.9 Socio-economic

Table 3-28: Socio-economic

Description of existing environmental and potential impacts		
Is the proposal likely to impact on local business? The nearest businesses at each proposal area include: - New England Highway and Golden Highway intersection (I-005): A beef abattoir is located about 650 metres south, Singleton Military Area is located about 55 metres southwest, and a BP truckstop is located about 220 metres north of the proposal. - Jerrys Plains Road and Putty Road intersection (I-007): A large commercial and industry area is located 50 metres south of the proposal area and Mount Thorley Warkworth Coal Mine is located 400 metres west of the proposal area. - Lonsdale Street and Golden Highway intersection (H-009 and H-010): BP service station is located about 420 metres and Robin Hood Bar and Bistros is located about 560 metres from the proposal area. Both businesses are located southeast of the proposal area on Pagan Street (Golden Highway). Daytime construction works are proposed at the Jerrys Plains Road and Putty Road (I-007) intersection. Night-time works are proposed at the Lonsdale Street and Golden Highway (H-009 and H-010) and the New England Highway and Golden Highway (I-005) intersections. While night-time works at this intersection may align with the business hours of Robin Hood Bar and Bistros, construction at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) is unlikely to impact the operation of the BP petrol station and Robin Hood Bar and Bistros due to the distance between the proposal area and these businesses. Night-time works at the New England Highway and Golden Highway intersection (I-005) would not impact the operation of the BP truck stop due to the distance from the proposal area. The proposal would not require any road closures or detours, and access to all businesses and residential properties within the vicinity of the proposal would be maintained throughout construction. Any delays to traffic associated with the proposal would be minor, temporary and short lived, and unlikely to substantially impact any local business.	Yes ☐	No ☒
Is the proposal likely to require any property acquisition? No property acquisition is proposed for the proposal as detailed in Section 2.2.2 (Proposal description).	Yes ☐	No ☒
Is the proposal likely to alter any access for properties (either temporarily or permanently)? Property access will be maintained for residents located at Lonsdale Street and Golden Highway intersection (H-009 and H-010) during construction. There would be no other property access issues for other proposal areas. There will be no permanent alterations for access during operation of the proposal.	Yes ☐	No ☒
Is the proposal likely to alter any on-street parking arrangements (either temporarily or permanently)? There are no existing parking facilities within or adjacent to the proposal areas. Due to the rural nature of the locations in which the proposal would occur, the demand for on-street parking in the vicinity of the proposed work locations is minimal. No parking impacts are anticipated as a result of the proposal.	Yes ☐	No ☒
Is the proposal likely to change pedestrian movements or pedestrian access (either temporarily or permanently)?	Yes ☐	No ☒

Description of existing environmental and potential impacts		
There is no existing infrastructure at the proposal areas that facilitate pedestrian movement and access (e.g. pedestrian crossings). The proposal does not include any provisions for pedestrian infrastructure. Pedestrians would be detoured around the construction works by traffic controllers and signage if required.		
Is the proposal likely to impact on any items or places of social value to the community (either temporarily or permanently)? As identified above, St James' Anglican Church and the Jerrys Plains Public School is located south of the Lonsdale Street and Golden Highway intersection (H-009 and H-010). The proposal is unlikely to impact community places given the limited nature of the works and distance from the proposal.	Yes ☐	No ☒
Is the proposal likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)? Temporary visual amenity changes may occur for businesses and farming surrounding the proposal areas during construction. This would include temporary construction barriers and temporary fencing, lighting and plant and equipment. Due to the nature and duration of the works, it is unlikely to cause long-term impacts to businesses, farms, tourist attractions.	Yes ☐	No ☒
Is the proposal likely to impact trees planted by a community group, Landcare group or by council or a tree that is a memorial or part of a memorial group e.g., has a plaque?	Yes ☐	No ☒
Is the proposal likely to impact trees that form part of a streetscape, an avenue or roadside planting? The trees located at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) are likely to have been planted by Council as part of a roadside planting. One tree removal and five trees would require pruning along Lonsdale Street to allow for the swept path of OSOM vehicles (refer to Figure 3-19). Council have been consulted on the proposed removal and pruning of trees along Lonsdale and confirmed they don't hold amenity value. As only one tree requires removal, the proposal would not substantially alter the streetscape.	Yes ☒	No ☐

Safeguards

Table 3-29: Socio-economic safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
C1	Socio-economic	Local residents, businesses and stakeholders will be notified at least five working days prior to works commencing and would be kept regularly informed of construction activities during the construction process. The notification is to include: • details of the proposal • the duration of works and working hours • any changed traffic or access arrangements • how to lodge a complaint or obtain more information • contact name and details.	Contractor	Construction
C2	Socio-economic	Complaints received will be recorded and attended to promptly in accordance with the <i>Community Involvement Practice Notes and Resource Manual</i> (RTA, 1998).	Contractor	Construction
C3	Socio-economic	Access and servicing of properties impacted by works at Lonsdale Road and Golden Highway are to be maintained during the works.	Contractor	Construction

3.10 Landscape character and visual amenity

Table 3-30: Landscape character and visual amenity

Description of existing environmental and potential impacts		
Is the proposed work over or near an important physical or cultural element or landscape? (For example, heritage items and areas, distinctive or historic built form, National Parks, conservation areas, scenic highways etc.) The Jerrys Plains Heritage Conservation Area is located south and adjacent to the proposal area at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). This conservation area does not overlap with the proposed work at this intersection. Further, given the lack of vibration intensive activities within the specified minimum working distances, the proposal is not anticipated to impact the heritage-listed Jerrys Plains Conservation Area. The 'Abbey Green' and outbuildings is located north of the Golden Highway and Putty Road intersection (I-006), not within the proposal area. Construction activities at the Golden Highway and Putty Road intersection (I-006) are limited to the road reserve and consist of signage installations and relocations. As such, construction would not impact the curtilage of the Abbey Green heritage items or the nearest buildings associated with the heritage items, which are located in excess of one kilometre north of the proposal area.	Yes ☐	No ☒
Would the proposal obstruct or intrude upon the character or views of a valued landscape or urban area? (For example, locally significant topography, a rural landscape or a park, a river, lake or the ocean or a historic or distinctive townscape or landmark) There are no known significant landmarks at the proposal areas. The extent of works would be mostly limited to the existing road reserve and is unlikely to cause major visual impacts during construction. Minor visual impacts would be caused by plant and equipment associated with the utility adjustment and asphaltting, including temporary fencing, signage and construction machinery at Lonsdale Street and Golden Highway intersection (H-009 and H-010). This would have the potential to result in visual clutter in the streetscape during construction. Other signage relocations are highly unlikely to cause any minor visual impacts. The proposal involves alterations to road infrastructure within road corridors. Visual changes during operation would be in line with the surrounding landscape at all locations. No substantial changes in visual context or landscape character are anticipated as a result of the proposal.	Yes ☐	No ☒
Would the proposal require the removal of mature trees or stands of vegetation, either native or introduced? One tree would be removed and tree pruning for five other trees would be required at the Lonsdale Street and Golden highway intersection (H-009 and H-010). The line of trees likely provides a streetscape screening for residents located on Lonsdale Street as discussed in Section 3.9 (Socio-economic). Minor visual impacts may be experienced by the residential receiver at 3 Lonsdale Street with the removal of the tree due to the increase line of sight onto Lonsdale Street. However, existing vegetation, including trees, screens the property from the road. The tree pruning of the five other trees would be reduced to removal of 20 per cent canopy cover to ensure the integrity of the tree; this is not likely to cause any additional visual impacts for other residential receivers located on Lonsdale Street in comparison to the surrounding environment.	Yes ☒	No ☐
Would the proposal result in large areas of shotcrete visible from the road or adjacent properties?	Yes ☐	No ☒
Would the proposal involve new noise walls or visible changes to existing noise walls?	Yes ☐	No ☒
Would the proposal involve the removal or reuse of large areas of road corridor, landscape, either verges or medians? Approximately 680 square metres of asphalt would be required for the construction of the hardstand at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). The extent	Yes ☐	No ☒

Description of existing environmental and potential impacts												
of works would be limited to a total of 8.5 hectares across the proposal areas and would largely remain within the road reserve.												
Would the proposal involve substantial changes to the appearance of a bridge (including piers, girders, abutments and parapets) that are visible from the road or residential areas?	Yes ☐	No ☒										
If involving lighting, would the proposal create unwanted light spillage on residential properties at night (in construction or operation)? Construction of the proposal would involve some night works requiring lighting, specifically at New England Highway and Golden Highway intersection (I-005) and possibly at the Lonsdale Road and Golden Highway intersection (H009 & H-010) in response to issue of a ROL. However, light spillage on residential properties at night is not considered significant due to the short term nature of construction works proposed at both locations and in the case of the New England Highway and Golden Highway intersection (I-005), the nearest residential receiver is located 200 metres northwest of the proposal area and the presence of trees along the property boundary to the proposal provides screening.	Yes ☒	No ☐										
Would any new structures or features to be constructed, result in over shadowing to adjoining properties or areas? Construction of the 70 centimetre high L-shaped retaining wall is proposed on the outside corner of Pringle Street/Golden Highway at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). This retaining wall may result in minor over shadowing to the adjacent grassed area. No impacts would be anticipated to properties within the vicinity.	Yes ☐	No ☒										
Additional information pertaining landscape character and visual impact risk. Laybacks and driveway reinstatement would be required for several residents at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) to allow for the extension of asphalt along the westbound side of Lonsdale Street. This would be carried out to visually align with the existing landscape. Table 3-31 details the properties affected. Table 3-31: Proposed layback and driveway reinstatements <table border="1"> <thead> <tr> <th>Lot</th> <th>Proposed works</th> </tr> </thead> <tbody> <tr> <td>6/20/DP758542</td> <td>Reinstate two existing laybacks</td> </tr> <tr> <td>7/20/DP758542</td> <td>Reinstate one existing layback and formal driveway without layback</td> </tr> <tr> <td>2/19/DP758542</td> <td>Reinstate formal driveway without layback</td> </tr> <tr> <td>1/19/DP758542</td> <td>Reinstate formal driveway without layback</td> </tr> </tbody> </table>			Lot	Proposed works	6/20/DP758542	Reinstate two existing laybacks	7/20/DP758542	Reinstate one existing layback and formal driveway without layback	2/19/DP758542	Reinstate formal driveway without layback	1/19/DP758542	Reinstate formal driveway without layback
Lot	Proposed works											
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7/20/DP758542	Reinstate one existing layback and formal driveway without layback											
2/19/DP758542	Reinstate formal driveway without layback											
1/19/DP758542	Reinstate formal driveway without layback											

Safeguards

Table 3-32: Landscape character and visual amenity safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
L1	Lighting	Task lighting for construction works will be directed away from sensitive receivers.	Contractor	Construction

3.11 Waste

Table 3-33: Waste

Description of existing environmental and potential impacts		
Is the proposal likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)? Limited quantities of concrete, asphalt, green waste and other waste types would be generated from the proposed works and not expected to be over 200 tonnes. Waste material is not expected to be contaminated.	Yes ☐	No ☒
Is the proposal likely to require a licence from EPA? The proposal does not include any activities listed under Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i>. An Environment Protection Licence is not required.	Yes ☐	No ☒
Is the proposal likely to require the removal of asbestos?	Yes ☐	No ☒

Safeguards

Table 3-34: Waste safeguards and management measures

Numbering	Impact	Environmental safeguards	Responsibility	Timing
M1	Waste management	Waste management measures will follow Transport's <i>Technical Guide: Management of road construction and maintenance waste</i> .	Contractor	Construction
M2	Waste management	The resource management hierarchy detailed by the <i>Waste Avoidance Resource Recovery Act 2001</i> will be adopted, namely avoid unnecessary consumption; resource recovery; disposal as a last resort.	Contractor	Construction
M3	Waste management	All waste will be treated in accordance with Transport's <i>Waste Minimisation and Management Guidelines</i> (RTA, 1998).	Contractor	Construction
M4	Waste management	Waste material, other than vegetation and tree mulch, will not to be left on site once the works have been completed.	Contractor	Construction
M5	Waste management	Working areas will be maintained, kept free of rubbish and cleaned up at the end of each working day.	Contractor	Construction

3.12 Climate change and greenhouse gas emissions

Table 3-35: Climate change and greenhouse gas emissions

Description of existing environmental and potential impacts		
Is the proposal located in an area likely to be permanently or tidally inundated in the future or subject to increased duration and intensity of flooding?	Yes ☐	No ☒
Have opportunities for reduced energy consumption during construction and operation been considered. If yes, summarise actions taken e.g., material selection, local suppliers and construction staff, etc. The source and quantity of materials would be determined during the detailed design phase of the proposal and would consider the requirements of the Transport <i>Sustainable Design Guidelines – Version 4.0. Materials</i> would be sourced from local suppliers where practicable.	Yes ☒	No ☐
Greenhouse gas emissions sources during construction are likely to be largest from: - transporting materials to site - electricity usage for street furniture including lighting, electronic signage and variable message signs. During operation sources would include: - maintenance of the proposal which includes infrastructure and pavement repairs, and fuel use for the operation of the plant and equipment to perform the maintenance activities - use of the proposal by vehicles		

Safeguards

No safeguards related to climate change and greenhouse gas emissions are proposed.

3.13 Cumulative impact

Table 3-36: Cumulative impact

Description of existing environmental and potential impacts		
Are there other projects and developments in the study area which could add to potential impacts in both construction and operation? The Belford and Golden Highway Project is currently being constructed at the New England Highway and Golden Highway intersection (I-005). The proposal works would be contained within the existing site boundary and is considered minor in nature compared to the Belford and Golden Highway project works and therefore are unlikely to cause any additional cumulative construction impacts. As outlined in Section 2.2.2, the proposal would facilitate the transport of large and heavy components from the Port of Newcastle to the CWO REZ. The CWO REZ consists of a series of solar and wind farm developments. The route selection, planning and operation of OSOM vehicle movements would be assessed and approved as part of each individual developer's respective environmental assessment and subject to the conditions of each relevant approval. As the proposal is required to facilitate the OSOM movements to the REZ, there would be no overlap. There are no anticipated operation cumulative impacts associated with the proposal.	Yes ☐	No ☒

Safeguards

No safeguards related to cumulative impacts are proposed.

