Transport for NSW

Western Distributor Smart Motorways

Addendum Review of Environmental Factors No.3

February 2023

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Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which the Western Distributor Smart Motorway 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.

Document control

Approval and authorisation

Title	Western Distributor Smart Motorway, Addendum review of environmental factors (#3) – Colebee construction compound
Accepted on behalf of Transport for NSW by:	
Signed	
Date:	

Executive summary

The proposed modification

Transport for NSW proposes to modify the M1 Western Distributor Smart Motorway (WDSM) project to include an additional construction compound site at Colebee (proposed modification). A review of environmental factors (REF) was prepared for the M1 Western Distributor Smart Motorway and determined in May 2021 (project REF). This report forms an addendum to the original project REF to assess the proposed modification to the original scope. This assessment is Addendum #3 to the original REF.

Need for the proposed modification

The proposed modification is needed to provide an assembly and ITS testing facility, and ancillary compound site to support delivery of the WDSM project.

Proposal objectives

The proposed modification remains consistent with the objectives outlined in the project REF because it supports the delivery of the overarching Smart Motorway project to

- Increase network resilience
- Improve travel time and reliability
- Improve traffic safety
- Enhance the road user experience
- Optimise transport asset utilisation and investment

The modification satisfied the addendum objective of 'ability to support the construction of the approved project including an ITS testing facility'.

No other compound location options were identified therefore no other alternate options were investigated.

Statutory and planning framework

The proposed modification can be assessed under Division 5.1 of the EP&A Act.

The proposed modification is categorised as development for the purpose of a road and is being carried out by or on behalf of a public authority. Under Section 2.109 of the Transport and Infrastructure SEPP 2021 the proposed modification is permissible without consent. The proposed modification is not State significant infrastructure or State significant development. Consent from Council is not required.

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

Community and stakeholder consultation

Transport would continue to consult with the community and key stakeholders throughout the project in line with the overarching Community and Stakeholder Engagement Plan (refer to Section 5.1 of the project REF) and Communication Plan (refer to safeguard SE1 in Section 5.2 of the project submissions report).

The nominated compound site is located at least 150 metres from the closest receiver. A construction noise assessment completed for the proposed compound operation concluded the proposal did not trigger the criteria for notification.

Environmental impacts

The main environmental impacts for the proposed modification are:

Construction Noise and Vibration

The proposed modification is located on Transport land in Colebee. The existing environment is dominated by road traffic noise from the adjoining M7 Motorway and Richmond Road corridors. The nearest residential receivers are at least 150metres south and behind the M7 motorway corridor and associated noise walls.

Operations carried out at the proposed compound sites would include pre-fabrication of materials, loading/unloading of equipment and materials, transport of materials and plant to/from the construction site, vehicle movements etc. Construction would require works both during and outside of standard working hours. A construction noise impact assessment identified that surrounding receivers were below noise management levels and outside of the distance for notification.

There is potential for cumulative noise impacts from other construction activities also in the locality, therefore a safeguard for verification monitoring has also been included to review actual measured noise impacts against noise predictions, and update noise management levels and management measures in response to monitoring results.

Aboriginal cultural heritage

A search of the Aboriginal Heritage Information Management System (AHIMS) and Native Title Register conducted by Transport for NSW returned no Aboriginal sites within the proposed modification area. The closest registered Aboriginal site is located 50 metres to the south east of the boundary. Previous studies of the site indicated low to no archaeological potential due to past disturbance. A Stage 1 assessment checklist was completed for an Aboriginal Cultural Heritage Officer's assessment and the findings concluded that the proposal is unlikely to have an impact on Aboriginal cultural heritage.

Non-Aboriginal heritage

Two heritage constraints were identified in the study area of local and state level significance. These are Blacktown Native Institution, and Colebee and Nurragingy Land Grant. The proposed modification is at least 50 metres from the nearest heritage item, Blacktown Native Institution located at least 50 metres to the west on the other side of Richmond Road corridor. The proposed modification has no direct impacts on these heritage items. There are no built features on these heritage areas therefore the proposal is not considered to have potential for indirect vibration impacts.

Biodiversity

Database searches revealed that a portion of the nominated compound area is mapped as, Cumberland Plain Woodland, a Critically Endangered Ecological Community (*BC Act*, CEEC). Additionally, six individuals of *Grevillea juniperina* (*BC Act*, Vulnerable) were also identified in the modification area. An assessment of significance was not completed on the basis that impacts to these features must be avoided. Safeguards have been included for a pre-clearing survey by suitably qualified ecologist, and implementation of physical protection measures to establish an exclusion zone to prevent direct impacts. Potential indirect impact such as spills would be satisfactorily managed by the existing project REF safeguards and this Addendum REF. Any change to this scope would require additional separate assessment and approval.

One dead tree has been identified for removal on the vehicle access track and was not within a mapped vegetation community. All remaining vegetation is to be retained and protected. The proposed modification area does not encroach on adjoining bushland area zoned for environmental conservation land (boundary located about 100 metres north east). Safeguards for fire prevention measures have been included to protect the adjoining bushland area from ignition risks such as sparks from welding and fabrication works and vehicle exhausts.

Soils and Water

The compound facility has been used previously as a construction compound site and requires minimal earthworks for compound establishment. Minor earthworks would be required for activities including establishment of erosion and sediment controls, fencing, site shed placement, and formation of vehicle access. There is increased risk associated with proposed 150 metre length directional drilling to connect into the ITS network Additional safeguards have been included for containment and management of spoil material including drill slurry.

Once the compound is established, potential soil and water risks such as dust and spills may be associated with activities like chemical use and storage, stockpiling and materials management, plant and vehicle movements, concrete washout, and refuelling. This can be adequately avoided or managed with the safeguards in the original REF and Addendum assessments.

Absence of nearby contaminated land register records and the previous disturbance history of the modification area indicate a low to negligible chance of encountering unexpected contamination from compound establishment or operations. Any impacts of the modification would be minor and temporary. The location would be reinstated to existing condition on completion of construction with no permanent impacts.

Traffic and Transport

Potential impacts to traffic and transport as a result of the modification are limited to the duration of construction. The underboring works require temporary lane closures on M7 Motorway that may cause temporary travel time delays which are reduced by programming these works at night when traffic volumes are lower. Any impacts to the M7 cycleway facility as part of underboring works would be temporary (estimated one working shift) and managed as per an approved pedestrian and cyclist management plan. Access to the Dean Park temporary ancillary works would require access for construction vehicles including excavator and vac truck through local roads subject to an approved traffic management plan.

The ancillary facility supports delivery of the overarching project and its traffic and transport objectives.

Visual impact

A visual impact assessment for the proposed modification assessed the Colebee compound as moderate-low impact to the nearest receiver (single premises) which can be reduced with additional management measures. This impact reduces to low-negligible for the dense residential areas located at greater distance or obscured by M7 Motorway corridor. At the end of works, the compounds would be decommissioned and returned to their existing condition. There would be no long-term visual impacts of the proposed modification.

Justification and conclusion

The proposal supports the delivery of the overarching Smart Motorways project which is required to improve traffic and hazard management and enhance corridor messaging and wayfinding on the M1 road corridor between Milsons Point and Allen Street in Pyrmont. The proposal is subject to assessment under Division 5.1 of the EP&A Act. This Addendum REF has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the proposed modification.

A number of the potential environmental impacts have been avoided or reduced during the concept design development and options assessment. The proposal, as described in the REF and Addendum REF, best meets the project objectives but would still result in some impacts on noise and vibration, biodiversity, and potential for cumulative construction impacts. Safeguards and management measures as detailed in the project REF and Addendum REF would avoid, ameliorate or minimise these expected impacts. The proposed modification would contribute toward realization of the long-term traffic and safety benefits of the overarching Smart Motorways project. On balance the proposal is considered justified.

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1. Introduction

1.1 Proposed modification overview

Transport for NSW proposes to modify the M1 Western Distributor Smart Motorway (WDSM) to include an additional construction compound site at Colebee (proposed modification). The compound would provide an assembly and ITS testing facility to support delivery of the WDSM project. The Colebee Compound is located on Richmond Road adjacent to, and west of, M7 Motorway, in Blacktown City Council LGA, about 45km west of the project site as shown in Figure 1-1. The proposal area and access track are shown in Figure 1-2. Chapter 3 describes the proposed modification in more detail.

A review of environmental factors (REF) was prepared for the M1 Western Distributor Smart Motorway and determined in May 2021 (referred to in this addendum REF as the project REF).

The project REF was not put on public display.

Figure 1-1: Locality map of the proposed modifications

Figure 1-2: Colebee construction compound location and access

1.2 Purpose of the report

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

This addendum REF is to be read in conjunction with the project REF (May 2021). The purpose of this addendum REF is to describe the proposed modification, to document and assess the likely impacts of the proposed modification on the environment, and to detail mitigation and management measures to be implemented.

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

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

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

The findings of the addendum REF would be considered when assessing:

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

1.3 Terms used in this report

The following terms have been used in this report:

- The 'project REF' is the REF prepared for the Western Distributor Smart Motorways in May 2021
- The 'approved project' is the current approved WDSM project as described in the determined project REF (May 2021)
- The 'proposed modification' is the proposal for an additional construction compound site to support construction of the approved project.
- This 'addendum REF' is the assessment and approval document for the proposed modification.
- The 'approved project boundary' refers to the area identified in the WDSM project REF (May 2021) that may be directly impacted by construction and operation of the approved project (shown in Figure 1-1 and Figure 1-2). The approved project boundary includes both the:
    - construction footprint, which is the area where construction activities would occur for the approved project, and,
    - operational footprint, which includes the areas that would be permanently impacted by the approved project

    - The ‘modified project boundary’ refers to the additional area that may be directly impacted by construction and operation of the proposed modification, being the additional compound site (shown in Figure 3-1).

- The ‘study area’ consists of land in the vicinity of, and including, the modified project boundary. The study area is the wider area surrounding the modified project boundary, including land that has the potential to be indirectly impacted by the proposed modification beyond the immediate works area (for example, as a result of any noise or traffic diversions). The scope of the study area varies depending on the environmental factor being assessed.

2. Need and options considered

2.1 Strategic need for the proposed modification

Chapter 2 of the project REF addresses the strategic need for the project, the project objectives and the options that were considered. The proposed modification described and assessed in this addendum REF is consistent with the strategic need for the project.

The proposed modification is needed to secure a compound site to facilitate construction works and avoid potential delays to the delivery of the construction project.

2.1.1 Strategic plans and policy

The proposal, including the proposed modification, remains consistent with the policies and planning documents outlined in Section 2 of the project REF and listed below:

- Future Transport 2056
- Movement and Place Framework
- Future Transport Technology Roadmap
- Greater Sydney Regional Plan
- Eastern City District Plan
- Road Safety Plan 2021
- Connected and Automated Vehicles Plan
- State Infrastructure Strategy 2018-2038
- Sydney City Centre Access Strategy
- Sydney's Bus Future
- NSW Freight and Ports Strategy
- NSW Freight and Ports Plan.

Since determination of the project REF, a number of planning and policy updates have been release, Table 2-1 below provides a summary of consistency with updated planning and policy documents.

Table 2-1 Summary review of the proposal (modification included) with strategic plans and policy

Name of planning or policy document	Comment
NSW 2021: A plan to make NSW number one	The plan aims to deliver strategic infrastructure projects and better coordinate different transport modes to provide clean, reliable, safe, efficient and integrated transport services. The modification and proposal would align with this the plan as the proposal aims to implement Smart Motorway technology to better manage traffic flow on the M1 road corridor between Milsons Point and Allen Street in Pyrmont. This would contribute to Goal 7 through improved network efficiencies. The proposal would meet the key action of 'Renovate Infrastructure' by maximising the use of the existing Western Distributor corridor.
Future Transport Strategy 2056	This strategy promotes the need to optimise and grow networks as well as increase the use of existing infrastructure and transport services. The strategy also discusses delivering benefits for transport customers and the community. The modification and proposal would improve access to and from the Western Distributor road corridor through upgraded transport infrastructure with Smart Motorway technology.
State Infrastructure Strategy 2018-2038	This plan includes objectives for careful management of State owned existing assets and ensuring appropriate maintenance, repurposing and upgrading. The modification and proposal aims to make technological improvements on an already established and pre-existing road to improve access to the road corridor.

	In addition, it would improve connections with the surrounding road network consistent with the objectives of this plan.
Greater Sydney Region Plan: A Metropolis of Three Cities	This plan aims to align land use, transport and infrastructure outcomes for Greater Sydney region. The modification and overarching proposal aim to meet the needs of the current and future population, land use changes and traffic increases in the precinct by making 'Smart Motorway' improvements on the Western Distributor network. The Eastern Harbour City district plan.
Greater Sydney Services and Infrastructure Plan - Eastern Harbour City district plan	As part of the Greater Sydney Services and Infrastructure Plan for NSW, population and economic growth is projected to occur within three cities: Eastern Harbour City; the Central River City and the Western Parkland City. The modification and overarching proposal support this outcome as it would support the projected growth of one of these three cities, the Eastern Harbour city. Improvements to the Western Distributor corridor and local roads would support anticipated growth in the Pyrmont area.
Road Safety Plan 2021 – Towards Zero	The modification supports delivery of the proposal The proposal would positively impact the core road safety objective of this plan with increased measures to manage incidents on the Western Distributor, including improved traffic and hazard management and ability for incident detection and response.
Local planning context	
Our Inner West 2036 Plan	The Plan recognises that large scale projects, such as Rozelle interchange, are already changing the landscape and have raised the need for sustainable, planned developments and urban renewal. The modification supports delivery of the proposal. The proposal would contribute to improved traffic and hazard management and enhance corridor messaging and wayfinding on the M1 road corridor between Milsons Point and Allen Street in Pyrmont.
Sustainable Sydney 2030 Plan	The modification supports delivery of the proposal. The proposal contributes towards the strategic direction for 'integrated transport for a connected city'.
Our Place Inner West Local Strategic Planning Statement	The modification supports delivery of the proposal. The proposal would contribute to infrastructure improvements on the road network which would benefit connectivity and predicted increases in demand within and surrounding the proposal area.
Blacktown LEP 2015	The proposed modification is a temporary (18 month) land use and would not impact the long term land use plans The proposal is consistent with the Blacktown LEP and aligns with plan as the temporary works have negligible impacts and is not inconsistent with the land use objectives.
State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Growth Centres SEPP)	The modified project boundary for the Colebee compound is outside of the North West Growth Centre boundary. Not applicable.

2.2 Proposal objectives and development criteria

Section 2.3 of the project REF identifies the proposal objectives and development criteria that apply to the proposed modification.

For the purpose of this assessment, the objective is to secure a compound site to facilitate the construction works.

2.3 Alternatives and options considered

2.3.1 Methodology for selection of preferred option

The project is located within Sydney CBD and construction space is limited. Two small facilities were secured nearby (Addendum REF 1, December 2022) in White Bay for use as construction compound sites to support construction though they also have space and access limitations. Transport investigated additional off-site locations which could be used for ITS testing facility and identified the Colebee site owned by Transport. This site was assessed against a do nothing option using the following criteria:

- ability to support the construction of the approved project including an ITS testing facility

2.3.2 Identified options

Do nothing - This option would proceed with the approved project as described in the project REF

Option 1 - Pursue Colebee site as additional compound facility - This option would involve the establishment, operation and decommissioning of an additional construction compound at the nominated Colebee site.

2.3.3 Analysis of options

Do Nothing – Utilisation of construction road space in the main works area would not be sufficient to support the size and scale of construction activity required, and would not be permissible on a motorway due to safety and traffic hazards. The White Bay compound sites secured in Addendum REF #1 support construction of the project, however they also have timing, space, and accessibility limitations as well as surrounding receivers which would limit potential productivity needed to support delivery of the proposal. Additional space is required to support ITS testing and fabrication needs.

Option 1 – This option for an additional compound site at Colebee, would provide for vehicle access needs, and construction needs including room for laydown, office sheds, storage, fabrication, ITS testing, and parking. This option would be able to support construction of the approved project and improve the overall project delivery timeframe compared to the Do Nothing option. I

'Option 1' benefits:

- Can be quickly setup as it is owned by Transport.
- Sufficient area to allow for construction needs including room for ITS testing facility, fabrication, laydown, office sheds, storage, and parking and holding area
- Suitable for ITS testing needs as it is close to existing ITS network
- It is accessible to over-size delivery vehicles and has easy access onto M7 Motorway for over-sized deliveries to site
- Is located a good distance away from potential noise receivers
- Opportunity for greater productivity because of more flexible work hours which supports delivery
- Based on initial area estimates it would require minimal vegetation impacts
- Preliminary database searches did not identify heritage constraints within the nominated boundary.

2.4 Preferred option

'Option 1 – Pursue Colebee compound site' was selected as the preferred option as it would best address the compound site selection criteria compared to the Do Nothing option.

3. Description of the proposed modification

3.1 The proposed modification

Transport for NSW proposes to modify the Western Distributor Smart Motorway Review of Environmental Factors to include an additional construction compound site at Colebee.

The proposed modification is shown in Figure 3-1. The compounds would be required for the entire duration of the project works (approximately 18 months) and would be used for the following:

- Storage of construction plant, materials, equipment, including but not limited to gantries, steel elements, ITS devices, and vehicles.
- Site offices and amenities with an outdoor covered area.
- Testing of Smart Motorways equipment with connection to TfNSW Transport Management Centre to simulate real life Smart Motorway operations.

Figure 3-1: Nominated construction compound location. The modified project boundary is shown in yellow.

3.2 Design

3.2.1 Design criteria

As there is no operational component of the proposed modification, the design criteria are unchanged compared to the criteria outlined in Section 3.2 of the project REF.

3.2.2 Engineering constraints

As there is no operational component of the proposed modification, the engineering constraints are generally consistent with those outlined in Section 3.2.2 of the project REF.

3.2.3 Main features of the modification

There would be no operational features of the proposed modification. The features of the construction compound are outlined in Section 3.4.

3.3 Construction activities

3.3.1 Work methodology

3.3.2 Construction hours and duration

Construction would require works both during standard hours and outside of standard hours.

The standard working hours are as follows:

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

To minimise disruption to daily traffic, businesses, and to ensure the safety of workers, it would be necessary to carry out work outside of standard working hours. These hours would be in accordance with the Road Occupancy Licence (ROL) issued by the Customer Journey Planning and are proposed to occur up to five consecutive nights a week as follows:

- Evening / night work– Generally Sunday to Thursday: 6pm to 7:00am
- No work on public holidays.

The proposed duration of construction is 18 months.

A quantitative noise and vibration assessment has been carried out for the proposal. Refer to Section 6.1 and Appendix C for details.

3.3.3 Plant and equipment

Heavy vehicles fitted with a crane (Hiab) would be used to deliver the site offices and amenities, construction plant where required and materials necessary for the work.

The proposed compound operation is expected to require the use of light vehicles, heavy vehicles, mobile lights, backup generator, excavator and storage of construction plant.

3.3.4 Earthworks

Source and quantity of materials

The site requires minor earthworks to connect to the nearby ITS network. About 150 metres of directional drilling is proposed beneath the M7 Motorway to reach the nearest connection point. Excavation of small pits at tie in points would also be required.

Minor earthworks would also be required for site shed setup, installation and maintenance of erosion and sediment controls and tree protection measures, formalising vehicle access, and fencing.

Traffic management and access

The compounds are accessible via Richmond Road (southbound). the existing road network of Rozelle and White Bay. Traffic control would be implemented as required as per an approved Vehicle Management Plan.

3.4 Ancillary facilities

The proposed modification is for additional ancillary facilities during construction for various activities. The general activities, as well as a basic work methodology for key activities are described below.

General compound facilities:

- site offices and staff amenities
    - ablutions
    - first aid
    - outdoor eating areas
    - smoking areas
    - rubbish areas
    - staff parking
    - pick up/drop off point
    - delivery bay
- material and equipment storage and laydown yard, including:
    - gantries and associated equipment such as electronic signs
    - formwork
    - conduits
    - temporary traffic barriers
    - erosion and sediment control provisions
    - plant and equipment
    - construction waste
    - generators and lighting towers if required
- ancillary construction activities
    - plant/vehicle refuelling
    - plant/equipment servicing
    - truck movements
    - chemical storage
    - stockpile management

Work methodology:

Site establishment

The establishment of the assembly and ITS testing facility would involve the following tasks:

- Erecting additional fencing and gate to secure the WDSM project work area, isolating it from others who may be using other parts of the lot
- Installation of protective measures for established trees to be retained and erosion and sediment controls
- Removal of one dead tree
- Delivery and siting of portable sheds, shelters, and toilet facilities

Connection to utilities

- About 150 metre length of directional drilling is required beneath M7 Motorway corridor to connect to optic fibre communications cable to enable ITS operations testing in real time.
    - To minimise noise impacts of the underboring activity, the sending pit will be set up at the Colebee site compound (at least 300 metres from the nearest receiver) where the drilling rig will be set up and operated from
    - Initial Underbore works will be conducted outside of standard working hours due to associated lane closures required on the M7 Motorway to monitor progress of the underbore. The underboring work is expected to take several shifts and would continue until the directional drilling reaches approx. 2-3m from the receiving pit
    - The receiving pit is located on Transport land in Dean Park on the residential side of the M7 noise wall. This pit will then be excavated by mini excavator during standard working hours and Underbore operation will continue on the final few metres during standard working hours until the penetration is through to the receiving pit
    - A vac truck will be used at the receiving pit during the break through during standard working hours
    - Drill slurry would be appropriately captured and contained for removal in accordance with waste classification requirements
    - Once operation complete, the open excavation (receiving pit) will be backfilled by the mini excavator and the crew will reinstate the disturbed area during standard working hours
- The Colebee site has existing power supply and lighting. Additional generators and lighting towers may be used if required.

Site operation

Operation of the assembly and ITS testing facility would involve the following activities:

- Delivery and storage of signage, componentry, and structural elements required for signage gantries as is consistent with current usage, by others
- Assembly of gantries and steel structures to be used for ITS signage
- Assembly, testing, and validation of ITS equipment including integrated speed and lane usage signs (ISLUS), electronic message signs (EMS), and combined automatic incident detection sensors (AID) and vehicle detection system (VDS) video sensors
- Loading assembled signage and structures for transport to the project site (via M7)
- Use of the existing driveway on Richmond Road (MR184) via left in and left out movements
- ongoing storage and stockpile/ laydown activities to support delivery of the project

Site decommissioning

- The proposed compound activity is temporary, and the site would be returned to existing condition on completion of construction.

The potential impacts associated with the use of these compound sites is assessed in Chapter 6 (Environmental assessment) of the project REF and this addendum REF. Site photos from a site visit during December 2022 are included in Appendix F.

3.5 Public utility adjustment

Connection to nearby ITS infrastructure requires about 150 metres of directional drilling beneath the M7 Motorway to reach the nearest tie-in point as shown in Figure 3-1. The site has access to power. Lighting towers and backup generators would be available for use.

Further environmental assessment may be required if there are changes to the above scope of utility adjustment.

3.6 Property acquisition

No property acquisition is required as the proposed compound sites are located on Transport for NSW. Lot 102 and a portion of Lot 1 in DP1109052, hatched in green and as labelled comprise the land currently securely fenced and

utilised by TfNSW for storage of miscellaneous large equipment and undefined operations by multiple arms of TfNSW and its contractors since the construction of M7 Motorway.

