

CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

Moorebank Precinct East Stage 2

19 MARCH 2021

SYDNEY INTERMODAL TERMINAL ALLIANCE MOOREBANK PRECINCT EAST STAGE 2

Construction Noise and Vibration Management Plan

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REVISIONS

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001	12/02/2018	First draft issued to Tactical	JW	AK/SH
002	26/02/2018	Environmental Representative comments addressed	JW	SH
003	02/03/2018	Additional ER comments addressed	JW/ZQ	KP
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Revision	Date	Description	Prepared by	Approved by
005	08/06/2018	Second round of minor DP&E comments addressed	KP	KP
006	27/09/18	Updates to reflect issue of Moorebank Precinct EPL and RfMA 002	ZQ	KP
007	23/05/19	Updated with MPW Commonwealth Approvals relevant to Moorebank Avenue upgrade works	MWR	HT
008	31/07/19	Updates to address DotEE comments in response to compliance with EPBC 2011/6086	MWR	AL
009	06/08/19	Updates to address additional DotEE comments	MWR	AL
010	25/10/19	Minor updates associated with: - RfMA 02A - Additional construction compounds to support warehouse construction - RfMA 07 – Update to compliance and non-compliance definitions and inclusion of cumulative impacts required by EPBC CoA (2011/6029) - RfMA 008 – MAUW construction compound - RfMA 011 – OOHW Protocol - RfMA 012 – Additional temporary construction access points - RfMA 014 – Suitable spoil importation - RfMA 015 – Moorebank Precinct EPL - RfMA 019 – Clarification of definitions for Early Works and Construction Phase A activities - RfMA 021 – New parking area - RfMA 024 – MPW EPBC (2011/6086) and MPE EPBC (2011/9229) approval requirements for DotEE review and approval	ZQ	AL
011	21/11/19	Update to address ER comments, removal of Construction Phase A updates associated with RfMA 019 and minor updates associated with RfMA 016 – Temporary access time extension.	RP	JC
012	22/11/19	Minor updates associated with RfMA 026 – Helicopter assisted installation	ZQ	AL
013	20/12/19	Updates to address ER comments on Rev 11 and Rev12, and the approved CTAMP-B	ZQ	AL
014	16/01/2020	Updated to address ER comments	ZQ	JC
015	30/10/2020	Updates associated with: - RfMA-018 – MAUW boundary change - RfMA-028 – MAUW/MADR stockpile areas - SSD 7628-Mod 2 approval	KB CS/AW	JC MW

Revision	Date	Description	Prepared by	Approved by
		Periodic review of management plans - OOHW request approval		
016	19/03/2021	Updates associated with: - RfMA-039 – Corrections and update to Extended Hours Works Plan, and revision to construction program - RfMA-040 – Additional compound for light vehicle parking and break facilities - SSD 7268 – MOD3 - SSD 7628 – MOD4	AW	RJ

ACRONYMS AND DEFINITIONS

The following general terms, abbreviations and definitions are used in this plan.

Terms	Explanation
A1055	Standards Australia AS1055–1997™ – Description and Measurement of Environmental Noise
ABL	Assessment Background Level is the single figure background level representing each assessment period – day, evening and night – over each 24-hour period of monitoring. The ABL is determined by the tenth percentile method as prescribed in EPA policies.
Adverse weather	Weather effects that enhance noise (wind and temperature inversions) that occur at a site for a significant period of time (wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of nights in winter).
Ambient noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
AMMM	Additional Mitigation Measures Matrix
ANZECC	Australian and New Zealand Environment Conservation Council
AS2436	Standards Australia AS 2436–2010™ – Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites.
AS61672 or AS1259	Standards Australia AS IEC 61672.1–2004™ – Electro Acoustics - Sound Level Meters Specifications Monitoring or Standards Australia AS1259.2-1990™ – Acoustics – Sound Level Meters – Integrating/Averaging as appropriate to the device.
Assessment period	The period in a day over which assessments are made.
Assessment point	A point at which noise measurements are taken or estimated.
Background noise	Background noise is the term used to describe the underlying noise level present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level metre and is measured statistically as the A-weighted noise level exceeded for 90% of a sample period. This is represented as the L90 noise level (see below).
BS 7385	British Standard BS7385: Part 2-1993 - Evaluation and Measurement for Vibration in Buildings — Part 2 – Guide to Damage Levels from Ground-borne Vibration, dated 1993.
CEMP	Construction Environmental Management Plan
CMM	Commonwealth Mitigation Measures
CNS	NSW Government – Transport for NSW Construction Noise Strategy (CNS), April 2013.
CNVIS	Construction Noise and Vibration Impact Statement
CNVMP	Construction Noise and Vibration Management Plan
CoC	Conditions of Consent
Contractor	Principal Contractor
Contractor's CLM	Contractor's Community Liaison Manager
Contractor's EM	Contractor's Environmental Manager
CPCoA	Concept Plan Conditions of Approval
CPCoC	Concept Plan Conditions of Approval
CTTAMP	Construction Traffic, Transport and Access Management Plan

Terms	Explanation
dBA	A-weighted decibels. The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the 'A' filter. A sound level measured with this filter switched on is denoted as dBA. Practically all noise is measured using the A filter.
DECC	Department of Environment and Climate Change (now EPA (see below))
Decibel [dB]	The unit that sound is measured in. The following are examples of the decibel readings of everyday sounds: • 0dB Faintest sound we can hear • 30dB Quiet library or location in the country • 45dB Typical office space. Ambience in the city at night • 60dB CBD mall at lunchtime • 70dB Sound of a car passing on the street • 80dB Loud music played at home • 90dB Sound of a truck passing on the street • 100dB Sound of a rock band • 115dB Limit of sound permitted in industry • 120dB Deafening
DIN4150:3	German Institute for Standardisation – DIN 4150 (1999-02) Part 3 – Structural Vibration - Effects of Vibration on Structures.
DNSDC	Defence National Storage and Distribution Centre
DoF	Department of Finance
DP&E	Department of Planning and Environment (now DPIE)
DPIE	Department of Planning, Industry and Environment (formerly DP&E)
EHW	Extended Hours Works. EHW for the project are available through the development of an EHW Plan (Appendix B). The EHW are defined in CoC B69 as: • Early Works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching) and relate to the following hours: – 6am to 7am, Monday – Friday – 6pm to 10pm, Monday – Friday – 1pm to 5pm, Saturday
EIS	Environmental Impact Statement
EMS	Environmental Management System
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	Environmental Representative
ERAP	Environmental Risk Action Plan
ERM	Environmental Resources Management Australia Pty Ltd

Terms	Explanation
EWB	Early Works Brief
FCMM	Final Compilation of Mitigation Measures
Frequency	Frequency is synonymous to pitch. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz (Hz).
High Noise Activity	Means jack hammering, rock or hammering, pile driving, vibratory rolling, cutting of pavement, concrete or steel or other work occurring on the surface that generates noise with impulsive, intermittent, tonal or low frequency characteristics.
ICNG	NSW Department of Environment and Climate Change – NSW Interim Construction Noise Guideline, July 2009.
IEC60942	Standards Australia AS/IEC 60942:2004/IEC 60942:2003 – Australian Standard™ – Electroacoustic – Sound Calibrators.
Impulsive Noise	Having a high peak of short duration or a sequence of such peaks. A sequence of impulses in rapid succession is termed repetitive impulsive noise.
INP	NSW Environment Protection Agency, Industrial Noise Policy, 2000
Intermittent	The level suddenly drops to that of the background noise several times during the period of observation. The time during which the noise remains at levels different from that of the ambient is one second or more.
L ₁	The sound pressure level that is exceeded for 1% of the time for which the sound is measured.
L ₁₀	The sound pressure level that is exceeded for 10% of the time for which the sound is measured.
L _{A90}	Background Noise Level. The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L90 noise level expressed in units of dB(A).
L _{Aeq}	Equivalent Continuous Sound Level. The 'equivalent noise level' is the summation of noise events and integrated over a selected period of time.
L _{Aeq,15min}	Equivalent Continuous Sound Level, over a period of 15 minutes
LGA	Local Government Area
L _{min}	The minimum sound pressure level measured over a given period.
L _p or SPL	Sound Pressure Level
L _w or SWL	Sound Power Level
MAUW	Moorebank Avenue Upgrade Works
Minister, the	NSW Minister for Planning
mm/s	Millimetres per second
Moorebank Precinct	Refers to the whole Moorebank intermodal precinct, i.e. the MPE site and the MPW site.
MPE	Moorebank Precinct East
MPW	Moorebank Precinct West
NCA	Noise Catchment Area
NML	Noise Management Level
NPI	NSW Environment Protection Authority – NSW Environmental Noise Management – Noise Policy for Industry, 2017 and relevant application notes.

Terms	Explanation
Non-compliance	An occurrence, set of circumstances, or development that results in a non-compliance or is non-compliant with Development Consent SSD 7628 Conditions of Consent or EPBC Act Approval (EPBC 2011/6229) Conditions of Approval but is not an incident
Non-conformance	Observations or actions that are not in strict accordance with the CEMP and the aspect specific sub-plan
NSW Vibration Guideline, the	NSW Department of Environment and Conservation – NSW Environmental Noise Management – Assessing Vibration: a Technical Guideline (the NSW Vibration Guideline), February 2006.
NVIA	Noise and Vibration Impact Assessment
OOHW	Out of Hours Works. Works that are not captured within standard construction hours or approved under the EHW Plan.
POEO Act	Protection of the Environment Operations Act 1997
Project (the), MPE Stage 2 Project	Stage 2 of the MPE Concept Approval (MP 10_0193) approved as the MPE Stage 2 Project (SSD 7628), and the SSD 7628-Mod 2, SSD 7628-Mod 3 and SSD 7628-Mod 4 approvals. It involves the construction and operation of warehousing and distribution facilities on the MPE site and upgrades to approximately 2.1 kilometres of Moorebank Avenue.
Project site / Project footprint	The subject of the MPE Stage 2 EIS, the part of the MPE site which includes all areas to be disturbed by the Project (including the operational area and construction area).
RBL	Rating Background Level, is the overall single figure background noise level representing each assessment period – day, evening and night – over the whole monitoring period. The RBL is determined by taking the median of the assessment background levels (ABLs) for each day, evening and night period (see ABL for definition), as set out in EPA policies.
REMM	Revised Environmental Management Measure
RNP	NSW Department of Environment, Climate Change and Water – NSW Road Noise Policy, March 2011.
RSoC	Revised Statement of Commitments
SIMTA	Sydney Intermodal Terminal Alliance
SME	School of Military Engineering
SSD	State Significant Development
Stage 1 site	The subject of this CNVMP includes all work areas of the Stage 1 Proposal (including the Operational area and Indicative Construction area). This area does not include the Rail Corridor.
Suitably qualified/experienced person	A person who has formal qualifications and/or relevant experience and competency to perform a particular task.
the Project	Stage 1, Package 2 of the Moorebank Intermodal Terminal Development
VDV	Vibration Dose Value (in $\text{m/s}^{1.75}$)

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1 BACKGROUND

The Sydney Intermodal Terminal Alliance (SIMTA) received approval for the construction and operation of Stage 2 of the Moorebank Precinct East (MPE) Project (SSD 7628), which comprises the second stage of development under the MPE Concept Consent (MP10_0193). SSD 7628 has been subject to the following modification applications:

- MPE Stage 2 Modification 2 (SSD 7628-Mod 2) application, which was approved on 31 January 2020;
- MPE Stage 2 Modification 3 (SSD 7628-Mod 3) application, which was approved on 18 December 2020; and
- MPE Stage 2 Modification 4 (SSD 7628-Mod 4) application, which was approved on 19 January 2021.

This Construction Noise and Vibration Management Plan (CNVMP) has been developed to manage noise and vibration impacts during the construction phase of Stage 2 of the Moorebank Precinct East (MPE) Project (hereafter, 'the Project').

Within this plan, a strategy has been established to demonstrate the Construction Contractor's approach to the management of noise and vibration impacts. This CNVMP addresses the relevant requirements of the Project Approvals, including the Environmental Impact Statement (EIS), Response to Submissions (RtS) and Minister's Conditions of Consent (CoCs), and all applicable guidelines and standards specific to the management of noise and vibration during construction phases of the Project.

1.1 Introduction

The MPE site, including the Project site, is located approximately 27 kilometres (km) south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany and includes the former Defence National Storage and Distribution Centre (DNSDC) site. The MPE site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West subregion, approximately 2.5 km from the Liverpool City Centre.

The Project involves the development of an intermodal facility including warehouse and distribution facilities, freight village (ancillary site and operational services), stormwater, landscaping, servicing and associated works on the eastern side of Moorebank Avenue, Moorebank

Stage 2 of the Project involves the construction and operation of warehousing and distribution facilities on the MPE site and upgrades to approximately 2.1 km of Moorebank Avenue.

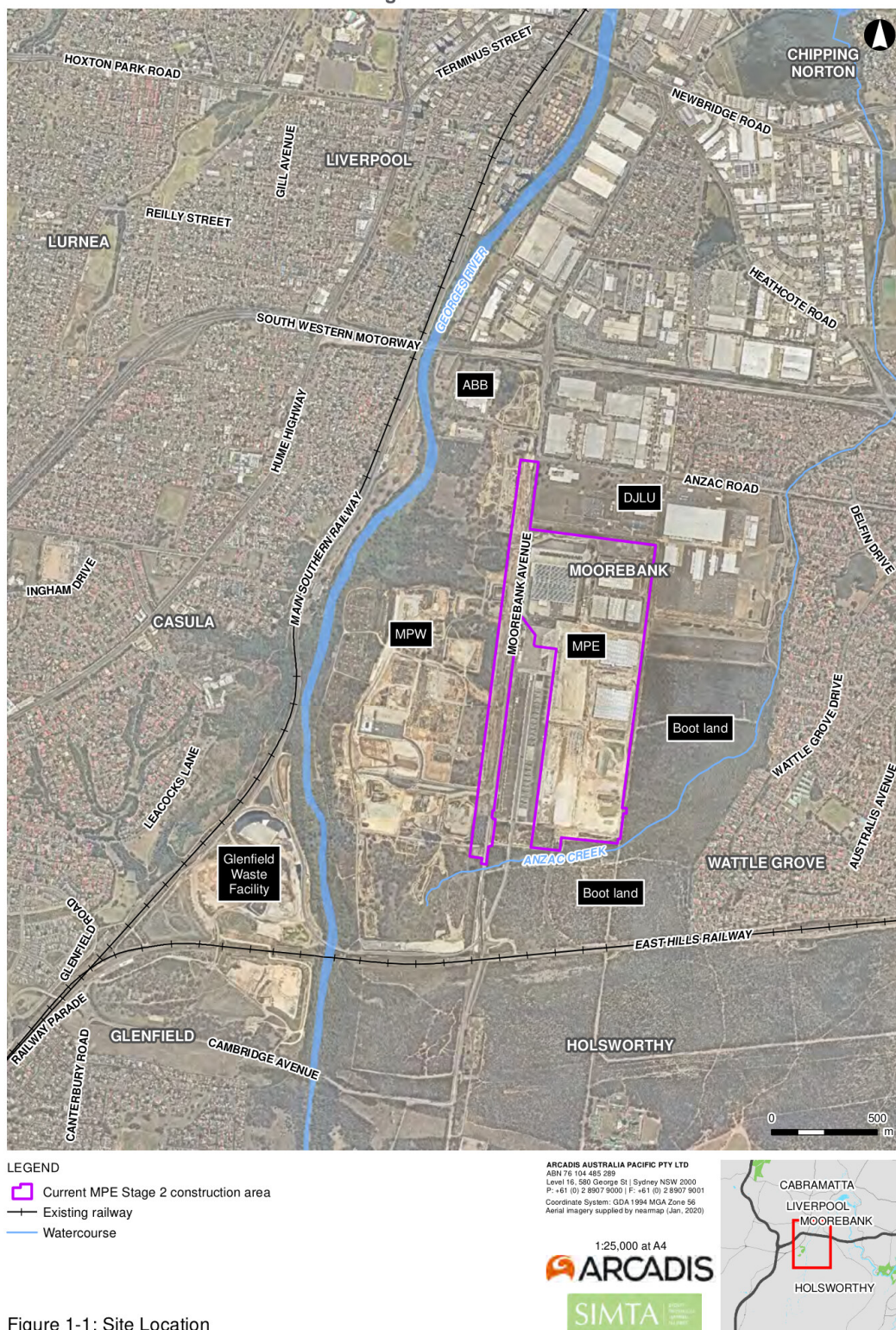
Key components of the Project include:

- Earthworks including the importation of 600,000m³ of fill and vegetation clearing
- Importation, stockpiling and placement of up to 250,000 m³ of suitable spoil (separate to the 600,000 m³ of imported clean general fill permitted for bulk earthworks)
- Approximately 300,000m² GFA of warehousing and ancillary offices
- Freight village, 8,000m² GFA of ancillary retail, commercial and light industrial land uses
- Warehouse fit-out
- Internal road network and hardstand across the site
- Ancillary supporting infrastructure within the site, including:
 - Stormwater, drainage and flooding infrastructure
 - Utilities relocation/installation
 - Fencing, signage, lighting, remediation, and landscaping
- An upgrade to Moorebank Avenue comprising the following key components:
 - Raising by about two metres and some widening
 - Embankments and tie-ins to existing Moorebank Avenue road levels
 - Signalling and intersection works
- Upgrading existing intersections along Moorebank Avenue, including:

- Moorebank Avenue / MPE Stage 2 access
- Moorebank Avenue / MPE Stage 1 northern access
- Moorebank Avenue / MPE Stage 2 central access
- Moorebank Precinct West (MPW) Southern Access/MPE Stage 2 southern emergency access.

The site location of is shown in Figure 1-1.

Construction Noise and Vibration Management Plan



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 QA by: RM

Figure 1-1 Site Location

1.2 Development Consent

The MPE Stage 2 Project has been assessed by the DP&E under Part 4.1 (now Division 4.7 as of 1 March 2018) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as State Significant Development (SSD). The Planning Assessment Commission (PAC) granted Approval for the MPE Stage 2 Project on 31 January 2018 and is subject to the Minister's CoCs (SSD 7628). The Project has been subsequently modified and approved under Modification 2 (SSD 7628-Mod 2) on 31 January 2020. The Project, including its potential impacts, consultation and proposed mitigation and management, is documented in the following suite of documents:

- State Significant Development (SSD) Approval SSD 7628, as modified
- Moorebank Precinct East – Stage 2 – Environmental Impact Statement (Arcadis Australia Pacific Pty Limited, December 2016)
- Moorebank Precinct East – Stage 2 – Response to Submissions (Arcadis Australia Pacific Pty Limited, July 2017)
- Consolidated assessment clarification responses issued on 10 November 2017.
- Moorebank Precinct East – Stage 2 (Modification 2) – Environmental Impact Statement SSD 7628-Mod 2 (Aspect Environmental Pty Limited, July 2019)
- Moorebank Precinct East – Stage 2 (Modification 2) – Response to Submissions SSD 7628-Mod 2 (Aspect Environmental Pty Limited, September 2019)
- Moorebank Precinct East – Stage 2 (Modification 3) – Environmental Impact Statement SSD 7628-Mod 3 (Aspect Environmental Pty Limited, June 2020)
- Moorebank Precinct East – Stage 2 (Modification 3) – Response to Submissions SSD 7628-Mod 3 (Aspect Environmental Pty Limited, August 2020)
- Moorebank Precinct East – Stage 2 (Modification 4) – Environmental Impact Statement SSD 7628-Mod 4 (Aspect Environmental Pty Limited, October 2020)
- MPE *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval (No. 2011/6229) granted on March 2014.
- MPW *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval (No. 2011/6086) granted on September 2016 (for Moorebank Avenue Upgrade Works only)

1.3 Project Delivery Phases

The Project construction period is anticipated to be up to five years, which will be generally divided into three works phases, as detailed in the following sections.

The terminology for the project phases or periods has developed from the preparation of the EIS and RtS documentation in response to the requirements of the CoCs and the need to stage the delivery of the environmental management documentation required by the CoC. Current terminology, and the equivalent terminology from the CoC and RtS are included in Table 1.

Table 1 Project Delivery Phase Terminology

Project Delivery Phase	CoC A18 Phase Equivalent	MPE Stage 2 RtS Works Period Equivalent
Early Works	Early works	Works Period A: Pre-construction
	Fill importation (to 60,000m ³)	Works Period B: Site preparation
Construction Phase A	Fill importation Construction	Works Period B: Site preparation
		Works Period E: Bulk earthworks, drainage and utilities
		Works Period F: Construction and internal fit out of warehousing
		Works Period G: Miscellaneous construction works

Project Delivery Phase	CoC A18 Phase Equivalent	MPE Stage 2 RtS Works Period Equivalent
Construction Phase B	Fill importation Construction	Works Period C: Construction of Moorebank Avenue Diversion Road Works Period D: Pavement and intersection works along Moorebank Avenue Works Period E: Bulk earthworks, drainage and utilities

1.3.1 Early Works

Early Works is generally described as site preparatory works including utilities adjustments and relocations, clearing and stripping of topsoil (top 100mm of topsoil), heritage salvage and fill importation (including VENM and ENM, up to 60,000m³), establishment of site access, temporary fencing and compound establishment, asbestos and hazardous material removal and preparation of buildings for demolition.

The Early Works includes but is not limited to:

- Geotechnical and utilities investigation works including potholing to confirm the location of existing services, disconnection of non-critical services (with retention in place), grout filling of disconnected draining lines, adjustment and relocation where applicable.
- Clearing of non-native vegetation, stripping of topsoil and stockpiling of topsoil on site for later re-use within site landscaping
- Stabilisation of areas where topsoil has been stripped with imported clean hard fill or by other methods determined by the Environmental Representative to have minimal environmental impact
- Removal of asbestos from heating equipment and fire resistant building elements (e.g. fire doors) by a licenced asbestos removalist followed by clearance by a certified occupational hygienist
- Hazardous material cleaning and decontamination in Buildings 67, 69, 81 and 83
- Heritage salvage works in Buildings 37, 75 and 80 on the Project site to recover architectural elements for adaptive re-use
- Importation, stockpiling and placement of up to 60,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean general fill material by truck-and-dog and / or semi-trailer
- Establishment of a site access point at the existing MPE site northern access and construction of associated access road, utilising existing paved areas with minor pavement extensions as required, to provide for access and manoeuvrability of vehicles into and through the site in accordance with CoC B10
- Establishment of temporary site fencing, a site compound(s) and temporary car parking areas to support Early Works and construction of the Project in accordance with CoC B10, B11 and B12
- Other activities determined by the Environmental Representative to have minimal environmental impact.

Any of the activities defined in SSD Approval 7628 as 'Early Works' may be undertaken during the Early Works. All works during Early Works will be undertaken in accordance with the Early Works Management Plan (EWEMP) and required sub-plans.

Upon the commencement of construction, the Project's CEMP will supersede the EWEMP.

1.3.2 Construction Works Phase A (excluding Moorebank Avenue Upgrade Works)

Construction Works Phase A will include all works described in Early Works in addition to bulk earthworks, drainage and utilities, construction and internal fit-out of warehousing and finishing works.

Construction Works Phase A excludes Moorebank Avenue works described in Section 1.3.3 below.

Construction Works Phase A includes, but is not limited to:

Completion of Site Preparation Activities

- Demolition of existing structures
- Clearing of remaining vegetation

- Adjusting the building formation of the site (to final operational levels) within which the Warehousing Compound will be located
- Establishment of temporary batch plant and materials crushing plant

Bulk Earthworks, Drainage and Utilities

- Importation, stockpiling and placement of up to a total of 600,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean general fill for bulk earthworks, including material imported as part of Early Works.
- Importation, stockpiling and placement of up to 250,000 m³ of suitable spoil (separate to the 600,000 m³ of imported clean general fill permitted for bulk earthworks)
- Installation of on-site detention (OSD) and drainage infrastructure within the MPE Stage 2 site
- Construction of retaining walls
- Creation of internal road formation by general earthworks (by constructing fill embankments)
- Bulk earthworks and adjusting the building formation of the Project site to final level, including the terminal hardstand
- Utilities relocation and installation
- Establishment of hardstand areas.

Construction and Internal Fit-out of Warehousing

- Foundation and floor slab installation
- Erection of framework and structural walls
- Installation of roof
- Internal fit-out of warehouses (racking and associated services).

Miscellaneous construction and finishing works

- Pavement construction (internal transfer roads and perimeter road), including forming of new kerbs, gutters, medians (where required) and other structures
- Line marking, lighting and sign posting
- Installation of road furniture, including traffic signs and pavement markers.
- Miscellaneous structural construction
- Finishing works, including landscaping and general site rehabilitation, where required
- Commissioning of the Project
- Decommissioning/demobilisation of the Project site, including removal of construction compound(s) and temporary construction environmental controls.

1.3.3 Construction Works Phase B (all Construction activities)

Construction Works Phase B will include all works described in Early Works Phase and Construction Works Phase A, in addition to the Moorebank Avenue upgrade works. Generally, the Moorebank Avenue upgrade works are described as construction of the Moorebank Avenue Diversion Road, bulk earthworks, drainage and utilities, and pavement works.

Construction Works Phase B includes, but is not limited to:

Construction of the Moorebank Avenue Diversion Road

- Stripping of topsoil within footprint of temporary diversion road
- Installation of temporary drainage
- Placement of fill and temporary road pavement (e.g. gravel)
- Construction of interface between temporary diversion road and existing Moorebank Avenue
- Installation of temporary road signage, street lighting and signalling
- Transfer of traffic onto temporary diversion road from Moorebank Avenue.

Bulk Earthworks, Drainage and Utilities

- Removal of existing pavement and stripping of topsoil within Moorebank Avenue

- Importation, stockpiling and placement of remainder of approximately 600,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean general fill for bulk earthworks
- Importation, stockpiling and placement of up to 250,000 m³ of suitable spoil (separate to the 600,000 m³ of imported clean general fill permitted for bulk earthworks)
- Creation of a road formation for Moorebank Ave and the Moorebank Ave Diversion Road by general earthworks (by constructing fill embankments)
- Utilities relocation and installation

Pavement works along Moorebank Avenue

- Placement of select layer of earthworks material on top of the road formation
- Placing and compacting the pavement later (concrete, or concrete and asphalt) over the select layer (consisting of a sub-base and base) and potential sealing with bitumen
- Traffic switching from diversion road onto final, upgraded Moorebank Avenue
- Removal of construction traffic management and progressive opening of the internal road and warehouse access roads to traffic
- Removal of road surface, road signage, street lighting and signalling from temporary diversion road
- Commissioning of Moorebank Avenue.

1.3.4 Construction Program

Construction of the Project is proposed to take up to five years, commencing in the first quarter of 2018. The final construction program will depend on the market demand for warehouses to be constructed on the MPE Stage 2 site.

The indicative construction program is shown in Table 2. The delivery phases are interrelated and overlap; the order of staging may alter slightly based on detailed construction contractor staging. Works will be undertaken progressively in different areas of the Project site. Some warehouses may be operational, prior to completion of construction in other areas of the site.

Table 2 Indicative Construction Program

Construction works period		2018				2019				2020				2021				2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Early Works	Pre-construction Activities																				
	Site Preparation Activities																				
Construction Phase A	Completion of Site Preparation Activities																				
	Bulk earthworks, drainage and utilities																				
	Construction and internal fit-out of warehousing																				
	Miscellaneous construction and finishing works																				
Construction Phase B	Bulk earthworks, drainage and utilities																				
	Construction of the Moorebank Avenue Diversion Road																				
	Pavement and intersection works along Moorebank Avenue																				

1.3.5 Construction Hours

Construction hours are divided into three scenarios:

1. Standard construction hours
2. Extended Hours Works (EHW)
3. Out of Hours Works (OOHW)

The standard construction hours for the Project (subject to different hours being permitted or required under an Environment Protection Licence (EPL)) are defined by CoC B65 as:

- Early Works and Construction:
 - 7am to 6pm, Monday – Friday
 - 7am to 1pm, Saturday
- Moorebank Avenue upgrade:
 - 7am to 6pm, Monday – Friday
 - 7am to 1pm, Saturday

EHW for the project are available through the development of an EHW Plan (Appendix B). The EHW are defined in CoC B69 as:

- Early Works and Construction (**not including high noise impact, piling, spoil placement, rock breaking, concrete batching**) and relate to the following hours:
 - 6am to 7am, Monday – Friday
 - 6pm to 10pm, Monday – Friday
 - 1pm to 5pm, Saturday

Works that are not captured within standard construction hours or approved under the EHW Plan may be undertaken through the Out of Hours Work Protocol (Appendix A) developed in accordance with CoC B67.

