EnergyCo

Central-West Orana Renewable Energy Zone Transmission project

Amendment Report

Appendix I: Noise and Vibration Impact Assessment Addendum

March 2024

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EnergyCo

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Noise and vibration impact assessment addendum

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WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Summary

The potential noise and vibration impacts of the project during construction and operation were assessed in Technical paper 9 of the Environmental Impact Statement (EIS). The key findings of this assessment was summarised in chapter 15 (Noise and vibration) of the EIS. Additional assessment has been undertaken to identify changes to potential noise and vibration impacts associated with the amended project. The findings of the additional assessment are reported in this section.

Assessment approach

A desktop assessment was carried out to assess the amended project. The same assessment methodology detailed in section 2 of Technical paper 9 was applied for the assessment of noise and vibration impacts for the amended project. The assessment of the proposed amendments and refinements included:

- revised assessment of the potential noise and vibration impacts to sensitive receivers as a result of updates to the proposed construction and operational study area
- additional construction and operational scenarios not previously assessed in Technical paper 9, including revised construction traffic, new microwave repeater sites, and local road upgrades.

Existing environment

The existing environment in relation to noise and vibration as assessed in Technical paper 9 remains relevant to assess the impacts of the amended project, with the exception of:

- an increase to the study area to include the proposed microwave repeater sites
- the addition and/or clarification of 12 sensitive receivers.

Assessment of potential impacts

Construction

There would be minor changes to the assessed noise and vibration impacts for the amended project when compared to the exhibited project. The number of highly noise affected properties has decreased from the assessment detailed in Technical paper 9 (from eight to one), whilst the number of impacted properties during most work stages has increased by two properties due to the inclusion of additional sensitive receivers as part of this addendum assessment.

Refinements to the project alignment, and the classification of some heritage receivers, has resulted in minor changes to construction vibration impacts. Some identified heritage receivers now have the potential to be impacted by unmitigated construction vibration, while impacts on residential structures remains largely unchanged. The implementation of recommended vibration mitigation measures would eliminate these potential impacts to heritage structures from occurring as a result of the amended project.

The construction traffic noise impact on sensitive receivers along Ulan-Wollar Road is expected to increase slightly as a result of refinements to expected construction traffic numbers.

Operation

The overall number of impacted receivers from operational noise from the project is expected to decrease slightly as a result of the project amendments and refinements. With the relocation of switching station M7, no operational noise impacts are now predicted to result in relation to this element of the project. Similarly, with the amendments and refinements to the transmission line alignment, the number of residential receivers impacted by transmission line corona noise has decreased to one. The addition of switching station E5, and the microwave repeater sites are not predicted to result in any operational noise impacts.

Updated or additional mitigation measures

Minor updates have been made to the proposed management and mitigation measures originally contained in EIS Technical paper 9 to improve and provide greater clarity of actions required in the implementation of the measures.

1 Introduction

1.1 Background

The Energy Corporation of NSW (EnergyCo) is seeking approval for the construction and operation of new electricity transmission infrastructure and new energy hubs and switching stations that are required to connect energy generation and storage projects within the Central West Orana REZ to the existing electricity network.

The original Central-West Orana REZ declaration provided for an initial intended network capacity of three gigawatts. The NSW Government amended the REZ declaration in December 2023 to increase the intended network capacity to six gigawatts, which would allow for more renewable energy from solar, wind and storage projects to be distributed through the NSW transmission network.

As the existing transmission network in the Central-West Orana region is not capable of transferring the amount of electricity expected to be generated from new renewable energy generation and storage projects in the Central-West Orana REZ, the development of new transmission infrastructure is required to provide additional electricity transfer capacity in the region to connect these projects to the National Energy Market (NEM).

1.2 The project (as exhibited)

The project as described in the publicly exhibited EIS (hereafter referred to as the 'exhibited project') included the following features:

- a new switching station (the New Wollar Switching Station), located at Wollar to connect the project to the existing 500 kilovolts (kV) transmission network
- around 90 kilometres of twin double circuit 500 kV transmission lines and associated infrastructure to connect the two energy hubs to the existing NSW transmission network via the New Wollar Switching Station
- energy hubs at Merotherie and Elong Elong (including a potential battery storage option at the Merotherie Energy Hub) to connect renewable energy generation projects within the Central West Orana REZ to the 500 kV network infrastructure
- around 150 kilometres of single circuit, double circuit and twin double circuit 330 kV transmission lines, to connect renewable energy generation projects within the Central-West Orana REZ to the two energy hubs
- thirteen switching stations along the 330 kV network infrastructure at Cassilis, Coolah, Leadville, Merotherie, Tallawang, Dunedoo, Cobbora and Goolma, to transfer the energy generated from the renewable energy generation projects within the Central-West Orana REZ onto the project's 330 kV network infrastructure
- underground fibre optic communication cables along the 330 kV and 500 kV transmission lines between the energy hubs and switching stations
- construction of microwave repeater sites at locations along the alignment, as well as off the alignment at Botobolar, to provide a communications link between the project and the existing electricity transmission and distribution network
- a maintenance facility within the Merotherie Energy Hub to support the operational requirements of the project
- establishment of new, and upgrade of existing access tracks for transmission lines, energy hubs, switching stations and other ancillary works areas within the construction area (such as temporary waterway crossings, laydown and staging areas, earthwork material sites with crushing, grinding and screening plants, concrete batching plants, brake/winch sites, site offices and workforce accommodation camps)

- property adjustment works to facilitate access to the transmission lines and switching stations. These works include the relocation of existing infrastructure on properties that are impacted by the project
- utility adjustments required for the construction of the transmission network infrastructure, along with other adjustments to existing communications, water and wastewater utilities. This would include adjustments to existing Transgrid and Essential Energy transmission infrastructure. This includes adjustments to Transgrid's 500 kV transmission lines 5A3 (Bayswater to Mount Piper) and 5A5 (Wollar to Mount Piper) to provide a connection to the existing NSW transmission network, including new transmission line towers along the Transgrid network along the frontage of the New Wollar Switching Station, and other locations where there is an interface with Transgrid's network.

1.3 The project (as amended)

In response to community, government and stakeholder engagement, consideration of submissions received during EIS exhibition, and ongoing development of the design and construction methodology for the project, EnergyCo is proposing a number of amendments and refinements to the exhibited project. The amendments and refinements to the exhibited project also confirm certain elements of the project that were highlighted as options or opportunities in the EIS.

The proposed amendments to the project as described in the EIS (inclusive of the proposed alignment and other refinements and clarification to the exhibited project) are collectively referred to in this noise and vibration impact assessment addendum as the 'amended project'.

The key proposed amendments and refinements of the amended project in comparison to the exhibited project are summarised in Table 1-1. It is noted that the table only includes features of the exhibited project that are subject to amendment or refinement as part of the Amendment Report.

Further information about the proposed amendments and refinements is provided in Chapter 3 of the Amendment Report. A detailed description and updated maps of the amended project are provided in Appendix A (Updated project description) and Appendix B (Updated project description mapping) of the Amendment Report respectively.

Table 1-1 Summary of key amendments and refinements to the exhibited project

Project feature	Summary of exhibited project	Summary of amendment/refinement
Construction area	The area identified in the exhibited project that would be directly impacted by the construction of the project, including (but not limited to) transmission towers and lines, brake and winch sites, access roads to the switching stations and energy hubs, access tracks, energy hubs, switching stations, communications infrastructure, workforce accommodation camps, construction compounds, laydown and staging areas.	Changes to the construction area are proposed due to changes to the exhibited project alignment, and the provision of additional project components, including a 330 kV switching station and associated transmission line, microwave repeater sites, access tracks and brake and winch sites.

Project feature	Summary of exhibited project	Summary of amendment/refinement
Operation area	The area identified for the exhibited project that would be occupied by permanent components of the project and/or maintained, including transmission line easements, transmission lines and towers, energy hubs, switching stations, communications infrastructure, access roads to the switching stations and energy hubs, maintenance facilities and permanent access tracks to the easements.	Changes to the operation area are proposed due to changes to the exhibited project alignment, and the provision of additional project components, including a 330 kV switching station and associated transmission line, microwave repeater sites and access tracks.
500 kV and 330 kV transmission line alignments	— A new switching station (the New Wollar Switching Station), located at Wollar to connect the project to the existing 500 kV transmission network. — Around 90 kilometres of twin double circuit 500 kV transmission lines and associated infrastructure to connect two energy hubs to the existing NSW transmission network via the New Wollar Switching Station. — Energy hubs at Merotherie and Elong Elong (including a potential battery storage option at the Merotherie Energy Hub) to connect renewable energy generation projects within the Central-West Orana REZ to the 500 kV network infrastructure. — Around 150 kilometres of single circuit, double circuit and twin double circuit 330 kV transmission lines, to connect renewable energy generation projects within the Central-West Orana REZ to the two energy hubs.	As per the exhibited project with the following changes: — changes to the 500 kV and 330 kV transmission line alignments (as detailed in the Amendment Report) — removal of potential battery storage option at the Merotherie Energy Hub.
Switching stations	Thirteen switching stations along the 330 kV network infrastructure.	Fourteen switching along the 330 kV network infrastructure, which includes relocation five 330 kV switching stations and provision of an additional 330 kV switching station.
Communication cables	Underground fibre optic communication cables along the 330 kV and 500 kV transmission lines between the energy hubs and switching stations.	Underground fibre optic communication cables along the amended alignments for the 330 kV and 500 kV transmission lines between the energy hubs and switching stations.

Project feature	Summary of exhibited project	Summary of amendment/refinement
Microwave repeater sites	Construction of microwave repeater sites at locations along the alignment, as well as off the alignment at Botobolar, to provide a communications link between the project and the existing electricity transmission and distribution network.	— A new antenna pole or tower would be established at an existing microwave repeater site at Botobolar, as described in the exhibited project. — The new microwave repeater site along the 500 kV New Wollar Switching Station—Merotherie Energy Hub connection, as described in the exhibited project, would be provided along the southern side of the 500 kV transmission line easement, just east of Blue Springs Road, Cope. — Additional communications microwave equipment (microwave antennas) is also proposed at two existing microwave repeater sites outside of the operation area, at Baldy Peak in Kandos and Magpie Hill in Galambine.
Construction methods and facilities	Construction compounds to support the construction of the project would be located at: — New Wollar Switching Station — Merotherie Energy Hub — Elong Elong Energy Hub.	— It is proposed to provide a satellite construction compound at the Neeleys Lane workforce accommodation camp, within the construction area of the exhibited project. The construction compound would include materials storage and laydown facilities — An additional crushing, grinding and screening plant is proposed at switching station M1.
Access roads and access tracks	Establishment of new, and upgrade of existing access tracks for transmission lines, energy hubs, switching stations and other ancillary works areas within the construction area (such as temporary waterway crossings, laydown and staging areas, earthwork material sites with crushing, grinding and screening plants, concrete batching plants, brake/winch sites, site offices and workforce accommodation camps).	— Minor changes are proposed to the alignment of access roads to the energy hubs, New Wollar Switching Station and switching station E2. — Minor changes to the alignments of access tracks and additional access tracks (some of which are existing access tracks) are proposed at various locations.
Property adjustments	Property adjustment works to facilitate access to the transmission lines and switching stations. These works include the relocation of existing infrastructure on properties that are impacted by the project.	Property adjustment works to facilitate access to the transmission lines and switching stations due to changes to the exhibited project alignment. These works include the relocation of existing infrastructure on properties that are impacted by the amended project.

Project feature	Summary of exhibited project	Summary of amendment/refinement
Local road and intersection upgrades	The following road and intersection upgrades are required to ensure safe access to construction sites and the movement of oversize and overmass (OSOM) equipment for the project: — Merotherie Road — Spring Ridge Road — Spring Ridge Road/Dapper Road intersection — Golden Highway/Spring Ridge Road intersection — Neeleys Lane/Ulan Road intersection — Golden Highway/Ulan Road intersection — Merotherie Energy Hub Access Road/Merotherie Road intersection — Merotherie Road/Golden Highway intersection. The EIS further noted that EnergyCo may assess and determine the above local road, bridge and intersection upgrades under Division 5.1 of the EP&A Act to allow these time critical works to be determined and commence construction prior to the determination of the CSSI application.	Refinements to the local road, bridge and intersection upgrades, including: — minor changes to the extent and/or alignment of the local road, bridge and intersection upgrades, including (but not limited to): — installing a new bridge on Merotherie Road at its crossing of the Talbragar River to replace the existing crossing — installing a new bridge on Spring Ridge Road at its crossing of Laheys Creek to replace the existing causeway — upgrading drainage infrastructure — additional works, including: — upgrading Neeleys Lane from the Neeleys Lane/Ulan Road intersection to the entrance of the Neeleys Lane workforce accommodation camp. EnergyCo no longer intends to assess and determine these local road, bridge and intersection works under Division 5.1 of the EP&A Act, and would determine these works as part of the CSSI application.

1.4 Statutory context

Environmental planning approval for the project is required in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act). The project is also a controlled action and would therefore requires Commonwealth assessment and approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Sections 5.12 and 5.13 of the EP&A Act provide for the declaration of State significant infrastructure (SSI) and Critical State significant infrastructure (CSSI). On 23 November 2020, the Minister for Planning made the Environmental Planning and Assessment Amendment (Central-West Orana Renewable Energy Zone Transmission Order) 2020. The Order declares the whole Central-West Orana REZ Transmission project to be CSSI.

This section describes the legislation and policy relevant to the assessment of noise and vibration impacts.

1.4.1 Legislation

1.4.1.1 Environmental Planning and Assessment Act 1979

The project was declared as Critical State significant infrastructure (CSSI) under section 5.13 of the (NSW) EP&A Act and by amendment to Schedule 5 of the NSW State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) with the addition of clause 23. As a CSSI project, the project requires approval from the NSW Minister for Planning and Public Spaces under Division 5.2, Part 5 of the EP&A Act.

An EIS was prepared to support EnergyCo's application for approval of the project in accordance with the requirements of Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS was placed on public exhibition by the NSW Department of Planning, Housing and Infrastructure and Environment (DPHI – formerly Department of Planning (DPE)) for a period of 42 days, commencing 28 September 2023 and concluding on 8 November 2023. In accordance with clause 179(2) of the EP&A Regulation, an application may, with the approval of the Planning Secretary, be amended at any time before the application is determined.

1.4.1.2 Environment Protection and Biodiversity Conservation Act 1999

A referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was also submitted on 2 February 2023, with the project subsequently declared to be a controlled action on 2 March 2023 requiring approval from the Australian Minister for the Environment and Water under the EPBC Act. The project would therefore be assessed in accordance with the NSW Assessment Bilateral Agreement under Part 9 of the EPBC Act.

In accordance with section 156A of the EPBC Act, a person may submit an application requesting a variation of the proposal described in the original EPBC referral.

1.4.2 Policies standards and guidelines

The proposal is Critical State significant infrastructure and is subject to approval by the NSW Minister for Planning and Public Spaces under the EP&A Act.

The Planning Secretary's Environmental Assessment Requirements (SEARs) have been issued for the project. As relevant to [discipline], these require *"an assessment of the construction, operational and road noise, vibration and blasting impacts of the project, including any corona discharge noise"*. This has been undertaken with reference to relevant standards and guidelines.

Impacts on noise and vibration from construction and operation of the project have been assessed in accordance with the relevant legislation and guidelines as they apply to these parameters. Key guidelines considered as part of this assessment included:

Table 1-2 Relevant legislation and policy

Acoustic aspect	Description	Relevant assessment guidelines
Airborne noise	Construction noise	— Interim Construction Noise Guideline (ICNG) (DECCW, 2009)
	Construction traffic noise	— NSW Road Noise Policy (RNP) (DECCW, 2011)
	Sleep disturbance from construction noise	— Interim Construction Noise Guideline (DECCW, 2009) — NSW Road Noise Policy (DECCW, 2011)
	Operational industrial noise	— Noise Policy for Industry (NPfI) (EPA 2017)
	Sleep disturbance from operational noise	— Noise Policy for Industry (EPA 2017)
	Existing ambient, background and industrial noise levels	— Noise Policy for Industry (EPA, 2017) — *Australian Standard AS 1055: Description and measurement of environmental noise* — *ISO 8297 – Determination of Sound Power Levels of Multisource Industrial Plants for Evaluation of Sound Pressure Levels in the Environment (Engineering Method)*

Acoustic aspect	Description	Relevant assessment guidelines
Vibration	Human comfort	— Assessing Vibration: A Technical Guideline (AVTG) (DEC, 2006)
	Construction vibration effect on structures (structural or cosmetic damage)	— *German Standard DIN 4150-3: Structural Vibration – effects of vibration on structures* — *Australian Standard AS2187.2-2006 Explosives – Storage, Transport and Use provides guidance for the assessment of cosmetic damage to buildings caused by vibration* — *British Standard BS 7385-2:1993 – Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration (1993)*
Blasting	Blasting overpressure and ground vibration	— ANZECC Technical Basis for Guidelines to Minimise Annoyance Due to Blast Overpressure and Ground Vibration — *AS 2187.2 Explosives – Storage, Transport and use Part 2: Use of Explosives*
Management	Mitigation and management of construction noise and vibration issues	— Interim Construction Noise Guideline (DECCW, 2009) — Noise Policy for Industry (EPA, 2017)
Cumulative impacts	Project-level cumulative impacts related to State significant projects	— Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2022)

1.5 Purpose and structure of this noise and vibration impact assessment addendum

The purpose of this noise and vibration impact assessment addendum is to assess the potential impacts of the project amendments and refinements for the amended project. This report considers whether the proposed amendments and refinements would result in any changes to the predicted noise and vibration impacts described in the EIS for the exhibited project, and whether any changes to the mitigation measures are required.

This report is to be read in conjunction with the EIS for the exhibited project and specifically Technical paper 9 – Noise and vibration (Technical paper 9).

The structure and content of this noise and vibration impact assessment addendum is as follows:

- Chapter 1 – Introduction: Provides an introduction to this noise and vibration impact assessment addendum and a brief overview of the statutory context that apply to the amended project (this chapter).
- Chapter 2 – Methodology: Outlines the methodology adopted for this noise and vibration impact assessment addendum.
- Chapter 3 –Construction assessment: Describes the potential construction impacts associated with the amendments and refinements as a result of the amended project.
- Chapter 4 – Operational assessment: Describes the potential operational impacts associated with the amendments and refinements as a result of the amended project.
- Chapter 5 – Management and mitigation measures: Details recommended mitigation and management measures to minimise the noise and vibration impacts (including any updated or new mitigation and management measures) as a result of the amended project.

The appendices to this paper are:

- Appendix A – Updated study area and sensitive receivers
- Appendix B – Updated construction noise assessment
- Appendix C – Updated operational noise assessment.

2 Methodology

2.1 Overview

Except where noted in the following sections, the assessment has adopted the same methodology as outlined in section 2 of Technical paper 9.

2.2 Existing environment

2.2.1 Study area

Minor changes were required to be made to the study area, on order to include areas containing amended microwave repeater sites which are located outside of the original study area. The updated study area is presented graphically in Appendix A.

2.2.2 Noise and vibration sensitive receivers

Initial sensitive receivers with the potential to be impacted by noise and vibration during construction and operation of the project were identified within Technical paper 9. The amendments have identified an additional 16 new or reclassified sensitive receivers as follows:

- Nine new or reclassified residential properties comprising:
  - two residential properties in Noise Catchment Area (NCA) 4 The first property is located off Ulan Road, approximately 500 m from the Neeleys Lane accommodation camp and construction compound. This residence was not initially identified as a noise sensitive receiver in the EIS and is identified within this addendum assessment as ID 1139. The second property is located at 1595 Cope Road, Cope (ID371) which was originally misclassified as a non-sensitive receiver, and has subsequently been assessed as a residential receiver
  - two new receivers in NCA 5, (ID 1491 and 1492), as a result of the expanded study area to encompass the Merotherie Road upgrade
  - one residential house in NCA 6, located at 121 Cliffdale Road, approximately 500 m to the west of the amended transmission line easement. This receiver was referred to in section 2.2.3.1 of Technical paper 9 as a newly constructed house, which has subsequently allocated receiver ID 1487
  - four new residential properties to the northwest, west southwest and northeast of the proposed Botobolar microwave repeater site, which have been allocated receiver ID numbers 1488, 1489,1490 and 1493 respectively).
- Dapper fire station, located to north of Elong Elong energy hub, is an existing facility that was not assessed in Technical paper 9, which has now been assessed as an industrial building (ID 726).
- Four cemeteries have been identified throughout the study area as noise and vibration sensitive receivers, including Wollar Anglican Cemetery (ID 39), Wollar Cemetery (ID 62), Ulan Cemetery (ID 265), and Uarbry Cemetery (ID 1241). These cemeteries were not originally identified as sensitive receivers in the EIS, and have subsequently been considered in this addendum.
- Two non-Aboriginal heritage structures (being the Spir Road Cottage and shed identified as CWO-22-HH08 in EIS Technical paper 6 (Non-Aboriginal heritage)) are located near the transmission easement in NCA 3 on Spir Road, which are considered as vibration sensitive receivers.

The non-Aboriginal heritage items outlined above are not considered noise sensitive as it is understood they are not inhabited and will be assessed for potential vibration impacts only.

These receivers have been added to the updated construction and operation noise and vibration assessments in Chapters 3 and 4.

2.3 Construction noise assessment methodology

2.3.1 Construction noise

Minor changes to the construction methodology for the project have been made, including the use of drones (in addition to helicopters) for the stringing of conductors during the construction of the transmission lines, construction of new microwave repeater sites and the provision of additional infrastructure at two existing microwave repeater sites, and local road upgrades and bridge works. Relevant adjustments have been made to the Sound Power Levels (SWLs) of these scenarios as presented in Appendix B-1.

While it is noted that there has been an inclusion of a crushing, grinding and screening site at switching station M1, rock-crushing plant was already considered in the EIS assessment for all energy hubs and switching stations as part of the Access and Earthworks work stage. All equipment assessed is listed in Appendix B-1 along with their respective SWLs.

Where changes have been proposed to site activities, the proposed study area or other relevant parameters, any resulting changes to construction noise impacts have been assessed and presented in Section 3.1.

2.3.1.1 Helicopter usage

It is expected that aircraft, including helicopters and drones, would be used during construction of the project to transport material where access to remote sites is required, and for the stringing of transmission lines.

EnergyCo has advised that the Air Navigation (Aircraft Noise) Regulations 2018 applies to the noise emissions from aircraft, including helicopters and drones and that in accordance with these guidelines, given aircraft operations would be intermittent within the project footprint, it is not necessary to generate Aircraft Noise Exposure Forecasts (ANEF) for the project.

Preliminary calculations have been undertaken to estimate the likely change in Sound Power Levels (SWL) under each scenario during the transmission line stringing construction scenario. The assessment outcomes, as detailed in Section 3.1.1, assume that a drone is used for stringing activities. Table 2-1 outlines the difference in predicted noise levels during conductor stringing depending on the stringing method used. These changes would generally result in a corresponding increase in maximum noise levels at affected receivers.

Table 2-1 Transmission line stringing total SWL

Scenario	Total SWL (all equipment), $L_{eq\ (15min)}$ dBA	Change from base case, dBA
Base case (neither drone nor helicopter)	115	-3
Including drone only	118	–
Including helicopter only	128	+10

As transport flight paths are not available at this time, no further consideration has been given to potential noise impacts associated with that source in this amendment report.

2.3.1.2 Conductor stringing

Technical paper 9 considered the potential use of a helicopter for conductor stringing. The noise predictions in this report have considered an industrial heavy-lift drone, with an indicative SWL of 115 dBA (*Noise Measurement Report: Unconventional Aircraft*, U.S. Department of Transportation (2020)). This is compared to a SWL of 128 dBA used for the helicopter as presented in Technical paper 9 of the EIS.

2.3.1.3 Microwave repeater sites

The construction of microwave repeater sites has been assumed to involve one construction scenario (based upon the *Sunnydale Radio Repeater Site REF* (Transgrid, 2018)). This scenario was assessed at the proposed sites at Botobolar and along the New Wollar Switching Station-Merotherie Energy Hub connection (Cope microwave repeater site). The proposed equipment list and respective SWLs are listed in Appendix B-1.

The potential impacts from the two new microwave repeater sites were calculated using simple spreadsheet-based noise prediction methods. This methodology is considered suitable due to the combination of the small study area, short-term construction periods, and the large separation distances to the nearest receivers. This methodology does not take screening from changes in elevation into account, and as such results in highly conservative buffers indicating the distance to compliance with project Noise Management Levels (NMLs). It is reasonable to assume that the noise environment surrounding the microwave repeater sites is similar to that of the project area.

It is assumed that the proposed installation of additional microwave infrastructure to the existing sites at Magpie Hill and Baldy Peak would involve minimal noise-generating equipment. Furthermore, these existing sites are isolated and likely more than 1,400 m from the nearest sensitive receivers, and thus are unlikely to result in noise or vibration impacts.

2.3.1.4 Local road upgrades

The methodology for assessment of noise impacts from the proposed local road upgrades and bridge works is consistent with the methodology presented in the Technical paper 9 of the EIS. The proposed construction equipment list as presented in Appendix B-1. It has been assumed that the majority of the work taking place involves upgrading roads from unsealed to sealed.

A bridge is also proposed for Merotherie Road and Spring Ridge Road. Whilst this involves a smaller study area to the local road upgrades, it is presented alongside the regular road upgrades results.

2.3.2 Construction road traffic noise

Although no change to the methodology outlined in Technical paper 9 of the EIS has been applied for the assessment of construction traffic noise, the proposed amendments have the potential to alter construction vehicle numbers at some locations. Where changes are proposed to road traffic numbers, the magnitude of these changes has been assessed and presented in Section 3.3.

Indicative peak hour vehicle movements for the project are outlined in Table 2-2 for locations where construction traffic numbers have changed. These vehicle movements are based on the expected typical and peak construction period for the project and would be confirmed during detailed design and construction planning. Construction traffic volumes at Ulan Road (north of Ulan-Wollar Road) were assessed in the EIS in association with the Neeleys Lane workers accommodation camp, which are also presented in Table 2-2 for comparison.

Table 2-2 Indicative peak hour construction vehicle movements (combined directions)

Site name	Exhibited project			Amended project		
	Light vehicles	Heavy vehicles	Total vehicles	Light vehicles	Heavy vehicles	Total vehicles
Neeleys Lane (Satellite camp site)	32	24	56	32	34	66

2.3.3 Construction vibration

The addition of microwave repeater sites to the assessment is likely to require the use of a vibratory pile driver as part of the construction method for the microwave radio towers. The Construction Noise and Vibration Guideline (for roads and maritime works) (Transport for NSW, 2022) (CNVG) summarises the relevant minimum working distances for certain vibration generating activities with regard to cosmetic damage and human comfort impacts, with minimum safe working distances applicable to the use of a vibratory driver presented in Table 2-3.

Table 2-3 Minimum working distances for vibration intensive plant

Plant item	Rating/description	Minimum working distance (metres)		
		Cosmetic damage (BS 7385)[1]	Heritage (DIN 4150-3)[1]	Human response (AVTG)
Vibratory pile driver	Driven piling	20	50	100

(1) Source: adapted from CNVG, TfNSW, 2022

The minimum working distances presented are indicative and would vary depending on the item of plant and local geotechnical conditions. The cosmetic damage thresholds apply to typical buildings under typical geotechnical conditions and vibration monitoring is recommended for receivers identified to be at risk of vibration impacts, including heritage items deemed vibration sensitive and located within 100 m of any vibration intensive work.

In relation to human response, the nominated minimum working distances relate to continuous vibration. For most construction activities, vibration emissions are intermittent and higher vibration levels over shorter periods are acceptable. Additional assessment should be undertaken where the human response criteria are exceeded.

The relevant minimum safe working distance for each work stage was determined in reference to the proposed equipment and buffer zones were created to geographically capture all receivers within these distances.

Where changes have been proposed to site activities, study areas or other relevant parameters, any resulting changes in construction vibration impacts have been assessed and presented in Section 3.2.

2.4 Operational noise assessment methodology

2.4.1 *Transmission line coronal noise*

No change to the methodology outlined in Technical paper 9 has been applied for the amended operational coronal noise assessment.

Where changes have been proposed to the transmission line alignment, any resulting changes in operational noise impacts have been assessed and presented in Chapter 4.

2.4.2 *Energy hub operational noise*

As described in Section 1.4, Merotherie energy hub would no longer include BESS units and consequently, the revised equipment and estimated SWLs for Merotherie energy hub listed in Table 2-4 were updated for the site.

Table 2-4 Primary noise generating equipment at the proposed Merotherie energy hub

Equipment	Number of plant (indicative)	Sound power level dB per unit $L_{Aeq(15\ minutes)}$	Sound power level dB per unit $L_{Amax\ (15\ minutes)}$
Power transformers	5	90	–
Synchronous condenser	4	93	–
Circuit breaker switches	–	–	115
Total		**101**	**115**

2.4.3 *Microwave repeater site operational noise*

It has been indicated that the only operational noise sources located at the proposed microwave repeater sites are likely to be air-conditioning units to maintain the temperature of the on-site equipment at appropriate temperatures (*Sunnydale Radio Repeater Site REF* (Transgrid, 2018)). Considering this, and the closest receiver (ID 1485) is approximately 525 m away from the Botobolar microwave repeater site, no operational noise impacts are predicted, and operational noise impacts from the microwave repeater sites do not require further discussion.

2.5 Noise and vibration impact mitigation and management measures

No change to the methodology outlined in Technical paper 9 has been applied for the identification of noise and vibration mitigation and management measures.

Where changes to predicted impacts require the consideration of alternative mitigation and management measures, these have been presented in Chapter 5.