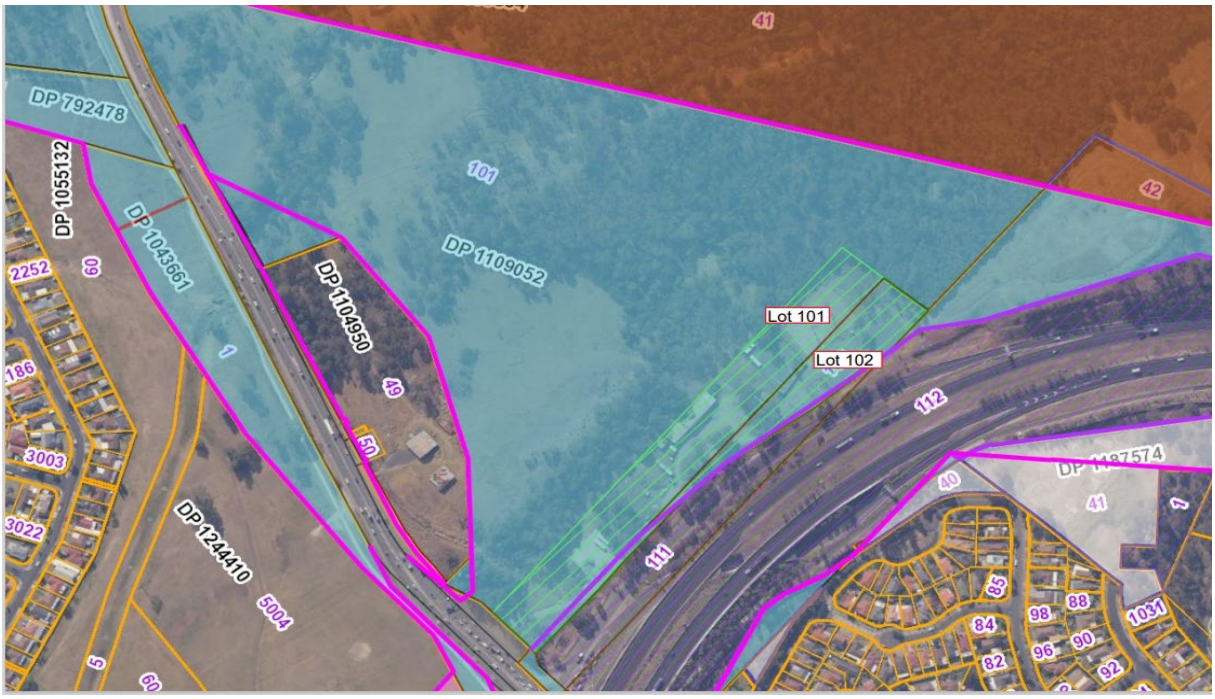

Figure 3-2: Property plan

4. Statutory and planning framework

4.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) provides a statutory basis for planning and environmental assessment in NSW. The EP&A Act provides a framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the proposal approval process. The proposal is subject to assessment under Division 5.1 of the EP&A Act.

The Environment Planning and Assessment Regulation 2021 (EP&A Regulation) is the subordinate and supplementary legislation to the EP&A Act. The EP&A Regulation provides details of how to implement the EP&A Act. The proposal is subject under Division 1, Part 8 of the EP&A Regulation.

Under the EP&A Regulation and as per the Guidelines for Division 5.1 Assessments (Department of Planning and Environment 2022), this REF considers environmental factors as detailed in Section 6.

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

In March 2022, the State Environmental Planning Policies (SEPPs) were updated. The former State Environmental Planning Policy (Infrastructure) was incorporated into the State Environmental Planning Policy (Transport and Infrastructure) 2021. Chapter two of the SEPP (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

Section 2.109 of the Transport and Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposed modification is to support development of a road and is to be carried out by Transport, it can be assessed under Division 5.1 of the EP&A Act. Development consent from council is not required.

The proposed modification is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under State Environmental Planning Policy (Resilience and Hazards) 2021, State Environmental Planning Policy (Planning Systems) 2021, or State Environmental Planning Policy (Central River City) 2021.

Part 2.2 of the Transport and Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development.

Consultation, including consultation as required by the Transport and Infrastructure SEPP (where applicable), is discussed in chapter 5 of this addendum REF.

State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021, Chapter 2 aims to promote an integrated and coordinated approach to land use planning in the coastal zone that is consistent with the *Coastal Management Act 2016*. It aims to achieve this by managing development in the coastal zone and protecting the environmental assets of the coast.

There are no areas identified by Part 2.2 as a coastal wetland or littoral rainforest occurring within the proposal area. The modification is within land mapped as a Coastal Environment Area and Coastal Use Area. As the proposal area is within the Foreshores and Waterways Area within the meaning of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005, the development considerations relating to Coastal Environment Areas and Coastal Use Areas do not apply to this development (Clause 2.10 and Clause 2.11).

The State Environmental Planning Policy (Resilience and Hazards) 2021, Chapter 4 Remediation of land aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. Appropriate measures would be put in place during construction should contamination be identified, and all spoil would be waste classified prior to disposal.

4.1.2 Local Environmental Plans

The proposed modification is located within the Blacktown Local Government Area (LGA). Local development control and land use zoning within the LGA is managed under the Blacktown Local Environmental Plan 2015. The LEP is relevant in identifying land use objectives, potential land use impacts and planning policy conflicts and as such, has still been considered.

The proposed modification is located outside of the boundary of *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* therefore it does not apply.

4.2 Other relevant NSW legislation

4.2.1 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is designed to protect both known heritage items (such as standing structures) and items that may not be immediately obvious (such as potential archaeological remains or 'relics'). Different parts of the Heritage Act deal with different situations and types of heritage and the Act provides a number of mechanisms by which items and places of heritage significance may be protected.

Section 57(1) of the Heritage Act lists the types of activities/works that require approval from Heritage NSW (a branch of the NSW Department of Premier and Cabinet) under Section 60 of the Heritage Act, when working on/in an item/place listed on the State Heritage Register (SHR). A

Section 139 of the Heritage Act protects archaeological 'relics' from being 'exposed, moved, damaged or destroyed' by the disturbance or excavation of land. This protection extends to the situation where a person has 'reasonable cause to suspect' that archaeological remains may be affected by the disturbance or excavation of the land.

Section 170 of the Heritage Act requires that culturally significant items or places managed or owned by Government agencies are listed on a departmental Heritage and Conservation Register.

Section 170A(1) requires that, if a government instrumentality intends to undertake any of the following actions regarding items listed on their s170 Heritage and Conservation Register, it must give the Heritage Council a minimum of 14 days' notice:

- remove an item from the s170 register
- transfer ownership
- cease to occupy an item currently on the s170 register
- demolish an item.

These actions are not proposed therefore this notification is not triggered.

Heritage listed items in the study area are identified in Section 6, though none are located within the proposal area and supporting specialist assessments concluded no archaeological potential in the modification area.

4.2.2 Protection of the Environment Operations Act 1997

The NSW *Protection of the Environment Operations Act 1997* (POEO Act) aims to reduce pollution and manage the storage, treatment and disposal of waste within NSW. The POEO Act also introduces the requirement for environmental protection licences (EPLs) to be obtained for scheduled activities that are of a nature and scale that have a potential to cause environmental pollution.

The proposed modification (both on its own or when considered together with the approved project) would not exceed the trigger for extraction or processing of material during construction and would not result in the existence of four or more traffic lanes for a continuous length of three kilometres. As a result, an EPL is not required for the proposed modification.

4.2.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) is directed at conserving threatened species, populations and ecological communities of animals and plants. The BC Act outlines the framework for addressing impacts on biodiversity from development and clearing. It establishes a framework to avoid, minimise and offset impacts on biodiversity from development through the Biodiversity Offsets Scheme.

The modification is not likely to significantly impact threatened species, populations or ecological communities or their habitats, within the meaning of the BC Act or FM Act and therefore a Species Impact Statement is not required.

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

4.2.4 Waste Avoidance and Resource Recovery Act 2001

The *NSW Waste Avoidance and Resource Recovery Act 2001* (WARR Act) promotes the waste hierarchy to avoid resource consumption and implement resource recovery in the form of material reuse and recycling in preference to waste disposal. The Act acknowledges that certain materials present either human or environmental risk, requiring classification, treatment and disposal of in accordance with specific waste management provisions. Waste generated during construction and operation of the proposed modification and compound would be managed in accordance with

the waste hierarchy and where required, disposed of in accordance its waste classification and relevant legislation and guidelines.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. These are considered in Appendix A and chapter 6 of the addendum REF.

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

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

Findings – matters of national environmental significance (other than biodiversity matters)

The assessment of the proposed modification's impact on matters of national environmental significance and the environment of Commonwealth land found that there would be no change to the findings of the determined activity and would be unlikely to cause a significant impact on matters of national environmental significance or the environment of Commonwealth land. A referral to the Australian Government Department of Agriculture, Water and the Environment is not required.

4.3.2 Other relevant Commonwealth legislation

Native Title Act 1993

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

A search of the Native Title Tribunal Native Title Vision website carried out on 7 February 2023 (Appendix F) resulted in nil search results for native title claims in the Blacktown Council area.

4.4 Confirmation of statutory position

The proposed modification is categorised as development for the purpose of a road and is being carried out by or on behalf of a public authority. Under Section 2.109 of the *Transport and Infrastructure SEPP 2021* the proposed modification is permissible without consent. The proposed modification is not State significant infrastructure or State significant development.

The proposed modification can be assessed under Division 5.1 of the EP&A Act.

Consent from Council is not required.

External heritage approvals under the Heritage Act are not required.

Transport is the determining authority for the proposed modification.

This addendum REF fulfils Transport's obligation under section 5.5 of the EP&A Act including to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.

5. Consultation

5.1 Consultation strategy

The consultation strategy relevant to the proposed modification remains consistent with Section 5.1 of the project REF. Public display of this addendum REF for comment was not proposed as the activity is not permanent and is at a distance from sensitive receivers. General project information, project updates, and media releases are to be provided on the project website. Specific targeted notification is proposed only if activities are predicted to exceed the noise threshold to trigger notification as per Transport for NSW Construction Noise and Vibration Guideline (CNVG, 2016).

5.2 Consultation outcomes

Section 2.109 of the Transport and Infrastructure SEPP provides that "development on behalf of a public authority for the purpose of a road or road infrastructure facilities may be carried out without consent" providing that certain key parties are consulted and/or notified about the work. Consultation requirements identified in the Transport and Infrastructure SEPP were met in the project REF.

5.3 Ongoing or future consultation

Transport would consult with the community and key stakeholders throughout the project in line with the overarching Community and Stakeholder Engagement Plan (refer to Section 5.1 of the project REF) and Communication Plan (refer to safeguard SE1 in Section 5.2 of the project submissions report).

The community and stakeholder engagement carried out during construction would include community updates on the hours of work, planned construction activities and program.

6. Environmental assessment

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

- Potential impacts on matters of national environmental significance under the EPBC Act.
- The factors specified in the Is an EIS required? (DUAP 1995/1996) and as required under section 171 of the Environmental Planning and Assessment Regulation 2021 and the Roads and Related Facilities EIS Guideline (DUAP 1996). The factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021 are also considered in Appendix A.
- Site-specific safeguards and management measures are provided to mitigate the identified potential impacts.

6.1 Noise and Vibration

This section describes the noise and vibration impacts that may occur when constructing and operating the proposed modification.

6.1.1 Methodology

The proposed Colebee compound is located about 45 kilometres west of the main project site as shown in Figure 1. Therefore, noise from the establishment and operation of the Colebee compound has the potential to impact on receivers not identified in the original project REF.

For operation of the Colebee Compound TfNSW's Construction & Maintenance Noise Estimator Tool (Noise Tool) was used, incorporating the following tasks to assess potential noise impacts:

- Identification of appropriate background noise levels
- Identification of the noise management level (NML)
- Identification of type of sensitive receivers. Common receivers were grouped into noise catchment areas (NCA) for construction noise impact assessment. NCAs include receivers that are exposed to similar work types to assist with assessment, consultation, and/or notification.
- Prediction of the noise and vibration impacts
- Identification of feasible and reasonable additional mitigation or management measures

The assessment is presented in Appendix C.

Potential vibration impacts of the proposal are assessed in accordance with the Roads and Maritime Services (now Transport for NSW) Construction Noise and Vibration Guideline (2016) which estimates the minimum safe working distances for common construction plant. These estimates are based on:

- BS 7385-2: British Standard – Evaluation and measurement for vibration in buildings – Part 2 Guide to Damage Levels from Ground-borne Vibration (addresses potential structural damage to buildings, in general, from ground-borne vibration).
- DIN 4150-3: *German Standard – Vibrations in building – Effects on structures* (addresses potential structural damage to heritage buildings from ground-borne vibration).

6.1.2 Existing environment

The proposed compound site is located in the suburb of Colebee. The surrounding area includes, M7 Motorway corridor, Richmond Road corridor, bushland, and further afield, low to medium density residential property.

Richmond Road, a classified State Road (MR 184), is directly south of the site and facilitates ingress and egress to the site. M7 Motorway is directly east of the site. At this location on and off ramps are provided to and from M7 Motorway. The existing noise environment surrounding the proposed compound site is dominated by traffic noise from M7 Motorway and Richmond Road (adjacent major arterial road).

Sensitive receivers in the study area are limited to residential properties, as shown in Figure 6-1, including.

- A single residential property about 300m to the west of the main compound area with direct access onto Richmond Road
- Dean Park ~150m, shielded by the M7 Motorway formation rising several metres above the level of the Colebee Compound site and protected by the M7 noise barriers
- Colebee ~475m to the north and shielded by thick bushland and solid barrier fencing
- Hassall Grove ~550m to the west with exposure to Richmond Road shielded by solid barrier fencing
- Oakhurst to the southwest ~670m with exposure to Rooty Hill Road and Richmond Road shielded by solid barrier fencing.

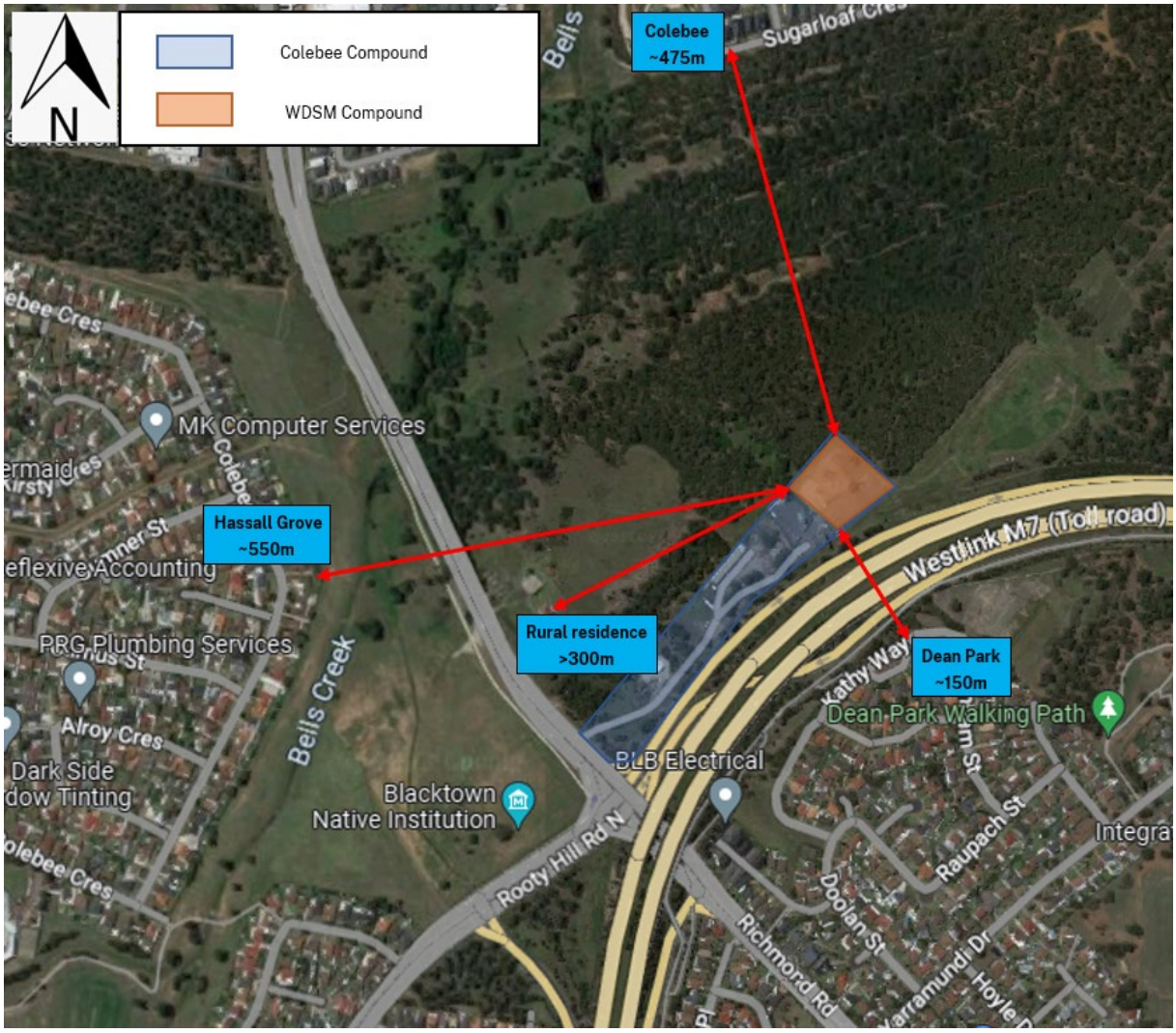

Figure 6-1 – Noise receiver types within 500m radius of the main compound area

Operations carried out at the proposed compound (pre-fabrication of materials, loading/unloading of equipment and materials at the laydown, transport of materials and plant to/from the construction site, etc.) would be the primary source of noise and vibration emissions during construction.

The proposal is located close to major motorway and arterial road corridors therefore the construction noise estimator tool (CNET) assessment applied noise environment 'R4' to represent background noise levels in the receiving noise environment. A slightly more conservative 'R3' noise area category was applied to Dean Park residential area due to the presence of local road traffic environment and works on the residential side of noise walls. This produced the following background noise levels (also referred to as Rating Background Level or RBL) for the assessment.

Table 6-1: Background noise levels applied for the construction noise assessment

Colebee:

Noise Area Category		R4
RBL or L_{A90}* Background level (dB(A))	Day	55
	Evening	50
	Night	45

*Notes: * L_{A90} = Background noise level*

Dean Park:

Noise Area Category		R3
RBL or L_{A90}* Background level (dB(A))	Day	50
	Evening	45
	Night	40

*Notes: * L_{A90} = Background noise level*

6.1.3 Criteria

Construction Noise

During construction the noise management levels (NML) are set as per the 'Construction Noise and Vibration Guideline' (RMS CNVG) to be 10dB(A) above the background levels during standard hours and 5dB(A) above the background level outside of standard working hours. As such based on the existing background noise levels provided in section 6.1.2 the following NMLs would apply to the proposal:

Colebee (R4):

- Day (standard hours): 55 + 10 = 65dB(A)
- Day (outside standard hours): 55 + 5 = 60dB(A)
- Evening (outside standard hours): 50 + 5 = 55dB(A)
- Night (outside standard hours): 45 + 5 = 50dB(A)

Dean Park (R3):

- Day (standard hours): 50 + 10 = 60dB(A)
- Day (outside standard hours): 50 + 5 = 55dB(A)
- Evening (outside standard hours): 45 + 5 = 50dB(A)
- Night (outside standard hours): 40 + 5 = 45dB(A)

Sleep disturbance of sensitive receivers was also considered for the compound operation scenario as it is expected to occur at night time. Sleep disturbance levels were estimated to be 55dB(A) and awakening reaction level (also called L_{AMAX}) is to be 65dB(A).

Construction Vibration

Assessment of potential disturbance from vibration on human occupants of buildings is made in accordance with the DECC '*Assessing Vibration; a technical guideline*' (DECC, 2006). The guideline provides criteria which are based on the British Standard BS 6472-1992 '*Evaluation of human exposure to vibration in buildings* (1-80Hz) which is recognised by the guideline as the preferred standard for assessing the 'human comfort criteria'. Table 6-2 summarises the accepted and maximum value for human comfort impacts by intermittent vibration assessed using the vibration dose value. Sources of vibration are defined as either 'Continuous', 'Impulsive' or 'Intermittent'.

Table 6.2 Vibration criteria for human comfort

Receiver type	Period	Intermittent vibration dose value (m/s1.75)	
		Preferred value	Maximum value

Residential	Day (7 am and 10 pm)	0.2	0.4
	Night (10 pm and 7 am)	0.13	0.26
Offices, schools, educational institutions and places of worship	When in use	0.4	0.8

British standard

British Standard BS 7385 recommends vibration limits for transient vibration judged to give a minimal risk of vibration induced damage to affected buildings. The limits for residential and industrial buildings are shown in Table 6-3.

Table 6.3 Vibration criteria for structural damage under the British Standard (BS 7385)

Group	Type of building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.

German Standard

Table 6-4 presents guideline values from *German Standard DIN 4150-3: 1999 Structural Vibration – Part 3: Effects of vibration on structures* for the maximum absolute value of the velocity at the foundation of various types of building. Damage is not expected to occur where the values are complied with and the values are generally recognised to be conservative.

Heritage buildings and structures should be considered on a case-by-case basis but as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values may be appropriate.

Table 6.4 Vibration criteria for structural damage under the German Standard (DIN 4150-3)

Line	Type of structure	Guideline values for velocity (mm/s)		
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz[1]
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50
2	Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)	3	3 to 8	8 to 10
Note: 1) At frequencies above 100 Hz the values given in this column may be used as minimum values				

Operation

Operational noise criteria are not relevant for this assessment as the construction compounds are limited to construction phase and would not change the road traffic noise.

An assessment of operational noise for the overarching proposal is assessed within Section 6.4 of the original REF.

6.1.4 Potential impacts

Construction Noise

Compound operation

The Transport for NSW Construction Noise Estimator tool was used to assess the noise impacts during construction from use of the proposed compound sites. See Appendix C for detail.

Based on the selected noise area category, construction noise estimator tool produced representative background noise levels (L90) together with the noise management levels (NML). These values are recorded above in section 6.1.3.

The distance-based assessment (scenario) was selected for assessment as it considers a number of plant items operating together during a certain construction activity. An 'operation of compound' scenario was assessed using out of standard working hours (night) criteria to consider a 'worst-case' scenario in order to identify feasible and reasonable mitigation measures to minimise the potential impact on sensitive receivers. A second noise assessment scenario was completed for under boring activities to capture potential impacts of the connection works in Dean Park. The noise estimator tool produced predicted noise levels for surrounding noise catchments. The results of the construction noise assessment are summarised in Table 6-5 and Table 6-6 below and are shown in Figures 6-2 and 6-3.

To assist with the assessment common residential receivers were grouped into noise catchment areas (NCA) for construction noise assessment. NCAs are the areas that are affected by the same works and located at similar distances from the noise generating activity. For each of the NCA affected distances (or the distances up to which noise levels are expected to exceed the Noise Management Level) are recorded in the tables below together with the predicted noise levels.

Table 6-5 Predicted construction noise levels for residential receiver types during compound operation outside of standard hours (NIGHT) R4

Working hours	Catchment distances	NML dB(A)	Predicted noise levels dB(A)	Recommended mitigation measures[1]	Comment
Outside of standard working hours (NIGHT)	NCA1 (urban environment) • 305m with line of sight though this reduces to 200m with application of barrier/shielding such as shed placement or use of noise blankets. • 125m for receivers behind substantial noise barrier (M7 raised corridor and noise walls)	45	50	N	No residential receivers within this distance. Closest receiver is about 300m away.
During standard working hours (DAY)	NCA1 (urban environment) 20m with line of sight.	65	75	N	(same as above)

N = Notification

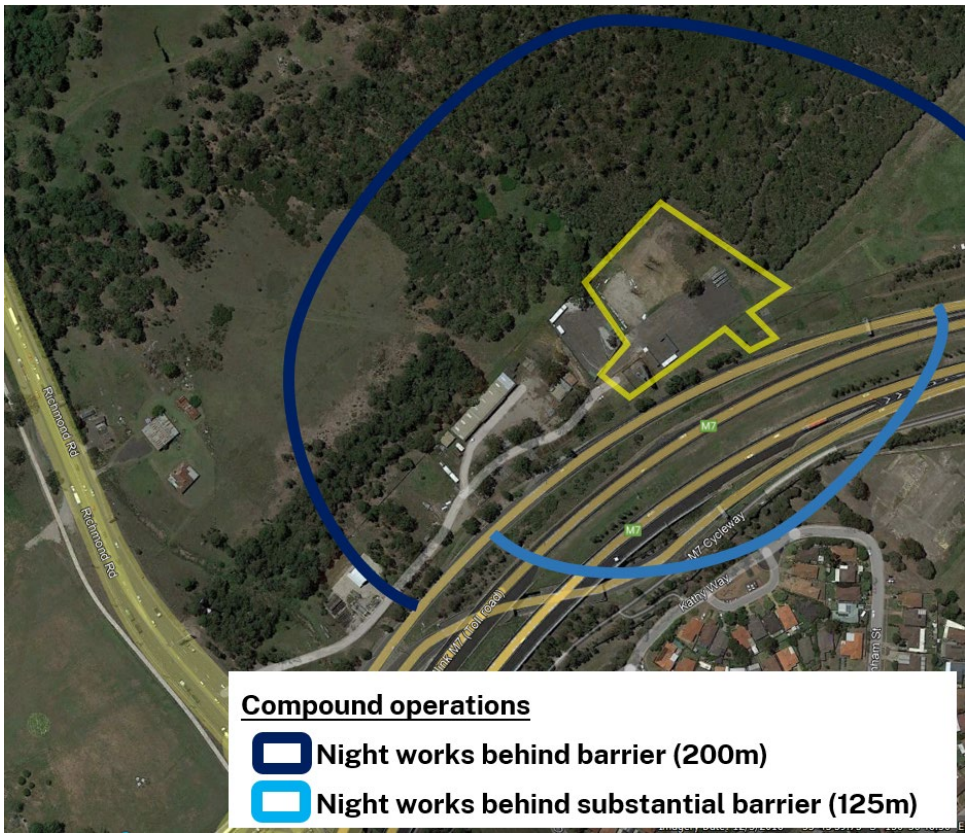

Figure 6-2: Construction noise impact map for compound operation at night. There are no receivers within these noise catchment areas.