Table 3 Depiction of Construction Hours

Day/ Time	12 am-1 am	1 am-2 am	2 am-3 am	3 am-4 am	4 am-5 am	5 am-6 am	6 am-7 am	7 am-8 am	8 am-9 am	9 am-10 am	10 am-11 am	11 am-12 pm	12 pm-1 pm	1 pm-2 pm	2 pm-3 pm	3 pm-4 pm	4 pm-5 pm	5 pm-6 pm	6 pm-7 pm	7 pm-8 pm	8 pm-9 pm	9 pm-10 pm	10 pm-11 pm	11 pm-12 am
Mon	Red	Red	Red	Red	Red	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Tue	Red	Red	Red	Red	Red	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Wed	Red	Red	Red	Red	Red	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Thur	Red	Red	Red	Red	Red	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Fri	Red	Red	Red	Red	Red	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Sat	Red	Red	Red	Red	Red	Red	Red	Red	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red
Sun or Public Holiday	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red

Note: Red – OOHW, Yellow – EHW, Green – Standard construction hours.

The OOH work (OOHW) construction period is divided further into the periods detailed in Table 4. Additional OOHW periods may be determined during the construction process, however any works will be subject to the OOHW Protocol.

Table 4 OOHW Periods

OOHW Period	Time	Day
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OOH Period 1	6.00am – 7.00am	Monday- Friday*
OOH Period 2	6.00pm – 10.00pm	Monday- Friday**
OOH Period 3	7.00am – 8.00am	Saturday
OOH Period 4	1.00pm – 5.00pm	Saturday***

*Referred to as EHW Period 1

** Referred to as EHW Period 2

*** Referred to as EHW Period 3

1.4 Purpose and Application

This CNVMP has been developed to address the CoCs and the FCMM's and is based on the noise and vibration impact assessment presented in the EIS, prepared by Wilkinson Murray (WM Report No. 12186-S2 Version C, dated November 2016). This plan aims to demonstrate how noise and vibration impacts will be managed during the construction phase of the Project.

This plan provides methods to measure and reduce the noise and vibration impacts by the contractor during construction activities, including all contractor and consultant partners.

The specific requirements of the CoCs for compilation of the CNVMP, as specified in the CoCs and FCMMs are specified in Section 2.1.1 of this plan.

The most recent, approved version of this plan will be implemented to manage the Project activities.

1.5 Objectives and Targets

Table 5 outlines the objectives and targets for the Project for the management of noise and vibration impacts during construction.

Table 5 Objectives and Targets

Objective	Target	Timeframe	Accountability
Ensure construction noise and vibration impacts on community, commercial stakeholders and structures are minimised	100% compliance with approved hours of work. No exceedances of noise or vibration criteria. No structural or cosmetic damage to nearby buildings or structures due to vibration relating to works.	Duration of Early Works and Construction	Contractor's CM
Ensure compliance with relevant CoCs, applicable legislative and other requirements	No written warnings or infringement notices	Duration of Early Works and Construction	Environmental Manager (Contractor's EM)
Ensure that reasonable and feasible mitigation measures are implemented to manage impacts on surrounding residents and commercial stakeholders	No exceedances of noise or vibration criteria	Duration of Early Works and Construction	Environmental Manager (Contractor's EM)
Ensure that affected residents and other stakeholders are kept informed of upcoming works, extended hours, out of hours works (if required) and mitigation measures	No validated complaints from the community regarding noise or vibration.	Duration of Early Works and Construction	Contractor's Community Liaison Manager (Contractor's CLM)
Avoid the exceedance of construction phase noise goals/criteria	Zero incidents of noise goal/criteria being exceeded	Construction	Contractor's CM

Objective	Target	Timeframe	Accountability
	during the construction phase		
Avoid the exceedance of construction phase vibration goals/criteria	Zero incidents of vibration goals/criteria being exceeded during the construction phase	Construction	Contractor's CM

1.6 Consultation

This CNVMP has been prepared in consultation with the NSW EPA as outlined in Table 6. Supplementary information to support the consultation undertaken is included in Appendix C.

Table 6 Consultation Summary

Agency	Date	Person contacted	Comment	Status
NSW EPA	First contacted 5 March 2018	EPA Representative	Request for consultation	Ongoing
	12 March 2018	SIMTA	EPA contacted SIMTA stating that they will not provide comment on the CNVMP.	Complete
	19 March 2018	EPA Representative	EPA contacted to confirm that they will not be providing further comment	Closed

2 ENVIRONMENTAL MANAGEMENT

2.1 Legal and Other Obligations

Table 7 details the legislation, planning instruments and guidelines considered during development of this strategy.

Table 7 Legislation, Policy, Standards and Guidelines

Legislation	Description	Relevance to this CNVMP
<i>Environmental Planning and Assessment Act 1979</i>	Establishes a system of environmental planning and assessment of development proposals for the State	The CoC and associated obligations are incorporated into this plan
<i>Protection of the Environment Operations Act 1997</i>	Aims to achieve the protection, restoration and enhancement of the quality of the NSW environment	All plant will be operated in a proper and efficient manner such that noise is minimised during construction.
<i>Interim Construction Noise Guideline (ICNG)</i> , Department of Environment and Climate Change 2009	Current NSW guideline for the assessment and management of construction noise.	Noise management levels (NMLs) have been established in accordance with this guideline.
<i>NSW Road Noise Policy (RNP)</i> , Department of Environment, Climate Change and Water 2011	Defines criteria to be used in assessing the impact of road traffic noise.	Assists the establishment of criteria for construction-related road traffic noise.
<i>Assessing Vibration – a technical guideline (AVTG)</i> , Department of Environment and Conservation 2006	Based on BS6472–1992, Evaluation of human exposure to vibration in buildings. Presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques	Used for the assessment of vibration (disturbance to building occupants). CoC B72(b) requires the vibration criteria to be met.
Australian Standard AS/NZS 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors	Recommends design criteria for conditions affecting the acoustic environment within occupied spaces.	Supporting technical standard.
Australian Standard AS2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites	Provides guidance for noise control on construction, maintenance and demolition sites.	Supporting technical standard.
German Standard DIN4150-2016 Structural vibration Part 3: Effects of vibration on structures	Used for the assessment of vibration (structural damage to buried services)	Supporting technical standard. CoC B72(c) requires the vibration limits to be observed.
NSW Industrial Noise Policy (INP), Environment Protection Agency 2000	Directed towards industry, acoustic practitioners and consent authorities that require a degree of technical detail to assess impacts properly and develop mitigation methods	Supporting technical standard CoC B62 requires use in developing RBLs for closest sensitive receivers

2.1.1 Requirements of the ICNG

The aim of the ICNG is to provide guidance on managing construction works to minimise noise, with an emphasis on communication and cooperation with all involved in, or affected by, construction noise.

The ICNG states there is no single approach to minimise noise from all types of construction. The level of effort and sophistication needed to assess impacts and identify ways to minimise noise will be guided by factors such as the duration of works and the extent of the noise. Noise levels that meet Noise Management Levels, short-term works or low noise level works will be typically easier to assess and manage.

Section 1.5 of the ICNG identifies the key steps for managing noise impacts from construction. These steps are outlined in Table 8 with references to where in this CNVMP the requirements have been addressed.

Table 8 ICNG Key Requirements

Requirement	Reference	How Addressed
Identify sensitive land uses that may be affected.	Section 3.1.1	Residential and non-residential receivers most potentially affected by noise from the construction of the Project have been specified.
Identify hours for the proposed construction works.	Section 1.3.5	A number of periods have been specified where construction works are proposed for the Project.
Identify noise impacts at sensitive land uses.	Section 3.1.2	Background noise levels established at residential receivers for the development of NML.
	Section 3.2.1.1	NML established for residential and non-residential land use.
	Section 0	Construction plant items and noise levels established for a number of scenarios. Noise levels at sensitive receivers predicted and compared to NML.
Select and apply the best work practices to minimise noise impacts.	Section 3.4	Management measures have been specified and developed in consideration of the ICNG, Development Consent and Final Compilation of Mitigation Measures from the RtS.

2.1.2 Compliance Matrices

2.1.2.1 State Approvals

The Project is being delivered under Part 4, Division 4.1 (now Division 4.7 as of 1 March 2018) of the EP&A Act. The CoCs include requirements to be addressed in this plan and delivered during the Project. These requirements and how they are addressed is provided within Table 9.

Table 9 Conditions of Consent

CoC	Requirement	Document Reference	How Addressed
A1	In addition to meeting the specific performance measures and criteria established under this consent all reasonable measures must be implemented to prevent, and if prevention is not reasonable, minimise, any harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	This plan	Section 3.4 of this CNVMP identifies the management measures to be implemented to prevent and minimise environmental harm. Additional management measures have been included within the Out of Hours protocol in Appendix A Section A.5.
A2	The development may only be carried out: a) in compliance with the conditions of this consent; b) in accordance with all written directions of the Secretary in relation to this consent; c) in accordance with the EIS, Submissions Report, Consolidated assessment clarification responses and updated Biodiversity Assessment Report; d) in accordance with the amended Development Layout Plans and Design Plans, amended WSUD plans and amended architectural plans to be submitted for the Secretary's approval as part of this consent; and in accordance with the management and mitigation measures at APPENDIX B of this consent.	This plan	This CNVMP has been developed to comply with the CoCs, written directions of the Secretary, amended development layout and management and mitigation measures outlined in Appendix B of the CoCs
A20	All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits, approvals and consents.	CEMP Section 2.5.2 Section 2.1	All applicable licences, permits and approvals will be obtained as required. Approvals, permits and licences required for the Project are discussed in the CEMP in Section 2.5.2. An Environmental Protection Licence (EPL) (No. 21054) was issued by the EPA on 4 June 2018 (variation issued on 18 April 2019). The licence applies to the Moorebank Precinct (excluding the MPE Stage 1 Rail Access Land Package (RALP) which has a separate EPL licence (No. 20966)

CoC	Requirement	Document Reference	How Addressed
			and authorises > 100,000 – 500,000 tonnes crushing, grinding or separating processing capacity per annum and > 500,000 – 2,000,000 tonnes extraction, processing or storage capacity per annum. The licence applies to all other activities carried on at the premises, including road construction, bulk earthworks 'cut and fill' and importing fill.
A32	All plant and equipment used at the site or to monitor the performance of the development must be: a) maintained in a proper and efficient condition; and b) operated in a proper and efficient manner.	Section 3.4 Table 38 NV8	All plant and equipment will be maintained and operated in a proper and efficient manner.
B1	The Applicant must: a) prepare each plan, program and other documents in consultation with the specified stakeholders; b) not commence each phase of the project until the plans, programs and other documents required under this consent are approved by or, where not required to be approved, submitted to the Secretary specified within the timeframes; and implement the most recent version of the required plans and programs approved by the Secretary for the duration of the development.	Section 1.6	This CNVMP has been prepared in consultation with the EPA. Construction of the Project will not commence until this CNVMP and other plans are approved by the Secretary. A Staging Report has been prepared and approved for Construction Phases A and B. The most recent, approved version of the CNVMP will be implemented.
B62	Prior to early works, the Applicant must undertake noise monitoring in accordance with the INP to verify RBLs for the closest sensitive receivers.	Section 3.1.2	Monitoring conducted and is presented in the Wilkinson Murray 12186-M2 Report VerC, dated January 2018.
B63	Prior to early works and fill importation, the Applicant must submit a Noise Monitoring Report detailing the results of background noise monitoring, any resulting adjustment of NMLs for the development and any additional noise mitigation measures to be included in the CEMP required under condition C1.	Section 3.1.2	Monitoring was conducted and is presented in the Wilkinson Murray 12186-M2 Report VerC, dated January 2018. No additional management measures nor adjustments to the NMLs were required.
B64	Continuous noise monitoring at sensitive receivers must be undertaken during early works, fill importation, construction and for at least 12 months following occupation of the entire site.	Section 4.1.2	Continuous noise monitoring is proposed.
B65	The construction hours detailed in Table 2 must be complied with, except where they may be undertaken under condition B66. Table 2: Hours of Work	Section 1.3.5 Section 3.4; Table 38 NV5	Construction hours to be complied with unless works outside these hours are permitted by other conditions of consent.

CoC	Requirement			Document Reference	How Addressed
	Activity	Day	Time		
	Early works and Construction	Monday – Friday	7am to 6pm		
		Saturday	7am to 1pm		
	Moorebank Avenue upgrade	Monday – Friday	7am to 6pm		
		Saturday	7am to 1pm		
B66	Except as permitted by an EPL, activities resulting in high noise impact (including impulsive or tonal noise emissions) must only be undertaken: a) Between the hours of 8:00am to 5:00pm Monday to Friday; b) Between the hours of 8:00am to 1:00pm Saturday; and, c) In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block. <i>Note: For the purposes of this condition, 'continuous' included any period during which there is less than a one hour respite between ceasing and recommencing any of the work that is the subject of this condition.</i>			Section 3.4; Table 38 NV6	Addressed by NV6 in Section 3.4
B67	Works may be undertaken outside the hours detailed in Table 2 in the following circumstances: a) For the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; b) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; c) Where different construction hours are permitted or required under an EPL in force in respect of construction, in which case these construction hours must be complied with; Where they are undertaken in accordance with an Out-of-Hours Work Protocol detailing the assessment, management and monitoring of noise as part of the Construction Noise and Vibration Management Plan.			Section 3.3.1.3 and 3.4; Table 38 NV7 Appendix A	Circumstances in which Out-Of-Hours works may be undertaken is explained in Section 3.3.1.3 and Appendix A
B68	The Applicant must prepare an Out-of-Hours Work Protocol for any work undertaken outside the hours specified in condition B65 or outside the circumstances specified under condition B67. An Out-of-Hours Work			Section 4.3	The Out-of-Hours Work Protocol is included in 4.3 and addresses the requirements of CoC 68.

CoC	Requirement	Document Reference	How Addressed
	Protocol must provide for the assessment, management and monitoring of out of hours work, including:		
	a) Where works are shown to be inaudible at the nearest sensitive receivers and vibration levels do not exceed those stipulated by Table 2.2 and Table 2.4 of Assessing Vibration: a technical guide (DEC, 2006);	Table A-1, Number 4	Table A-1, Number 4
	b) Where a negotiated agreement has been arranged with affected receivers;	Table A-1, Numbers 6 and 7	Table A-1, Numbers 6 and 7
	c) Where noise can be shown to satisfy the noise management levels specified in the <i>Interim Construction Noise Guideline</i> (ICNG, DECC, 2009) at non-residential land uses; or,	Table A-1, Number 5	Table A-1, Number 5
	Where works are undertaken as part of an Extended Hours Work Plan approved as part of the Out-of-Hours Work Protocol .	Table A-1, Number 8	Table A-1, Number 8
B69	An Extended Hours Work Plan will be prepared for any construction undertaken during the extended hours detailed in Table 3 as required by condition B68(d). The Extended Hours Work Plan must provide for:		
	a. A three month assessment period, commencing at the start of extended hours construction work;	Section B.5	Continuous noise monitoring results to be reviewed during first week of EHW and monthly thereafter for the three month assessment period, with a final report issued to the Secretary.
	b. Implementation of the Construction Noise and Vibration Management Plan;	CNVMP	This EHWP has been prepared in a manner consistent with the CNVMP and refers to relevant sections of the CNVMP. Any relevant updates to the CNVMP will be incorporated into the EHWP via the EWHP review process.
	c. Noise monitoring at a representative number of sensitive receivers (including closest and furthest) to confirm the predicted noise levels;	Section B.5.2	Monitoring to be conducted per the processes outlined in Section 4.1.2 and Section 4.1.3 of the CNVMP. Additional monitoring location added in NCA3 to confirm the predicted noise levels.
	d. Targeted consultation with the noise affected sensitive receivers;	Section B.6	Consultation with potentially affected receivers included in Section B.6.
	e. Notification of the relevant Council, local residents and other affected stakeholders and sensitive receivers of the timing and duration at least 48 hours prior to the commencement of the works;	Section B.6	Council and stakeholder notification requirements specified in Section B.6.

CoC	Requirement	Document Reference	How Addressed								
	f. Construction work timeframes and methods for investigation of noise complaints;	Section B.1.3 Section B.7	EHW periods and duration of works described in Section B.1.3. Complaints handling process outlined in Section B.7.								
	g. Submission of monthly complaints reports to the Department for the life of extended hours activities;	Section B.5.4	Reporting processes, outlined in Section B.5.4, to include monthly reports to DP&E.								
	h. Continual refinement of mitigation measures based on consultation with the noise affected sensitive receivers;	Section B.4	Review process, outlined in Section B.4, to include consultation with relevant stakeholders.								
	i. Implementation of work practices set out in section 5.2 of the ICNG;	Section B.4	Management and mitigation during EHW to be consistent with Section 3.4 of the CNVMP and includes ICNG work practices.								
	j. A final summary report submitted to the Secretary at the end of the assessment period in sub-condition (a), detailing the outcomes of the assessment period, the resolution of complaints during the assessment period, and demonstrate the acceptability of works outside standard hours.	Section B.5.4	Reporting processes, outlined in Section B.5.4, to include final report to DP&E.								
Table 3: Extended Hours of Work											
<table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td rowspan="2">Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).</td><td>Monday – Friday</td><td>6am to 7am 6pm to 10pm</td></tr><tr><td>Saturday</td><td>1pm to 5pm</td></tr></table>				Activity	Day	Time	Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).	Monday – Friday	6am to 7am 6pm to 10pm	Saturday	1pm to 5pm
Activity	Day	Time									
Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).	Monday – Friday	6am to 7am 6pm to 10pm									
	Saturday	1pm to 5pm									
B70	The Applicant must comply with all written directions of the Secretary arising from the review of the final summary report required under condition B69.	Section B.5.4	The EHWP will be updated in accordance with any recommendations made by DP&E on the summary report. All written directions will be complied with.								
B71	Construction must be carried out in accordance with the construction noise management levels and requirements detailed in the ICNG (DECC, 2009).	Section 2.1.1	Section 2.1.1 of this document details the requirements of Section 1.5 of the ICNG, entitled “Applying the Guideline” which shows the high level steps for managing noise from construction. As per the requirements of the ICNG, closest sensitive receivers have been specified, NMLs specified, NMLs compared with predicted noise levels and mitigation select commensurate with the noise impacts (i.e. exceedance of the NML).								

CoC	Requirement	Document Reference	How Addressed
			Table 17 identifies the ICNG as a relevant policy that establishes noise and vibration management levels. Table 18 identifies how construction noise management levels from the ICNG are to be applied to residential receivers. Table 33 indicates that predicated $L_{Aeq, 15min}$ will comply with ICNG NMLs at all sensitive receivers. Measures NV12 and NV13 require the implementation of additional noise mitigation where noise management levels are likely to be exceeded.
	All reasonable and feasible noise mitigation measures must be implemented in addition to the management and mitigation measures in APPENDIX B with the aim of achieving the following construction Noise Management Levels (NMLs) and vibration criteria:	Section 3.4; Table 38	Table 38 NV12 and NV13 require the implementation of additional noise mitigation where noise management levels are likely to be exceeded. Measure NV10 addresses construction vibration including adherence to safe working distances for vibration intensive plant
	a) Construction noise management levels established using the ICNG (DECC, 2009);	Section 3.2.1.1; Table 18 and Table 19	Section 3.2.1.1, Table 18 identifies how construction noise management levels from the ICNG are to be applied to residential receivers. Table 19 identifies how construction noise management levels from the ICNG are to be applied at other sensitive receivers including educational institutions and industrial premises.
B72	b) Vibration criteria established using the <i>Assessing Vibration: a technical guide</i> (DECC, 2006) (for human exposure); and,	Section 3.2.2; Table 25 and Table 26 Section 3.4; Table 38	Section 3.2.2, Table 25 and Table 26 establishes vibration criteria in line with <i>Assessing Vibration; a technical guideline</i>. Measure NV10 addresses construction vibration including adherence to safe working distances for vibration intensive plant
	c) Vibration limits set out in the German Standard <i>DIN 4150-3: Structural Vibration – effects of vibration on structures</i> (for structural damage).	Section 3.2.2.2; Table 27 and Table 28 Section 3.3.6.1; Table 36 Section 3.4; Table 38	Section 3.2.2.2; Table 27 and Table 28 establishes recommended vibration limits in line with DIN4150. Section 3.3.6.1, Table 36 establishes safe working distances for damage to buildings in line with vibration limits set out in DIN 4150-3. Measure NV10 addresses construction vibration including adherence to safe working distances for vibration intensive plant

CoC	Requirement	Document Reference	How Addressed
B73	Any construction activities identified as exceeding the construction noise management levels and/or vibration criteria must be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) required by condition B76. All feasible and reasonable noise mitigation and management measures must be implemented and any activities that could exceed the construction NMLs must be identified and managed in accordance with the CNVMP. <i>Note: the ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction NML.</i>	Section 0; Table 33 Section 3.3.5; Table 25 Section 3.3.6; Table 26 Section 3.4	Assessments of construction activities undertaken in Sections 0, and 3.3.5 indicate that the Project will not exceed identified construction NMLs. Assessments of construction activities undertaken in Section 3.3.6 indicates that the Project will not exceed specified vibration criteria during construction. In the unlikely event that construction activities exceed specified NMLs mitigation measures NV12 and NV13 will be implemented. Section 3.3.6 includes mitigation measures that could be applied in the event that construction activities exceed established vibration criteria.
B74	Where feasible and reasonable, construction traffic movements on public roads should aim to limit any increase in existing road traffic noise levels to no more than 2 dB $L_{Aeq,period}$, where 'period' is defined in the EPA's <i>Road Noise Policy</i> (RNP) for both day and night.	Section 3.2.1.3 and 3.3.5 Table 35	Section 3.2.1.3 and 3.3.5, and Table 35 demonstrates that $L_{Aeq,period}$ road traffic noise will not increase by more than 2dB.
B75	The Applicant is to ensure the construction contractor's vehicles operate as to minimise impacts. Measures that could be used include: a) Toolbox talks;	Section 2.3 Section 3.4; Table 38 NV11	Section 2.3 addresses site-specific induction training that will include toolbox talks being undertaken. NV11 addresses the requirements of this condition.
	b) Contracts that include provisions to deal with unsatisfactory noise performance for the vehicle and/or the operator; and	Section 3.4; Table 38 NV11	NV11 addresses the requirements of this condition.
	c) Specifying non-tonal movement alarms in place of reversing beepers or alternative such as reversing cameras and proximity alarms, or a combination of these, where tonal alarms are not mandated by legislation.	Section 2.3 Section 3.4; Table 38 NV11 and NV8	Section 2.3 addresses site-specific induction training that will include operation of vehicles that use non-tonal reversing beepers. NV8 and NV11 addresses the requirements of this condition.
B76	Use of compression brakes for construction vehicles associated with the project that are on site or on nearby roads is not permitted (e.g. Anzac Avenue).	Section 3.4	Addressed by NV11 in Section 3.4
B77	A Construction Noise and Vibration Management Plan (CNVMP) must be prepared for the development to the satisfaction of the Secretary. The plan must form part of the CEMP required under C1 and detail how construction noise and vibration impacts will be minimised and managed. The Plan must be consistent with	Section 1.6; Appendix C Section 2.1.1 Table 8, Table 17 Section 3.2.1.1; Table 18	Section 1.6 and Appendix C provides evidence of consultation with EPA. Table 8, Table 17, Table 18 and Table 33 indicates how the Project is consistent with ICNG guidelines.

CoC	Requirement	Document Reference	How Addressed
	the guidelines contained in the ICNG (DECC, 2009). The plan must be developed in consultation with the EPA and include:	Section 0; Table 33 Section 3.4; Table 38	Section 3.4, Table 38 detail how construction noise and vibration impacts will be minimised and managed.
	a) Identification of the work areas, site compounds and access points;	Figure 3-2	Figure 3-2 s3s site compounds, access points and work areas.
	b) Identification of the type and number of plant and equipment expected on site at the same time;	Section 3.3.3.2; Table 32	Table 32 identifies the types and amount of construction plant and equipment that will be used during each phase of construction.
	c) Identification of sensitive receivers (including heritage structures if relevant) and relevant construction noise and vibration goals applicable to the project as stipulated in condition B71;	Figure 3-1 Section 3.1.1; Table 15 Section 3.2.1.1; Table 18	Figure 3-1 visually identifies the location of sensitive receivers of the Project. Table 15 lists all sensitive receivers of the Project Table 18 demonstrates how ICNG NMLs are applied to sensitive receivers of the Project.
	d) Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise and/or vibration impacts on surrounding sensitive receivers, particularly residential areas;	Section 1.3.4 Section 3.3.1 Section 3.3.1.1; Table 29 Section 3.3.1.2 Section 3.3.1.3 Section 0; Table 33 Section 3.3.6; Table 36	Section 1.3.4 provides an indicative schedule of the construction program for the Project. A summary of the indicative construction works and associated activities proposed to be undertaken during each of these works periods is provided in Table 29. No blasting activities are permitted or proposed for the construction of the Project. Table 29 and Section 3.3.1 provides details on the construction activities that will be undertaken for the Project. Table 33 demonstrates that construction activities will not exceed specified NMLs and is unlikely to have any noise impacts on surrounding sensitive receivers. Table 36 demonstrates that construction activities will not exceed specified vibration criteria and is unlikely to have any vibration impacts on surrounding sensitive receivers.
	e) An Out-of-Hours Work Protocol as referenced in condition B68 for the assessment, management and approval of works outside standard construction hours, for the Secretary's approval. The Out-of-Hours Work Protocol must:		

CoC	Requirement	Document Reference	How Addressed
	i. Detail assessment of out-of-hours work against the relevant noise and vibration criteria;	Table A-1	Table A-1
	ii. Provide detailed mitigation measures for any residual impacts (that is, additional to general mitigation measures), including extent of at-receiver treatments;	Table A-1 and Section A.5	Table A-1 and Section A.5
	iii. Include proposed notification arrangements; and	Table A-1, Number 10	Table A-1, Number 108
	iv. Include an Extended Hours Work Plan as required by condition B69.	Appendix B	Appendix B
	f) Identification of feasible and reasonable measures to be implemented to minimise and manage construction noise impacts, including, but not limited to, acoustic enclosures, erection of noise walls (hoardings), respite periods;	Section 3.4; Table 38	Table 37 includes the requirements of the CoC, FCMM, ICNG and best practice management measures.
	g) Management of the number of trucks accessing the site;	Section 3.3.5 and Table 34 Figure 3-3, and Section 3.3 of the CTAMP Truck Driver Protocol in CTAMP Appendix B	Section 3.3.5 and Table 34 identifies the existing and project daily traffic volumes and the percentage of heavy vehicles along specified routes. Specified routes are shown in Figure 3-3 of the CTAMP. Truck Driver Protocol Appendix B of the CTAMP details protocols for accessing site. Section 3.3 of the CTAMP describes how traffic and transport risks will be managed during construction of the Project. Section 3.3.11, Table 3-10 includes mitigation measures (TA-12, TA-13, TA-17, TA-18, TA-33, TA-34) that will assist in the management of the number of trucks accessing the Project site.
	h) A truck driver protocol addressing the designated routes, acceptable delivery hours, speed limits on site, no engine braking in the vicinity or on site, no extended periods of idling, avoiding queuing in or around the site and limiting the need for reversing on site	Section 3.3.5 Section 3.4 Table 37 NV11 Truck Driver Protocol in CTAMP Appendix B Section 4.3	Section 3.3.5 indicates that a truck driver protocol has been prepared as part of the CTAMP to address the requirements of this condition. Section 4.3 details where updates to the CNVMP will require updates to the CTAMP.
	i) Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibration criteria are achieved, including applicable buffer distances for vibration intensive works, use of low vibration generating equipment /vibration dampeners or alternative	Section 3.2.2.4 Section 3.3.6 Section 3.4; Table 38 NV8, NV10, NV15 and NV16	Section 3.2.2.4 details vibration management levels to be adhered to Table 38 details feasible and reasonable mitigation measures that will be implemented to ensure vibration criteria is achieved and includes the following mitigation

CoC	Requirement	Document Reference	How Addressed
	construction methodology, and pre and post-construction dilapidation surveys or sensitive structures where vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria);		measures (NV8, NV10, NV15 and NV16) that address the requirement of this condition.
	j) A description of: i) how the effectiveness of mitigation and management measures would be monitored during the proposed works, clearly indicating ii) how often this monitoring would be conducted, iii) the locations where monitoring would take place, iv) how the results of this monitoring would be recorded and reported, and, if any exceedance is detected v) how any non-compliance would be rectified;	i) Section 4.1 ii) Section 4.1 iii) Section 4.1.2 iv) Section 4.1.5 v) Section 3.4 NV12 and NV13, Section 4.2 and 4.3	i) and ii) Section 4.1 details monitoring to be undertaken, and frequency, to determine the effectiveness of mitigation measures employed. iii) Monitoring locations described in Section 4.1.2. iv) Section 4.1.5 details reporting requirements v) In the unlikely event that construction activities exceed specified NMLs mitigation measures NV12 and NV13 will be implemented. Section 3.3.6 includes mitigation measures that will be applied in the event that construction activities exceed established vibration criteria.
	k) Noise and vibration monitoring procedures (routine and complaints triggered monitoring);	Section 4.1 Section 4.2; Table 39	Section 4.1 details noise and vibration monitoring procedures. Table 39 provides details on complaints triggered monitoring.
	l) A community consultation and complaints handling procedure; and,	Section 3.3 of the Construction Community Communication Strategy Section 4.2; Table 39	Table 39 details the noise and vibration incident and complaint response management process. Community consultation will be undertaken in accordance with Section 3.3 of the Construction Community Communication Strategy.
	m) Mechanisms for the monitoring, review and amendment of this plan.	Section 4.3 Section 4.5 of the CEMP	Section 4.3 details the mechanisms for review and amendment of this plan. Reviews will be undertaken in accordance with Section 4.5 of the CEMP.
B78	Blasting is not permitted on the site.	Section 3.3.1.1	No blasting activities are proposed or permitted.
C7	The Applicant must ensure that the environmental management plans required under this consent are prepared in accordance with any relevant guidelines, and include:	a) Section 3.1 b) Section 2.1, Section 3.2 c) Section 3.4	a) Section 3.1 details existing background noise levels

CoC	Requirement	Document Reference	How Addressed
	(a) detailed baseline data; (b) a description of: - the relevant statutory requirements (including any relevant approval, licence or lease conditions); - any relevant limits or performance measures / criteria; and - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) a description of the management measures to be implemented to comply with the relevant statutory requirements, limits or performance measures / criteria; (d) a program to monitor and report on the: - impacts and environmental performance of the development; and - effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: - incidents and non-compliances; - complaints; - non-compliances with statutory requirements; and (h) a protocol for periodic review of the plan.	d) Section 4.1 and Section 4.3 e) Section 4.2 f) Section 4.1 and 4.3 g) Section 4.2 and Section 4.1.6 h) Section 4.3	b) Section 2.1 details legislative requirements, noise and vibration criteria are detailed in Section 3.2 c) Section 3.4 details management measures d) Section 4.1 details monitoring requirements, reporting is outlined in Section 4.1.5. Section 4.3 details the effectiveness of management measures e) Section 4.2 details measures to be followed in the event of an exceedance or complaint f) Section 4.1 details monitoring and reporting requirements. Section 4.3 details the mechanism to review and improve performance g) Section 4.2 details incident and complaints management. This is further detailed within the CEMP and Section 4.1.6 details the process for managing non-compliances h) Section 4.3 details periodic review.
	<i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for a particular management plan.</i>		

The Final Compilation of Mitigation Measures (FCMMs) were prepared as part of the MPE Stage 2 Submissions Report (Arcadis 2017). A list of the FCMMs as relevant to the Project and how they have been complied with in this plan are provided in Table 10.