2.6 Noise criteria

With the addition of new or reclassified receivers, additional construction and operational noise criteria is required. These criteria have been determined by the relevant processes outlined in Technical paper 9. In accordance with the Interim Construction Noise Guideline (ICNG) and Noise Policy for Industry (NPfI), the new or reclassified non-residential receivers would be classified as the following:

- cemeteries (those as outlined in Section 2.2.2) are classified as passive recreation
- Dapper fire station is classified as industrial.

2.6.1 Construction criteria

Table 2-5 lists the NMLs that have been adopted for the new or reclassified non-residential receivers.

Table 2-5 Construction NML for non-residential receivers

Land use	**NMLs ($L_{eq(15\ min)}$ dBA)**
Passive recreation (when in use)	External noise level – 60
Industrial	External noise level – 75

2.6.2 Operational criteria

Table 2-6 lists the project amenity noise levels that have been adopted for the new or reclassified non-residential receivers.

Table 2-6 Established project amenity noise level

Location	**Type of receiver**	**Recommended amenity noise level (ANL) dB $L_{Aeq,period}$**	**Project amenity noise level (ANL –5 dB) dB $L_{Aeq,period}$[1,2]**	**Project adjusted ANL dB $L_{Aeq,\ period}$[3]**		
				Day	**Evening**	**Night**
All cemeteries	Passive recreation	When in use	45	45	–	–
Dapper fire station	Industrial	When in use	65	65	65	65

(1) A -5 dB factor is applied to project amenity noise levels to ensure that industrial noise levels at noise sensitive receivers (existing plus new) remain within the recommended amenity noise levels as required in the NPfI

(2) Amenity levels for non-residential receivers only apply when the premises are in use

(3) Day: the period from 7 am to 6 pm Monday to Saturday; or 8 am to 6 pm on Sundays and public holidays; evening: the period from 6 pm to 10 pm; night: the remaining periods.

3 Construction assessment

3.1 Construction noise assessment

The following sections present a summary and discussion of any changes from Technical paper 9 to the predicted noise impacts associated with construction activities. Detailed results are presented in relevant appendices as follows:

- Appendix B-3: Mapping of sensitive receivers predicted to exceed Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) (ICNG) NMLs for the worst-case construction scenario.
- Appendix B-4: Full results tables of predicted construction noise level exceedances for all assessed residential receivers for all scenarios.

3.1.1 Transmission lines

3.1.1.1 Transmission line works impacting on residential receivers

Overall, there are minor changes to the predicted construction noise impacts during transmission lines works, primarily derived from the changes to the alignment from that assessed in Technical paper 9 of the EIS. Detailed results of the construction noise assessment associated with the transmission lines works are presented in Appendix B-4, and a summary of total exceedances is presented in Table 3-1. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

The assessment shows that construction noise levels are predicted to be the highest during earthworks associated with the construction of foundations for the transmission towers. Noise levels during this stage have been predicted to exceed NMLs at up to 75 properties located along the transmission alignment during standard working hours (previously 74 properties). The majority of these exceedances are considered minor (53 of these exceedances are <10 dB above NMLs).

The number of highly noise affected (>75 dBA) is unchanged from Technical paper 9 of the EIS (one), however the individual receiver has changed; receiver 531 is now highly noise affected and sensitive receiver 539 is now in exceedance of standard hours NML by 8 dBA during standard hours compared to being highly noise affected in the exhibited EIS, which is a result of a change in alignment. Most exceedances are predicted to occur in NCA 4, which represents isolated rural properties across the alignment.

Where helicopters are used during aerial stringing activities instead of drones, potential changes to these predicted noise levels are discussed in Section 2.3.1.1. Aerial stringing would progress along the alignment, and thus any impacts would be short term, and this activity would not be undertaken during night-time hours.

Where the foundations work stage is undertaken outside of standard hours (including the daytime periods of Saturday afternoons and Sundays), exceedances may occur at up to 144 properties, which is unchanged from Technical paper 9. As with the standard hours results, one property is predicted to be highly noise affected, but the individual receiver has changed from ID 539 to ID 531, which is now in exceedance of the out-of-hours NML by 18 dBA. This is also as a result of a change in alignment.

Table 3-1 Summary of total residential exceedances for transmission lines work stages

Work stage	NCA										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	4	0	1	17 (14)	3	3 (2)	2	2	3	2 (1)	0
Site access	4 (5)	0	1	20 (21)	3	5 (4)	3	2	4	3	0
Vegetation clearing and access	4 (5)	0	1	23 (22)	4 (3)	5 (4)	3	1 (2)	4	3	0
Foundations	6	2 (0)	4	28 (30)	4	6 (5)	14	2	4	4	1
Tower erection	4 (5)	0	1	20 (21)	3	5 (4)	3	2	4	3	0
Conductor stringing	4	0	1	19 (14)	3	3 (2)	3 (2)	2	3	2 (1)	0
Conductor brake & winch	1 (2)	0	0	3	2	0	1	2	1	0 (1)	0
Commissioning	3 (4)	0	1	14 (13)	3	3 (2)	2	2	1 (2)	2	0
Demobilisation and rehabilitation	5	0	1	28 (27)	4	5 (4)	8 (9)	2	4	4	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	8	2	8	37	7	7 (6)	13	2	4	5	2
Site access	8	3	10 (8)	42 (44)	7	9 (8)	17	2	4	6 (7)	2
Vegetation clearing and access	8	3	10	45 (46)	7	9 (7)	17	3 (2)	4	7	2
Foundations	9 (12)	3	13	60 (58)	8	10 (9)	18	4	7	10	2
Tower erection	8	3	10 (8)	42 (44)	7	9 (8)	17	2	4	6 (7)	2
Conductor stringing[1]	7 (8)	2	8	42 (37)	7	7 (6)	14 (13)	2	4	6 (5)	2
Conductor brake & winch	4 (5)	0	1	21 (20)	3	3 (2)	1	2	4	3	0
Commissioning	7	2	8	36 (35)	7	6 (5)	8 (9)	2	4	4 (5)	1
Demobilisation and rehabilitation	8 (10)	3	11	52 (51)	8	10 (9)	18	4 (3)	5	7 (6)	2

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

(1) Out of hours conductor stringing activities indicated to only take place during the day time if required (Saturday and Sunday, day time)

Sleep disturbance impacts during the worst case night-time foundations work stage are predicted at over 112 receivers (previously over 113 receivers), with potential sleep awakening impacts predicted at up to 40 receivers (previously 38 receivers). As these levels are external predictions, a nominal 10 dB can be conservatively subtracted from these external noise predictions to provide an indication of internal noise levels (in accordance with guidance within the ICNG). This assumes windows are open and that the worst affected façade is a sleep space.

Where the predicted levels are adjusted for internal noise levels, they are predicted to potentially result in sleep disturbance at approximately 47 receivers (previously 52 receivers) and cause potential awakening at 10 properties (previously 12 receivers).

It is noted that these exceedances would be short term and would not occur simultaneously at all properties. Mitigation and management measures are considered in Chapter 5.

3.1.1.2 Transmission line works impacting on non-residential receivers

Previously, no exceedances of NMLs have been predicted for non-residential receivers. The assessment of an additional non-residential receiver (Dapper Fire Station (ID 726) did not identify any exceedances of construction NMLs as detailed in Table 3-2, and as such no changes to the findings of Technical paper 9 of the exhibited EIS have been identified.

Mitigation and management measures are considered in Chapter 5.

Table 3-2 Summary of non-residential noise results for transmission lines work stages

Non-residential receiver	NMLs ($L_{eq(15\ min)}$ dBA)	Highest predicted noise level ($L_{eq(15\ min)}$ dBA)
Dapper Fire Station	External noise level – 75	45

3.1.2 Elong Elong energy hub

There are no changes to the predicted noise impacts from the construction of Elong Elong energy hub as presented in Technical paper 9 on residential receivers.

Previously, no exceedances of NMLs have been predicted for non-residential receivers. No construction noise impacts have been predicted at Dapper Fire Station (ID 726) as detailed in Table 3-3, and as such no changes to the findings of Technical paper 9 have been identified. Mitigation and management measures are considered in Chapter 5.

Table 3-3 Summary of non-residential noise results for Elong Elong energy hub work stages

Non-residential receiver	NMLs ($L_{eq(15\ min)}$ dBA)	Highest predicted noise level ($L_{eq(15\ min)}$ dBA)
Dapper Fire Station	External noise level – 75	43

3.1.3 Coolah switching station (M2)

Overall, there are minor changes to the predicted construction noise impacts during the construction of Coolah switching station (M2), primarily derived from the changes to the alignment from that assessed in Technical paper 9.

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the Coolah switching station (M2) are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-4. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

Due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with no exceedances predicted during standard working hours (no change from Technical paper 9). No properties are predicted to be highly noise affected (no change from Technical paper 9).

Where out of hours work are proposed, exceedances may be experienced at two properties (ID 1323 and 1324) within NCA 10 (no change from Technical paper 9), with no potential sleep disturbance impacts predicted (no change from Technical paper 9). These residential receivers are located approximately 2,500 m from Coolah switching station, and exceed out-of-hours NMLs by 1 dBA. These exceedances are now predicted to occur only during the Access and earthworks work stage (previously Access and earthworks, Foundations and pads and Demobilisation and rehabilitation work stages).

Mitigation and management measures are considered in Chapter 5.

Table 3-4 Summary of total residential exceedances for Coolah switching station (M2) work stages

Work stage	NCA										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	0	0	0	0	0	0	0	0	0	0	0
Site access	0	0	0	0	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	0	0	0	0	0	0	0	0
Access and earthworks	0	0	0	0	0	0	0	0	0	0	0
Foundations and pads	0	0	0	0	0	0	0	0	0	0	0
Equipment installation	0	0	0	0	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	0	0	0	0	0	0	0	0	0	0	0
Site access	0	0	0	0	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	0	0	0	0	0	0	0	0
Access and earthworks	0	0	0	0	0	0	0	0	0	2	0
Foundations and pads	0	0	0	0	0	0	0	0	0	0 (1)	0
Equipment installation	0	0	0	0	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	0	0	0	0	0	0	0 (1)	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.4 Dunedoo switching station (M7)

Overall, there are minor changes to the predicted construction noise impacts during the construction of Dunedoo Switching Station (M7), primarily derived from the changes in the alignment from that assessed in Technical paper 9. The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the Dunedoo Switching Station (M7) are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-5. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

Due to the separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with exceedances predicted at two properties during standard working hours (no change from Technical paper 9). No properties are predicted to be highly impacted (no change from Technical paper 9). However impacts are now predicted to occur during three work stages only: Access and earthworks, Foundations and pads, and Demobilisation and rehabilitation (previously predicted during all work stages).

If out of hours work is conducted, exceedances may be experienced at up to seven receivers (previously eight receivers), with the potential for sleep disturbance impacts at three receivers (previously four receivers). These properties are located within NCAs 3 and 4.

Mitigation and management measures are discussed in Chapter 5.

Table 3-5 Summary of total residential exceedances for Dunedoo switching station (M7) work stages

Work stage	NCA										
Standard hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	0	0	0 (1)	0	0	0	0	0	0	0
Site access	0	0	0	0 (1)	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	0 (1)	0	0	0	0	0	0	0
Access and earthworks	0	0	1 (0)	1 (2)	0	0	0	0	0	0	0
Foundations and pads	0	0	0	1	0	0	0	0	0	0	0
Equipment installation	0	0	0	0 (1)	0	0	0	0	0	0	0
Commissioning	0	0	0	0 (1)	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	1	0	0	0	0	0	0	0
Out of hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	0	1 (0)	1 (3)	0	0	0	0	0	0	0
Site access	0	0	1 (0)	1 (3)	0	0	0	0	0	0	0
Vegetation clearing	0	0	1	2 (3)	0	0	0	0	0	0	0
Access and earthworks	0	0	2	5 (6)	0	0	0	0	0	0	0
Foundations and pads	0	0	1	3	0	0	0	0	0	0	0
Equipment installation	0	0	1	2 (3)	0	0	0	0	0	0	0
Commissioning	0	0	1 (0)	1 (2)	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	1	3	0	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.5 Cobbora switching station (E1)

Overall, there are minor changes to the predicted construction noise impacts during the construction of Cobbora Switching Station (E1), primarily derived from the changes to the alignment from that assessed in Technical paper 9. The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the Cobbora Switching Station (E1) are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-6. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

Due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor, with a minor exceedance of 1 dBA predicted at one property (ID 719) during standard working hours located approximately 1,230 m to the northeast (no change). No properties are predicted to be highly impacted (no change).

If out of hours work is conducted, receivers 539 and 719 (previously three receivers) may experience exceedances of 4 and 11 dBA respectively, with the potential for sleep disturbance impacts at receiver 719 (no change). These receivers are located within NCAs 1 and 2.

Mitigation and management measures are discussed in Chapter 5.

Table 3-6 Summary of total residential exceedances for Cobbora switching station (E1) work stages

Work stage	NCA										
Standard hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	0	0	0	0	0	0	0	0	0	0
Site access	0	0	0	0	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	0	0	0	0	0	0	0	0
Access and earthworks	0	1	0	0	0	0	0	0	0	0	0
Foundations and pads	0	0	0	0	0	0	0	0	0	0	0
Equipment installation	0	0	0	0	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	1	0	0	0	0	0	0	0	0	0
Site access	0	0 (1)	0	0	0	0	0	0	0	0	0
Vegetation clearing	0	1	0	0	0	0	0	0	0	0	0
Access and earthworks	1 (2)	1	0	0	0	0	0	0	0	0	0
Foundations and pads	1 (0)	1	0	0	0	0	0	0	0	0	0
Equipment installation	0	1	0	0	0	0	0	0	0	0	0
Commissioning	0	1	0	0	0	0	0	0	0	0	0
Demobilisation and rehabilitation	1 (0)	1	0	0	0	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.6 Dunedoo switching station (E5)

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the newly proposed Dunedoo Switching Station (E5) are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-7. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

Due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with one exceedance of 6 dBA predicted during standard working hours at receiver ID 730. No properties are predicted to be highly noise affected.

If out of hours work is conducted, minor exceedances may be experienced at three properties located in NCAs 2 and 4 during the access and earthworks stage, which are receiver ID 609, 730 and 747. Receivers 609 and 747 are in exceedance of <5 dBA, whereas receiver 730 is predicted to exceed out of hours NML by 16 dBA. Potential sleep disturbance impacts are also predicted this property.

Mitigation and management measures are discussed in Chapter 5.

Table 3-7 Summary of total residential exceedances for Dunedoo switching station (E5) work stages

Work stage	NCA										
Standard hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	0	0	0	0	0	0	0	0	0	0
Site access	0	0	0	0	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	1	0	0	0	0	0	0	0
Access and earthworks	0	0	0	1	0	0	0	0	0	0	0
Foundations and pads	0	0	0	1	0	0	0	0	0	0	0
Equipment installation	0	0	0	1	0	0	0	0	0	0	0
Commissioning	0	0	0	0	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Utility adjustment	0	0	0	1	0	0	0	0	0	0	0
Site access	0	0	0	1	0	0	0	0	0	0	0
Vegetation clearing	0	0	0	1	0	0	0	0	0	0	0
Access and earthworks	0	1	0	2	0	0	0	0	0	0	0
Foundations and pads	0	0	0	1	0	0	0	0	0	0	0
Equipment installation	0	0	0	1	0	0	0	0	0	0	0
Commissioning	0	0	0	1	0	0	0	0	0	0	0
Demobilisation and rehabilitation	0	0	0	1	0	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.7 Access track construction – Transmission line

3.1.7.1 Access road works impacting residential receivers

Overall, there are minor changes to the predicted construction noise impacts during the construction of access tracks primarily derived from the additions and changes to the alignments from those assessed in Technical paper 9.

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage for access tracks are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-8. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that noise impacts during the construction of access tracks may impact up to 63 receivers during standard hours (previously 62). Of these impacted receivers, 41 exceed NMLs by 10 dB or less, and are considered minor impacts. It is noted that these exceedances would be short term and would not occur simultaneously at all properties. It is predicted that no receivers would be highly noise affected (previously seven).

If this work is conducted out of standard hours, exceedances may be experienced at up to 131 receivers (no change), with the potential for sleep disturbance impacts at up to 101 of these receivers (previously 104) and the potential for sleep awakening impacts at up to 33 receivers (previously 32). It is noted that the exceedances of 5 dB or less make up approximately 37% of these out of hours impacts. Where the predicted levels are adjusted for internal noise levels, they are predicted to potentially result in sleep disturbance at approximately 37 receivers and may result in awakening at four properties.

These impacts would be short term and occur at the commencement of construction. Mitigation and management measures are discussed in Chapter 5.

Table 3-8 Summary of total residential exceedances for Access tracks work stages

Work stage	**NCA**										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Earthworks and upgrades	5	0	1	30 (29)	4	5 (4)	8 (9)	2	4	4	0
Vegetation Clearing	4 (5)	0	1	26 (25)	3	5 (4)	6 (5)	2	4	3	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Earthworks and upgrades	7 (10)	3	14 (13)	55 (53)	8	10 (9)	16 (18)	4	5 (4)	7	2
Vegetation Clearing	8 (9)	3 (2)	10 (11)	48 (49)	7 (8)	9 (7)	18 (17)	1 (2)	4	6 (7)	2

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.8 Construction compound at Merotherie Energy Hub

Overall, there are minor changes to the predicted construction noise impacts during the establishment of the construction compound at Merotherie energy hub from that assessed in Technical paper 9. An incorrect Construction Impact Zone (CIZ) footprint was modelled, which was larger than the correct CIZ for the construction compound at Merotherie Energy Hub. As a result, predicted construction noise impacts have reduced from those presented in the EIS.

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the Merotherie Energy Hub are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-9. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with no exceedances predicted during standard working hours (no change). If out of hours work is conducted, exceedances may be experienced at receivers 876, 880, and 965 (previously five) of <5 dBA. No sleep disturbance impacts are predicted.

Mitigation and management measures are discussed in Chapter 5.

Table 3-9 Summary of total residential exceedances for the construction compound at Merotherie energy hub work stages

Work stage	**NCA**										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	0	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0	0
Operation	0	0	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	0	0	0	0	0 (4)	0	0	0	0	0	0
Construction	0	0	0	0	1 (4)	0	0	0	0	0	0
Operation	0	0	0	0	3 (5)	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.9 Construction compound at Elong Elong Energy Hub

Overall, there are minor changes to the predicted construction noise impacts during the construction of the Elong Elong construction compound primarily derived from the changes to the construction area from that assessed in Technical paper 9. The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the construction compound at Elong Elong Energy Hub are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-10. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with up to one exceedance of approximately 17 dBA predicted during standard working hours at receiver 719 (previously zero).

If out of hours work is conducted, exceedances of <5 dBA may be experienced at receivers 539 and 611 and approximately 27 dBA for receiver 719 (previously two exceedances). There is potential for sleep disturbance impacts at both of the receivers in NCA 2 (ID 611 and 719) (no change).

Mitigation and management measures are discussed in Chapter 5.

Table 3-10 Summary of total residential exceedances for the construction compound at Elong Elong energy hub work stages

Work stage	**NCA**										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	0	1 (0)	0	0	0	0	0	0	0	0	0
Construction	0	1 (0)	0	0	0	0	0	0	0	0	0
Operation	0	1 (0)	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	1 (0)	2	0	0	0	0	0	0	0	0	0
Construction	1 (0)	2	0	0	0	0	0	0	0	0	0
Operation	1 (0)	2	0	0	0	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.10 Construction compound at Neeleys Lane

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the construction compound at Neeleys Lane are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-11. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with up to two exceedances of approximately 3 dBA at receivers 1103 and 1142 predicted during standard working hours.

If out of hours work is conducted, exceedances may be experienced at three properties in NCA 4 (ID 1103, 1139, and 1142), and one property in NCA 5 (ID 1167), with the potential for sleep disturbance impacts at the receivers in NCA 4.

Mitigation and management measures are discussed in Chapter 5.

Table 3-11 Summary of total residential exceedances for the construction compound at Neeleys Lane work stages

Work stage	**NCA**										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	0	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	1	0	0	0	0	0	0	0
Operation	0	0	0	2	0	0	0	0	0	0	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Vegetation clearing	0	0	0	3	0	0	0	0	0	0	0
Construction	0	0	0	2	0	0	0	0	0	0	0
Operation	0	0	0	3	0	0	0	0	1	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.11 Neeleys Lane workforce accommodation camp

Overall, there are minor changes to the predicted construction noise impacts during the construction of the Neeley's Lane accommodation camp derived from the reclassification of a receiver erroneously considered in Technical paper 9 as non-sensitive use. The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage at the Neeleys Lane workforce accommodation camp are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-12. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that receiver 1139 is predicted to exceed NMLs by 7 dBA during standard hours, whilst if out of hours work is conducted, exceedances may be experienced at up to four properties (previously three). Sleep disturbance impacts are predicted at receivers 1103, 1139, and 1142 (previously two).

Mitigation and management measures are discussed in Chapter 5.

Table 3-12 Summary of total residential exceedances for Neeleys Lane workforce accommodation camp work stages

Work stage	NCA										
Standard hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Vegetation clearing	0	0	0	1 (0)	0	0	0	0	0	0	0
Construction	0	0	0	1 (0)	0	0	0	0	0	0	0
Operation	0	0	0	0	0	0	0	0	0	0	0
Out of hours											
	NCA 1	NCA 2	NCA 3	NCA 4	NCA 5	NCA 6	NCA 7	NCA 8	NCA 9	NCA 10	NCA 11
Vegetation clearing	0	0	0	3 (2)	0	0	0	0	0 (1)	0	0
Construction	0	0	0	3 (2)	0	0	0	0	1	0	0
Operation	0	0	0	1	0	0	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.12 Microwave repeater sites

It is estimated that the noise levels of the proposed Botobolar microwave repeater site at the surrounding four identified residential properties would exceed their nominal 45 dBA standard hours criteria by around 1–2 dBA. These four properties may also experience an exceedance during out of hours work, along with potential sleep disturbance impacts.

The proposed microwave repeater site along the New Wollar Switching Station-Merotherie Energy Hub connection is in the vicinity of two properties (ID 373 and 399) in NCA 4. It is likely that standard hours criteria would not be exceeded during construction, however, out of hours criteria may be exceeded by approximately 3 dBA. There are no sleep disturbance impacts expected.

Mitigation and management measures are discussed in Chapter 5.

3.1.13 Local road upgrades

The predicted number of properties with exceedances of the NMLs due to construction activities during each work stage of the local road upgrades are summarised in Appendix B-4 and a summary of total exceedances is presented in Table 3-13. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

These results show that due to the large separation distances between the project and the nearest noise sensitive receivers, construction noise impacts are generally expected to be minor with exceedances at up to four receivers predicted during standard working hours across multiple NCAs.

If out of hours work is conducted, exceedances may be experienced at 18 properties across multiple NCAs, with noise levels exceeding 25 dBA at one receiver in NCA 11 and sleep disturbance impacts are predicted at eight properties. No properties are predicted to be highly noise affected by these activities.

It is understood that bridge construction is planned for Merotherie Road and Spring Ridge Road as part of the local road upgrades. This is expected to have minor construction noise impacts, with one receiver in NCA 2 likely to experience an out-of-hours exceedance of between 0–5 dBA, and one receiver in NCA 6 is likely to experience exceedances of between 0–10 dBA in standard hours and 5–15 dBA during out-of-hours.

Similar to other construction stages in the project, the works for local road upgrades are unlikely to occur simultaneously and would move as construction progresses. Mitigation and management measures are discussed in Chapter 5.

Table 3-13 Summary of total residential exceedances for the local road upgrades work stages

Work stage	**NCA**										
Standard hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	0	0	0	0	0	1	0	0	0	0	1
Access and earthworks	0	0	0	2	0	1	0	0	0	0	1
Paving and asphalting	0	0	0	1	0	1	0	0	0	0	1
Bridge works	0	0	0	0	0	1	0	0	0	0	0
Out of hours											
	NCA 1	**NCA 2**	**NCA 3**	**NCA 4**	**NCA 5**	**NCA 6**	**NCA 7**	**NCA 8**	**NCA 9**	**NCA 10**	**NCA 11**
Utility adjustment	0	1	0	3	0	1	0	0	0	0	1
Access and earthworks	0	3	0	4	6	2	0	0	1	0	2
Paving and asphalting	0	2	0	3	1	1	0	0	0	0	1
Bridge works	1	0	0	0	0	1	0	0	0	0	0

Where: 0 total exceedances, 1 – 5 total exceedances, 6 – 20 total exceedances, >20 total exceedances

3.1.14 Potential risk from concurrent construction activities

There is the potential for concurrent construction activities occurring in proximity to noise sensitive receivers located within approximately 2 km of simultaneous construction activities from more than one work stage. This is considered most likely to occur at isolated rural properties in NCAs 4 and 5, where transmission line construction may coincide with work at the Merotherie Energy Hub.

Concurrent impacts are not predicted to occur as a result of access track or compound construction activities, as these works are scheduled for the start of construction and are expected to be complete before major works at the infrastructure sites commences.

Based on the generally low number of predicted impacts outlined above, the risk of notable concurrent construction impacts is considered low and where these do occur, concurrent noise levels would not exceed 3 dB above the highest predicted noise levels from individual construction activities.

Mitigation and management measures are considered in Chapter 5.

3.1.15 Discussion of construction noise impact

The noise and vibration assessment has identified that changes to the predicted EIS construction noise impacts would generally be minor. The loudest of work stages, are predicted to be earthworks, and construction of access tracks.

Most exceedances are predicted to occur at isolated rural properties within NCA 4. Given the short duration of most impacts, these exceedances are not predicted to generally occur simultaneously or for extended periods. No exceedances are predicted for the new/reclassified non-residential receivers across all construction work stages and scenarios.

Where works are carried out outside of standard working hours, noise levels are predicted to be more noticeable and result in exceedances of criteria for some activities. Typically, foundations and/or earthworks are expected to be the loudest out of hours work stage at most sites and this work should be avoided during night-time periods where reasonable and feasible.

The predicted construction noise levels are considered to be conservative, assuming all plant identified in Appendix B-1 is operational at any one time. As such actual noise levels would generally be expected to be below these predicted noise levels at any identified noise-sensitive receiver. Further, as stated above, transmission line construction works would be transitory (i.e. they would progress along corridor to build the transmission line and associated tower structures progressively), and as such these predictions would not be sustained through the entire construction period at each receiver. Management and mitigation recommendations have been made to address the identified impacts and are presented in Chapter 5.

Detailed modelling predictions for each receiver are provided in Appendix B-4.

3.2 Construction vibration

3.2.1 Predicted vibration impacts

Based on the potential vibration generating plant identified for construction, the minimum working distances from the construction area were identified. Where they are predicted to change, Table 3-14 presents the number of sensitive receivers within the minimum working distances for vibration intensive activities. The results as presented in the EIS are displayed in brackets where there are changes compared to the updated results.

Table 3-14 Predicted vibration impacts

NCA	Predicted number of sensitive receivers within minimum working distances		
	Cosmetic damage	Heritage (Aboriginal/Non-Aboriginal)	Human response
	(BS 7385)	(DIN 4150-3)	(AVTG)[2]
Transmission lines			
NCA 1	0	0/0	0 (1)
NCA 3	0	0/2 (0/0)	0
NCA 4	0 (1)	0/0	1
NCA 6	0	1/0 (0/0)	0
NCA 8	9 (4)	0/1	0
All other NCAs	0	0/0	0
Access tracks			
NCA 4	0 (2)	0/0	1 (2)
NCA 8	6	0/0	0
All other NCAs	0	0/0	0
Neeleys Lane construction compound			
All NCAs	0	0/0	0
Microwave repeater sites			
All NCAs	0	0/0	0
Local road upgrades			
All NCAs	0	0/0	0

(1) As discussed in Technical paper 9, at the time this assessment was prepared, the Technical paper 5 – Aboriginal cultural heritage assessment report does not contain adequate detail to determine the vibration sensitivity of Indigenous items and as such this assessment has considered grinding groove and shelter locations only. These items will be assessed further as design progresses and within the Construction Noise and Vibration Management Plan (CNVMP).

(2) *Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006) (AVTG)

3.2.2 Discussion

For the transmission line works, it was found that human comfort impacts may potentially be experienced at one residential building located in close proximity to the construction area (previously two). These impacts are predicted at the nearest receivers to the transmission line corridor and likely to be highest during earthworks where vibratory rollers are proposed (namely site access works and transmission line tower foundations). Potential human comfort impacts were also identified during works at the access tracks.

Up to nine structures have been identified within the recommended minimum safe working distances for potential cosmetic damage (increase of four) across multiple work stages. All identified buildings are unoccupied structures such as sheds and unoccupied dwellings, and as such are not expected to generate impacts to human comfort. One of these structures is located in close proximity to a brake and winch site, and six structures are located close to access track works (previously eight).

Three non-Aboriginal heritage items have been identified within the recommended minimum safe working distances (previously one). This has increased from Technical paper 9 as a result of a receiver sensitivity reclassification and are located in NCA 3 in close proximity to the transmission line alignment.

One Indigenous item is expected to be located within the minimum safe working distance for transmission line construction, in NCA 6. This is the result of the confirmation and assessment of transmission tower locations. However the vibration sensitivity of this item is currently unknown and would be assessed as design progresses and within the Construction Noise and Vibration Management Plan (CNVMP).

Where cosmetic damage minimum distances are complied with, damage to utilities, pipelines and infrastructure is considered highly unlikely. If the final power rating or proposed equipment changes from that indicated in Appendix B-1, further reviews are required to review the findings of this assessment.

Vibration mitigation measures have been recommended in Section 5.1.2.

3.3 Construction road traffic noise

Overall, there are minor changes to the predicted noise levels from construction traffic along Ulan Road (Main Street, Ulan to Golden Highway) as assessed in Technical paper 9, however no change in the number of affected properties is predicted to occur. Overall, three receivers are predicted to exceed criteria at this location during night time hours only, with no exceedances predicted during daytime hours.