Table 6-6 Predicted construction noise levels for residential receiver types during under boring activities outside of standard hours (NIGHT) R3 and during standard hours (DAY) R3

Working hours	Catchment distances	NML dB(A)	Predicted noise levels dB(A)	Recommended mitigation measures	Comment
Outside of standard working hours (NIGHT)	NCA1 (urban environment) • No line of sight = 105m • Line of sight = 240m	40	45	N	There are residential receivers within this distance.
During standard working hours (DAY)	NCA1 (urban environment) No line of sight = 10m Line of sight = 25m	50	60	N	No residential receivers within this distance

N = Notification

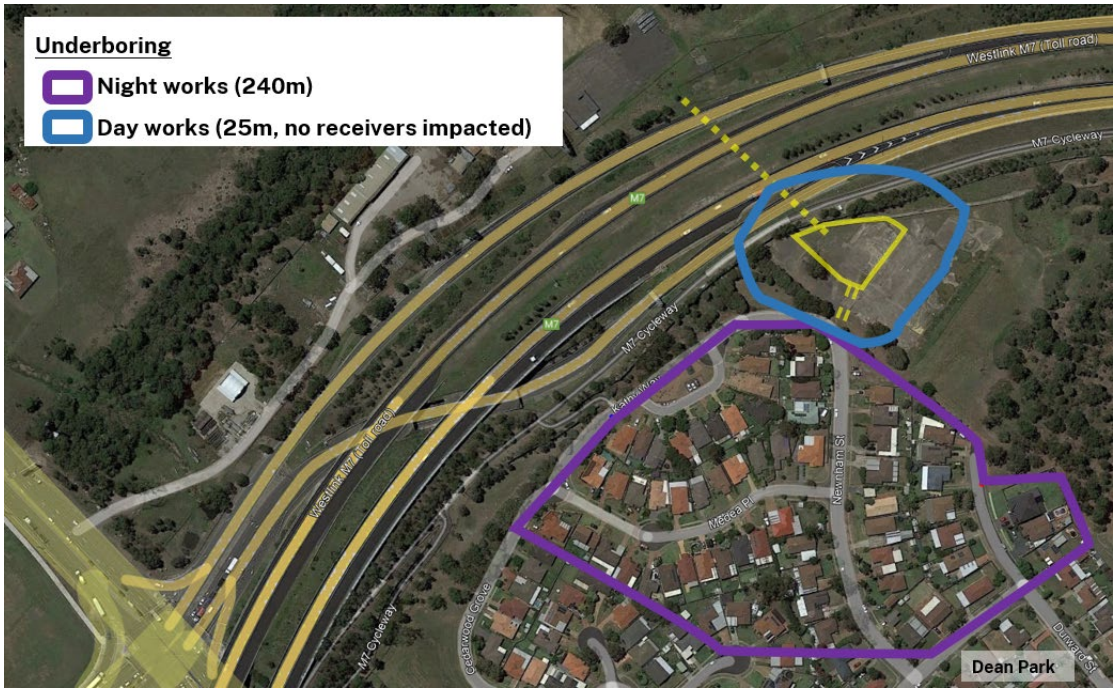

Figure 6-3: Construction noise impact map for Underboring works (receiver side). (Note, the night impact area reduces from 240m to 140m where there is no line of sight).

Figure 6-2 demonstrates that compound operation at night does not exceed the noise management levels for identified sensitive receivers in the surrounding study area.

The noise impact assessment also predicted substantial impact reductions if works in Dean Park can be completed during standard hours. The impact distance reduces from 240m to 25m. Subsequently the works methodology was modified to complete works at the receiving side during standard hours to avoid unnecessary construction noise impacts to receivers in Dean Park.

The noise assessment found that receivers are outside of the notification range for compound works and underboring work scenarios.

The sleep disturbance assessment did not identify any residential receivers in the 95m catchment distance for compound operation at night.

Due to the potential for cumulative noise impacts from other construction activities also in the locality, a program of verification (V) monitoring is recommended to review actual measured noise impacts against noise predictions, and update noise management levels and management measures in response to monitoring results. This is captured below as safeguard NV9.

Construction traffic noise

The nighttime period has been identified as the critical period of this assessment due to the increased sensitivity, as well as need for substantial works to take place at night to minimise traffic disruption. The project REF indicates that existing traffic flows along the M7 Motorway and Richmond Road dominate the existing noise environment and therefore the addition of the construction traffic noise generated to access the compound is expected to contribute low to negligible change in the noise environment.

Construction Vibration

Human comfort vibration impacts are not anticipated due to the distance to the closest residential receivers. There are heritage items in the surrounding study area, though they are significant for historical association rather than built features therefore not sensitive to vibration impacts. See section 6.3 for more detail on non-Aboriginal heritage.

Though no vibration intensive activities are proposed at the compound sites, general site activities from establishment and operation (i.e. setup of site sheds, delivery and unloading of materials, vehicle movements) have the potential to generate vibration.

A pre-construction vibration risk assessment is recommended to determine potentially affected buildings and structures surrounding the compound locations and appropriate vibration criteria and management measures. This is already proposed for the overarching proposal though would be expanded to include the compound sites and presence of any heritage features.

This is consistent with safeguards from the original REF.

Operation

No operational impacts are expected as there is no operational component to the proposed modification. The proposed compound and activities associated would not result in permanent changes to background noise, as use of the location is temporary, with refurbishment of the site upon completion of activities.

6.1.5 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Construction noise and vibration - cumulative impacts (NV9)	The noise and vibration management plan (NVMP) is to include a process for Verification monitoring to confirm noise management levels and adjust management measures as appropriate.	Transport/ Contractor	Pre-construction / construction

6.2 Aboriginal and Non-Aboriginal Heritage

6.2.1 Existing environment

Aboriginal heritage

A PACHCI stage 1 checklist was prepared and is included in Appendix D. This included database searches of the following (February 2023):

- AHIMS basic and extensive search. Results shown in Figure 6-4 below.
- National Native Title Tribunal search
- State Heritage Register (Aboriginal Place)
- Australian Heritage Database

In addition, a literature review of other studies included results from an Aboriginal cultural heritage and archaeology assessment prepared for M7 Motorway Duplication (Transport, 2022). This study concluded high levels of historic disturbance in the modification area boundary and low potential for Aboriginal heritage features or archaeology. The Transport Aboriginal Cultural Heritage Officer issued a PACHCI clearance letter on 8 February 2023 and noted that the project is considered unlikely to harm known Aboriginal cultural heritage items or places, and the potential for unexpected finds is reduced due to past disturbance. The clearance letter is included in Appendix D.

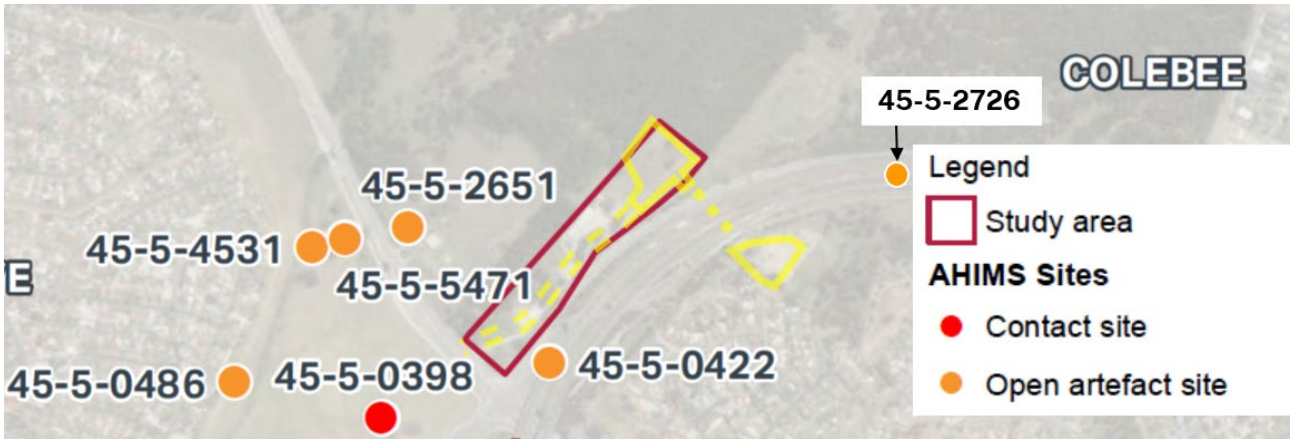

Figure 6-4: AHIMS records in the study area. The proposed modification area is shown in yellow.

Non-Aboriginal heritage

Database searches of the following heritage databases were completed for the proposed modification area:

A literature review of recent heritage assessments in the study area also included a study for M7 Motorway Duplication (Transport, 2022), and heritage assessment prepared for the adjoining Environmental Conservation area (Transport 2020).

The search results identified two listed items as listed below and shown in Figure 6-5.

- Blacktown Native Institution
- Colebee and Nurragingy Land Grant

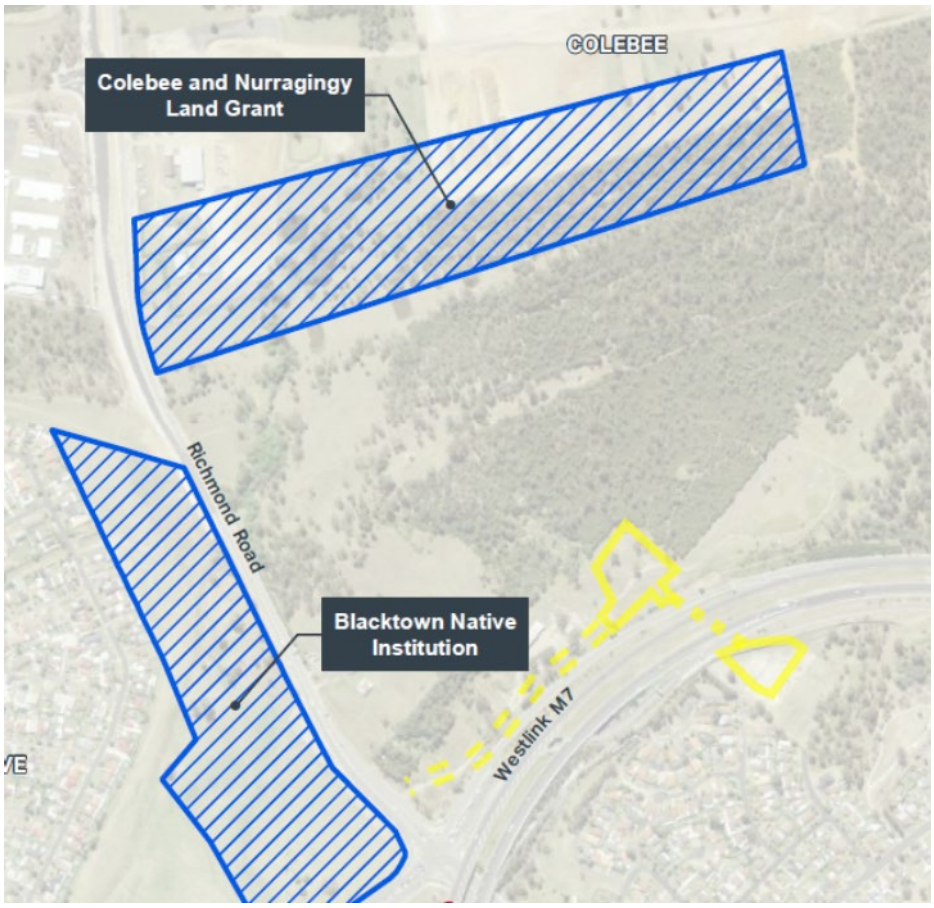

Figure 6-5: Listed non-Aboriginal heritage features in the study area. The proposed modification area is shown in yellow.

6.2.2 Potential impacts

Construction

The proposed modification would have no direct impacts on the identified Aboriginal cultural heritage and non-Aboriginal heritage features identified in the study area.

The nearest recorded AHIMS site is about 50 metres south east of the proposal area within the M7 Motorway corridor.

The nearest recorded non-Aboriginal heritage feature is Blacktown Native Institution located about 50 metres west on the opposite side of Richmond Road corridor.

Potential indirect impacts such as amenity are minor and localised and limited to the duration of construction.

Operation

No operational impacts are expected as there is no operational component to the proposed modification. The proposed compound use of the location is temporary, with complete refurbishment of the site upon completion of activities.

6.2.3 Safeguards and management measures

Safeguards and management measures as outlined in the Project REF and subsequent addendum REFs remain adequate to manage potential impact to Aboriginal and non-Aboriginal heritage.

6.3 Soils and Contamination

6.3.1 Existing environment

The proposed modification area is within the Blacktown soil landscape (9030bt) The Blacktown soil landscape is a residual soil that forms in areas of Bringelly Shale. It typically occurs on gently undulating rises, with broad rounded

crests and ridges with gently inclined slopes. The soil profile is characterised by shallow red and brown podzolic soils on ridges and crests. This soil type is characterized by moderate leaching, which produces an accumulation of clay and can be hard-setting. This generally means the susceptibility of this soil landscape to erosion is low, though minor sheet and gully erosion can occur where vegetation is absent.

The subject site is subject to previous disturbance as part of adjacent road construction activities and prior use as construction compound site. No natural cliff features, rock outcrops or rock shelves were identified. The adjoining M7 Motorway is located at higher elevation and batters down to the nominated main works compound area.

A desktop contamination search was carried out on Environment Protection Authority's (EPA) Contaminated Land Records in February 2023 and found 2 listed sites within Blacktown City Council LGA, and none were in Colebee or the vicinity of the modification area.

6.3.2 Potential impacts

Construction

The compound facility has been used previously as a construction compound site and requires minimal earthworks for compound establishment. Minor earthworks would be required for activities including establishment of erosion and sediment controls, fencing, site shed placement, and formation of vehicle access. There is increased risk of soil and water impacts associated with proposed 150 metre length directional drilling to connect into the ITS network Additional safeguards have been included for containment and management of spoil material including drill slurry.

Once the compound is established, potential soil and water risks such as dust and spills may be associated with activities like chemical use and storage, stockpiling and materials management, plant and vehicle movements, concrete washout, and refuelling. This can be adequately avoided or managed with the safeguards in the original REF and Addendum assessments.

Absence of nearby contaminated land register records and the previous disturbance history of the modification area indicate a low to negligible chance of encountering unexpected contamination from compound establishment or operations.

In order to prevent other contamination risks such as illegal dumping, the site compounds the facility will be secured and fenced off.

Operation

No operational impacts are expected as there is no operational component to the proposed modification. The proposed compound use of the location is temporary, with complete refurbishment of the site upon completion of activities.

6.3.3 Safeguards and management measures

Safeguards within the project REF remain appropriate to address Soils and Contamination risks of the proposed modification. Erosion and Sediment control plans would be expanded to also include the modification area.

6.4 Biodiversity

6.4.1 Existing environment

The modification area is on land owned by Transport. The sites have previously been used as construction compound facility. Much of the vegetation coverage has been cleared though there are still individual mature trees within the lot, and rows of mature trees along the boundary. Photos from a site visit in December 2022 site visit are included in Appendix F. An adjoining bushland area to the north-east is zoned as Environmental Conservation.

Database searches were completed in February 2023 for the following:

The results of database searches are included in Appendix E.

Two threatened ecological communities are identified in the surrounding study area.

- Cumberland Plain Woodland (BC Act – CEEC)
- Cooks River/ Castlereagh Ironbark Forest in the Sydney Basin Bioregion (BC Act EEC)

The mapped extents of these areas are included below in Figure 6-6.

Cumberland Plain Woodland CEEC is also habitat for the Cumberland land snail (*Meridolum corneovirens*) (BC Act, Endangered).

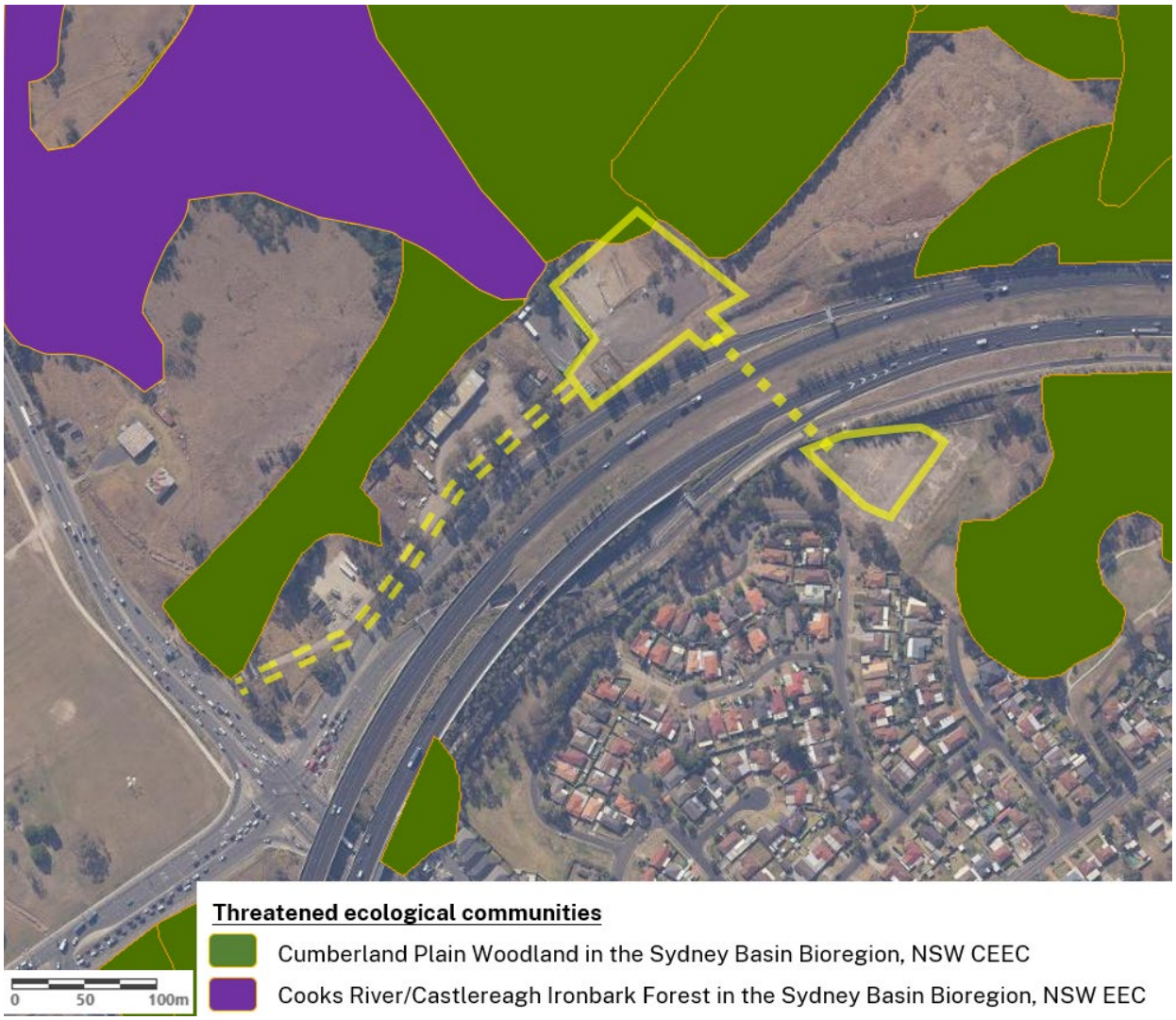

Figure 6-6: Threatened vegetation community mapping in the modification area.

BioNet search results for the study area identified a high number of records for the following protected flora species within these mapped vegetation communities:

- *Grevillea juniperina* (*BC Act*, Vulnerable)
- *Dillwynia tenuifolia* (*BC Act*, Vulnerable)
- *Pultenaea parviflora* (*BC Act,* Endangered*)*

Of these records, six *Grevillea juniperina* were within the identified modification area boundary (see Figure 6-7).

The adjoining bushland area is associated with biodiversity offsets from M7 Motorway construction and is subject to handover to NPWS for future management (see Appendix I). The boundary of this area is located about 100metres north of the proposed modification area.

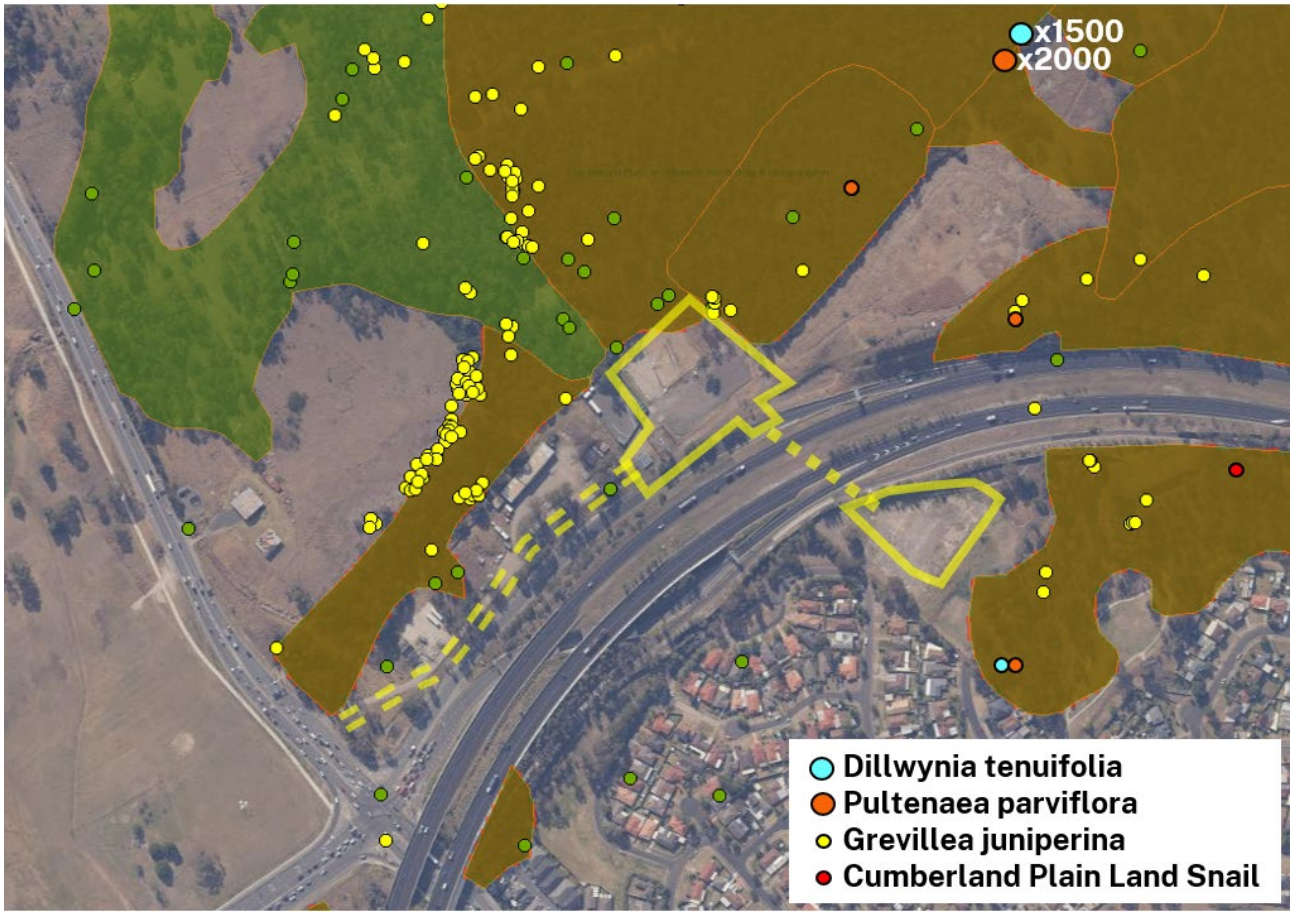

Figure 6-7: Bionet search results records

6.4.2 Potential impacts

Construction

The proposal overlaps with an area of about 1000m2 of Cumberland Plain Woodland (CEEC). Additionally, there are six *Grevillea juniperina* (*BC Act* = Vulnerable) records within or near the modification area boundary (see Figure 6-8 below).