Table 10 Final Compilation of Mitigation Measures (FCMM)

FCMM	Requirement	Document Reference
2A	A Construction Noise and Vibration Management Plan (CNVMP), or equivalent, would be prepared for the Amended Proposal in accordance with the <i>Interim Construction Noise Guideline</i> (DECC, 2009) (or equivalent), and will include the following:	Section 2.1
	Identification of nearby residences and other sensitive land uses	Figure 3-1

FCMM	Requirement	Document Reference
	Description of approved hours of work	Table 37 NV5
	Description and identification of construction activities, including work areas, equipment and duration	Section 3; Table 37 NV5
	Description of what work practices (generic and specific) will be applied to minimise noise and vibration	Table 37 NV10
	Consider the selection of plant and processes with reduced noise emissions	Table 37 NV8 and NV9
	A complaints handling process	Section 4.2
	Noise and vibration monitoring procedures	Section 4.1
	Overview of community consultation required for identified high impact works	Table 37 NV2
	Induction and training will be provided to relevant staff and sub-contractors outlining their responsibilities with regard to noise	Table 37 NV4
	- Procedure for approval of any works undertaken outside of the following hours: - Standard hours of 07:00 am to 18:00 pm Monday to Friday, and 08:00am to 13:00 pm Saturday, - Out of hours (OOH) work periods: - OOH Period 1 is 6:00am – 7:00am weekdays; - OOH Period 2 is 6:00pm – 10:00pm weekdays - OOH Period 3 is 7:00am – 8:00am Saturday; and	Appendix A. Note that the OOH Periods presented in FCMM 2A are inconsistent with CoC B69. Therefore, CoC B69 extended hours have been utilised.
2B	Any works undertaken outside of the hours prescribed in mitigation measure 2A would be undertaken in consultation with relevant authorities. Works outside these hours that may be permitted would include:	
	Any works which would not result in audible noise emissions at any nearby sensitive receptors.	
	The delivery of oversized plant and/or structures that police or other authorities determine require special arrangements to transport along public roads	
	Emergency work to avoid the loss of lives, property and/or to prevent environmental harm	Appendix A Out of hours Protocol
	Maintenance and repair of public infrastructure where disruption to essential services and/or consideration of worker safety do not allow work within standard construction hours.	
	Public infrastructure works that shorten the length of the project and are supported by noise-sensitive receivers.	
	Construction works where it can be demonstrated and justified that these works are required to be undertaken outside of standard construction hours.	
	Any other work as approved through the CNVMP.	
2D	In the event of any noise or vibration related complaint or adverse comment from the community, noise and ground vibration levels (as relevant) would be investigated. Remedial action would be	Section 4 and Table 37 NV3

FCMM	Requirement	Document Reference
	implemented where feasible and reasonable. The procedures for managing complaints would be provided within the Community Information and Awareness Strategy.	

2.1.2.2 EPBC Approvals

The EPBC Act approval for the MPE Concept was granted by the Department of the Environment in March 2014 (No. 2011/6229). This approval was provided for the impact of the MPE Project on listed threatened species and communities (Sections 18 and 18A of the EPBC Act) and Commonwealth land (Sections 26 and 27A of the EPBC Act).

The EPBC Act approval for the MPW Concept was granted by the Commonwealth Department of Environment and Energy (DoEE) in September 2016 (No. 2011/6086). This approval was provided for the impact of the MPW Project on listed threatened species and communities (Sections 18 and 18A of the EPBC Act) and Commonwealth land (Sections 26 and 27A of the EPBC Act).

The Moorebank Avenue upgrade works will be performed under the MPE Stage 2 Consent as described in Section 1.1 and 1.3 of the CEMP. Since the western side of the Moorebank Avenue upgrade works construction footprint is located within the MPW site, the works must comply with the MPW Commonwealth Approval.

The construction and operation of the Project has been designed to be consistent with the EPBC Act Approval conditions, where relevant. EPBC Act Approval conditions for the Project include specific conditions and commitments that are required to be addressed in this plan. These conditions are specified within Table 11 along with the where they have been addressed in preparing this plan.

Table 11 Commonwealth Conditions of Approval (CoA)

Condition	Requirement	Document Reference
MPE EPBC Approval (2011/6229)		
7(b)	Identification and quantification of all potential impacts associated with noise, vibration, air quality, traffic, light spill, hydrological changes, contamination, and indigenous heritage (including cumulative impacts associated with the DoF's proposed intermodal) upon Commonwealth land. Consideration must be given to people and communities at SME, DNSDC, Defence housing, and the environment more generally in neighbouring bushland areas.	Section 3 addresses potential construction noise impacts The DNSDC has been relocated to the DJLU, to the north of the MPE site, and is listed as a sensitive receiver in this plan and therefore relevant management measures within this plan are applicable. Note: The SME and Defence housing have been relocated from the MPW Site to the Holsworthy Barracks and are no longer sensitive receivers of the MPE site.
7(f)	Identification of the trigger values and criteria for all matters mentioned in condition 7(b) (excluding light spill, land contamination and indigenous heritage) that will be adopted for monitoring and managing potential impacts to Commonwealth Land.	Section 3.2
MPW EPBC Approval (2011/6086)		
6	Sections of the CEMP and OEMP relating to noise and vibration must be prepared by a suitably qualified expert and must:	This Plan

Condition	Requirement	Document Reference
	a) be consistent with the Noise and Vibration Provisional Environmental Management Framework (2 July 2014), provided at Appendix 0 to the finalised EIS	
	b) incorporate all measures 5A to 5T (CEMP only) and 5U to 5AJ (OEMP only) from Table 7.1 of the finalised EIS that are described as 'mandatory'	Section 3.4 addresses all 'mandatory' measures
	c) explain how all measures 5A to 5T (CEMP only) and 5U to 5AJ (OEMP only) from Table 7.1 of the finalised EIS that are described as 'subject to review' have been addressed	Section 3.4 addresses all measures described as 'subject to review' Appendix A also addresses measures 5D and 5S
	d) be approved by the Minister or a relevant New South Wales regulator.	This plan was approved by DP&E on 15 June 2018.

The MPE Commonwealth mitigation measures which are relevant to this plan are detailed in Table 12. There are no additional mitigation measures for MPW.

Table 12 MPE Commonwealth Mitigation Measures (CMM)

Issue	Requirement	Document Reference
Noise	A Construction Noise and Vibration Management Plan would be developed to implement best practice mitigation and management measures to minimise noise impacts on surrounding land uses and sensitive receivers, including Commonwealth Land during construction. The Construction Noise and Vibration Management Plan would address following noise issues:	This plan
Noise	Construction activities would have regard to the standard hours of 07:00 am to 18:00 pm Monday to Friday, and 08:00am to 13:00 pm Saturday (with approval from relevant authorities). Works outside of these hours that may be permitted would include (Wilkinson Murray 2013): - Any works which do not cause noise emissions to be audible at any nearby sensitive receptors. - The delivery of materials which is required outside of these hours as requested by Police or other authorities for safety reasons. Local residents would be informed of the timing and duration of approved works in accordance with the SIMTA's notification provisions. - Emergency work to avoid the loss of lives, property and/or to prevent environmental harm.	Section 3.4
Noise	Any other work as approved through the Construction Noise and Vibration Management Plan Process.	
Noise	Training and awareness which would include the following: - Site awareness training/environmental inductions to provide instruction on noise mitigation techniques/measures to be implemented during construction of the SIMTA proposal. - Working within approved hours. - Working with noisy equipment away from sensitive receivers. - Using noise screens and temporary barriers - Maintaining plant and equipment. - Turning off machinery when not in use.	Section 2.3

Issue	Requirement	Document Reference
	- Limiting the “clustering” of noisy plant / processes. - Communication, including a notification process to inform residents of respite times. - Incident and emergency response. Non-conformance, preventative and corrective action procedures.	
CMM	Selection of quiet plant and processes wherever feasible and retrofitting reversing alarms that are quieter and display less annoying characteristics. Such alarms could include “smart alarms” and “quacker alarms”.	Section 3.4
CMM	Where appropriate specific mitigation measures that may be considered would include: - Portable temporary screens to mitigate specific noise sources. - Respite periods (e.g. for extended periods of driven piling and use of rock breakers). - Consideration of offset distances, orientation and position of noisy plant away from sensitive receptors, including SME and DNSDC operations. - Completion of loading and unloading activities away from sensitive receivers. - Use of spotters, closed circuit television monitors, “smart” reversing alarms or “squawker” type reversing alarms in place of traditional reversing alarms. The anticipated effectiveness of some noise mitigation techniques in reducing construction noise impacts are presented in Table 84.	Section 3.4
CMM	Ground borne vibration levels would be measured and monitored to establish the minimum working separation between the equipment and nearby vibration sensitive receivers and buildings that have the potential to be impacted when vibration-generating equipment is used during construction of the SIMTA proposal.	Section 4.1.4

2.1.2.3 Revised Statement of Commitments

The Revised Statement of Commitments (RSoC) includes the most recent compilation of SIMTA commitments to mitigate the environmental impacts, monitor the environmental performance and/or achieve a positive environmentally sustainable outcome. These RSoCs (June 2017) were presented in the Moorebank Precinct East – Concept Plan Modification 2 Response to Submissions. The RSoC that are relevant to this plan are specified in Table 13.

Table 13 Revised Statement of Commitments

RSoC	Requirement	Document Reference
RSoC – Item 1.3	RSoC – Noise and Vibration Prior to undertaking demolition and construction on site, a Construction Noise and Vibration Management Plan should be prepared based on details of the proposed construction methodology, activities and equipment This should identify potential noise and vibration impacts and reasonable and feasible noise mitigation measures (such as those identified in this report) that may be implemented to minimise any potential impacts, including engineering and management controls.	This plan
RSoC – Item 1.3	RSoC – Noise and Vibration All construction activities will have regard to the standard hours During construction of 7:00am to 6:00pm Monday to	Section 1.3.5 and 3.3.1.3

RSoC	Requirement	Document Reference
	Friday and 8:00am to 1:00pm Saturday (with approval from relevant authorities). Any works undertaken outside of these hours will be undertaken in consultation with relevant authorities. - Works outside these hours that may be permitted will include: - Any works which do not cause noise emissions to be audible at any nearby sensitive receptors. - The delivery of materials which is required outside of these hours as requested by Police or other authorities for safety reasons. Local residents, commercial and industrial premises will be informed of the timing and duration of approved works in accordance with the notification provisions outlined in the CNMP. - Emergency work to avoid the loss of lives, property and/or to prevent environmental harm. Any other work as approved through the CNMP Process.	

MPE Concept Plan Conditions of Consent are not directly relevant to the development of this plan.

2.2 Roles and Responsibilities

Relevant roles and responsibilities associated with this CNVMP are presented in Table 14.

Table 14 Roles and Responsibilities

Roles	Responsibilities
Contractor's Project Manager (Contractor's PM)	- Include environmental consideration into all aspects of Project planning - Ensure that Project responsibilities and authorities are defined and communicated - Attend audit meetings and action results of any audit findings - Allocate Project resources to handle environmental issues - Oversee the implementation and maintenance of the CNVMP - Endorse the CNVMP - Appoint / nominate and provide support for the Contractor's Environmental Manager (Contractor's EM) - Report to senior management and the Principal's Representative on the performance of the system and environmental breaches - Take action to resolve environmental non-conformances and incidents - Sign off on all environment and sustainability inspections - Enforce environmental requirements for suppliers and sub-contractors - Report environmental incidents to the Principal's Representative - Authorise expenditure to implement environmental management requirements within limits of authority as defined in the Principal's Representatives Project requirements - Undertake ICAM investigations - Review audit corrective actions and take action as necessary to ensure timely close out of issues - Be contactable 24 hours a day - Direct works to be performed in a more environmental responsible manner that reduces impacts or stop works if there is a risk of environmental harm
Contractor's Construction Manager	Communicating with all personnel and sub-contractors regarding compliance and non-conformance with the CEMP and site specific environmental issues / EWMS

Roles	Responsibilities
(Contractor's CM)	- Identifying resources required for implementation of the CEMP - Organise and manage site plant, labour and temporary materials - Coordinating the implementation and maintenance of site environmental controls and provide support for the Contractor's EM - Report all environmental incidents in accordance with the incident reporting protocol - Undertake ICAM investigations - Take action to resolve non-conformances and incidents - Be contactable 24 hours a day - Direct works to be performed in a more environmentally responsible manner that reduces impacts or stop works if there is a risk of environmental harm
Contractor's Environmental Manager (Contractor's EM)	- Oversee the overall implementation of this CNVMP - Ensure that sufficient resources are allocated for the implementation of this CNVMP - Ensure that the CEMP covers the management and mitigation measures presented in this CNVMP - Consider and advise senior management on compliance and conformance obligations - Ensure that the outcomes of compliance monitoring / incident reporting are systematically evaluated as part of ongoing management of construction activities - Ensure all noise and vibration mitigation measures are implemented - Where standard mitigation measures are deemed insufficient, undertake reasonable steps to manage adverse impacts and implement all additional measures - Authorise cessation of construction activities on-site if exceedances are identified - Ensure construction activity records / monitoring records/ incident reports are kept and maintained on-site - Ensure audits of construction site activity records / monitoring records/ incident reports are undertaken as needed, findings are shared with relevant site personnel and corrective actions are implemented - Ensure all relevant personnel have and understand the most up-to-date copy of this CNVMP - Ensure that all requirements of this CNVMP are effectively implemented - Ensure that any required actions arising from incident investigation processes during compliance construction monitoring are reported to the relevant personnel for further action and ensure that the actions are effectively implemented - Coordinate the implementation of monitoring requirements and corrective actions - Ensure that experienced, trained or qualified personnel conduct the noise (or vibration) monitoring - Ensure all monitoring reporting requirements are met and maintained on site - Acts as a primary site contact for any valid complaints received via the Contractor's CLM - Authorise all monitoring reports and any revisions to this CNVMP
Site Supervisors	- Oversee the implementation of this CNVMP - Ensure works are undertaken during permitted hours - Ensure all noise and vibration mitigation measures are implemented - Where standard mitigation measures are deemed insufficient, undertake reasonable steps to manage adverse impacts and implement all additional measures
Contractor's Community Liaison Manager (Contractor's CLM)	- Implement the Community Consultation Strategy - Assist the Contractor's EM in consulting regulatory agencies and community - Communicate potential environmental impacts to the community and all stakeholders - Manage the resolution of environmental complaints - Act as a 24-hour contact (if other staff as outlined above are not available).
Construction contractors / sub-	- Understand and implement mitigation as required in the CNVMP and any additional required measures identified during construction - Participate (or conduct if authorised) relevant training to implement the requirements of this CNVMP

Roles	Responsibilities
contractors / site personnel	
Noise and Vibration Monitoring Personnel (contractors)	• Undertake relevant training to implement the requirements of this CNVMP • Undertake all monitoring activities in accordance with this CNVMP • Ensure regular maintenance of monitoring equipment • Ensure all relevant monitoring quality control / assurance procedures are effectively implemented

2.3 Training

All site personnel, contractors and sub-contractors shall undergo site specific induction training, which will include noise and vibration management training developed with an emphasis on understanding and managing noise impacts from the work activities being undertaken.

This site-specific induction training will include:

- The location of potentially sensitive receptors
- Relevant noise and vibration mitigation measures, including noise screens and temporary barriers where feasible
- Site hours of operation i.e. the permissible hours of work, including deliveries
- A summary of relevant licence and approval conditions
- Any limitations on high noise generating activities
- Construction employee parking areas
- Designated loading/unloading areas and procedures
- Emphasis that there should be no swearing, shouting or loud stereos/radios on site
- Details of the complaints handling procedure
- Details of the environmental incident procedures
- Limiting the clustering of noisy plant / processes
- Communication, including a notification process to inform residents of respite times
- Non-conformance, preventative and corrective action procedures
- Outline the consequences of not complying with these measures
- Toolbox meetings will be undertaken as required covering specific environmental issues and will include noise and vibration control measures where required, including but not limited to:
 - Ensuring work occurs within approved hours
 - Locating noisy equipment away from sensitive receptors
 - Ensuring plant and equipment is well maintained and not making excessive noise
 - Operation of vehicles to minimise noise and vibration impacts, i.e. use of designated haulage routes, use of non-tonal reversing beepers, turning off plant, equipment and vehicles when not in use.

Toolbox training on noise and vibration management requirements and measures will be completed by the Contractor's EM (or nominated authority) during the Project.

Personnel directly involved in implementing noise and vibration control measures on site will be given specific training in the various measures to be implemented. Records of all training will be filed in the Project filing system.

3 IMPLEMENTATION

3.1 Existing Environment

The existing noise environment in the vicinity of the Project is best described as 'urban', being an area with an acoustical environment that:

- Is dominated by 'urban hum' or industrial source noise
- Has through traffic with characteristically heavy and continuous traffic flows during peak periods
- Is near commercial districts or industrial districts
- Has any combination of the above, where 'urban hum' means the aggregate sound of many unidentifiable, mostly traffic-related sound sources.

3.1.1 Sensitive Receivers

The potentially most affected residential receivers in the vicinity of the Project site are located in the suburbs of Casula, Glenfield and Wattle Grove. In addition to residential receivers, a number of potentially affected non-residential receivers have been identified near the Project site, including All Saints Senior College and the Casula Powerhouse, located to the west of the Project site, across the Georges River. The nearest industrial receivers consist of Moorebank Precinct West (MPW), ABB and the Defence Joint Logistics Unit (DJLU) (Figure 3-1). Table 15 presents a summary of the potentially most affected receivers near the Project site.

Table 15 Sensitive Receivers

Receiver/Suburb	Category	Distance (m) from Stage 2 Construction Area
Wattle Grove	Residential	390
Wattle Grove North		350
Casula		760
Glenfield		1,580
All Saints Senior College (S1)	Educational	1,250
Casula Powerhouse (S2)		890
MPW (I1)	Industrial	Boundary
DJLU (I2)		Boundary
ABB (I3)		495

Kitchener House is located at 208 Moorebank Avenue, and is of heritage significance. Kitchener House is vacant and is therefore not considered as a noise sensitive receptor, however it is to be considered as a sensitive receiver for potential construction vibration impacts which could cause damage to the heritage structure.

Construction Noise and Vibration Management Plan

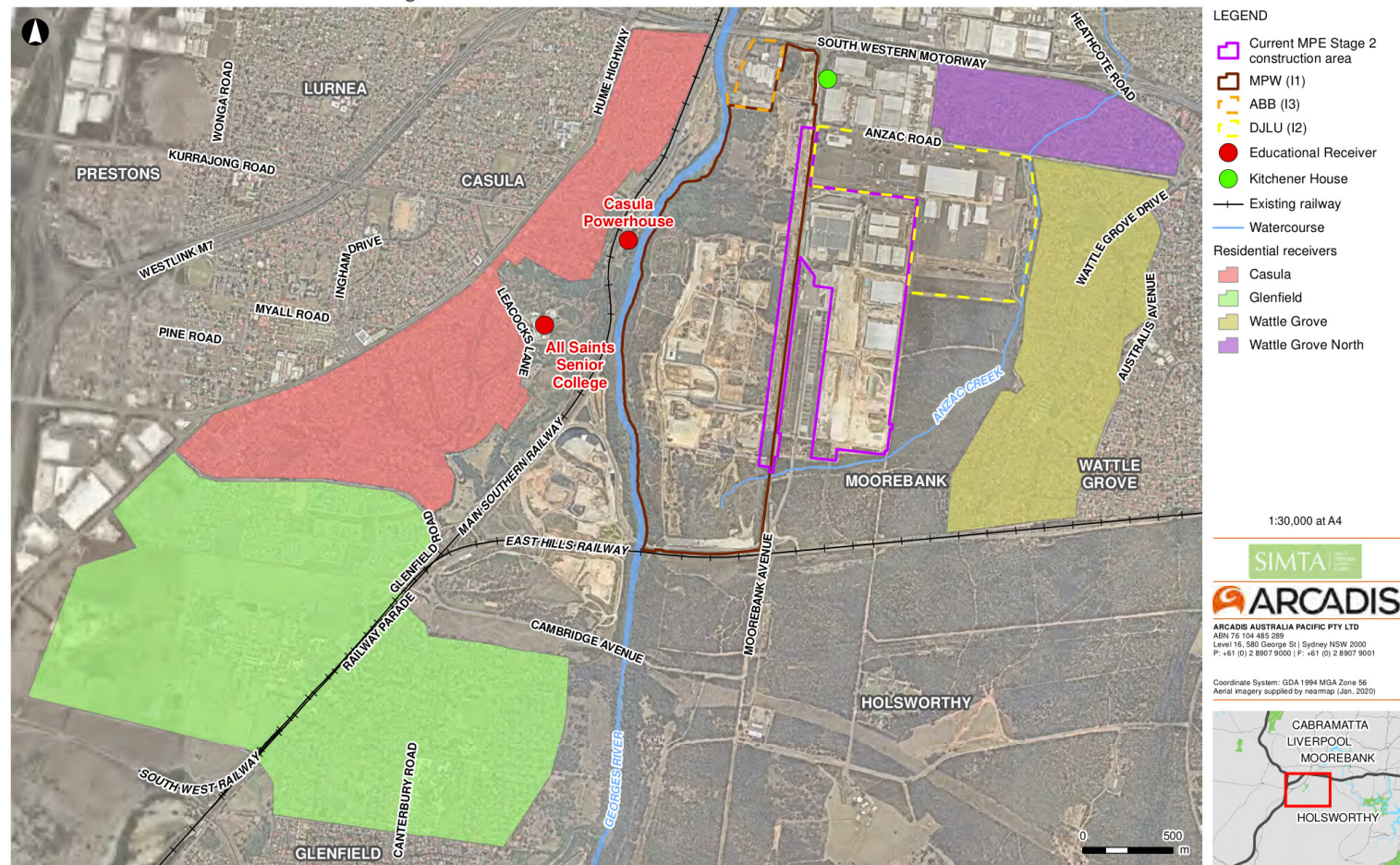


Figure 3-1: Sensitive Receivers

Date: 3/03/2020 Path: \\ho-aus-nr-fs-01\jobs\AA0087651-GIS\A_Current\B_Maps\MPE52\MPE52_CEMP\MPE52_CNVM\SIMTA_MPE52_CNVM_002_NoiseReceivers_A4L_v5.mxd
 Created by: TT
 QA by: GC

Figure 3-1 Sensitive Receivers

3.1.2 Background Noise Levels

Background noise monitoring to satisfy CoC B62 and B63 of the MPE Stage 2 Development Consent (SSD 7628) has been conducted (in December 2017) and is presented in the Wilkinson Murray 12186-M2 Report VerC, dated January 2018.

The noise monitoring required to satisfy conditions B62 and B63 concluded that Rating Background Levels (RBLs) from December 2017 monitoring data are generally consistent with those identified in the MPE Concept Plan which were used to inform the noise management levels for the MPE 2 Stage EIS. Therefore, no change to the NMLs were required.

The RBLs at sensitive receiver locations considered representative of each of the four areas are presented in Table 16.

Table 16 Rating Background (Noise Levels)

NCA	Rating Background Levels (RBL) in dB(A)		
	Daytime (7am to 6pm)	Evening (6pm to 10pm)	Night-time (10pm to 7am)
Wattle Grove	42	37	37
Wattle Grove North	36	36	36
Casula	41	37	34
Glenfield	44	44	37

3.2 Noise and Vibration Levels

3.2.1 Noise Management Levels

The policies and standards outlined in Table 17 have been used to establish construction noise management levels for MPE Stage 2.

Table 17 Construction Noise Policies and Standards

Environment impact	Relevant policy/ standard used to establish noise and vibration management level
Airborne noise	- NSW Interim Construction Noise Guideline (ICNG) - Conditions of Consent
Sleep disturbance and maximum noise events	Construction noise – INP Application Notes
Construction-related road traffic noise	No specific guidelines, but guidance taken from the NSW Interim Construction Noise Guideline (ICNG) and the NSW Road Noise Policy (RNP).

3.2.1.1 Airborne Noise

Table 18 (reproduced from Table 2 of the ICNG) sets out the NMLs and how they are to be applied to residential receivers.