The daytime and night time predicted construction traffic noise level of the worst-impacted receivers along this route, as well as a qualitative assessment of the impacts to sensitive receivers exceeding base noise criteria, are presented in Table 3-15 and mapped in Appendix B-3. No changes have been predicted on other roads.

Noise management measures have been recommended in Chapter 5 to assist in minimising the potential for noise disturbance from construction road traffic noise, in particular during night-time hours.

Table 3-15 Predicted impacts of construction traffic noise along key construction routes

Construction route section	**Road type**	**Worst impacted receiver noise level *(increase on previous)* (dBA)**		**Qualitative discussion**
		Day	**Night**	
Ulan Rd (Main St, Ulan to Golden Highway)	Sub-arterial	62 *(+5)*	60 *(+6)*	Three receivers are predicted to exceed the base road noise criteria during both day and night time hours, all of which are directly adjacent to Ulan Road. The most impacted receiver is 6161 Ulan Road, which is predicted to experience 60 dBA at night. No other exceedances were predicted in this area.

4 Operational assessment

The following sections present a summary and discussion of any changes to the predicted noise impacts associated with operational activities presented in Technical paper 9. Detailed results are presented in relevant appendices as follows:

- Appendix C-1: Mapping of sensitive receivers predicted to exceed Noise Policy for Industry (NSW EPA, 2017) (NPfI) and Road Noise Policy (DECCW, 2011) (RNP) noise criteria.

4.1 Transmission line corona noise

Noise levels associated with corona noise have been modelled under neutral (non-noise enhancing) meteorological conditions and the number of potentially impacted residential receivers have been calculated. This methodology is unchanged from Technical paper 9.

The number of properties exceeding the applicable project noise trigger level (PNTL) under neutral meteorological conditions are summarised in Table 4-1 and grouped by magnitude of exceedance per NCA. Appendix C-1 provides a graphical representation of the exceedances along each section of the transmission line.

Table 4-1 Transmission line corona noise – predicted number of exceedances (neutral meteorological conditions)

NCA	PNTL	Number of properties exceeding PNTL, grouped by magnitude of exceedance category[1]			Sleep disturbance	
		Negligible	Moderate	Significant	PNTL	Predicted exceedances
Out of Hours						
4	35	1	0	1	40	1

(1) With reference to definitions in Technical paper 9

The assessment findings show that up to two properties may be impacted by coronal noise during night-time hours, one to a 'negligible' level of exceedance (ID 531, located east of Castlereagh Highway) and one to a 'significant' level of exceedance (ID 371, located 650m northwest of the Ulan Water business office) . During standard hours, receiver ID 531 is not predicted to be impacted by coronal noise. The exceeding properties would likely require operational noise mitigation in accordance with the mitigation measures presented in Section 5.2. However given the conservative assumptions included in these calculations, it is recommended that corona noise monitoring is undertaken following the commencement of operations to determine the need for operational noise mitigation measures and appropriate type of mitigation, where relevant.

It should be noted that the identification of exceeding residential properties has been undertaken incorporating a number of conservative factors. It is understood that as part of final design process, further modelling of audible noise and assessable meteorological conditions would be conducted by the appointed Network Operator. The final audible noise impact is therefore subject to this further modelling and further feasible and reasonable assessment of mitigation (further to the discussion in Section 5.2).

4.2 Switching stations

As presented in Technical paper 9, the only proposed noise-generating items located at the switching station sites would be circuit breaker switches. These have been modelled under standard conditions.

With the repositioning of multiple switching stations and the addition of the Dunedoo switching station (E5), the operational noise impacts are required to be reconsidered. The exceedances at switching stations M1, M4, M5, M6, M8, M9, E2 and E3 as presented in Technical paper 9 are unchanged, however with the repositioning of switching station M7, noise levels at receiver 717 no longer exceed L_{Amax} awakening trigger levels.

Furthermore, the newly predicted noise levels at receivers surrounding switching stations M2, M3, E1, E4, and E5 also do not exceed L_{Amax} awakening trigger levels.

4.3 Merotherie Energy Hub

As presented in Technical paper 9, no exceedances of PNTLs were predicted at receivers surrounding the Merotherie Energy Hub. The proposed changes to the operational equipment at this site mean the noise levels emitted from the energy hub during operation would be lower than as assessed in Technical paper 9, and therefore there is no change to the outcome of the section of assessment.

4.4 Elong Elong Energy Hub

As presented in Technical paper 9, no exceedances of PNTLs were predicted at receivers surrounding the Elong Elong Energy Hub. Minor changes to the operational footprint of this site mean the noise levels emitted from the energy hub during operation would be lower than as assessed in Technical paper 9, and therefore there is no change to the outcome of the section of assessment.

5 Management and mitigation measures

5.1 Construction

5.1.1 Construction mitigation measures

Minor updates have been made to the management and mitigation measures originally proposed in Technical paper 9 however these changes to not have a material affect the intent of the measures. The construction noise mitigation measures are detailed below in Table 5-1.

Table 5-1 Proposed construction noise mitigation measures

Reference	Impact	Mitigation measures	Timing	Applicable location(s)
NV1	Construction noise (source controls)	As part of development of the detailed design and construction methodology, all reasonable and feasible mitigation measures will be considered, confirmed and implemented to minimise construction noise impacts and to avoid exceedances of the applicable noise goals at adjacent sensitive receivers where practicable. Measures that may achieve this outcome may include, but are not limited to the following: — portable temporary noise screens will be erected adjacent to stationary or long-term static noise sources, or noise generating items, where reasonable and feasible — spotters, “smart” reversing alarms, or broadband reversing alarms will be used in place of traditional tonal beeper reversing alarms, particularly on equipment where reversing alarms are frequently in use such as rollers, loaders or compactors — noise source controls, such as the use of residential class mufflers, will be used reduce noise from all plant including cranes, excavators and trucks — the offset distance between noisy plant items and sensitive receivers will be maximised, where reasonable and feasible — machinery will be operated in a manner which reduces maximum noise level events such as reduce shaking of excavator buckets, dropping materials into trucks from height or steel on steel contact — construction plant and equipment will be turned off when not in use — helicopters will not be operated during evening and night-time periods. Where the use of drones is proposed during evening and/or night-time periods, an additional assessment(s) will be undertaken to identify appropriate operational limits to ensure that noise impacts to nearby sensitive receivers are acceptable.	Detailed design Pre-construction Construction	All locations where exceedances of the applicable construction noise criteria are predicted at sensitive receivers

Reference	Impact	Mitigation measures	Timing	Applicable location(s)
NV2	Construction noise (administrative controls)	Opportunities to reduce exceedances of the applicable construction noise goals through the implementation of administrative controls will be examined, confirmed and implemented where reasonable and feasible. Controls to be considered will include, but not limited to the following: — environmental awareness training and inductions for site personnel will include noise mitigation techniques/measures to be implemented when on site and accessing the site — the avoidance of simultaneous construction activities during transmission line construction in the vicinity of the Energy Hubs will be investigated to minimise potential cumulative noise impacts — plant and equipment will be selected with noise emission levels being a consideration for selection. This will include the consideration of alternative stringing methods, such as the use of drones instead of helicopters — noise-intensive works will be limited to less sensitive construction hours (i.e. away from early morning and late afternoon periods) as far as practicable, when working in the vicinity of sensitive receivers — plant and equipment will be well maintained to ensure that excessive noise is not generated — the provision of respite periods for helicopter take off/landing will be considered at the construction compounds — a blasting vibration and overpressure assessment will be required as part of any potential blast design. This assessment will determine the Maximum Instantaneous Charge to achieve the recommended ground vibration and overpressure limits. In addition, a Blast Management Strategy will be prepared in accordance with section 4 of AS 2187.2-2006 for inclusion in the CNVMP — any works undertaken outside standard working hours will be further assessed in accordance with the ICNG and the CNVG during detailed design and an Out of hours works protocol will be developed and implemented to mitigate any identified impacts.	Detailed design Pre-construction Construction	All locations where exceedances of the applicable construction noise criteria are predicted at sensitive receivers.

Reference	Impact	Mitigation measures	Timing	Applicable location(s)
NV3	Construction noise	Opportunities to reduce the impacts associated with construction noise levels through the implementation of proactive community consultation will be examined, confirmed and implemented where reasonable and feasible. Controls to be considered will include, but not limited to the following: — sensitive receivers potentially affected by the works will be notified of the commencement of construction activities at least five days prior to works starting. The notification will inform potentially impacted sensitive receivers of the nature of and duration of works, expected noise levels and contact details of where sensitive receivers can contact can project representatives — the community will be kept regularly informed of noise intensive activities in the immediate area — if noise complaints are received, the complainant will be offered the opportunity for noise monitoring to be carried out to confirm the noise level at the receiver. Where the noise monitoring confirms that the applicable noise predictions are being exceeded, the construction methodology will be reviewed and changes implemented to reduce construction noise levels to be compliant with noise predictions where reasonable and feasible. Additional mitigation measures such as respite periods have been outlined in Table 15-29 of chapter 15 (Noise and vibration) of the EIS.	Pre-construction	All locations where exceedances of the applicable construction noise criteria are predicted at sensitive receivers.

5.1.2 Construction vibration mitigation

Minor updates have been made to the management and mitigation measures originally proposed in Technical paper 9 however these changes to not have a material affect the intent of the measures. The construction vibration mitigation measures are reproduced below in Table 5-2.

Table 5-2 Construction vibration mitigation measures

Reference	Impact	Mitigation measures	Timing	Applicable location(s)
NV4	Construction vibration	Where construction is likely to result in vibration levels that exceed relevant criteria at sensitive receivers, mitigation and management will be implemented where practicable and appropriate. Measures that will be considered and implemented where feasible and reasonable include (but are not limited to): — avoid the use of vibration-intensive plant at distances where human discomfort will result — substitute lower vibration-intensive plant and methods (for example use a smaller machine, lower power settings or alternative equipment) — sequence operations to avoid or minimise concurrent vibration intensive activities — schedule the use of vibration-sensitive equipment during the least sensitive times of the day — confirm any vibration-sensitive heritage structures that could be impacted by the proposal works — inform and consult with potentially affected receivers about upcoming vibration-intensive activities — pre and post condition surveys.	Detailed design Pre-construction	All locations where exceedances of the applicable construction vibration criteria are predicted at sensitive receivers.
NV5	Heritage vibration impacts	Vibration sensitive Aboriginal and non-Aboriginal heritage items which have potential to be impacted by the project works will be confirmed prior to the commencement of vibration generating works in proximity to relevant structures. Suitable, item specific criteria will be developed for heritage items and vibration impacts at these locations will be managed before commencement of construction. This may include the use of alternative construction methods which generate lower levels of ground vibration and the installation of vibration monitors while vibration intensive activities are conducted.	Detailed design	All heritage items where exceedances of the applicable construction vibration criteria are predicted

5.2 Operation

5.2.1 Operational environmental management

5.2.1.1 Transmission line – Corona noise

Due to the potential predicted exceedances of the PNTL during operation of the transmission lines, mitigation strategies to reduce the likely noise impact have been considered.

From an acoustic perspective, possible strategies to mitigate noise are typically investigated in the following order (decreasing preference):

1 Land use planning and provision of appropriate buffer distances

- It is understood that the current alignment is fixed and not expected to be altered in any significant manner. As such, this does not present a feasible noise mitigation measure.

2 Noise control at the noise source

- Noise control options for transmission lines are, however, expected to be limited. It is understood that the implementation of specific types of transmission line conductors (larger conductors) can in some circumstances reduce noise impacts, however for the project these options are not currently identified as feasible and reasonable.

3 Noise control along the noise transfer path

- Noise barriers are not considered feasible and reasonable for the proposed transmission lines for the following reasons:
  - all identified exceeding receivers are generally isolated in nature
  - the transmission line is an elevated noise source with long horizontal extent.

4 Noise control at the receiver.

- Due to the rural nature of the study area and generally isolated nature of receivers, receiver-based noise treatment is considered feasible and reasonable to manage operational noise exceedances from transmission lines.

The predicted impacts have been determined under neutral meteorological conditions in accordance with NPfI methodology discussed in Section 2.4.2. The significance of the predicted impacts is summarised in Table 5-3.

Table 5-3 Properties requiring mitigation (night-time, neutral meteorological conditions)

NCA	NPfI extent of impact[1]	Number of impacted receivers	Receiver(s) ID (predicted worst case noise level L_{Aeq})
4	Significant	1	371 (41dB)
4	Negligible	1	531 (36 dB)

(1) With reference to definitions in Technical paper 9

Based on these predicted potential exceedances, operational noise mitigation options to reduce potential noise impacts should be investigated at two receivers, one of which has been identified as being potentially subject to a significant impact and the other identified as potentially subject to a negligible impact. This may include monitoring after the commissioning of the project at each residence where potential operational noise levels are predicted to exceed project trigger levels. In accordance with NPfI methodology outlined in Technical paper 9, negligible exceedances do not typically require any mitigation. Operational mitigation measures are outlined in Section 5.3.

Following the finalisation of properties and facades that may require treatment, various guideline documents are available in NSW to advise on appropriate construction methods to facilitate property treatment (for example DPIE's *Development Near Rail Corridors and Busy Roads – Interim Guideline*, TfNSW's *At-Receiver Treatment Guideline*). Typical considerations include:

- fresh air ventilation systems that meet Building Code of Australia requirements with the windows and doors shut
- upgraded windows, glazing and solid core doors
- upgrading window and door seals
- the sealing of wall vents
- upgrading mass of building envelope by installing additional internal wall/ ceiling lining
- the sealing of the underfloor below the bearers and appropriately treating sub-floors ventilation
- the sealing of eaves or any sound insulation weaknesses.

Where required, at-property treatments would need to be determined in consultation with the landholder and informed by a detailed building condition survey and final predicted noise levels. Building condition surveys would determine if the internal noise target is met based on current building conditions or if treatment is required. For example, in older or light weight buildings, the provision of reasonable and feasible noise treatment may not provide any meaningful reduction in internal noise levels.

If treatment is determined to be required, effective treatment would likely consist of the sealing of sound insultation weaknesses in the structure, and/or provision of alternative means of air ventilation (should compliance require doors and windows to remain closed). This may require the provision of active ventilation systems or air conditioning.

5.3 Operational mitigation measures

Minor updates have been made to the management and mitigation measures originally proposed in Technical paper 9 however these changes to not have a material affect the intent of the measures. The operational noise mitigation measures are reproduced below in Table 5-4.

Table 5-4 Summary of operational noise and vibration mitigation measures

Mitigation ID	Impact	Mitigation measure	Timing	Applicable location(s)
NV6	Operational noise	An Operational Noise Review will be prepared to confirm the predicted noise impacts from the project (based on the final infrastructure locations). Where necessary, the operational mitigation measures to be implemented below will be revised so operational noise impacts are compliant with the project noise trigger levels, where feasible and reasonable. Where exceedances of the project specific noise trigger levels are predicted (i.e. transmission lines audible noise), feasible and reasonable operational noise and vibration mitigation measures will be further investigated, in consultation with the affected receivers. This will include:	Pre-construction	All locations

Mitigation ID	Impact	Mitigation measure	Timing	Applicable location(s)
		Transmission lines — Scheduling of maintenance activities during less sensitive times of day. — Noise control at the receiver, such as ‘at property’ treatment to upgrade aspects of the dwellings including the façade or ventilation systems. — Monitoring after the commissioning of the project to be conducted at each residence where potential operational noise levels are predicted to exceed project trigger levels. — If additional measures are found to be required during the compliance monitoring, these will be implemented as soon as practicable. Energy hubs and switching stations — Adoption of lower generating noise equipment (where practicable). — Site layout designed to minimise noise impacts. — Restriction of operational parameters such as cooling fans where meteorological conditions are favourable. — Noise control at the receiver, such as ‘at property’ treatment to upgrade aspects of the dwellings including the façade or ventilation systems. Identified measures will be implemented prior to operation of the relevant infrastructure. In addition, the following will be undertaken: — Monitoring after the commissioning of the project to be conducted at each residence where potential operational noise levels are predicted to exceed project trigger levels to compare operational noise levels to predictions. — If additional measures are found to be required during the compliance monitoring, these will be implemented as soon as practicable.		

5.4 Effectiveness of mitigation measures

5.4.1 Construction

The adoption of the recommended standard noise mitigation measures during construction activities would reduce the severity and impact of the predicted noise levels.

Land use planning measures such as locating high noise activities such as stockpiles or construction routes away from receivers is the most preferable form of noise mitigation and would provide the most benefit.

The implementation of noise controls on equipment, including regular maintenance, the use of broadband reversing beepers (or alternatives), lower noise plant or temporary screening would reduce the generation and transmission of noise to potentially affected receivers.

Planning and scheduling measures, including the provision of respite periods, particularly during drone operations (if required) and high quality communication and complaints investigation would reduce the severity of impacts and annoyance during high noise periods.

The implementation of the recommended construction vibration mitigation measures is expected to eliminate all predicted construction vibration impacts.

5.4.2 Operation

During periods of wet weather, noise impacts have been predicted to occur as a result of coronal noise at two locations. The implementation of at receiver acoustic treatments is expected to be the only feasible noise mitigation method to reduce these impacts, however is not strictly required under the NPfI for negligibly-impacted properties. Where these are effectively installed, internal noise levels are expected to be acceptable. It is noted that these mitigation measures would not provide any reduction in noise levels at outdoor areas, however given the source is most likely to occur during periods of rain, this is unlikely to be generate complaints.

Sleep disturbance impacts have also been predicted to potentially occur at two switching stations. Although the requirement for noise mitigation is yet to be determined, if found to be required, it is recommended that circuit breaker switches are screened or housed within sound insulated enclosures. Where this mitigation measure is effectively adopted, noise impacts would no longer occur.

6 Limitations

This report is provided by WSP Australia Pty Limited (*WSP*) for EnergyCo (*Client*) in response to specific instructions from the Client and in accordance with WSP's project and agreement with the Client (*Agreement*).

6.1 Permitted purpose

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6.2 Qualifications and assumptions

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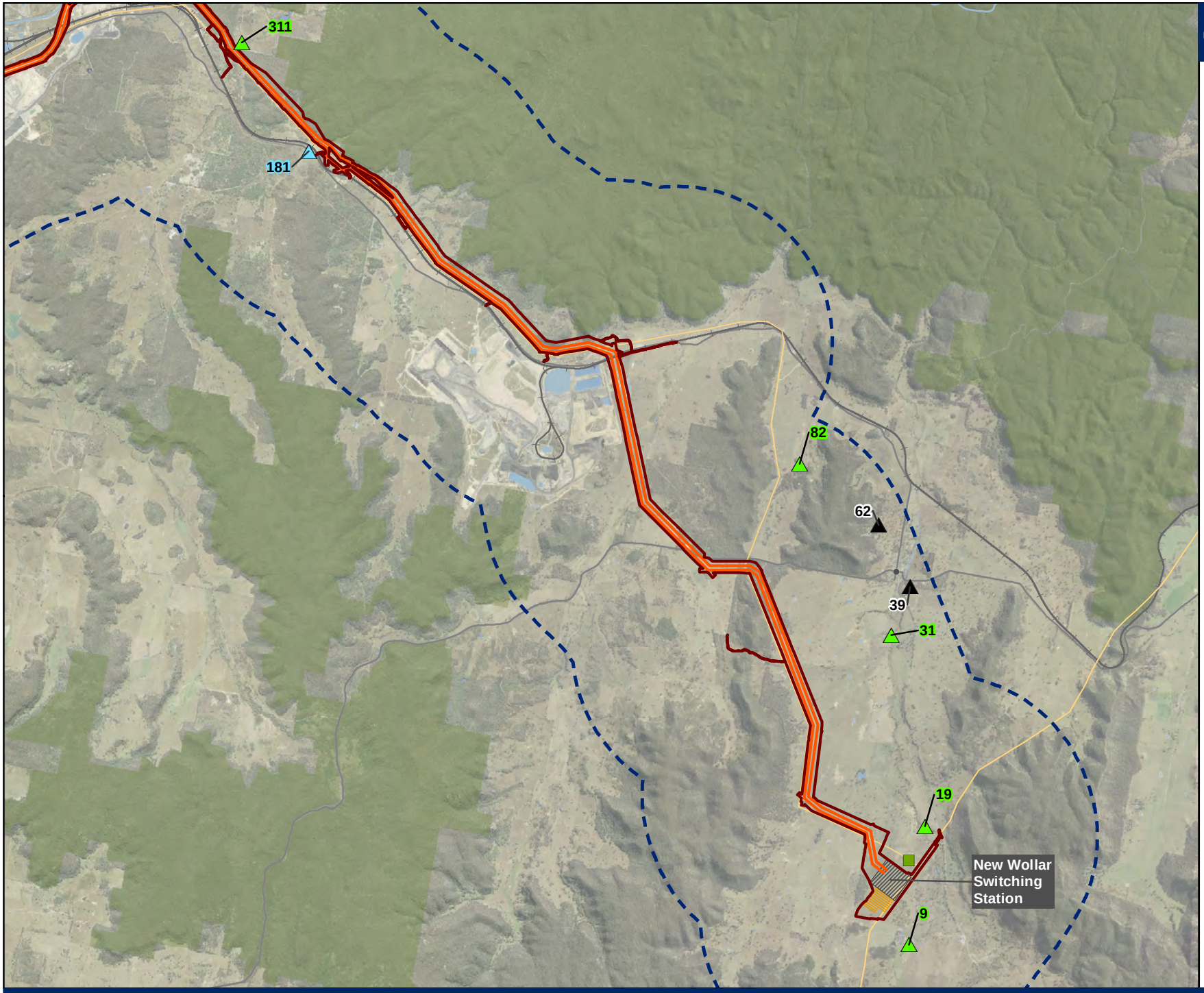
Appendix A

Updated study area and sensitive receivers



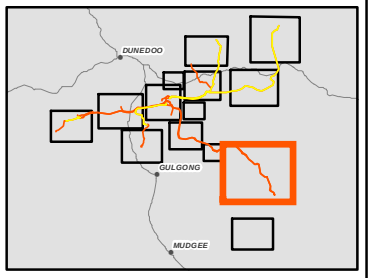
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- Construction compound
- Energy hub / 500 kV switching station
- 500 kV transmission line
- Existing substation
- Existing transmission line
- Road
- Railway
- Watercourse
- Water body
- NPWS estate

Noise sensitive receivers

- Cemetery
- House
- Unoccupied house



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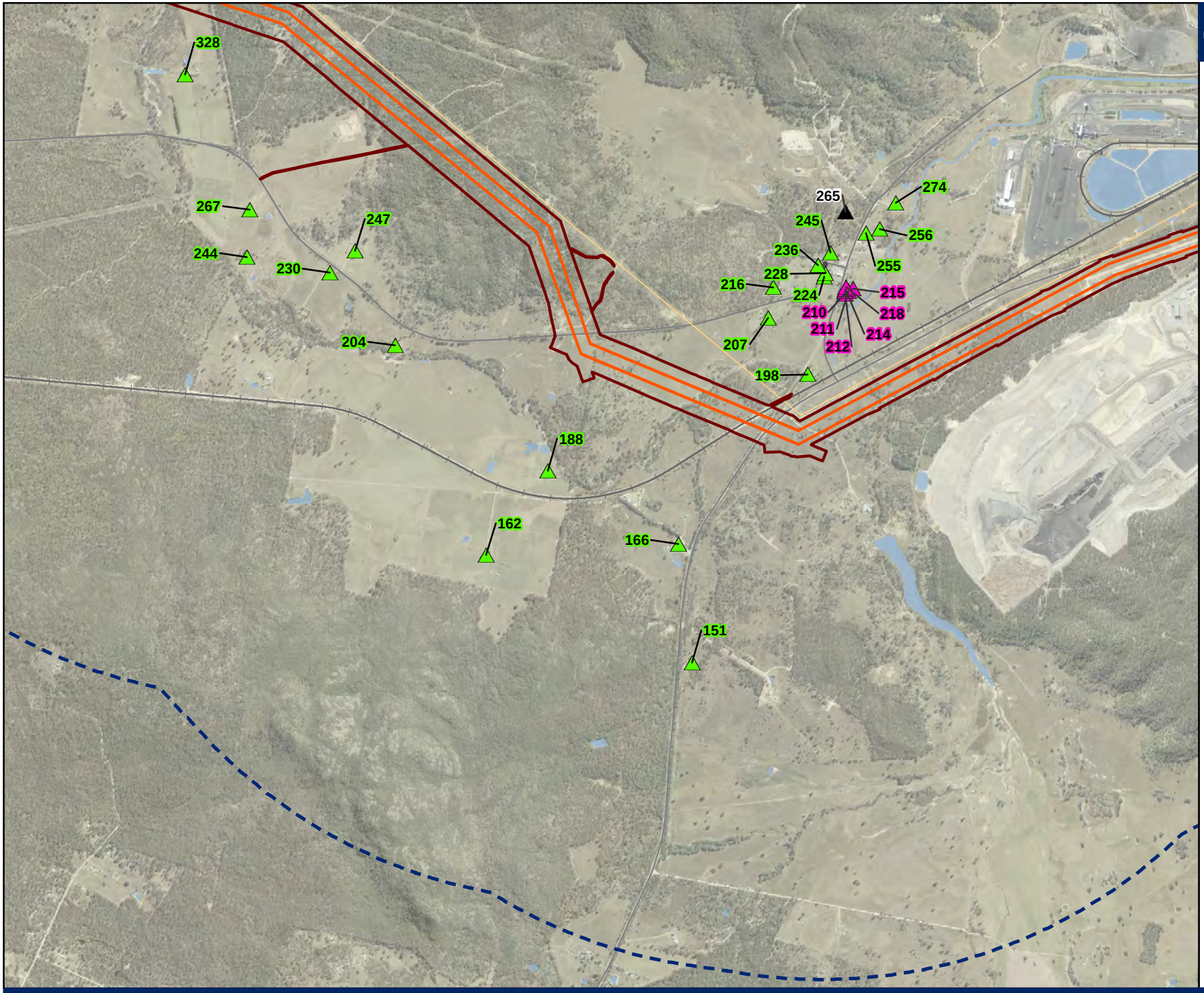


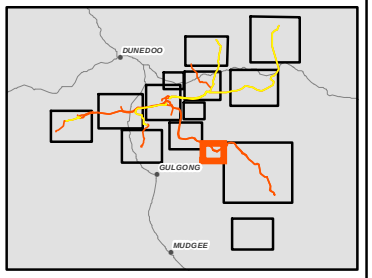
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- 500 kV transmission line
- Existing transmission line
- Road
- Railway
- Watercourse
- Water body

Noise sensitive receivers

- Cemetery
- House
- School



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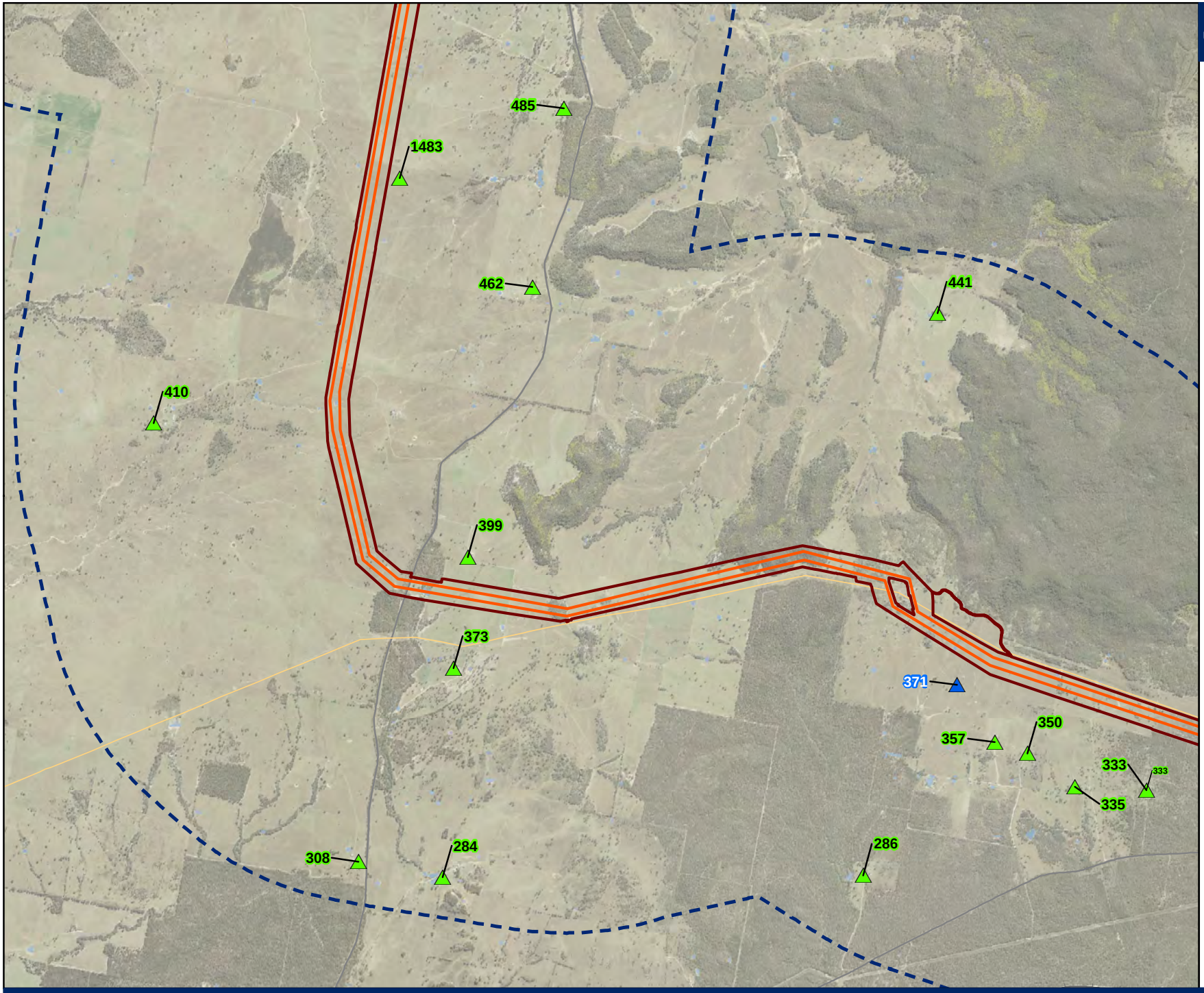