4. Summary of safeguards and environmental management measures

4.1 Safeguards and environmental management measures

This section provides a summary of the site-specific environmental safeguards and management measures identified in described in Section 3 of this minor works REF. These safeguards will be implemented to reduce potential environmental impacts throughout construction and operation. A framework for managing the potential impacts is provided with reference to environmental management plans and relevant Transport QA specifications. Any potential licence and/or approval requirements required prior to construction are also listed.

Table 4-1: Summary of site-specific safeguards for proposed work

Factor	Safeguards
Soil	E1. Erosion and sediment control measures are to be implemented (in accordance with the Landcom <i>Managing Urban Stormwater, Soils and Construction Guidelines</i> (the Blue Book)) and associated volumes and maintained to: • minimise 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 • divert clean water around the site. E2. Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request. E3. Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised. E4. Work areas are to be stabilised progressively during the works. E5. A progressive erosion and sediment control plan is to be prepared and implemented for the works as necessary. E6. The maintenance of established stockpile sites is to be in accordance with Transport's <i>Stockpile Site Management Guideline</i> (EMS-TG-10). E7. Potential or actual acid sulphate soils are to be managed in accordance with Transport's <i>Guidelines for the Management of Acid Sulphate Materials</i> 2005. E8. Saline soils are to be managed in accordance with <i>NSW Department of Primary Industries (2014) Salinity Training Handbook</i> E9. An unexpected finds procedure for potential or actual contaminated soils will be included in the construction environmental management documentation.
Waterways and water quality	W1. Weather forecasts (probability and amount of rain) will be considered when programming works. Works involving ground disturbance will be planned to avoid wet weather wherever practicable. W2. An emergency spill kit will be kept onsite at all times during works. All staff are to be made aware of the location of the spill kit and trained in its use. W3. If a spill occurs, Transport's Environmental Incident Procedure 2021 will be followed and the Transport Project Manager notified as soon as practicable.
Noise and vibration	NV1. Construction noise and vibration will be managed in accordance with the <i>Construction Noise and Vibration Guideline</i> (CNVG) (Transport for NSW, 2023) and <i>Interim Construction Noise Guideline</i> (ICNG) (DECC, 2009). NV2. All sensitive receivers (e.g. schools, local residents) likely to be affected will be notified at least five working days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: • the project • the construction period and construction hours • impacts and mitigation measures, • contact information for project management staff

Factor	Safeguards
	complaint and incident reporting how to obtain further information. NV3. Any work with impulsive or tonal noise emissions will be carried out in accordance with the Construction Noise and Vibration Guideline (Roads) (Transport for NSW, 2023) and EPA Interim Construction Noise Guideline (ICNG) (NSW DECC, 2009). NV4. Recommended noise mitigation measures, as identified in Table 3-9 to Table 3-12, are to be implemented where appropriate. NV5. Construction methods must consider safe working distances for rollers and other vibration producing equipment when working adjacent to structures, including heritage structures. Equipment and methods will be selected to avoid structural damage and minimise the potential for amenity impacts for adjacent receivers.
Air quality	A1. Vehicles transporting waste or other materials that have a potential to produce odours or dust will be covered during transportation. A2. At the Lonsdale Street and Golden Highway intersection, works (including the spraying of paint and other materials) will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely to impact sensitive receivers. A3. Plant, vehicles and equipment will be maintained in good condition and in accordance with manufacturer's specifications. A4. Plant and machinery will be turned off when not in use. A5. Visual monitoring of air quality will be undertaken to verify the effectiveness of controls and enable early intervention. A6. Work activities will be reprogrammed if the management measures are not adequately restricting dust generation.
Aboriginal cultural heritage	AH1. If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Transport for NSW Aboriginal cultural heritage officer and regional environment manager contacted immediately. Steps in Transport's <i>Standard Management Procedure: Unexpected Heritage Items</i> must be followed.
Non-Aboriginal heritage	H1. If unexpected archaeological remains are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in Transport's <i>Standard Management Procedure: Unexpected Heritage Items</i> must be followed. Transport for NSW Senior Environment Specialist - Heritage must be contacted immediately. H2. If any items defined as relics under the <i>NSW Heritage Act 1977</i> are uncovered during the works, all works must cease in the vicinity of the find and the Transport for NSW Senior Environment Specialist - Heritage contacted immediately.
Biodiversity	B1. If unexpected, threatened fauna or flora species are discovered, works will be stopped immediately and follow Transport's <i>Unexpected Threatened Species Find Procedure</i> in Transport's <i>Biodiversity Guidelines 2011 – Guide 1</i> (Pre-clearing process). B2. All construction work will be undertaken in accordance with Transport's <i>Biodiversity Guidelines, Protecting and Managing Biodiversity on RMS Projects, 2011</i>. B3. The location and extent of all works will be clearly demarcated and communicated to all staff and contractors working within the area during site inductions and daily toolbox talks. B4. Vegetation to be retained will be protected in accordance with AS 4970-2009 – <i>Protection of trees on development sites</i> and may require exclusion fencing of the Tree Protection Zones. B5. Any tree pruning will be no more than 20% of the canopy cover for each tree B6. Any additional construction activities not identified in this MWREF within the tree protection zone of the subject trees must be assessed and approved by the project arborist and must comply with AS 4970-2009 - <i>Protection of trees on development sites</i>. B7. Tree removal and pruning will be undertaken by a suitably qualified arborist. B8. The hollows in the tree to be removed at the Lonsdale Street and Golden Highway intersection (H-009 and H-010) will be inspected for the presence of fauna immediately prior to planned removal. If present, the fauna will be removed and relocated by a suitably qualified and experienced fauna handler prior to tree removal.
Traffic and transport	T1. Current traffic movements and property accesses will be maintained during the works. Any short-term lane closures would require notifications to the community.

Factor	Safeguards
	T2. Where works would affect the free flow of traffic, an ROL will be obtained and, for all works, a Traffic Management Plan (TMP) will be prepared in accordance with Transport's <i>Traffic Control at Work Sites Technical Manual</i> T3. Appropriate temporary traffic signage (such as variable message signs) and supervision will be provided at all times to ensure that all construction work areas are controlled and that unauthorised personnel (e.g. pedestrians) are excluded from work areas. T4. Vehicle movement plans (VMPs) will be developed to limit impacts on other road users (including pedestrians, vehicles and cyclists) and the environment, with specific regard to other road works in the area, local traffic movement requirements and peak traffic volumes. A TMP shall be prepared by the Contractor prior to any changes to road user movements and access. T5. Designated work areas within any road reserve will be delineated prior to the work commencing. This area would be the minimum required for safely undertaking the activity. T6. If required, pedestrian access around the intersection work area would be provided and maintained at all times. Where this cannot be achieved a safe diversion for pedestrians will be provided. Provision for pedestrians will be detailed in the TMP.
Socio-economic	C1. Local residents, businesses and stakeholders will be notified at least five working days prior to works commencing, and would be kept regularly informed of construction activities during the construction process. The notification is to include: • details of the proposal, including temporary compound site • the duration of works and working hours • any changed traffic or access arrangements • how to lodge a complaint or obtain more information • contact name and details. C2. Complaints received will be recorded and attended to promptly in accordance with the <i>Community Involvement Practice Notes and Resource Manual</i> (RTA, 1998). C3. Access and servicing of properties impacted by works at Lonsdale Road and Golden Highway are to be maintained during the works.
Landscape character and visual amenity	L1. Task lighting for construction works will be directed away from sensitive receivers.
Waste	M1. Waste management measures will follow Transport's Technical Guide: Management of road construction and maintenance waste. M2. The resource management hierarchy detailed by the Waste Avoidance Resource Recovery Act 2001 will be adopted, namely avoid unnecessary consumption; resource recovery; disposal as a last resort. M3. All waste will be treated in accordance with Transport's Waste Minimisation and Management Guidelines (RTA, 1998). M4. Waste material, other than vegetation and tree mulch, will not to be left on site once the works have been completed. M5. Working areas will be maintained, kept free of rubbish and cleaned up at the end of each working day.
Climate change and greenhouse gas emissions	None identified.
Cumulative impacts	None identified.

4.2 Licensing and approvals

Table 4-2: Summary of licensing and approvals required

Instrument	Requirement	Timing
Road Occupancy Licence from Transport for NSW	For any lane closures	Prior to start of construction

4.3 Other requirements

Table 4-3: Other requirements

Requirement		
Environmental management plan sent to SMES or their delegate (ESL) for review. Not applicable.	Yes ☐	No ☒

5. Certification, review and determination

5.1 Certification

This minor works REF 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.

Prepared by:

Signature



Name: Chris Power

Position: Graduate Environmental Consultant

Company name: Arcadis

Date: 11 April 2024

Prepared by:

Signature



Name: Tracy Lam

Position: Graduate Environmental Consultant

Company name: Arcadis

Date: 11 April 2024

Minor works REF reviewed by:

Signature



Name: Kate Wiggins

Position: Principal Environmental Consultant

Company name: Arcadis

Date: 11 April 2024

5.2 Environment and Sustainability staff review

The minor works REF has been reviewed and considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposal this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in the minor works REF and associated information. This assessment is considered to be in accordance with the factors required to be considered under section 171 of the Environmental Planning and Assessment Regulation 2021.

The proposal described in this minor works REF will have some environmental impacts which can be ameliorated satisfactorily. Having regard to the safeguards and management measures proposed, this assessment has considered that these impacts are unlikely to be significant and therefore an approval for the proposal does not need to be sought under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on areas of outstanding value and on threatened species, ecological communities or their habitats for both terrestrial and aquatic species as defined by the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*.

The proposal described in the minor works REF will not affect areas of outstanding value. The activity described in the minor works REF will not significantly affect threatened species ecological communities or their habitats. Therefore, a species impact statement is not required.

The assessment has also addressed the potential impacts of the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there will be no significant impacts. Therefore, there is no need for a referral to be made to the Australian Government Department of Climate Change, Energy, the Environment and Water for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999*.

The minor works REF is considered to meet all relevant requirements.

5.3 Environment and Sustainability staff recommendation

It is recommended that the proposal for the Central West Port to Orana Renewable Zone within the Singleton LGA as described in this minor works REF proceed subject to the implementation of all safeguards identified in the minor works REF and compliance with all other relevant statutory approvals, licences, permits and authorisations.

The minor works REF has examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity in accordance with the EP&A Act, EP&A Regulation and the Guidelines approved under Clause 170 of the EP&A Regulation. The minor works REF has established that the activity is not likely to significantly affect the environment or threatened species, ecological communities or their habitats.

The minor works REF has concluded that there will be no significant impacts on matters of national environmental significance or any impacts on the environment of Commonwealth land.

If the proposal has not commenced within two years of the determination date the SMES must be consulted to identify any new or updated assessment or approval requirements.

Recommended by: 
Signature
Name: Jonathon Blizzard
Position: Senior Manager Environment and Sustainability
Date: 22/4/2024

Noted by: 
Signature
Name: Dimitri Perdikaris
Position: Senior Manager Renewables Transportation
Date: 29/04/2024

5.4 Decision statement

In accordance with the above recommendation, I certify that I have reviewed and endorsed the contents of this minor works REF, and to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under Section 170 of the EP&A Regulation, and the information is neither false nor misleading.

I determine that Transport for NSW may:

- proceed with the activity

Signature 
Name: Damien Pfeiffer
Position: Director Development Services (Land Use)
Date: 7/05/2024

Signature 
Name: Anna Zycki
Position: Regional Director North
Date: 9 May 2024

5.5 EP&A Regulation publication requirement

Table 5-1: EP&A Regulation publication requirement

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

6. Definitions

Table 6-1: Definitions

Term	Definition
AHIMS	Aboriginal Heritage Information Management System
BC Act	<i>Biodiversity Conservation Act 2016</i>
CEMP	Construction Environmental Management Plan
CWO REZ	Central West Orana Renewable Energy Zone
DBH	Diameter breast height
DECC	Former NSW Department of Environment and Climate Change
DPE	NSW Department of Planning and Environment
DPI	Department of Industries
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environmental Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
EPL	Environmental Protection Licence
EnergyCo	Energy Corporation of NSW
GW	Gigawatt
FM	<i>Fisheries Management Act 1994</i>
ICNG	Interim Construction Noise Guideline
LEP	Local Environmental Plan
LGA	Local Government Area
MWREF	Minor Works Review of Environmental Factors
NML	Noise management level
NSW OEH	New South Wales Office of Environment and Heritage, now currently known as the New South Wales Environment and Heritage department of the state government
NVMP	Noise and Vibration Management Plan
OSOM	Over-sized and/or over-mass components
PACHCI	<i>TfNSW Procedure for Aboriginal cultural heritage consultation and investigation</i>
PMST	Protected Matters Search Tool
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
REF	Review of Environmental Factors
REZ	Renewable Energy Zone
ROL	Road occupancy licenses
SEPP (Biodiversity and Conservation)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SEPP (Transport and Infrastructure)	State Environmental Planning Policy (Transport and Infrastructure) 2021
Singleton LEP	Singleton Local Environmental Plan 2013
TEC	Threatened ecological communities

Term	Definition
TMP	Transport Management Plan
Transport	Transport for NSW

7. References

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Appendix A: Consideration of State and Commonwealth environmental factors