Table 18 ICNG Construction Noise Management Levels

Time of Day	Noise Management Level LAeq(15min)	How to Apply
Standard hours ¹ : Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	RBL + 10dBA	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
Standard hours	Highly noise affected 75dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, considering: - times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences) - if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times
Outside recommended standard hours	Noise affected RBL + 5dBA	A strong justification will typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dBA above the noise affected level, the proponent should negotiate with the community. Where practical, noisy construction work will be undertaken during the less sensitive 6 pm to 10 pm evening period. For guidance on negotiating agreements see section 7.2.2 of the ICNG.

Note 1: CoC B65 defines standard hours of work on Saturday to be 7 am to 1.

Within the DJLU there are a number of offices and warehouses, some of which may be sensitive to construction noise. The ICNG NML for commercial/ industrial and school receivers are shown in Table 19.

Table 19 ICNG Airborne Construction Noise Management Levels at Other Noise Sensitive Land Uses

Land Use	Noise Management Level LAeq(15min)	Where NML Applies
Classrooms at schools and other educational institutions	45 dBA	Internal noise level
Industrial premises	75 dBA	External noise level

Note: Outdoor noise level based on recommended maximum internal noise level in AS 2107 and assumes 10 dB loss through an open window.

Similar to the establishment of external amenity criteria for S1 and S2, the NML for S1 and S2 are set to 10 dBA above the internal NML.

Table 20 shows relevant construction noise goals for standard construction hours based on the measured RBL values shown in Table 16. The majority of construction is expected to occur during standard construction hours.

Table 20 NML for Standard Construction Hours

Receivers	Acceptable $L_{Aeq, 15 \text{ min}}$ Noise Level (RBL + 10 (dBA))
Wattle Grove	52
Wattle Grove North	46
Casula	51
Glenfield	54
S1, S2	55
I1, I2, I3	75

Table 21 presents construction NML for the Project for each of the OOH works periods specified in Table 4.

Table 21 Construction Noise Management Levels by OOH Work Period

Receiver	NMLs (dBA)			
OOH Period	1	2	3	4
Wattle Grove	42	42	47	47
Wattle Grove North	41	41	41	41
Casula	39	42	46	46
Glenfield	42	49	49	49
S1, S2	55	55	55	55
I1, I2, I3	75	75	75	75

3.2.1.2 Sleep Disturbance

For residential receptors, it is also important to consider potential sleep disturbance impacts associated with OOHW conducted during the night time (10pm to 7am) period.

Screening levels for maximum noise levels during the night time period (10:00pm – 7:00am) were established in accordance with the INP Application Notes (www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm) and are presented in Table 22.

Table 22 Sleep Disturbance Screening Levels

Catchment	Sleep Disturbance Screening Level ($L_{A,1min}$ / L_{Amax})
Wattle Grove	52
Wattle Grove North	51
Casula	49
Glenfield	52

This method (RBL + 15 dB) is widely accepted as the appropriate method for assessing and managing sleep disturbance impacts (using the $L_{A1, 1min}$ or L_{Amax} noise descriptors) and is adopted here to establish criteria for use in the CNVMP.

Where there are noise events found to exceed the initial screening level, further analysis is made to identify:

- The likely number of events that might occur during the night assessment period
- Whether events exceed an 'awakening reaction' level of 55dBA L_{Amax} (internal), which equates to an external L_{Amax} NML of 65 dBA (assuming open windows).

3.2.1.3 Construction Traffic Noise Criteria

The ICNG does not include any criteria to assess off-site traffic noise associated with construction of the Project.

Criteria for off-site road traffic noise applicable to existing residences affected by additional traffic on existing local roads generated by land use developments are specified in the NSW Road Noise Policy (RNP). Whilst these criteria do not specifically apply to construction traffic movements, they have been conservatively considered and are summarised in Table 23.

Table 23 RNP Criteria for Road Traffic Noise

Road	Category	Assessment Criteria - dBA	
		Day ($L_{Aeq, 15 \text{ hour}}$ (7am – 10pm))	Night ($L_{Aeq, 9 \text{ hour}}$ (10pm – 7am))
M5 Motorway	Freeway	60 (external)	55 (external)
Moorebank Avenue, Anzac Road	Arterial Road	60 (external)	55 (external)

Note: The specified criteria do not apply to vehicle movements within the Project Site. For the purpose of assessment, any noise generated by on-site vehicle movements is considered as construction noise and assessed holistically with on-site mobile plant in accordance with the ICNG.

Additionally, it is typically recognised that for existing residences and other sensitive land uses affected by additional traffic on existing roads, any increase in the total traffic noise level should preferably be limited to 2 dB above the existing road traffic noise levels. A 2 dB increase is typically considered not noticeable.

3.2.2 Vibration Management Levels

The policies and standards outlined in Table 24 have been used to establish vibration management levels for the Project.

Table 24 Vibration Standards

Environment impact	Relevant policy/ standard used to establish noise and vibration management level
Vibration (structural damage to buildings and buried services)	• German Standard DIN 4150:2016 – Part 3 Structural vibration in buildings – Effects on structures
Vibration impact on humans	• Assessing Vibration: A Technical Guideline (DECC, 2006) • British Standard BS 6472-1992 and 2008 'Guide to evaluation of human exposure to vibration in buildings (1-80Hz)'

3.2.2.1 Disturbance to Buildings Occupants

Assessment of potential disturbance from construction vibration on human occupants of buildings is made in accordance with the guideline Assessing Vibration: A Technical Guideline (DECC, 2006). The guideline

provides criteria which are based on the British Standard BS 6472-1992 'Guide to Evaluation of Human Exposure to Vibration in Buildings (1-80Hz)'.

BS6472-1992 nominates guideline values for various categories of disturbance, the most stringent of which are the levels of building vibration associated with a "low probability of adverse comment" from occupants.

BS 6472-1992 was amended in 2008 to extend the use of the Vibration Dose Values (VDV) to all types of vibration (i.e. continuous, impulsive and intermittent). The vibration dose value is dependent upon the level and duration of the short-term vibration event, as well as the number of events occurring during the daytime or night-time period.

The vibration dose values recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in Table 25.

Table 25 Vibration Dose Value ranges which might result in various probabilities of adverse comment within buildings

Place and Time	Low probability of adverse comment (m/s ^{1.75})	Adverse comment possible (m/s ^{1.75})	Adverse comment probable (m/s ^{1.75})
Critical areas (day or night)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Residential buildings 16 hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8 hr night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Offices, schools, educational institutions and places of worship (day or night)	0.4 to 0.8	0.8 to 1.6	1.6 to 2.4
Workshops (day or night)	0.8 to 1.6	1.6 to 3.2	3.2 to 6.4

To assess the potential for vibration impact on human comfort, initial screening criteria based on *Assessing Vibration; a technical guideline* (DECC, 2006) have been adopted based on peak velocity units, as this metric is also used for the cosmetic damage vibration assessment. The screening criteria are conservative because they are based on the continuous vibration velocity criteria (i.e. vibration that continues uninterrupted for a defined assessment period) while construction works are mostly intermittent. The screening criteria are based on the preferred peak values, as shown in Table 26, for pseudo-continuous work activities and on maximum peak values for surface construction works, which are intermittent in nature.

Table 26 Construction Vibration Distance - Initial Screening Criteria

Place and Time	Preferred peak velocity, mm/s (>8Hz)	Maximum peak velocity, mm/s (>8Hz)
Critical areas (day or night)	0.14	0.28
Residential buildings 16 hr day	0.28	0.56
Residential buildings 8 hr night	0.20	0.40
Offices, schools, educational institutions and places of worship (day or night)	0.56	1.10
Workshops (day or night)	1.10	2.20

3.2.2.2 Structural Damage to Buildings

Potential structural damage of buildings caused by vibration is typically managed by ensuring vibration induced into the structure does not exceed certain limits and standards.

For this project, German Standard DIN 4150 – 2016 – Structural vibration: Part 3: Effects of vibration on structures, (DIN 4150-3) is referenced by CoC 72.

DIN4150-3 suggests levels at which damage might occur. Damage is defined as any permanent effects of vibration that reduces the serviceability of a structure or one of its components.

Table 27 sets out the recommended limits from DIN4150 for short-term vibration to ensure minimal risk of damage.

Table 27 Vibration Guide Values - minimal risk of cosmetic damage (DIN 4150-3) - peak particle velocity

Guideline Values for Velocity – mm/s (peak component particle velocity)				
Type of Structure	At Foundation at a Frequency of			Top Storey (Horizontal)
	1 to 10 Hz	10 to 50Hz	50 to 100 Hz ¹	All Frequencies
Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or occupancy ²	5	5 to 15	15 to 20	15
Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg. Listed buildings under preservation order)	3	3 to 8	8 to 10	8

Note 1: At frequencies above 100Hz, the values given in this column may be used as minimum values.

Note 2: Type of structure considered to be representative of a residential building.

For this project, the guideline values taken at the foundation have been used because the buildings are typically low level.

Furthermore, DIN 4150-3 states that exceeding these values does not necessarily result in structural damage. If the criteria are significantly exceeded, further investigation will be conducted.

3.2.2.3 Structural Buried Pipework and Infrastructure

Table 28 provides guideline values for evaluating the effects of vibration on buried pipework and infrastructure. It is assumed that the pipes have been manufactured and laid using current technology; if this is not the case, special considerations will have to be made.

Table 28 Vibration Guide Values - minimal risk of cosmetic damage (DIN 4150-3) - peak component particle velocity – pipes and infrastructure

Pipe Material	Guideline Values for Velocity – mm/s (peak component particle velocity)
Pipes (including welded pipes)	100
Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with and without flange).	80
Masonry, plastic	50

3.2.2.4 General Vibration Screening Criterion

DIN4150-3 states that the guide values in Table 27 relate predominantly to short-term vibration, which does not give rise to fatigue in structures.

For most construction activities involving short term vibration sources such as rock breakers, piling rigs, vibratory rollers, excavators and the like, the predominant vibration energy occurs at frequencies greater than 10 Hz (and usually in the 20 Hz to 100 Hz range). On this basis, a conservative vibration damage screening level per receiver type is given below:

- Buildings used for commercial purposes, industrial buildings, and buildings of similar design: 20.0 mm/s
- Dwellings and buildings of similar design and/or occupancy: 5.0 mm/s
- Pipework and infrastructure: 50mm/s
- Heritage buildings: 3mm/s

At locations where the predicted and/or measured vibration levels are greater than shown above (peak component particle velocity), a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure will be conducted to determine the applicable safe vibration level.

3.2.2.5 Heritage

A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive.

If required, the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring of heritage-listed structures will be sought.

Unless otherwise advised, heritage buildings and structures will be assessed as per the screening criteria presented in the Section above as they should not be assumed to be more sensitive to vibration unless they are found to be structurally unsound. If a heritage building or structure is found to be structurally unsound (following inspection) a more conservative cosmetic damage objectives of 3 mm/s peak component particle velocity (from DIN 4150-3) will be applied.

The approach to manage potential vibration impact shall be to:

1. Identify heritage items where the 3 mm/s peak component particle velocity objective may be exceeded during specific construction activities
2. Structural engineering report to be undertaken on any identified heritage items where exceedances of 3 mm/s peak component particle velocity are expected, to confirm structural integrity of the building and confirm if item is 'structurally sound'
3. If item confirmed as 'structurally sound', adopt the screening criteria, or
4. If item confirmed as 'structurally unsound' or no structural engineering report conducted, adopt the more conservative cosmetic damage objectives of 3 mm/s peak component particle velocity.

3.3 Environmental Impacts

3.3.1 Construction Activities

3.3.1.1 Standard Construction Hours

A summary of the indicative construction works and associated activities proposed to be undertaken during each of these works periods is provided in Table 29. No blasting activities are permitted or proposed for the construction of the Project.

Table 29 Construction activities to be Undertaken Within Each Construction Works Period

Delivery Phase	Works Periods	Activity
Early Works	Works Period B: Site preparation activities	• Geotechnical and utilities investigation works including potholing to confirm the location of existing services, disconnection of non-critical services (with retention in place), grout filling of disconnected draining lines, adjustment and relocation where applicable, and demolition of

Delivery Phase	Works Periods	Activity
		buildings and structures where required to enable safe and secure access to utilities. • Clearing of non-native vegetation, stripping of topsoil and stockpiling of topsoil on site for later re-use within site landscaping • Stabilisation of areas where topsoil has been stripped with imported clean hard fill or by other methods determined by the Environmental Representative to have minimal environmental impact • Establishment of an interim access road to existing warehousing in the north-east portion of the MPE Stage 2 site, utilising existing paved areas with minor pavement extensions as required • Removal of asbestos from heating equipment and fire resistant building elements (e.g. fire doors) by a licenced asbestos removalist followed by clearance by a certified occupational hygienist • Hazardous material cleaning and decontamination in Buildings 67, 69, 81 and 83 • Heritage salvage works in Buildings 37, 75 and 80 on the Project site to recover architectural elements for adaptive re-use • Importation, stockpiling and placement of up to 60,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean general fill material by truck-and-dog and / or semi-trailer • Establishment of a site access point at the existing MPE site northern access and construction of associated access road to provide for access and manoeuvrability of vehicles into and through the site in accordance with CoC B10 • Establishment of temporary site fencing, a site compound(s) and temporary car parking areas to support Early Works and construction of the Project in accordance with CoC B10, B11 and B12 • Other activities determined by the Environmental Representative to have minimal environmental impact.
Construction Phase A	Works Period B: Completion of Site preparation activities	• Demolition of existing structures • Clearing of vegetation • Adjusting the building formation of the site (to final operational levels) within which the Main Warehousing Compound will be located • Establishment of temporary batch plant and materials crushing plant
	Works Period E: Bulk earthworks, drainage and utilities	• Importation, stockpiling and placement of up to 600,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean general fill for bulk earthworks • Importation, stockpiling and placement of up to 250,000 m³ of suitable spoil (separate to the 600,000 m³ of imported clean general fill permitted for bulk earthworks) • Installation of on-site detention (OSD) and drainage infrastructure within the MPE Stage 2 site • Construction of retaining walls • Creation of internal road formation by general earthworks (by constructing fill embankments) • Bulk earthworks and adjusting the building formation of the Project site to final level, including the terminal hardstand • Utilities relocation and installation • Establishment of hardstand areas.
	Works Period F: Construction and internal fit-out of warehousing	• Foundation and floor slab installation • Erection of framework and structural walls • Installation of roof • Internal fit-out of warehouses (racking and associated services).

Delivery Phase	Works Periods	Activity
		Helicopter assisted installation of solar panels, air conditioning units and other plant
	Works Period G: Miscellaneous construction and finishing works	- Pavement construction (internal transfer roads and perimeter road), including forming of new kerbs, gutters, medians (where required) and other structures - Line marking, lighting and sign posting - Installation of road furniture, including traffic signs and pavement markers. - Miscellaneous structural construction - Finishing works, including landscaping and general site rehabilitation, where required - Commissioning of the Project - Decommissioning/demobilisation of the Project site, including removal of construction compound(s) and temporary construction environmental controls.
Construction Works Phase B	Works Period C: Construction of the Moorebank Avenue diversion road	- Stripping of topsoil within footprint of temporary diversion road - Installation of temporary drainage - Placement of fill and temporary road pavement (e.g. gravel) - Construction of interface between temporary diversion road and existing Moorebank Avenue - Installation of temporary road signage, street lighting and signalling - Transfer of traffic onto temporary diversion road from Moorebank Avenue.
	Works Period E: Bulk earthworks, drainage and utilities	- Removal of existing pavement and stripping of topsoil within Moorebank Avenue - Importation, stockpiling and placement of approximately 600,000 m³ (not exceeding a total of 22,000 m³ of material per day) of imported clean fill - Importation, stockpiling and placement of up to 250,000 m³ of suitable spoil (separate to the 600,000 m³ of imported clean general fill permitted for bulk earthworks) - Creation of a road formation by general earthworks (by constructing fill embankments) - Utilities relocation and installation
	Works Period D: Pavement works along Moorebank Avenue	- Placement of select layer of earthworks material on top of the road formation - Placing and compacting the pavement later (concrete, or concrete and asphalt) over the select layer (consisting of a sub-base and base) and potential sealing with bitumen - Traffic switching from diversion road onto final, raised Moorebank Avenue - Removal of construction traffic management and progressive opening of the internal road and warehouse access roads to traffic - Removal of road surface, road signage, street lighting and signalling from temporary diversion road - Commissioning of Moorebank Avenue.

3.3.1.2 Extended Hours

CoC B69 allows works to be undertaken during extended hours. Activities to be undertaken during extended hours are all those *“not including high noise impact, piling, spoil placement, rock breaking, concrete batching”*.

Approval for extended hours works is via the Out of Hours Works Protocol (Appendix A) and the works are to be managed under the Extended Hours Work Plan (Appendix B).

3.3.1.3 Out of Hours

Works outside of standard hours can occur under CoC B67 in the following circumstances:

- For the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm
- Where different construction hours are permitted, or required under an EPL in force in respect of construction, in which case these construction hours must be complied with
- Where they are undertaken in accordance with the OOHW Protocol (Appendix A) detailing the assessment, management and monitoring of noise.

The activities to be undertaken during OOH (and not including extended hours detailed above) have not yet been determined; however, once identified, the OOHW Protocol (Appendix A) will be implemented.

An Out of Hours Work Protocol is provided in Appendix A and makes provision for out of hours works, including:

- Where works are shown to be inaudible at the nearest sensitive receivers and vibration levels do not exceed those stipulated by Table 2.2 and Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006);
- Where a negotiated agreement has been arranged with affected receivers
- Where noise can be shown to satisfy the noise management levels specified in the Interim Construction Noise Guideline (ICNG, DECC, 2009) at non-residential land uses
- Where works are undertaken as part of an Extended Hours Work Plan approved as part of the Out-Of-Hours Work Protocol.

3.3.2 Construction Compounds

Temporary construction compounds are required to support construction of the Project as follows:

- The Warehousing Compound
- The Liberty Compound
- The Moorebank Avenue Compound.

The Warehousing Compound which will be the main construction compound for the Project will include:

- A site office(s)
- Staff amenities
- Car parking
- Storage and laydown areas
- Materials testing facilities
- Material crushing facilities
- A concrete batching plant.

It is expected that some additional satellite compounds will be required during the construction of each individual warehouse on the Proposal site; however, the Warehousing Compound will be used for the majority of construction works.

The Liberty Compound is an existing compound consisting of two existing sheds, amenities and car parking. It is located immediately adjacent to the Warehousing Compound in the centre of the Project site.

The Moorebank Avenue Compound will be located on the western side of Moorebank Avenue, immediately south of Bapaume Road.

The Moorebank Avenue Compound will include, site offices, car parking, amenities block and equipment storage and laydown areas, with some materials such as pre-cast culverts being temporarily stored within the compound area on occasion. The entrance to this compound will be via Bapaume Road.

No stockpiles are proposed to be located within the Moorebank Avenue Compound. Some materials such as pre-cast culverts may be temporarily stored within the compound area on occasion. The location of the Moorebank Avenue Compound is shown on Figure 3-2.

The location and layout of the construction compounds are shown in Figure 3-2.

Construction Noise and Vibration Management Plan



Figure 3-2 Overview of Construction Compound

3.3.3 Plant and Equipment

A range of plant and equipment will be required for the construction of the Project. A summary of the indicative plant and equipment likely to be utilised is provided in Table 30 for standard hours.

Table 30 Indicative Construction Plant and equipment Required for Construction

	Early Works	Construction Phase A						Construction Phase B		
Equipment	Site preparation activities	Completion of Site Preparation activities	Bulk earthworks, drainage and utilities	Construction and internal fit-out of warehousing	Miscellaneous construction and finishing works	Material Delivery	Stockpiling	Construction of the Moorebank Avenue diversion road	Bulk earthworks, drainage and utilities	Pavement works along Moorebank Avenue
Truck and Dog	✓	✓	✓	-	-	✓	-	-	✓	-
Loaders	✓	✓	✓	✓	✓	-	-	-	✓	-
Static and vibratory rollers, and high energy impact compaction ^{1,2}	✓	✓	✓	✓	-	-	✓	✓	✓	✓
Mobile cranes	✓	✓	✓	✓	-	-	-	-	✓	-
Excavators	✓	✓	✓	✓	-	-	-	✓	✓	✓
Excavators with hammers ¹	✓	✓	✓	-	-	-	-	-	✓	-
Backhoes	✓	✓	✓	✓	✓	-	-	-	✓	-
825 Compactor	-	-	-	-	-	-	✓	✓	-	✓
Crushing plant	-	✓	✓	-	-	-	-	-	✓	-
Concrete Batch plant	-	-	✓	✓	-	-	-	-	✓	-
Concrete agitators (or similar)	-	✓	✓	✓	✓	-	-	-	✓	-
Concrete pumps	-	✓	✓	✓	✓	-	-	-	✓	-
Concrete saws	-	-	✓	✓	✓	-	-	-	✓	-
Air compressors	-	-	✓	✓	✓	-	-	-	✓	-
Jackhammers ¹	-	-	-	✓	✓	-	-	-	-	-
Dozers	-	✓	✓	-	-	-	✓	✓	✓	✓
Mulchers	-	✓	-	-	-	-	-	-	-	-

	Early Works	Construction Phase A						Construction Phase B		
Equipment	Site preparation activities	Completion of Site Preparation activities	Bulk earthworks, drainage and utilities	Construction and internal fit-out of warehousing	Miscellaneous construction and finishing works	Material Delivery	Stockpiling	Construction of the Moorebank Avenue diversion road	Bulk earthworks, drainage and utilities	Pavement works along Moorebank Avenue
20-40 tonne articulated tipper trucks	✓	✓	✓	-	-	-		-	✓	-
Scrapers	-	✓	✓	-	-	-		-	✓	-
Graders	-	✓	✓	✓	-	✓		✓	✓	✓
Water trucks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Piling rigs	-	-	✓	✓	-	-	-	-	✓	-
Forklifts	-	-	✓	✓	✓	-	-	-	✓	-
Small earthmoving equipment	✓	-	✓	✓	✓	-	-	-	✓	-
Welder	-	-	✓	✓	✓	-	-	-	✓	-
Road Sweeper	-	-	-	-	-	✓	-	-	-	-
Road profiler ¹	-	-	-	-	-	-	-	✓	-	✓
Rubber roller	-	-	-	-	-	-	-	✓	-	✓
Lighting towers	-	-	-	-	-	✓	✓	-	-	-
Generators	-	-	-	-	-	✓	-	-	-	-
Helicopter, Airbus AS350D1 or Bell 206L4	-	-	-	✓	-	-	-	-	-	-

Note 1: 5 dB modification factors applied.

Note 2: Data supplied by Day Design (ref: 6033-7.1L REV C)

3.3.3.1 Sound Power Levels of Plant and Equipment

Sound Power Levels (SWLs) associated with typical construction plant to be used throughout the construction of the Proposal are specified in Table 31. These SWLs have recently been measured at other similar construction sites. The table gives both SWL and Sound Pressure Levels (SPL) at 7m for the equipment. SWL is independent of measurement position.

Table 31 Typical Construction Plant Sound Levels - dBA

Plant	Sound Power Level	Sound Pressure Level at 7m
Truck and Dog	103	78
Loaders	112	87
Static and vibratory rollers and high energy impact compaction ^{1,2}	110	85
Mobile cranes	110	85
Excavators	110	85
Excavators with hammers ¹	122	97
Backhoes	105	80
825 Compactor	112	87
Crushing plant	118	93
Concrete batch plant	113	88
Concrete agitators (or similar)	105	80
Concrete pumps	103	78
Concrete saws	112*	87
Air compressors	100	75
Jackhammers ¹	113*	88
Dozers	118	93
Mulchers	118	93
20-40 tonne articulated tipper trucks	110	85
Scrapers	110	85
Graders	109	84
Water trucks	105	80
Piling rigs	121*	96
Forklifts	106	81
Small earthmoving equipment	95	70
Rail tamper	118	93
Welder	90	65
Road Sweeper	105	80
Road profiler ¹	116*	91
Rubber roller	108	83
Lighting Towers	85	60
Helicopter, Airbus AS350D1 or Bell 206L4	130	102
Generators	85	60

Note 1: 5 dB modification factors applied.

Note 2: Data supplied by Day Design (ref: 6033-7.1L REV C)

A number of activities have proven to be particularly annoying to nearby residents:

- Use of 'beeper' style reversing or movement alarms
- Grinding metal

- Concrete or masonry rock drilling
- Vibratory rolling
- Bitumen milling or profiling
- Jackhammering
- Rock hammering or rock breaking
- Impact piling.

These activities have had a 5 dB modification factor added to the predicted levels.

3.3.3.2 Plant Numbers

The indicative plant numbers likely to be utilised for the project is presented in Table 32.

Table 32 Works Periods, Plant Numbers and Estimated Total SWL

	Early Works			Construction Phase A				Construction Phase B		
Equipment	Site Preparation activities	Completion of Site Preparation activities	Bulk earthworks, drainage and utilities	Construction and internal fit-out of warehousing	Miscellaneous construction and finishing works	Material Delivery	Stockpiling	Construction of the Moorebank Avenue diversion road	Bulk earthworks, drainage and utilities	Pavement works along Moorebank Avenue
Truck and Dog	4	10	10	-	-	10	-	-	10	-
Loaders	-	2	2	4	2	-	-	-	2	-
Static and vibratory rollers, and high energy impact compaction	2	4	4	3	-	-	1	3	4	3
Mobile cranes	2	2	5	8	-	-	-	-	5	-
Excavators	3	4	5	4	-	-	-	4	5	4
Excavators with hammers	-	1	2	-	-	-	-	-	2	-
Backhoes	-	4	4	6	4	-	-	-	4	-
825 Compactor	-	-	-	-	-	-	1	2	-	2
Crushing plant	-	1	1	-	-	-	-	-	1	-
Concrete Batch plant	-	1	1	1	-	-	-	-	1	-
Concrete agitators (or similar)	-	5	5	10	3	-	-	-	5	-
Concrete pumps	-	4	4	10	3	-	-	-	4	-
Concrete saws	-	4	2	6	2	-	-	-	2	-

	Early Works			Construction Phase A				Construction Phase B		
Equipment	Site Preparation activities	Completion of Site Preparation activities	Bulk earthworks, drainage and utilities	Construction and internal fit-out of warehousing	Miscellaneous construction and finishing works	Material Delivery	Stockpiling	Construction of the Moorebank Avenue diversion road	Bulk earthworks, drainage and utilities	Pavement works along Moorebank Avenue
Air compressors	-	3	4	20	4	-	-	-	4	-
Jackhammers	-	-	-	6	3	-	-	-	-	-
Dozers	-	3	4	-	-	-	1	2	4	2
Mulchers	-	3	-	-	-	-	-	-	-	-
20-40 tonne articulated tipper trucks	4	10	10	-	-	-	-	-	10	-
Scrapers	-	5	6	-	-	-	-	-	6	-
Graders	4	4	4	2	-	1	-	4	4	4
Water trucks	1	5	5	2	2	1	1	2	5	2
Piling rigs	-	1	3	2	-	-	-	-	3	-
Forklifts	-	3	3	20	3	-	-	-	3	-
Small earthmoving equipment	3	6	20	20	6	-	-	-	20	-
Welder	-	10	10	20	5	-	-	-	10	-
Road Sweeper	-	-	-	-	-	-	-	-	-	-
Road profiler	-	-	-	-	-	-	-	1	-	1
Rubber roller	-	-	-	-	-	-	-	1	-	1
Lighting towers	-	-	-	-	-	4	4	-	-	-
Generators	-	-	-	-	-	2	4	-	-	-
Helicopter, Airbus AS350D1 or Bell 206L4	-	-	-	1	-	-	-	-	-	-
Combined SWL for Works Period (dBA)	117	127	129	124*	118	108	110	122	129	122

* Note: The combined SWLs provided in Table 32 are based on a conservative worst-case scenario (derived from the EIS) reflective of the concurrent operation of all plant. The operation of a helicopter is not included in the combined SWL for the relevant works period as the helicopter will not be used concurrently with all other plant and equipment depicted in Table 32.

3.3.4 Assessment of Construction Noise during Standard Hours

Consistent with the requirements of the ICNG, construction noise impacts are considered based on a worst-case assessment corresponding to plant and equipment operating on part of the site nearest to sensitive receivers.