An exclusion area is proposed to avoid potential disturbance to these protected biodiversity features, see Figure 6-9. A pre-clearing inspection by a suitably qualified ecologist is required to confirm presence/absence of biodiversity constraints and modify the exclusion area accordingly. A test of significance was not completed as safeguards would be implemented to avoid impact to these areas including physical protection measures in place. Any potential indirect impact such as weed spread or water runoff can be adequately managed with existing safeguards. Any new or additional biodiversity impacts would require separate assessment and approval.

Figure 6-8 Area of mapped Cumberland Plain Woodland (CEEC) within the proposed modification area. Yellow circles represent *Grevillea juniperina* records.

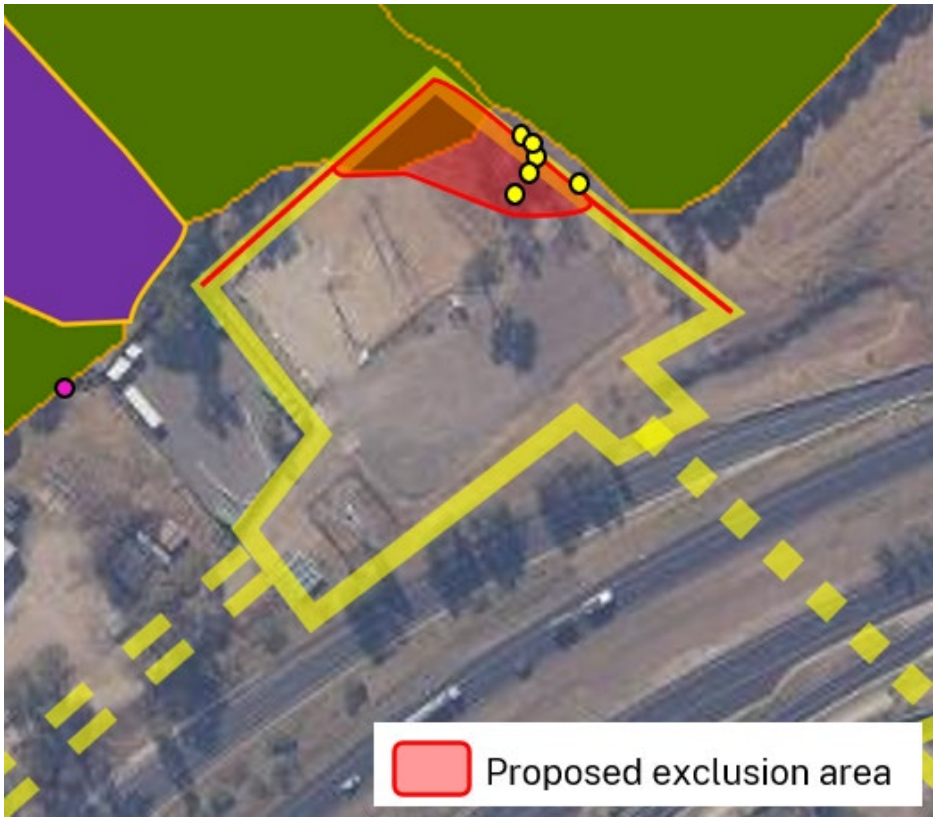

Figure 6-9 Nominated exclusion area to protect biodiversity constraints (final area subject to ecologist pre-clearing inspection).

The proposed modification has identified potential removal of one tree on the vehicle access track which was observed as dead during the December 2022 site visit (see photos in Appendix F). This is not within mapped TEC area. No visible hollows or habitat features were identified on the dead tree. The tree removal was recommended for safety and to would also increase the protection area possible for a nearby healthy tree.

Tree protection measures would be implemented to retain and protect the remaining trees within the modification area.

The proposed modification would have no direct impact to the environmental conservation area to the north-east. Existing safeguards for erosion and sediment control would be adequate to manage any potential indirect risk. Other biodiversity impacts, such as weed spread or encountering habitat features and unexpected finds would be managed in accordance with Transport Biodiversity Guideline - Protecting and Managing Biodiversity on Transport projects.

Figure 6-9: Proposed exclusion area to protect mapped EEC flora records in the corner of the modification area.

Operation

No operational impacts are expected as there is no operational component to the proposed modification. The proposed compound use of the location is temporary, with complete refurbishment of the site upon completion of activities.

Vegetation impacts would be added to the overarching project total and offset in accordance with Transport Biodiversity offset policy (2022).

6.4.3 Safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Biodiversity (FF07)	Suitably qualified ecologist to complete pre-clearing inspection of the Colebee main construction area. Pre-clearing check to include inspection for - Boundary of Cumberland Plain Woodland (CEEC) - *Grevillea juniperina* (BC Act, Vulnerable) - *Dillwynia tenuifolia* (BC Act, Vulnerable) - *Pultenaea parviflora* (BC Act, Endangered) - *Meridolum corneovirens (BC Endangered)* Ecologist advice to be incorporated into the preparation of sensitive area mapping and physical protection measures.	Contractor	Construction
Biodiversity (FF08)	Physical exclusion area is to be established and maintained around the mapped sensitive area (biodiversity) for the duration of construction.	Contractor	Construction
Biodiversity (FF09)	Tree Protection measures are to be implemented in accordance with Australian Standard AS4970 for protection of trees on development sites.	Contractor	Construction
Biodiversity (FF10)	All works, including removal of the dead tree, are to comply with Transport Biodiversity Guideline - Protecting and Managing Biodiversity on Transport projects.	Contractor	Construction
Biodiversity (FF11)	Appropriate fire prevention and response measures are to be inlcuded in the CEMP to protect the adjoining bushland area from ignition risks (such as sparks from welding and fabrication works and vehicle exhausts).	Contractor	Construction

Other safeguards and management measures to address Biodiversity impacts are identified in the original REF and Addendum REFs

6.5 Other impacts

6.5.1 Existing environment and potential impacts

Environmental factor	Existing environment	Potential impacts
Surface water	The closest waterways to the modification area are Eastern Creek which is 1.68km north east, and Bells Creek which is roughly 390m north west. There is also an unnamed Bells Creek tributary drainage line that is located beneath the vehicle access track used to access the compound roughly parallel to Richmond Road and about 55m from the edge of the road alignment.	Potential impacts to surface water quality as a result of the modification are limited to the duration of construction. Vehicle activity on the access track may contribute to the risk of erosion and sedimentation issues impacting water quality of the Bells Creek tributary. Construction activites such as the storage of chemicals, stockpiling, and refuelling, pose a potential risk to water quality if not appropriately managed. The risk is minor and can be managed with the implementation of standard erosion and sediment management measures.
Traffic and transport	Compound site is located off Richmond Road and has easy access onto the M7 northbound on ramp. Traffic volumes on Richmond Road and M7 Motorway are high. There are no bus stop facilities nearby. The nearest active transport facilities are the shared path on Richmond Road northbound side (opposite side of the road corridor to the compound facility), and the M7 cyclist corridor.	Potential impacts to traffic and transport as a result of the modification are limited to the duration of construction. During construction, some activities may require additional traffic management measures on Richmond Road to accommodate over-sized vehicle access and egress movements. The location of the compound directly off a main arterial road and close to a motorway interchange reduce the potential impact of haulage routes impacting local road networks. (Haulage routes to and from the main construction work area in Sydney CBD would be subject to approved traffic management plans, including safe access and egress arrangements). The underboring works require temporary lane closures on M7 Motorway that may cause temporary travel time delays which are reduced by programming these works at night when traffic volumes are lower. Any impacts to the M7 cycleway facility as part of underboring works would be temporary (estimated one working shift) and managed as per an approved pedestrian and cyclist management plan. Access to the Dean Park temporary ancillary works would require access for construction vehicles including excavator and vac truck through local roads subject to an approved traffic management plan.

Visual impact	The main compound site is surrounded by established trees and bushland area, and the raised M7 motorway corridor. There is one rural receiver about 300m away and the viewpoint to the compound site is obscured by trees. There is a separate existing compound facility located within the same lot.	Potential impacts to visual impact as a result of the modification are limited to the duration of construction. Residential receiver The viewpoint from nearest residential receiver is identified as low sensitivity because of the existing compound facilities in use on this site, as well as the 300m distance and vegetation obscuring much of the viewpoint. The presence of an additional construction site and operations and the estimated 18 month duration contribute to a moderate magnitude. Low sensitivity and moderate magnitude result in a moderate-low risk rating to the nearest residential receiver. This can be further reduced to low with the implementation of measures such as considerate site layout. Passing road user The viewpoint of M7 Motorists would be from a different elevation and behind vegetation which would largely obscure the compound area from view, as well as the transient views of a motorist passing at speed. Similarly, the viewpoint from Richmond Road corridor would also be transient and obscured by the distance from the road corridor and established vegetation. Viewpoints from passing road users were therefore assigned a low/negligible sensitivity. The similar use of the lot to the existing compound use was used to assign a low magnitude. Low/negligible sensitivity and low magnitude result in a low/negligible risk rating to passing road users. The compound is a temporary land use and would be fully decommissioned following the construction phase with no permanent visual impact.
Air Quality	The Air Quality environment relevant to the proposed modification is largely influenced by surrounding major road corridors and contributions from motor vehicle exhaust. The closest residential receivers to the main compound area are Dean Park located about 150 metres south, and a single residential receiver located about 300 metres north-west.	Vehicle movements, plant and generator use, and stockpiling of materials have the potential to produce airborne emissions and dust. Air quality management measures as outlined in section 6.5.2 of the original REF remain appropriate to address Air Quality risks of the proposed modification.
Property and Land use	The proposed compound sites are within an open lot surrounded by bushland and the M7 Motorway and Richmond Road corridors. No property acquisition is required as the proposed compound sites are located on Transport for NSW owned land.	At the end of works, the compound would be decommissioned and returned to existing condition therefore there would be no permanent impacts.
Socio Economic	The Socio-Economic environment relevant to the proposed modification is located on the boundary of the North West Growth Centre (NWGC)	The proposal would not directly affect access to or use of any key social infrastructure (such as schools, places of worship, medical centres,

	which is experiencing substantial growth and development. The 300m area surrounding the compound facility includes bushland and one rural residential property. The bushland area is identified in the NWGC plans as environmental conservation area. No other social infrastructure such as schools, places of worship, health facilities, community centres were identified within a 300 metre radius.	community centres etc). The proposal would maintain access to nearby Memorial facilities on Sommerville Road. The proposal is not anticipated to impact passing trade, access to business. Underboring may cause minor and temporary impacts to travel time and to active transport facilities (potentially one shift beneath M7 cycle path) to balance safety needs of workers within the road corridor. Potential socio-economic impacts to visual impact are minor/negligible and limited to the duration of construction. Potential construction phase amenity impacts have been considered as follows: • Noise and vibration (refer REF section 6.4, and Addendum Section 6.1) • Air quality (refer REF section 6.5, Addendum Section 6.5.1) • Visual impacts (refer REF section 6.2, Addendum Section 6.5.1). At the end of works, the compounds would be decommissioned and returned to their existing condition therefore there would be no permanent impacts.
Waste and Resource Use, and Sustainability	Waste and resources relevant to the proposed modification is largely consistent with that described in Section 6.5 of the project REF.	A potential additional waste stream to the REF may be possible ITS waste, and Waste produced from office use. An additional energy demand is also required in construction to operate the compound facility. Safeguards within the project REF remain appropriate to address Waste and Resource use risks of the proposed modification.
Cumulative impacts	Cumulative construction noise and traffic impacts with other major construction projects are considered in section 6.6 of the project REF. There is another existing Transport compound facility on the same lot. Other Transport projects in planning phase are also evaluating construction compound opportunities in the area. Additionally, the M7 duplication overlaps with the study area for the proposed modification.	Potential cumulative construction impacts from other nearby construction projects may exacerbate predicted noise impacts. A verification monitoring safeguard would identify and manage potential cumulative construction noise impacts, and CEMP and management plan updates would review the adequacy of controls and modify accordingly. These updates would also assist to manage potential cumulative amenity impacts such as air quality. Safeguards within the project REF (CU1) remain appropriate to address Cumulative risks of the proposed modification. The compound use would not have any permanent impacts.

6.5.2 Safeguards and management measures

Safeguards within the project REF remain appropriate to address the environmental factors outlined above in Section 6.4.1.

7. Environmental management

7.1 Environmental management plans (or system)

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

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

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

7.2 Summary of additional safeguards and management measures

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

Table 7-1: Summary of additional safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
NV9	Construction noise and vibration - cumulative impacts (NV9)	The noise and vibration management plan (NVMP) is to include a process for Verification monitoring to confirm noise management levels and adjust management measures as appropriate.	Transport/ Contractor	Pre-construction / construction
FF07	Biodiversity	Suitably qualified ecologist to complete pre-clearing inspection of the Colebee main construction area. Pre-clearing check to include inspection for - Boundary of Cumberland Plain Woodland (CEEC) - *Grevillea juniperina* (BC Act, Vulnerable) - *Dillwynia tenuifolia* (BC Act, Vulnerable) - *Pultenaea parviflora* (BC Act, Endangered) - *Meridolum corneovirens (BC Endangered)* Ecologist advice to be incorporated into the preparation of sensitive area mapping and physical protection measures.	Contractor	Construction
FF08	Biodiversity	Physical exclusion area is to be established and maintained around the mapped sensitive area (biodiversity) for the duration of construction.	Contractor	Construction
FF09	Biodiversity	Tree Protection measures are to be implemented in accordance with Australian Standard AS4970 for protection of trees on development sites.	Contractor	Construction
FF10	Biodiversity	All works, including removal of the dead tree, are to comply with Transport Biodiversity Guideline - Protecting and Managing Biodiversity on Transport projects.	Contractor	Construction
FF11	Biodiversity	Appropriate fire prevention and response measures are to be inlcuded in the CEMP to protect the adjoining bushland area from ignition risks (such as sparks from welding and fabrication works and vehicle exhausts).	Contractor	Construction

7.3 Licensing and approvals

Licensing and approval requirements would be consistent with the project REF.

8. Conclusion

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

8.1 Justification

8.1.1 Social factors

The proposed modification would facilitate construction of the approved Smart Motorways project, which would result in positive long-term social impacts during operation through providing improved traffic and hazard management and enhance corridor messaging and wayfinding on the M1 road corridor between Milsons Point and Allen Street in Pyrmont.

- The proposed modification is not expected to cause discernible traffic or transport, air quality, or visual impacts.
- The proposal may have construction phase noise and vibration impacts though minor and able to be adequately managed with safeguards outlined in the project REF and section 7.2.
- No direct impact to heritage features are anticipated, and no structures at risk of indirect vibration impact were identified.
- The proposal would not directly affect access to or use of any key social infrastructure (such as schools, places of worship, medical centres, community centres etc). The proposal is not anticipated to impact passing trade, access to business. Potential impact to traffic or active transport facilities is very minor and temporary and able to be adequately managed with safeguards outlined in the project REF and section 7.2.
- Cumulative construction impacts due to other construction works in the area be adequately managed with safeguards outlined in the project REF and section 7.2

Overall, the social benefits of the proposed modification outweigh the potential adverse social impacts identified and therefore it is considered to be justified.

8.1.2 Biophysical factors

Potential biophysical impacts of the proposed modification would be limited to construction phase impacts only. The modification has assessed the need for one dead tree removal and no features of habitat value were identified. Remaining vegetation is to be retained and protected. Potential indirect impacts such as risk of spills or erosion are able to be adequately managed with safeguards outlined in the project REF and section 7.2. The proposal does not have a significant impact on the biophysical environment.

8.1.3 Economic factors

The proposed modification provides value for money in utilising Transport land/assets, and enabling greater productivity and program. This contributes to the overarching proposal benefit of improvements to road safety and journey time and flow on regional economic benefits from improved travel times.

8.1.4 Public interest

The modification is required to facilitate construction of the approved Smart Motorways project, which would result in positive long-term social impacts during operation through providing improved traffic and hazard management and enhance corridor messaging and wayfinding on the M1 road corridor between Milsons Point and Allen Street in Pyrmont. The location of the compound site away from sensitive receivers assists in managing construction noise impacts of the proposal.

Overall, the proposal is believed to be justified in meeting its objectives with few residual long-term impacts and is therefore in the public interest.

8.2 Objects of the EP&A Act

Instrument	Requirement
1.3(a) To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The proposal modification assists the delivery of the proposal to achieve the project safety benefits. Social and economic impacts are consistent with the project REF and as outlined in Section 6.5.1. Management measures are adequate to avoid and/or minimise impacts.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	The principles of ecological sustainable development are considered in Section 8.2.1.
1.3(c) To promote the orderly and economic use and development of land.	The proposed modification contributes to the overarching proposal benefit of improvements to road safety and journey time and flow on regional economic benefits from improved travel times.
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the project.
1.3(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	The proposed modification has low to negligible risk on the biophysical environment. The proposal has minimal vegetation impacts (one dead tree) re are no habitat features identified and the risk of erosion or spills is low. Management measures are outlined in the project REF and Section 7.2 to adequately avoid and/or minimise impacts.
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	The modification would not have direct impacts to heritage listed items. Mitigation measures proposed in the project REF and Section 7.2 adequately avoid and/or minimise impacts. The modification is not expected to have any impacts on Aboriginal heritage. Refer to Section 6.2.
1.3(g) To promote good design and amenity of the built environment.	Potential visual amenity impacts of the modification have been considered in Section 6.5.1. Potential visual impacts are low and limited to construction phase. The compound is a temporary land use and would be fully decommissioned following the construction phase with no permanent visual impact.
1.3(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	The site office/s would likely be demountable buildings which would meet construction industry standards. The building/s would be operated in accordance with the NSW Code of Practice Construction Work (August 2019).
1.3(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	Not relevant to the project.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	The communications strategy includes routine project updates. Specific targeted notifications may be appropriate subject to noise predictions.

8.2.1 Ecologically sustainable development

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

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

The precautionary principle

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

The use of the proposed compound site does not pose a threat of serious or irreversible damage to the environment. Regardless, the proposed modification has sought to take a precautionary approach to minimise environmental impacts, including through assessing impacts based on the 'worst-case' or conservative scenarios, and by designing the compound to be located within existing hardstand cleared area in an industrial area. This principle has also been applied in the development of safeguards and management measures using best available technical information, environmental standards and guidelines.

Intergenerational equity

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

The proposed modification has integrated both short and long-term economic, social and environmental considerations so that any likely impacts are not left to be addressed by future generations.

Conservation of biological diversity and ecological integrity

Preserving biological diversity and ecological integrity requires that ecosystems, species, and biological diversity are maintained to ensure their survival.

The proposed modification seeks to conserve ecological integrity by locating the compound within an existing hardstand cleared area with minimal vegetation impacts (one dead tree removal) required. Management measures outlined in the project REF and Section 7.2 would adequately avoid and/or minimise potential indirect impacts (such as spills) on the biophysical environment.

Improved valuation, pricing and incentive mechanisms

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

The modification contributes to the value to the community associated with safety improvements of the overarching Smart Motorway proposal.

Environmental issues were considered as key matters in the selection of compound sites including selection of already cleared hardstand areas. The proposed modification provides value for money in utilising Transport land/assets, and nearby ITS connections to facilitate the ITS testing. This contributes to the overarching proposal benefit of improvements to road safety and journey time and flow on regional economic benefits from improved travel times.

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

Conclusion

The proposed Western Distributor Smart Motorway modification (Addendum REF #3) for an additional compound site located within Colebee is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

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

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal, as described in the REF, best meets the project objectives but would still result in some impacts on non-Aboriginal heritage, construction noise at residential receivers, and cumulative construction impacts. Safeguards and management measures as detailed in the project REF and Section 7.2 of this Addendum would avoid, ameliorate or minimise these expected impacts. The proposed modification would also facilitate construction of the Smart Motorways project and contribute to the overarching project objective for improved traffic and hazard management and enhanced corridor messaging and wayfinding on the M1 road corridor between Milsons Point and Allen Street in Pyrmont. On balance, the proposal is considered justified and the following conclusions are made.

Significance of impact under NSW legislation

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

Significance of impact under Australian legislation

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

9. Certification

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

Name:	
Position:	Environment Officer
Company name:	Transport for NSW
Date:	

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

Name:	Andrew Davidson
Position:	Project Manager
Transport region/program:	Development Manager – Smart Motorways
Date:	

10. References

- Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022

  https://www.planningportal.nsw.gov.au/major-projects/projects/m7-motorway-mod-6-widening

- Westlink M7 Widening, Non Aboriginal Heritage Impact Assessment, Transport for NSW, July 2022

  https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-663-MOD-6%2120220801T074244.226%20GMT

- Richmond Road Colebee, Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020

- Richmond Road Colebee, Non-Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020,
  file://corp.trans.internal/prof/UserProfiles/deauh/Documents/WDSM%20Smart%20Motorways/colebee/2020-10-28_80221003_Boundary-Fence-EIA_ver2_PAN-57047.pdf

Terms and acronyms used in this REF

Term / Acronym	Description
AusLink	Mechanism to facilitate cooperative transport planning and funding by Commonwealth and state and territory jurisdictions
BC Act	*Biodiversity Conservation Act 2016 (NSW)*
CEMP	Construction environmental management plan
CM SEPP	State Environmental Planning Policy (Coastal Management) 2018
EIA	Environmental impact assessment
EP&A Act	*Environmental Planning and Assessment Act 1979 (NSW)*. Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*. Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	*Fisheries Management Act 1994 (NSW)*
Heritage Act	*Heritage Act 1977 (NSW)*
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LoS	Level of Service. A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers
MNES	Matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
NPW Act	*National Parks and Wildlife Act 1974 (NSW)*
OEH	Office of Environment and Heritage within the Department of Planning and Environment.
PEA Act	*Protection of the Environment Administration Act 1991.*
QA Specifications	Specifications developed by Transport for use with road work and bridge work contracts let by Transport.
RMS	NSW Roads and Maritime Services, now Transport for NSW
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
Transport	Transport for NSW

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

Section 171 Checklist

In addition to the requirements of the Is an EIS required? guideline (DUAP 1995/1996) and the Roads and Related Facilities EIS Guideline (DUAP 1996) as detailed in the REF, the following factors, listed in section 171 of the Environmental Planning and Assessment Regulation 2021, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor		Impact
a	Any environmental impact on a community? The proposed modification would result in the following environmental impacts on the community: • Minor temporary traffic, vibration, waste and visual impacts. • No long-term negative impacts.	Short-term minor negative
b	Any transformation of a locality? The proposed modification is unlikely to result in any transformation of a locality as it is a temporary (18 months) activity and is consistent with existing land use of the area.	Nil
c	Any environmental impact on the ecosystems of the locality? Potential impacts of the proposed modification would be limited to construction phase only. The modification requires minimal vegetation impacts. Potential soil and water impacts on the environment are able to be adequately managed with safeguards outlined in the project REF and section 7.2. The proposal does not have a significant impact on the ecosystems of the locality. No direct impact to NSW or Commonwealth threatened species, populations or ecological communities was identified by the assessment. Vegetation impacts have been minimised through selection of existing cleared sites. The proposed compound activity is temporary and the site would be returned to existing condition on completion of construction.	Short-term minor negative
d	Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposed modification may result in a temporary reduction in the aesthetic and recreational quality of the area during the construction phase in the form of noise and visual impacts. The proposal may also result in temporary reduction of environmental quality due to possible indirect impacts on water quality (such as erosion or spills) during construction. Safeguards and mitigation measures have been proposed to avoid, manage and minimise these impacts.	Short-term minor negative
e	Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? The proposed modification would not have any such effects.	Nil.
f	Any impact on the habitat of protected fauna (within the meaning of the Biodiversity Conservation Act 2016)? The proposed modification requires minimal vegetation impacts (one dead tree). Possible indirect impacts on water quality (such as erosion or spills) during construction are able to be adequately managed with safeguards outlined in the project REF and section 7.2.	Short-term minor negative
g	Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	Nil

Factor		Impact
	The proposed modification would not endanger animals, plants or other forms of life. No plants or animals of national or state conservation were identified within the proposal area. Possible indirect impacts on the biophysical environment are able to be adequately managed with safeguards outlined in the project REF and section 7.2.	
h	Any long-term effects on the environment? The proposed modification would contribute to the positive safety outcomes of the overarching Smart Motorways project.	Long term positive
i	Any degradation of the quality of the environment? The proposal would have some potential for temporary degradation of the quality of the environment through the generation of noise, dust and amenity impacts. These impacts are able to be adequately managed with safeguards outlined in the project REF and section 7.2.	Short-term minor negative
j	Any risk to the safety of the environment? The proposed modification would not create risks to the safety of the environment.	Nil
k	Any reduction in the range of beneficial uses of the environment? The proposal would not reduce the range of beneficial uses of the environment.	Nil
l	Any pollution of the environment? The proposed modification would not result in pollution of the environment. There would be short-term minor risks to local water quality in the event of a spill of release of sediment off site. Noise would be generated during construction and there would be potential for dust generation from compound setup and operations. These impacts are able to be adequately managed with safeguards outlined in the project REF and section 7.2.	Short-term minor negative
m	Any environmental problems associated with the disposal of waste? Waste generated during construction would be removed from site and disposed of legally. No environmental problems are anticipated for the disposal of waste.	Nil
n	Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The proposal would not increase demand for resources, which are, or are likely to become, in short supply.	Nil
o	Any cumulative environmental effect with other existing or likely future activities? During construction, the proposed modification may contribute to cumulative noise and traffic impacts in the local area and local road network due to the number of other concurrent construction projects also operating in the area. These impacts are able to be adequately managed with safeguards outlined in the project REF and section 7.2. The proposed modification has only construction phase impacts therefore potential long term cumulative operational impacts are consistent with the project REF (Section 6.6).	Short-term minor negative
p	Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	Nil

Factor		Impact
	The proposed modification is not in a coastal area and would not influence coastal processes and/or coastal hazards. The proposed modification would not have any long term operational impacts.	
q	Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1 Strategic plans relevant to the proposal which have been considered in the project and Addendum REFs include: • A Metropolis of Three Cities – The Greater Sydney Region Plan 2018 • Eastern City District Plan – connecting communities 2018 • Our Inner West 2036: Local strategic planning statement 2020 See Section 4 of this REF for further information on statutory and planning framework. The proposed modification falls within Blacktown Local Government Area.	The proposed modification is a temporary (18 month) land use and would not impact the long term land use plans The proposal is consistent with the Blacktown LEP and aligns with the plan as the temporary works have negligible impacts and is not inconsistent with the land use objectives.
r	Other relevant environmental factors.	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to the project REF and Chapter 6 of this Addendum REF assessment.