Environmental Planning and Assessment Regulation 2021 section 171(2) factors

The following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

Table A1: Consideration of section 171 of the EP&A Regulation factors

Factor	Description of impact	Duration and extent
a) Environmental impact on the community.	The proposed work may cause minor short-term environmental impacts on the community, such as traffic delays and noise impacts on residents however the potential impacts would be minimised with the implementation of the safeguards as detailed in this MWREF.	Short-term, negative (minor), temporary Long-term, positive
b) The transformation of the locality.	The proposal would not transform the locality, as works would be mostly contained within the road corridor and would operate like existing conditions once operational.	Nil
c) Any environmental impact on the ecosystems of the locality.	The proposal is not likely to cause environmental impacts on the surrounding ecosystems. The proposal works would mostly be contained within the road corridor. Tree removal and pruning would be required at the Lonsdale Street and Golden Highway intersection (H-009 and H-010). Biodiversity impacts would be managed in accordance with the safeguards detailed in Section 3.7.	Nil
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality.	Temporary construction works would be required at the proposal but due to the extent and short duration of the works this would not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality, as works would generally be contained with the existing road formation.	Short-term, negative (minor) and temporary
e) Any effect on any locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.	The proposal is unlikely to have an effect on a locality, place or building of significance or other special value for present or future generations due to the short-term duration of construction.	Nil

Factor	Description of impact	Duration and extent
f) Any impact on the habitat of protected fauna (within the meaning of the <i>Biodiversity and Conservation Act 2016</i>).	The proposal would not impact on the habitat of protected fauna due to the limited scope of works for the proposed activities and the implementation of the safeguards provided in Section 3 of this MWREF.	Nil
g) Any endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air.	The proposal would not endanger any species of animal, plant or other form of life, whether living on land, in water or in the air due to the limited scope of works for the proposed activities and the implementation of the safeguards provided in Section 3 of this MWREF.	Nil
h) Any long-term effects on the environment	The proposal would allow the delivery of components to the Orana Renewable Zone which have positive long-term effects on the community providing renewable energy to homes. There are no anticipated negative long-term effects on the environment from the maintenance works due to the limited scope of these works and the implementation of the safeguards provided in Section 3 of this MWREF.	Positive, long-term
i) Any degradation of the quality of the environment.	The proposal would potentially degrade the quality of the environment during construction with regards to biodiversity, traffic delays, noise, and generation of small volumes of construction waste, however the potential impacts would be minimised with the implementation of the safeguards provided in Section 3.	Short-term, negative (minor) and temporary
j) Any risk to the safety of the environment.	The proposal would be constructed during standard and OOHV which could potentially cause safety risks for road users. However, this will be managed with the implementation of safeguards provided in Section 3.	Short-term, negative (minor) and temporary
k) Any reduction in the range of beneficial uses of the environment.	The proposal would not reduce the range of beneficial uses of the environment.	Nil
l) Any pollution of the environment.	The proposal would potentially cause short-term noise, soil and water quality and air quality impacts to the environment i.e. loud vehicles, dust generation and erosion and sedimentation. However, this will be managed with the implementation of safeguards provided in Section 3.	Short-term, negative (minor) and temporary
m) Any environmental problems associated with the disposal of waste	The waste generated during construction is expected to be minor. This will be contained and disposed to approved recycling facilities or to a licence landfill as detailed in Section 3.	Short-term, negative (minor) and temporary

Factor	Description of impact	Duration and extent
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply.	The proposal is not expected to require large amounts of resources to construct the proposal.	Nil
o) The cumulative environmental effect with other existing or likely future activities.	The proposal has the potential to cause a cumulative environmental effect for residents located near the New England Highway and Golden Highway intersection (I-005) such as construction fatigue. The proposal would be limited to the existing road corridor and is relatively short-term in comparison to the Belford to Golden Highway project being constructed.	Short-term, negative (minor) and temporary
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions.	There will be no impacts on coastal processes associated with the proposal.	Nil
q) Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	The proposal aligns with Singleton Local Environmental Plan 2013 by facilitating the safe delivery of over-sized and over-massed components from Port of Newcastle to the CWO REZ. The proposal aligns with the objective to enable to efficient handling and distribution of freight from port areas through the provision of transport infrastructure.	Long-term and positive
r) Other relevant environmental factors	Nil	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to Section 3 of this assessment.

Matters of National Environmental Significance

Table A2: Matters of national environmental significance

Environmental 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 (often called 'Ramsar' wetlands)?	Nil

d) Any impact on nationally threatened species, ecological communities or migratory species?	Nil
e) Any impact on a Commonwealth marine area?	Nil
f) Does the proposal involve a nuclear action (including uranium mining)?	Nil
Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

Appendix B: Noise and Vibration Calculator Tool Results

Transport
for NSW



Distanced Based Assessment (Construction Scenario)

Steps for Screening Assessment:

1. Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
2. Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
3. Select the scenario. If not found in drop-down list, refer to 'Source List' and select a representative scenario with similar plant combination.
4. Is there line of sight to receiver? Select the appropriate scenario from the drop down list.

Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list. Solid barrier can be in the form of road cutting, solid construction hoarding, acoustic curtain, timber lapped and capped fence, shipping container, site office, etc. Please note that vegetation and trees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the solid barrier.

6. Determine if there are any receivers (both residential and non-residential receivers) within the affected distance for each relevant time period. Consider background noise measurements to check assumption in Step #2 if:
 - (a) there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or
 - (b) there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks.

Note that consideration need to be given to the construction staging plan when determining impact duration.

7. Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver
8. Where night works are involved, identify sleep disturbance affected distance.

9. Document the outcomes of these steps.
(Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction and Maintenance Noise Estimator should be investigated on a project-by-project basis. Please contact a Roads and Maritime noise specialist for more information)

Abbreviation	Measure
N	Notification
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

Please pick from drop-down list in orange cells

Noise area category		R2
RBL or LA90 Background level (dB(A))	Day	45
	Evening	40
	Night	35
LAeq(5minute) Noise	Day	55
	Day (OOHW)	50
Mangement Level (dB(A))	Evening	45
	Night	40
Scenario		Paving / asphalting
Is there line of sight to receiver?		No (behind solid barrier)

Residential receiver			LAeq(5minute) noise level above background (LA90)												LAeq(5minute) 75 dB(A) or greater (Highly affected)			Sleep disutrbance LAmax 65 dB(A)
			5 to 10 dB(A) Noticeable			10 to 20 dB(A) Clearly audible			20 to 30 dB(A) Moderately intrusive			> 30 dB(A) Highly Intrusive						
			Affected distance (m)			Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))				
			Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	105						N	25	65	N, PC, RO	10	75	N, PC, RO	10	75	185	
	Day (OOHW)	155						N, R1, DR	25	65	N, R1, DR, PC, SN	10	75	N, PC, RO	10	75		
	Evening	230						N, R1, DR	155	50	N, R1, DR, PC, SN	20	70	N, PC, RO	10	75		
	Night	335	N	335	40	N, R2, DR	230	45	N, PC, SN, R2, DR	105	55	AA, N, PC, SN, R2, DR	25	65	N, PC, RO	10		75
	Highly Affected	10												N, PC, RO	10	75		
Developed settlements (urban and suburban)	Day	115						N	35	65	N, PC, RO	10	75	N, PC, RO	10	75	215	
	Day (OOHW)	180						N, R1, DR	115	55	N, R1, DR, PC, SN	10	75	N, PC, RO	10	75		
	Evening	280						N, R1, DR	180	50	N, R1, DR, PC, SN	20	70	N, PC, RO	10	75		
	Night	425	N	425	40	N, R2, DR	280	45	N, PC, SN, R2, DR	115	55	AA, N, PC, SN, R2, DR	35	65	N, PC, RO	10		75
	Highly Affected	10												N, PC, RO	10	75		
Propagation across a valley / over water	Day	140						N	40	65	N, PC, RO	10	75	N, PC, RO	10	75	280	
	Day (OOHW)	230						N, R1, DR	140	55	N, R1, DR, PC, SN	10	75	N, PC, RO	10	75		
	Evening	365						N, R1, DR	230	50	N, R1, DR, PC, SN	20	70	N, PC, RO	10	75		
	Night	575	N	575	40	N, R2, DR	365	45	N, PC, SN, R2, DR	140	55	AA, N, PC, SN, R2, DR	40	65	N, PC, RO	10		75
	Highly Affected	10												N, PC, RO	10	75		

Transport
for NSW



Distanced Based Assessment (Construction Scenario)

Steps for Screening Assessment:

1. Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
2. Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
3. Select the scenario. If not found in drop-down list, refer to 'Source List' and select a representative scenario with similar plant combination.
4. Is there line of sight to receiver? Select the appropriate scenario from the drop down list.

Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list. Solid barrier can be in the form of road cutting, solid construction hoarding, acoustic curtain, timber lapped and capped fence, shipping container, site office, etc. Please note that vegetation and trees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the solid barrier.

6. Determine if there are any receivers (both residential and non-residential receivers) within the affected distance for each relevant time period. Consider background noise measurements to check assumption in Step #2 if:
 - (a) there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or
 - (b) there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks.

Note that consideration need to be given to the construction staging plan when determining impact duration.

7. Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver
8. Where night works are involved, identify sleep disturbance affected distance.

9. Document the outcomes of these steps.

(Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction and Maintenance Noise Estimator should be investigated on a project-by-project basis. Please contact a Roads and Maritime noise specialist for more information)

Abbreviation	Measure
N	Notification
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

Please pick from drop-down list in orange cells

Noise area category		R1
RBL or LA90 Background level (dB(A))	Day	40
	Evening	35
	Night	30
LAeq(5minute) Noise	Day (OOHW)	50
	Evening	45
Mangement Level (dB(A))	Evening	40
	Night	35
Scenario		Local road works
Is there line of sight to receiver?		No (behind solid barrier)

Residential receiver			LAeq(5minute) noise level above background (LA90)												LAeq(5minute) 75 dB(A) or greater (Highly affected)			Sleep disturbance LAmax 65 dB(A)
Affected distance (m)			5 to 10 dB(A) Noticeable			10 to 20 dB(A) Clearly audible			20 to 30 dB(A) Moderately intrusive			> 30 dB(A) Highly intrusive			LAeq(5minute) 75 dB(A) or greater (Highly affected)			Affected distance (m)
			Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	
Undeveloped green fields, rural areas with isolated dwellings	Day	265							N	125	60	N	40	70	N, PC, RO	25	75	155
	Day (OOHW)	390				N, R1, DR	265	50	N, R1, DR	125	60	N, R1, DR, PC, SN	40	70	N, PC, RO	25	75	
	Evening	565				N, R1, DR	390	45	N, R1, DR	185	55	N, R1, DR, PC, SN	75	65	N, PC, RO	25	75	
	Night	815	N	815	35	N, R2, DR	565	40	N, PC, SN, R2, DR	265	50	AA, N, PC, SN, R2, DR	125	60	N, PC, RO	25	75	
	Highly Affected	25													N, PC, RO	25	75	
Developed settlements (urban and suburban)	Day	330							N	140	60	N	45	70	N, PC, RO	25	75	180
	Day (OOHW)	500				N, R1, DR	330	50	N, R1, DR	140	60	N, R1, DR, PC, SN	45	70	N, PC, RO	25	75	
	Evening	740				N, R1, DR	500	45	N, R1, DR	215	55	N, R1, DR, PC, SN	85	65	N, PC, RO	25	75	
	Night	1090	N	1090	35	N, R2, DR	740	40	N, PC, SN, R2, DR	330	50	AA, N, PC, SN, R2, DR	140	60	N, PC, RO	25	75	
	Highly Affected	25													N, PC, RO	25	75	
Propagation across a valley / over water	Day	440							N	170	60	N	55	70	N, PC, RO	25	75	230
	Day (OOHW)	685				N, R1, DR	440	50	N, R1, DR	170	60	N, R1, DR, PC, SN	55	70	N, PC, RO	25	75	
	Evening	1035				N, R1, DR	685	45	N, R1, DR	280	55	N, R1, DR, PC, SN	100	65	N, PC, RO	25	75	
	Night	1525	N	1525	35	N, R2, DR	1035	40	N, PC, SN, R2, DR	440	50	AA, N, PC, SN, R2, DR	170	60	N, PC, RO	25	75	
	Highly Affected	25													N, PC, RO	25	75	

Overview of additional mitigation measures

After standard noise mitigation measures have been applied noise levels may still exceed noise management levels. The Construction and Maintenance Noise Estimator will indicate which additional measures apply. Note that assistance from Roads and Maritime Communication and Stakeholder Engagement is available to coordinate and deliver community consultation and notification. The team also has the latest noise fact sheets and letter templates.

The range of additional measures are described below. Note in instances where there are many receivers above the NML it may not be practical to discuss the project with every receiver recommended below. Instead the community should be proactively engaged so they have an incentive to participate in discussion. Support from the community may be demonstrated from surveys, online feedback, contact phone numbers and community events.

Longer term impacts

During long term works or at fixed sites the additional mitigation measures above may become less effective. In these situations at-receiver noise mitigation may be considered where feasible and reasonable if options for at source noise mitigation and management measures have been exhausted.

At receiver mitigation may include temporary window and door screens, temporary localised shielding or permanent forms of mitigation.