The ICNG recommends that realistic worst case or conservative noise levels should be predicted for assessment locations representing the most noise exposed residential or other sensitive land uses. For the construction site, residential or other sensitive land uses have been grouped into receiver areas or “catchments” which comprise those receivers which would experience a similar level of construction noise. For each receiver area, the noise levels are predicted at the most noise exposed location. For most construction activities, it is expected that the actual construction noise levels may be lower than predicted at the most exposed receiver or location – as the noise levels presented in this document are based on a realistic worst case assessment.

The predicted $L_{Aeq, 15min}$ noise levels at sensitive receivers during standard hours for each specified works category is presented in Table 33. A cumulative noise level impact assessment for construction is presented in Section 3.4. The cumulative noise level impact assessment for construction undertaken during preparation of this plan did not consider use of a helicopter. Notwithstanding, a separate construction noise and vibration impact statement (CNVIS) has been undertaken to consider potential noise and vibration impacts of a helicopter (see Appendix D).

Table 33 indicates that predicted $L_{Aeq, 15min}$ construction noise levels comply with the established NML at all receivers.

Table 33 Predicted Construction Noise Levels During Standard Hours

	Early Works L _{Aeq} , 15min	Construction Phase A L _{Aeq} , 15min					Construction Phase B L _{Aeq} , 15min				Noise Management Level (NML) L _{Aeq} , 15min
Equipment	Site Preparation activities	Completion of Site Preparation activities	Bulk earthworks, drainage and utilities	Construction and internal fit-out of warehousing	*Miscellaneous construction and finishing works	Worst Case Cumulative	Construction of the Moorebank Avenue diversion road	Bulk earthworks, drainage and utilities	Pavement works along Moorebank Avenue Works	Cumulative	
Wattle Grove	39	49	51	46	41	52	38	51	38	51	52
Wattle Grove North	34	45	41	41	36	44	35	46	35	46	46
Casula	36	47	49	43	38	50	41	49	41	50	51
Glenfield	25	35	37	28	26	38	30	37	30	38	54
S1	34	44	46	41	35	47	39	45	39	46	55
S2	32	42	44	39	34	45	37	44	37	45	55
I1	61	72	74	68	63	75	66	74	66	75	75
I2	62	72	74	69	63	75	57	74	57	75	75
I3	40	51	49	47	42	54	41	53	41	53	75

*Note: The cumulative assessments provided in Table 33 are based on conservative worst-case scenario noise assessments (derived from the EIS). The operation of a helicopter is not included in the calculation of the cumulative assessment for the relevant works period as the helicopter will not be used concurrently with other plant and equipment depicted in Table 32.

3.3.5 Potential Construction Traffic Noise Impacts

3.3.5.1 Construction Traffic Generation

During the construction of the Project, all heavy vehicles, and the majority of light vehicles, will travel to and from the site via the M5 Motorway and Moorebank Avenue. Additionally, a small number of light vehicles will travel along Anzac Road, east of Moorebank Avenue, and along Moorebank Avenue, north of the M5 Motorway. No heavy vehicles, associated with the construction of the Project, will travel along Anzac Road, or along Moorebank Avenue, north of the M5 Motorway.

The existing and projected daily traffic volumes, and percentage heavy vehicles, along the specified roads, for the construction of the Project, are presented in Table 34. It is not yet known whether heavy construction vehicles will travel to the site, along the M5 Motorway, from the east or the west. This will depend upon factors such as the construction contractor, and the source(s) of fill. Therefore, the projected construction traffic volumes along the M5 Motorway, presented in Table 34, are based on all heavy construction vehicles travelling along the M5 Motorway both east and west of Moorebank Avenue. Such a scenario may not eventuate in practice, and therefore, the assessment of construction traffic noise along the M5 Motorway is conservative.

A Driver's Code of Conduct has been prepared as an Appendix to the Construction Traffic Access Management Plan (CTAMP) to assist in the management of potential traffic and traffic noise related impacts.

Table 34 Construction Traffic Volume and % Heavy Vehicles

Location	Time ¹	Existing (no Development)		Future (with Development)	
		Volume	%Heavy	Volume	%Heavy
M5 Motorway – East of Moorebank Avenue	Day	106,344	9.7	107,370	10.5
	Night	21,060	13.2	21,201	13.5
M5 Motorway – West of Moorebank Avenue	Day	124,264	10.2	125,290	10.8
	Night	24,036	11.5	24,177	11.8
Moorebank Avenue – North of M5 Motorway	Day	26,892	10.0	26,953	10.0
	Night	6,308	10.0	6,345	9.9
Anzac Road – East of Moorebank Avenue	Day	8,991	4.6	9,018	4.6
	Night	2,109	4.6	2,125	4.6

Source: Arcadis

1. Day = 7.00am – 10.00pm, Night = 10.00pm – 7.00am

3.3.5.2 Predicted Increases in Road Noise Levels

Using the data in Table 35, the increases in road noise levels along the M5 Motorway, Moorebank Avenue and Anzac Road, during the construction of the Project, have been calculated. The calculations have been conducted using the Calculation of Road Traffic Noise (CORTN) algorithm, and are based upon the following assumptions:

- Vehicle speeds are 100 km/h along the M5 Motorway and 60 km/h along Moorebank Avenue and Anzac Road.
- Typical receiver setbacks are approximately 25 metres along the M5 Motorway and approximately 12 metres along Moorebank Avenue and Anzac Road. It is important to highlight that receiver setbacks are important when calculating absolute road noise levels, however setbacks are not important when calculating increases in road noise levels due to changes in traffic volume and mix.

The predicted increases in road noise levels, due to the construction of the Project, are shown in Table 35.

Table 35 Increases in Road Noise Levels During Construction

Location	Predicted Increase (dBA)	
	Day ¹	Night ¹
M5 Motorway – East of Moorebank Avenue	0.1	0.0
M5 Motorway – West of Moorebank Avenue	0.2	0.1
Moorebank Avenue – North of M5 Motorway	0.0	0.1
Anzac Road – East of Moorebank Avenue	0.0	0.0

1. Day = 7.00am – 10.00pm, Night = 10.00pm – 7.00am

Table 35 shows that increases in road noise levels along the M5 Motorway, Moorebank Avenue, and Anzac Road are considerably less than 2 dB. Therefore, no mitigation of traffic noise levels, due to the construction of the Project, has been considered.

3.3.6 Potential Construction Vibration Impacts

Vibration-intensive plant that will be used during construction will include:

- Vibratory rollers
- High-energy impact compaction equipment
- Jack-hammering.

3.3.6.1 Vibration Safe Working Distances

Table 36 defines typical safe working distances for vibration intensive activities. These safe working distances are defined for damage (DIN 4150-3) and human comfort (the NSW Vibration Guideline). The safe working distances for cosmetic damage will be complied with at all times.

Table 36 Safe Working Distances

Plant Item	Rating/Description	Safe Working Distance (m)			
		Pipework and Infrastructure (DIN 4150-3)	Buildings used for commercial purposes, industrial buildings, and buildings of similar design (DIN 4150-3)	Dwellings and buildings of similar design and/or occupancy (DIN 4150-3)	Human Comfort (the NSW Vibration Guideline)
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	1 m	2 m	6 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	1 m	2 m	8 m	20 m
	< 200 kN (Typically 4-6 tonnes)	1 m	3 m	15 m	40 m
	< 300 kN (Typically 7-13 tonnes)	1 m	4 m	19 m	100 m
	> 300 kN (Typically 13-18 tonnes)	1 m	4 m	25 m	100 m
	> 300 kN (> 18 tonnes)	1 m	1 m	31 m	100 m
High Energy Impact Compaction ¹	100 kW Tractor (Towing Equipment)	2m	3 m	10 m	50 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	1 m	1 m	3 m	7 m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	1 m	2 m	9 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	1 m	4 m	24 m	73 m

Plant Item	Rating/Description	Safe Working Distance (m)				Human Comfort (the NSW Vibration Guideline)
		Pipework and Infrastructure (DIN 4150-3)	Buildings used for commercial purposes, industrial buildings, and buildings of similar design (DIN 4150-3)	Dwellings and buildings of similar design and/or occupancy (DIN 4150-3)		
Vibratory Pile Driver	Sheet piles	1 m	1 m to 4m	2 m to 20 m		20 m
Pile Boring	≤ 800 mm	1 m	1 m	2 m		n/a
Jackhammer	Hand held	1 m	1 m	1 m		Avoid contact with structure

Note 1: Data supplied by Day Design (ref: 6033-7.1L REV C)

For general construction and roadworks, it is not expected that the cosmetic damage and human comfort criteria will be exceeded as the safe working distances specified in Table 36 will be able to be maintained.

In areas where residential buildings and or commercial buildings are located less than 100 m from areas where vibratory rollers are proposed, all feasible and reasonable mitigation measures will be implemented including:

- Selection of an appropriate-sized vibratory roller
- The use of lower vibration settings or static rolling
- Verification of vibration levels via monitoring.

In relation to human comfort, the safe working distances above relate to continuous vibration. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels, occurring over shorter periods may be allowed. A targeted assessment may be undertaken during works to evaluate any decrease in human comfort safe work distance offsets and to determine if any other mitigation or management measures are required to minimise the potential impacts.

3.3.6.2 Heritage Listed Structures

Kitchener House is located at 208 Moorebank Avenue, and is of heritage significance. Vibration generating works associated with the Moorebank Avenue /M5 Motorway Intersection would potentially occur within 100 m of Kitchener House.

If works are within 100 m of Kitchener House, the following approach to manage potential vibration impacts shall be conducted prior to the commencement of those works:

1. Undertake pre-construction dilapidation surveys of Kitchener House (to be conducted by suitably qualified person);
2. Obtain a structural engineering report to confirm structural integrity of the building and confirm if item is 'structurally sound' (or alternatively adopt the more stringent criteria specified in (5) below).
3. Seek advice of a heritage specialist on methods and locations for installing equipment used for vibration and movement of heritage-listed structures.
4. If Kitchener House is 'structurally sound', the screening criteria will apply, or
5. If Kitchener House is 'structurally unsound' or if a structural engineering report is not conducted, the conservative cosmetic damage objectives of 3 mm/s peak component particle velocity will be adopted.
6. Conduct continuous vibration monitoring for the period where construction works occur within 100 m.

3.4 Cumulative Impacts

Assessment of potential cumulative noise and vibration impacts was undertaken by Wilkinson Murray as part of the preparation of the EIS (Refer to Section 19 and Appendix L of the MPE Stage 2 EIS).

The cumulative construction noise scenario accounted for the cumulative predicted noise impacts associated with Project construction activities, MPW Early Works activities, MPE Stage 1 and MPW Stage 2 construction works. The highest predicted $L_{Aeq, 15min}$ construction noise levels at sensitive receivers during relevant phases for each concurrent project were used for the assessment to attain a worst-case construction cumulative scenario to assess against the NMLs established for the Project.

The worst-case cumulative construction noise levels for each of the selected receivers are presented in Table 37. The results show that cumulative construction noise levels are predicted to comply with the NML at all receivers, except for the most sensitive receivers in Casula, where cumulative construction noise levels may exceed NML by up to 2dB. This is considered a negligible exceedance.

Table 37 Worst-case cumulative construction noise levels

Receiver	Predicted $L_{Aeq, 15min}$ Noise Levels					NML	Exceedance
	MPE Stage 2 Proposal	MPW Early Works	MPW Stage 2	MPE Stage 1	Cumulative		
Wattle Grove	49	38	37	40	50	52	0 dB
Wattle Grove North	45	38	37	27	46	46	0 dB

Receiver	Predicted $L_{Aeq, 15min}$ Noise Levels					NML	Exceedance
	MPE Stage 2 Proposal	MPW Early Works	MPW Stage 2	MPE Stage 1	Cumulative		
Casula	47	44	50	40	53	51	2 dB
Glenfield	35	40	36	32	43	54	0 dB
S1	44	49	49	39	53	55	0 dB
S2	42	49	48	37	52	55	0 dB

Due to the large separation distances between the Project and nearby sensitive receivers, construction vibration impacts are considered negligible.

Management measures (See Section 3.5) will be implemented prior to and during construction to avoid and minimise impact on noise and vibration on surrounding sensitive receivers. Appropriate implementation of these controls would reduce the risk of noise and vibration impacts during the construction phase of the Project.

3.5 Management Measures

This section describes the overall approach to managing and mitigating noise and vibration impacts as a result of the Project based on the predicted impacts as summarised in this CNVMP.

The management measures discussed in this section are based on the applicable EIS, RtS, NVIA, CoC, the ICNG as well as the requirements and standards of SIMTA and its contractors.

The noise predictions in this CNVMP were developed to address the assessment requirements documented in the ICNG (Section 2.1.1). It also identifies the thresholds by which impacts can be quantified and the level of mitigation and management that is required for each stage of works.

The mitigation and management measures are consistent with the intent and recommendations of the ICNG for own best-practice techniques to be developed for managing construction noise and vibration and implementing feasible and reasonable mitigation measures.

The noise assessment and mitigation approach has been adopted, in conjunction with the requirements of the ICNG, for the measured described in this CNVMP.

Table 10 includes the Final Compilation of Mitigation Measures (FCMMs) related to noise and vibration that were established as part of the MPE Stage 2 RtS. These mitigation measures have been included in Table 38 and references to where the FCMMs are addressed have also been included in Table 38.

The mitigation measures that will be adopted during the Project are described in Table 38 and will be implemented for the works to manage and potentially reduce construction noise and vibration impacts.

Table 38 Management Measures

ID	Management Measure	Timing	Responsibility	Reference
NV1	The approved hours of work, the name of the site/project manager, the responsible managing company, its address and 24 hour contact phone number for any inquiries, including construction/noise complaints will be displayed at the site, typically near site entrance points.	Pre-construction and during construction	Contractor's Community Liaison Manager (Contractor's CLM)	MPW C'th CoA 6 (c) Good practice
NV2	Notification of potentially affected people and the relevant council about construction commencement, out-of-hours works and high noise works will occur in accordance with the Construction Community Communication Strategy and will detail the following at least 14 days prior to commencement of relevant works: • Nature of the construction stages • Hours of work • Duration of noisier activities • Measures to minimise noise impacts The Project website, information and response lines, email distribution list and any applicable community based forums will also be utilised for this purpose.	Pre-construction and during construction	Contractor's Community Liaison Manager (Contractor's CLM)	CoC B77 CoC B155 FCMM 2A MPW C'th CoA 6 (c)
NV3	In the event of any noise or vibration related complaint or adverse comment from the community, noise and ground vibration levels (as relevant) will be investigated. Remedial action will be implemented where feasible and reasonable. The procedures for managing complaints will be provided within the Construction Community Communication Strategy.	Construction	Contractor's Community Liaison Manager (Contractor's CLM)	CoC B76 CoC B155 FCMM 2D
NV4	A site-specific induction will be provided to all site personnel, contractors and sub-contractors with an emphasis on understanding and managing noise impacts from the work activities being undertaken. This will include the location of noise sensitive receptors, specific mitigation measures, site hours of operation, noise complaints procedure, etc. as well as the consequences of not complying with these mitigation measures.	Pre-construction	Contractor's Environmental Manager (Contractor's EM)	This plan FCMM 2A MPW C'th CoA 6 (c)

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ID	Management Measure	Timing	Responsibility	Reference
NV5	All general construction works and activity will be scheduled to occur during the following periods, unless authorised as out-of-hours works or as otherwise specified in an environment protection licence: 7:00am to 6:00pm Mondays to Fridays, inclusive; 7:00am to 1:00pm Saturdays; and - at no time on Sundays or public holidays.	During construction	Contractor's EM Site Supervisor	CoC B65 FCMM 2A MPW C'th CoA 6 (c)
NV6	Construction works and activity with the potential to generate high noise impact (including impulsive or tonal noise emissions) will be scheduled to occur during the following periods: - between the hours of 8:00 am to 5:00 pm Monday to Friday; - between the hours of 8:00 am to 1:00 pm Saturday; and - in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block. Blasting is not permitted at any time.	During construction	Contractor's EM Site Supervisor	CoC B66 MPW C'th CoA 6 (c)
NV7	Out-of-hours works will only be undertaken in the following circumstances: - for the delivery or despatch of materials as requested by the NSW Police Force or other public authorities for safety reasons - where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm - where they are undertaken in accordance with the Out-Of-Hours Work Protocol	During construction	Contractor's EM Site Supervisor	CoC B67
NV8	Where feasible and reasonable, plant and equipment will be selected, operated and maintained to be minimise noise and vibration, including: - Select plant and equipment based on least noise and vibration emission levels - Use of low-vibration generating equipment/vibration dampeners or alternative construction methodology where necessary	During construction	Contractor's EM Site Supervisor	CoC A32 CoC B75 CoC B77 (i) FCMM 2A MPW C'th CoA 6 (c)

ID	Management Measure	Timing	Responsibility	Reference
	- Use of noise source controls, such as the use of residential class mufflers and engine covers, to reduce noise from all plant and equipment including excavators and trucks - Maintenance, repair or replacement of plant and equipment if it becomes noisy - Use of quietest suitable and available construction equipment - Use of silenced generators and compressors - Shut down of equipment when not in use for extended periods of time - Ensuring road plates are properly installed and maintained. - Use of non-tonal movement alarms in place of reversing beepers, or alternatives such as reversing cameras and proximity alarms, unless tonal alarms are mandated by legislation. All plant and equipment used at the site or to monitor the performance of the development will be: - maintained in a proper and efficient condition; and - operated in a proper and efficient manner.			
NV9	Where feasible and reasonable, plant and equipment will be selected to have operating Sound Power Levels compliant with the values presented in Table 31 of this Plan in the first instance, Table 2 in the Transport for NSW <i>Construction Noise Strategy</i> or AS 2436-1981 2010 <i>Guide to noise and vibration control on construction, demolition and maintenance sites</i> . Attended monitoring of will be conducted within 28 days of significant new plant / equipment arriving at the site.	Pre-construction	Contractor's EM	FCMM 2A
NV10	Where feasible and reasonable, the following work practices will be adopted to minimise noise and vibration: - Where practical, undertake the noisiest works during standard hours. - Avoid simultaneous operation of noisy plant.	Pre-construction	Contractor's EM	B72 (b) (c) B77 (i) FCMM 2A MPW C'th CoA 6 (c) MPW Stage 1 REMM 5S

ID	Management Measure	Timing	Responsibility	Reference
	• Maximise the offset distance between noisy plant and adjacent sensitive receptors • Throttle down or switch off plant when not in use • Examine, and implement where feasible and reasonable, alternative work practices that generate less noise. • Noise-emitting (including directional noise emitting) plant and equipment to be directed away from sensitive receivers, or behind barriers. To be effective for ground level noise, the screens will be lined with acoustic absorptive material, be at least 2 m in height and installed within 5 m of the noise source • "Clustering" of noisy plant or processes will be limited. • Adhere to the safe working distances identified in the CNVMP for vibration intensive plant • Select materials which require fewer vibration intensive activities to occur (such as materials requiring less compaction). • Arrange the work site to minimise the use of movement alarms on vehicles and mobile plant. • Where there are no overriding project constraints, program works so as to not affect any sensitive receiver for more than a total of six nights in any four week period. • Avoid dropping materials from a height, dropping or dragging road plates. • Talk to workers about noise from the works and how it can be reduced. • Use radios and stereos indoors rather than outdoors. • Contact potentially noise affected receivers at the earliest possible time before any site work begins. • Inform potentially noise affected receivers about the nature of the construction stages and the duration of noisier activities – for example, excavation and rock-breaking. • Describe to potentially affected receivers any noise controls, such as temporary noise walls or use of silenced equipment.			

ID	Management Measure	Timing	Responsibility	Reference
	- Keep potentially noise affected receivers up to date on progress. - Provide contact details on a site board at the front of the site and maintain a complaints register suited to the scale of works. - Ask about any concerns that potentially affected receivers may have and discuss possible solutions. - Provide potentially affected receivers with access to the latest copy of the CNVMP. - Keep staff who receive complaints informed regarding current and upcoming works and the relevant contacts for these works. - Handle complaints in a prompt and responsive manner. - Where there are complaints about noise from an identified work activity, review and implement, where feasible and reasonable, actions additional to those described above to minimise noise output.			
NV11	Construction vehicles will be operated so as to minimise any construction noise impacts from the construction site. To achieve this the following will occur: - Toolbox talks for drivers and operators - No use of compression brakes on the site or on nearby roads - Loading and unloading of materials/deliveries will occur as far as possible from receptors. - Selection of site access points and roads which are as far as possible away from noise sensitive receptors. - Shielding of dedicated loading/unloading areas to be shielded if close to noise sensitive receptors (such that exceedance of NMLs is expected) - Fitting of delivery vehicles with straps rather than chains for unloading, wherever feasible and reasonable. - Make delivery personnel and truck drivers aware of approved haulage routes and access in and out of the construction site. - Prevent vehicles and plant queuing and idling outside the site prior to the morning start time.	During construction	Contractor's EM Site Supervisor	CoC 75 CoC 76 MPW C'th CoA 6 (c)

ID	Management Measure	Timing	Responsibility	Reference
	- Prevent vehicles and plant associated with the works idling in nearby streets and residential areas - Traffic speeds will be sign-posted, and drivers made aware of appropriate speeds and driving practices - Issue pre-determined delivery times to suppliers and use radio communication to confirm status of the delivery. - Contracts will include provisions to deal with any unsatisfactory noise performance for specific vehicles and/or operators and require the use of non-tonal reversing alarms - The Truck Drivers Protocol presented in the CTAMP must be adhered to			
NV12	If noise management levels are likely to be exceeded, stationary noise sources will be enclosed or shielded whilst ensuring that the work health and safety of workers is maintained.	During construction	Contractor's EM	CoC B73
NV13	If noise management levels are likely to be exceeded, structures will be used to shield residential receptors from noise. This may include site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.	Pre-construction and during construction	Contractor's EM	CoC B73 MPW C'th CoA 6 (c)
NV14	A targeted assessment will be undertaken during works to evaluate any proposed decrease in damage or human comfort safe work distance offsets and to determine if any other mitigation or management measures are required to address the potential impacts.	Construction	Contractor's EM	This plan
NV15	In areas where residential buildings and or commercial buildings are located less than 100 m from areas where vibratory rollers are proposed, all feasible and reasonable mitigation measures will be implemented including: - Selection of an appropriate-sized vibratory roller; - The use of lower vibration settings or static rolling; and/or - Verification of vibration levels via monitoring.	Construction	Contractor's EM	CoC B77 (i) This plan

ID	Management Measure	Timing	Responsibility	Reference
NV16	If works are within 50 m of Kitchener House, the following approach to manage potential vibration impacts shall be conducted prior to the commencement of those works:	Construction	Contractor's EM	CoC B77 (i) This plan
	1. Undertake pre-construction dilapidation surveys of Kitchener House (to be conducted by suitably qualified person);			
	2. Obtain a structural engineering report to confirm structural integrity of the building and confirm if item is 'structurally sound' (or alternatively adopt the more stringent criteria specified in (5) below).			
	3. Seek advice of a heritage specialist on methods and locations for installing equipment used for vibration and movement of heritage-listed structures.			
	4. If Kitchener House is 'structurally sound', the screening criteria will apply, or			
	5. If Kitchener House is 'structurally unsound' or if a structural engineering report is not conducted, the conservative cosmetic damage objectives of 3 mm/s peak component particle velocity will be adopted.			
	6. Conduct continuous vibration monitoring for the period where construction works occur within 100 m.			
	7. Undertake post-construction dilapidation surveys (to be conducted by suitably qualified person)			
	In the event an exceedance of established vibration criteria does occur, surveys will be undertaken immediately.			

4 MONITORING AND REPORTING

4.1 Monitoring

Noise and vibration monitoring will be conducted as per the requirements of this CNVMP. Noise measurements shall be undertaken consistent with the procedures documented in AS1055.1-1997 Acoustics - Description and Measurement of Environmental Noise – General Procedures. Vibration measurements shall be undertaken in accordance with the procedures documented in the EPA's Assessing Vibration - a technical guideline (2006), DIN4150 Structural Vibration – Part 3 Effects of Vibration on Structures and BS7385 Part 2 Evaluation and measurement for vibration in buildings. Monitoring during extended hours is described in Section B.5.

4.1.1 Maximum Noise Levels for Plant and Equipment

Attended noise measurements will be undertaken within a period of 28 days of significant equipment arriving on site to establish the Sound Levels and to confirm that the operating noise levels comply with the values presented in Table 31 of this Plan.

Plant and equipment noise monitoring will ensure the L_{Aeq} and L_{A90} parameters are recorded as a minimum, with $L_{Aeq, 15min}$ values inferred by extrapolation or calculation as necessary. The L_{Amax} and $L_{A1, 15min}$ parameter should also be recorded for each measurement. The time and location of the monitoring will also be noted.

The plant and equipment measurement sample height will be 1.5 m above ground level, unless an alternate height is specified by the operator that more accurately captures emissions data for the item being considered. All measurements will be completed with the sound level meter mounted to a tripod (if possible, hand held measurements are acceptable if the assessment height or position cannot be achieved using a tripod) and with a windscreen fitted.

The duration of each plant and equipment measurement sample will be selected by the operator to ensure the noise emission from the item being considered is adequately recorded. To avoid misunderstanding, a shorter duration less than 15 minutes may be adopted for plant and equipment noise level tests.

4.1.2 Attended Community Noise Monitoring

4.1.2.1 Triggers for Attended Community Noise Monitoring

Attended noise monitoring will be undertaken in the community in following circumstances:

- In response to a complaint
- Where OOHW is approved and attended monitoring is determined to be required
- During EHW.

4.1.2.2 Attended Noise Monitoring Locations

The attended measurements will typically be conducted at the potentially most affected receivers in each NCA, as follows:

- NCA1: 15 Larra Court, Wattle Grove
- NCA2: 6 Namoi Court, Wattle grove
- NCA3: 2 Rushton Place, Casula
- NCA4: 14 Goodenough Street, Glenfield.

In addition to the locations above, attended noise measurements will be conducted at an additional location in NCA3, at the corner of Blackwood Avenue and Canberra Avenue, Casula. This location has been added to account for the potential for complex topography to influence construction noise impacts in NCA3.

4.1.2.3 Attended Noise Monitoring Methodology

Community noise monitoring will ensure the $L_{Aeq, 15min}$ and $L_{A90, 15min}$ parameters are recorded as a minimum. The site noise level contribution ($L_{Aeq, 15min}$) shall be determined in the absence of any influential source not associated with the Project works for direct comparison to the relevant criteria. The L_{Amax} , L_{Amin} , L_{A1} and L_{A10} parameters will be recorded for each measurement with the $L_{A1, 1minute}$ parameter measured directly or calculated where possible and if applicable.

The community noise measurement sample height will be 1.5 m above ground level. The duration of each community noise measurement sample will be 15 minutes. All measurements will be completed with the sound level meter mounted to a tripod and with a windscreen fitted. The device microphone will be focused on the noise emission centre of the equipment being tested. No noise monitoring will be completed during periods where wind speeds exceed 5 m/s or during any rain events.

Unless monitoring locations are pre-determined, the sound level meter will be located 3 to 5 metres away from walls, buildings and other reflecting surfaces where feasible. Noise monitoring will be undertaken at the most affected point on or within the property boundary or at the most affected point within 30 metres of the property. Noise monitoring will always be conducted when activities on-site are typical of normal works (i.e. not during respite periods for noisy works or where the measurements are likely to be influenced by noisy short term 'one off' activities).

If community noise monitoring identifies that predicted noise levels are being exceeded, the Construction Contractor will revisit construction practices/sequencing etc. to reduce noise levels, minimise impacts and to enable provision of information on noise levels to surrounding and potentially affected residents should this be required (i.e. on request or following a complaint).

Where OOHW is approved and attended monitoring is determined to be required, attended noise measurements will be conducted at the most affected receptors following the general and community monitoring requirements specified above.

4.1.3 Continuous Noise Monitoring

As required by CoC B64, continuous noise monitoring will be undertaken during early works, fill importation, construction and for at least 12 months following occupation of the entire site at the locations specified above.