Matters of National Environmental Significance and Commonwealth land

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

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

Factor		Impact
a	Any impact on a World Heritage property? There are no World Heritage Properties within or near the proposal area.	Nil
b	Any impact on a National Heritage place? There are no National Heritage places within or near the proposal area.	Nil
c	Any impact on a wetland of international importance? There are no wetlands of international importance within or near the proposal area.	Nil
d	Any impact on a listed threatened species or communities? No listed threatened species or communities were identified within the proposal area. Minimal vegetation removal is required for the modification (one dead tree). Potential for indirect impacts such as spills, erosion, and runoff can be adequately avoided or mitigated through Safeguards and management measures as outlined in the project REF and section 7.2.	Minor, temporary indirect impact
e	Any impacts on listed migratory species? No migratory species are known to utilise the site.	Nil
f	Any impact on a Commonwealth marine area? There are no Commonwealth marine areas within or near the modified proposed modification.	Nil
g	Does the proposal involve a nuclear action (including uranium mining)? The proposed modification does not involve a nuclear action.	Nil
h	Additionally, any impact (direct or indirect) on the environment of Commonwealth land? The proposed modification does not have direct or indirect impact on Commonwealth land.	Nil

Appendix B - Statutory consultation checklists

Transport and Infrastructure SEPP (2021)

Certain development types

Development type	Description	Yes / No	If 'yes' consult with	SEPP clause
Car Park	Does the project include a car park intended for the use by commuters using regular bus services?	No	Local council and the occupiers of adjoining land	Clause 2.111
Bus Depots	Does the project propose a bus depot?	No	Local council and the occupiers of adjoining land	Clause 2.111
Permanent road maintenance depot and associated infrastructure	Does the project propose a permanent road maintenance depot or associated infrastructure such as garages, sheds, tool houses, storage yards, training facilities and workers' amenities?	No	Local council and the occupiers of adjoining land	Clause 2.111

Development within the Coastal Zone

Development type	Description	Yes / No	If 'yes' consult with	SEPP clause
Development with impacts on certain land within the coastal zone	Is the proposal within a coastal vulnerability area [Note: mapping of this feature has not yet been released] and is inconsistent with a certified coastal management program applying to that land? (Note: a certified coastal zone management plan is taken to be a certified coastal management program) Resilience and Hazards SEPP (Chapter 2 – Coastal Management) mapping shows the proposed modification is located in area mapped as coastal use area, and coastal environment area. The proposed land use for a temporary construction compound facilities is consistent with Part 4.2 City West, Clause 4.25 - Temporary and interim uses. There are no areas identified by Part 2.2 as a coastal wetland or littoral rainforest occurring within the proposal area. The modification is within land mapped as a Coastal Environment Area and Coastal Use Area. As the proposal area is within the Foreshores and Waterways Area within the meaning of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005, the development considerations relating to Coastal Environment Areas and Coastal Use Areas do not apply to this development (Clause 2.10 and Clause 2.11).	No	Local council	Clause 2.14

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Council related infrastructure or services

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP clause
Stormwater	Are the works likely to have a *substantial* impact on the stormwater management services which are provided by council?	No	Local council	Clause 2.10 (1)(a)
Traffic	Are the works likely to generate traffic to an extent that will *strain* the capacity of the existing road system in a local government area?	No	Local council	Clause 2.10 (1)(b)
Sewerage system	Will the works involve connection to a council owned sewerage system? If so, will this connection have a *substantial* impact on the capacity of any part of the system?	No	Local council	Clause 2.10 (1)(c)
Water usage	Will the works involve connection to a council owned water supply system? If so, will this require the use of a *substantial* volume of water?	No	Local council	Clause 2.10 (1)(d)
Temporary structures	Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a *minor* or *inconsequential* disruption to pedestrian or vehicular flow?	No	Local council	Clause 2.10 (1)(e)
Road & footpath excavation	Will the works involve more than *minor* or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	No	Local council	Clause 2.10 (1)(f)

Local heritage items

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP clause
Local heritage	Is there is a local heritage item (that is not also a State heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential? *Local heritage features are identified in the surrounding area. The proposal has no direct impacts to heritage fabric. Potential minor indirect impacts from construction vibration can be adequately managed with safeguards as outlined in the project REF and Addendum REF section 7.2.*		Local council	Clause 2.11

Flood liable land

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP clause
Flood liable land	Are the works located on flood liable land? If so, will the works change flood patterns to more than a *minor* extent?	No	Local council	Clause 2.12
Flood liable land	Are the works located on flood liable land? (to any extent). If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?	No	State Emergency Services Email: erm@ses.nsw.gov.au	Clause 2.13

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

Public authorities other than councils

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP clause
National parks and reserves	Are the works adjacent to a national park or nature reserve, or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	No	Environment, Energy and Science, DPE	Clause 2.15(2)(a)
National parks and reserves	Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	No	Environment, Energy and Science, DPE	Clause 2.15 (2)(b)
Artificial light	Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	No	Director of the Siding Spring Observatory	Clause 2.15 (2)(d)
Defence communications buffer land	Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhardt LEP 2012, Narrandera LEP 2013 and Urana LEP 2011.	No	Secretary of the Commonwealth Department of Defence	Clause 2.15 (2)(e)
Mine subsidence land	Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	No	Mine Subsidence Board	Clause 2.15 (2)(f)

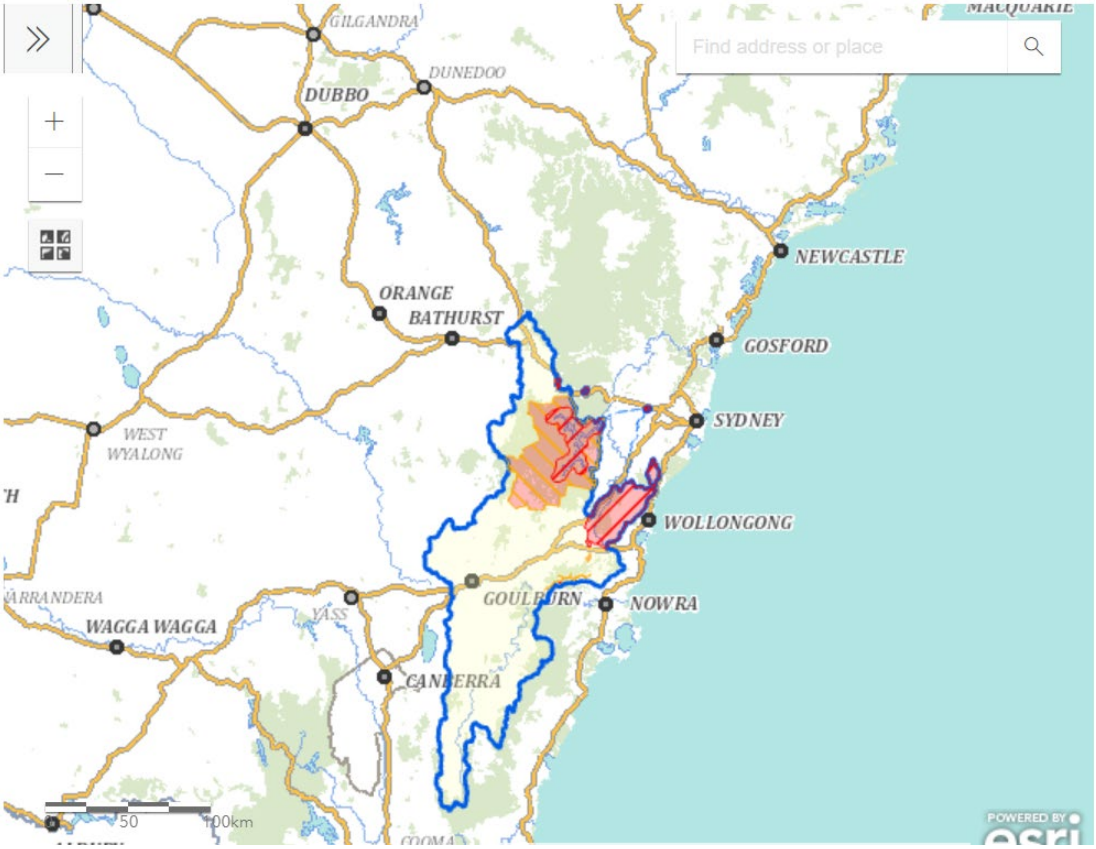
Neutral or beneficial effect on water quality assessment

Neutral or beneficial effect assessment

The proposal is not within the Sydney Drinking Water Catchment map therefore the assessment of neutral or beneficial effect on water quality assessment is not required.

SYDNEY DRINKING WATER CATCHMENT MAP

The Sydney Drinking Water Catchment map highlighting the special and controlled areas.



Appendix C – Proposed site layout

Possible compound site layout plan (Modification area boundary shown in yellow)

Appendix D – Construction Noise Estimator Tool results

Transport
for NSW

Distanced Based Assessment (Construction Scenario)

Please pick from drop-down list in orange cells

Noise area category		R4
RBL or LA90 Background level (dB(A))	Day	55
	Evening	50
	Night	45
LAeq(15minute) Noise Mangement Level (dB(A))	Day	65
	Day (OOHW)	60
	Evening	55
	Night	50
Scenario		Compound operation
Is there line of sight to receiver?		Yes

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-

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

Residential receiver

			LAeq(15minute) noise level above background (LA90)											LAeq(15minute) 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))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	65							N, PC, RO	20	75	N, PC, RO	20	75	N, PC, RO	20	75	
	Day (OOHW)	115				N, R1, DR	65	65	N, R1, DR	20	75	N, R1, DR, PC, SN	10	80	N, PC, RO	20	75	
	Evening	170				N, R1, DR	115	60	N, R1, DR	35	70	N, R1, DR, PC, SN	10	80	N, PC, RO	20	75	
	Night	250	N	250	50	N, R2, DR	170	55	N, PC, SN, R2, DR	65	65	AA, N, PC, SN, R2, DR	20	75	N, PC, RO	20	75	85
	Highly Affected	20													N, PC, RO	20	75	
Developed settlements (urban and suburban)	Day	75							N, PC, RO	25	75	N, PC, RO	25	75	N, PC, RO	25	75	
	Day (OOHW)	130				N, R1, DR	75	65	N, R1, DR	25	75	N, R1, DR, PC, SN	5	85	N, PC, RO	20	75	
	Evening	200				N, R1, DR	130	60	N, R1, DR	40	70	N, R1, DR, PC, SN	15	80	N, PC, RO	25	75	
	Night	305	N	305	50	N, R2, DR	200	55	N, PC, SN, R2, DR	75	65	AA, N, PC, SN, R2, DR	25	75	N, PC, RO	25	75	95
	Highly Affected	25													N, PC, RO	25	75	
Propagation across a valley / over water	Day	90							N, PC, RO	25	75	N, PC, RO	25	75	N, PC, RO	25	75	
	Day (OOHW)	155				N, R1, DR	90	65	N, R1, DR	25	75	N, R1, DR, PC, SN	5	85	N, PC, RO	25	75	
	Evening	250				N, R1, DR	155	60	N, R1, DR	50	70	N, R1, DR, PC, SN	15	80	N, PC, RO	25	75	
	Night	405	N	405	50	N, R2, DR	250	55	N, PC, SN, R2, DR	90	65	AA, N, PC, SN, R2, DR	25	75	N, PC, RO	25	75	110
	Highly Affected	25													N, PC, RO	25	75	

Non-residential receiver
Undeveloped green fields, rural areas with isolated dwellings

				LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	170				N	65	65	N, PC, RO	20	75
Hospital wards and operating theatres	Day	65	65							N, PC, RO	20	75
Place of worship	Day	55	170				N	65	65	N, PC, RO	20	75
Active recreation	Day	65	65							N, PC, RO	20	75
Passive recreation	Day	60	115				N	35	70	N, PC, RO	20	75
Industrial premise	Day	75	20							N, PC, RO	20	75
Offices, retail outlets	Day	70	35							N, PC, RO	20	75

				LAeq(15minute) noise level above NML											
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	65											4	90
	Night	65	65											4	90
Place of worship	Evening	55	170											11	80
	Night	55	170											11	80
Active recreation	Evening	65	65				N, R1, DR		70	N, R1, DR	11	80	N, R1, DR, PC, SN	4	90
Passive recreation	Evening	60	115				N, R1, DR	65	65	N, R1, DR	20	75	N, R1, DR, PC, SN	6	85
Industrial premise	Evening	75	20				N, R1, DR	11	80	N, R1, DR	4	90	N, R1, DR, PC, SN	1	100
	Night	75	20	N	20	75	N, R2, NR	11	80	N, PC, SN, R2, DR	4	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	35					20	75		6	85		2	95
	Night	70	35	N	35	70		20	75		6	85		2	95

Non-residential receiver
Developed settlements (urban and suburban)

				LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	200				N	75	65	N, PC, RO	25	75
Hospital wards and operating theatres	Day	65	75							N, PC, RO	25	75
Place of worship	Day	55	200				N	75	65	N, PC, RO	25	75
Active recreation	Day	65	75							N, PC, RO	25	75
Passive recreation	Day	60	130				N	40	70	N, PC, RO	25	75
Industrial premise	Day	75	25								25	75
Offices, retail outlets	Day	70	40								25	75

	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
		65	75					40						4	90
		65	75		75			40						4	90
		55	200					130			40			14	80
		55	200		200			130			40			14	80
		65	75					40						4	90
		60	130					75			25			8	85
		75	25											1	100
		75	25		25									1	100
Offices, retail outlets		70	40					25						3	95
	Night	70	40		40			25						3	95

Non-residential receiver
Propagation across a valley / over water

				LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	250				N	75	65	N, PC, RO	25	75
Hospital wards and operating theatres	Day	65	90							N, PC, RO	25	75
Place of worship	Day	55	250				N	75	65	N, PC, RO	25	75
Active recreation	Day	65	90							N, PC, RO	25	75
Passive recreation	Day	60	155				N	40	70	N, PC, RO	25	75
Industrial premise	Day	75	25							N, PC, RO	25	75
Offices, retail outlets	Day	70	50							N, PC, RO	25	75

				LAeq(15minute) noise level above NML											
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	90				N, R1, DR	50	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90
	Night	65	90	N	90	65	N, R2, NR	50	70	N, PC, SN, R2, DR	14	80	AA, N, PC, SN, R2, DR	4	90
Place of worship	Evening	55	250				N, R1, DR	155	60	N, R1, DR	40	70	N, R1, DR, PC, SN	14	80
	Night	55	250	N	250	55	N, R2, NR	155	60	N, PC, SN, R2, DR	40	70	AA, N, PC, SN, R2, DR	14	80
Active recreation	Evening	65	90				N, R1, DR	50	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90
Passive recreation	Evening	60	155				N, R1, DR	90	65	N, R1, DR	25	75	N, R1, DR, PC, SN	8	85
Industrial premise	Evening	75	25				N, R1, DR	15	80	N, R1, DR	4	90	N, R1, DR, PC, SN	1	100
	Night	75	25	N	25	75	N, R2, NR	15	80	N, PC, SN, R2, DR	4	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	50				N, R1, DR	25	75	N, R1, DR	8	85	N, R1, DR, PC, SN	3	95
	Night	70	50	N	50	70	N, R2, NR	25	75	N, PC, SN, R2, DR	8	85	AA, N, PC, SN, R2, DR	3	95

Transport
for NSW

Distanced Based Assessment (Construction Scenario)

Please pick from drop-down list in orange cells

Noise area category		R4
RBL or LA90 Background level (dB(A))	Day	55
	Evening	50
	Night	45
LAeq(15minute) Noise Mangement Level (dB(A))	Day	65
	Day (OOHW)	60
	Evening	55
	Night	50
Scenario		Compound operation
Is there line of sight to receiver?		No (behind solid barrier)

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:
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(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-

Abbreviation	Measure
N	Notification
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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

Residential receiver

			LAeq(15minute) noise level above background (LA90)											LAeq(15minute) 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))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	30							N, PC, RO	10	75	N, PC, RO	10	75	N, PC, RO	10	75	
	Day (OOHW)	65				N, R1, DR	30	65	N, R1, DR	10	75	N, R1, DR, PC, SN	5	80	N, PC, RO	10	75	
	Evening	115				N, R1, DR	65	60	N, R1, DR	20	70	N, R1, DR, PC, SN	5	80	N, PC, RO	10	75	
	Night	170	N	170	50	N, R2, DR	115	55	N, PC, SN, R2, DR	30	65	AA, N, PC, SN, R2, DR	10	75	N, PC, RO	10	75	45
	Highly Affected	10													N, PC, RO	10	75	
Developed settlements (urban and suburban)	Day	40							N, PC, RO	15	75	N, PC, RO	15	75	N, PC, RO	15	75	
	Day (OOHW)	75				N, R1, DR	40	65	N, R1, DR	15	75	N, R1, DR, PC, SN	#N/A	85	N, PC, RO	10	75	
	Evening	130				N, R1, DR	75	60	N, R1, DR	25	70	N, R1, DR, PC, SN	5	80	N, PC, RO	15	75	
	Night	200	N	200	50	N, R2, DR	130	55	N, PC, SN, R2, DR	40	65	AA, N, PC, SN, R2, DR	15	75	N, PC, RO	15	75	50
	Highly Affected	15													N, PC, RO	15	75	
Propagation across a valley / over water	Day	45							N, PC, RO	15	75	N, PC, RO	15	75	N, PC, RO	15	75	
	Day (OOHW)	90				N, R1, DR	45	65	N, R1, DR	15	75	N, R1, DR, PC, SN	#N/A	85	N, PC, RO	15	75	
	Evening	155				N, R1, DR	90	60	N, R1, DR	25	70	N, R1, DR, PC, SN	5	80	N, PC, RO	15	75	
	Night	250	N	250	50	N, R2, DR	155	55	N, PC, SN, R2, DR	45	65	AA, N, PC, SN, R2, DR	15	75	N, PC, RO	15	75	60
	Highly Affected	15													N, PC, RO	15	75	

Non-residential receiver
Undeveloped green fields, rural areas with isolated dwellings

			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)				
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	115				N	30	65	N, PC, RO	10	75
Hospital wards and operating theatres	Day	65	30							N, PC, RO	10	75
Place of worship	Day	55	115				N	30	65	N, PC, RO	10	75
Active recreation	Day	65	30							N, PC, RO	10	75
Passive recreation	Day	60	65				N	20	70	N, PC, RO	10	75
Industrial premise	Day	75	10							N, PC, RO	10	75
Offices, retail outlets	Day	70	20							N, PC, RO	10	75

				LAeq(15minute) noise level above NML										
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	30											2	90
	Night	65	30											2	90
Place of worship	Evening	55	115											6	80
	Night	55	115											6	80
Active recreation	Evening	65	30				N, R1, DR		70	N, R1, DR	6	80	N, R1, DR, PC, SN	2	90
Passive recreation	Evening	60	65				N, R1, DR	30	65	N, R1, DR	10	75	N, R1, DR, PC, SN	3	85
Industrial premise	Evening	75	10				N, R1, DR	6	80	N, R1, DR	2	90	N, R1, DR, PC, SN	1	100
	Night	75	10	N	10	75	N, R2, NR	6	80	N, PC, SN, R2, DR	2	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	20					10	75		3	85		1	95
	Night	70	20	N	20	70		10	75		3	85		1	95

Non-residential receiver
Developed settlements (urban and suburban)

			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)				
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	130				N	40	65	N, PC, RO	15	75
Hospital wards and operating theatres	Day	65	40							N, PC, RO	15	75
Place of worship	Day	55	130				N	40	65	N, PC, RO	15	75
Active recreation	Day	65	40							N, PC, RO	15	75
Passive recreation	Day	60	75				N	25	70	N, PC, RO	15	75
Industrial premise	Day	75	15								15	75
Offices, retail outlets	Day	70	25								15	75

	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
		65	40					25						3	90
		65	40		40			25						3	90
		55	130					75			25			8	80
		55	130		130			75			25			8	80
		65	40					25						3	90
		60	75					40			15			5	85
		75	15											1	100
		75	15		15									1	100
Offices, retail outlets		70	25					15						2	95
	Night	70	25		25			15						2	95

Non-residential receiver
Propagation across a valley / over water

			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)				
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	155				N	40	65	N, PC, RO	15	75
Hospital wards and operating theatres	Day	65	45							N, PC, RO	15	75
Place of worship	Day	55	155				N	40	65	N, PC, RO	15	75
Active recreation	Day	65	45							N, PC, RO	15	75
Passive recreation	Day	60	90				N	25	70	N, PC, RO	15	75
Industrial premise	Day	75	15							N, PC, RO	15	75
Offices, retail outlets	Day	70	25							N, PC, RO	15	75

				LAeq(15minute) noise level above NML										
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	45				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
	Night	65	45	N	45	65	N, R2, NR	25	70	N, PC, SN, R2, DR	8	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	155				N, R1, DR	90	60	N, R1, DR	25	70	N, R1, DR, PC, SN	8	80
	Night	55	155	N	155	55	N, R2, NR	90	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	8	80
Active recreation	Evening	65	45				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
Passive recreation	Evening	60	90				N, R1, DR	45	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85
Industrial premise	Evening	75	15				N, R1, DR	5	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100
	Night	75	15	N	15	75	N, R2, NR	5	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25				N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

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-

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		R4
RBL or LA90 Background level (dB(A))	Day	55
	Evening	50
	Night	45
LAeq(15minute) Noise Mangement Level (dB(A))	Day	65
	Day (OOHW)	60
	Evening	55
	Night	50
Scenario		Compound operation
Is there line of sight to receiver?		No (behind substantial solid barrier)