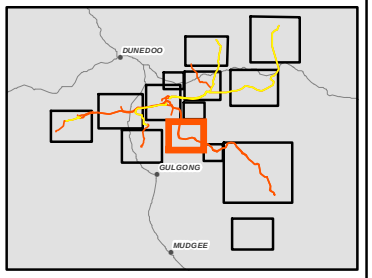
Appendix A
Updated study area and sensitive receivers
Page 3 of 14

Legend

- Amended study area
- Amended construction area
- 500 kV transmission line
- Existing transmission line
- Road
- Railway
- Water body

Noise sensitive receivers

- House
- New/reclassified house



0 0.6 1.2 Km

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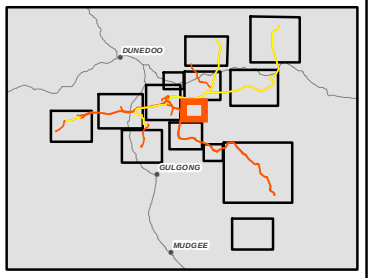
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Road
- Water body

Noise sensitive receivers

- House



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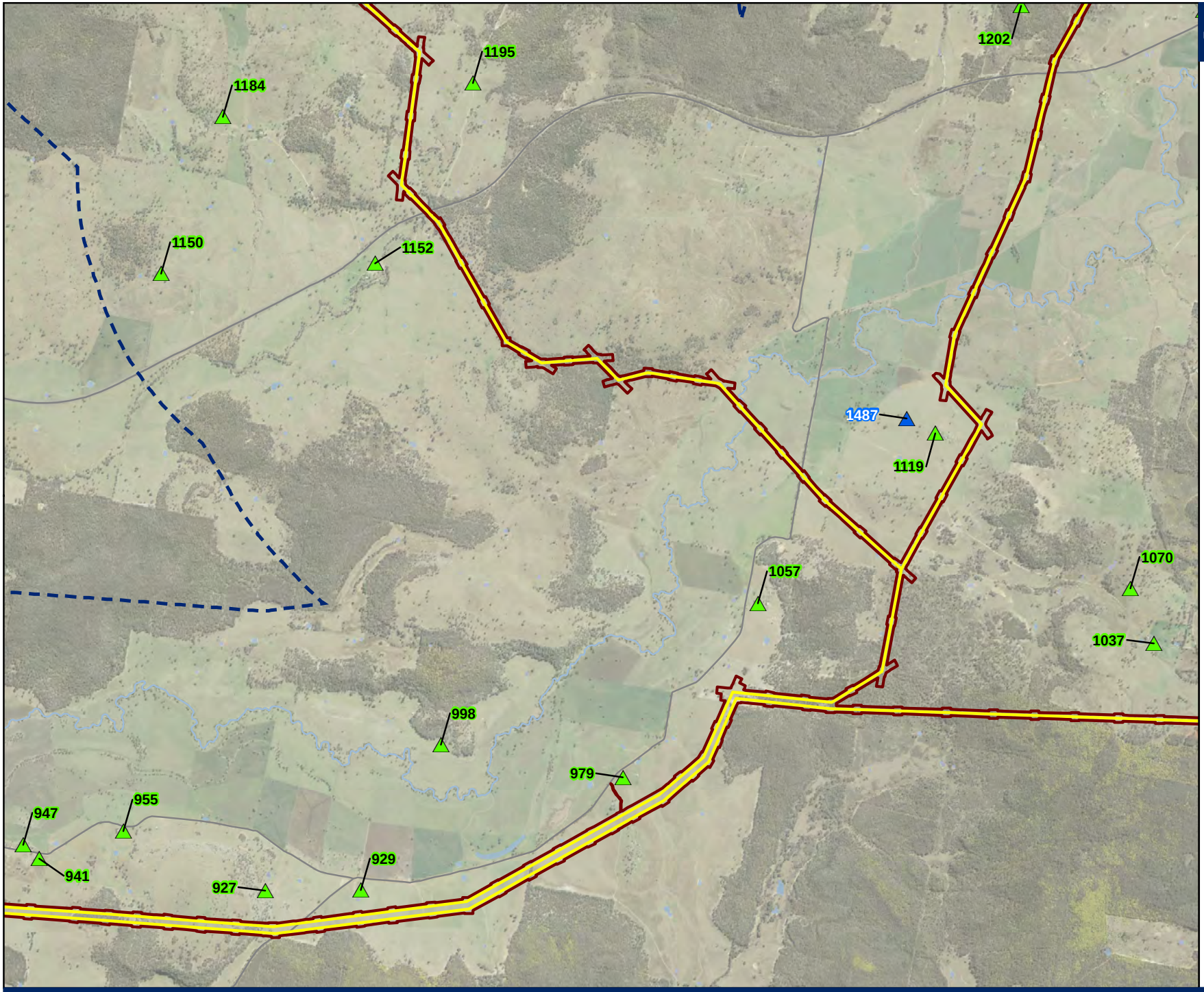


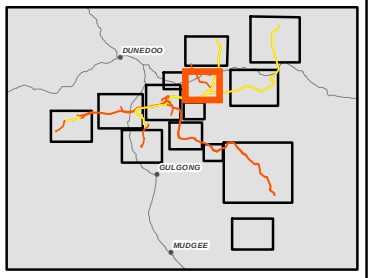
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- 330 kV transmission line
- Road
- Watercourse
- Water body

Noise sensitive receivers

- House
- New/reclassified house



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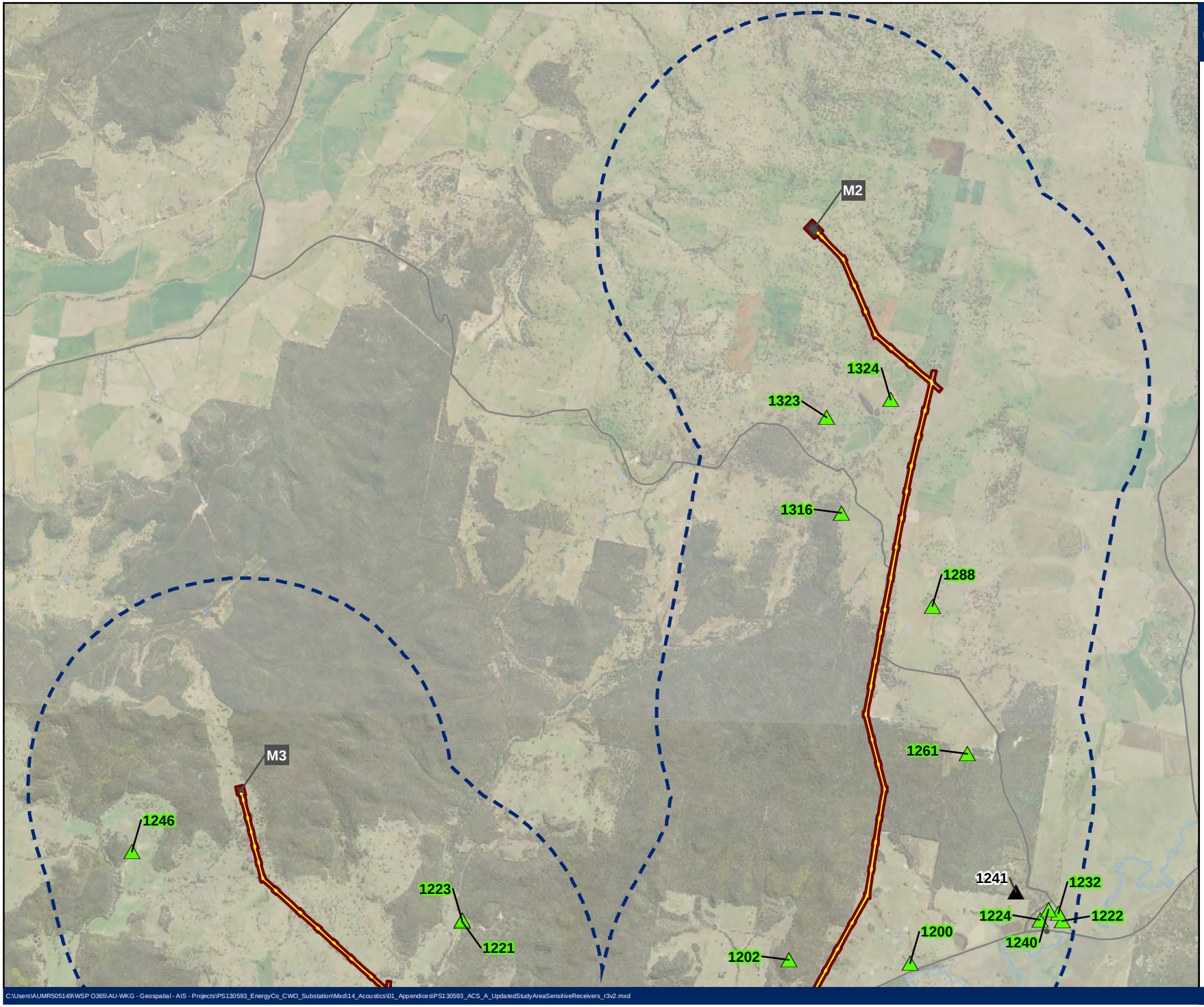
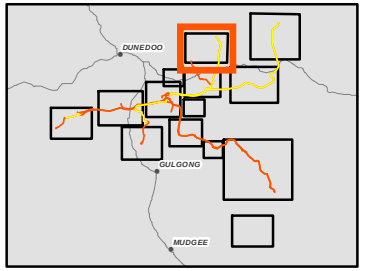


Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 330 kV transmission line
- Road
- Watercourse
- Water body

Noise sensitive receivers

- Cemetery
- House



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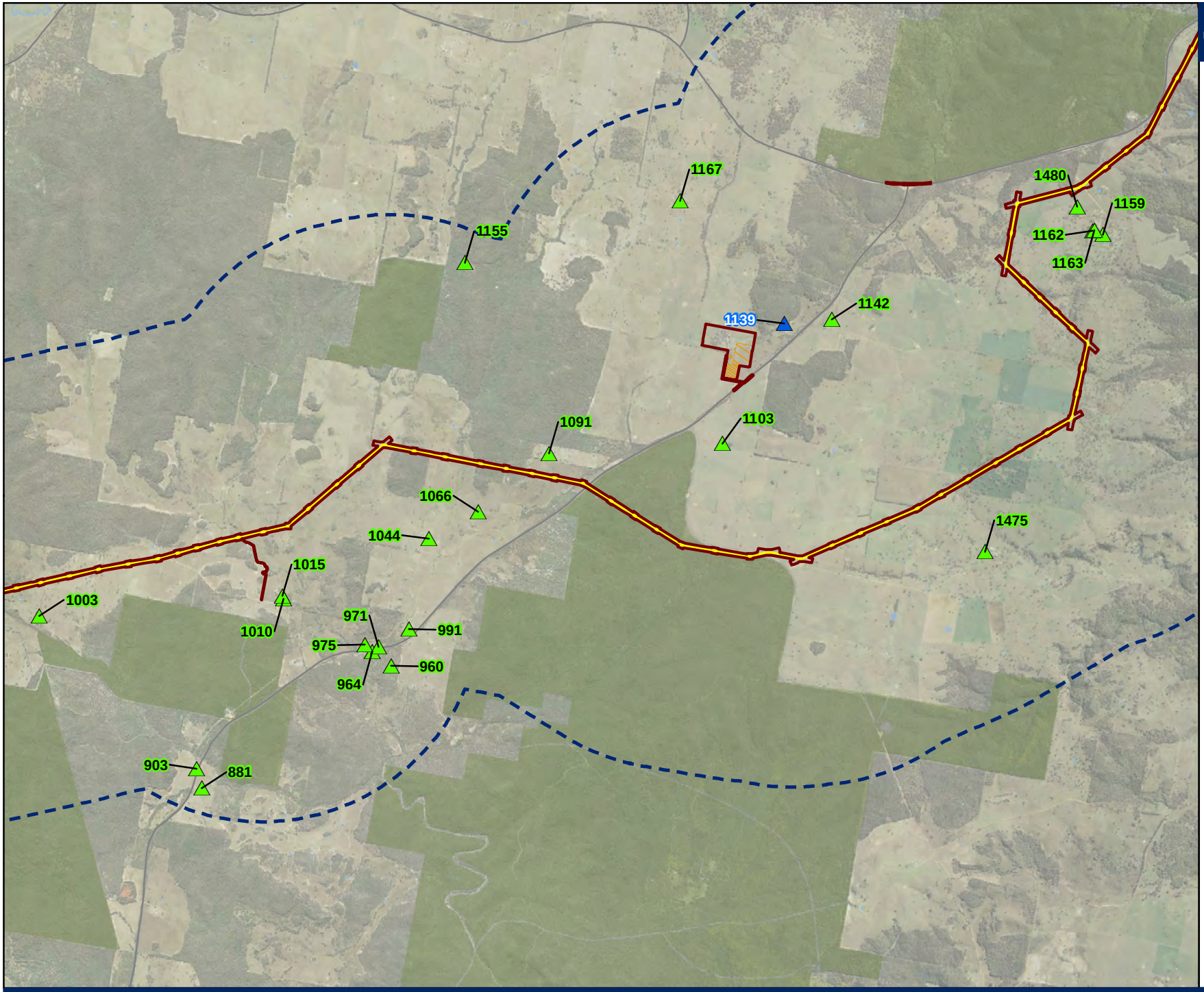
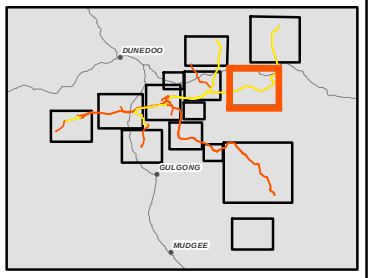


Legend

- Amended study area
- Amended construction area
- Construction compound
- Workforce accommodation camp
- 330 kV transmission line
- Road
- Watercourse
- Water body
- NPWS estate

Noise sensitive receivers

- House
- New/reclassified house



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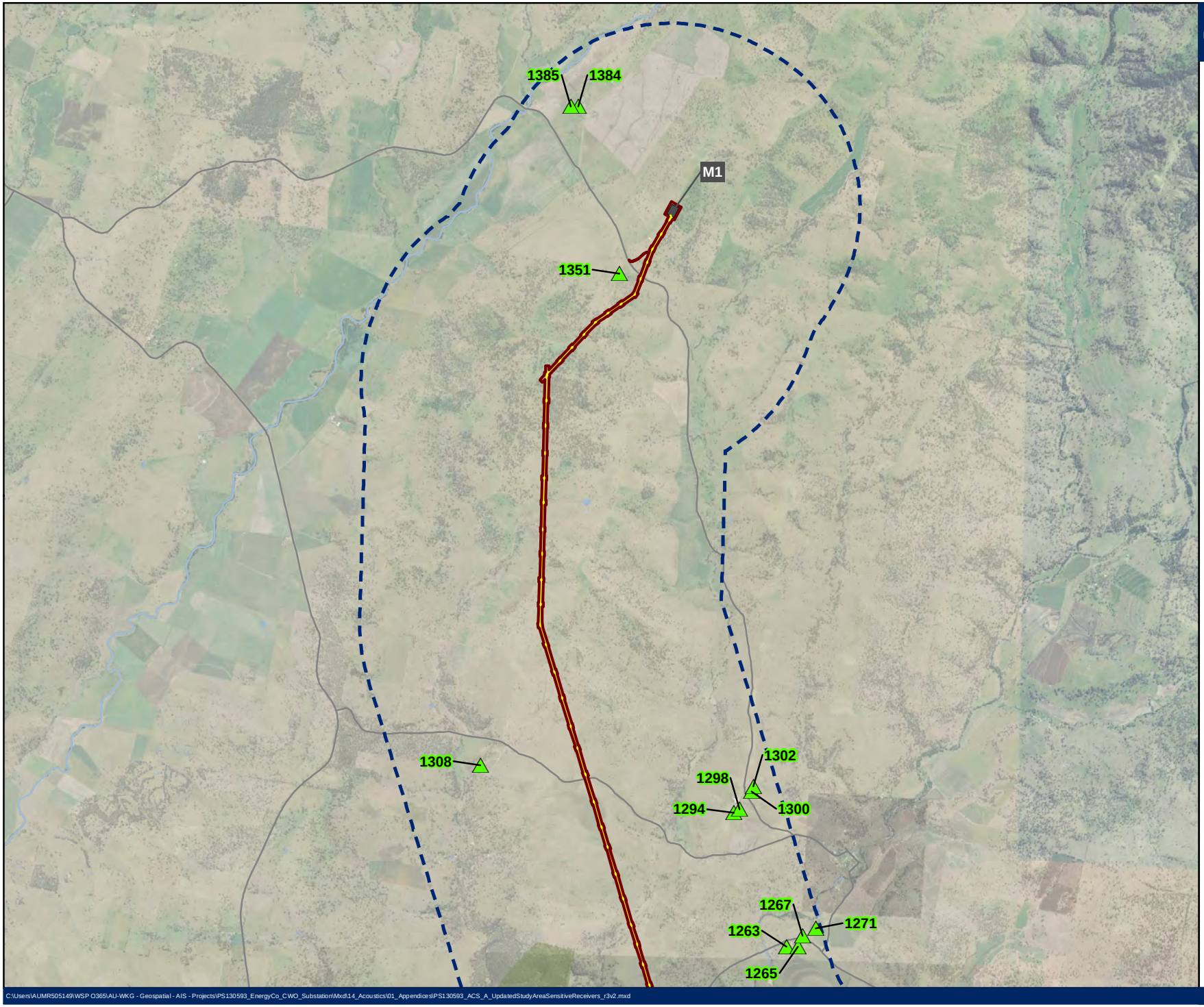


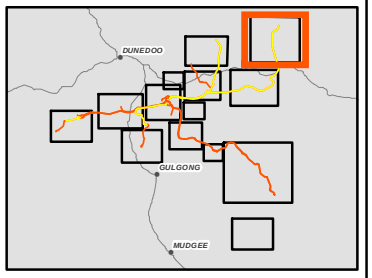
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 330 kV transmission line
- Road
- Watercourse
- Water body
- NPWS estate

Noise sensitive receivers

- House



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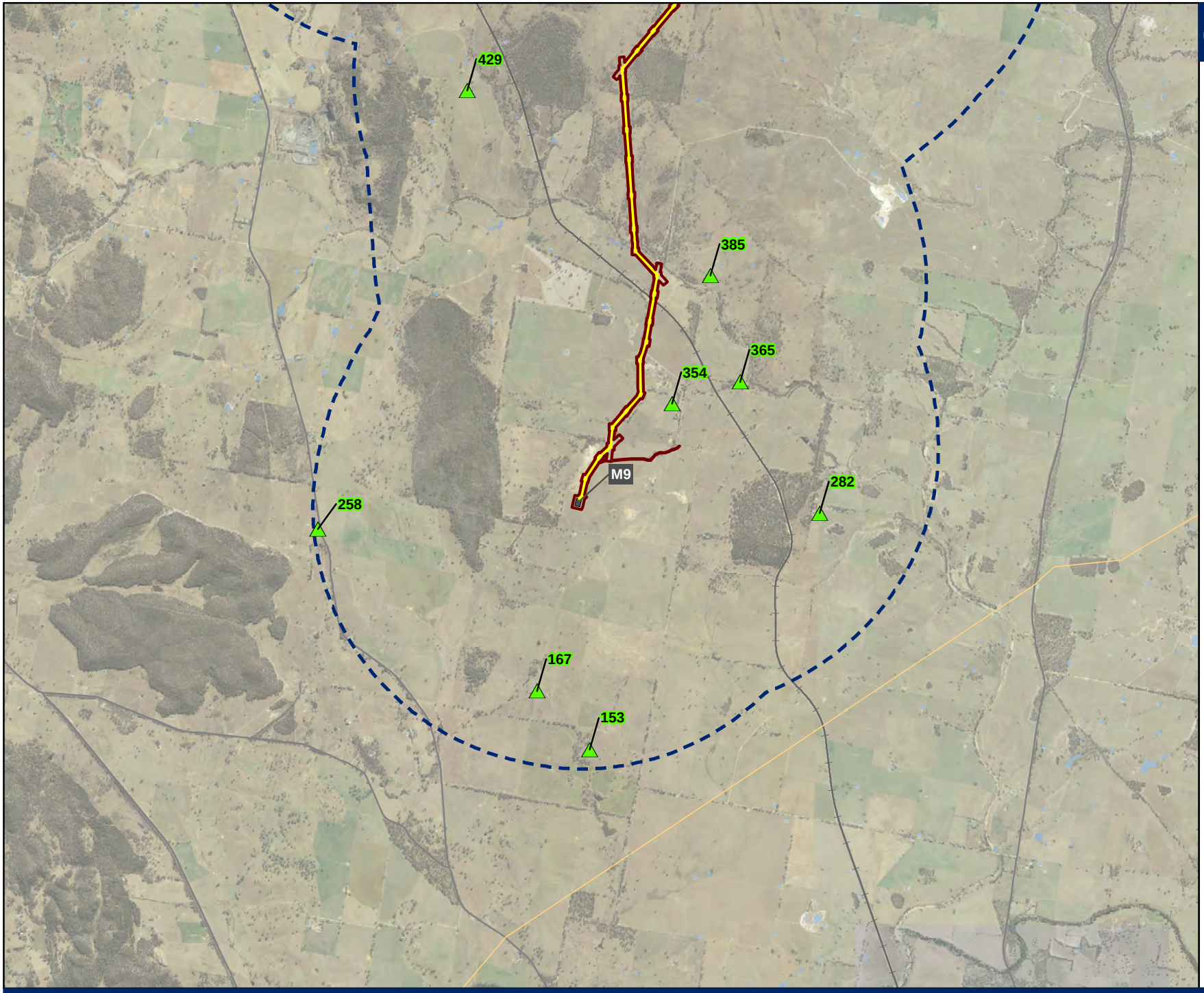


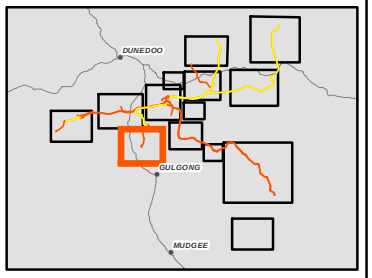
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- Existing transmission line
- Road
- Railway
- Water body

Noise sensitive receivers

- House



0 0.75 1.5 Km

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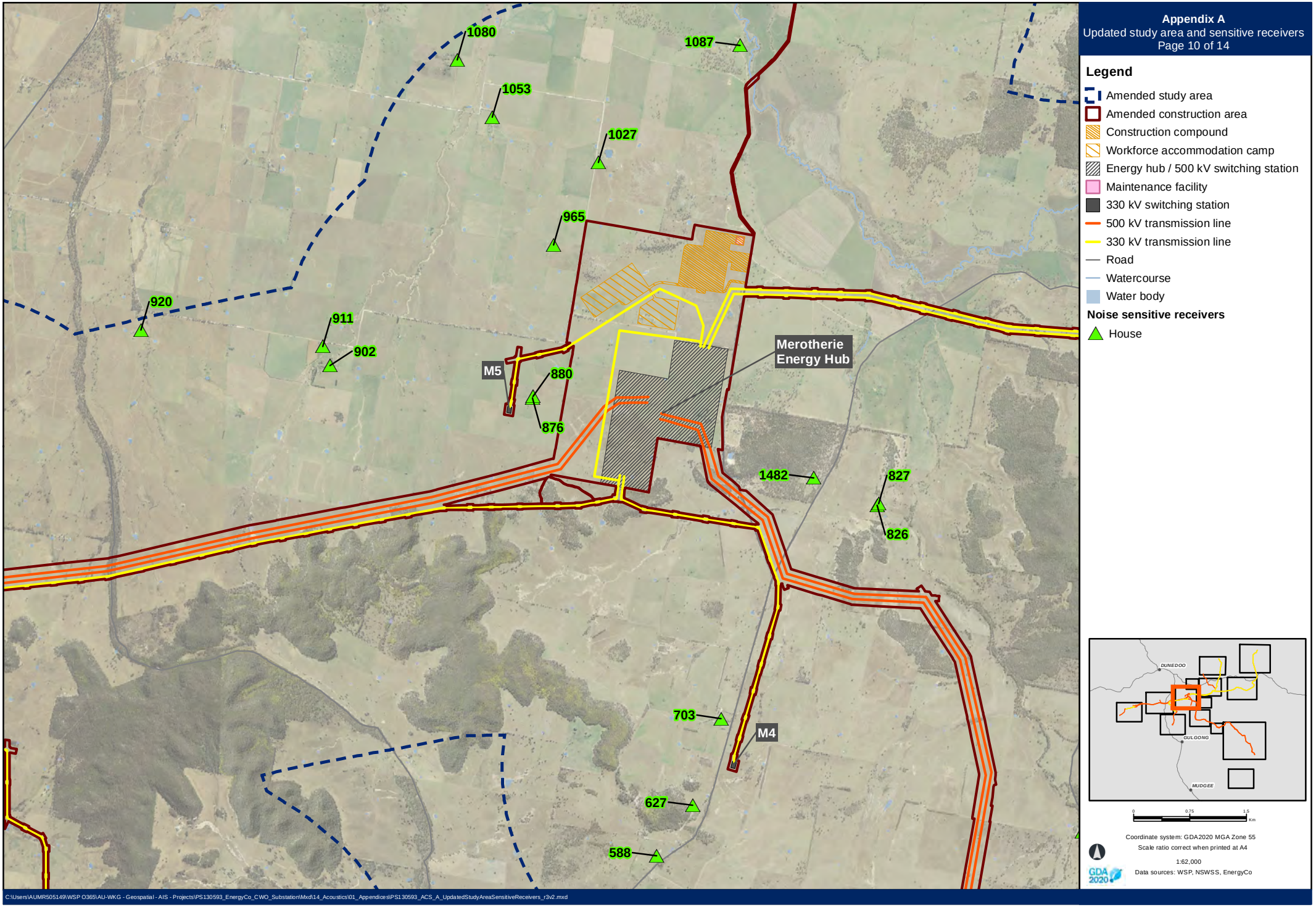
1080
1087
1053
1027
965
920
911
902
880
876
M5
Merotherie
Energy Hub
1482
827
826
703
M4
627
588
Appendix A
Updated study area and sensitive receivers
Page 10 of 14
Legend
Amended study area
Amended construction area
Construction compound
Workforce accommodation camp
Energy hub / 500 kV switching station
Maintenance facility
330 kV switching station
500 kV transmission line
330 kV transmission line
Road
Watercourse
Water body
Noise sensitive receivers
House
DUNEDOO
GULGONG
MUDGEE
0
0.75
1.5
Km
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GDA 2020
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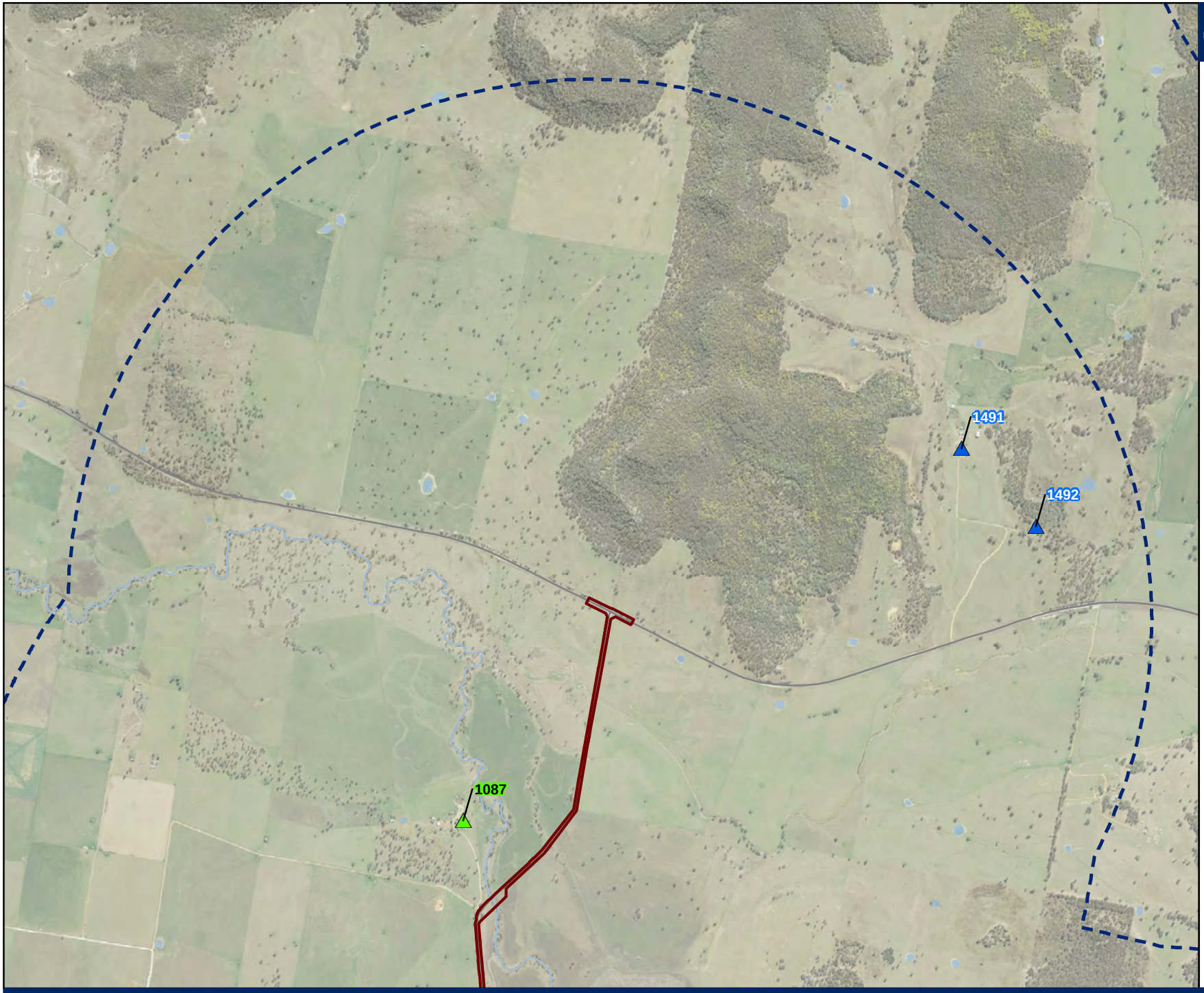
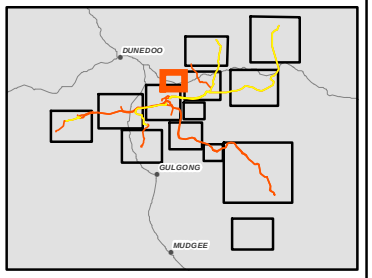