Feasible and reasonable considerations for providing at-receiver treatments should include:

- time of day of the noise increase and exceedence of criteria
- time of use of affected receivers
- how many decibels the noise levels are to increase

Abbreviation	Measure	Description
N	Notification (letterbox drop or equivalent)	Advance warning of works and potential disruptions can assist in reducing the impact on the community. The notification may consist of using variable message sign, letterbox drop (or equivalent), web site / social media or a combination to distribute information detailing work activities, time periods over which these will occur, impacts and mitigation measures. Notification should be a minimum of 5 working days prior to the start of works. The approval conditions for projects may also specify requirements for notification to the community about works that may impact on them.
SN	Specific notifications	Specific notifications are letterbox dropped (or equivalent) to identified stakeholders no later than 5 working days ahead of construction activities that are likely to exceed the noise objectives. The specific notification provides additional information when relevant and informative to more highly affected receivers than covered in general letterbox drops. This form of communication is used to support periodic notifications, or to advertise unscheduled works.
PC	Phone calls	Phone calls detailing relevant information made to identified/affected stakeholders, who have provided their contact details, within seven calendar days of proposed work. Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs. Where the resident cannot be telephoned then an alternative form of engagement should be used.
IB	Individual briefings	Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Project representatives would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project. Where the resident cannot be met with individually then an alternative form of engagement should be used.
RO	Respite offer	Respite Offers should be considered where there are high noise and vibration generating activities near receivers. As a guide work should be carried out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of and amenity at nearby receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact. This measure is evaluated on a project-by-project basis, and may not be applicable to all projects, or or when duration respite has been agreed (see below)
R1	Respite Period 1	Out of hours construction noise in out of hours period 1 shall be limited to no more than three consecutive evenings per week except where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and no more than 6 evenings per month
R2	Respite Period 2	Night time construction noise in out of hours period 2 shall be limited to two consecutive nights except for where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and 6 nights per month. Where possible, high noise generating works shall be completed before 11pm.
DR	Duration respite	Respite offers and respite periods 1 and 2 may be counterproductive in reducing the impact on the community for longer duration projects. In this instance and where it can be strongly justified it may be beneficial to increase the work duration, number of evenings or nights worked through Duration Respite so that the project can be completed more quickly. Transport staff should engage with the community where noise levels are expected to exceed the NML to demonstrate support for Duration Respite.
AA	Alternative accommodation	Alternative accommodation options may be offered (as a last resort) to residents living in close proximity to construction works that are likely to experience highly intrusive noise levels. The specifics of the offer will be identified on a project-by-project basis, however an AA offer is unlikely to be made for maintenance works. Additional aspects for consideration shall include whether the highly intrusive activities occur throughout the night or before midnight.
V	Verification	Verification may be required for building or asset condition where works are likely to cause vibration impact or for noise levels following reasonable complaints. See Appendix F of the Construction Noise and Vibration Guideline for more details.

Predicted airborne L _{Aeq} (15min) noise level at receiver			Additional mitigation measures
Perception	dB(A) above RBL	dB(A) above NML	Type ¹
All hours			
75dBA or greater			N, V, PC, RO
Standard hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Public Holiday (Nil)			
Noticeable	5 to 10	0	-
Clearly audible	10 to 20	< 10	-
Moderately intrusive	20 to 30	10 to 20	N, V
Highly intrusive	> 30	> 20	N, V
OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Holidays			
Noticeable	5 to 10	< 5	-
Clearly audible	10 to 20	5 to 15	N, R1, DR
Moderately intrusive	20 to 30	15 to 25	V, N, R1, DR
Highly intrusive	> 30	> 25	V, IB, N, R1, DR, PC, SN
OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Public Holiday (6pm – 7am)			
Noticeable	5 to 10	< 5	N
Clearly Audible	10 to 20	5 to 15	V, N, R2, DR
Moderately intrusive	20 to 30	15 to 25	V, IB, N, PC, SN, R2, DR
Highly intrusive	> 30	> 25	AA, V, IB, N, PC, SN, R2, D
Notes¹ (refer to detailed descriptions in Table C1 above): 1. AA = Alternative accommodation V = Validation of predicted noise levels IB = Individual briefings N = Notification box drops PC = Phone calls SN = Specific notifications R1 = Respite period 1 R2 = Respite period 2 DR = Duration respite			
2. All affected receivers			

Ground vibration - minimum working distances from sensitive receivers

As a guide, minimum working distances from sensitive receivers for typical items of vibration intensive plant are listed in the table below. The minimum distances are quoted for both cosmetic damage (refer to BS 7385:2-1993 for light-framed residential type structures and DIN 4150-3:2016 for fragile or heritage type structures) and human comfort (refer to EPA's Assessing Vibration - a technical guideline). The minimum working distances for cosmetic damage must be complied with at all times, unless otherwise approved by Roads and Maritime or under the environmental license as relevant.

Recommended minimum working distances for vibration intensive plant from sensitive receiver

Plant item	Rating / Description	Minimum working distance		
		Cosmetic damage		Human Response
		Light framed structure (BS 7385)	Heritage and other sensitive structures (DIN 4150)	EPA's Vibration Guideline
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	14 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	16 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	33 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	41 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	54 m	100 m
	> 300 kN (> 18 tonnes)	25 m	68 m	100 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	(900 kg - 12 to 18t excavator)	7 m	19 m	23 m
Large Hydraulic Hammer	(1600 kg - 18 to 34t excavator)	22 m	60 m	73 m
Vibratory Pile Driver	Sheet piles	20 m	50 m	100 m
Pile Boring	≤ 800 mm	2 m (nominal)	5 m	7 m
Jackhammer	Hand held	1 m (nominal)	2 m	3 m
Profiler	Wirtgen W210	4 m	-	-
Asphalt Paver	Vogele Super 1800-3	1 m	-	-
Steel Drum Roller	Hamm HD70 (Oscillating Mode)	2 m	-	-
Steel Drum Roller	Hamm HD70 (Static Mode)	1 m	-	-

The minimum working distances are indicative and will vary depending on the particular item of plant, local geotechnical conditions and the dominant frequency of the construction vibration levels. They apply to cosmetic damage of typical light-framed residential buildings and heritage/fragile buildings and assume that construction vibration could include low frequency content associated with the increased risk of cosmetic damage. Vibration monitoring is recommended to confirm the minimum working distances at specific sites. Additionally, detailed analysis based on the frequency dependent guideline vibration levels in BS 7385:2-1993 and DIN 4150-3:2016 may be utilised in conjunction with site specific measurements to derive alternative cosmetic damage objectives and minimum working distances. For heritage listed / fragile structures, specialist advice from an appropriately qualified structural engineer who is familiar with heritage structures is required to support any proposed relaxation of the initial cosmetic damage

Operational aspects of some receivers may be highly sensitive to noise and vibration over and above typical noise and vibration allowances based on annoyance and human comfort. For highly sensitive receivers (eg, high technology facilities with sensitive equipment, recording studios and cinemas), specific assessment is required to ensure satisfactory operation of the facility and determine if any mitigation or management measures are required to minimise the potential impacts. Some guidance where building contents contain sensitive equipment may be found in these additional references:

* Australian Standard 2834-1995 Computer Accommodation, Chapter 2.9 Vibration, p16

* Gordon CG Generic Vibration Criteria for Vibration Sensitive Equipment Proceedings of International Society for Optical Engineering (SPIE), Vol. 1619, San Jose, CA, November 4-6, 1991, pp. 71-85

* ASHRAE Applications Handbook (SI) 2003, Chapter 47 Sound and Vibration Control, pp47.39-47.40

* ISO 8569 1996 Measurement & Evaluation of Shock & Vibration Effects on Sensitive Equipment in buildings

In relation to human comfort (response), the minimum working distances in the above table relate to continuous vibration. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels, occurring over shorter periods are allowed (see EPA's Assessing Vibration: a technical guideline). Where the predicted vibration levels for construction activities exceed the human comfort objectives, the procedures in Appendix C of the Construction Noise and Vibration Guideline are to be followed in order to mitigate the potential impacts at sensitive receivers.

Appendix C: Aboriginal Heritage Information Management System Search Results

Appendix D: TfNSW Stage 1 PACHCI Assessment

18/ 03/ 2024

Dimitri Perdikaris
76 Victoria Street
Grafton NSW 2460

Dear Dimitri,

Preliminary assessment results for Central West Orana Renewable Energy Zones based on Stage 1 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (the procedure).

The project sites I-001, I-002, I-003, I-004, I-005, I-006, I-007, I-008, H-009, H-010, I-026 and I-027 as described in the Stage 1 assessment, were assessed as being unlikely to have an impact on Aboriginal cultural heritage. The assessment is based on the following due diligence considerations:

- The project is unlikely to harm known Aboriginal objects or places.
- The AHIMS search did not indicate moderate to high concentrations of Aboriginal objects or places in the study area.
- The study area does not contain landscape features that indicate the presence of Aboriginal objects, based on the Heritage NSW's *Due diligence Code of Practice for the Protection of Aboriginal objects in NSW* and the Transport for NSW's procedure.
- The cultural heritage potential of the study area appears to be reduced due to past disturbance.
- There is an absence of sandstone rock outcrops likely to contain Aboriginal art.

Your project may proceed in accordance with the environmental impact assessment process, as relevant, and all other relevant approvals.

If the scope of your project changes, you must contact me and your regional environmental staff to reassess any potential impacts on Aboriginal cultural heritage.

If any potential Aboriginal objects (including skeletal remains) are discovered during the course of the project, all works in the vicinity of the find must cease. Follow the steps outlined in the Transport for NSW's *Unexpected Archaeological Finds Procedure*.

Safeguard- Due to the proximity of some of the proposed works to areas identified by AHIMS as being 'Aboriginal sites recorded in or near the location', caution must be taken to ensure there is no impact to these sites.

For further assistance in this matter do not hesitate to contact me.

Yours Sincerely,



Merredy Quinn- Bates
Aboriginal Cultural Heritage Officer

Appendix E: Non-Aboriginal Heritage Search Results



Singleton Local
Environmental
Plan 2013

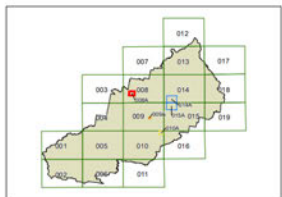
Heritage Map - Sheet HER_008A

Heritage

-  Conservation Area - General
-  Item - General
-  Item - Archaeological

Cadastre

-  Cadastre 08/03/2013 ©
-  Land and Property Information (LPI)



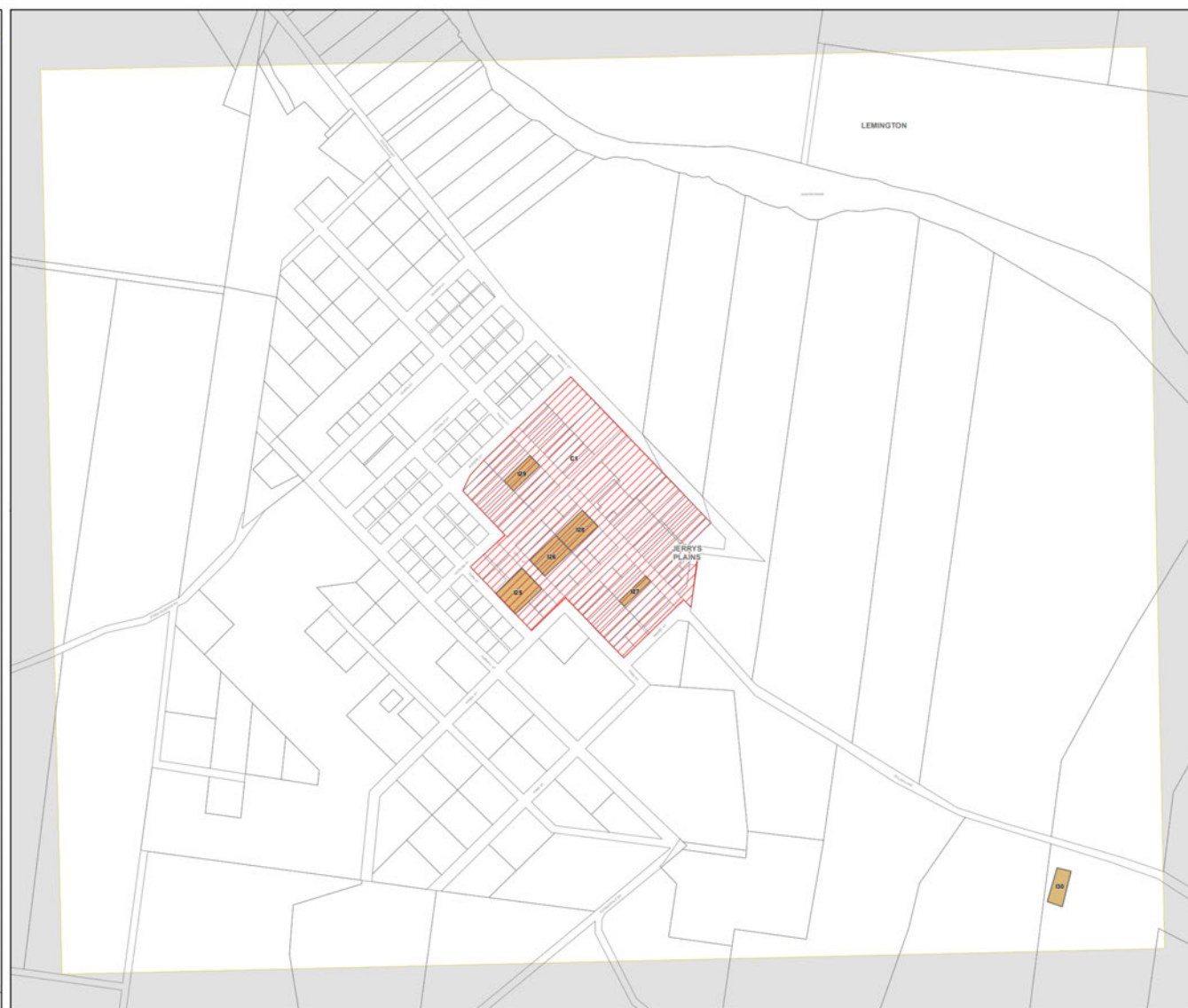
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Kilometres