Exceedances during site operating hours will be reviewed to determine their source and whether they are attributable to construction activities. Meteorological conditions (average and maximum wind speeds, temperature, precipitation and cloud cover etc.) will also be noted during a review of any exceedances.

Site activity records will be maintained during any noise or vibration monitoring events.

4.1.4 Vibration Monitoring

Additional vibration monitoring of plant or equipment or in the community may be required. Circumstances where this may be required include:

- In response to vibration complaint
- Works occurring near or adjacent to retained heritage structures
- Use of vibration intensive plant needs to occur within the safe working distances specified in this CNVMP
- Attended monthly vibration monitoring during construction.

Vibration monitoring will be conducted as per the requirements of this CNVMP and with due regard to EPA's Assessing Vibration - a technical guideline (2006), DIN4150 Structural Vibration – Part 3 Effects of Vibration on Structures and BS7385 Part 2 Evaluation and measurement for vibration in buildings.

Specific monitoring requirements and measures for heritage and other sensitive structures and residential receivers are described below:

- Should activities with the potential to generate significant vibration events in close proximity to heritage structures and other sensitive structures be identified, vibration testing will be undertaken for the activity at a location away from sensitive buildings or structures.
- The safe working distances for human comfort specified in Table 36 will be used to trigger this testing equipment

- The vibration testing methodology will be established by a suitably experienced person and/or in consultation with a qualified technical specialist.
- The outcomes of the vibration testing may require continuous unattended vibration monitoring to occur for select activities. The methodology for any ongoing vibration monitoring will be established by a suitably experienced person and/or in consultation with a qualified technical specialist.
- Pre- and post- construction dilapidation surveys of sensitive structures where vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria).

A vibration monitoring report will be developed following monitoring and include the following information:

- Relevant guideline or policy that has been applied
- Background vibration measurements that have been undertaken
- Instruments and methodology used for measurements (including reasons for settings and descriptors used and calibration details)
- A site map showing location of vibration sources, measurement locations and receivers (where appropriate);
- Vibration criteria applied
- Vibration measurement results
- A comparison of measured against vibration criteria
- A discussion of proposed mitigation measures, the vibration reduction likely, the feasibility and reasonableness of these measures and how compliance and conformance can be practically determined.

4.1.5 Monitoring Reports

The Contractor's EM will compile a report for the construction noise and vibration compliance monitoring (attended monitoring) every month detailing the community noise monitoring results as well as any other noise and vibration monitoring that was conducted during the reporting period. The report will include information about any exceedances detected and how non-compliances and non-conformances were addressed. Non-conformances, non-compliances and corrective and preventative actions will be managed in accordance to the CEMP section 4.4. This report will be sent to the Principal's Representative.

Monitoring reports will be used to maintain compliance and record the effectiveness of management measures against construction noise impacts. Measures evaluated as being ineffective will be subject to review and trigger the implementation of additional environmental controls during an update of the CNVMP.

4.1.6 Exceedance of Noise and Vibration Management Levels

In the event of an exceedance of noise and vibration management levels, works will cease or reduce immediately at the direction of the Contractor's CM/EM or Site Supervisor. Remedial measures will be implemented prior to recommencing work, and monitoring undertaken to verify noise or vibration levels.

If high noise generating works are shown to exceed the required noise criteria, or if noise complaints are received related to the high noise work, additional mitigation will be implemented for these activities (to ensure compliance with the required noise limits to the satisfaction of the ER), such as:

- Acoustic screening
- Alternate work methodologies
- Alternative plant with lower noise
- Plant and machinery will be checked and verified for noise levels and appropriate exhaust/fittings/noise attenuators.

In the event of appreciable vibration levels arising from construction activities, measures will be put in place to reduce vibration to within acceptable levels. Such measures may include reducing equipment size, changing operational settings, using other plant in lieu of that which is generating the vibration or a combination of these.

4.2 Community Enquiry, Complaints and Incident Management

Community consultation will be undertaken in accordance with the CEMP and Section 3.3.2 and Section 3.3.5 of the Construction Community Communication Strategy (CCCS). Prior to the commencement of high noise activities, notification will be issued to the agreed distribution area specified in Appendix A of the CCCS; 7 days prior to works which may impact on the community or stakeholders.

The objective of the CCCS is to ensure that the community is notified regarding works being undertaken for potentially affected neighbouring property owners and businesses before undertaking major activity or milestones. These may include:

- Commencement and completion of works
- Noisy works
- Out of Hours
- Changes to traffic, parking or access.

Community notifications include all Community Updates, Out-of-Hours notices, project information flyers and other communications material. The notifications will proactively notify the community and key stakeholders of current and forthcoming activities including those that have the potential to impact on the community. All notifications will include the project contact numbers, details of the Project website and an email address to refer any enquiries or complaints.

In the event of a noise or vibration incident or complaint, the response management process summarised in Table 39 will be implemented.

Complaints arising from the Project will be treated sensitively and in a manner, that recognises the potential for noise and vibration to cause environmental impacts. Special consideration will be given to complaints related to noise and vibration during highly intrusive works (particularly those activities when increased impacts are predicted) in order that additional mitigation can be implemented in a timely manner.

Various lines of communication will be made available for enquiries and complaints during construction of the Project. This will include a 24-hour telephone number for enquiries and complaints. Any complaints received during the works will be dealt with in accordance with the Project Complaints management protocols outlined in the Construction Community Communication Strategy.

Table 39 Noise and Vibration Incident / Complaint Response Management

Incident Type	Response	Responsibility
Noise levels from construction activities exceed noise goals and criteria	Noisy activities will cease or reduce under direction of the Contractor's EM/CM or Site Supervisor. Remedial measures will be implemented prior to recommencing work, and monitoring undertaken to verify noise levels. All plant and machinery will be checked and verified for noise levels and appropriate exhaust/fittings/noise attenuators. Works methodologies will be reviewed and amended if required.	Contractor's EM Site Supervisor
Community complaint relating to noise or vibration	Any noise or vibration complaints received from the community or adjacent stakeholders will be recorded and responded to within two hours in accordance with the complaints management system for the Project. Attended noise or vibration monitoring will be offered if the complaint is not immediately resolved. Noise or vibration intensive activities will cease or reduce under direction of the Contractor's EM or Site Supervisor. Remedial measures will be implemented prior to recommencing work, and monitoring undertaken to verify noise levels.	Contractor's EM Contractor's CLM

Incident Type	Response	Responsibility
	All plant and machinery will be checked and verified for noise levels and appropriate exhaust/fittings/noise attenuators. Works methodologies will be reviewed and amended if required.	
Negotiations with specific Receptors	Additional noise and vibration mitigation measures may be negotiated with sensitive receptors if requested or as required to address complaints (if received).	Contractor's CLM
Vibration causing structural damage	Activities causing significant vibration at off site buildings (however unlikely) will cease under direction of the Contractor's EM or Site Supervisor. Any occupants of buildings may be evacuated with due consideration to safety, and the area secured to prevent unauthorised access. A structural assessment will be undertaken and the results compared with any previous condition survey; and if any damage is associated with construction, rectification work will be implemented or compensation agreed.	Contractor's EM Site Supervisor

4.3 Review and Improvement

Any amendments to the CNVMP and associated documentation will be undertaken in accordance with Section 1.2.7 of the CEMP.

Management reviews will be undertaken as part of the continual improvement process. The reviews will be initiated by the Contractor's EM and includes relevant project team members and stakeholders and will be undertaken in accordance with Section 4.5 of the CEMP.

The review of the CNVMP will include:

- Consideration of the general progress of work, significant changes in construction activities and the level of overall environmental risk
- Consideration of monitoring, inspection and audit results
- Consideration of recent and relevant incidents and any lessons learnt
- Consideration of any new regulatory obligations
- Consideration of any recorded noise complaints
- A review of the effectiveness of environmental controls, including management measures
- Consideration of changes in operational needs such as resourcing
- Feedback from relevant stakeholders.

The outcomes of the environmental reviews may trigger the amendments to this CNVMP and related documentation, revision to the Project's environmental management system, review of the risk assessment, re-evaluation of the project objectives and targets as well as input into other project documents. management system, review of the risk assessment, re-evaluation of the project objectives and targets as well as input into other project documents.

Noise and vibration monitoring results will be reviewed by the Contractor's EM to evaluate the effectiveness of noise management measures and to analyse results against impacts detailed in Section 3.3. If additional noise management measures are identified, this plan would be reviewed and amended where required.

Where amendments require changes to the Truck Driver Protocol, the relevant sections of the Construction Traffic and Access Management Plan must also be updated.

4.4 Non-compliances, Non-conformance and Actions

It is the responsibility of all personnel to report non-compliances and non-conformances to their Site Supervisor and/or the Contractor's EM.

Non-compliances, non-conformances and corrective and preventative actions will be conducted in accordance with Section 4.4 of the CEMP.

APPENDIX A OUT OF HOURS WORKS PROTOCOL

A.1 Preamble

This Out of Hours Works (OOHW) Protocol has been developed to assist with compliance of environmental legislation, project obligations and to effectively manage potential environmental impacts associated with noise during in the course of construction of the Project. It has been prepared in accordance with CoC B68 and CoC B77(e).

A.2 Objectives

This Protocol outlines the project requirements for construction working hours and documents a process to be implemented when work outside of standard hours is required.

The key objective of the Protocol is to ensure that impacts to the local community are avoided and minimised and the requirements of CoC B68 and CoC B77(e) are met. Specific objectives include:

- Minimising potential adverse noise impacts to the community
- Identify sensitive receivers and ensure appropriate noise control measures are implemented during out of hours construction activities
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements.

A.3 Compliance Matrix

Table A-1 shows the requirements for the OOHW in CoC B68 and CoC B77(e) and where the condition has been responded to in this Protocol.

Table A-1 Compliance Matrix OOHW Protocol

Condition Number	Condition	Document Reference	How Addressed
B68	The Applicant must prepare an Out-of-Hours Work Protocol for any work undertaken outside the hours specified in condition B65 or outside the circumstances specified under condition B67. An Out-of-Hours Work Protocol must provide for the assessment, management and monitoring of out of hours work, including:	Appendix A	The Out-of-Hours Work Protocol is included in Appendix A and addresses the requirements of CoC 68.
	a) Where works are shown to be inaudible at the nearest sensitive receivers and vibration levels do not exceed those stipulated by Table 2.2 and Table 2.4 of Assessing Vibration: a technical guide (DEC, 2006);	Table A-2, Number 4	Table A-2, Number 4
	b) Where a negotiated agreement has been arranged with affected receivers;	Table A-2, Numbers 6 and 7	Table A-2, Numbers 6 and 7
	c) Where noise can be shown to satisfy the noise management levels specified in the <i>Interim Construction Noise Guideline</i> (ICNG, DECC, 2009) at non-residential land uses; or,	Table A-2, Number 5	Table A-2, Number 5
	d) Where works are undertaken as part of an Extended Hours Work Plan approved as part of the Out-of-Hours Work Protocol .	Table A-2, Number 8	Table A-2, Number 8
B77 (e)	An Out-of-Hours Work Protocol as referenced in condition B68 for the assessment, management and approval of works outside standard construction hours,		

Condition Number	Condition	Document Reference	How Addressed
	for the Secretary's approval. The Out-of-Hours Work Protocol must:		
	i. Detail assessment of out-of-hours work against the relevant noise and vibration criteria;	Table A-2	Table A-2
	ii. Provide detailed mitigation measures for any residual impacts (that is, additional to general mitigation measures), including extent of at-receiver treatments;	Table A-2 and Section A.5	Table A-2 and Section A.5
	iii. Include proposed notification arrangements; and	Table A-2, Number 10	Table A-2, Number 108
	iv. Include an Extended Hours Work Plan as required by condition B69.	Appendix B	Appendix B

A.4 Out of Hours Work Protocol

Exclusions to this Protocol: with due regard to CoC B67 OOHW will be undertaken without further assessment in the following circumstances:

- For the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons;
- Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; and
- Where different construction hours are permitted or required under an EPL in force in respect of construction, in which case these construction hours must be complied with.

The Contractor's EM must submit an OOH works request to the Principal's Representative at least two weeks prior to works being undertaken (except in emergency circumstances) for endorsement. The Principal's Representative must submit the OOH request to the ER for information. OOHW periods are detailed in Table 4 of the CNVMP.

Where possible, OOHW will be avoided and scheduled to occur during the approved hours for construction. Where OOHW are needed for the safe and efficient implementation of the Project, or due to exceptional circumstances the level of impacts of OOHW will be considered.

A Construction Noise and Vibration Impact Statement (CNVIS) will be utilised to identify risk of the proposed OOH activity, and whether the application is required to be approved by the Contractor's or Project Manager's EM and/or the Environmental Representative (ER), or referred to DP&E.

Table A-2 OOHW Protocol

No.	Step	Detail
1.	Work Identification	• Identify work activities requiring OOH and when the work will occur. • Identify the reason why OOHW are needed; does the work proposed need to be completed outside the approved hours of construction or can it be rescheduled for standard working hours. • If the OOHW are essential to the Project, or are required due to exceptional circumstances, prepare and document a justification for the works. • If works fall into the categories identified in the EHWP, then the works are to be carried out under the EHWP.
2.	Assess Alternatives	Assess alternate options that may allow construction to be undertaken within approved hours such as: • Using alternate equipment

No.	Step	Detail
		• Different construction methods, or • Postponing scheduled works. If no other options are considered practical, consult the PM's Environmental Manager and document, using an Out of Hours form (developed by the Construction Contractor) to provide a description of the works, the expected duration, a list of all noise generating plant, equipment and machinery in use, activities to be undertaken, and all potential mitigation and management measures considered.
3.	Undertake CNVIS	If no alternate options are available / viable, the activity is to be assessed for noise and vibration impacts on the surrounding receptors via a Construction Noise and Vibration Impact Statement (CNVIS) prepared by suitably qualified personnel, taking into account all proposed noise and vibration mitigation measures. The CNVIS will: • Identify the closest and/or potentially most affected receptors situated within the potential area of influence of the works; • Predict noise and vibration levels based on the NVIA scenarios or via modelling (or spreadsheet calculation) for new scenarios; • Compare the predicted values to the noise and vibration management levels; • Provide a list of necessary mitigation and management measures that will be required to be implemented. Predictions will account for particularly annoying (tonal, low frequency content or impulsive) work activities by applying a 5 dB(A) penalty to the values for particularly annoying activities. Predictions will account for all potential noise and vibration mitigation and management measures by applying a deduction to the values assessed above for the noise reducing measures that will be implemented. Predictions will be provided to assess potential sleep disturbance impacts, if anticipated. General activities which are inaudible at receptors, including (but not limited to), security operations, monitoring, survey, refuelling, low noise plant maintenance, general site maintenance will not require a CNVIS.
4.	Negligible Impact Works	If the CNVIS shows that construction works will <u>not</u> generate $L_{Aeq, 15\text{minute}}$ noise levels more than the rating background level at sensitive receivers, the activity will be considered inaudible. Where works are <u>inaudible at the nearest sensitive receivers and vibration levels will not exceed those stipulated by Table 2.2 and Table 2.4 of Assessing Vibration: A Technical Guide (DECC 2006)</u>, the works will be considered to have negligible impact and referred to the Contractor's EM for review and approval. The Contractor's PM, Principal's Representative and the ER will be provided with the OOHW approval for information.
5.	Low Impact Works	If the CNVIS shows that construction works <u>will generate $L_{Aeq, 15\text{minute}}$ noise levels between the rating background level and 5 dB above the rating background level and comply with the Vibration Management Level (VML)</u>, the activity will be considered low impact and referred to the ER for review and approval. In referring the approval to the ER, the Construction Contractor will: • Demonstrate the requirement for activities to be conducted outside the approved standard construction hours • Summarise the findings of the CNVIS assessment, and • Detail the mitigation measures to be implemented for the specific OOHW. Where the nature of the activity, the likely impacts and the proposed management measures are considered acceptable by the ER, the works may proceed when ER and Principal's Representative approval is received.
6.	High Impact Works Negotiated agreements achieved with the community	If the CNVIS shows that construction works <u>will exceed NML and/or VML</u>, the activity will be considered high impact and, if negotiated agreements have been reached with affected receivers, referred to ER for review and approval. Where practical, noisy construction work will be undertaken during the less sensitive 6 pm to 10 pm evening period.

No.	Step	Detail
		In referring the approval to ER, the Construction Contractor will: • Demonstrate the requirement for activities to be conducted outside the approved standard construction hours; • Summarise the findings of the CNVIS assessment; • Detail the mitigation measures to be implemented for the specific OOHW; and • Detail the negotiated agreements agreed with the community. Where the nature of the activity, the likely impacts and the proposed management measures are considered acceptable, by works may proceed when ER and Principal's Representative approval is received.
7.	High Impact Works Negotiated agreements <u>not</u> achieved with the community	If the CNVIS shows that construction works <u>will</u> exceed NML and/or VML, the activity will be considered high impact and, if negotiated agreements have not been reached with affected receivers, an updated Out of Hours Works Protocol will be developed and referred to DP&E, for review and approval. Where practical, noisy construction work will be undertaken during the less sensitive 6 pm to 10 pm evening period. In referring the approval to DP&E, the contractor will: • Demonstrate the requirement for activities to be conducted outside the approved standard construction hours • Summarise the findings of the CNVIS assessment; • Detail the mitigation measures to be implemented for the specific OOHW; and • Detail why the negotiated agreements were not agreed with the community. When referring the application to DP&E, the ER will provide a summary of the issues and provide a recommendation to be considered by DP&E. Up to 4 weeks (20 business days) will be allowed for DP&E to review the updated OOHW Protocol.
8.	OOH Works Approval	OOHW will not commence until approval is granted in accordance with items 4, 5, 6 or 7 (whichever is applicable)
9.	Community Notification	Community notification will be undertaken in accordance with the Community Communication Strategy. All OOHW (both low and high impact) will require notification to be distributed to receptors potentially affected by the works. A notification boundary will be established on a case by case basis in consultation with the Principal's Representative. Notification will be issued to the agreed area at least 7 days prior to works which may impact the community or stakeholders. The Project website will be updated with relevant information to further notify the community and stakeholders.
10.	Mitigation and Monitoring	All reasonable and feasible mitigation measures will be implemented in both standard approved hours and OOHW for the duration of the Project. Attended noise monitoring will be undertaken during OOHW and in accordance with other project or environment protection licence requirements. Monitoring will provide comparison the applicable CNVIS to ensure noise levels comply with those predicted in the CNVIS. Where noise (or vibration) levels are observed to continually exceed those outlined in the activity specific CNVIS, works shall stop and alternate methods and mitigation measures investigated and implemented. Noise and vibration monitoring will be undertaken by suitably qualified personnel, including professionally trained and experienced environmental staff and noise consultants where deemed necessary.

A.5 Noise Mitigation to be Considered for OOHW

Noise and vibration mitigation measures for OOHW in addition to the general management measures detailed in Section 3.4 of the CNVMP will be considered. These will be considered on a case by case basis and nominated where reasonable and feasible, dependent upon the outcomes of the CNVIS:

- All plant to be well maintained and fitted with noise mufflers, engine hoods etc
- Timetabling noisiest activities to occur at the least sensitive times i.e. in the evening as opposed to night, or mid-morning as opposed to first thing in the morning
- Using spotters, closed circuit television monitors, “smart” reversing alarms, or “squawker” type reversing alarms in place of traditional reversing alarms;
- Mitigation of specific noise sources using portable temporary screens or enclosures, where practicable and safe
- Turning off plant and equipment when not in use
- Carrying out loading and unloading away from sensitive receivers, where practicable
- Avoid dropping materials from a height
- Timetabling OOHW at locations with the furthest distance from sensitive receivers
- Substituting noisy/vibration intensive equipment with less intrusive types
- Maximising the offset distance between noisy plant items and sensitive receivers
- Avoiding using noisy plant simultaneously and / or close together, adjacent to sensitive receivers, where practicable
- Orienting equipment away from sensitive receivers, where practicable;
- Using noise source controls, such as the use of residential class mufflers, to reduce noise from all plant and equipment including cranes, graders, excavators and trucks
- Selecting plant and equipment based on noise emission levels.

In extreme circumstances where the CNVIS deems the works to be of high impact, and they cannot be planned to occur during standard construction hours, at-receiver treatments may be required. They may include but not be limited to:

- Temporary acoustic shielding
- Offer of respite to residents

Following the application of all feasible and reasonable mitigation measures, if proposed OOHW are anticipated to result in residual impacts, defined as an exceedance of NML or VML, due consideration should be given to conducting these works during standard construction hours instead of OOH.

The potential noise reduction that can be achieved by noise mitigation measures are shown in Table A-3.

Table A-3 Noise Mitigation Measures

Management Measure	Anticipated Noise Reduction, dBA
Administrative Controls	
Operate during approved hours	N/A
Undertake regular noise monitoring to determine the impact of operating plant on sensitive receivers	N/A
Appropriate training of onsite staff	N/A
Undertake community consultation and respond to complaints in accordance with established project procedures	N/A
Turning off machinery when not in use	0-5
Respite periods for pile drivers and rock breakers	N/A
Engineering Controls	
Portable temporary screens	5-10
Screen or enclosure for stationary equipment	10-15

Management Measure	Anticipated Noise Reduction, dBA
Maximising the offset distance between noisy plant items and sensitive receivers	3-6
Avoiding using noisy plant simultaneously and / or close together, adjacent to sensitive receivers	2-3
Orienting equipment away from sensitive receivers	3-5
Carrying out loading and unloading away from sensitive receivers	3-5
Using dampened tips on rock breakers	3-6
Using noise source controls, such as the use of residential class mufflers, to reduce noise from all plant and equipment including bulldozers, cranes, graders, excavators and trucks	5-10
Selecting site access points and roads as far as reasonably practicable away from sensitive receivers	3-6
Using spotters, closed circuit television monitors, “smart” reversing alarms, or “squawker” type reversing alarms in place of traditional reversing alarms	2-5
Employ non noise-generating structures such as site offices, storage sheds, stockpiles and tanks as noise barriers	5-10

APPENDIX B EXTENDED HOURS WORK PLAN

This Extended Hours Work Plan (EHWP) has been developed for the Project to comply with the requirements of CoC B68(d) and B69 and other relevant conditions, as listed in Table B-1. The EHWP presents the assessment, management and approval process for works to occur during EHW.

All works conducted under this EHWP will be conducted consistently with the CNVMP.

Table B-1 EHWP Compliance Matrix

CoC	Requirement	EHWP Reference	How Addressed
B69	An Extended Hours Work Plan will be prepared for any construction undertaken during the extended hours detailed in Table 3 as required by condition B68(d). The Extended Hours Work Plan must provide for:		
	a) A three month assessment period, commencing at the start of extended hours construction work;	Section B.5	Continuous noise monitoring results to be reviewed during first week of EHW and monthly thereafter for the three month assessment period, with a final report issued to the Secretary.
	b) Implementation of the Construction Noise and Vibration Management Plan;	CNVMP	This EHWP has been prepared in a manner consistent with the CNVMP and refers to relevant sections of the CNVMP. Any relevant updates to the CNVMP will be incorporated into the EHWP via the EHWP review process.
	c) Noise monitoring at a representative number of sensitive receivers (including closest and furthest) to confirm the predicted noise levels;	Section B.5.2	Monitoring to be conducted per the processes outlined in Section 4.1.2 and Section 4.1.3 of the CNVMP. Additional monitoring location added in NCA3 to confirm the predicted noise levels.
	d) Targeted consultation with the noise affected sensitive receivers;	Section B.6	Consultation with potentially affected receivers included in Section B.6.
	e) Notification of the relevant Council, local residents and other affected stakeholders and sensitive receivers of the timing and duration at least 48 hours prior to the commencement of the works;	Section B.6	Council and stakeholder notification requirements specified in Section B.6.
	f) Construction work timeframes and methods for investigation of noise complaints;	Section B.1.3 Section B.7	EHW periods and duration of works described in Section B.1.3. Complaints handling process outlined in Section B.7.
	g) Submission of monthly complaints reports to the Department for the life of extended hours activities;	Section B.5.4	Reporting processes, outlined in Section B.5.4, to include monthly reports to DP&E.

CoC	Requirement	EHWP Reference	How Addressed
	h) Continual refinement of mitigation measures based on consultation with the noise affected sensitive receivers;	Section B.4	Review process, outlined in Section B.4, to include consultation with relevant stakeholders.
	i) Implementation of work practices set out in section 5.2 of the ICNG;	Section B.4	Management and mitigation during EHW to be consistent with Section 3.4 of the CNVMP and includes ICNG work practices.
	j) A final summary report submitted to the Secretary at the end of the assessment period in sub-condition (a), detailing the outcomes of the assessment period, the resolution of complaints during the assessment period, and demonstrate the acceptability of works outside standard hours.	Section B.5.4	Reporting processes, outlined in Section B.5.4, to include final report to DP&E.

Table 3: Extended Hours of Work

Activity	Day	Time
Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).	Monday – Friday	6am to 7am 6pm to 10pm
	Saturday	1pm to 5pm

B.1.1 Description of Works

The following section identifies the EHW activities. CoC B69 allows extended hours for construction works *“not including high noise impact, piling, spoil placement, rock breaking, concrete batching”*.

A summary of the EHW periods, and associated activities proposed to be undertaken is provided in Table B-2.

Table B-2 Construction activities to be undertaken within EHW periods

Construction works period	Activity
6:00am – 7:00am Weekdays	- Starting of EHW equipment for servicing and maintenance - Material delivery - Stockpiling
6:00pm – 10:00pm Weekdays 1:00pm – 5:00pm Saturday	- Material delivery - Stockpiling

B.1.2 Construction Compounds

Works during extended hours will make use of the construction compounds described in Section 3.3.2 of the CNVMP.

B.1.3 Timing and Duration

The proposed EHW will be conducted in Works Period B “Bulk Earthworks, Drainage and Utilities” which is to occur within Construction Phase A. As outlined in Section 1.3.3 of the CNVMP, these works will be undertaken in stages beginning in Q2 of 2018 and would have a duration of up to three years.

B.2 Identification of Receivers

The potentially most affected residential receivers in the vicinity of the Project site are specified in Section 3.1.1 of the CNVMP and, for convenience, are summarised below in Table B-3.

Table B-3 Sensitive Receivers

Receiver/Suburb	Category	Distance (m) from Stage 2 Construction Area
Wattle Grove	Residential	390
Wattle Grove North		350
Casula		760
Glenfield		1,580
All Saints Senior College (S1)	Educational	1,250
Casula Powerhouse (S2)		890
MPW (I1)	Industrial	Boundary
DJLU (I2)		Boundary
ABB (I3)		495

Kitchener House is located at 208 Moorebank Avenue, and is of heritage significance. Kitchener House is vacant and is therefore not considered as a noise sensitive receptor, however it is to be considered as a sensitive receiver for potential construction vibration impacts which could cause damage to the heritage structure.

B.3 Noise and Vibration Management Levels

B.3.1 Noise Management Levels

In accordance with the ICNG, construction noise management levels (NML) outside of standard construction hours are set at 5 dBA above the rating background noise level (RBL) for residential land uses. NML for the EHW periods permissible under CoC 69 have been developed using the RBL presented in Section 3.1.2 of the CNVMP and are presented below in Table B-4.

Table B-4 also presents NML for non-residential land uses, which are independent of the RBL.

Table B-4 Extended Hours NML

NCA	Noise Management Level (NML) in dB(A)		
	6am to 7am Weekdays	6pm to 10pm Weekdays	1pm to 5pm Saturday
Wattle Grove	42	42	47
Wattle Grove North	41	41	41
Casula	39	42	46
Glenfield	42	49	49
S1, S2	55	55	55
DJLU	75	75	75

B.3.2 Construction Traffic Noise Criteria

The ICNG does not include any criteria to assess off-site traffic noise associated with construction of the Project.

Criteria for off-site road traffic noise applicable to existing residences affected by additional traffic on existing local roads generated by land use developments are specified in the NSW Road Noise Policy (RNP). Whilst these criteria do not specifically apply to construction traffic movements, they have been conservatively considered and are summarised in Table B-6 Table B-5.