Legend

- Amended study area
- Amended construction area
- Road
- Watercourse
- Water body

Noise sensitive receivers

- House
- New/reclassified house



0 0.35 0.7 Km

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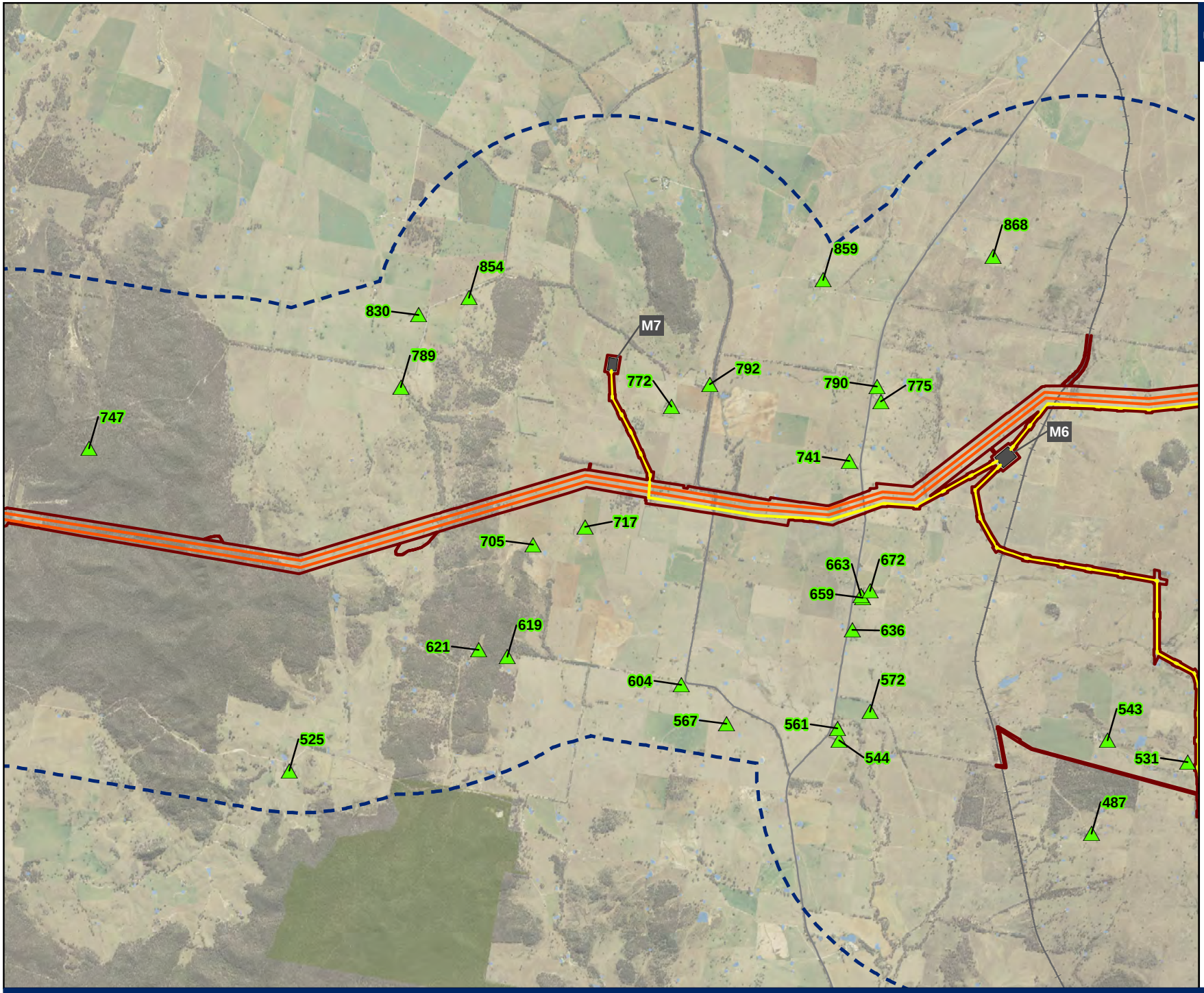
Data sources: WSP, NSWSS, EnergyCo



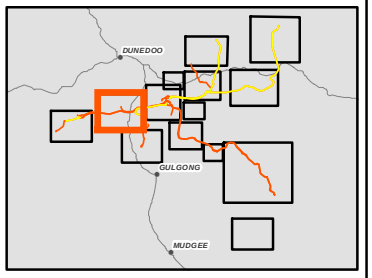
Appendix A
Updated study area and sensitive receivers

Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Road
- Railway
- Water body
- NPWS estate

Noise sensitive receivers

- House



0 0.8 1.6 Km

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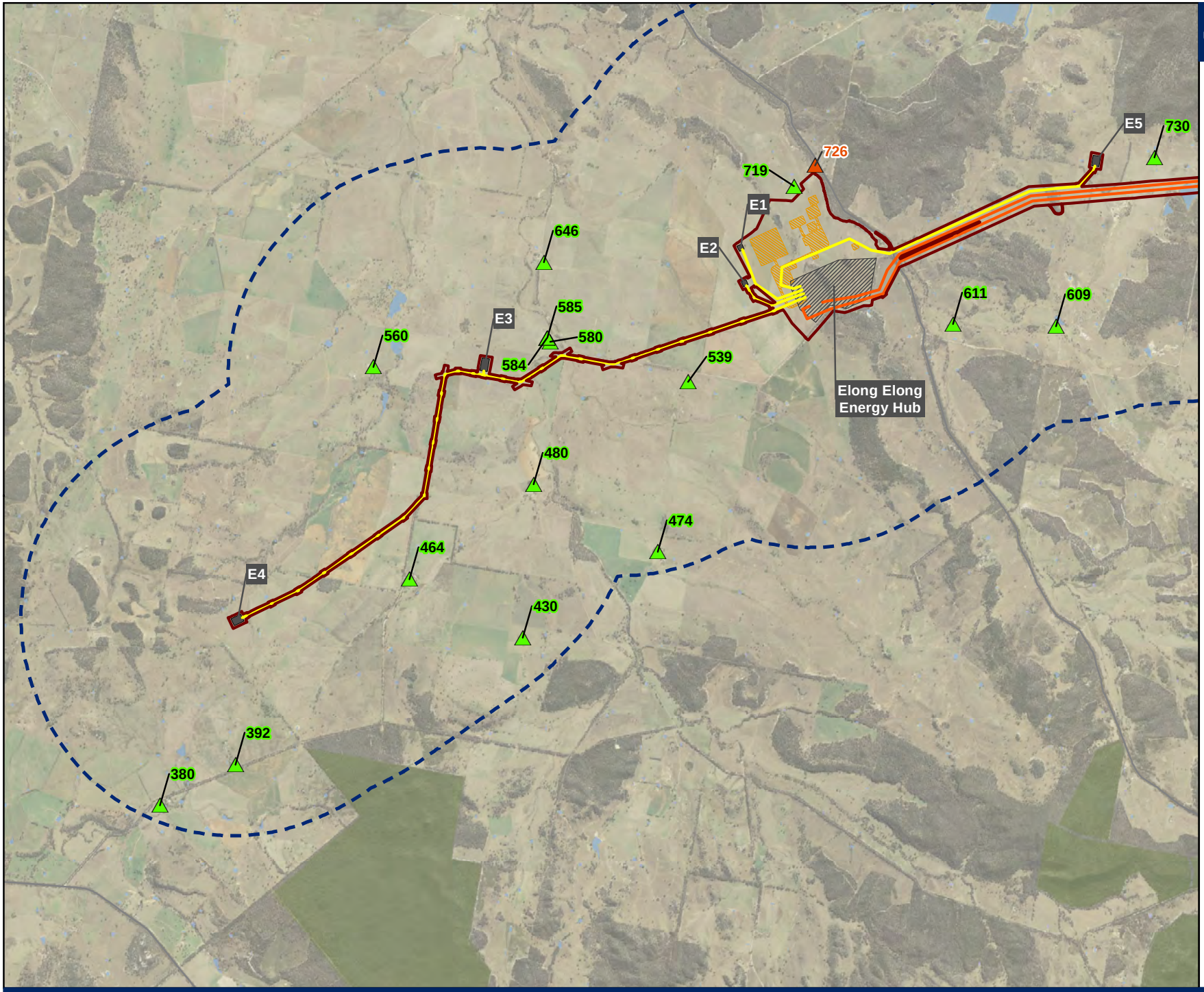
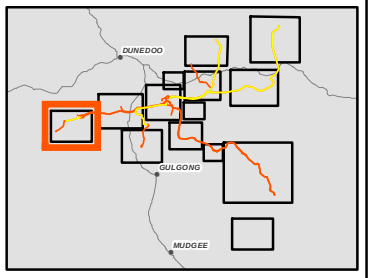


Legend

- Amended study area
- Amended construction area
- Construction compound
- Energy hub / 500 kV switching station
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Road
- Water body
- NPWS estate

Noise sensitive receivers

- Dapper Fire Station
- House



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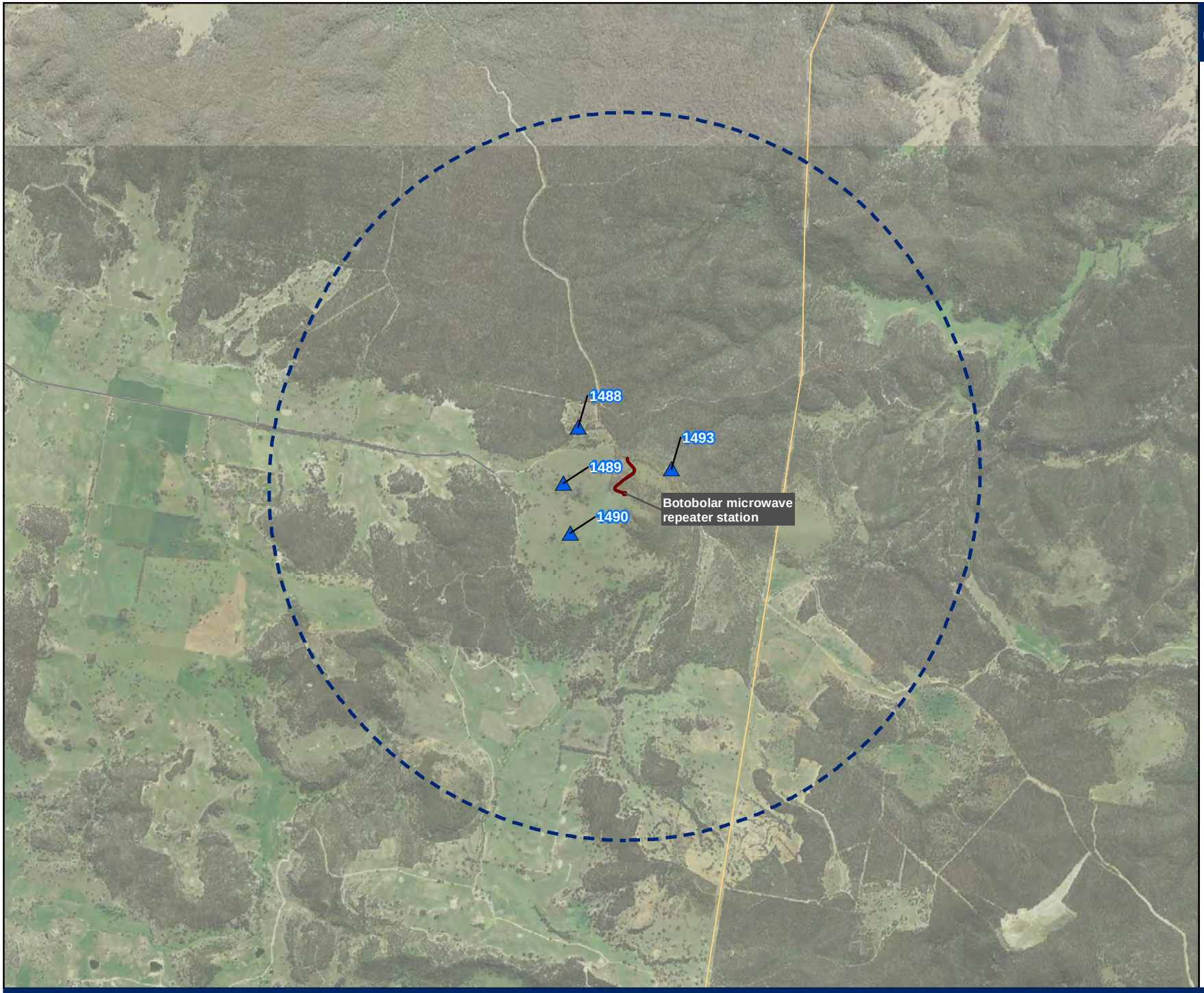
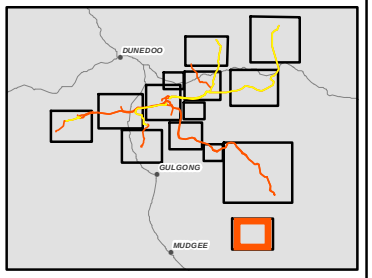


Legend

- Amended study area
- Amended construction area
- Existing transmission line
- Road

Noise sensitive receivers

- New/reclassified house



0 0.55 1.1 Km

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Data sources: WSP, NSWSS, EnergyCo

Appendix B

Updated construction noise assessment

APPENDIX B-1
Detailed construction noise scenarios

Transmission line construction - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Utility adjustment (Enabling works)	5T excavator	1	1	104	
	20T excavator	1	0.75	110	
	Telehandler	1	1	113	116
	10kL water cart	1	1	107	
	Hand tools	1	0.5	105	
	Plate compactor	1	1	104	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Trench roller	1	1	105	
	TOTAL		**117**		**117**
Site access (Enabling works)	20T excavator	1	0.8	110	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	D7 Dozer	1	1	115	121
	Generator	1	1	103	
	Grader	1	1	113	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Truck and trailer	1	0.25	108	
	TOTAL		**119**		**121**
Vegetation Clearing and access	30T excavator	1	0.75	110	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	D7 Dozer	1	1	115	
	Grader	1	1	113	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Tipper	2	0.5	110	
	Chainsaw	1	0.5	114	
	Mulcher	1	0.5	116	128
	TOTAL		**121**		**128**
Foundations	30T excavator	2	0.75	112	
	20T franna crane	1	0.5	113	117
	Concrete batching plant	1	1	105	
	Concrete boom pump	1	0.25	109	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	4	0.3	109	
	Concrete vibrator	1	1	101	
	Grader	2	1	113	
	Truck and trailer	2	0.25	108	
	Hand tools	1	0.5	105	
	Bored piling rig	2	1	112	
	Skid Steer	1	1	104	
	Tipper	2	0.5	110	
	TOTAL		**124**		**124**
Tower erection	Telehandler	1	1	113	
	20T franna crane	2	0.5	113	117
	60T mobile crane	1	1	113	
	180T mobile crane	1	1	113	
	EWP Boom lift (Cherry picker)	2	0.25	99	
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Semi trailer	1	0.25	108	
	TOTAL		**119**		**119**
Conductor stringing	Telehandler	1	1	113	
	20T franna crane	1	0.5	113	
	EWP Boom lift (Cherry picker)	1	0.25	99	
	Hand tools	1	0.5	105	
	Drone	1	1	115	115
	Knuckle boom	2	0.25	99	
	Semi trailer	1	0.25	108	
	TOTAL		**118**		**118**
Conductor brake & winch	Cable hauling winch	2	1	103	

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
	Cable heavy drum stand	4	1	-	
	Cable puller	1	1	103	
	Cable tensioner	1	1	103	
		108			**108**
Commissioning of RNI	Telehandler	1	1	113	116
	EWP Boom lift (Cherry picker)	2	0.25	99	
	Tipper	2	0.5	110	
	TOTAL	**115**			**116**
Demobilisation and rehabilitation	20T excavator	2	0.75	110	
	Telehandler	1	1	113	
	20T franna crane	2	0.5	113	
	60T mobile crane	2	1	113	
	10kL water cart	1	1	107	
	D7 Dozer	1	1	115	121
	EWP Boom lift (Cherry picker)	2	0.25	99	
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	2	1	104	
	Truck and trailer	4	0.25	108	
	TOTAL	**122**			**122**

Energy Hubs and Switching Station construction - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Utility adjustment (Enabling works)	5T excavator	1	1	104	
	20T excavator	1	0.75	110	
	Telehandler	1	1	113	116
	10kL water cart	1	1	107	
	Hand tools	1	0.5	105	
	Plate compactor	1	1	104	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Trench roller	1	1	105	
	TOTAL		**117**		**117**
Site access (Enabling works)	20T excavator	1	0.8	110	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	D7 Dozer	1	1	115	121
	Generator	1	1	103	
	Grader	1	1	113	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Truck and trailer	1	0.25	108	
	TOTAL		**119**		**121**
Vegetation clearance	20T excavator	2	0.75	110	
	D10 Dozer	1	1	117	
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Truck and trailer	1	0.25	108	
	Chainsaw	1	0.5	114	
	Mulcher	1	0.5	116	128
	TOTAL		**120**		**128**
Access and earthworks (including blasting & crushing)	30T excavator	3	0.75	110	
	Pad foot roller	2	1	109	
	Smooth drum roller	2	1	109	
	10kL water cart	2	1	107	
	D10 Dozer	2	1	117	126
	Grader	1	1	113	
	Hand tools	1	0.5	105	
	Scraper	5	1	110	
	Truck and trailer	3	0.25	108	
	30T articulated dump truck	5	0.25	110	
	Crusher	1	0.5	118	
	TOTAL		**125**		**126**
Foundations and pads (including piling and blasting)	30T excavator	2	0.75	110	
	20T franna crane	1	0.5	113	
	Concrete batching plant	1	1	105	
	Concrete boom pump	1	0.25	109	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	4	0.3	109	
	Concrete vibrator	1	1	113	
	Grader	2	1	113	121
	Hand tools	1	0.5	105	
	Bored piling rig	2	1	112	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Truck and trailer	2	0.25	108	
	TOTAL		**122**		**122**
Equipment installation	Telehandler	1	1	113	
	20T franna crane	2	0.5	113	117
	60T mobile crane	1	1	113	
	180T mobile crane	2	1	113	

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
	EWP Boom lift (Cherry picker)	4	0.25	99	
	Generator	2	1	103	
	Hand tools	1	0.5	105	
	Tipper	1	0.5	110	
	TOTAL	**120**			**120**
Commissioning of RNI	Telehandler	1	1	113	117
	EWP Boom lift (Cherry picker)	2	0.25	99	
	Tipper	2	0.5	110	
	TOTAL	**115**			**117**
Demobilisation and rehabilitation	20T excavator	2	0.75	110	
	Telehandler	1	1	113	
	20T franna crane	2	0.5	113	
	60T mobile crane	2	1	113	
	10kL water cart	1	1	107	
	D7 Dozer	1	1	115	121
	EWP Boom lift (Cherry picker)	2	0.25	99	
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	2	1	104	
	Truck and trailer	4	0.25	108	
	TOTAL	**122**			**122**

Access tracks (Enabling works)

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Earthworks and upgrades	20T excavator	2	0.75	110	
	20T franna crane	1	0.5	113	
	60T mobile crane	1	1	113	
	Concrete batching plant	1	1	105	
	Concrete boom pump	1	0.25	109	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	3	0.25	109	
	Concrete vibrator	1	1	113	
	Generator	1	1	103	
	Grader	1	1	113	121
	Hand tools	1	0.5	105	
	Bored piling rig	1	1	112	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Truck and trailer	3	0.25	108	
	TOTAL	**122**			**122**
Vegetation clearance	20T excavator	2	0.75	110	
	D10 Dozer	1	1	117	128
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Truck and trailer	1	0.25	108	
	Chainsaw	1	0.5	114	
	Mulcher	1	0.5	116	
	TOTAL	**120**			**128**

Construction compounds - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Vegetation clearance	20T excavator	2	0.75	110	
	D10 Dozer	1	1	117	128
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Truck and trailer	1	0.25	108	
	Chainsaw	1	0.5	114	
	Mulcher	1	0.5	116	
	TOTAL		**120**		**128**
Construction	20T excavator	2	0.75	110	
	20T franna crane	2	0.5	113	
	60T mobile crane	1	1	113	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	3	0.3	109	
	Concrete vibrator	1	1	113	
	EWP Boom lift (Cherry picker)	3	0.25	99	
	Generator	2	1	103	
	Grader	1	1	113	121
	Hand tools	1	0.5	105	
	Semi trailer	2	0.25	108	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	TOTAL		**122**		**122**
Operation	Light vehicles	20	0.1	88	
	30T excavator	2	0.75	110	
	20T franna crane	1	0.5	113	
	Drone	1	1	115	
	Concrete batching plant	1	1	105	
	Crushing / screening plant	1	1	118	
	Concrete boom pump	1	0.25	109	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	4	0.3	109	
	Concrete vibrator	1	1	113	
	Grader	2	1	113	121
	Hand tools	1	0.5	105	
	Bored piling rig	2	1	112	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Truck and trailer	2	0.25	108	
	TOTAL		**124**		**124**

Accomodation camps - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Vegetation clearance	20T excavator	2	0.75	110	
	D10 Dozer	1	1	117	
	Generator	1	1	103	
	Hand tools	1	0.5	105	
	Skid Steer	1	1	104	
	Truck and trailer	1	0.25	108	
	Chainsaw	1	0.5	114	
	Mulcher	1	0.5	116	128
	TOTAL		**120**		**128**
Construction	20T excavator	2	0.75	110	
	20T franna crane	2	0.5	113	
	60T mobile crane	1	1	113	
	Pad foot roller	1	1	109	
	Smooth drum roller	1	1	109	
	10kL water cart	1	1	107	
	Concrete agitator	3	0.3	109	
	Concrete vibrator	1	1	113	
	EWP Boom lift (Cherry picker)	3	0.25	99	
	Generator	2	1	103	
	Grader	1	1	113	121
	Hand tools	1	0.5	105	
	Semi trailer	2	0.25	108	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	TOTAL		**122**		**122**
Operation	Light vehicles	200	0.1	88	
	Generator	6	1	103	105
	TOTAL		**111**		**111**

Microwave repeaters - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Construction	Semi trailer	1	0.25	108	
	Backhoe	1	0.5	111	
	Concrete truck	1	0.25	109	
	20T excavator	1	0.5	110	
	60T mobile crane	1	0.25	113	
	Light vehicles	2	0.25	88	
	Hand tools	3	0.5	105	
	Pile driving	1	0.25	116	119
	TOTAL	**117**			**119**

Local road upgrades - Equipment list and Sound Power Levels

Work stage	Equipment	Number of items	Usage factor per 15 minutes	Base SWL dBA	LAMax (Loudest Item)
Utility adjustment (Enabling works)	5T excavator	1	1	104	
	20T excavator	1	0.75	110	
	Telehandler	1	1	113	116
	10kL water cart	1	1	107	
	Hand tools	1	0.5	105	
	Plate compactor	1	1	104	
	Skid Steer	1	1	104	
	Tipper	1	0.5	110	
	Trench roller	1	1	105	
	TOTAL	**117**			**117**
Access and earthworks (including crushing)	30T excavator	3	0.75	110	
	Pad foot roller	2	1	109	
	Smooth drum roller	2	1	109	
	10kL water cart	2	1	107	
	D10 Dozer	2	1	117	126
	Grader	1	1	113	
	Hand tools	1	0.5	105	
	Scraper	5	1	110	
	Truck and trailer	3	0.25	108	
	30T articulated dump truck	5	0.25	110	
	Crusher	1	0.5	118	
	TOTAL	**125**			**126**
Paving and asphalting	Asphalt paver (plus truck)	1	1	114	
	Concrete truck + pump	1	0.75	109	
	Smooth drum roller	2	1	109	
	Concrete saw	1	0.25	122	122
	TOTAL	**120**			**122**
Bridge works	20T franna crane	2	1	113	
	Concrete truck + pump	1	0.75	109	
	Bored piling	1	0.75	112	115
	Hand tools	1	0.5	105	
	Generator	2	1	103	
	Welder	1	0.5	105	
	TOTAL	**118**			**118**

APPENDIX B-2
Modelled road traffic numbers

Table B-1 Updated construction traffic assessment parameters

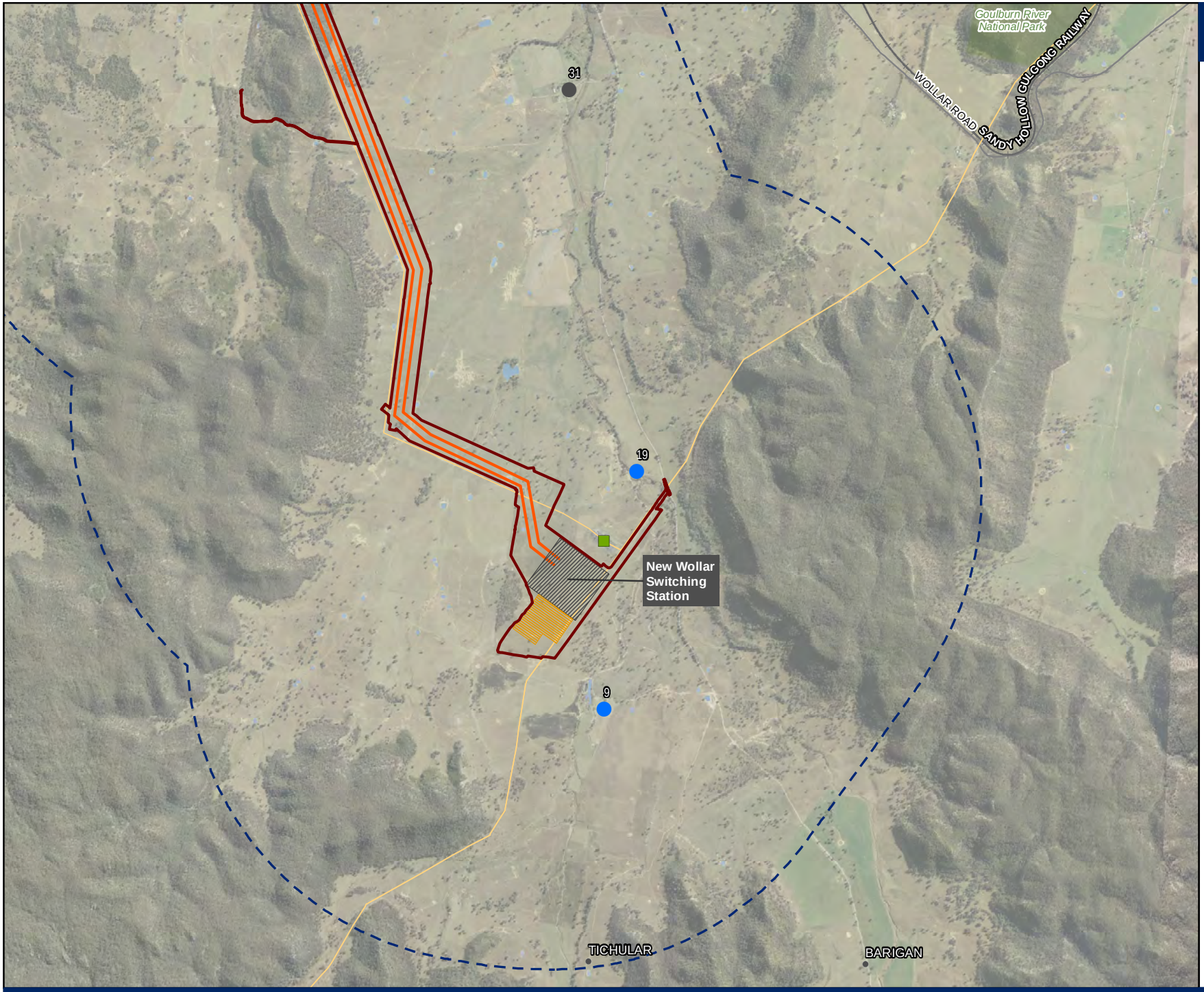
Road ID	Road name	Pavement type (RM)	Road classification (RM)	Speed km/hr	Existing traffic (vehicles/hr)				Construction traffic (vehicles/hr)[1]				Total traffic (vehicles/hr)			
					Day		Night		Day		Night		Day		Night	
					LV[4]	HV[5]	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
11_B	Ulan Road (north of Ulan-Wollar Road) (NB)	sealed	Sub-arterial Road	100	30	3	2	0	19	17	13	3	49	20	15	3
11_B	Ulan Road (north of Ulan-Wollar Road) (SB)	sealed	Sub-arterial Road	100	24	5	1	1	19	17	13	3	43	22	14	4

(1) Construction traffic volumes are split 50/50 in each direction along the construction routes