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Projection: GDA1994

Zone 58

Map Identification Number: 7000_COM_HER_008A_010_20130820





Singleton Local Environmental Plan 2013

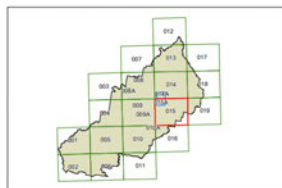
Heritage Map - Sheet HER_015

Heritage

- Conservation Area - General
- Item - General
- Item - Archaeological

Cadastre

Cadastre 24/09/2018 © Spatial Services



Kilometres

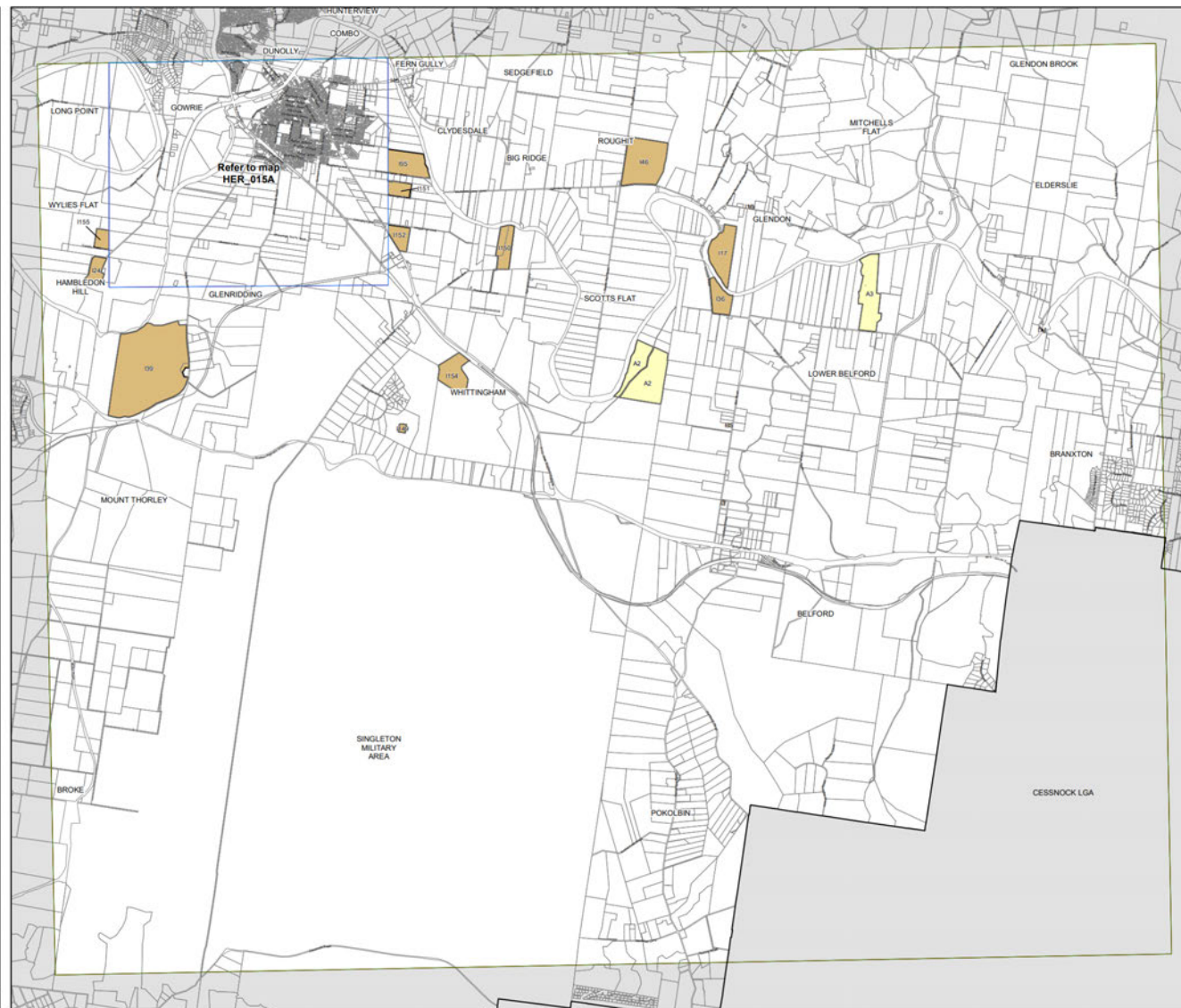
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MGA Zone 58

Map identification number:

7005_COM_HER_015_080_20190320





Singleton Local Environmental Plan 2013

Heritage Map - Sheet HER_009

Heritage

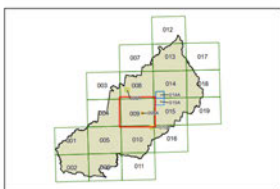
Conservation Area - General

Item - General

Item - Archaeological

Cadastral

Cadastral 09/08/2021 © Spatial Services



N

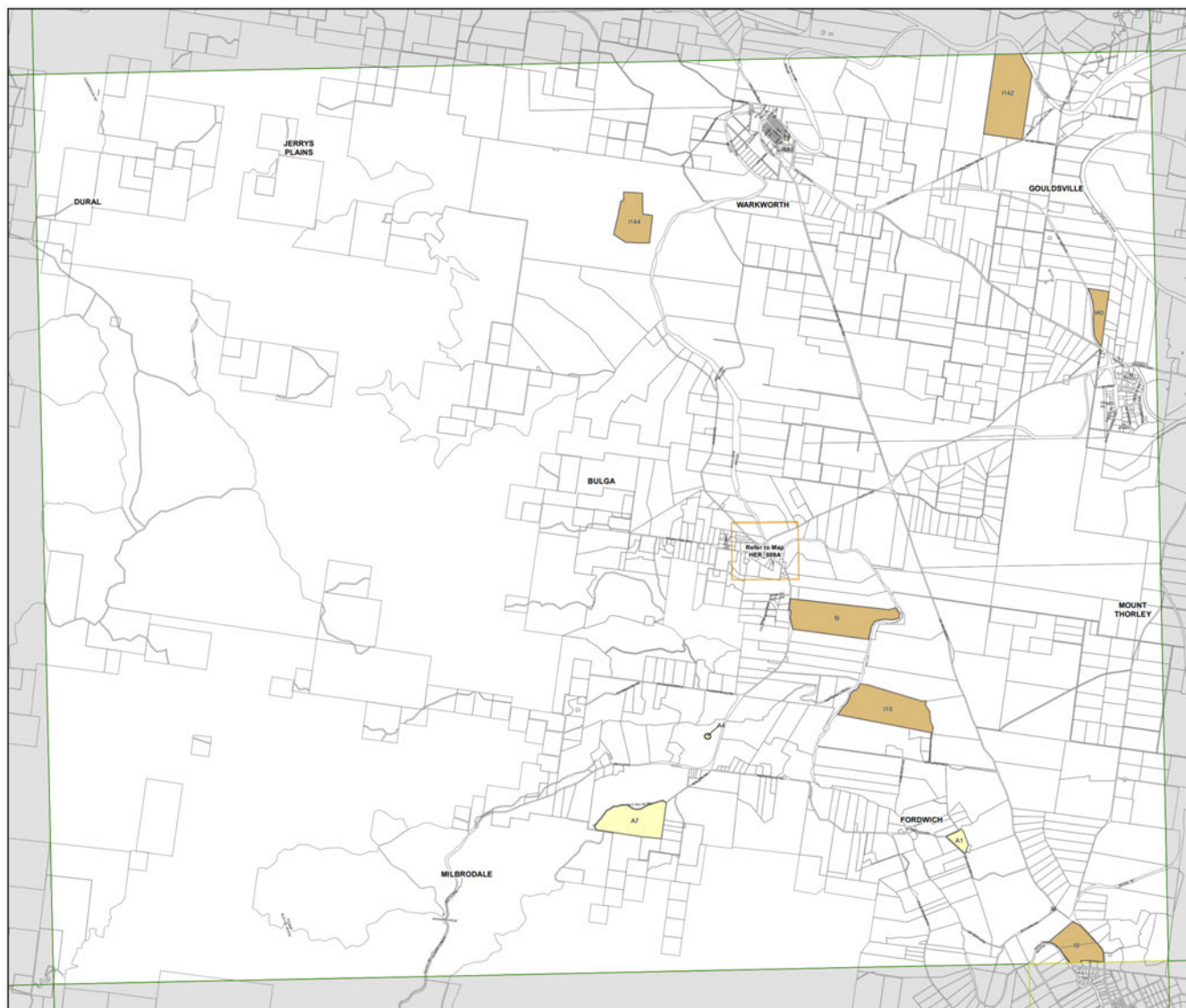
0 1 2 Kilometres

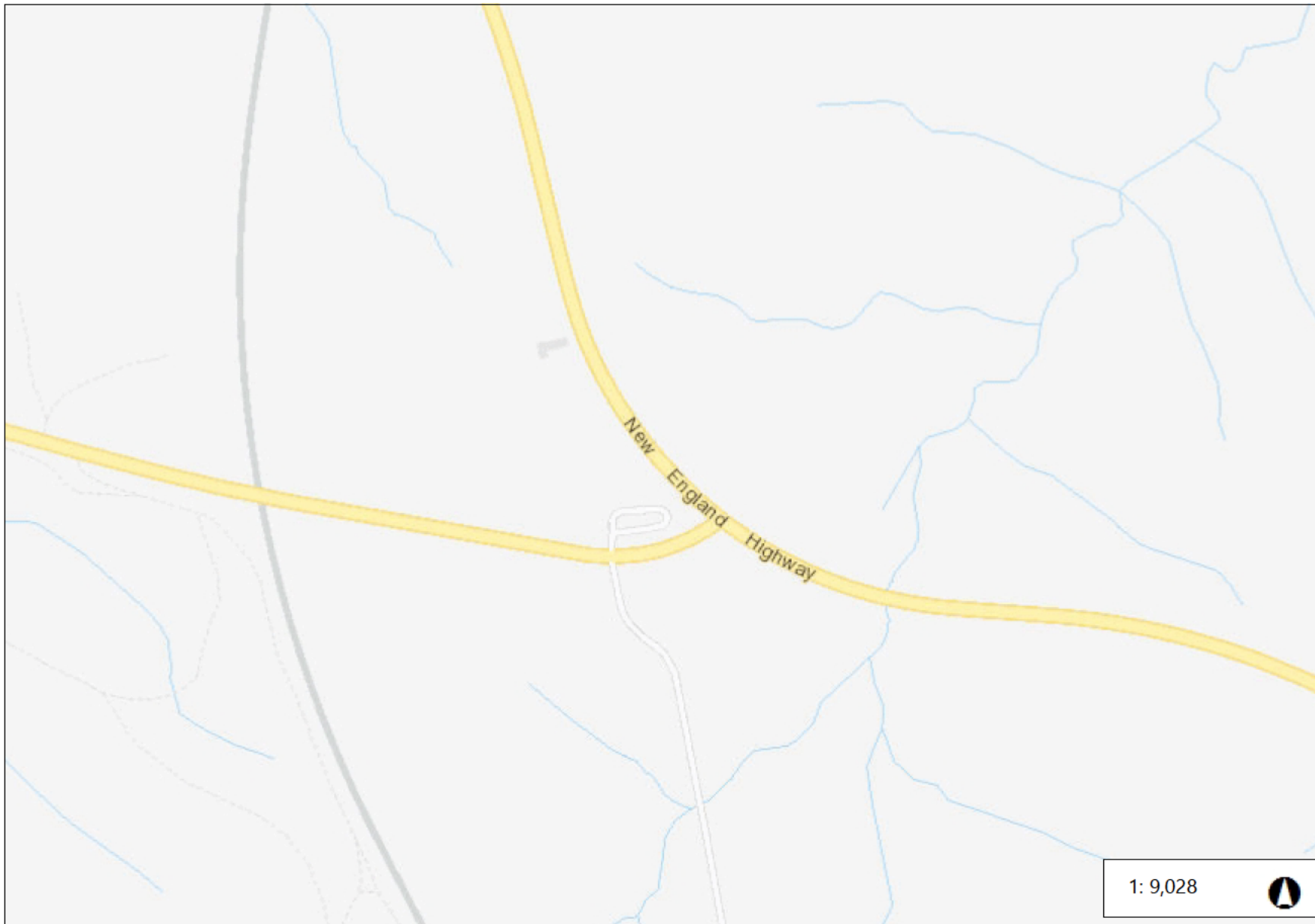
Scale: 1:80,000 @ A3

Projection: GDA 1994

MSA Zone 58

Map identification number: 7000_COM_HER_009_083_20211014





1: 9,028



458.6 0 229.31 458.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere
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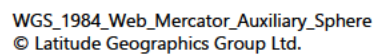


Legend

-  World Heritage Areas NSW
-  SEPP
-  State Heritage Register
-  Aboriginal Place
- Local Environmental Plan**
 -  Aboriginal Place
 -  Conservation Area - General
 -  Conservation Area - Landscape
 -  Heritage Conservation Area
 -  Item - Aboriginal
 -  Item - Archaeological
 -  Item - General
 -  Item - Landscape
-  Local Environmental Plan
 -  Cluster (label denotes number)
-  Aboriginal Place
 -  Cluster (label denotes number)
-  State Heritage Register
 -  Cluster (label denotes number)
-  Interim Heritage Order
 -  Cluster (label denotes number)