Table B-5 RNP Criteria for Road Traffic Noise

Road	Category	Assessment Criteria - dBA	
		Day (7am – 10pm)	Night (10pm – 7am)
M5 Motorway	Freeway	L _{Aeq} , 15 hour 60 (external)	L _{Aeq} , 9 hour 55 (external)
Moorebank Avenue, Anzac Road	Arterial Road	L _{Aeq} , 15 hour 60 (external)	L _{Aeq} , 9 hour 55 (external)

Note: The specified criteria do not apply to vehicle movements within the Project Site. For the purpose of assessment, any noise generated by on-site vehicle movements is considered as construction noise and assessed holistically with on-site mobile plant in accordance with the ICNG.

Additionally, it is typically recognised that for existing residences and other sensitive land uses affected by additional traffic on existing roads, any increase in the total traffic noise level should preferably be limited to 2 dB above the existing road traffic noise levels. A 2 dB increase is typically considered not noticeable.

B.3.3 Vibration Management Levels

B.3.3.1 Disturbance to Buildings Occupants

Assessment of potential disturbance from construction vibration on human occupants of buildings is made in accordance with the guideline *Assessing Vibration; a technical guideline* (DECC, 2006). The guideline provides criteria which are based on the British Standard BS 6472-1992 'Guide to evaluation of human exposure to vibration in buildings (1-80Hz)'.

BS6472-1992 nominates guideline values for various categories of disturbance, the most stringent of which are the levels of building vibration associated with a "low probability of adverse comment" from occupants.

BS 6472-1992 was amended in 2008 to extend the use of the Vibration Dose Values (VDV) to all types of vibration (i.e. continuous, impulsive and intermittent). The vibration dose value is dependent upon the level and duration of the short-term vibration event, as well as the number of events occurring during the daytime or night-time period.

The vibration dose values recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in Table B-6.

Table B-6 Vibration Dose Value ranges which might result in various probabilities of adverse comment within buildings

Place and Time	Low probability of adverse comment (m/s ^{1.75})	Adverse comment possible (m/s ^{1.75})	Adverse comment probable (m/s ^{1.75})
Critical areas (day or night)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Residential buildings 16 hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8 hr night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Offices, schools, educational institutions and places of worship (day or night)	0.4 to 0.8	0.8 to 1.6	1.6 to 2.4
Workshops (day or night)	0.8 to 1.6	1.6 to 3.2	3.2 to 6.4

To assess the potential for vibration impact on human comfort, initial screening criteria based on *Assessing Vibration; a technical guideline* (DECC, 2006) have been adopted based on peak velocity units, as this metric is also used for the cosmetic damage vibration assessment. The screening criteria are conservative because they are based on the continuous vibration velocity criteria (i.e. vibration that continues uninterrupted for a defined assessment period) while construction works are mostly intermittent. The screening criteria are based on the preferred peak values, as shown in Table B-7, for pseudo-continuous work activities and on maximum peak values for surface construction works, which are intermittent in nature.

Table B-7 Construction Vibration Distance - Initial Screening Criteria

Place and Time	Preferred peak velocity, mm/s (>8Hz)	Maximum peak velocity, mm/s (>8Hz)
Critical areas (day or night)	0.14	0.28
Residential buildings 16 hr day	0.28	0.56
Residential buildings 8 hr night	0.20	0.40
Offices, schools, educational institutions and places of worship (day or night)	0.56	1.10
Workshops (day or night)	1.10	2.20

B.3.3.2 Damage to Infrastructure and Heritage

Potential structural damage of buildings, services or heritage structures caused by vibration is typically managed by ensuring vibration induced into the structure does not exceed certain limits and standards. The management criteria is not time affected; therefore the management of vibration in relation to structural damage should be undertaken in accordance with the CNVMP Section 3.2.2.2 to 3.2.2.5.

B.3.4 Construction Equipment and Activities

A range of construction equipment will be required during extended hours. A summary of the indicative equipment likely to be utilised is provided in Table B-8. Sound Power Levels (SWLs) associated with typical construction plant to be used during extended hours are also specified in Table B-8. These SWLs have recently been measured at other similar construction sites. The table gives both SWL and Sound Pressure Levels (SPL) at 7m for the equipment. SWL is independent of measurement position.

Table B-8 Indicative construction equipment and noise levels for EHW

Equipment	Equipment Qty Per EHW Activity		Noise Levels (dBA)	
	Material Delivery	Stockpiling	Sound Power Level	Sound Pressure Level at 7 m
Truck and Dog	✓		103	78
Static and vibratory rollers, and high energy impact compaction ^{1,2}		✓	110	85
825 Compactor		✓	112	87
Dozers		✓	118	93
Graders	✓		109	84
Water trucks	✓	✓	105	80
Road Sweeper	✓		90	65
Lighting towers	✓	✓	108	83
Generators	✓	✓	85	60

Note 1: 5 dB modification factors applied.

Note 2: Data supplied by Day Design (ref: 6033-7.1L REV C)

It is commonplace for construction equipment to be started for servicing prior to normal use. The noise emissions associated with starting equipment for servicing are typically lower than those during normal use. Accordingly, the noise levels presented in Table B-8 conservatively represent noise emissions associated with servicing construction equipment.

B.3.5 Predicted Noise Levels

During the EHW period between 6.00am – 7.00am weekdays, $L_{Aeq,15min}$ noise levels at sensitive receivers have been predicted and are presented in Table B-9. Table B-9 indicates that construction noise levels are not predicted to exceed the applicable NML at sensitive receivers during the extended hours construction between 6.00am – 7.00am weekdays.

Table B-9 Predicted Construction Noise Levels during extended hours of 6am and 7am weekdays

Receiver	Predicted $L_{Aeq, 15min}$ Noise Level	NML	Exceedance
Wattle Grove	28	42	0 dB
Wattle Grove North	35	41	0 dB
Casula	37	39	0 dB
Glenfield	<20	42	0 dB

Materials delivery and stockpiling are proposed activities during the EHW periods of 6.00pm – 10.00pm weekdays and 1.00pm – 5.00pm Saturday.

$L_{Aeq, 15min}$ noise levels at sensitive receivers have been predicted and are presented in Table B-10. Table B-10 indicates that construction noise levels are not predicted to exceed the applicable NML at sensitive receivers during the EHW periods of 6.00pm – 10.00pm weekdays and 1.00pm – 5.00pm Saturday.

Table B-10 Predicted Construction Noise Levels during extended hours of 6.00pm – 10.00pm weekdays and 1.00pm – 5.00pm Saturday

Receiver	Predicted $L_{Aeq, 15min}$ Noise Level	NML	Exceedance
Wattle Grove	34	42	0 dB
Wattle Grove North	30	41	0 dB
Casula	28	39	0 dB
Glenfield	21	42	0 dB

B.3.6 Potential Construction Traffic Noise Impacts

B.3.6.1 Construction Traffic Generation

During the EHW, all heavy vehicles, and the majority of light vehicles, will travel to and from the site via the M5 Motorway and Moorebank Avenue. Additionally, a small number of light vehicles will travel along Anzac Road, east of Moorebank Avenue, and along Moorebank Avenue, north of the M5 Motorway. No heavy vehicles, associated with the construction of the Project, will travel along Anzac Road, or along Moorebank Avenue, north of the M5 Motorway.

The existing and projected daily traffic volumes, and percentage heavy vehicles, along the identified roads, for the construction of the Project, are presented in Table B-11. It is not yet known whether heavy construction vehicles would travel to the site, along the M5 Motorway, from the east or the west. This would depend upon factors such as the construction contractor, and the source(s) of fill. Therefore, the projected construction traffic volumes along the M5 Motorway, presented in Table B-11, are based on all heavy construction vehicles travelling along the M5 Motorway both east and west of Moorebank Avenue. Such a scenario may not eventuate in practice, and therefore, the assessment of construction traffic noise along the M5 Motorway is conservative.

Table B-11 Construction Traffic Volume and % Heavy Vehicles

Location	Time ¹	Existing (no Development)		Future (with Development)	
		Volume	%Heavy	Volume	%Heavy
M5 Motorway – East of Moorebank Avenue	Day	106,344	9.7	107,370	10.5
	Night	21,060	13.2	21,201	13.5
M5 Motorway – West of Moorebank Avenue	Day	124,264	10.2	125,290	10.8
	Night	24,036	11.5	24,177	11.8
Moorebank Avenue – North of M5 Motorway	Day	26,892	10.0	26,953	10.0
	Night	6,308	10.0	6,345	9.9
Anzac Road – East of Moorebank Avenue	Day	8,991	4.6	9,018	4.6
	Night	2,109	4.6	2,125	4.6

Source: Arcadis

1. Day = 7.00am – 10.00pm, Night = 10.00pm – 7.00am

B.3.6.2 Predicted Increases in Road Noise Levels

Using the data in Table B-11, the increases in road noise levels along the M5 Motorway, Moorebank Avenue and Anzac Road, during the construction of the Project, have been calculated. The calculations have been conducted using the Calculation of Road Traffic Noise (CORTN) algorithm, and are based upon the following assumptions:

- Vehicle speeds are 100 km/h along the M5 Motorway and 60 km/h along Moorebank Avenue and Anzac Road.
- Typical receiver setbacks are approximately 25 metres along the M5 Motorway and approximately 12 metres along Moorebank Avenue and Anzac Road. It is important to highlight that receiver setbacks are important when calculating absolute road noise levels, however setbacks are not important when calculating increases in road noise levels due to changes in traffic volume and mix.

The predicted increases in road noise levels, due to the construction of the Project, are shown in Table B-12.

Table B-12 Increases in Road Noise Levels During EHW

Location	Predicted Increase (dBA)	
	Day ¹	Night ¹
M5 Motorway – East of Moorebank Avenue	0.1	0.0
M5 Motorway – West of Moorebank Avenue	0.2	0.1
Moorebank Avenue – North of M5 Motorway	0.0	0.1
Anzac Road – East of Moorebank Avenue	0.0	0.0

1. Day = 7.00am – 10.00pm, Night = 10.00pm – 7.00am

Table B-12 shows that increases in road noise levels along the M5 Motorway, Moorebank Avenue, and Anzac Road are considerably less than 2 dB. Therefore, no mitigation of traffic noise levels, due to EHW, has been considered.

B.3.7 Potential Vibration Impacts During Extended Hours

B.3.7.1 Vibration Intensive Activities and Equipment

Vibration-intensive plant that will be used during EHW will be limited to vibratory rollers used during stockpiling.

B.3.7.2 Vibration Safe Working Distances

Table B-13 defines typical safe working distances for vibration intensive activities relevant to EHW. These safe working distances are defined for damage (DIN 4150-3) and human comfort (the NSW Vibration Guideline). The safe working distances for cosmetic damage will be complied with at all times.

Table B-13 Safe Working Distances

Plant Item	Rating/Description	Safe Working Distance (m)			
		Pipework and Infrastructure (DIN 4150-3)	Buildings used for commercial purposes, industrial buildings, and buildings of similar design (DIN 4150-3)	Dwellings and buildings of similar design and/or occupancy (DIN 4150-3)	Human Comfort (the NSW Vibration Guideline)
Vibratory Roller	< 50 kN (Typically 1- 2 tonnes)	1 m	2 m	6 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	1 m	2 m	8 m	20 m
	< 200 kN (Typically 4-6 tonnes)	1 m	3 m	15 m	40 m
	< 300 kN (Typically 7-13 tonnes)	1 m	4 m	19 m	100 m
	> 300 kN (Typically 13-18 tonnes)	1 m	4 m	25 m	100 m
	> 300 kN (> 18 tonnes)	1 m	1 m	31 m	100 m

For EHW, it is not expected that the cosmetic damage and human comfort criteria will be exceeded as the safe working distances specified in Table B-13 will be able to be maintained.

In areas where residential buildings and or commercial buildings are located less than 100 m from areas where vibratory rollers are proposed, all feasible and reasonable mitigation measures will be implemented including:

- Selection of an appropriate-sized vibratory roller;
- The use of lower vibration settings or static rolling; and/or
- Verification of vibration levels via monitoring.

In relation to human comfort, the safe working distances above relate to continuous vibration. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels, occurring over shorter periods may be allowed. A targeted assessment may be undertaken during works to evaluate any decrease in human comfort safe work distance offsets and to determine if any other mitigation or management measures are required to minimise the potential impacts.

B.3.7.3 Heritage Listed Structures

Kitchener House is located at 208 Moorebank Avenue, and is of heritage significance. Vibration generating activities during EHW are unlikely to occur within 100 m of Kitchener House. However, if EHW are to occur within 100 m of Kitchener House, management as per the CNVMP Section 3.2.2.5 will be required.

B.4 Management Measures

All reasonable and feasible mitigation measures will be implemented consistent with Section 5.2 of the ICNG and Section 3.4 of the CNVMP as well as Section A.4 of the OOHWP Protocol. Refinement of the management measures will be undertaken in consultation with noise affected receivers through the Community Consultative Committee and in response to noise and/or vibration complaints.

B.5 Monitoring and Reporting

Monitoring and reporting during EHW will be consistent with Section 4 of the CNVMP, except where noted in the sections below.

B.5.1 Maximum Noise Levels for Plant and Equipment

Noise levels of plant used during EHW will be measured in accordance with the process outlined in Section 4.1.1 of the CNVMP.

B.5.2 Noise Monitoring

Attended community noise monitoring will be undertaken during EHW in accordance with Section 4.1.2 of the CNVMP. Attended noise measurements will be undertaken at all locations prescribed in Section 4.1.2.2 of the CNVMP during each of the EHW periods in the first week of EHW and monthly thereafter for the duration of the three month assessment period.

During EHW, the results of continuous noise monitoring, conducted in accordance with Section 4.1.3 of the CNVMP, will be reviewed at equivalent intervals to the attended noise monitoring to confirm compliance with the NML.

B.5.3 Vibration Monitoring

Where required, vibration monitoring during EHW will be conducted in accordance with Section 4.1.4 of the CNVMP.

B.5.4 Monitoring and Assessment Reports

During EHW, the Contractor's EM will compile a monthly report for the construction noise and vibration compliance monitoring detailing the community noise monitoring results as well as any other noise and vibration monitoring that was conducted during the reporting period. The report will include information about any exceedances detected and how non-compliances were addressed. This report will be sent to the Principal's Representative and to DP&E.

A final summary report will be provided to the Secretary at the end of the assessment period (3 months) detailing the outcomes of the assessment period, the resolution of complaints during the assessment period, and demonstrate the acceptability of works outside standard hours. The EHWP will be updated in accordance with any recommendations made by DP&E on the summary report. All written directions will be complied with.

B.6 Stakeholder Consultation & Notification

All EHW will require targeted consultation and notification to be distributed to receptors potentially affected by the works between 5 and 14 days prior to commencement. A notification boundary will be established on a case by case basis. See the Community Consultation Strategy for further detail.

Liverpool City Council will be notified of EHW a minimum of 48 hours prior to commencement.

Notification will be conducted in accordance with the processes established in the Community Communication Strategy. All notification will advise both the timing and duration of the relevant works.

B.7 Complaints

Enquiries, complaints and incident management relating to EHW will be undertaken as per the Project CEMP and Community Communication Strategy.

Complaints arising from EHW will be treated sensitively and in a manner, that recognises the potential for noise and vibration to cause environmental impacts. Special consideration will be given to complaints related to noise and vibration in order that additional mitigation can be implemented in a timely manner.

Various lines of communication will be made available for enquiries and complaints during construction of the Project. This will include a 24 hour telephone number for enquiries and complaints. Any complaints received during the works will be dealt with in accordance with the Strategy for the Project. Complaints management protocols are outlined in the Community Liaison Plan. The outcomes of the environmental reviews may trigger the amendments to this EHWP. Any amendments to the EHWP and associated documentation will be undertaken in accordance with Section 1.2.7 of the CEMP.

Construction of the project during extended hours will be undertaken in accordance with the most recent, approved version of the EHWP.

APPENDIX C EVIDENCE OF CONSULTATION

From: Nathan Cairney

Sent: Monday, 19 March 2018 8:42 AM

To: 'Jennifer Sage' <Jennifer.Sage@epa.nsw.gov.au>

Cc: RJohnson <richard@aspectenvironmental.com.au>; Dan Blyde <Dan.Blyde@qube.com.au>; Steve Ryan <sryan@tacticalgroup.com.au>; Andrew Wiltshire <awiltshire@tacticalgroup.com.au>; Sarah Thomson <Sarah.Thomson@epa.nsw.gov.au>; Rashad Danoun <Rashad.Danoun@epa.nsw.gov.au>

Subject: RE: MPE Stage 2 SSD-7628 - Condition B77 Construction Noise and Vibration

Mgmt Plan (CNVMP)

Hi Jennifer,

Thanks for the response below and the quick discussion on the phone this morning. Confirming that in relation to the requirement of the condition for the plan to be developed in consultation with EPA, EPA welcome the opportunity, however do not intend to provide comments on the plan and therefore this requirement has been satisfied.

Regards,
NATHAN CAIRNEY



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 Before printing this document, please consider the environment.

From: Jennifer Sage [<mailto:Jennifer.Sage@epa.nsw.gov.au>]

Sent: Monday, 12 March 2018 11:28 AM

To: Nathan Cairney <ncairney@tacticalgroup.com.au>

Cc: RJohnson <richard@aspectenvironmental.com.au>; Dan Blyde <Dan.Blyde@qube.com.au>; Steve Ryan <sryan@tacticalgroup.com.au>; Andrew Wiltshire <awiltshire@tacticalgroup.com.au>; Sarah Thomson <Sarah.Thomson@epa.nsw.gov.au>; Rashad Danoun <Rashad.Danoun@epa.nsw.gov.au>

Subject: RE: MPE Stage 2 SSD-7628 - Condition B77 Construction Noise and Vibration Mgmt Plan (CNVMP)

Hello Nathan

Thanks for your email below providing the Construction Noise and Vibration Management Plan (March 2018) for Moorebank Precinct East Stage 2. I understand that a condition of planning approval for the project requires the proponent to consult with the EPA when developing the above management plan.

While the EPA encourages the use of environmental management plans as an effective environmental management tool, it does not review or endorse them for reasons of maintaining regulatory 'arm's length', and therefore has not reviewed the above management plan.

Please do not hesitate to contact me (details below) or Rashad Danoun on (02) 9995

6370 should you have any further questions.

Regards

Jen

Jennifer Sage

Unit Head Metropolitan Infrastructure

Regulatory Services Division, NSW Environment Protection Authority

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Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555



Please note that I do not work on Thursdays.

From: Nathan Cairney [<mailto:ncairney@tacticalgroup.com.au>]

Sent: Monday, 5 March 2018 6:51 AM

To: Sarah Thomson <Sarah.Thomson@epa.nsw.gov.au>; Jennifer Sage <Jennifer.Sage@epa.nsw.gov.au>

Cc: RJohnson <richard@aspectenvironmental.com.au>; Dan Blyde <Dan.Blyde@qube.com.au>; Steve Ryan <sryan@tacticalgroup.com.au>; Andrew Wiltshire <awiltshire@tacticalgroup.com.au>

Subject: FW: MPE Stage 2 SSD-7628 - Condition B77 Construction Noise and Vibration Mgmt Plan (CNVMP)

Sarah/Jennifer,

Please find below and attached CNVMP for the above project. If there is anything that you could do to progress this in Rashad's absence it would be greatly appreciated.

Regards,
NATHAN CAIRNEY

DIRECTOR

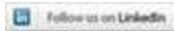


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From: Nathan Cairney

Sent: Monday, 5 March 2018 6:00 AM

To: 'Rashad.Danoun@epa.nsw.gov.au' <Rashad.Danoun@epa.nsw.gov.au>

Cc: Steve Ryan <sryan@tacticalgroup.com.au>; RJohnson
<richard@aspectenvironmental.com.au>; Andrew Wiltshire
<awiltshire@tacticalgroup.com.au>; 'Patel, Ketan' <Ketan.Patel@arcadis.com>;
Blackmore, Shannon <Shannon.Blackmore@arcadis.com>; Dan Blyde
<Dan.Blyde@qube.com.au>

Subject: MPE Stage 2 SSD-7628 - Condition B77 Construction Noise and Vibration
Mgmt Plan (CNVMP)

Hi Rashad,

I understand that Andrew Wiltshire contacted you earlier this month to notify you that this plan would be issued, and further to that discussion we now provide a copy of the CNVMP for EPA's review and comment. The condition does not require any form of approval from EPA, only for your input and consultation into the plan and we would appreciate it if you could review and comment on the plan in this light.

Our program to commence works would ideally be a start on site in the first week of April, and in order to achieve that we would require your comments on or before 19 March, anything you could to progress the review by this time would be greatly appreciated. Similarly, we would also be grateful to have the opportunity to meet and discuss the plan with you in order to garner your comments in an efficient and effective manner, so please don't hesitate to let us know if you would like to meet and we will arrange for specialists to be available (I believe you would have met Nic Hall from Wilkinson Murray in the past on the project).

Regards,
NATHAN CAIRNEY



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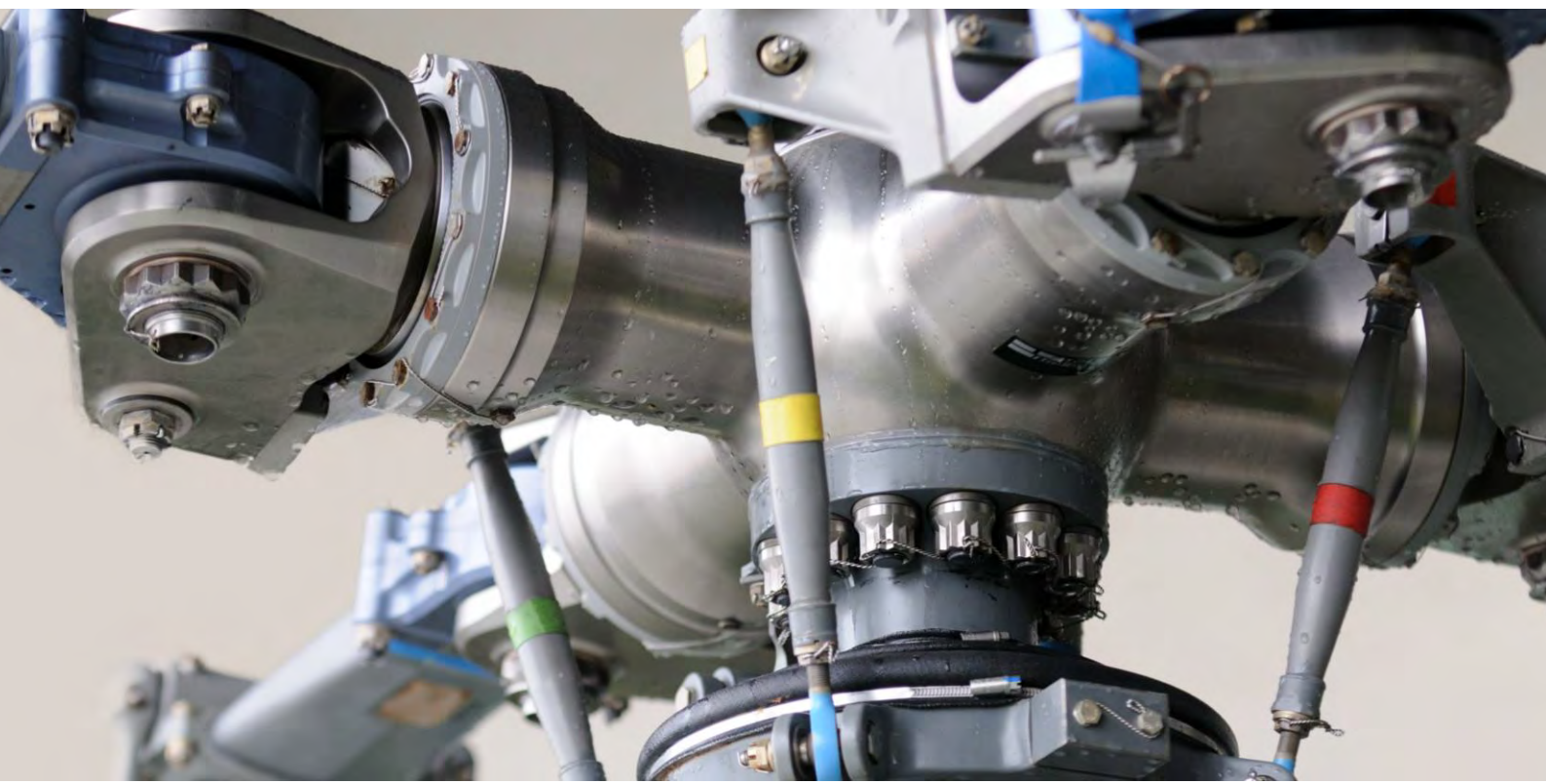
APPENDIX D HELICOPTER ASSISTED INSTALLATION WORKS CONSTRUCTION NOISE AND VIBRATION IMPACT STATEMENT (CNVIS)

SIMTA – Moorebank Precinct East Stage 2

Helicopter Assisted Installation Works - construction noise and vibration impact
statement

November 2019

Doc no. 19023-NV-RP-1-1



SIMTA Moorebank Precinct East Stage 2

Title	Helicopter lift – Construction noise and vibration impact statement
Document no.	Doc No. 19023-NV-RP-1-1
Revision	Rev 1
Date	8 November 2019
Author	John Hutchison
Reviewer	Scott Hughes
File path	I:\PROJECTS\19023 - Arcadis Moorebank\02 Deliverables\021 Reports\19023-NV-RP-1-1 Arcadis MPES2 Helicopter NVIS.docx

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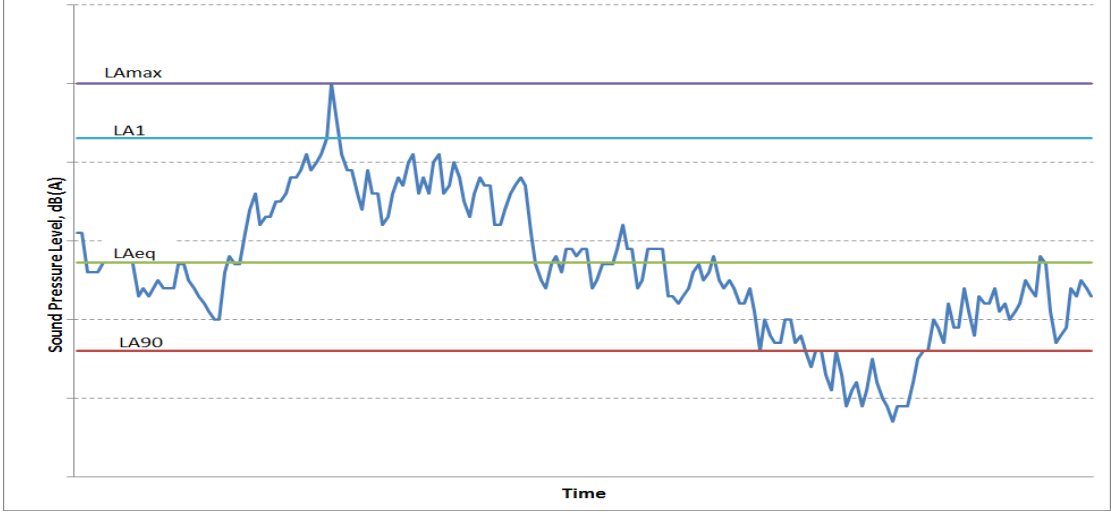
Revision	Date	Status
0	8 November 2019	To client for review
1	8 November 2019	Amended with client comments

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Appendix A. Predictions for individual receivers

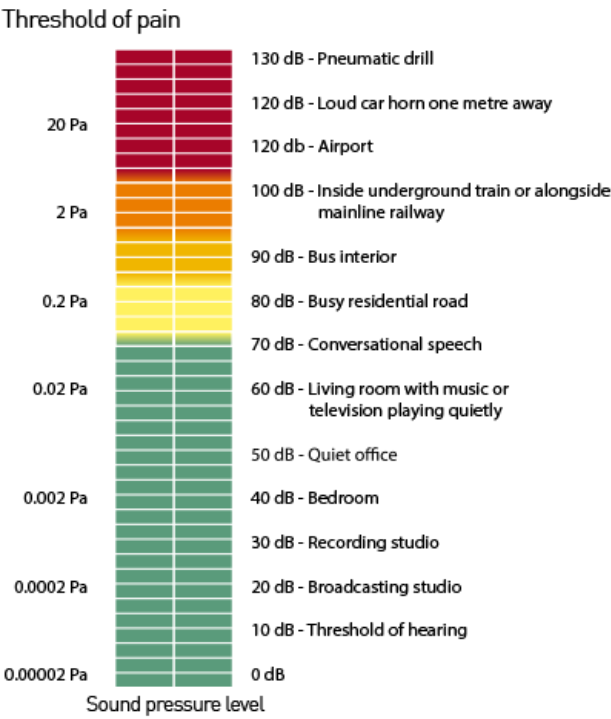
Definition of terms

Assessment period	The period in a day over which assessments are made.
Background noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation.
Decibel (dB)	A measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm (to base 10) of the ratio of a given sound power to a reference power.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
dB(C)	Unit used to measure 'C-weighted' sound pressure levels, an adjustment made to sound level to approximate low frequency noise between 10 Hz and 200 Hz.
Extraneous noise	Noise resulting from activities that are not typical of the area such as construction, and traffic generated by holiday periods or special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Noise assessment criteria	A standard rule or test by which the acceptability of the nature and characteristics of noise may be judged or evaluated. Criteria are generally based on guidelines or standards developed by Government agencies (eg EPA) to protect the majority of people for the majority of the time from adverse impacts.
Noise level statistics	L_{A90} - The A-weighted sound pressure level exceeded 90% of the monitoring period. This is considered to represent the background noise. L_{Aeq} - The equivalent continuous A-weighted noise level—the level of noise equivalent to the energy average of noise levels occurring over a measurement period. L_{A1} - The A-weighted sound pressure level exceeded 1% of the monitoring period. L_{Amax} - The maximum A-weighted noise level associated with the measurement period. 
Sound Power Level (SWL)	The A-weighted sound power level is a logarithmic ratio of the acoustic power output of a source relative to 10^{-12} watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.