Residential receiver

			LAeq(15minute) noise level above background (LA90)											LAeq(15minute) 75 dB(A) or greater (Highly affected)			Sleep disutrbance LAmax 65 dB(A)
			5 to 10 dB(A)			10 to 20 dB(A)			20 to 30 dB(A)			> 30 dB(A)					
			Noticeable			Clearly audible			Moderately intrusive			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))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	20							N, PC, RO	5	75	N, PC, RO	5	75	N, PC, RO	5	75	
	Day (OOHW)	35				N, R1, DR	20	65	N, R1, DR	5	75	N, R1, DR, PC, SN	#N/A	80	N, PC, RO	5	75	
	Evening	65				N, R1, DR	35	60	N, R1, DR	10	70	N, R1, DR, PC, SN	#N/A	80	N, PC, RO	5	75	
	Night	115	N	115	50	N, R2, DR	65	55	N, PC, SN, R2, DR	20	65	AA, N, PC, SN, R2, DR	5	75	N, PC, RO	5	75	25
	Highly Affected	5													N, PC, RO	5	75	
Developed settlements (urban and suburban)	Day	25							N, PC, RO	5	75	N, PC, RO	5	75	N, PC, RO	5	75	
	Day (OOHW)	40				N, R1, DR	25	65	N, R1, DR	5	75	N, R1, DR, PC, SN	#N/A	85	N, PC, RO	5	75	
	Evening	75				N, R1, DR	40	60	N, R1, DR	15	70	N, R1, DR, PC, SN	#N/A	80	N, PC, RO	5	75	
	Night	125	N	125	50	N, R2, DR	75	55	N, PC, SN, R2, DR	25	65	AA, N, PC, SN, R2, DR	5	75	N, PC, RO	5	75	25
	Highly Affected	5													N, PC, RO	5	75	
Propagation across a valley / over water	Day	25							N, PC, RO	5	75	N, PC, RO	5	75	N, PC, RO	5	75	
	Day (OOHW)	50				N, R1, DR	25	65	N, R1, DR	5	75	N, R1, DR, PC, SN	#N/A	85	N, PC, RO	5	75	
	Evening	90				N, R1, DR	50	60	N, R1, DR	15	70	N, R1, DR, PC, SN	#N/A	80	N, PC, RO	5	75	
	Night	150	N	150	50	N, R2, DR	90	55	N, PC, SN, R2, DR	25	65	AA, N, PC, SN, R2, DR	5	75	N, PC, RO	5	75	30
	Highly Affected	5													N, PC, RO	5	75	

Non-residential receiver
Undeveloped green fields, rural areas with isolated dwellings

	Standard hours			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
				<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	65				N	20	65	N, PC, RO	5	75
Hospital wards and operating theatres	Day	65	20							N, PC, RO	5	75
Place of worship	Day	55	65				N	20	65	N, PC, RO	5	75
Active recreation	Day	65	20							N, PC, RO	5	75
Passive recreation	Day	60	35				N	10	70	N, PC, RO	5	75
Industrial premise	Day	75	5							N, PC, RO	5	75
Offices, retail outlets	Day	70	10							N, PC, RO	5	75

	OOHW			LAeq(15minute) noise level above NML											
				< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	20											1	90
	Night	65	20											1	90
Place of worship	Evening	55	65											3	80
	Night	55	65											3	80
Active recreation	Evening	65	20				N, R1, DR		70	N, R1, DR	3	80	N, R1, DR, PC, SN	1	90
Passive recreation	Evening	60	35				N, R1, DR	20	65	N, R1, DR	5	75	N, R1, DR, PC, SN	2	85
Industrial premise	Evening	75	5				N, R1, DR	3	80	N, R1, DR	1	90	N, R1, DR, PC, SN	0	100
	Night	75	5	N	5	75	N, R2, NR	3	80	N, PC, SN, R2, DR	1	90	AA, N, PC, SN, R2, DR	0	100
Offices, retail outlets	Evening	70	10					5	75		2	85		1	95
	Night	70	10	N	10	70		5	75		2	85		1	95

Non-residential receiver
Developed settlements (urban and suburban)

	Standard hours			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
				<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	75				N	25	65	N, PC, RO	5	75
Hospital wards and operating theatres	Day	65	25							N, PC, RO	5	75
Place of worship	Day	55	75				N	25	65	N, PC, RO	5	75
Active recreation	Day	65	25							N, PC, RO	5	75
Passive recreation	Day	60	40				N	15	70	N, PC, RO	5	75
Industrial premise	Day	75	5								5	75
Offices, retail outlets	Day	70	15								5	75

	OOHW														
				< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
		65	25					15						1	90
		65	25		25			15						1	90
		55	75					40			15			3	80
		55	75		75			40			15			3	80
		65	25					15						1	90
		60	40					25			5			2	85
		75	5											0	100
		75	5		5									0	100
Offices, retail outlets		70	15					5						1	95
	Night	70	15		15			5						1	95

Non-residential receiver
Propagation across a valley / over water

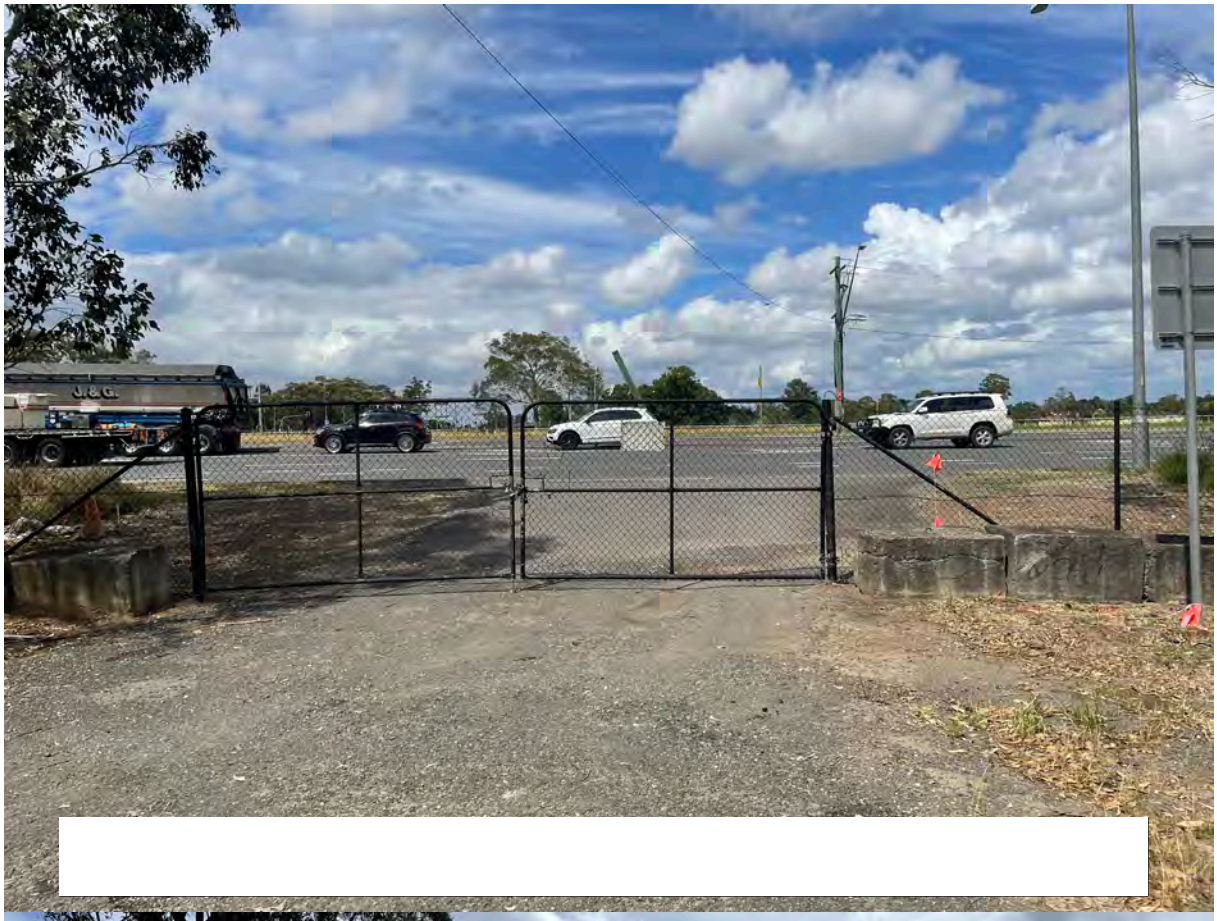
	Standard hours			LAeq(15minute) noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
				<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	90				N	25	65	N, PC, RO	5	75
Hospital wards and operating theatres	Day	65	25							N, PC, RO	5	75
Place of worship	Day	55	90				N	25	65	N, PC, RO	5	75
Active recreation	Day	65	25							N, PC, RO	5	75
Passive recreation	Day	60	50				N	15	70	N, PC, RO	5	75
Industrial premise	Day	75	5							N, PC, RO	5	75
Offices, retail outlets	Day	70	15							N, PC, RO	5	75

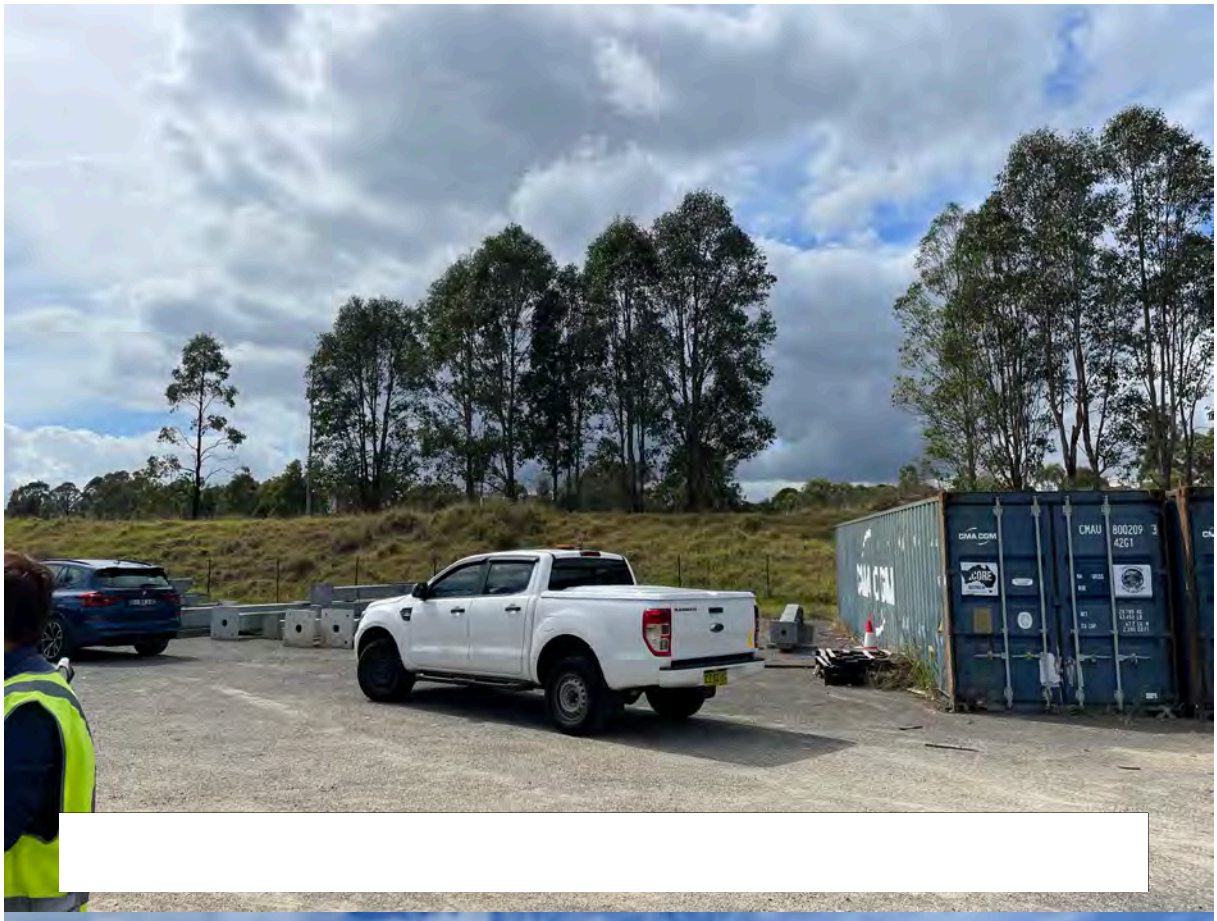
	OOHW			LAeq(15minute) noise level above NML											
				< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	25				N, R1, DR	15	70	N, R1, DR	3	80	N, R1, DR, PC, SN	1	90
	Night	65	25	N	25	65	N, R2, NR	15	70	N, PC, SN, R2, DR	3	80	AA, N, PC, SN, R2, DR	1	90
Place of worship	Evening	55	90				N, R1, DR	50	60	N, R1, DR	15	70	N, R1, DR, PC, SN	3	80
	Night	55	90	N	90	55	N, R2, NR	50	60	N, PC, SN, R2, DR	15	70	AA, N, PC, SN, R2, DR	3	80
Active recreation	Evening	65	25				N, R1, DR	15	70	N, R1, DR	3	80	N, R1, DR, PC, SN	1	90
Passive recreation	Evening	60	50				N, R1, DR	25	65	N, R1, DR	5	75	N, R1, DR, PC, SN	2	85
Industrial premise	Evening	75	5				N, R1, DR	#N/A	80	N, R1, DR	1	90	N, R1, DR, PC, SN	0	100
	Night	75	5	N	5	75	N, R2, NR	#N/A	80	N, PC, SN, R2, DR	1	90	AA, N, PC, SN, R2, DR	0	100
Offices, retail outlets	Evening	70	15				N, R1, DR	5	75	N, R1, DR	2	85	N, R1, DR, PC, SN	1	95
	Night	70	15	N	15	70	N, R2, NR	5	75	N, PC, SN, R2, DR	2	85	AA, N, PC, SN, R2, DR	1	95

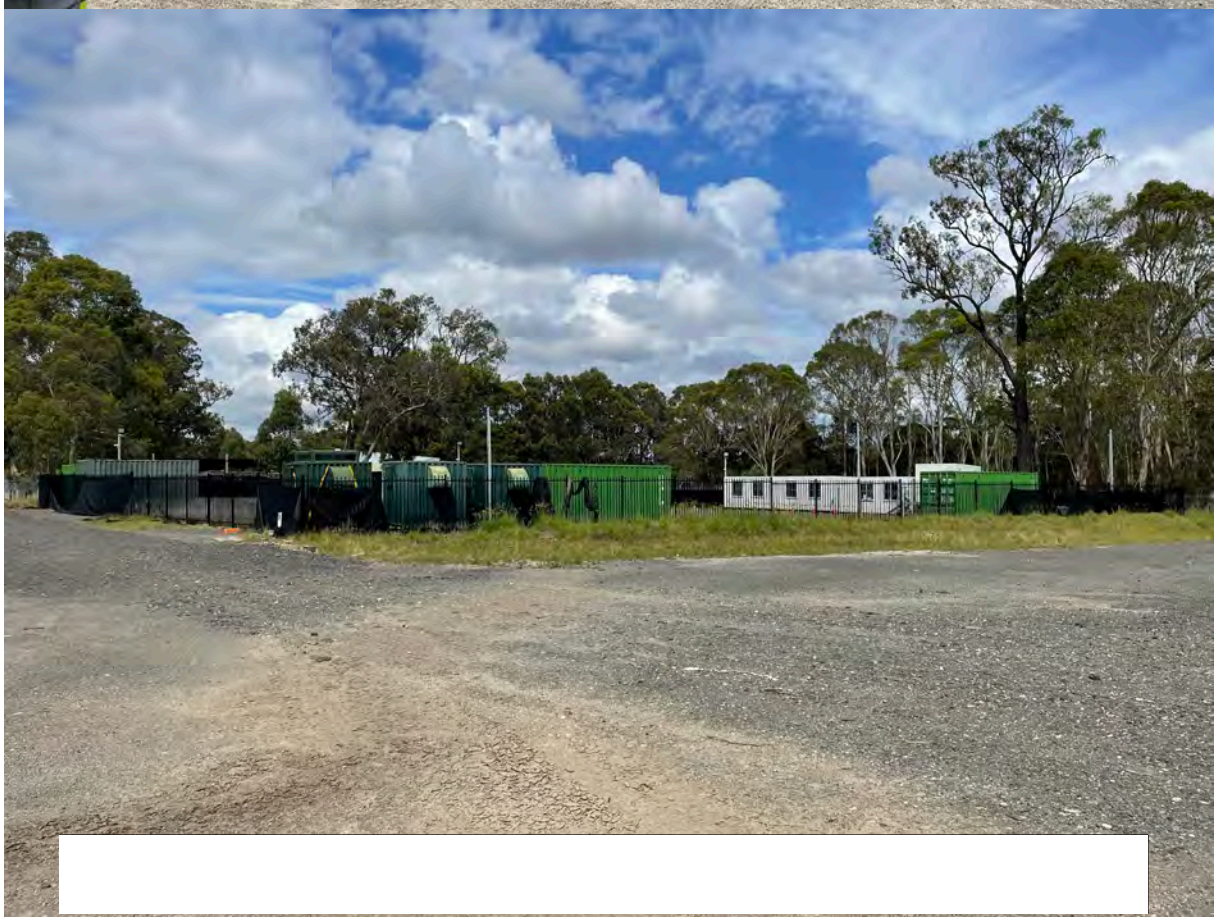
Appendix E – Site photos

Site photographs, December 2022


Apparent impact damage
~4m
Dead tree




CMAU 800209 3
42G1



Appendix F – PACHCI checklist and clearance letter

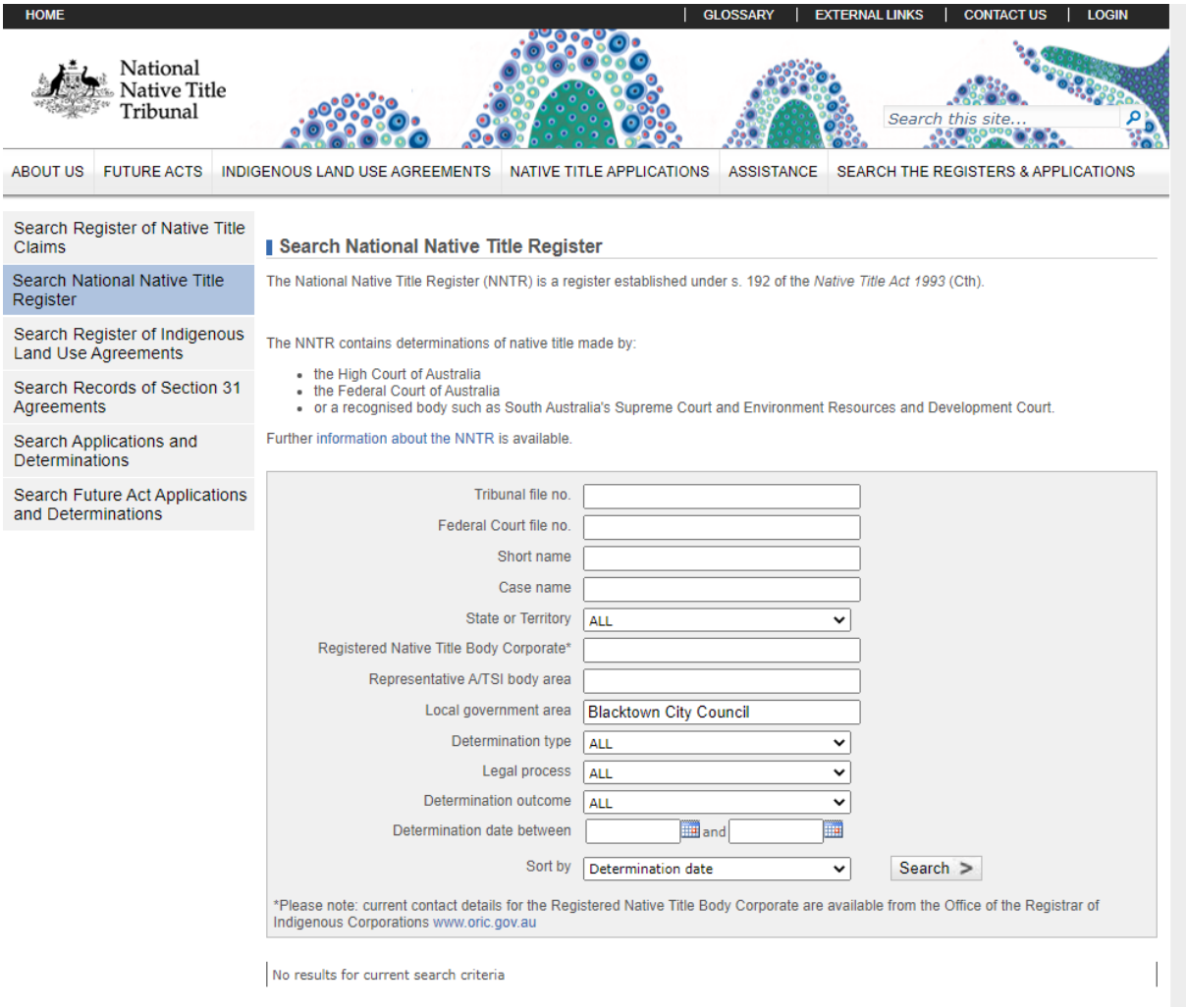
Database search results

National Native Title Tribunal (NNTT) search tool results

Search date: 07 Feb 2023

Blacktown LGA

Nil search result.