Notes

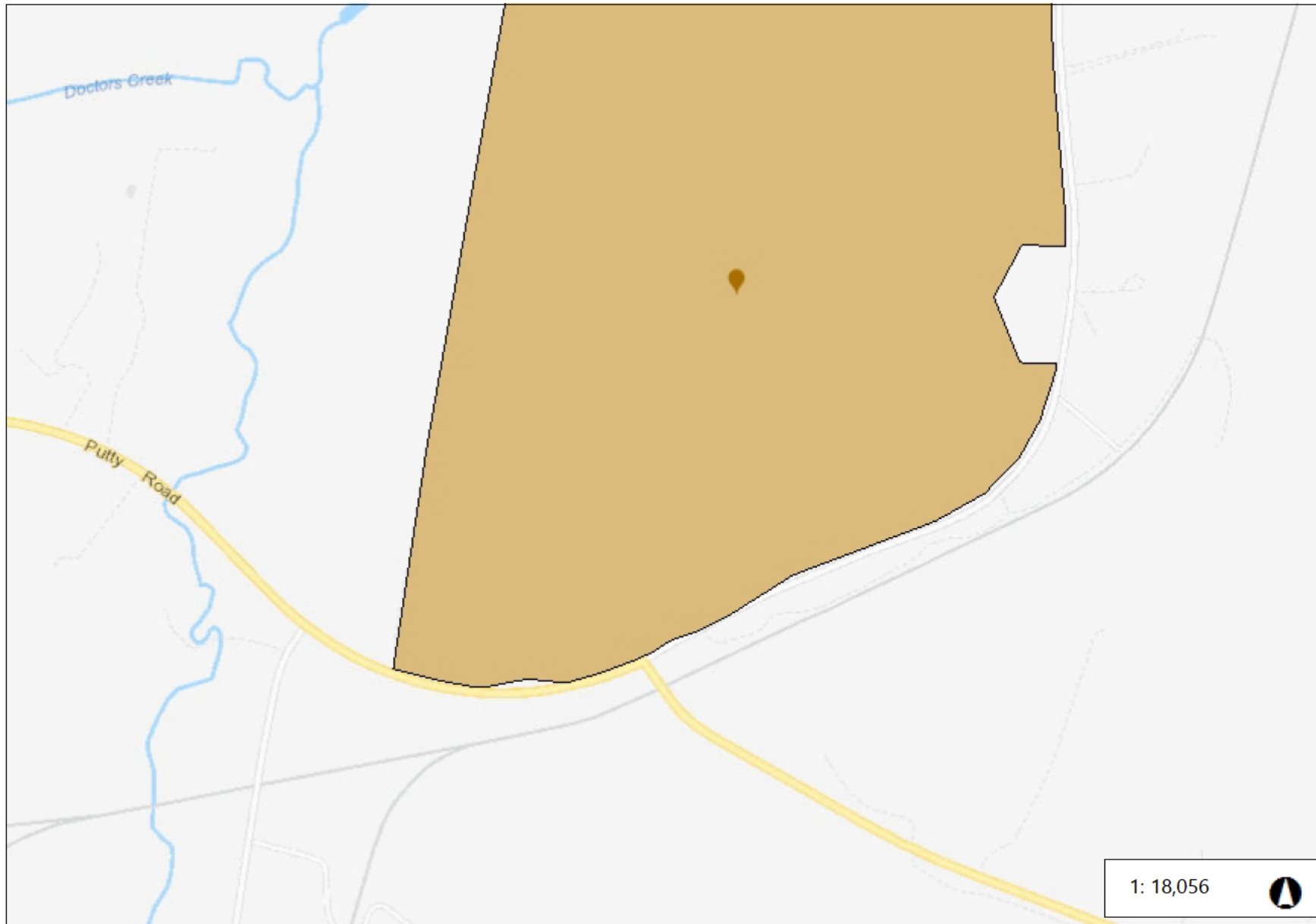
Notes



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1: 18,056



917.2 0 458.62 917.2 Meters

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

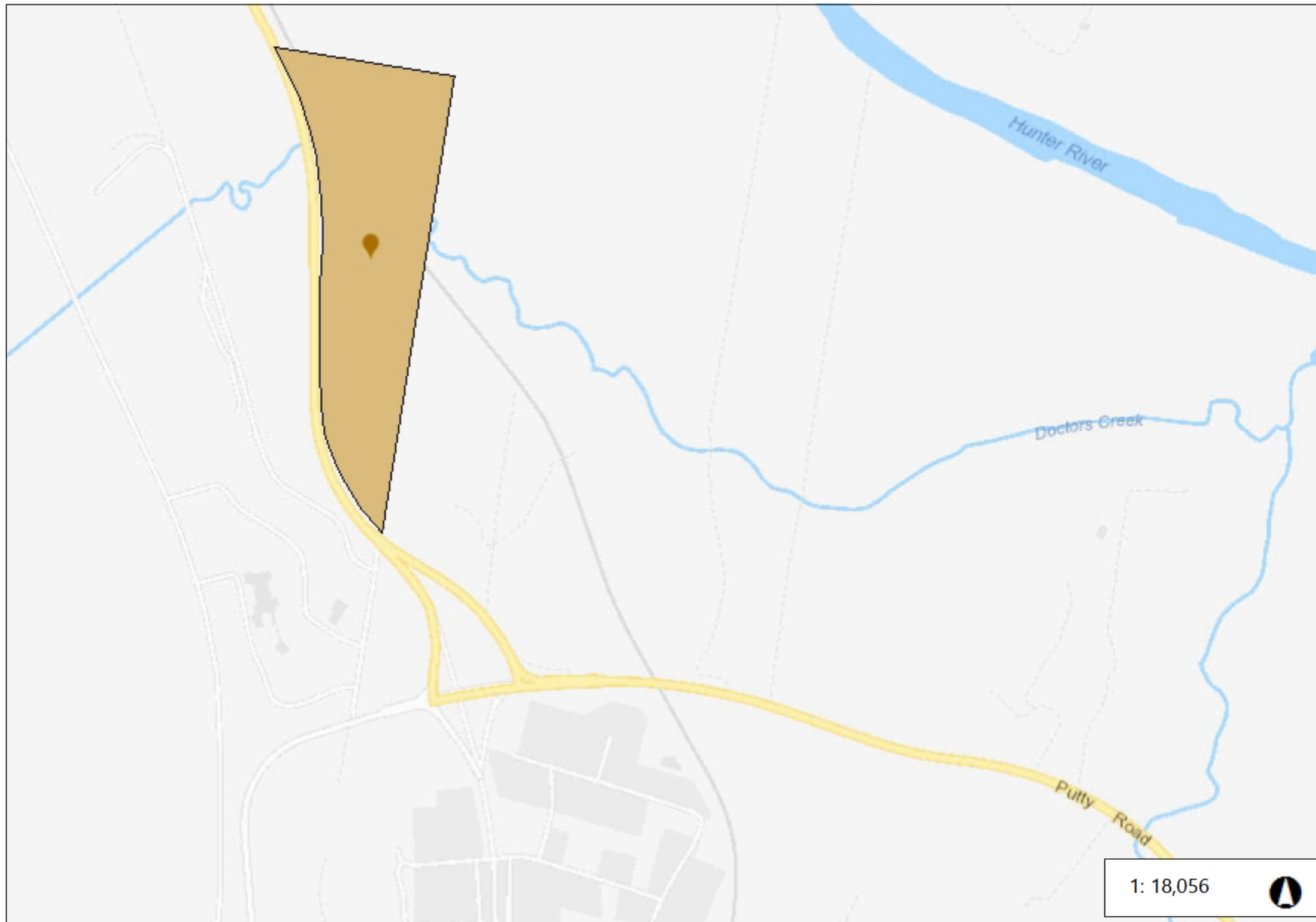


Legend

-  World Heritage Areas NSW
-  SEPP
-  State Heritage Register
-  Aboriginal Place
- Local Environmental Plan**
 -  Aboriginal Place
 -  Conservation Area - General
 -  Conservation Area - Landscape
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-  Local Environmental Plan
 -  Cluster (label denotes number)
-  Aboriginal Place
 -  Cluster (label denotes number)
-  State Heritage Register
 -  Cluster (label denotes number)
-  Interim Heritage Order
 -  Cluster (label denotes number)

Notes

Notes



1: 18,056



917.2 0 458.62 917.2 Meters

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Legend

-  World Heritage Areas NSW
-  SEPP
-  State Heritage Register
-  Aboriginal Place
- Local Environmental Plan**
 -  Aboriginal Place
 -  Conservation Area - General
 -  Conservation Area - Landscape
 -  Heritage Conservation Area
 -  Item - Aboriginal
 -  Item - Archaeological
 -  Item - General
 -  Item - Landscape
-  Local Environmental Plan
 -  Cluster (label denotes number)
-  Aboriginal Place
 -  Cluster (label denotes number)
-  State Heritage Register
 -  Cluster (label denotes number)
-  Interim Heritage Order
 -  Cluster (label denotes number)

Notes

Notes

Search Results

66 results found.

Abbey Green Homestead Group Putty Rd	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
All Saints Anglican Church Group High St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Arderseir and Garden Maitland Rd	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Baroona Homestead, Outbuildings & Garden Range Rd	Whittingham via Singleton, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Beckers Bridge Glendon Brook Gresford Rd	Glendon Brook, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Boer War Memorial Obelisk Elizabeth St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Bon Accord 7-9 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Caledonian Hotel 38-40 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Chain of Ponds Hotel and Outbuildings Old Singleton Rd	Liddell, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Club House Hotel 142 John St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Club House Hotel Group John St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Convent of Mercy (Current Buildings) Queen St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Convent of Mercy (Original Building) Queen St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Convent of Mercy Group Queen St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Council Chambers (former) 74 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Crail House Howe St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Criterion Hotel 148 John St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Dalwood and Surrounds Dalwood Rd	Branxton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Elderslie Road Bridge Branxton Rd	Elderslie, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Ewbank and Outbuildings 88 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Fovvbrook Cross Beds New England Hwy	Ravensworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Glenayr Including Fence 1A Kent St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Glendon Area Glendon Rd	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Glendon Homestead and Sites of Outbuildings Glendon Rd	Glendon via Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Gondwana Rainforests of Australia	Lismore, NSW, Australia	(Listed place) National Heritage List
Gondwana Rainforests of Australia	NSW, Australia, QLD, Australia	(Declared property) World Heritage List
Greater Blue Mountains Area Great Western Hwy	Katoomba, NSW, Australia	(Declared property) World Heritage List
Greenwood and Outbuildings Greenwood St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Hambledon Hill Homestead Hambledon Hill Rd	Singleton, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place	Bulga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Putty, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Jerrys Plains Church, School and Police Station Group	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lambs Valley Lambs Valley Rd	Stanhope, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

MacDonald Valley / Wollombi Valley Area	St Albans, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Middle Falbrook Road Bridge Rixs Creek Falbrook Rd	Middle Falbrook via Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Milbrodale Estate Original Homestead Putty Rd	Milbrodale via Bulga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Minimbah House Whittingham Broke Rd	Whittingham Via Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Moreton Bay Fig Tree Queen St	Singleton, NSW, Australia	(Removed from Register or IL) Register of the National Estate (Non-statutory archive)
Mount Leonard Estate Homestead Broke Whittingham Rd	Broke, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Murinbin House Group Broke Rd	Broke, NSW, Australia	(Interim List) Register of the National Estate (Non-statutory archive)
Murinbin House Group Broke Rd	Broke, NSW, Australia	(Listed place) Commonwealth Heritage List
Neotsfield Homestead Gardens Racecourse La (off)	Whittingham via Singleton, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Pelerin 11 Edinburgh Ave	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Percy Hotel 65-67 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Police Station Doyle St	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Public School Doyle St	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Railway Station Munro St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Ravensworth / Liddell Geological Site Ravensworth Liddell Rd	Liddell, NSW, Australia	(Removed from Register or IL) Register of the National Estate (Non-statutory archive)
Ravensworth Homestead Hebden Rd	Ravensworth, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Redbourneberry Bridge Singleton Gresford Rd	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
School Residence Doyle St	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Shire Council Technical Offices George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Singleton Conservation Area	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Singleton Courthouse 39 Elizabeth St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Singleton Post Office and Stables (former) 25A-27 George St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Singleton Showground Group Bathurst St	Singleton, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
St Andrews Anglican Church Wollombi St	Broke, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
St James Anglican Church Pagan St	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Patricks Catholic Church Queen St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Strowan Denman Rd	Jerrys Plains, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
The Blue Mountains	Katoomba, NSW, Australia	(Indicative place) Register of the National Estate (Non-statutory archive)
The Greater Blue Mountains Area Greater Western Hwy	Katoomba, NSW, Australia	(Listed place) National Heritage List
The Greater Blue Mountains Area - Additional Values and Areas Great Western Hwy	Katoomba, NSW, Australia	(Nominated place) National Heritage List
Wade Cottage 25-27 Bishopsgate St	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wollemi National Park (1980 boundary) The Putty Rd	Singleton, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Thu Mar 21 17:29:48 2024

Place Details

[Send Feedback](#)

Abbey Green Homestead Group, Putty Rd, Singleton, NSW, Australia

Photographs	None
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (14/05/1991)
Place ID	1433
Place File No	1/09/077/0018

Statement of Significance

Abbey Green is an historically significant building for its associations with George Thomas Loder III, the first owner of Abbey Green, who was a prominent Hunter Valley grazier and founder of an early meat preserving and canning enterprise aimed at expanding the markets for graziers. The Abbey Green Homestead, woolshed, slab stables, slab outbuilding and its siting high above a reach of the river illustrate very well the chief characteristics of a prosperous late Victorian Hunter River Homestead Group.

Official Values Not Available

Description

The building has a slate roof and is built of sandstock brick. It is a distinctively Victorian building with the drawing room thrust forward. In the approach from the rear, the remains of a once expansive Victorian garden are evident. Pathways wind through circular stone lined gardens. The roof is supported on a cast iron trellis and frieze above the deep, stone flagged verandah. The back verandah is roofed with bullnosed iron, most of the windows are small paned and shuttered as are the French doors opening on to the verandah. Inside the joinery is of cedar and is in good condition. The mantelpieces in the main rooms are marble. A secondary courtyard paved in stone is formed between the servants wing and a detached building which has an attic and a stone cellar. The outbuildings include a woolshed, stables with slab walls and a rough hewn timber floor and an unusual octagonal building with low slab walls and a high iron roof and centrepole. Abbey Green was an original grant to George Loder, a pioneer of the Hawkesbury who arrived with the first fleet. In 1851 his grandson George Thomas Loder extended the original grant by 4,000 acres and it was he who had built the majority of the complex.

History Not Available

Condition and Integrity

Restored.