(2) LV – Light Vehicle

(3) HV – Heavy Vehicle

APPENDIX B-3
Construction noise exceedance mapping



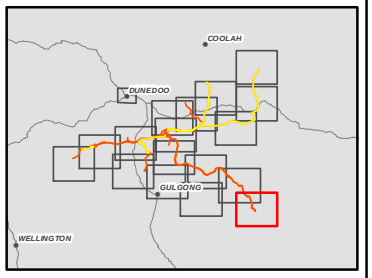
Appendix B-3
Maximum predicted construction noise exceedances

Legend

- Amended study area
- Amended construction area
- Construction compound
- Energy hub / 500 kV switching station
- 500 kV transmission line
- Existing substation
- Existing transmission line
- Road
- Railway
- Water body
- NPWS estate

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

Data sources: WSP 2023, EnergyCo, NSWSS

Legend

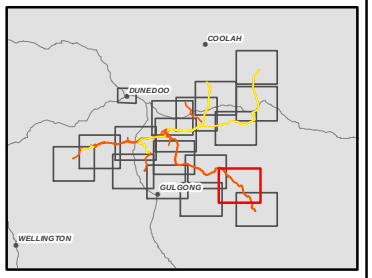
- Amended study area
- Amended construction area
- 500 kV transmission line
- Existing transmission line
- Road
- Railway
- Water body
- NPWS estate

Construction traffic exceedances

- Local Road Exceedance - Day and Night time

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Highly intrusive (>25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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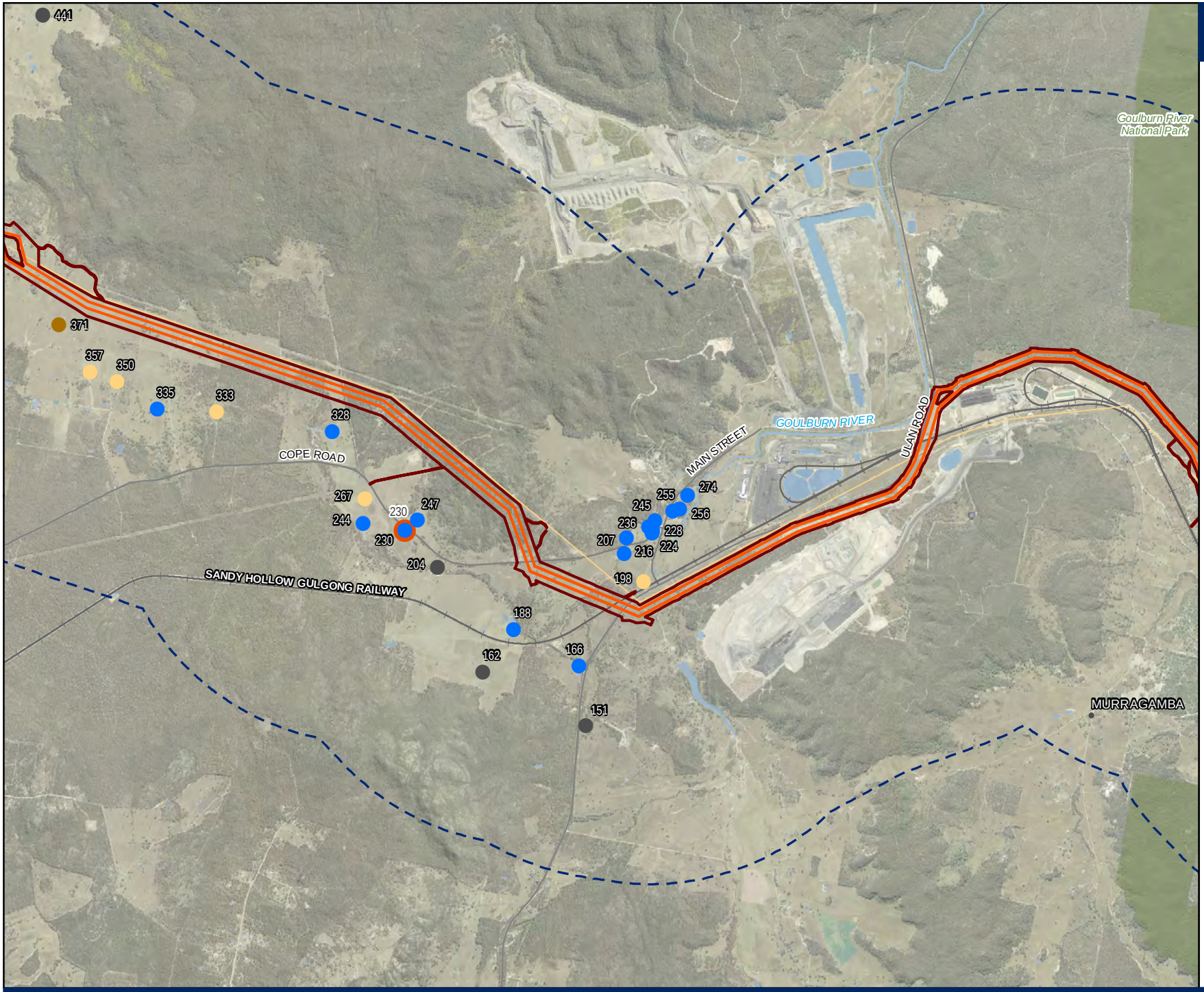
Data sources: WSP 2023, EnergyCo, NSWSS



Legend

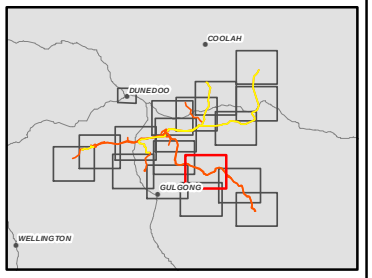
- Amended study area
- Amended construction area
- 500 kV transmission line
- Existing transmission line
- Road
- Railway
- Watercourse
- Water body
- NPWS estate

Construction traffic exceedances

- Exceedance - night (>55dB and >2dB increase)

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)



0 0.65 1.3 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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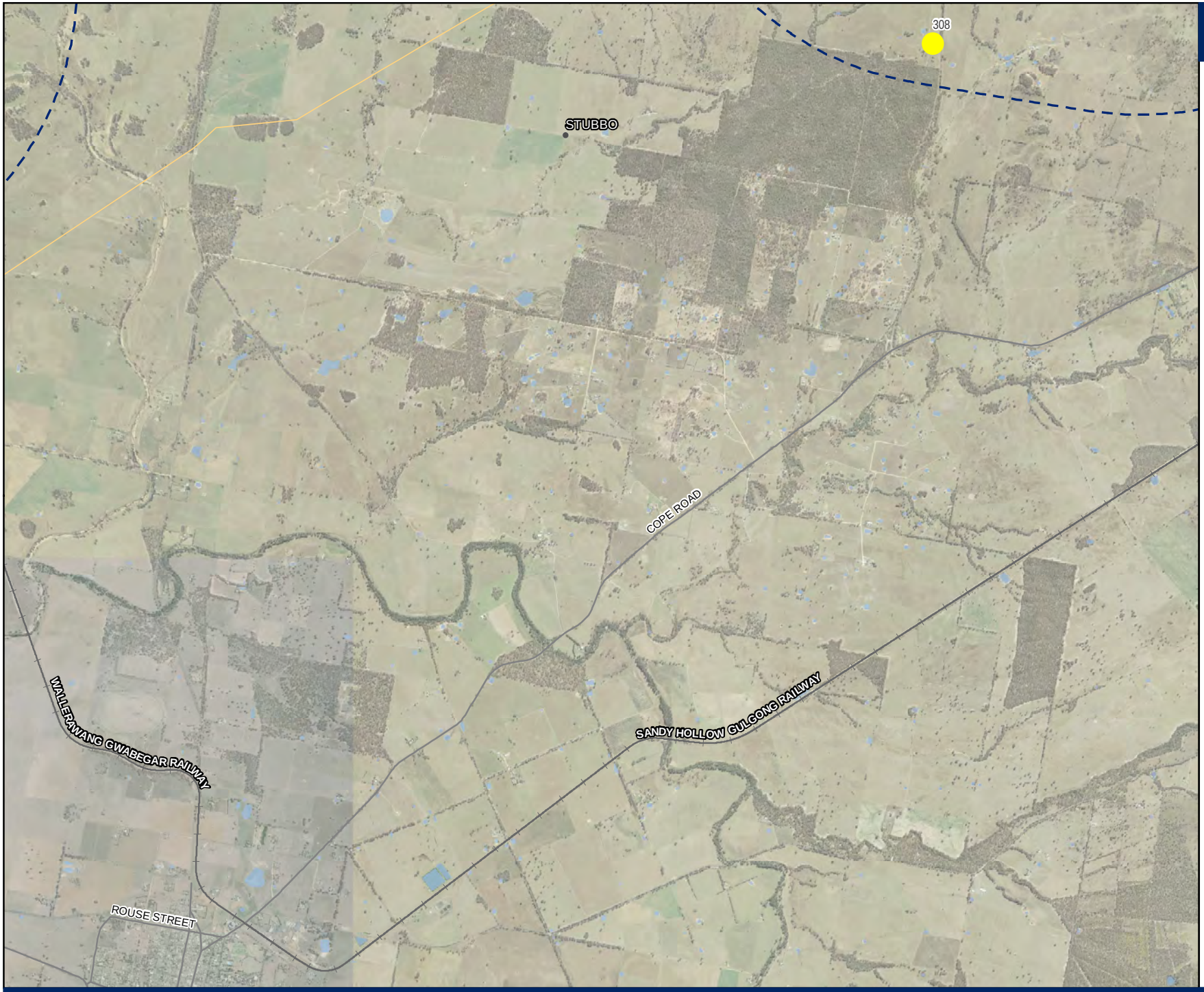
Data sources: WSP 2023, EnergyCo, NSWSS

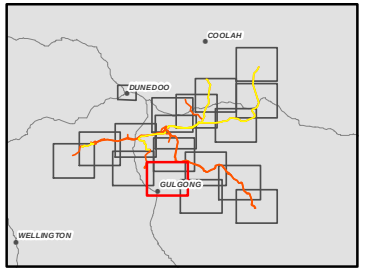


Legend

- Amended study area
- Existing transmission line
- Road
- Railway
- Water body

Construction traffic exceedances

- Local Road Night Time Exceedance Only



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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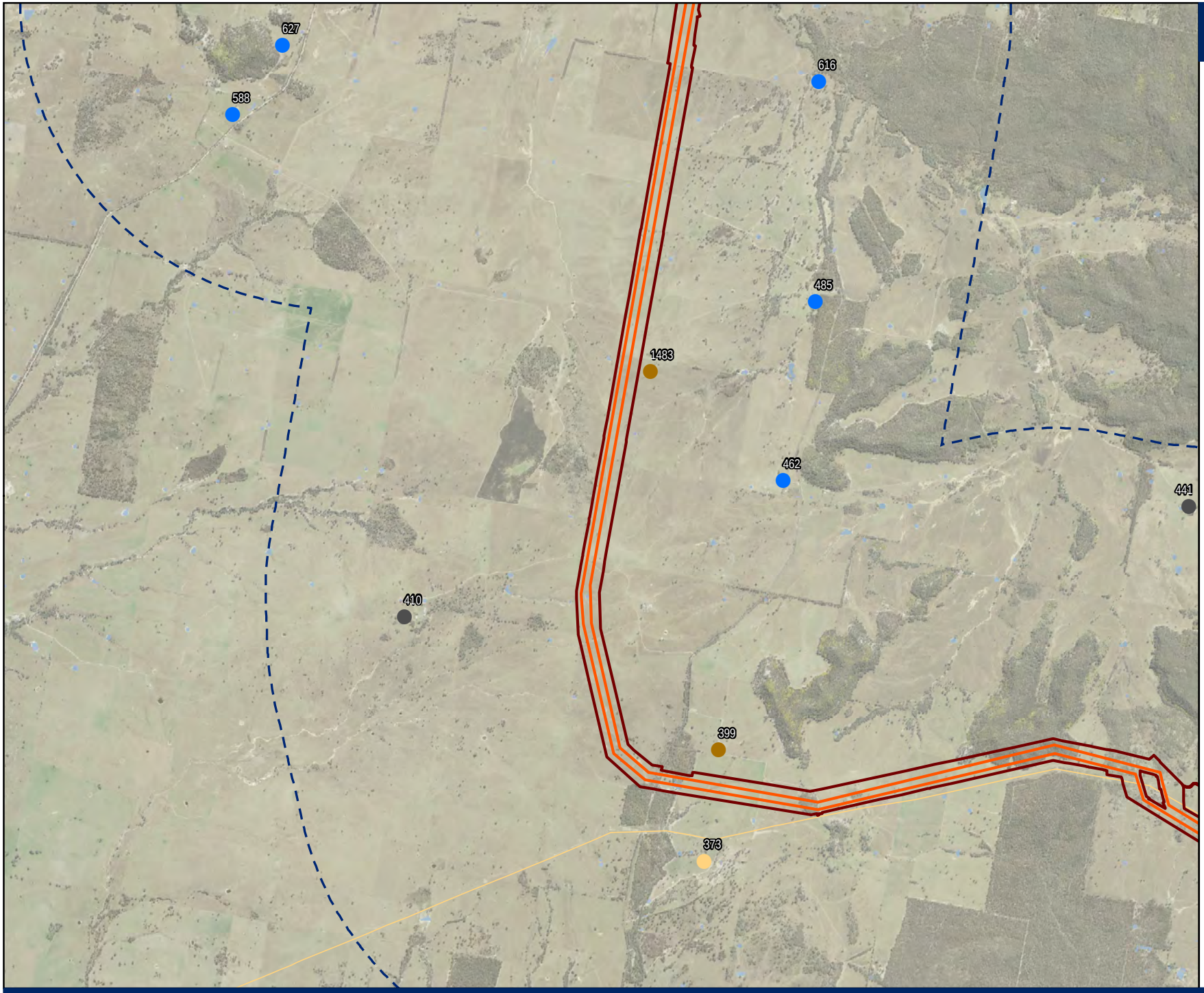
Data sources: WSP 2023, EnergyCo, NSWSS

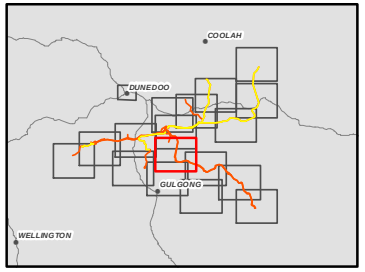


Legend

- Amended study area
- Amended construction area
- 500 kV transmission line
- Existing transmission line
- Water body

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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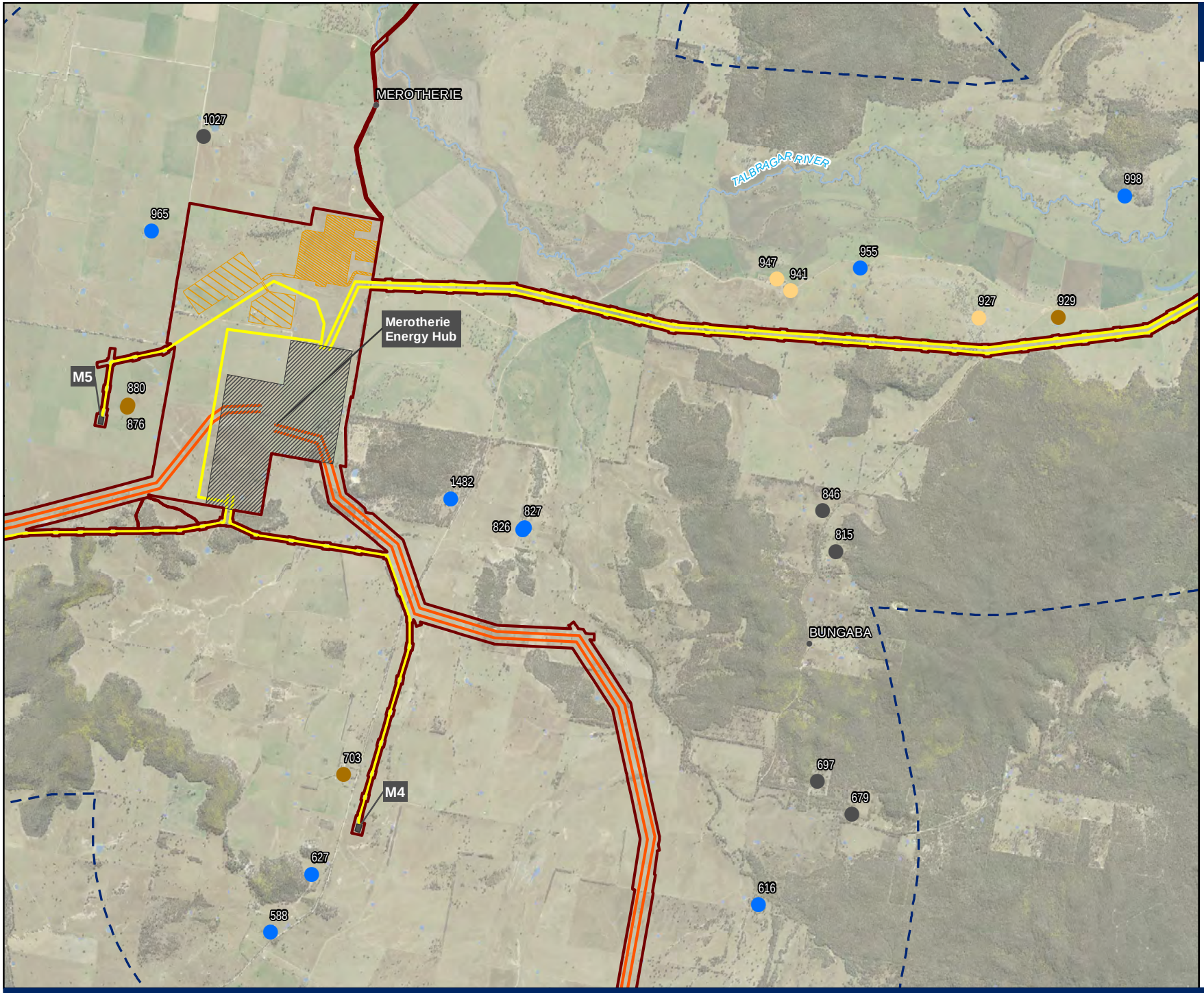
Data sources: WSP 2023, EnergyCo, NSWSS

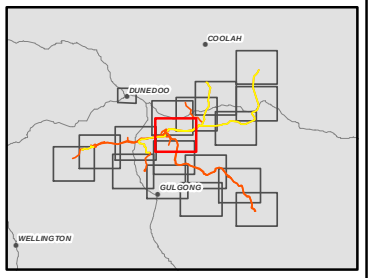


Legend

- Amended study area
- Amended construction area
- Construction compound
- Workforce accommodation camp
- Energy hub / 500 kV switching station
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Watercourse
- Water body

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)

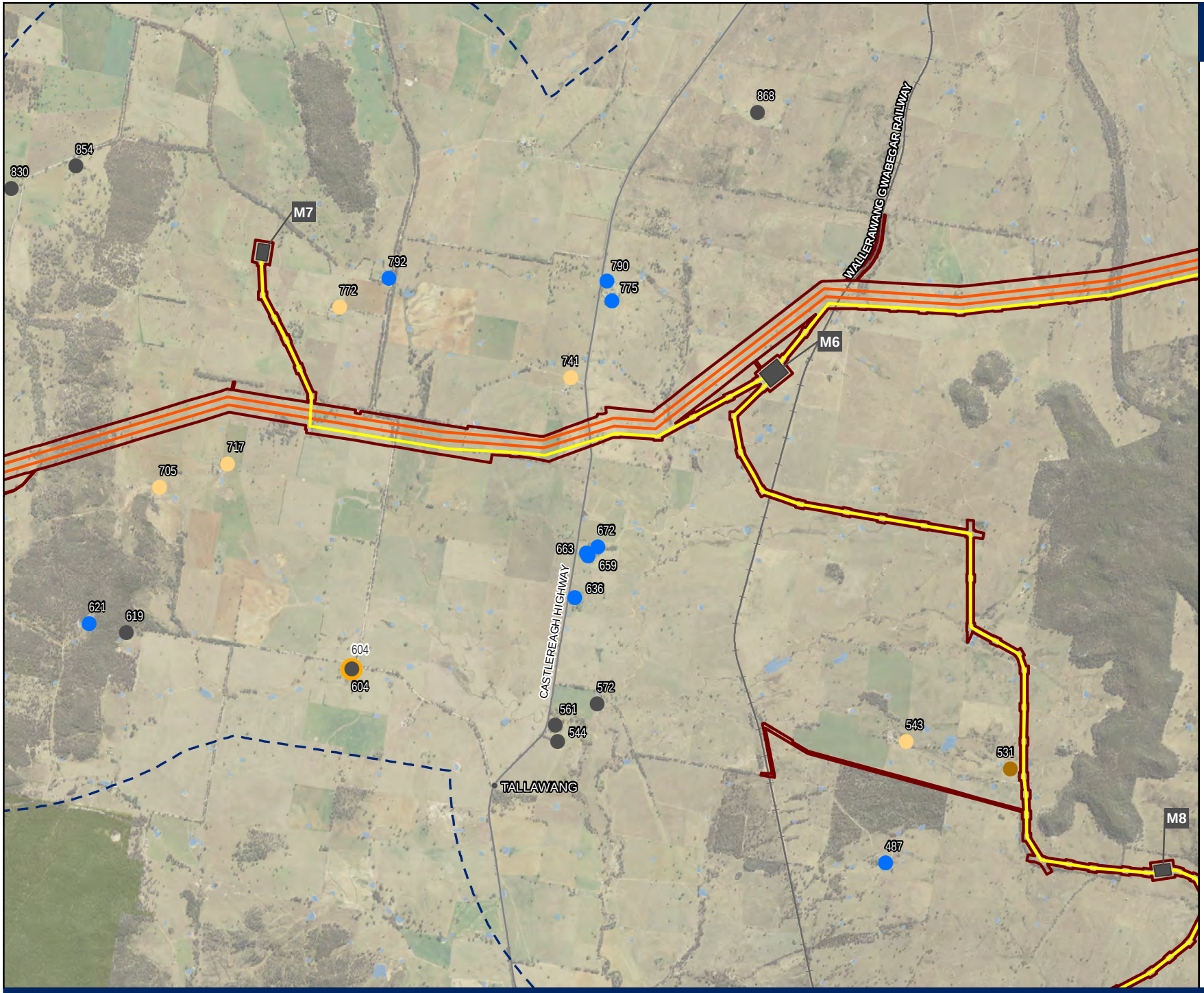


0 0.65 1.3 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:60,000

Data sources: WSP 2023, EnergyCo, NSWSS



Legend

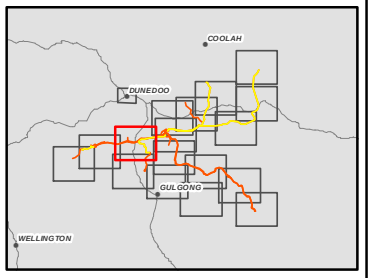
- Amended study area
- Amended construction area
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Road
- Railway
- Water body
- NPWS estate

Construction traffic exceedances

- Local Road Exceedance - Day and Night time

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)



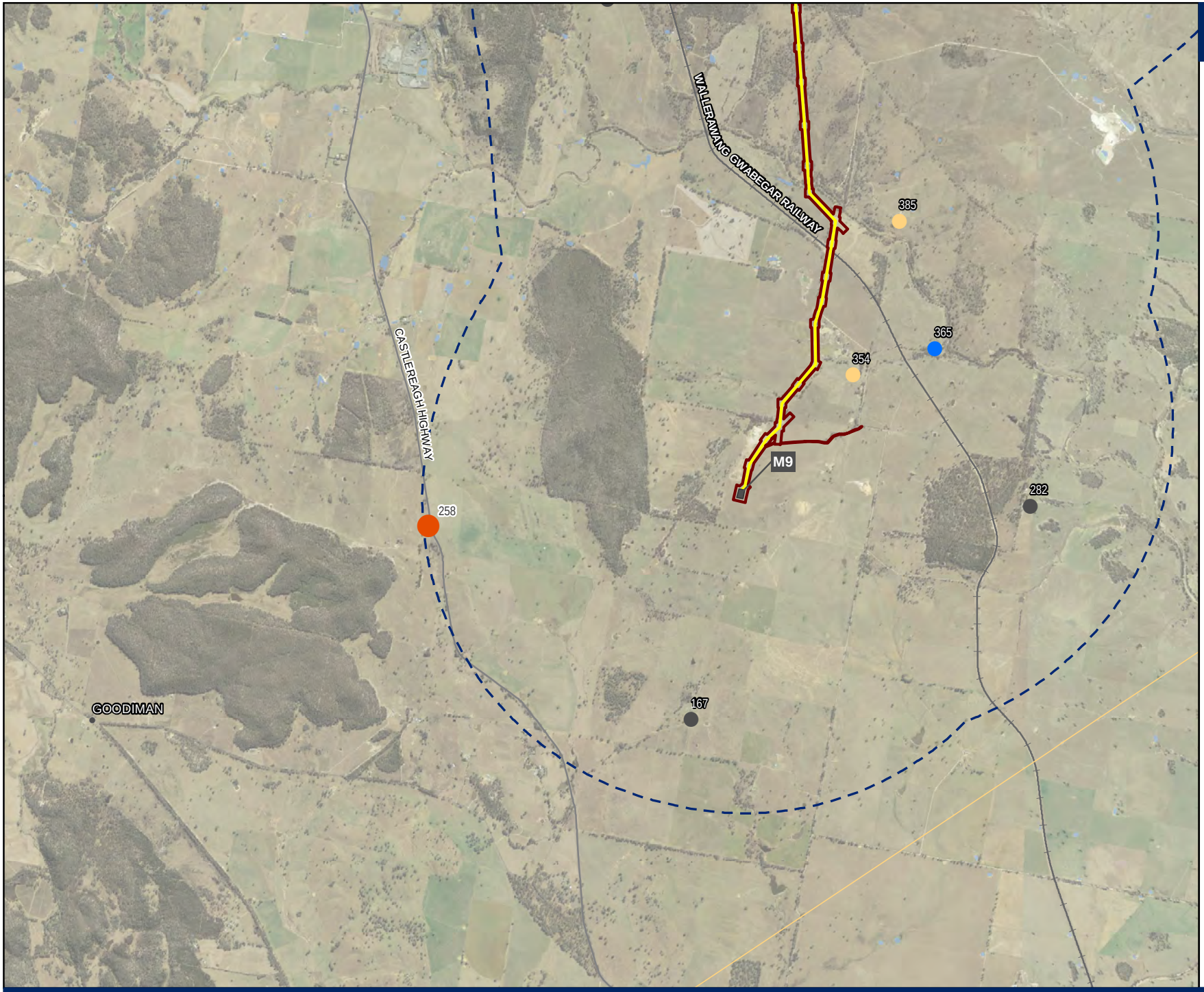
0 0.5 1 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

GDA 2020

Data sources: WSP 2023, EnergyCo, NSWSS



Legend

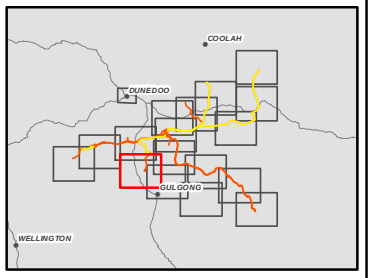
- Amended study area
- Amended construction area
- 330 kV switching station
- Existing transmission line
- Road
- Railway
- Water body

Construction traffic exceedances

- Exceedance - night (>55dB and >2dB increase)

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)



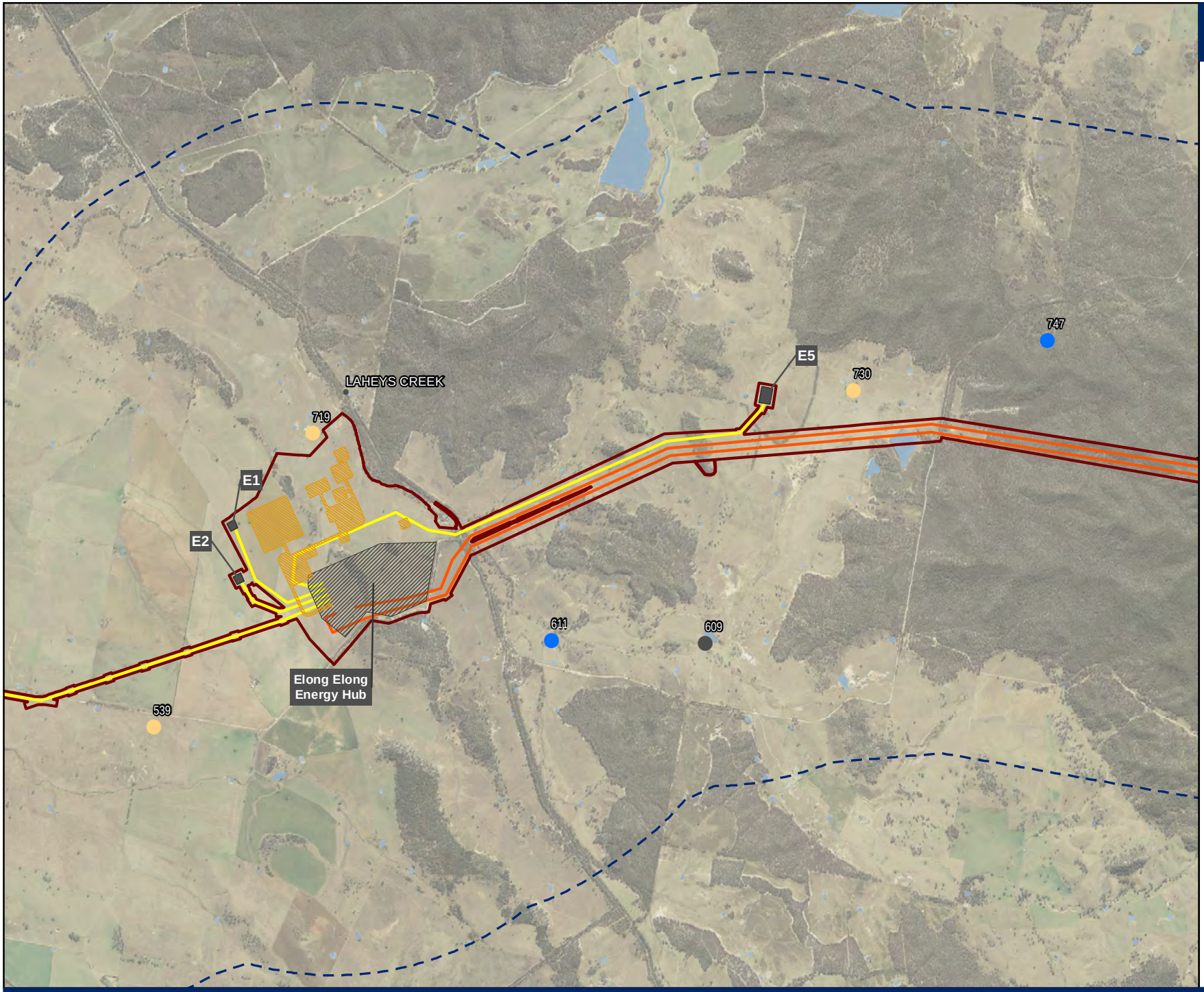
0 0.5 1 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