AHIMS Search result including extensive search:

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Colebee - WDSM
Client Service ID : 749734

Roads and Maritime Services - Philip St Parramatta

Date: 01 February 2023

PO Box 3035
Parramatta New South Wales 2124
Attention: Hannah Shuttleworth

Email: hannah_shuttleworth@rta.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -33.7336, 150.8475 - Lat, Long To : -33.7291, 150.8552, conducted by Hannah Shuttleworth on 01 February 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

AHIMS Web Services (AWS)

Extensive search - Site list report

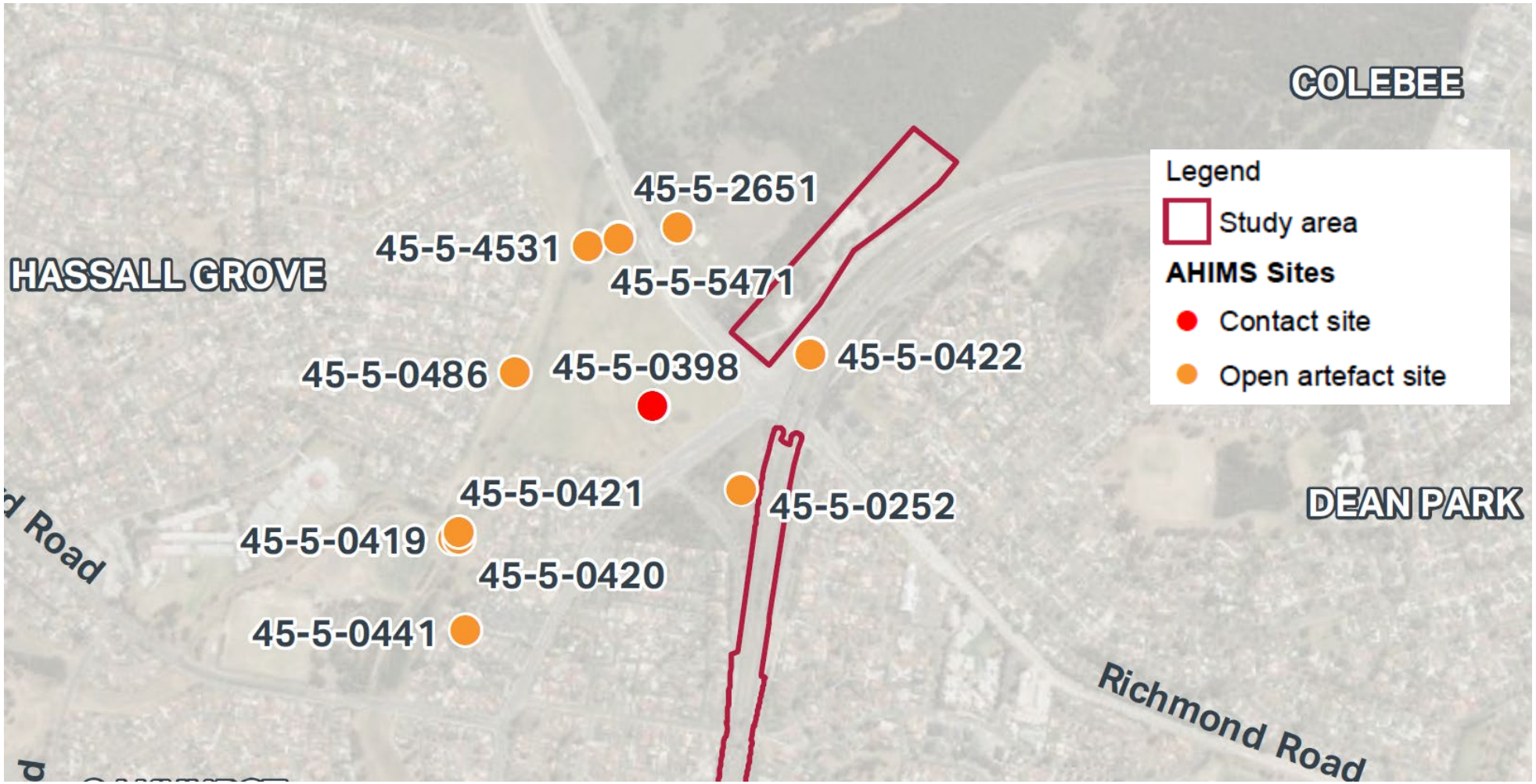
Your Ref/PO Number : Colebee - WDSM
Client Service ID : 749741

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-0422	Blacktown Plumpton	AGD	56	300660	6265230	Open site	Valid	Artefact : -	Open Camp Site	521,755,1018,9 8279,98280
	Contact	Recorders	Doctor.Jo McDonald					Permits	1596	
45-5-2726	SYDNEY ORBITAL OPEN SCATTER 8 (SO-OS-8)	AGD	56	301170	6265520	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Neville Baker,Megan Mebberson					Permits	1397	

**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 01/02/2023 for Hannah Shuttleworth for the following area at Lat, Long From : -33.7336, 150.8475 - Lat, Long To : -33.7291, 150.8552. Number of Aboriginal sites and Aboriginal objects found is 2

Literature review results AHIMS Results in the study area: Source: Extract from Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022

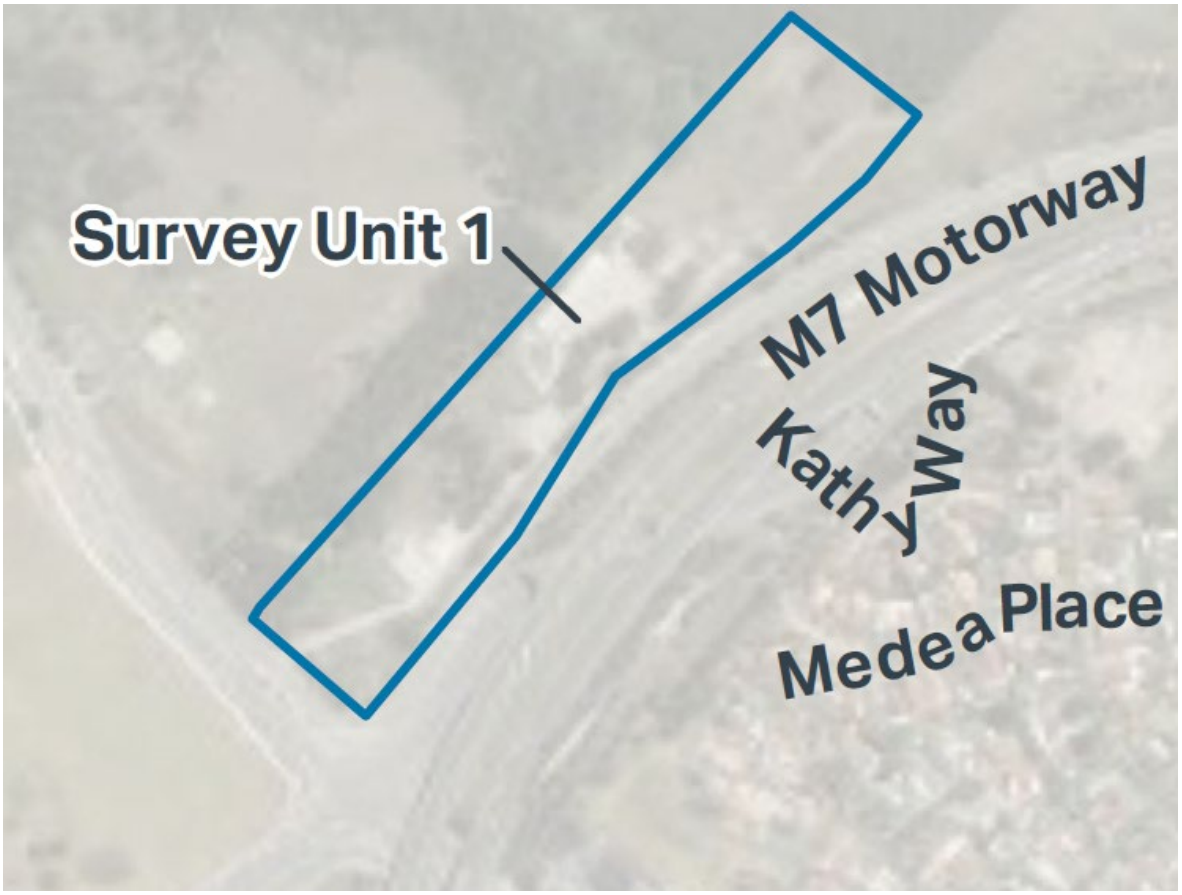


AHIMS Results in the study area: Source: Extract from Richmond Road Colebee, Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020

Extracts from Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022:

Archaeological potential

'Survey Unit 1' – Colebee (covers area of proposed Colebee compound site)



Survey Unit 1

Table 7-1: Survey units

Survey unit	Size (ha)	Proposed modification element(s)	LALC area	Approximate chainage	Reason for selection
1	3.46	Nil (was previously a potential compound ancillary facility site, which has been removed from proposed modification scope post-survey)	Deerubbin	27800	• Proximity to BNI and Plumpton Ridge • Presence of first order watercourse (albeit modified) • Potential for one or small 'pockets' of intact/relatively intact land

Survey unit 1 results confirming high disturbance and no Aboriginal heritage sites identified and no archaeological potential.

Table 7-2: Survey results

Survey unit	Landform unit(s) (pre-disturbance)	Area (m^2)	Visibility (%)	Exposure (%)	Effective Coverage (m^2)	Effective coverage (%)	Disturbance rating (observed)	Aboriginal site(s) identified	Plates
1	Hillslope; drainage depression	34,615	60	40	8,308	24	High	None	**Plate 1**, **Plate 2** and **Plate 3**

8th of February 2023

Project manager
Andrew Davidson
Development Manager,
Smart Motorways
Transport for NSW

Dear Andrew,

Preliminary assessment results for Western Distributor Smart Motorway (WDSM) – Addendum REF for Colebee construction compound based on Stage 1 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (the procedure).

The project, as described in the Stage 1 assessment checklist, was 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 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.
- All aspects of the project must remain inside the study zone at all times.

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 The Aboriginal Engagement Section, Greater Sydney Region, 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 Roads and Maritime Services' *Unexpected Heritage Finds Procedure*.

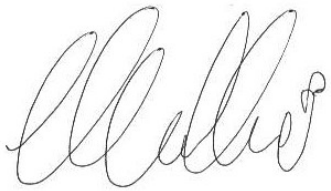
For further assistance in this matter do not hesitate to contact me.

Yours sincerely / faithfully

Roads and Maritime Services

Level 3, 27 Argyle Street, Parramatta NSW 2150
E corrine.quinlan@transport.nsw.gov.au | M 0447 978 380

13 22 13



Corrine Quinlan
Aboriginal Cultural Heritage Advisor – Greater Sydney Region

Stage 1 Roads and Maritime Services assessment

Procedure for Aboriginal cultural heritage consultation and investigation: Resource 3

Aim

The project manager (or their representative) must provide the information requested in this checklist to the regional Aboriginal cultural heritage adviser. This information will assist them in determining whether the project may affect Aboriginal cultural heritage in accordance with Stage 1 of the procedure.

Please **provide** this completed cover sheet, along with the required information, to your regional Aboriginal cultural heritage adviser.

Contact details for this project

Name of project:
Western Distributor Smart Motorway (WDSM) – Addendum REF for Colebee construction compound (P.0062474.04.001.006)

Project manager
Andrew Davidson
Development Manager, Smart Motorways
M: 0413 368 324
andrew.davidson3@transport.nsw.gov.au

Environmental officer undertaking/managing the environmental impact assessment
Hannah D'eau
Environment Officer
Easing Sydney's Congestion Program Office | Sydney Division
M: 0418 642 902
Hannah.Deau@transport.nsw.gov.au

Corporate communications officer, if any
Tyson Kinnane
Communication & Stakeholder Engagement Officer
Stakeholder and Community Engagement Division
tyson.kinnane@transport.nsw.gov.au

Date:
February 2023

Action	Status ☑
Item 1 Attach an overview of the project. The overview must include the known scope and extent of the proposed works; compound site requirements; access and movement of plant; re-location and/or provision of utilities; the location of noise walls, sedimentation basins, shared pathways, cycle ways, etc… Transport for NSW proposes to modify the Western Distributor Smart Motorway (WDSM) REF to include an additional construction compound site at Colebee. The proposed modification is shown figures in **Attachment A.** The compound would be required for the entire duration of the project works (approximately 18 months) and would be used for the following: •Storage of construction plant, materials, equipment, including but not limited to gantries, steel elements, ITS devices, and vehicles. •Site offices and amenities with an outdoor covered area. •Testing of Smart Motorways equipment with connection to TfNSW Transport Management Centre to simulate real life Smart Motorway operations. This includes about 150m of underboring to connect to nearby ITS systems on the M7 Motorway corridor. The proposal is located within Deerubbin LALC within Blacktown City Council LGA.	☑
Item 2 Attach a map/plan of the study area that clearly outlines the extent and scope of the project. The map/plan should also include topographical information where available. A map showing the location of the proposed compound site is included in **Attachment A.**	☑
Item 3 If land acquisition is required, provide details about this. No land acquisition is required. The land is owned by TfNSW and has been used as a compound site for transport activities previously.	☑
Item 4 Attach a brief description of current and past land use, where known. For example, the study area land is currently used as a car park/road reserve/farming/etc. and was formally used for a car park/road reserve/farming/etc… The location is within Transport owned land alongside the M7 Motorway corridor and is accessed from Richmond Road. The location has been used as a compound site for transport activities previously. This compound site is surrounded by M7 Motorway, bushland, and Richmond Road corridor.	☑
Item 5 Describe the timeframe for the project along with key milestones and deliverables.	☑

The delivery of the WDSM project is anticipated to take 18 months. The compound site would be used to support delivery of the project for the duration of works. The contractor has been awarded and are looking to setup compound operations in February 2023.	
Item 6 Please attach the results of the Office of Environment and Heritage's Aboriginal Heritage Information Management System **(AHIMS) Basic Search** - http://www.environment.nsw.gov.au/licences/WhatInformationCanYouObtainFromAHIMS.htm If required, please include the results of an **AHIMS Extensive Search**. These results should be plotted on a map/plan covering the study area. Refer to **Attachment B** for AHIMS search results presented in map format, and extensive search results. Results from literature review results for the same area are also included. The closest AHIMS record is a located in the verge of the M7 northbound on-ramp. This is about 50 metres south-east (see attached figures) from the access track for the compound site. There is no direct or indirect impacts from the proposed compound site use on any of the AHIMS results.	☑
Item 7 Attach the results of the following heritage searches relevant to the study area: Searches completed February 2023: • Native Title Register search (NNTT search) ✓ *LGA Search completed for Blacktown City Council and Liverpool City Council both produced one result for South Coast Claimants. Refer to **Attachment B.*** • State Heritage Inventory search ✓ *Search completed for on the online portal. Two nearby SHR results identified outside of the Compound area, Blacktown Native Institution and Colebee Nurragingy Land Grant. No nearby Aboriginal Places identified. Refer to **Attachment C**.* • Australian Heritage Database search ✓ *Searches completed for Blacktown City Council and LGA. Search results are attached. Refer to **Attachment D.*** ○ One result for Colebee 'indigenous place'. There is no content available in the link though this is likely to correspond with the Blacktown Native Institution and/or Colebee Nurragingy Land Grant sites listed on the state register. The proposal has no direct or indirect impact to these features.	
Item 8 Attach a copy of any heritage assessment (Aboriginal or non-Aboriginal) previously prepared for the study area/project? A draft version Addendum REF is being prepared for the proposed compound site and can be provided on request.	☑

Item 9 Attach a copy of any environmental impact assessment previously prepared for the study area/project? Literature review included recent heritage assessments completed for other Transport projects with overlapping study areas. Links to these reports are included in the reference list in the Attachment B. • Westlink M7 Widening, Transport for NSW, July 2022 • Richmond Road Colebee, Transport for NSW, July 2022	☑

List of attachments:

A. Proposal description and figures
B. AHIMS and Native Title Register search result including literature review results
C. State Heritage Inventory search result
D. Australian Heritage Database search results

Attachment A – Description of works

Description of works

Transport for NSW proposes to modify the Western Distributor Smart Motorway Review of Environmental Factors to include an additional construction compound site at Colebee.

The proposed modification is shown in Figures below. The compound would be required for the entire duration of the project works (approximately 18 months) and would be used for the following:

- Storage of construction plant, materials, equipment, including but not limited to gantries, steel elements, ITS devices, and vehicles.
- Site offices and amenities with an outdoor covered area.
- Testing of Smart Motorways equipment with connection to TfNSW Transport Management Centre to simulate real life Smart Motorway operations.

The site requires minor earthworks to connect to the nearby ITS network (see Figure). About 150 metres of directional drilling is proposed beneath the M7 Motorway to reach the nearest connection point in Dean Park. Excavation of small pits at tie in points would also be required.

Minor earthworks would also be required for site shed setup, installation and maintenance of erosion and sediment controls and tree protection measures, formalising vehicle access, and fencing.

One dead tree was identified for removal along the vehicle access track due to previous damage and for safe access. Existing trees would be retained with tree protection measures implemented.

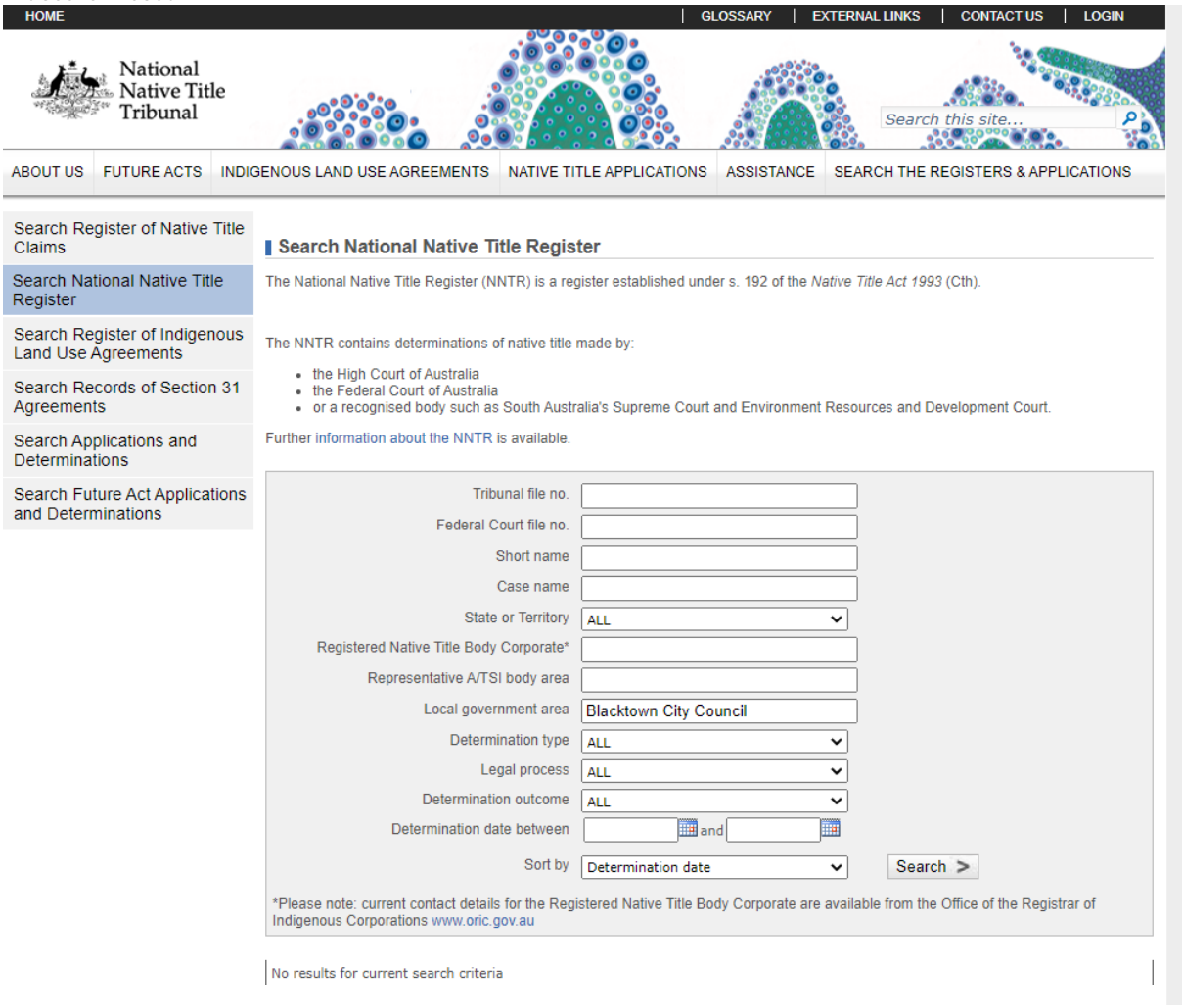

Main construction area
Underbore
Temporary ancillary works area
Construction vehicle access route
Richmond Rd
M7
Westlink M7
Kathy Way
Newnham St
Medea Pl
Cedarwood Grv
Dunward St
Paupach St
Dean Park
nearmap
Imagery © 2023 Nearmap, HERE
50 m

Figure 1: Nominated construction compound location. The modified project boundary is shown in yellow.

Figure 2: Potential construction compound layout plan

Attachment B – AHIMS and NNTT results

National Native Title Tribunal (NNTT) search tool results
Search date: 07 Feb 2023
Blacktown LGA
Nil search result.



AHIMS Search result including extensive search:

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Colebee - WDSM

Client Service ID : 749734

Roads and Maritime Services - Philip St Parramatta

Date: 01 February 2023

PO Box 3035
Parramatta New South Wales 2124
Attention: Hannah Shuttleworth

Email: hannah_shuttleworth@rta.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -33.7336, 150.8475 - Lat, Long To : -33.7291, 150.8552, conducted by Hannah Shuttleworth on 01 February 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Colebee - WDSM

Client Service ID : 749741

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-0422	Blacktown Plumpton	AGD	56	300660	6265230	Open site	Valid	Artefact : -	Open Camp Site	521,755,1018,98279,98280
	Contact	**Recorders**	Doctor.Jo McDonald						**Permits**	1596
45-5-2726	SYDNEY ORBITAL OPEN SCATTER 8 (SO-OS-8)	AGD	56	301170	6265520	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Neville Baker,Megan Mebberson						**Permits**	1397

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

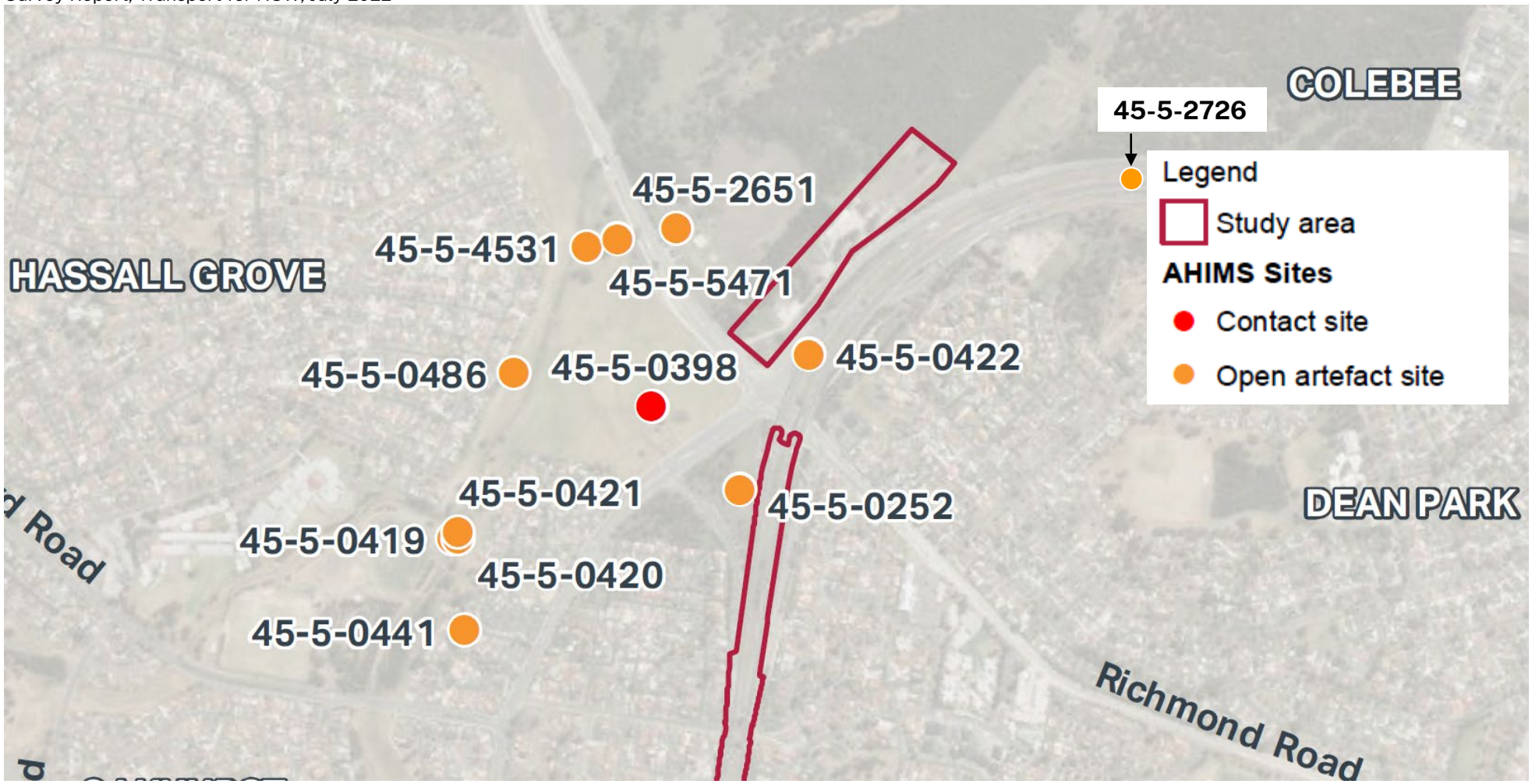
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