Location

Comprising homestead, woolshed, stables, slab octagonal building, courtyards and remains of Victorian garden, Putty Road, 6km south-east of Singleton.

Bibliography

HICKMAN,L. "THE TALE OF AN OLD HOME - AND A BUSY MEAT WORKS". LAND MAGAZINE AUG. 19, 1976, P 39.
WHITELAW,E. "A HISTORY OF SINGLETON" THE SINGLETON HISTORICAL SOCIETY, NEWCASTLE, 1974.
BATES,G. "STATELY HUNTER HOMES" NEWCASTLE MORNING HERALD, 5TH SEPTEMBER, 1964.

Report Produced Thu Mar 21 17:25:44 2024

Place Details

[Send Feedback](#)

Strowan, Denman Rd, Jerrys Plains, NSW, Australia

Photographs	None
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (21/03/1978)
Place ID	1395
Place File No	1/09/077/0001

Statement of Significance

Built in 1860 to the designs of Oswald Lewis (son of Mortimer Lewis). An attractive unspoilt transitional country house with particularly fine hallway and general detail. It has been continuously occupied by the descendants of the first owner, George Bowman, a well known pastoralist family.

(The Commission is in the process of developing and/or upgrading official statements for places listed prior to 1991. The above data was mainly provided by the nominator and has not yet been revised by the Commission.)

Official Values Not Available

Description

A groomed country house, set into an attractive garden, it is built of rendered brick painted white and illustrates the architectural transition between late Georgian and early Victorian styles. French doors with rounded glass heads and shutters open onto stone flagged verandahs on three sides which are decorated with cast iron pilasters and an intricate valence. Fine interiors and detail. Two storey kitchen wing added c 1900. Stables and outbuildings.

History Not Available

Condition and Integrity Not Available

Location

Denman Road, 5km north-west of Jerrys Plains.

Bibliography Not Available

Report Produced Thu Mar 21 17:36:39 2024



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Australian heritage photographic library search results

Query details

Location: jerrys plains
Results: 14 records were found.

Records Displayed: 1 to 10

Search results



Click image for more details



Click image for more details



Click image for more details



Click image for more details

Title: Appletree Aboriginal Area

Location: Jerrys Plains

Barcode No: rt07640

Place ID: 1425

Title: Merton Cottage

Location: 4883 Jerrys Plains Rd, Denman

Barcode No: rp02927

Place ID: 1343

Title: Merton Cottage

Location: 4883 Jerrys Plains Rd, Denman

Barcode No: rp02927a

Place ID: 1343

Title: Police Station

Location: Doyle St, Jerrys Plains

Barcode No: rt00168

Place ID: 14475

Photographic resources

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For further information please contact:

Heritage Mailbox:
heritage@dcceew.gov.au

Key

Links to another web site
Opens a pop-up window



Click image for more details

Title: Police Station

Location: Doyle St, Jerrys Plains

Barcode No: rt00169

Place ID: 14475



Click image for more details

Title: Police Station

Location: Doyle St, Jerrys Plains

Barcode No: rt00587

Place ID: 14475



Click image for more details

Title: Police Station

Location: Doyle St, Jerrys Plains

Barcode No: rt00588

Place ID: 14475



Click image for more details

Title: Public School

Location: Doyle St, Jerrys Plains

Barcode No: rt00164

Place ID: 14411



Click image for more details

Title: Public School

Location: Doyle St, Jerrys Plains

Barcode No: rt00165

Place ID: 14411



Click image for more details

Title: Public School

Location: Doyle St, Jerrys Plains

Barcode No: rt00166

Place ID: 14411

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Australian heritage photographic library search results

Query details

Location: singleton

Results: 181 records were found.

Records Displayed: 1 to 10

Search results



Click image for more
details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00149

Place ID: 1418



Click image for more
details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00150

Place ID: 1418



Click image for more
details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00152

Place ID: 1418

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Key

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Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00153

Place ID: 1418



Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00155

Place ID: 1418



Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00156

Place ID: 1418



Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00569

Place ID: 1418



Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00573

Place ID: 1418



Click image for more details

Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00575

Place ID: 1418

details



Title: All Saints Anglican Church Group

Location: High St, Singleton

Barcode No: rt00577

Place ID: 1418

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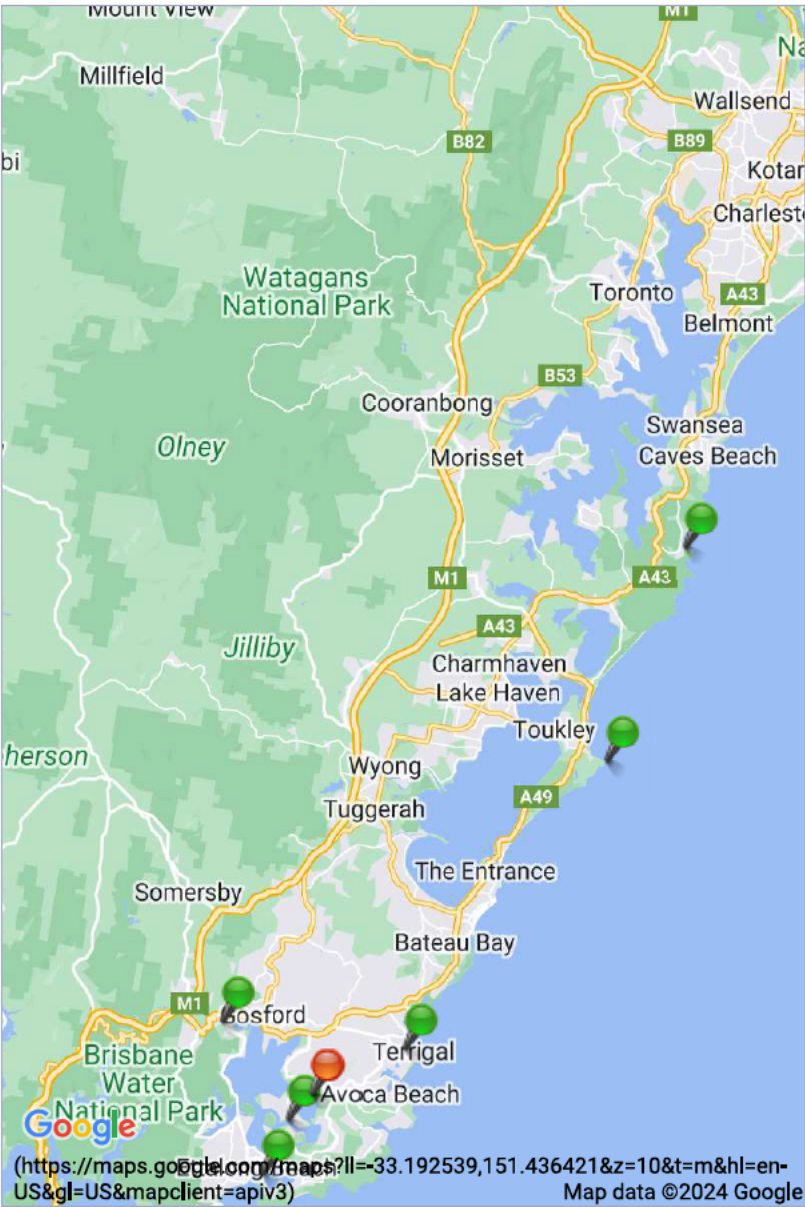
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> [Search maritime heritage sites with map](#)

Search maritime heritage sites with map

[Search for maritime heritage sites by region, category and type.](#)



Region

- ☐ All regions
- ☐ Northern Rivers
- ☐ Mid north coast
- ☐ Hunter Valley
- ☒ Central Coast
- ☐ Sydney
- ☐ Illawarra
- ☐ South East
- ☐ NSW - Other
- ☐ Lord Howe Island and Middleton & Elizabeth Reefs
- ☐ Darling
- ☐ Murray river

Maritime category

Maritime Her ▾

Maritime type

All type ▾

Site search results

Site title	Description	Category	Region
Catherine Hill Bay (ViewSiteDetail.aspx?siteid=2344)	Catherine Hill Bay, located between Norah Head and Newcastle, was used from the early days of the colony as a	Maritime Heritage Site	Central Coast

	safe haven for vessels travelling on the coast and caught in bad weather. ...		
Davistown (ViewSiteDetail.aspx?siteid=2345)	Brisbane water located in Broken Bay, was located from the earliest days of the settlement at Sydney. ...	Maritime Heritage Site	Central Coast
Ettalong Wharf (ViewSiteDetail.aspx?siteid=2430)		Maritime Heritage Site	Central Coast
Henry Kendall Cottage and Historical Museum (ViewSiteDetail.aspx?siteid=2366)	Henry Kendall Cottage and Historical Society maintains a local history collection. ...	Maritime Heritage Site	Central Coast
Jonathan Pipers Shipyard (ViewSiteDetail.aspx?siteid=2784)	From 1844 to 1879, Jonathan Piper built 24 known ships at his yards, the first being the ketch Peacock and the last, a ketch called Jonathan. ...	Maritime Heritage Site	Central Coast
Norah Head Lighthouse (ViewSiteDetail.aspx?siteid=2066)	Norah Head Lighthouse Norah Head Operation	Maritime Heritage Site	Central Coast

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Appendix F: Biodiversity Search Results

DPI Weedwise Search – Hunter region ‘priority weeds’

Definitions

Prohibition on certain dealings: Must not be imported into the state, sold, bartered, exchanged or offered for sale.

Regional recommended measure: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.

Exclusion zone: An exclusion zone is established for all land in the region, except the core infestation which includes all urban centres of the Hunter region.

Prohibited Matter: A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries

Control Order: Owners and occupiers of land on which there is species must notify the local control authority for the area if the species is part of a new infestation on the land, destroy all species on the land ensuring that subsequent generations of species are destroyed; and keep the land free of species. A person who deals with a carrier of species must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.

Scientific Name	Common name	Biosecurity duty
<i>Opuntia leucotricha</i>	Aaron's bear prickly pear	Prohibition on certain dealings
<i>Lycium ferocissimum</i>	African boxthorn	Prohibition on certain dealings
<i>Eragrostis curvula</i>	African lovegrass	Regional recommended measure
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African olive	Exclusion zone
<i>Alternanthera philoxeroides</i>	Alligator weed	Prohibition on certain dealings
<i>Eichhornia azurea</i>	Anchored water hyacinth	Prohibited Matter
<i>Sagittaria calycina</i> var. <i>calycina</i>	Arrowhead	Regional recommended measure
<i>Tamarix aphylla</i>	Athel pine	Prohibition on certain dealings.
<i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Bitou bush	Prohibition on certain dealings
<i>Centaurea x moncktonii</i>	Black knapweed	Prohibited Matter
<i>Robinia pseudoacacia</i>	Black locust	Exclusion zone
<i>Salix nigra</i>	Black willow	Prohibition on certain dealings
<i>Rubus fruticosus</i> species <i>aggregate</i>	Blackberry	Prohibition on certain dealings Regional recommended measure
<i>Opuntia rufida</i>	Blind rufida	Prohibition on certain dealings Regional recommended measure
<i>Heliotropium amplexicaule</i>	Blue heliotrope	Regional recommended measure
<i>Vinca major</i>		Regional recommended measure
<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Boneseed	Prohibition on certain dealings
<i>Cylindropuntia fulgida</i> var. <i>mamillata</i>	Boxing glove cactus	Regional recommended measure
<i>Asparagus asparagoides</i>	Bridal creeper	Prohibition on certain dealings
<i>Asparagus declinatus</i>	Bridal veil creeper	Prohibited Matter
<i>Schinus terebinthifolius</i>	Broad-leaf pepper tree	Regional recommended measure
<i>Orobancha</i> species	Broomrapes	Prohibition on certain dealings
<i>Cylindropuntia tunicata</i>	Brown-spined Hudson pear	Regional recommended measure
<i>Opuntia microdasys</i>	Bunny ears cactus	Prohibition on certain dealings
<i>Cabomba caroliniana</i>	Cabomba	Prohibition on certain dealings