GDA 2020

Data sources: WSP 2023, EnergyCo, NSWSS

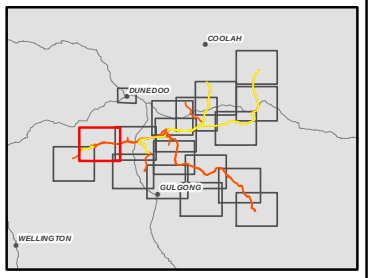


Legend

- Amended study area
- Amended construction area
- Construction compound
- Energy hub / 500 kV switching station
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Water body

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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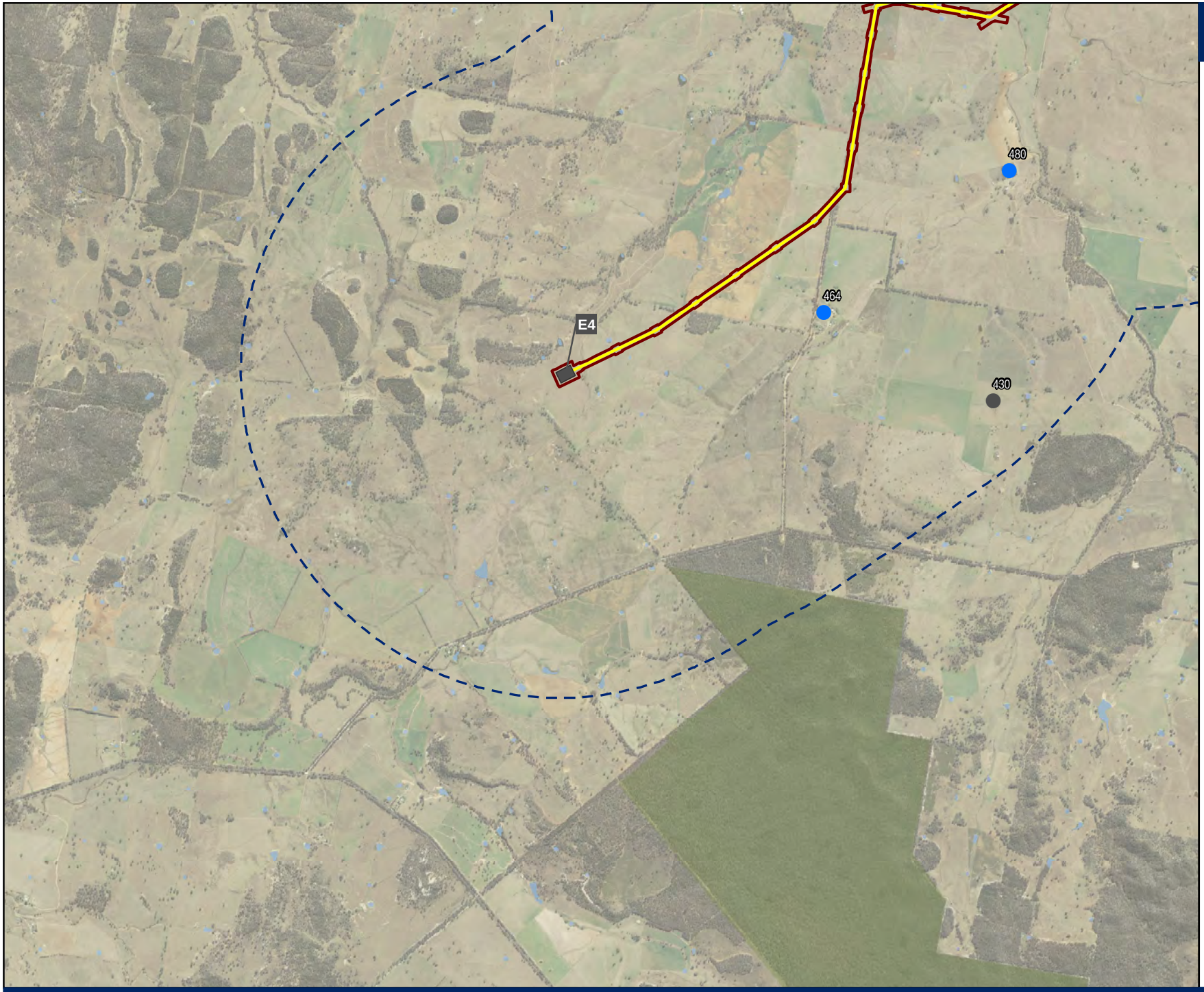
GDA 2020

Data sources: WSP 2023, EnergyCo, NSWSS

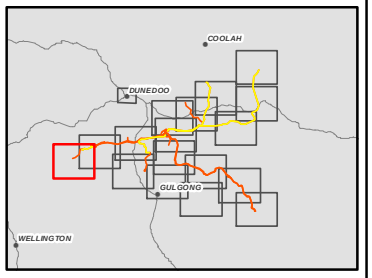


Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 330 kV transmission line
- Water body
- NPWS estate

Construction noise exceedances

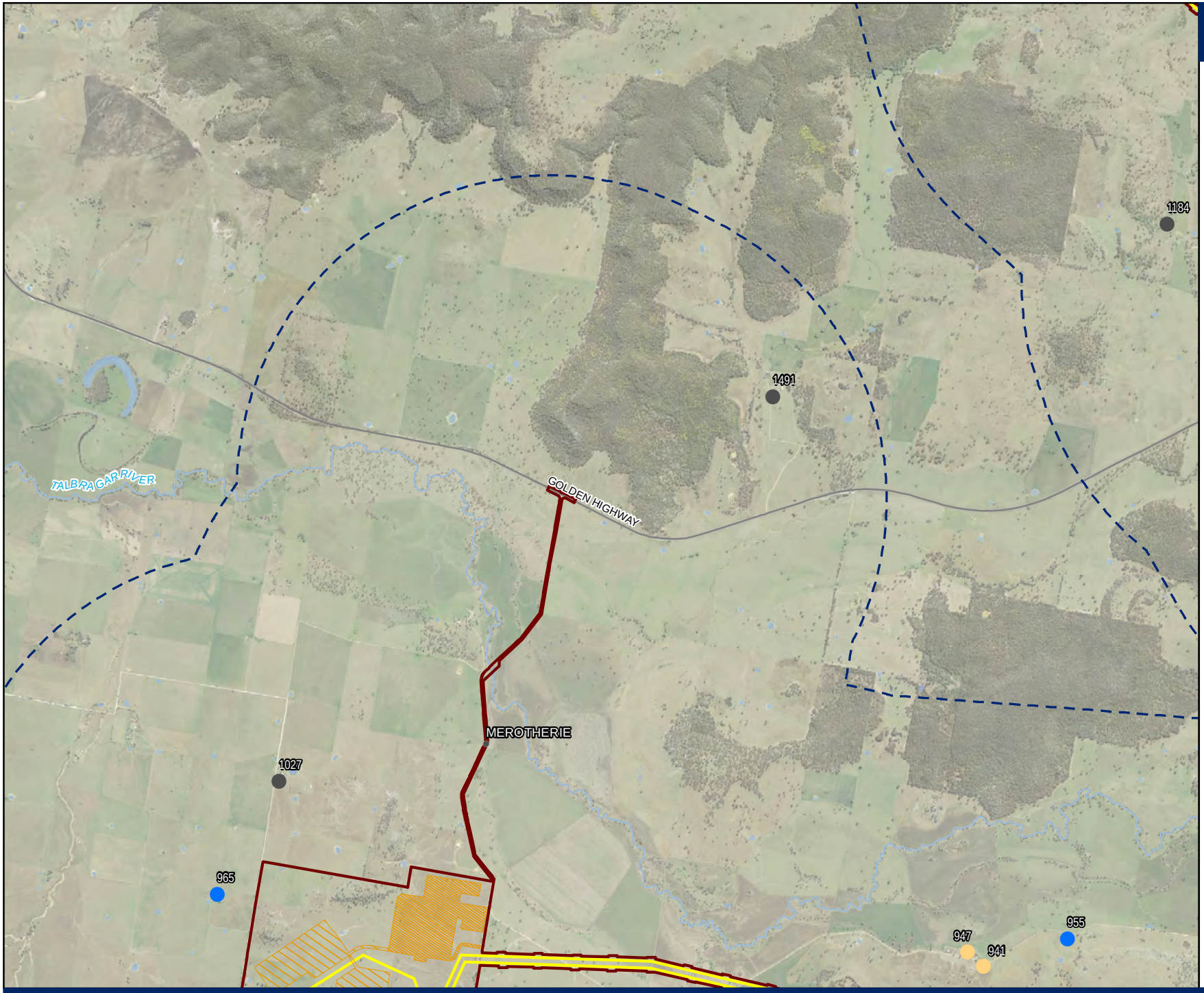
- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

Data sources: WSP 2023, EnergyCo, NSWSS

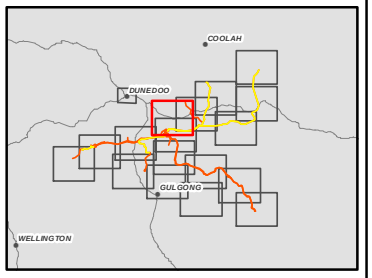


Legend

- Amended study area
- Amended construction area
- Construction compound
- Workforce accommodation camp
- 330 kV transmission line
- Road
- Watercourse
- Water body

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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GDA 2020

Data sources: WSP 2023, EnergyCo, NSWSS

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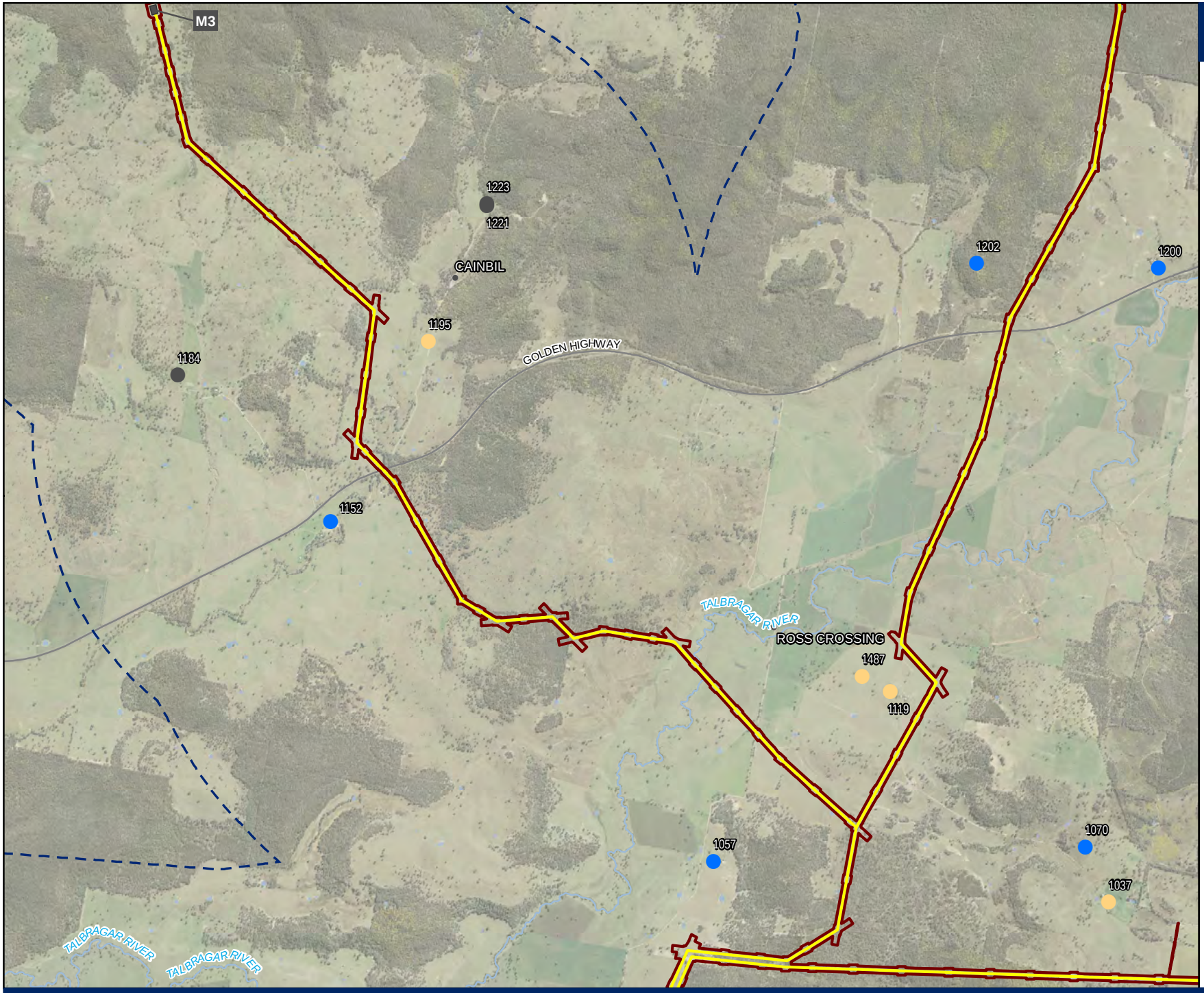
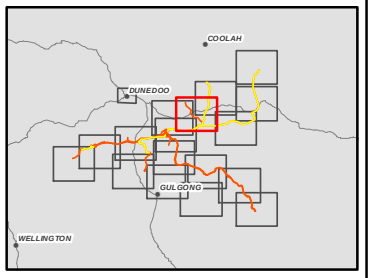


Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 330 kV transmission line
- Road
- Watercourse
- Water body

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)



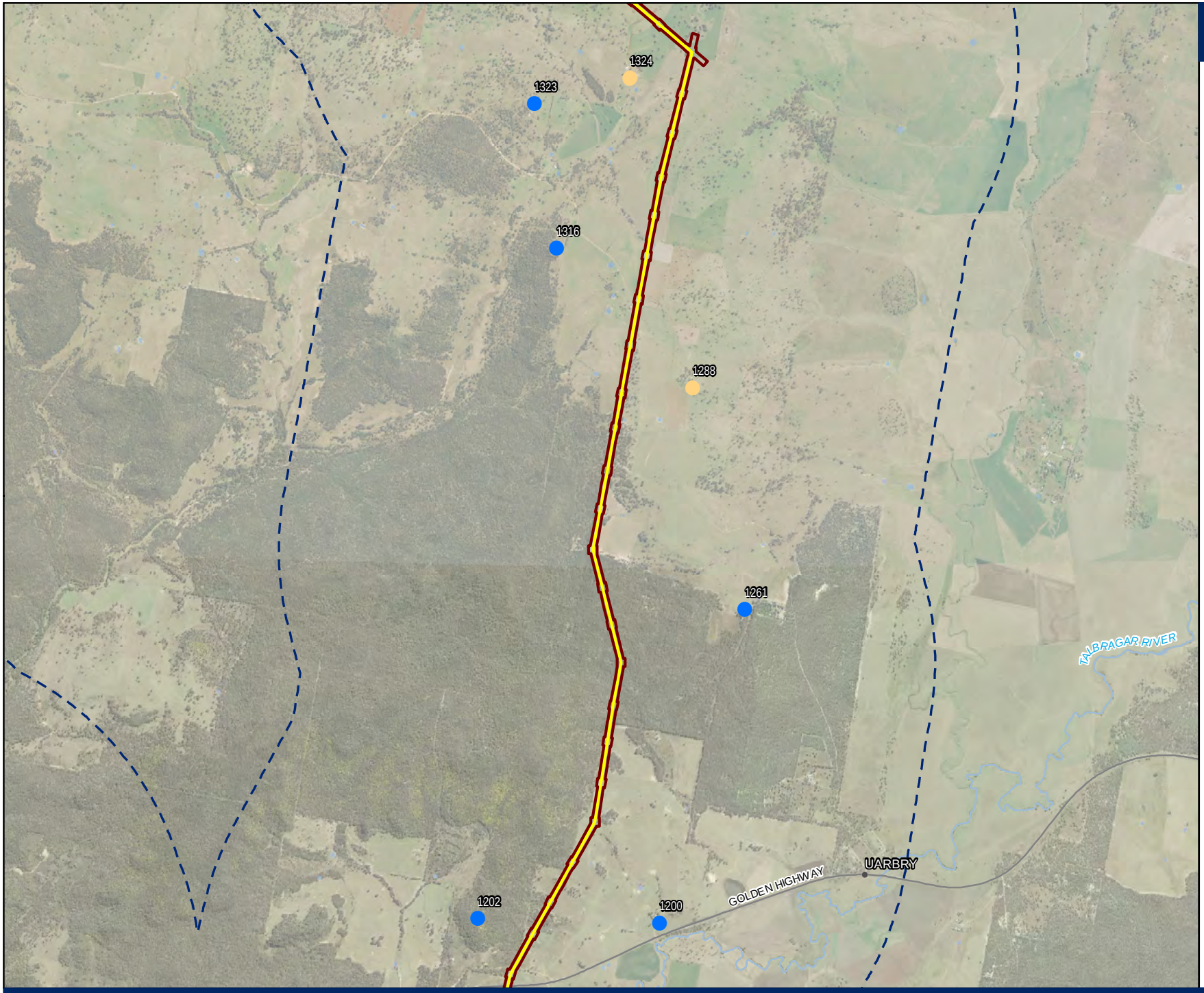
0 0.5 1 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

GDA 2020

Data sources: WSP 2023, EnergyCo, NSWSS

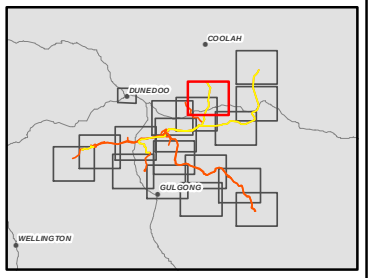


Legend

- Amended study area
- Amended construction area
- 330 kV transmission line
- Road
- Watercourse
- Water body

Construction noise exceedances

- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)



0 0.5 1 km

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

1:50,000

Data sources: WSP 2023, EnergyCo, NSWSS

Legend

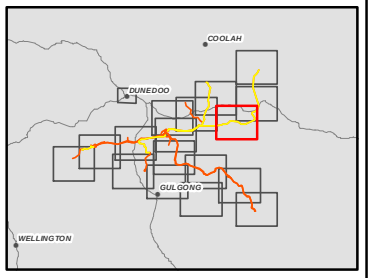
- Amended study area
- Amended construction area
- Construction compound
- Workforce accommodation camp
- 330 kV transmission line
- Road
- Water body
- NPWS estate

Construction traffic exceedances

- Exceedance - Day (>60dB and >2dB increase) and Night (>55dB and >2dB increase)

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4
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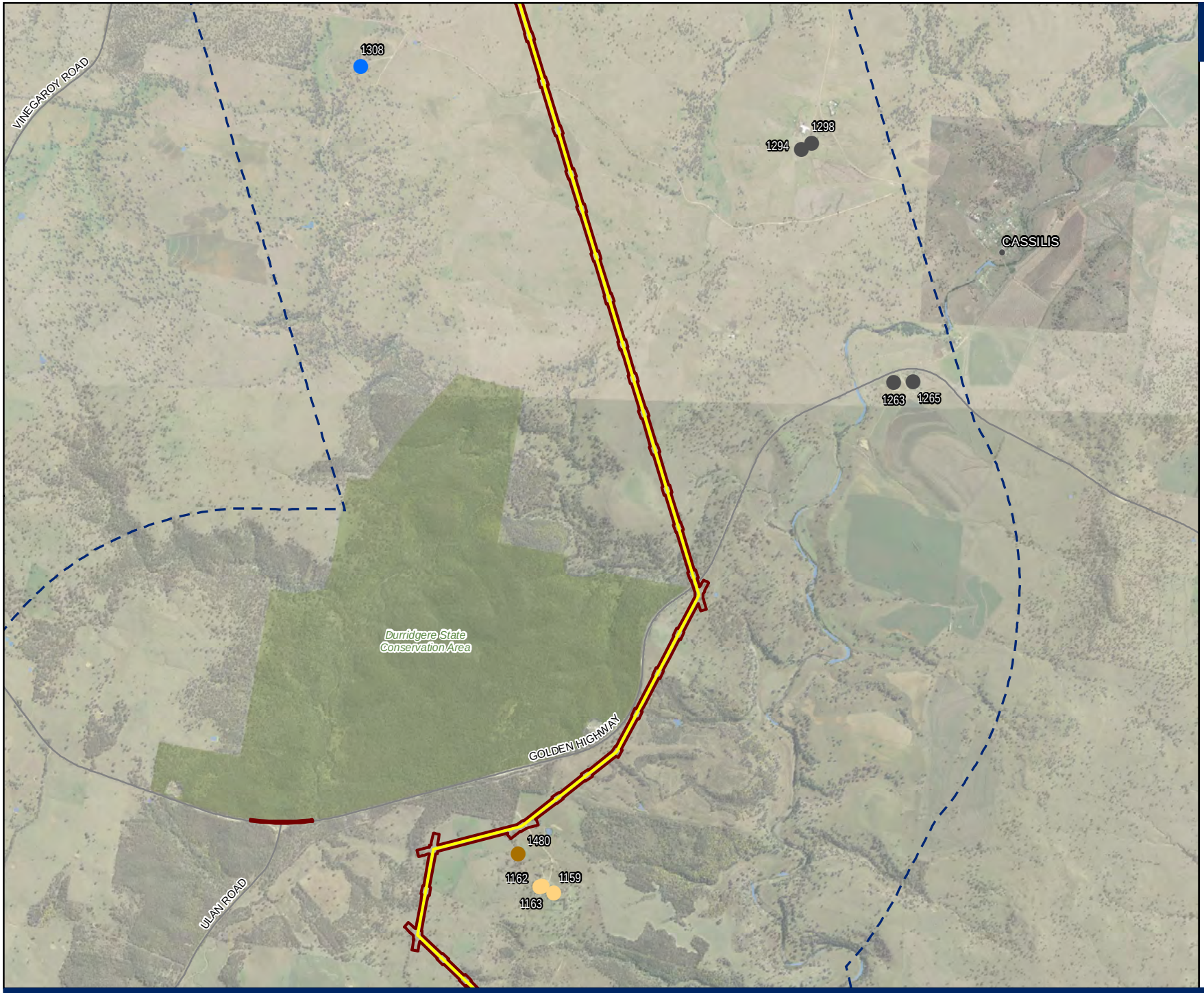
Data sources: WSP 2023, EnergyCo, NSWSS

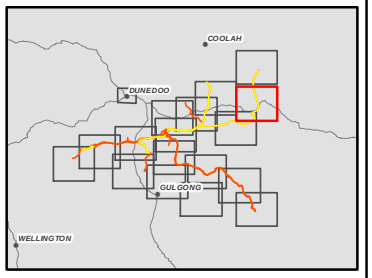


Legend

- Amended study area
- Amended construction area
- 330 kV transmission line
- Road
- Water body
- NPWS estate

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Clearly audible (5-15 dB)
- Dwelling - Moderately intrusive (15-25 dB)
- Dwelling - Highly intrusive (>25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4

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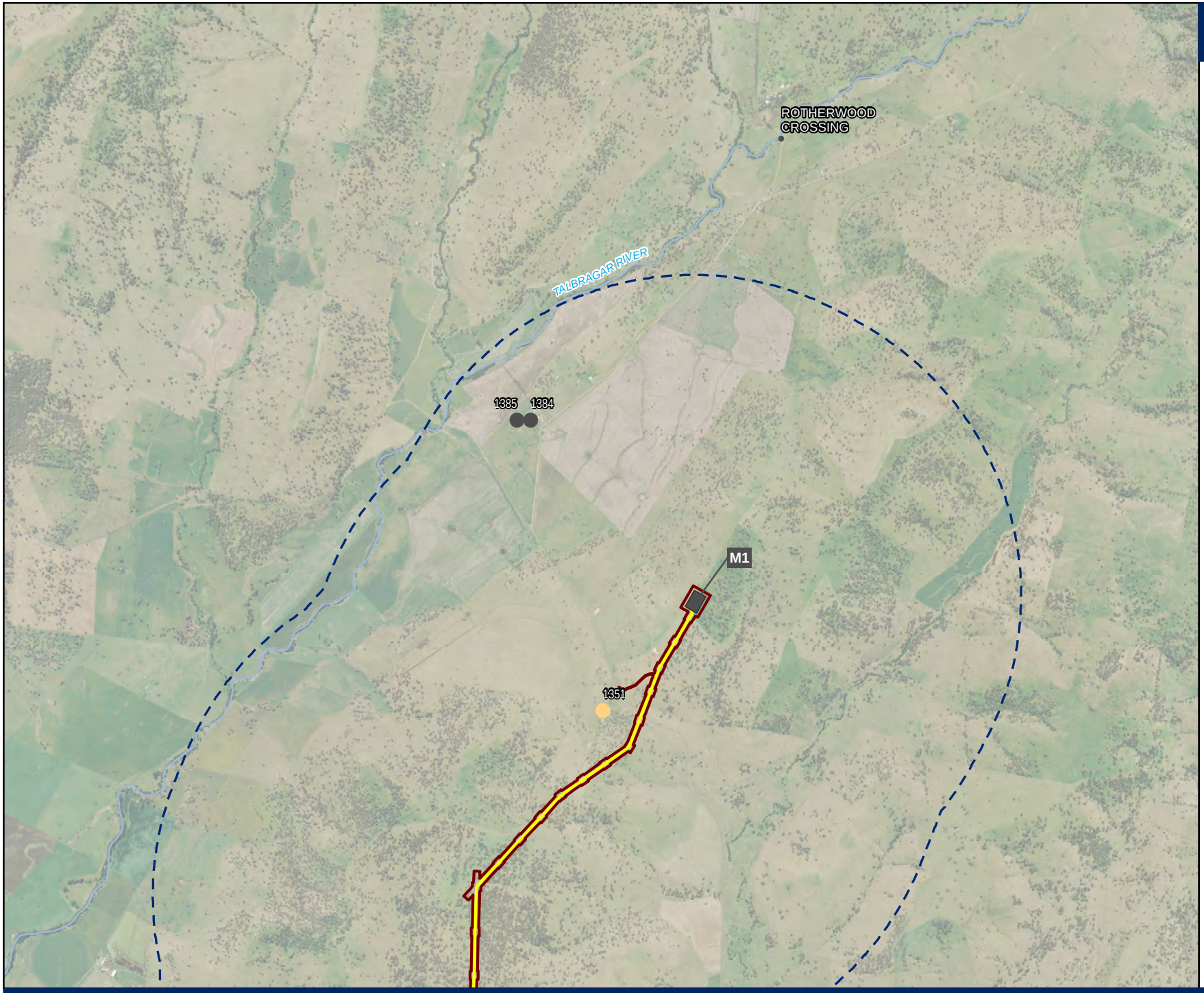
Data sources: WSP 2023, EnergyCo, NSWSS

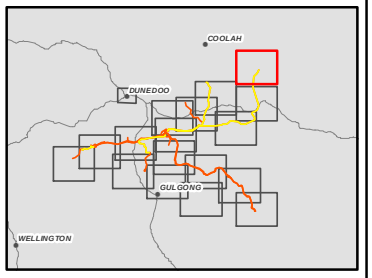


Legend

- Amended study area
- Amended construction area
- 330 kV switching station
- 330 kV transmission line
- Watercourse

Construction noise exceedances

- Dwelling - Noticeable (0-5 dB)
- Dwelling - Moderately intrusive (15-25 dB)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4
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Data sources: WSP 2023, EnergyCo, NSWSS

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APPENDIX B-4
Predicted construction exceedances

Transmission lines

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	1	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	14	2	1	0	17
NCA 5	1	2	0	0	3
NCA 6	3	0	0	0	3
NCA 7	2	0	0	0	2
NCA 8	0	2	0	0	2
NCA 9	2	1	0	0	3
NCA 10	2	0	0	0	2
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	2	3	0	0	8
NCA 2	2	0	0	0	0	2
NCA 3	7	1	0	0	0	8
NCA 4	9	18	9	1	0	37
NCA 5	3	1	3	0	0	7
NCA 6	2	4	1	0	0	7
NCA 7	11	2	0	0	0	13
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	1	4	0	0	0	5
NCA 11	2	0	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	1	1	3	0	0	5
NCA 2	1	0	0	0	0	1
NCA 3	2	1	0	0	0	3
NCA 4	13	7	9	1	0	30
NCA 5	1	0	3	0	0	4
NCA 6	3	2	1	0	0	6
NCA 7	14	2	1	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	1	2	1	0	0	4
NCA 10	2	2	0	0	0	4
NCA 11	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	6	2	1	0	0	9
NCA 5	3	0	0	0	0	3
NCA 6	1	0	0	0	0	1
NCA 7	1	0	0	0	0	1
NCA 8	0	1	0	0	0	1
NCA 9	1	0	0	0	0	1
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	3	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	15	4	1	0	20
NCA 5	0	3	0	0	3
NCA 6	5	0	0	0	5