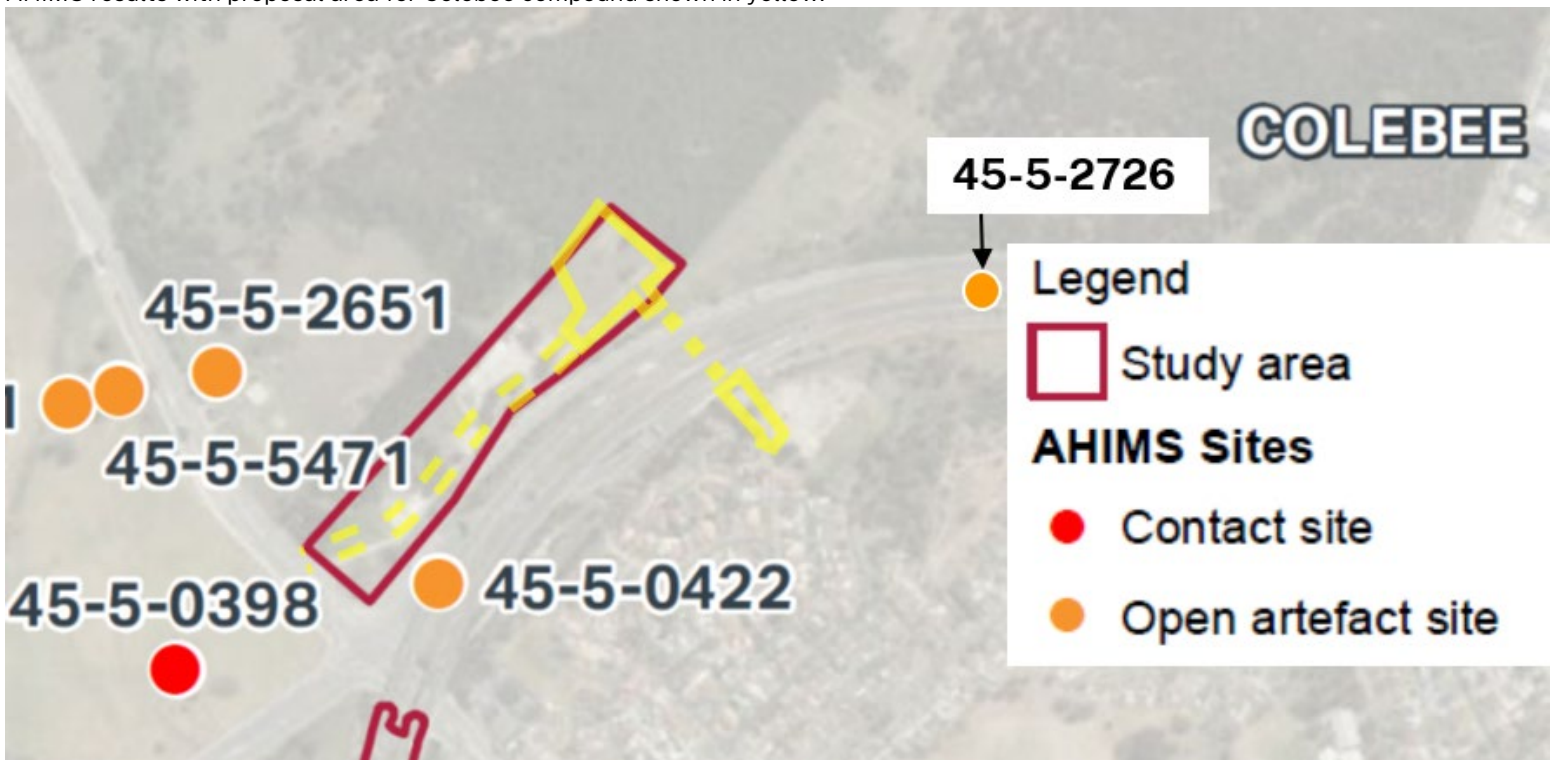
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 01/02/2023 for Hannah Shuttleworth for the following area at Lat, Long From : -33.7336, 150.8475 - Lat, Long To : -33.7291, 150.8552. Number of Aboriginal sites and Aboriginal objects found is 2

Literature review results AHIMS Results in the study area: Source: Extract from Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022

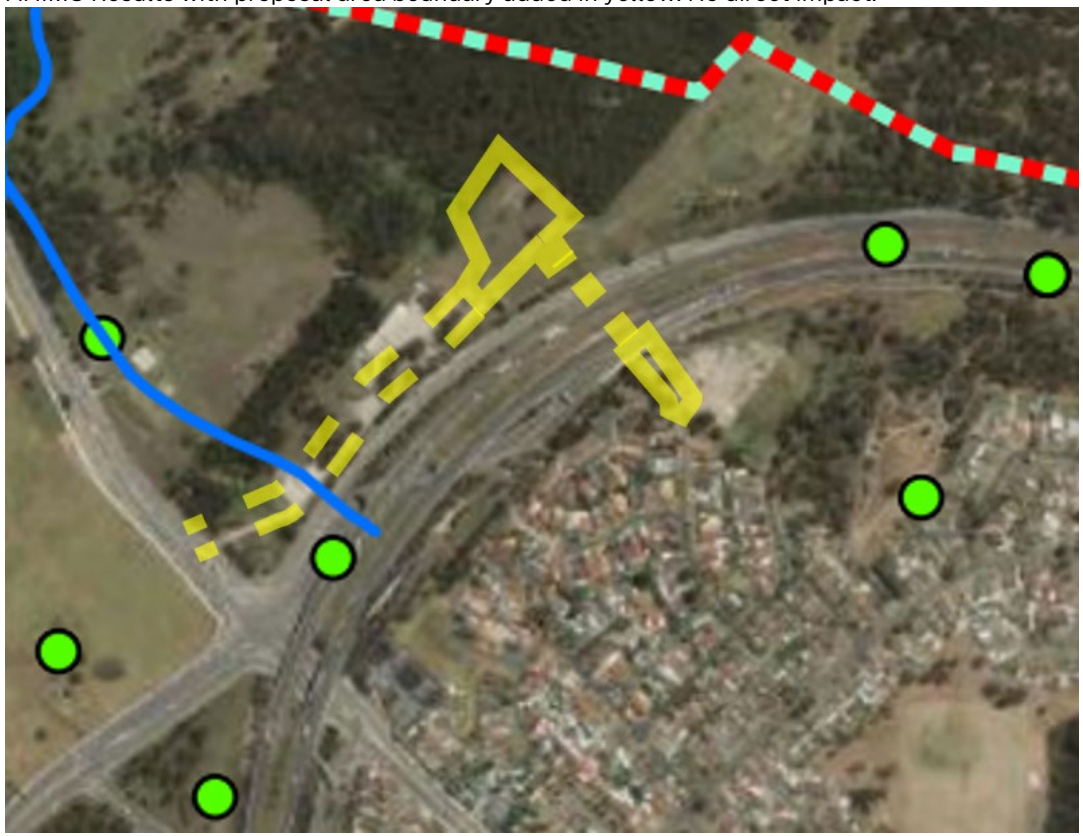


AHIMS results with proposal area for Colebee compound shown in yellow:



AHIMS Results in the study area: Source: Extract from Richmond Road Colebee, Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020

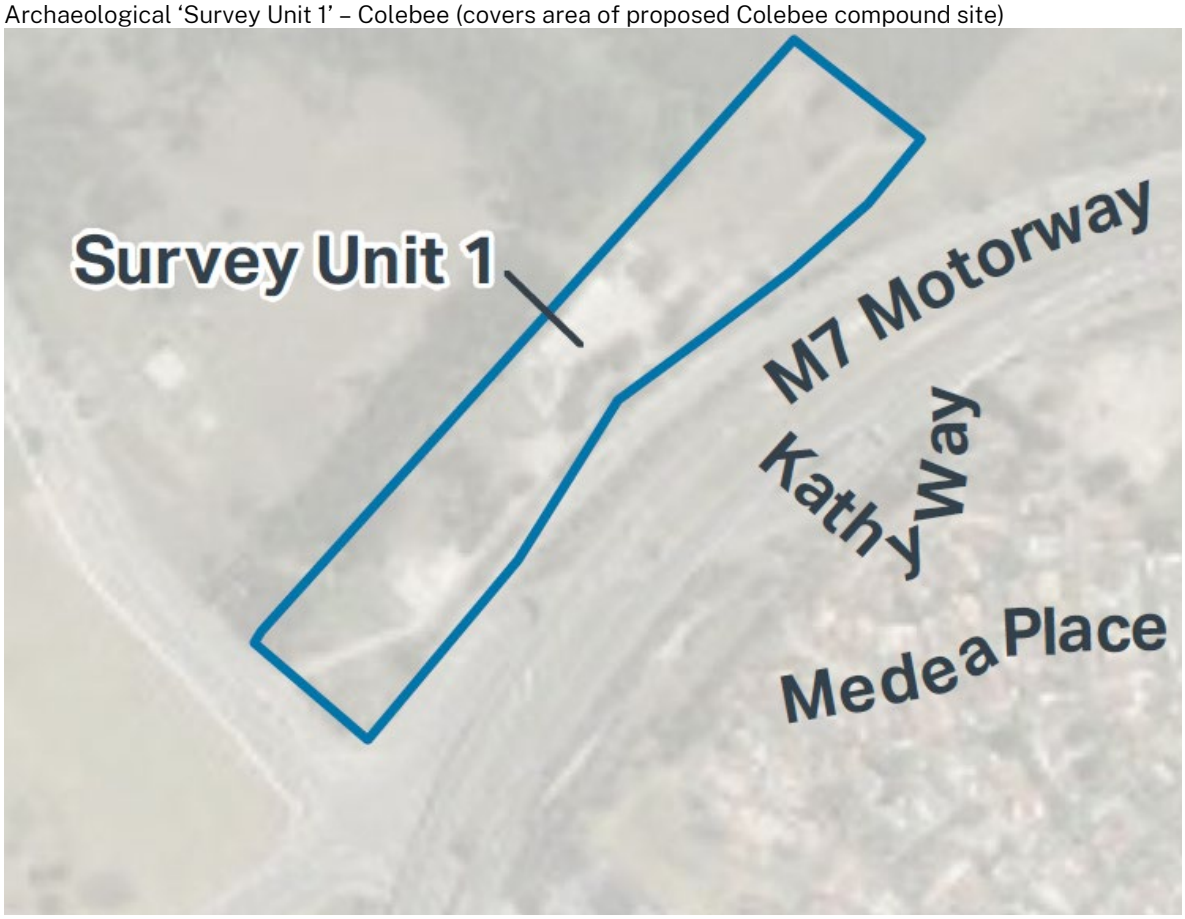
AHIMS Results with proposal area boundary added in yellow. No direct impact.



Archaeological potential

Extracts from Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022:

Archaeological 'Survey Unit 1' – Colebee (covers area of proposed Colebee compound site)



Survey Unit 1:

Table 7-1: Survey units

Survey unit	Size (ha)	Proposed modification element(s)	LALC area	Approximate chainage	Reason for selection
1	3.46	Nil (was previously a potential compound ancillary facility site, which has been removed from proposed modification scope post-survey)	Deerubbin	27800	• Proximity to BNI and Plumpton Ridge • Presence of first order watercourse (albeit modified) • Potential for one or small 'pockets' of intact/relatively intact land

Survey unit 1 results:

Table 7-2: Survey results

Survey unit	Landform unit(s) (pre-disturbance)	Area (m^2)	Visibility (%)	Exposure (%)	Effective Coverage (m^2)	Effective coverage (%)	Disturbance rating (observed)	Aboriginal site(s) identified	Plates
1	Hillslope; drainage depression	34,615	60	40	8,308	24	High	None	**Plate 1**, **Plate 2** and **Plate 3**

Results confirm high disturbance and no Aboriginal heritage sites identified and no archaeological potential.

References

- Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022

  https://www.planningportal.nsw.gov.au/major-projects/projects/m7-motorway-mod-6-widening

- Westlink M7 Widening, Non Aboriginal Heritage Impact Assessment, Transport for NSW, July 2022

  https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-663-MOD-6%2120220801T074244.226%20GMT

- Richmond Road Colebee, Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020

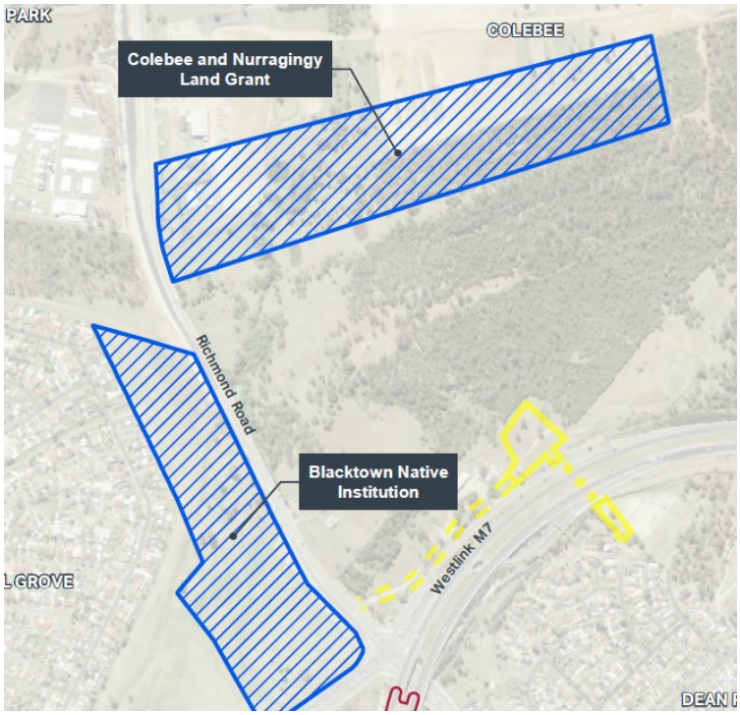
  https://www.blacktown.nsw.gov.au/files/assets/public/planning-neighbour-notifications/da-20-02092/pr146915_richmond-road-colebee_final_pan-57047.pdf

- Richmond Road Colebee, Non-Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020, file://corp.trans.internal/prof/UserProfiles/deauh/Documents/WDSM%20Smart%20Motorways/colebee/2020-10-28_80221003_Boundary-Fence-EIA_ver2_PAN-57047.pdf

Attachment C – SHR database search results

Searched February 2023.

State Heritage Register items in the surrounding area which also have Aboriginal cultural heritage significance. No direct or indirect impacts. No identified 'Aboriginal place' results.



Colebee and Nurragingy Land Grant
https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5056189

Blacktown Native Institution
https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5051312

Attachment D – Australian Heritage database search results

One result for Colebee 'indigenous place'. There is no content available in the link though this is likely to correspond with the Blacktown Native Institution and/or Colebee Nurragingy Land Grant sites listed on the state register. The proposal has no direct or indirect impact to these features.

Search Results

20 results found.

Blacktown Native Institution Site Richmond Rd	Oakhurst, NSW, Australia	(Nomination now ineligible for PPAL) National Heritage List
Former ADI Site The Northern Rd	Llandilo, NSW, Australia	(Nomination now ineligible for PPAL) National Heritage List
Grantham Poultry Research Station (former) Seven Hills Rd Sth	Seven Hills, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Colebee, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place	Kellyville, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Llandilo International Transmitting Station Stoney Creek Rd	Shanes Park, NSW, Australia	(Place removed from CHL) Commonwealth Heritage List
Native Institution Richmond Rd	Oakhurst, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Old Boiler House Blacktown Rd	Blacktown, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Old Windsor Road Section Old Windsor Rd	Kellyville, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Prospect Reservoir Area	Prospect, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Rouse Hill House Garden Windsor Rd	Rouse Hill, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Rouse Hill House including Stables and Outbuildings Windsor Rd	Rouse Hill, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Schofields Aerodrome (former) Eastern Rd	Schofields, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Shale Woodland Llandilo Stony Creek Rd	Shanes Park, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Shale Woodland Llandilo Stony Creek Rd	Shanes Park, NSW, Australia	(Listed place) Commonwealth Heritage List
Site of Veteran Hall Reservoir Rd	Prospect, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Bartholomews Anglican Church (former) Prospect Hwy	Prospect, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
The Rooty Hill Rooty Hill Rd South	Rooty Hill, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Western Sydney Shale Woodland St Marys Forrester Rd	St Marys, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Western Sydney Shale Woodland St Marys Forrester Rd	St Marys, NSW, Australia	(Ineligible Place) Commonwealth Heritage List

Report Produced: Tue Feb 7 12:03:46 2023

Place Details

new search edit search

Send Feedback

Indigenous Place, Colebee, NSW, Australia

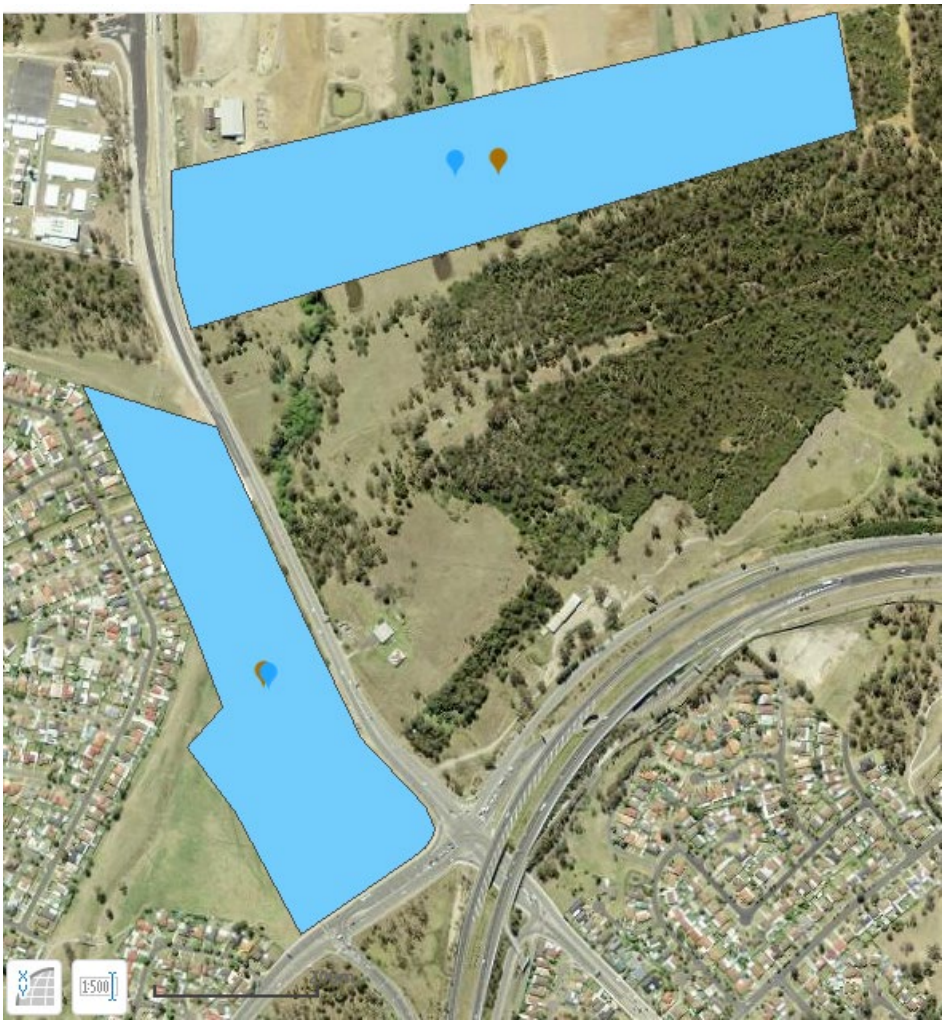
Photographs	None
List	Register of the National Estate (Non-statutory archive)
Class	Indigenous
Legal Status	Indicative Place
Place ID	18986
Place File No	1/14/005/0009

Statement of Significance Not Available
Official Values Not Available
Description Not Available
History Not Available
Condition and Integrity Not Available
Location Not Available
Bibliography Not Available

Report Produced Tue Feb 7 12:04:12 2023

Appendix G – Non-Aboriginal Heritage search results

State Heritage Inventory portal search result:



Colebee and Nurragingy Land Grant
https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5056189

Blacktown Native Institution
https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5051312

Extracts from Westlink M7 Widening, Aboriginal Cultural Heritage, Stage 2 PACHCI - Archaeological Survey Report, Transport for NSW, July 2022:

SHR Listed area:

Source: Extract from Richmond Road Colebee, Aboriginal Heritage Impact Assessment, Transport for NSW, October 2020

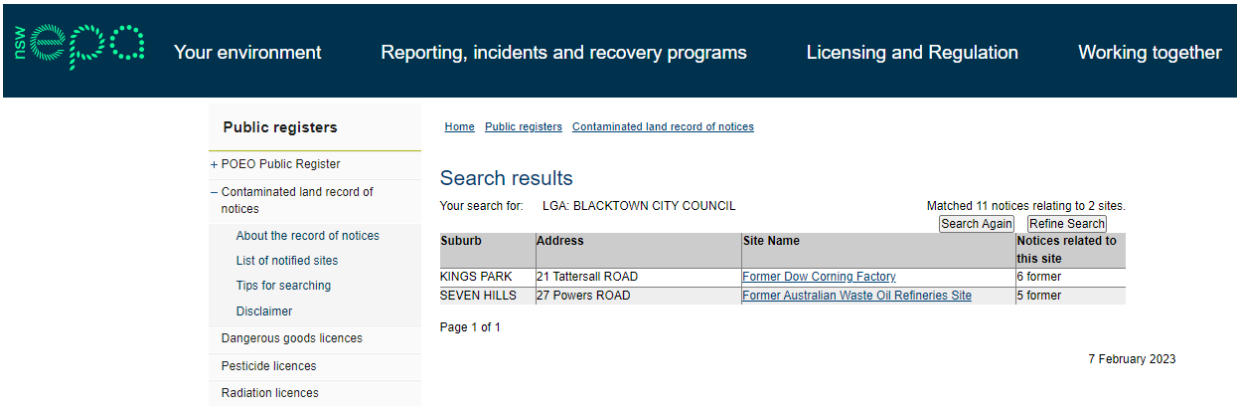
Appendix H – Contaminated lands register search results

NSW EPA Contaminated lands register

LGA search: Blacktown City Council

Search date 7 Feb 2023

No results in the study area.



Appendix I – Biodiversity database results

Biodiversity Offset lands:

This area in red is the biodiversity offset area from original M7 construction. This confirms that the proposal does not encroach on this area (this also corresponds with area zoned for environmental conservation in the Growth Centres SEPP) Source: Richmond Road Colebee, TfNSW 2020]

SEED PORTAL SEARCH

Threatened vegetation communities and BioNet records

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: 15-Feb-2023

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	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	44
Listed Migratory Species:	14

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:	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:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	21
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

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
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically Endangered	Community likely to occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within 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
BIRD		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
FISH		

Scientific Name	Threatened Category	Presence Text
Macquaria australasica		
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Prototroctes maraena		
Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
FROG		
Heleioporus australiacus		
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
[Acacia bynoeana](#) Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat likely to occur within area
[Acacia pubescens](#) Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat may occur within area
[Allocasuarina glareicola](#) [21932]	Endangered	Species or species habitat likely to occur within area
[Cynanchum elegans](#) White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
[Genoplesium baueri](#) Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area
[Haloragis exalata subsp. exalata](#) Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat may occur within area
[Micromyrtus minutiflora](#) [11485]	Vulnerable	Species or species habitat likely to occur within area
[Persicaria elatior](#) Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
[Persoonia hirsuta](#) Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat likely to occur within area
[Persoonia nutans](#) Nodding Geebung [18119]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat known to occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat likely to occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area
Pterostylis saxicola Sydney Plains Greenhood [64537]	Endangered	Species or species habitat may occur within area
Pultenaea parviflora [19380]	Vulnerable	Species or species habitat known to occur within area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		

Scientific Name	Threatened Category	Presence Text
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine 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
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Warragamba Dam Raising Project	2017/7940	Controlled Action	Assessment Approach
Not controlled action			
18-hole, golf course development, west of Eastern Creek	2004/1757	Not Controlled Action	Completed
Clearance of 6.3ha of Cumberland Plain Woodland for industrial subdivision cnr of Old Walgrove and W	2004/1445	Not Controlled Action	Completed
Concrete Batching Plant and Associated Facilities	2005/2067	Not Controlled Action	Completed
Conrad Road Residential Subdivision	2001/320	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Electricty Substation at Old Wallgrove Road	2005/2220	Not Controlled Action	Completed
Erection of a dwelling and associated access and infrastructure, 19 Tidswell Str	2003/1078	Not Controlled Action	Completed
gas main installation from Eastern Creek to Erskine Park	2005/2235	Not Controlled Action	Completed
hazard reduction burn	2003/1181	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Mountain View Classrooms Construction	2001/306	Not Controlled Action	Completed
Residential development at Doonside Crescent Woodcroft, Blacktown LGA	2004/1378	Not Controlled Action	Completed
Residential development within 2.08ha, Fyfe Road	2005/1966	Not Controlled Action	Completed
Residential Subdivision	2001/304	Not Controlled Action	Completed
Residential subdivision Lot 1005 Conrad Road	2003/1054	Not Controlled Action	Completed
Rezoning & Disposal of Quakers Hill property	2001/281	Not Controlled Action	Completed
Riverstone Integrated Water Services Proposal	2007/3216	Not Controlled Action	Completed
Second Ponds Creek urban development	2004/1905	Not Controlled Action	Completed
Second Ponds Creek Urban Development of Precinct 1b	2005/1991	Not Controlled Action	Completed
Wonderland Business Park Precinct, Stage 1, Lot D1	2004/1626	Not Controlled Action	Completed
Not controlled action (particular manner)			
Replacement of flows with recycled water	2006/3050	Not Controlled Action (Particular Manner)	Post-Approval

Bioregional Assessments

SubRegion	BioRegion	Website
Sydney	Sydney Basin	BA website

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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NSW GOVERNMENT