Scientific Name	Common name	Biosecurity duty
		Regional recommended measure
<i>Cinnamomum camphora</i>	Camphor laurel	Regional recommended measure
<i>Austrocyllindropuntia cylindrica</i>	Cane cactus	Prohibition on certain dealings
<i>Genista monspessulana</i>	Cape broom	Prohibition on certain dealings
<i>Dolichandra unguis-cati</i>	Cat's claw creeper	Prohibition on certain dealings
<i>Opuntia schickendantzii</i>	Chicken dance cactus	Prohibition on certain dealings
<i>Nassella neesiana</i>	Chilean needle grass	Prohibition on certain dealings Regional recommended measure
<i>Celtis sinensis</i>	Chinese celtis	Regional recommended measure
<i>Persicaria chinensis</i>	Chinese knotweed	Regional recommended measure
<i>Triadica sebifera</i>	Chinese tallow tree	Exclusion zone Regional recommended measure
<i>Asystasia gangetica</i> subsp. <i>micrantha</i>	Chinese violet	Control Order
<i>Asparagus africanus</i>	Climbing asparagus	Prohibition on certain dealings Regional recommended measure
<i>Asparagus plumosus</i>	Climbing asparagus fern	Prohibition on certain dealings
<i>Erythrina crista-galli</i>	Cockspur coral tree	Regional recommended measure
<i>Opuntia stricta</i>	Common pear	Prohibition on certain dealings
<i>Hyparrhenia hirta</i>	Cooltai grass	Regional recommended measure
<i>Barleria repens</i>		Regional recommended measure
<i>Cotoneaster glaucophyllus</i>	Cotoneaster	Regional recommended measure
<i>Ageratina adenophora</i>	Crofton weed	Regional recommended measure
<i>Hygrophila polysperma</i>	East Indian hygrophylla	Regional recommended measure
<i>Amelichloa caudata</i>	Espartillo-broad kernel	Regional recommended measure
<i>Amelichloa brachychaeta</i>	Espartillo-narrow kernel	Regional recommended measure
<i>Myriophyllum spicatum</i>	Eurasian water milfoil	Prohibition on certain dealings
<i>Austrocyllindropuntia subulata</i>	Eve's needle cactus	Prohibition on certain dealings Regional recommended measure
<i>Senecio madagascariensis</i>	Fireweed	Prohibition on certain dealings
<i>Genista linifolia</i>	Flx-leaf broom	Prohibition on certain dealings
<i>Asparagus densiflorus</i>	Foxtail fern	Prohibition on certain dealings
<i>Limnobium laevigatum</i>	Frogbit	Prohibition on certain dealings
<i>Galenia pubescens</i>	Galenia	Exclusion zone
<i>Andropogon gayanus</i>	Gamba grass	Prohibition on certain dealings
<i>Solanum chrysotrichum</i>	Giant devil's fig	Exclusion zone
<i>Sporobolus fertilis</i>	Giant Parramatta grass	Regional recommended measure
<i>Sporobolus pyramidalis</i>	Giant rat's tail grass	Regional recommended measure
<i>Arundo donax</i>	Giant reed	Regional recommended measure
<i>Gloriosa superba</i>	Glory lily	Regional recommended measure
<i>Ulex europaeus</i>	Gorse	Prohibition on certain dealings Regional recommended measure
<i>Cestrum parqui</i>	Green cestrum	Regional recommended measure
<i>Salix cinerea</i>	Grey willow	Prohibition on certain dealings
<i>Asparagus aethiopicus</i>	Ground asparagus	Prohibition on certain dealings Regional recommended measure
<i>Baccharis halimifolia</i>	Groundsel bush	Regional recommended measure
<i>Harrisia</i> species	Hawkweeds – Hieraciums	Regional recommended measure Prohibited Matter
<i>Pilosella</i> species	Hawkweeds – Pilosellas	Prohibited Matter
<i>Gleditsia triacanthos</i>	Honey locust	Regional recommended measure
<i>Equisetum</i> species	Horsetails	Regional recommended measure
<i>Cylindropuntia pallida</i>	Hudson pear	Prohibition on certain dealings Regional recommended measure
<i>Hydrocotyle ranunculoides</i>	Hydrocotyl	Prohibited Matter
<i>Hygrophila costata</i>	Hygrophila	Recommended management measure
<i>Hymenachne amplexicaulis</i> and hybrids	Hymenachne	Prohibition on certain dealings Regional recommended measure
<i>Vachellia karroo</i>	Karoo acacia	Prohibited Matter
<i>Heteranthera reniformis</i>	Kidney-leaf mud plantain	Regional recommended measure
<i>Pilosella piloselloides</i>	King devil hawkweed	Prohibited Matter

Scientific Name	Common name	Biosecurity duty
<i>Bassia scoparia</i>	Kochia	Prohibited Matter
<i>Clidemia hirta</i>	Koster's curse	Prohibited Matter
<i>Pueraria lobata</i>	Kudzu	Regional recommended measure
<i>Lagarosiphon major</i>	Lagarosiphon	Prohibited Matter
<i>Lantana camara</i>	Lantana	Prohibited Matter Prohibition on certain dealings
<i>Pereskia aculeata</i>	Leaf cactus	Regional recommended measure
<i>Ludwigia longifolia</i>	Long-leaf willow primrose	Regional recommended measure
<i>Ludwigia peruviana</i>	Ludwigia	Regional recommended measure
<i>Anredera cordifolia</i>	Madeira vine	Prohibition on certain dealings
<i>Berberis lomariifolia</i>	Mahonia	Regional recommended measure
<i>Prosopis</i> species	Mesquite	Prohibition on certain dealings
<i>Nassella tenuissima</i>	Mexican feather grass	Prohibited Matter
<i>Miconia</i> species	Miconia	Prohibited Matter
<i>Mikania micrantha</i>	Mikania vine	Prohibited Matter
<i>Mimosa pigra</i>	Mimosa	Prohibited Matter
<i>Asparagus macowanii</i>	Ming asparagus fern	Regional recommended measure
<i>Ageratina riparia</i>	Mistflower	Regional recommended measure
<i>Bryophyllum</i> species	Mother-of-millions	Regional recommended measure
<i>Pilosella officinarum</i>	Mouse-ear hawkweed	Prohibited Matter
<i>Caesalpinia decapetala</i>	Mysore thorn	Regional recommended measure
<i>Carduus nutans</i> subsp. <i>nutans</i>	Nodding thistle	Regional recommended measure
<i>Pilosella aurantiaca</i>	Orange hawkweed	Prohibited Matter
<i>Leucanthemum vulgare</i>	Oz-eye daisy	Regional recommended measure
<i>Cortaderia</i> species	Pampas grass	Regional recommended measure Exclusion zone
<i>Parkinsonia aculeata</i>	Parkinsonia	Prohibition on certain dealings Control Order
<i>Parthenium hysterophorus</i>	Parthenium weed	Prohibited Matter Prohibition on certain dealings
<i>Echium plantagineum</i>	Paterson's curse	Exclusion zone
<i>Bocconia frutescens</i>	Plume poppy	Regional recommended measure
<i>Annona glabra</i>	Pond apple	Prohibited Matter
<i>Vachellia nilotica</i>	Prickly acacia	Prohibited Matter
<i>Austrocylindropuntia</i> species	Prickly pears	Prohibition on certain dealings Regional recommended measure Prohibition on certain dealings
<i>Cylindropuntia</i> species	Prickly pears	Regional recommended measure
<i>Opuntia</i> species	Prickly pears	Prohibition on certain dealings Regional recommended measure
<i>Crotalaria beddomeana</i>	Rattlepod	Regional recommended measure
<i>Toxicodendron succedaneum</i>	Rhus tree	Regional recommended measure
<i>Opuntia elata</i>	Riverina pear	Prohibition on certain dealings Regional recommended measure
<i>Cylindropuntia imbricata</i>	Rope pear	Prohibition on certain dealings Regional recommended measure
<i>Cryptostegia grandiflora</i>	Rubber vine	Prohibited Matter
<i>Sagittaria platyphylla</i>	Sagittaria	Prohibition on certain dealings Regional recommended measure
<i>Salvinia molesta</i>	Salvinia	Prohibition on certain dealings Regional recommended measure
<i>Cytisus scoparius</i> subsp. <i>scoparius</i>	Scotch broom	Prohibition on certain dealings Regional recommended measure
<i>Euphorbia paralias</i>	Sea spruce	Regional recommended measure
<i>Gymnocoronis spilanthoides</i>	Senegal tea plant	Regional recommended measure
<i>Nassella trichotoma</i>	Serrated tussock	Prohibition of certain dealings
<i>Chromolaena odorata</i>	Siam weed	Prohibited Matter
<i>Limonium hyblaenum</i>	Sicilian sea lavender	Regional recommended measure
<i>Asparagus falcatus</i>	Sicklethorn	Regional recommended measure
<i>Solanum elaeagnifolium</i>	Silverleaf nightshade	Prohibition on certain dealings

Scientific Name	Common name	Biosecurity duty
		Regional recommended measure
<i>Opuntia monacantha</i>	Smooth tree pear	Prohibition on certain dealings Regional recommended measure
<i>Asparagus scandens</i>	Snakefeather	Prohibition on certain dealings Regional recommended measure
<i>Juncus acutus</i>	Spiny rush	Regional recommended measure
<i>Limnobiium spongia</i>	Spongeplant	Prohibited Matter
<i>Centaurea stoebe</i> subsp. <i>micranthos</i>	Spotted knapweed	Prohibited Matter
<i>Hypericum perforatum</i>	St John's Wort	Regional recommended measure
<i>Solanum sisymbriifolium</i>	Sticky nightshade	Regional recommended measure
<i>Heterotheca grandiflora</i>	Telegraph weed	Regional recommended measure
<i>Opuntia aurantiaca</i>	Tiger pear	Prohibition on certain dealings Regional recommended measure
<i>Ailanthus altissima</i>	Tree-of-heaven	Regional recommended measure
<i>Solanum viarum</i>	Tropical soda-apple	Control Order
<i>Opuntia tomentosa</i>	Velvety tree pear	Prohibition on certain dealings Regional recommended measure
<i>Trapa species</i>	Water caltrop	Prohibited Matter
<i>Eichhornia crassipes</i>	Water hyacinth	Prohibition on certain dealings Regional recommended measure
<i>Pistia stratiotes</i>	Water lettuce	Regional recommended measure
<i>Stratiotes aloides</i>	Water soldier	Prohibited Matter
<i>Heteranthera zosterifolia</i>	Water star grass	Regional recommended measure
<i>Opuntia robusta</i>	Wheel cactus	Prohibition on certain dealings Regional recommended measure
<i>Rubus niveus</i>	White blackberry	Regional recommended measure
<i>Salix species</i>	Willows	Prohibition on certain dealings
<i>Striga species</i>	Witchweeds	Prohibited Matter
<i>Tecoma stans</i>	Yellow bells	Regional recommended measure
<i>Limnocharis flava</i>	Yellow burrhead	Prohibited Matter



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 07-Nov-2023

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Summary

Matters of National Environment 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 (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	36
Listed Migratory Species:	13

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	40 - 50km upstream from Ramsar site	In feature area

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. Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.	

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community likely to occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community may occur within area	In feature area
Kurri sand swamp woodland of the Sydney Basin bioregion	Endangered	Community may occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[<u>Resource Information</u>]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FROG			
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature 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]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Eucalyptus glauцина Slaty Red Gum [5670]	Vulnerable	Species or species habitat known to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Ozothamnus tesselatus [56203]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Prostanthera cineolifera [11233]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area	In feature area
Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]		Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [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.		
Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [15545]	NSW	In feature area
Commonwealth Land - [12547]	NSW	In buffer area only

Listed Marine Species [Resource Information]			
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Upgrade of approx 32km of Main Northern Railway, including construction of 3rd track	2009/4897	Controlled Action	Post-Approval	In buffer area only

Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2717	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Hunter	Northern Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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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. Please see the caveat for interpretation of information provided here.

Report created: 07-Nov-2023

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[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	36
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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	50 - 100km upstream from Ramsar site	In feature area

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. Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.	

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community likely to occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community may occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species			[<u>Resource Information</u>]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature 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	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			
Eucalyptus glaucina			
Slaty Red Gum [5670]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Euphrasia arguta			
[4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Ozothamnus tessellatus			
[56203]	Vulnerable	Species or species habitat may occur within area	In feature area
Picris evae			
Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269)			
a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Prostanthera cineolifera			
[11233]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa			
Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In feature area
Rhizanthella slateri			
Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area	In feature area
Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]		Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[[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.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [15543]	NSW	In buffer area only
Commonwealth Land - [12582]	NSW	In buffer area only

Listed Marine Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

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Monarcha melanopsis Black-faced Monarch [609]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
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Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]		Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

Regional Forest Agreements
[\[Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals
[\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Bulga Coal Optimisation Project Modification, near Singleton, NSW	2018/8300	Controlled Action	Post-Approval	In buffer area only
Extension of existing open cut coal mine at the Bulga Coal Complex	2012/6637	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2717	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Aerial baiting for wild dog control at Singleton Military Area and Bulga Coal Mine	2005/2078	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Redbank 2 Power Station & Infrastructure	2003/1088	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Bioregional Assessments				
SubRegion	BioRegion	Website		Buffer Status
Hunter	Northern Sydney Basin	BA website		In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

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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. Please see the caveat for interpretation of information provided here.

Report created: 07-Nov-2023

[Summary](#)

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[Matters of NES](#)

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Summary

Matters of National Environment Significance

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World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	36
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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	50 - 100km upstream from Ramsar site	In feature area

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. Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.		

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community likely to occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community may occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species			[<u>Resource Information</u>]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature 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]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Ozothamnus tesselatus [56203]	Vulnerable	Species or species habitat may occur within area	In feature area
Picris evae Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Prostanthera cineolifera [11233]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Migratory Terrestrial Species

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
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Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]		Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myiagra cyanoleuca Satin Flycatcher [612]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

Regional Forest Agreements
[[Resource Information](#)]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]				
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2717	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Aerial baiting for wild dog control at Singleton Military Area and Bulga Coal Mine	2005/2078	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Redbank 2 Power Station & Infrastructure	2003/1088	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Bioregional Assessments				
SubRegion	BioRegion	Website		Buffer Status
Hunter	Northern Sydney Basin	BA website		In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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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Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 07-Nov-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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:	1
National Heritage Places:	1
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	39
Listed Migratory Species:	11

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties			[Resource Information]
Name	State	Legal Status	Buffer Status
Greater Blue Mountains Area	NSW	Declared property	In buffer area only

National Heritage Places			[Resource Information]
Name	State	Legal Status	Buffer Status
Natural			
The Greater Blue Mountains Area	NSW	Listed place	In buffer area only

Wetlands of International Importance (Ramsar Wetlands)			[Resource Information]
Ramsar Site Name		Proximity	Buffer Status
Hunter estuary wetlands		50 - 100km upstream from Ramsar site	In feature area

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.			
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.			

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community likely to occur within area	In feature area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community likely to occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.			
Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
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Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area	In feature area
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area	In feature 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	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Cynanchum elegans			
White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Eucalyptus glaucina			
Slaty Red Gum [5670]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Euphrasia arguta			
[4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Homoranthus darwinioides			
[12974]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Ozothamnus tesselatus			
[56203]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Picris evae			
Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269)			
a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa			
Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Wollemia nobilis Wollemi Pine [64545]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only

REPTILE

Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Migratory Terrestrial Species

Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Wollemi	National Park	NSW	In buffer area only

Regional Forest Agreements	[Resource Information]
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Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals				[Resource Information]	
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Not controlled action					

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Liddell Battery, Decoupling and Bayswater Ancillary Works	2020/8844	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Hunter	Northern Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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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