NCA 7	2	1	0	0	3
NCA 8	0	2	0	0	2
NCA 9	3	1	0	0	4
NCA 10	3	0	0	0	3
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	3	3	0	0	8
NCA 2	1	2	0	0	0	3
NCA 3	6	4	0	0	0	10
NCA 4	14	18	9	1	0	42
NCA 5	3	1	3	0	0	7
NCA 6	4	4	1	0	0	9
NCA 7	14	2	1	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	2	4	0	0	0	6
NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	3	0	0	6
NCA 2	2	0	0	0	0	2
NCA 3	5	1	0	0	0	6
NCA 4	10	10	9	1	0	30
NCA 5	2	0	3	0	0	5
NCA 6	1	3	2	0	0	6
NCA 7	12	3	2	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	1	3	0	0	0	4
NCA 11	1	0	0	0	0	1
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	3	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	1	0	0	0	0	1
NCA 4	5	3	1	0	0	9
NCA 5	0	3	0	0	0	3
NCA 6	2	0	0	0	0	2
NCA 7	1	1	0	0	0	2
NCA 8	0	1	1	0	0	2
NCA 9	0	1	0	0	0	1
NCA 10	2	0	0	0	0	2
NCA 11	0	0	0	0	0	0

3 - Vegetation clearance and access

NCA	**Number of Residential Receivers exceeding NML**				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	3	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	16	6	1	0	23
NCA 5	1	3	0	0	4
NCA 6	4	1	0	0	5
NCA 7	2	1	0	0	3
NCA 8	0	1	0	0	1
NCA 9	3	1	0	0	4
NCA 10	3	0	0	0	3
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	3	2	1	0	8
NCA 2	1	2	0	0	0	3
NCA 3	4	5	1	0	0	10
NCA 4	12	21	9	3	0	45
NCA 5	2	2	3	0	0	7

NCA 6	3	5	1	0	0	9
NCA 7	14	2	1	0	0	17
NCA 8	1	0	0	2	0	3
NCA 9	0	3	1	0	0	4
NCA 10	3	2	2	0	0	7
NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	2	1	0	6
NCA 2	2	0	0	0	0	2
NCA 3	5	0	1	0	0	6
NCA 4	11	11	9	2	1	34
NCA 5	3	1	3	0	0	7
NCA 6	2	3	2	0	0	7
NCA 7	10	6	2	0	0	18
NCA 8	0	0	0	2	0	2
NCA 9	0	3	1	0	0	4
NCA 10	1	1	2	0	0	4
NCA 11	1	0	0	0	0	1
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	0	3	0	0	5
NCA 2	0	0	0	0	0	0
NCA 3	0	1	0	0	0	1
NCA 4	14	5	6	1	0	26
NCA 5	1	0	3	0	0	4
NCA 6	3	1	1	0	0	5
NCA 7	11	1	1	0	0	13
NCA 8	0	0	1	0	0	1
NCA 9	3	0	1	0	0	4
NCA 10	1	2	0	0	0	3
NCA 11	0	0	0	0	0	0

4 - Foundations

NCA	**Number of Residential Receivers exceeding NML**				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	3	0	0	6
NCA 2	2	0	0	0	2
NCA 3	4	0	0	0	4
NCA 4	18	9	1	1	28
NCA 5	1	3	0	0	4
NCA 6	4	2	0	0	6
NCA 7	13	1	0	0	14
NCA 8	0	1	1	0	2
NCA 9	3	1	0	0	4
NCA 10	4	0	0	0	4
NCA 11	1	0	0	0	1
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	4	1	3	0	9
NCA 2	1	2	0	0	0	3
NCA 3	5	7	1	0	0	13
NCA 4	20	20	15	5	1	60
NCA 5	1	4	0	3	0	8
NCA 6	3	4	3	0	0	10
NCA 7	4	13	1	0	0	18
NCA 8	2	0	0	2	0	4
NCA 9	3	0	3	1	0	7
NCA 10	4	3	3	0	0	10
NCA 11	0	2	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	2	1	3	0	8
NCA 2	1	2	0	0	0	3
NCA 3	6	3	1	0	0	10
NCA 4	14	7	15	4	1	41

NCA 5	3	1	0	3	0	7
NCA 6	4	1	5	0	0	10
NCA 7	3	11	4	1	0	19
NCA 8	0	0	0	2	0	2
NCA 9	0	0	3	1	0	4
NCA 10	2	1	3	0	0	6
NCA 11	1	1	0	0	0	2
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	1	2	1	0	0	4
NCA 2	0	0	0	0	0	0
NCA 3	1	0	0	0	0	1
NCA 4	9	7	2	1	0	19
NCA 5	0	1	2	0	0	3
NCA 6	2	1	0	0	0	3
NCA 7	2	0	1	0	0	3
NCA 8	0	0	2	0	0	2
NCA 9	2	0	1	0	0	3
NCA 10	2	0	0	0	0	2
NCA 11	0	0	0	0	0	0

5 - Tower erection

NCA	**Number of Residential Receivers exceeding NML**				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	3	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	15	4	1	0	20
NCA 5	0	3	0	0	3
NCA 6	5	0	0	0	5
NCA 7	2	1	0	0	3
NCA 8	0	2	0	0	2
NCA 9	3	1	0	0	4
NCA 10	3	0	0	0	3
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	3	3	0	0	8
NCA 2	1	2	0	0	0	3
NCA 3	6	4	0	0	0	10
NCA 4	14	18	9	1	0	42
NCA 5	3	1	3	0	0	7
NCA 6	4	4	1	0	0	9
NCA 7	14	2	1	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	2	4	0	0	0	6
NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	3	0	0	6
NCA 2	2	0	0	0	0	2
NCA 3	5	1	0	0	0	6
NCA 4	10	10	9	1	0	30
NCA 5	2	0	3	0	0	5
NCA 6	1	3	2	0	0	6
NCA 7	12	3	2	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	1	3	0	0	0	4
NCA 11	1	0	0	0	0	1
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0

NCA 4	7	2	1	0	0	10
NCA 5	1	2	0	0	0	3
NCA 6	1	0	0	0	0	1
NCA 7	0	1	0	0	0	1
NCA 8	0	1	1	0	0	2
NCA 9	0	1	0	0	0	1
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0

6 - Conductor stringing

NCA	**Number of Residential Receivers exceeding NML**				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	1	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	16	2	1	0	19
NCA 5	1	2	0	0	3
NCA 6	3	0	0	0	3
NCA 7	2	1	0	0	3
NCA 8	0	2	0	0	2
NCA 9	2	1	0	0	3
NCA 10	2	0	0	0	2
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	2	3	0	0	7
NCA 2	1	1	0	0	0	2
NCA 3	5	3	0	0	0	8
NCA 4	13	19	9	1	0	42
NCA 5	3	1	3	0	0	7
NCA 6	2	4	1	0	0	7
NCA 7	11	2	1	0	0	14
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	2	4	0	0	0	6
NCA 11	2	0	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	3	0	0	6
NCA 2	2	0	0	0	0	2
NCA 3	3	1	0	0	0	4
NCA 4	10	8	9	1	0	28
NCA 5	1	0	3	0	0	4
NCA 6	3	2	1	0	0	6
NCA 7	14	2	1	0	0	17
NCA 8	0	0	1	1	0	2
NCA 9	1	2	1	0	0	4
NCA 10	1	2	0	0	0	3
NCA 11	1	0	0	0	0	1
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	7	2	1	0	0	10
NCA 5	2	1	0	0	0	3
NCA 6	1	0	0	0	0	1
NCA 7	0	1	0	0	0	1
NCA 8	0	1	1	0	0	2
NCA 9	0	1	0	0	0	1
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0

7 - Conductor brake & winch

NCA	**Number of Residential Receivers exceeding NML**
Standard Hours	

	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	1	0	0	0	1
NCA 2	0	0	0	0	0
NCA 3	0	0	0	0	0
NCA 4	2	1	0	0	3
NCA 5	2	0	0	0	2
NCA 6	0	0	0	0	0
NCA 7	1	0	0	0	1
NCA 8	2	0	0	0	2
NCA 9	1	0	0	0	1
NCA 10	0	0	0	0	0
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	3	0	0	0	4
NCA 2	0	0	0	0	0	0
NCA 3	1	0	0	0	0	1
NCA 4	11	9	1	0	0	21
NCA 5	0	3	0	0	0	3
NCA 6	2	1	0	0	0	3
NCA 7	0	1	0	0	0	1
NCA 8	0	1	1	0	0	2
NCA 9	3	1	0	0	0	4
NCA 10	3	0	0	0	0	3
NCA 11	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	8	2	1	0	0	11
NCA 5	1	2	0	0	0	3
NCA 6	2	0	0	0	0	2
NCA 7	1	1	0	0	0	2
NCA 8	0	1	1	0	0	2
NCA 9	0	1	0	0	0	1
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
NCA 5	0	0	0	0	0	0
NCA 6	0	0	0	0	0	0
NCA 7	0	0	0	0	0	0
NCA 8	1	0	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0

8 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	1	0	0	3
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	11	2	1	0	14
NCA 5	2	1	0	0	3
NCA 6	3	0	0	0	3
NCA 7	2	0	0	0	2
NCA 8	0	2	0	0	2
NCA 9	0	1	0	0	1
NCA 10	2	0	0	0	2
NCA 11	0	0	0	0	0

Out of Hours						
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	2	2	3	0	0	7
NCA 2	2	0	0	0	0	2
NCA 3	7	1	0	0	0	8
NCA 4	10	17	8	1	0	36
NCA 5	3	1	3	0	0	7
NCA 6	1	5	0	0	0	6
NCA 7	6	2	0	0	0	8
NCA 8	0	0	1	1	0	2
NCA 9	0	3	1	0	0	4
NCA 10	1	3	0	0	0	4
NCA 11	1	0	0	0	0	1
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	2	0	3	0	0	5
NCA 2	0	0	0	0	0	0
NCA 3	0	1	0	0	0	1
NCA 4	14	5	8	1	0	28
NCA 5	1	0	3	0	0	4
NCA 6	2	2	1	0	0	5
NCA 7	11	2	1	0	0	14
NCA 8	0	0	1	1	0	2
NCA 9	3	0	1	0	0	4
NCA 10	2	2	0	0	0	4
NCA 11	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	6	2	1	0	0	9
NCA 5	3	0	0	0	0	3
NCA 6	1	0	0	0	0	1
NCA 7	1	0	0	0	0	1
NCA 8	0	1	0	0	0	1
NCA 9	1	0	0	0	0	1
NCA 10	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0

9 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	2	3	0	0	5
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	18	9	1	0	28
NCA 5	1	3	0	0	4
NCA 6	4	1	0	0	5
NCA 7	7	1	0	0	8
NCA 8	0	1	1	0	2
NCA 9	3	1	0	0	4
NCA 10	4	0	0	0	4
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	1	3	3	1	0	8
NCA 2	1	2	0	0	0	3
NCA 3	3	7	1	0	0	11
NCA 4	16	19	14	3	0	52
NCA 5	1	4	1	2	0	8
NCA 6	4	4	2	0	0	10
NCA 7	10	7	1	0	0	18
NCA 8	2	0	0	2	0	4
NCA 9	1	1	2	1	0	5
NCA 10	2	3	2	0	0	7

NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	1	3	1	0	8
NCA 2	2	0	0	0	0	2
NCA 3	7	0	1	0	0	8
NCA 4	9	11	14	2	1	37
NCA 5	3	1	2	1	0	7
NCA 6	4	2	3	0	0	9
NCA 7	4	11	2	1	0	18
NCA 8	0	0	0	2	0	2
NCA 9	0	1	2	1	0	4
NCA 10	1	2	2	0	0	5
NCA 11	2	0	0	0	0	2
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	2	1	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	1	0	0	0	0	1
NCA 4	7	4	2	1	0	14
NCA 5	0	3	0	0	0	3
NCA 6	2	1	0	0	0	3
NCA 7	2	1	0	0	0	3
NCA 8	0	0	2	0	0	2
NCA 9	0	1	0	0	0	1
NCA 10	2	0	0	0	0	2
NCA 11	0	0	0	0	0	0

New Wollar sub-station

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	2	0	0	0	2
All other NCAs	0	0	0	0	0
Out of Hours					

	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Merotherie energy hub

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2	2	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2		0	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	4	3	0	0	0	7

All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	2	2	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2	2	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2	2	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	2	2	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Elong Elong energy hub

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0

All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	2	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0

Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	1	0	0	0	0	1
NCA 2	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
NCA 2	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Cassilis switching station (M1)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	2	1	0	0	0	3

All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Coolah switching station (M2)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0

Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 10	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Leadville switching station (M3)
No exceedances across all NCAs

Merotherie switching station (M4)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0
NCA 5	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	1
NCA 5	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	1	0	0	0	1
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	1
NCA 5	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	1	0	0	0	1
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 5	1	0	0	0	0	1

All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 5	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	1	1	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	1	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 5	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 5	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	1	0	0	0	2
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	1	0	0	0	1
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0

Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
NCA 5	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	1	0	0	0	1
NCA 5	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	1	0	0	0	0	1
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	1	0	0	0	1
NCA 5	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	1	1	0	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	1	1	0	0	0	2
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Merotherie switching station (M5)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	0		2	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	0		2	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0

NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	0		2	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	2	0	0	0	0	2
NCA 5	1	0	0	2	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	2	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	0		2	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	1	0	1	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 5	0		2	0	0	2
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0

Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
NCA 5	2	0	0	0	2
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	2	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
NCA 5	0	2	0	0	2
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
NCA 5	1	0	1	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
NCA 5	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0

Tallawang switching station (M6)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	5	2	0	0	0	7

All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						

	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Dunedoo switching station (M7)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	1	0	0	0	0	1
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	1	0	0	0	0	1
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	1	0	0	0	0	1
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	0	0	0	0
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 3	0	1	0	0	0	1
NCA 4	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 3	1	0	0	0	0	1
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						

	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 3	1	0	0	0	1
NCA 4	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 3	1	1	0	0	0	2
NCA 4	4	1	0	0	0	5
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	1	0	0	0	1
NCA 4	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	0	0	0	0
NCA 4	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	1	0	0	0	1
NCA 4	2	1	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	1	0	0	0	0	1
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax					
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	0	0	0	0
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	1	0	0	0	1
NCA 4	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq					
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	1	0	0	0	0	1
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	0	0	0	0
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 3	1	0	0	0	0	1
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	0	0	0	0
NCA 4	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 3	0	1	0	0	0	1
NCA 4	2	1	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	1	0	0	0	0	1
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 3	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Tallawang switching station (M8)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML

Standard Hours						
	0-10 dB		10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Tallawang switching station (M9)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	3	1	0	0	0	4
All other NCAs	0	0	0	0	0	0

Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML

Standard Hours						
	0-10 dB		10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 4	2	0	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Cobbora switching station (E1)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0

All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0

NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Cobbora switching station (E2)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
NCA 2	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0

All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	1	0	0	0	1
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0

NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Goolma switching station (E3)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	3	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3		0	0	0	3
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	6	0	0	0	6
All other NCAs	0	0	0	0	0	0

Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	3	0	0	0	3
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	3	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML

Standard Hours						
	0-10 dB		10-20 dB	>20 dB	Highly Affected (>75 dBA)	Total
NCA 1	3		0	0	0	3
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	3	3	0	0	0	6
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	3	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	5-10 dB	10-20 dB	20-30 dB	>30dB	Total
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Goolma switching station (E4)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						

	0-5 dB	5-15 dB	15-25 dB	>25 dB	Highly Affected (>75 dBA)	Total
NCA 1	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Goolma switching station (E5)

1 - Utility adjustment (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Site access (Enabling works)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1

All other NCAs	0	0	0	0	0	0

4 - Access and earthworks (including blasting & crushing)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	1	0	0	0	0	1
NCA 4	1	0	1	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

5 - Foundations and pads (including piling and blasting)

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

6 - Equipment installation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0

NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

7 - Commissioning of RNI

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

8 - Demobilisation and rehabilitation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Access track construction

1 - Earthworks and upgrades

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	3	0	0	5
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	19	9	2	0	30
NCA 5	1	3	0	0	4
NCA 6	4	1	0	0	5
NCA 7	7	1	0	0	8
NCA 8	0	1	1	0	2
NCA 9	3	1	0	0	4
NCA 10	3	1	0	0	4
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	2	4	0	0	7
NCA 2	1	2	0	0	0	3
NCA 3	7	7	0	0	0	14
NCA 4	20	18	15	2	0	55
NCA 5	1	4	1	2	0	8
NCA 6	4	4	2	0	0	10
NCA 7	8	7	1	0	0	16
NCA 8	2	0	0	2	0	4
NCA 9	1	3	1	0	0	5
NCA 10	2	3	2	0	0	7
NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	3	1	4	0	0	8
NCA 2	2	0	0	0	0	2
NCA 3	7	1	0	0	0	8
NCA 4	8	12	15	1	1	37
NCA 5	3	1	1	2	0	7
NCA 6	4	2	3	0	0	9
NCA 7	4	11	3	2	0	20
NCA 8	0	0	0	2	0	2
NCA 9	0	3	1	0	0	4
NCA 10	0	2	1	0	0	3
NCA 11	2	0	0	0	0	2
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	0	0	0	3
NCA 2	0	0	0	0	0	0
NCA 3	0	0	0	0	0	0
NCA 4	9	5	1	0	0	15
NCA 5	1	2	0	0	0	3
NCA 6	2	1	0	0	0	3
NCA 7	3	0	2	0	0	5
NCA 8	0	0	1	0	0	1
NCA 9	0	1	0	0	0	1
NCA 10	1	1	0	0	0	2
NCA 11	0	0	0	0	0	0

2 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	3	1	0	0	4
NCA 2	0	0	0	0	0
NCA 3	1	0	0	0	1
NCA 4	19	5	2	0	26
NCA 5	1	2	0	0	3
NCA 6	4	1	0	0	5
NCA 7	4	2	0	0	6
NCA 8	0	2	0	0	2

NCA 9	3	1	0	0	4
NCA 10	2	1	0	0	3
NCA 11	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	2	3	3	0	0	8
NCA 2	1	2	0	0	0	3
NCA 3	6	4	0	0	0	10
NCA 4	14	21	11	2	0	48
NCA 5	3	1	3	0	0	7
NCA 6	4	4	1	0	0	9
NCA 7	12	4	2	0	0	18
NCA 8	0	0	0	1	0	1
NCA 9	0	3	1	0	0	4
NCA 10	3	2	1	0	0	6
NCA 11	1	1	0	0	0	2
Sleep disturbance - LAeq					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	1	3	0	0	6
NCA 2	2	0	0	0	0	2
NCA 3	5	1	0	0	0	6
NCA 4	9	12	11	1	0	33
NCA 5	4	0	3	0	0	7
NCA 6	1	3	2	0	0	6
NCA 7	8	5	2	2	0	17
NCA 8	0	0	0	1	0	1
NCA 9	0	3	1	0	0	4
NCA 10	1	1	1	0	0	3
NCA 11	1	0	0	0	0	1
Sleep awakening - LAMax					
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	2	2	1	0	0	5
NCA 2	0	0	0	0	0	0
NCA 3	1	0	0	0	0	1
NCA 4	13	7	7	2	0	29
NCA 5	1	0	3	0	0	4
NCA 6	2	2	1	0	0	5
NCA 7	11	3	1	1	0	16
NCA 8	0	0	1	1	0	2
NCA 9	3	0	1	0	0	4
NCA 10	2	1	1	0	0	4
NCA 11	0	0	0	0	0	0

Construction compound at Merotherie

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0	0	0	0	0
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	3	0	0	0	0	3
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Construction compound at Elong Elong

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		1	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	1	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		1	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	1	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	0		0	0	0	0
NCA 2	0		1	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 1	1	0	0	0	0	1
NCA 2	1	0	0	1	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	1	0	0	1	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 1	0	0	0	0	0	0
NCA 2	0	1	0	0	0	1

All other NCAs	0	0	0	0	0	0

Construction compound at New Wollar

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 11	0	2	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	1	1	0	0	0	2
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Construction compound at Neeleys Lane

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1	2	0	0	0	3
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	2	0	0	0	0	2
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	2	0	0	0	2
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	1	0	0	0	2
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	2		0	0	0	2
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	3	0	0	0	3
NCA 9	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	2	0	0	0	3
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0

NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Merotherie workforce accommodation camp

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	3	1	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	1		0	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	1	3	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	3	1	0	0	0	4
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 5	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 5	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Neeley's Lane workforce accommodation camp

1 - Vegetation clearance

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	3	0	0	0	3
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	2	1	0	0	0	3
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

2 - Construction

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	1		0	0	0	1
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	2	1	0	0	3
NCA 9	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	2	0	1	0	0	3
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

3 - Operation

NCA	Number of Residential Receivers exceeding NML					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0		0	0	0	0
NCA 9	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 4	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	1	0	0	0	0	1
NCA 9	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 4	0	0	0	0	0	0
NCA 9	0	0	0	0	0	0

All other NCAs	0	0	0	0	0	0

Local Road Upgrades

1 - Utility adjustment

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0
NCA 4	0	0	0	0	0
NCA 5	0	0	0	0	0
NCA 6	1	0	0	0	1
NCA 9	0	0	0	0	0
NCA 11	1	0	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	1	0	0	0	0	1
NCA 4	1	2	0	0	0	3
NCA 5	0	0	0	0	0	0
NCA 6	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	2	0	0	0	0	2
NCA 5	0	0	0	0	0	0
NCA 6	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
NCA 6	0	0	0	0	0	0
NCA 9	0	0	0	0	0	0
NCA 11	1	0	0	0	0	1
All other NCAs	0	0	0	0	0	0

2 - Access and earthworks

NCA	Number of Residential Receivers exceeding NML				
Standard Hours					
	0-10 dB	**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0	0	0	0	0
NCA 4	2	0	0	0	2
NCA 5	0	0	0	0	0
NCA 6	0	1	0	0	1
NCA 9	0	0	0	0	0
NCA 11	0	1	0	0	1
All other NCAs	0	0	0	0	0
Out of Hours					
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	1	2	0	0	0	3
NCA 4	1	2	1	0	0	4
NCA 5	5	1	0	0	0	6
NCA 6	1	0	1	0	0	2
NCA 9	1	0	0	0	0	1
NCA 11	1	0	0	1	0	2
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	2	0	0	0	0	2
NCA 4	1	1	1	0	0	3
NCA 5	1	0	0	0	0	1
NCA 6	0	0	1	0	0	1
NCA 9	0	0	0	0	0	0

NCA 11	0	0	0	1	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	1	0	0	0	0	1
NCA 5	0	0	0	0	0	0
NCA 6	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0

3 - Paving and asphalting

NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	1		0	0	0	1
NCA 5	0		0	0	0	0
NCA 6	1		0	0	0	1
NCA 9	0		0	0	0	0
NCA 11	0		1	0	0	1
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	2	0	0	0	0	2
NCA 4	1	2	0	0	0	3
NCA 5	1	0	0	0	0	1
NCA 6	0	1	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	1	0	0	0	0	1
NCA 4	1	1	0	0	0	2
NCA 5	0	0	0	0	0	0
NCA 6	0	0	1	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	1	0	0	1
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
NCA 6	1	0	0	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	1	0	0	0	1
All other NCAs	0	0	0	0	0	0

4 - Bridge works

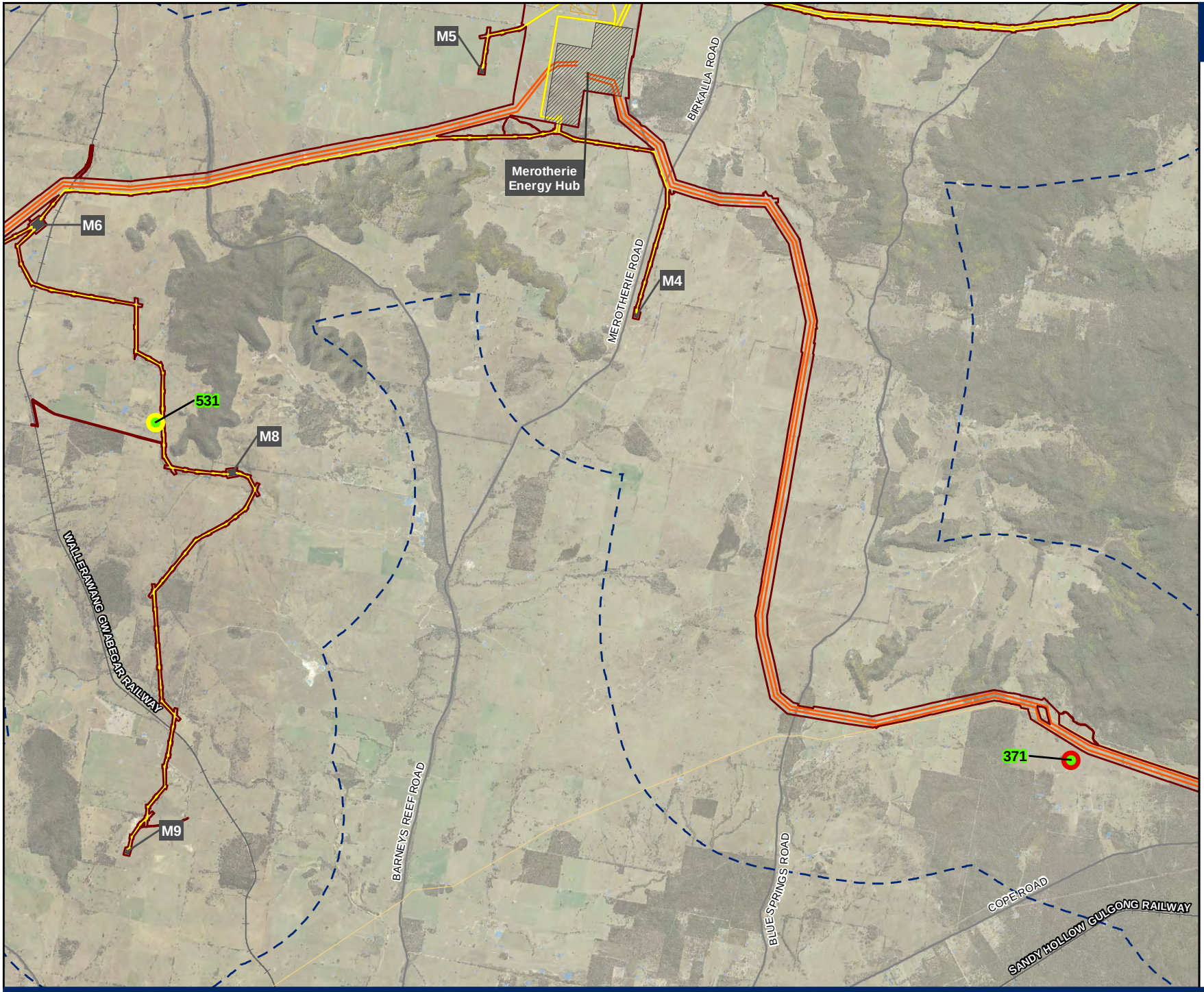
NCA	**Number of Residential Receivers exceeding NML**					
Standard Hours						
	0-10 dB		**10-20 dB**	**>20 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	0		0	0	0	0
NCA 4	0		0	0	0	0
NCA 5	0		0	0	0	0
NCA 6	1		0	0	0	1
NCA 9	0		0	0	0	0
NCA 11	0		0	0	0	0
All other NCAs	0		0	0	0	0
Out of Hours						
	0-5 dB	**5-15 dB**	**15-25 dB**	**>25 dB**	**Highly Affected (>75 dBA)**	**Total**
NCA 2	1	0	0	0	0	1
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
NCA 6	0	1	0	0	0	1

NCA 9	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep disturbance - LAeq						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
NCA 6	0	0	1	0	0	1
NCA 9	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0
Sleep awakening - LAMax						
	0-5 dB	**5-10 dB**	**10-20 dB**	**20-30 dB**	**>30dB**	**Total**
NCA 2	0	0	0	0	0	0
NCA 4	0	0	0	0	0	0
NCA 5	0	0	0	0	0	0
NCA 6	0	0	0	0	0	0
NCA 9	0	0	0	0	0	0
NCA 11	0	0	0	0	0	0
All other NCAs	0	0	0	0	0	0

Appendix C

Updated operational noise assessment

APPENDIX C-1
Transmission line – Operational noise exceedances mapping



Appendix C-1
Transmission line operational noise exceedances

Legend

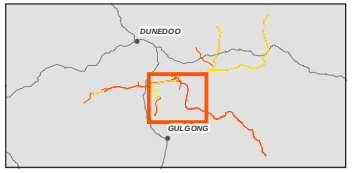
- Amended study area
- Amended construction area
- Energy hub / 500 kV switching station
- Workforce accommodation camp
- 330 kV switching station
- 500 kV transmission line
- 330 kV transmission line
- Existing transmission line
- Road
- Railway
- Water body

Noise sensitive receivers

- Dwelling - Night Time Only

Operational noise

- Negligible
- Significant



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A4
1:100,000
Data sources: WSP, NSWSS, EnergyCo

GDA 2020

C:\Users\AUMR505149\WSP O365\AU-WKG - Geospatial - AIS - Projects\PS130593_EnergyCo_CWO_Substation\Mxd\14_Acoustics\01_Appendices\PS130593_ACS_C-1_TransmissionLine_Operational_NoiseExceedances_r3v2.mxd

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