Sound Pressure Level (SPL)

This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of noise.

A technical definition for the sound pressure level, in decibels, is 20 times the logarithm (base 10) of the ratio of any two quantities related to a given sound pressure to a reference pressure (typically 20 µPa equivalent to 0 dB). Examples of typical sound pressure levels are shown below.



Source: https://www.osha.gov/dts/osta/otm/noise/health_effects/soundpropagation.html

Tonal noise Noise with perceptible and definite pitch or tone

1. Introduction

Sydney Intermodal Terminal Alliance (SIMTA) is currently constructing an Intermodal Terminal Facility at Moorebank NSW, consisting of warehousing and distribution facilities to handle up to around 1.5 million containers each year. The facility will enable containers moving between Port Botany and southwest Sydney to travel primarily by rail, increasing the capacity and efficiency of Port Botany. Containers bound for other states would be transferred directly to trains without leaving the facility.

The Moorebank Precinct East Stage 2 (MPE) project involves construction of large warehouses on the eastern side of the project area. The MPE is located 27 kilometre west of Sydney's CBD near the suburbs of Casula, Glenfield and Wattle Grove. An illustration of the facility location and surrounding area is provided in Figure 1-1.

As part of construction, plant and materials need to be transferred from the ground onto the roofs of newly constructed warehouses. A helicopter is proposed for this activity to avoid construction and use of a tower crane. Dates and times of the helicopter lifts are yet to be determined; however it must be a daylight activity for safety reasons, therefore avoiding the more noise sensitive periods of the day.

The use of a helicopter to undertake these tasks provides coverage of the whole roof and would eliminate or substantially minimise the requirement for manual handling, thereby significantly reducing the number of construction personnel required on the roof and also reducing the risk of injury through falls and manual handling. Therefore the helicopter use is considered justified as it is the most reasonable and feasible measure for ensuring the workplace safety of construction personnel and, as such, is the most appropriate method to meet the Contractor's WHS legislative requirements.

Use of a helicopter for this purpose may result in construction noise and vibration impacts on the surrounding community. However, this activity was not included within the noise and vibration impact assessment completed as part of the Environmental Impact Statement for the project and now requires assessment to ensure appropriate noise and vibration mitigation and management measures are implemented.

In support of the project's noise and vibration management plan (NVMP), this construction noise and vibration impact statement provides a summary of the existing environment, relevant noise and vibration management goals, results of the impact assessment and appropriate controls and safeguards.

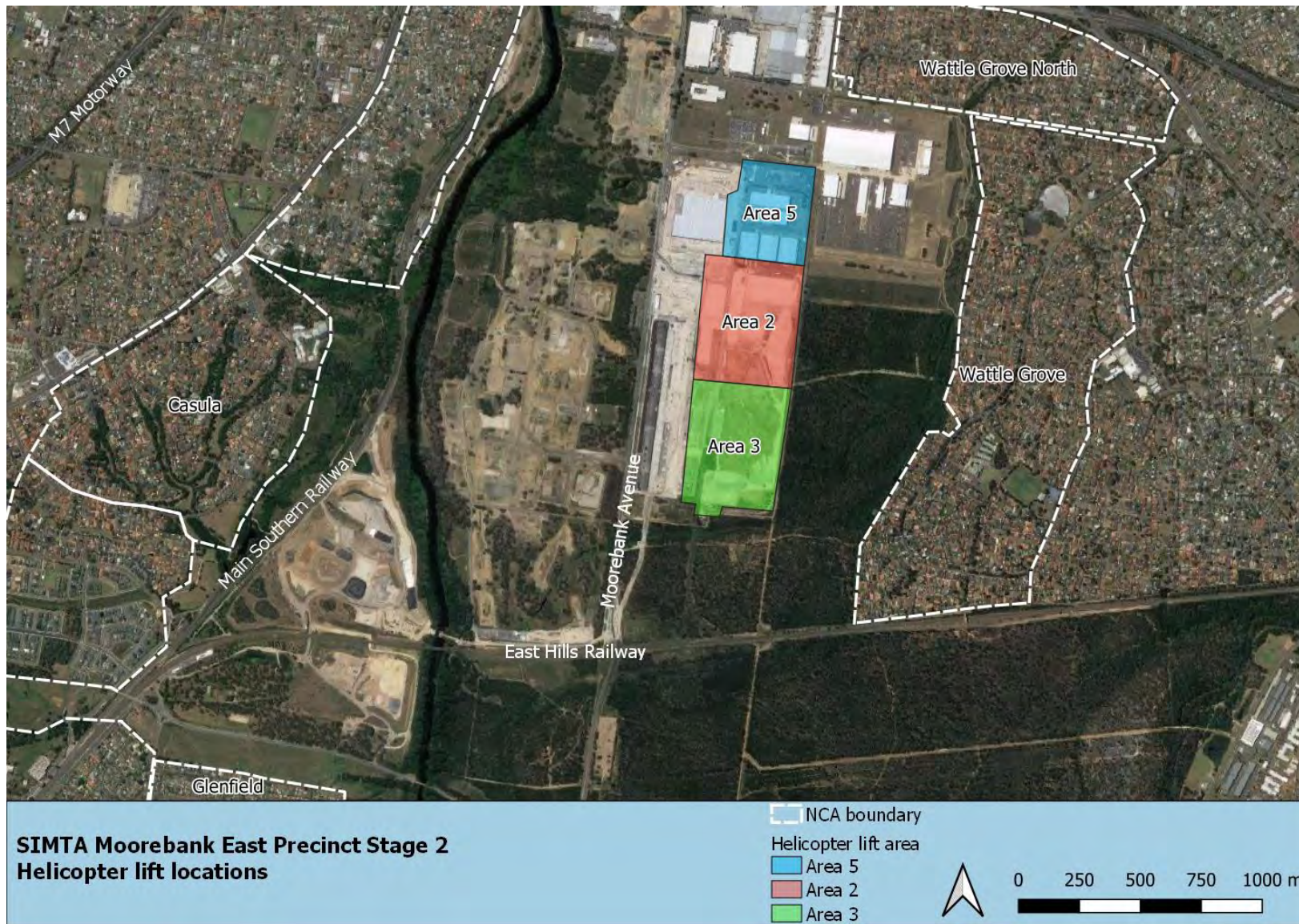


Figure 1-1 Location map

2. Assessment framework

The Sydney Intermodal Terminal Alliance (SIMTA) received approval for the construction and operation of Stage 2 of the Moorebank Precinct East (MPE) Project (SSD 7628), which comprises the second stage of development under the MPE Concept Consent (MP10_0193).

The NVMP outlines the Project's Conditions of Consent (CoC) for management of construction noise and vibration impacts. COCs applicable to the proposed helicopter lifts are detailed in Table 2-1.

Table 2-1 Conditions of Consent

CoC	Description								
Construction hours									
B65	The construction hours detailed in Table 2 must be complied with, except where they may be undertaken under condition B67. Table 2: Hours of Work <table><tr><td>Activity</td><td>Day</td><td>Time</td></tr><tr><td rowspan="2">Early works and Construction</td><td>Monday– Friday</td><td>7am to 6pm</td></tr><tr><td>Saturday</td><td>7am to 1pm</td></tr></table>	Activity	Day	Time	Early works and Construction	Monday– Friday	7am to 6pm	Saturday	7am to 1pm
Activity	Day	Time							
Early works and Construction	Monday– Friday	7am to 6pm							
	Saturday	7am to 1pm							
B66	Except as permitted by an EPL, activities resulting in a high noise impact shall only be undertaken: a) between the hours of 8:00 am to 5:00 pm Monday to Friday; b) between the hours of 8:00 am to 1:00 pm Saturday; and c) in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block. For the purposes of this condition, ‘continuous’ includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.								
B67	Works may be undertaken outside the hours detailed in Table 2 in the following circumstances: a) For the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; b) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; c) Where different construction hours are permitted or required under an EPL in force in respect of construction, in which case these construction hours must be complied with; d) Where they are undertaken in accordance with an Out-of-Hours Work Protocol detailing the assessment, management and monitoring of noise as part of the Construction Noise and Vibration Management Plan.								
B68	The Applicant must prepare an Out-of-Hours Work Protocol for any work undertaken outside the hours specified in condition B65 or outside the circumstances specified under condition B67. An Out-of-Hours Work Protocol must provide for the assessment, management and monitoring of out of hours work, including: a) Where works are shown to be inaudible at the nearest sensitive receivers and vibration levels do not exceed those stipulated by Table 2.2 and Table 2.4 of Assessing Vibration: a technical guide (DEC, 2006); b) Where a negotiated agreement has been arranged with affected receivers; c) Where noise can be shown to satisfy the noise management levels specified in the Interim Construction Noise Guideline (ICNG, DECC, 2009) at non-residential land uses								

CoC	Description										
B69	An Extended Hours Work Plan will be prepared for any construction undertaken during the extended hours detailed in Table 3 as required by condition B68(d). The Extended Hours Work Plan must provide for: a. A three month assessment period, commencing at the start of extended hours construction work; b. Implementation of the Construction Noise and Vibration Management Plan; c. Noise monitoring at a representative number of sensitive receivers (including closest and furthest) to confirm the predicted noise levels; d. Targeted consultation with the noise affected sensitive receivers; e. Notification of the relevant Council, local residents and other affected stakeholders and sensitive receivers of the timing and duration at least 48 hours prior to the commencement of the works; f. Construction work timeframes and methods for investigation of noise complaints; g. Submission of monthly complaints reports to the Department for the life of extended hours activities; h. Continual refinement of mitigation measures based on consultation with the noise affected sensitive receivers; i. Implementation of work practices set out in section 5.2 of the ICNG; j. A final summary report submitted to the Secretary at the end of the assessment period in sub-condition (a), detailing the outcomes of the assessment period, the resolution of complaints during the assessment period, and demonstrate the acceptability of works outside standard hours. Table 3: Extended Hours of Work <table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td rowspan="3">Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).</td><td>Monday to</td><td>6am to 7am</td></tr><tr><td>Friday</td><td>6pm to 10pm</td></tr><tr><td>Saturday</td><td>1pm to 5pm</td></tr></table>	Activity	Day	Time	Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).	Monday to	6am to 7am	Friday	6pm to 10pm	Saturday	1pm to 5pm
Activity	Day	Time									
Early works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching).	Monday to	6am to 7am									
	Friday	6pm to 10pm									
	Saturday	1pm to 5pm									
Construction noise and vibration											
B72	All reasonable and feasible noise mitigation measures must be implemented in addition to the management and mitigation measures in APPENDIX B with the aim of achieving the following construction Noise Management Levels (NMLs) and vibration criteria: a) construction noise management levels established using the Interim Construction Noise Guideline (DECC 2009); b) vibration criteria established using the Assessing Vibration: A Technical Guide (DECC 2006) (for human exposure); and c) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). Any construction activities identified as exceeding the construction noise management levels and/or vibration criteria shall be managed in accordance with the Construction Noise and Vibration Management Plan required by condition E34(b).										
B73	Any construction activities identified as exceeding the construction noise management levels and/or vibration criteria must be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) required by condition B76. All feasible and reasonable noise mitigation and management measured must be implemented and any activities that could exceed the construction NMLs must be identified and managed in accordance with the CNVMP.										
OOHW											
B77 e)	An Out-of-Hours Work Protocol as referenced in condition B68 for the assessment, management and approval of works outside standard construction hours, for the Secretary’s approval. The Out-of-Hours Work Protocol must: i. Detail assessment of out-of-hours work against the relevant noise and vibration criteria; ii. Provide detailed mitigation measures for any residual impacts (that is, additional to general mitigation measures), including extent of at receiver treatments; iii. Include proposed notification arrangements; and iv. Include an Extended Hours Work Plan as required by condition B69.										

3. Existing environment and assessment criteria

3.1 Existing environment

As shown in Figure 1-1, the project site is bounded to the west by the Moorebank Precinct West (MPW) and the main southern railway. Beyond the railway is the suburban area of Casula. In the south the site is bounded by the East Hills Railway which gives way to undeveloped land in Holsworthy and the suburb of Glenfield in the south west. To the east of the site is undeveloped land leading into the suburban area of Wattle Grove. In the north, industrial uses are dominant to the M5 Motorway, with Wattle Grove North to the North East.

Residential and non-residential sensitive receivers are located close to the project site. The nearest being Wattle Grove North around 350 metres northeast of the project site. Wattle Grove lies around 400 – 600 metres to the east, Glenfield around 1800 metres southwest and Casula around 1350 metres west. These suburbs have been used to divide sensitive receivers into representative noise catchment areas (NCAs) within which existing levels of noise are likely to be similar and impacts from the project of a similar magnitude. A summary of nearby receivers and NCAs is presented in Table 3-1.

Non-residential sensitive receivers in the area are identified within the NVMP as Casula Powerhouse (Art centre) and All Saints Senior College in Casula.

Table 3-1 Sensitive receivers and NCAs

NCA	Description	Orientation, distance to project site
1	Wattle Grove residents	East, 400 – 600 m
2	Wattle Grove residents	Northeast – 350 m
3	Casula residents	West, 1350 m
4	Glenfield residents	Southwest, 1800 m

3.2 Background noise monitoring

Baseline noise levels for each NCA are summarised in the Project's NVMP. Monitoring locations and Rating Background Levels (RBLs) are described in Table 3-2.

RBLs represent the average minimum background sound level and is the 10th percentile LA90 noise level for each measurement period, averaged over the measurement days.

Table 3-2 Background noise levels

Noise Monitoring Location Details	Representative noise catchment area	Rating background level (RBL)		
		Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
15 Larra Court, Wattle Grove	Wattle Grove	42	37	37
6 Namoi Court, Wattle Grove	Wattle Grove North	36	36	36
2 Rushton Place, Casula	Casula	41	37	34
14 Goodenough Street, Glenfield	Glenfield	44	44	37

3.3 Construction hours

The NVMP divides construction hours into three scenarios:

1. Standard construction hours
2. Extended Hours Works (EHW)
3. Out of Hours Works (OOHW)

The standard construction hours for the Project (subject to different hours being permitted or required under an Environment Protection Licence (EPL)) are defined by CoC B65 as:

- 7am to 6pm, Monday – Friday
- 7am to 1pm, Saturday

EHW for the project are available through the development of an EHW Plan. The EHW are defined in CoC B69 as Early Works and Construction (not including high noise impact, piling, spoil placement, rock breaking, concrete batching) and relate to the following hours:

- 6am to 7am, Monday – Friday
- 6pm to 10pm, Monday – Friday
- 1pm to 5pm, Saturday

Works that are not captured within standard construction hours or approved under the EHW Plan may be undertaken through the Out of Hours Work Protocol developed in accordance with CoC B68.

3.4 Out of hours work protocol

The project OOHW protocol (Appendix A of the NVMP) was developed in line with CoC B68, and addresses works proposed to be undertaken outside the hours specified in condition B65 or outside the circumstances specified under condition B67.

The OOHW Protocol requires detailed assessment of out-of-hours work against relevant noise and vibration criteria and provision of mitigation measures for any residual impacts; proposed notification arrangements and must include an extended hour work plan.

3.5 Noise assessment criteria

3.5.1 ICNG

CoC B72 requires implementation of all feasible and reasonable noise mitigation measures with the aim of achieving the construction Noise Management Levels (NML) detailed in the *Interim Construction Noise Guideline* (ICNG) (DECC 2009) during construction activities.

The ICNG notes noise that exceeds background noise levels may result in adverse impacts and an increased likelihood of complaints. During standard hours, where construction noise is within 10 dB(A) of the RBL, the impacts are considered acceptable.

Where construction noise is more than 10 dB(A) above the RBL, a residential receiver is taken to be noise affected and the proponent should undertake all reasonable and feasible steps to manage the impact and consult with the affected community. Above a $L_{Aeq, 15 \text{ minute}}$ noise level of 75 dB(A), a receiver is considered to be highly noise affected, requiring respite to be given in consultation with the regulatory authority and the community.

At night, or outside approved construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected.

In addition, annoying noise such as rock hammers, impact piling, or other impulsive noise sources usually result in greater annoyance than continuous construction noise. A 5 dB(A) penalty is applicable to such activities prior to comparison with the NMLs and has been applied to the helicopter in this CNVIS.

3.5.2 Standard hours

The NMLs in Table 3-3 are applicable to works undertaken during standard approved hours and are based on the RBLs described in Section 3.2.

Table 3-3 Summary of noise management levels

Representative noise catchment area	Construction noise management levels, $L_{Aeq, 15 \text{ minute}}$
	Standard hours
Wattle Grove	52
Wattle Grove North	46
Casula	51
Glenfield	54

A noise level above $L_{Aeq, 15 \text{ min}}$ 70 dB(A) at a commercial property is considered to warrant noise mitigation. Similarly, an industrial facility would warrant noise mitigation at $L_{Aeq, 15 \text{ minute}}$ noise levels above 75 dB(A).

Table 3-4 presents management levels for noise at other relevant sensitive land uses. Internal noise levels are assessed at the centre of the occupied room. Where internal noise levels cannot be measured, external noise levels may be used. A conservative estimate of the difference between internal and external noise levels is 10 dB for buildings other than residences.

Table 3-4 NMLs for non-residential sensitive receivers

Receiver type	Sensitive receiver type	NML applicable when in use, $L_{Aeq, 15 \text{ min}}$
All Saints Senior College	Classrooms at schools and other educational institutions	Internal noise level 45 dB(A) / External noise level 55 dB(A)
Casula Powerhouse Arts Centre	Community centres	

3.5.3 Out of hours work

The NVMP divides works undertaken outside standard construction hours into 4 out of hours works (OOHW) periods, as summarised in Table 3-5. NMLs for each period are presented in Table 3-6. High impact noise is defined as noise levels exceeding OOHW period NMLs. The NVMP does not provide NMLs for works on Sunday, works between 8 am and 4pm on Sunday are taken as OOWP 4.

Table 3-5 OOHW periods

OOHW Period	Day	Time
1	Monday to Friday	6am to 7am
2		6 pm to 10 pm
3	Saturday	7am to 8am Saturday
4		1pm to 5pm

Table 3-6 NMLs for OOHW periods

Representative noise catchment area	Construction noise management levels, $L_{Aeq, 15 \text{ minute}}$			
	1	2	3	4
Wattle Grove	42	42	47	47
Wattle Grove North	41	41	41	41
Casula	39	42	46	46
Glenfield	42	49	49	49
All Saints Senior College / Casula Powerhouse	55	55	55	55

3.6 Sleep disturbance

The helicopter lifts are not proposed to take place overnight and sleep disturbance is not applicable.

3.7 Vibration management levels

When assessing human exposure to construction-related vibration, MCoA E22 requires vibration goals are established using *Environmental Noise Management Assessing Vibration: A Technical Guideline* (DECC 2006), which provides criteria for the assessment of vibration impacts on humans.

Construction activities typically generate vibration of an intermittent nature, which is assessed using a Vibration Dose Value (VDV). Acceptable values of vibration doses are presented in Table 3-7 for sensitive receivers.

Table 3-7 VDV Vibration criteria

Receiver type	Time period	Intermittent Vibration Dose Value (VDV $\text{ms}^{-1.75}$)	
		Preferred	Maximum
Critical areas	When in Use	0.1	0.2
Residential	Day (7am to 10pm)	0.2	0.4
	Night (10pm to 7am)	0.13	0.26
Office, schools, educational institutions and places of worship	When in use	0.4	0.8

Guidance for the consideration of potential building damage from construction vibration is provided in MCoA E22, which requires the application of values set out in the *German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures*. These values are presented in Table 3-8.

Table 3-8 Guideline values for vibration velocity to be used when evaluating the effects of short-term vibration on structures (DIN 4150-3).

Line	Type of building	Guideline values for vibration (PPV mm/s)			
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz	Vibration at horizontal plane of highest floor at all frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)	3	3 to 8	8 to 10	8

4. Impact assessment

4.1 Construction activity and source noise levels

A helicopter, Airbus AS350D1 or Bell 206L4, would lift plant and material from a laydown area in Area 2 (see Figure 1-1) and transfer them to warehouse rooftops in Areas 2, 3 and 5. The helicopter would use a 30 metre long sling to pick up and set down each pallet, typically remaining airborne for the duration of the activity, except for 15-minute refueling breaks each 2 hours. Though actual timing of the lifts is yet to be determined, noise impacts have been assessed during standard hours and outside standard hours on weekends, which would be a worst-case scenario.

Proposed equipment is summarised in Table 4-1 with the anticipated overall unmitigated $L_{Aeq, 15 \text{ minute}}$ sound power level from the helicopter. This value is taken from measurements of a previous helicopter lift at the project site. Measurements were completed by Wilkinson Murray in April 2019 at a range of distances from the works and sound power levels calculated from the results.

Sound power levels and ultimate predicted noise levels will depend on the location and operating conditions of the helicopter. The helicopter was assumed to be hovering at 45 metres above ground at the worst-case location relative to each receiver and represents a worst-case assessment. Where activity moves away from each receiver, or less time is spent hovering, predicted levels will decrease.

Table 4-1 Summary of proposed works

Activity	Location	Time	Distance / direction to nearest receivers	Equipment	Activity $L_{Aeq, 15 \text{ min}}$ sound power, dB(A)
Helicopter lifts	Areas 2, 3 & 5 (refer to Figure 1-1)	8 am to 4 pm Saturday and Sunday	East, 400 – 600 m Northeast – 350 m West, 1350 m Southwest, 1800 m	Airbus AS350DD1 or Bell 206L4 helicopter	130*

* A 5 dB penalty for annoying noise characteristics such as impulsiveness, low frequency components and tonality, will be added to the predicted level in line with the ICNG.

4.2 Modelling

SoundPlan noise modelling software was used to calculate noise impacts in accordance with the ISO9613 prediction method, at each of the representative sensitive receivers. The following parameters were incorporated in the model:

- Topography – 1 meter contours Digital Elevation Model plus Lidar data for site area
- Individual sensitive receivers – All receivers within each NCA have been included in the assessment, approximately 5,500 receivers
- Buildings –included in the model to allow for screening / reflection. Predictions made to the buildings' façade, with worst-case façade used in prediction at 1.5 metres above ground level.
- Construction noise sources –Activities and equipment listed in Table 4-1 were included in the noise model. Helicopters were assumed to be hovering at 45 metres above ground allowing for 30 metre sling and 15 metre warehouse roof height.
- Meteorology –worst-case conditions (gentle breeze from source to receiver and stable conditions).
- Cumulative noise – during helicopter operations in OOHW period, it is assumed no other construction activity would be underway and no cumulative impacts expected. Only one helicopter would be in operation.

4.3 Predicted noise levels

4.3.1 Standard hours

Predicted noise levels for individual receivers are provided in Appendix A and are summarised for each area of helicopter operations in Table 4-3, showing the maximum predicted noise level and the number of likely exceedances of the noise management levels during standard hours. Predicted noise levels include a 5dB penalty for likely annoying characteristics such as impulsiveness, low frequency and tonality.

Helicopter lifts in each area are predicted to exceed the standard NMLs at many identified receivers. The level of impact is directly proportional to the distance between source and receiver, with the closest receivers in each NCA to experience the highest noise level.

A single industrial receiver north of area 5 is expected to exceed 75 dBA. When working south of this area, the results would be lower.

During standard hours, receivers in Wattle Grove, Wattle Grove North and Casula are likely to be noise affected, with those in Wattle Grove North the highest impacted when activity is in Area 5.

Glenfield and Moorebank are at low risk of adverse impacts with only minor exceedances predicted during the day.

Table 4-2 Summary of predicted noise levels during standard hours (Areas 2,3, and 5)

Level of impact				Exceedance of Standard NML, dB			
Work area	NCA	Maximum	No. > 75dbA	0-5	6-15	15-25	25+
5	Casula	64	0	594	723	0	0
	Glenfield	52	0	0	0	0	0
	Moorebank	77	1	1	0	0	0
	Wattle Grove	71	0	1030	1675	111	0
	Wattle Grove North	75	0	0	240	477	42
2	Casula	63	0	887	562	0	0
	Glenfield	54	0	2	0	0	0
	Moorebank	69	0	0	0	0	0
	Wattle Grove	71	0	877	1785	110	0
	Wattle Grove North	68	0	5	518	236	0
3	Casula	61	0	1105	209	0	0
	Glenfield	57	0	31	0	0	0
	Moorebank	63	0	0	0	0	0
	Wattle Grove	75	0	1084	1308	172	0
	Wattle Grove North	62	0	29	718	4	0

4.3.2 Outside standard hours

Where works may need to be conducted outside standard hours, the NMLs would be lower and the resulting impacts greater. Though results are provided, helicopter lifts are not likely in the early morning or evening period as this activity is a daylight activity only.

During the day time on weekends, OOHW 3 and 4, many receivers would experience noise at levels more than 15 dB above the NML.

Table 4-3 Summary of predicted noise levels (Areas 2,3, and 5)

Level of impact		Helicopter lift area		
Period	Exceedance of NML	5	2	3
OOHW 1 6am to 7am Monday to Friday	0 – 5 dB	7	26	136
	5 – 15dB	2043	2067	3036
	15 – 25 dB	3166	3327	2186
	>25 dB	326	121	172
OOHW 2 6 pm to 10 pm Monday to Friday	0 – 5 dB	45	115	248
	5 – 15dB	2357	2436	3327
	15 – 25 dB	2765	2859	1755
	>25 dB	325	121	172
OOHW 3 7am to 8am Saturday	0 – 5 dB	566	491	637
	5 – 15dB	3487	3584	3821
	15 – 25 dB	1218	1413	863
	>25 dB	214	11	15
OOHW 4 1pm to 5pm Saturday	0 – 5 dB	566	491	637
	5 – 15dB	3487	3584	3821
	15 – 25 dB	1218	1413	863
	>25 dB	214	11	15

Contours representing predicted noise levels in each area are presented in Figure 4-1 to Figure 4-3. Contours demonstrate Wattle Grove would be the most affected, particularly from work in areas 5 and 3. Casula and Glenfield, though still noise affected, would experience lower levels of helicopter noise.

4.3.3 Sleep disturbance

The risk of sleep disturbance is based on the frequency and nature of high noise events in the night period, typically after 11 pm. Helicopter lifts are planned during daylight hours only and sleep disturbance is not applicable.

4.4 Vibration

Vibration intensive equipment is not proposed for the helicopter lifts, hence ground-borne vibration is not applicable.

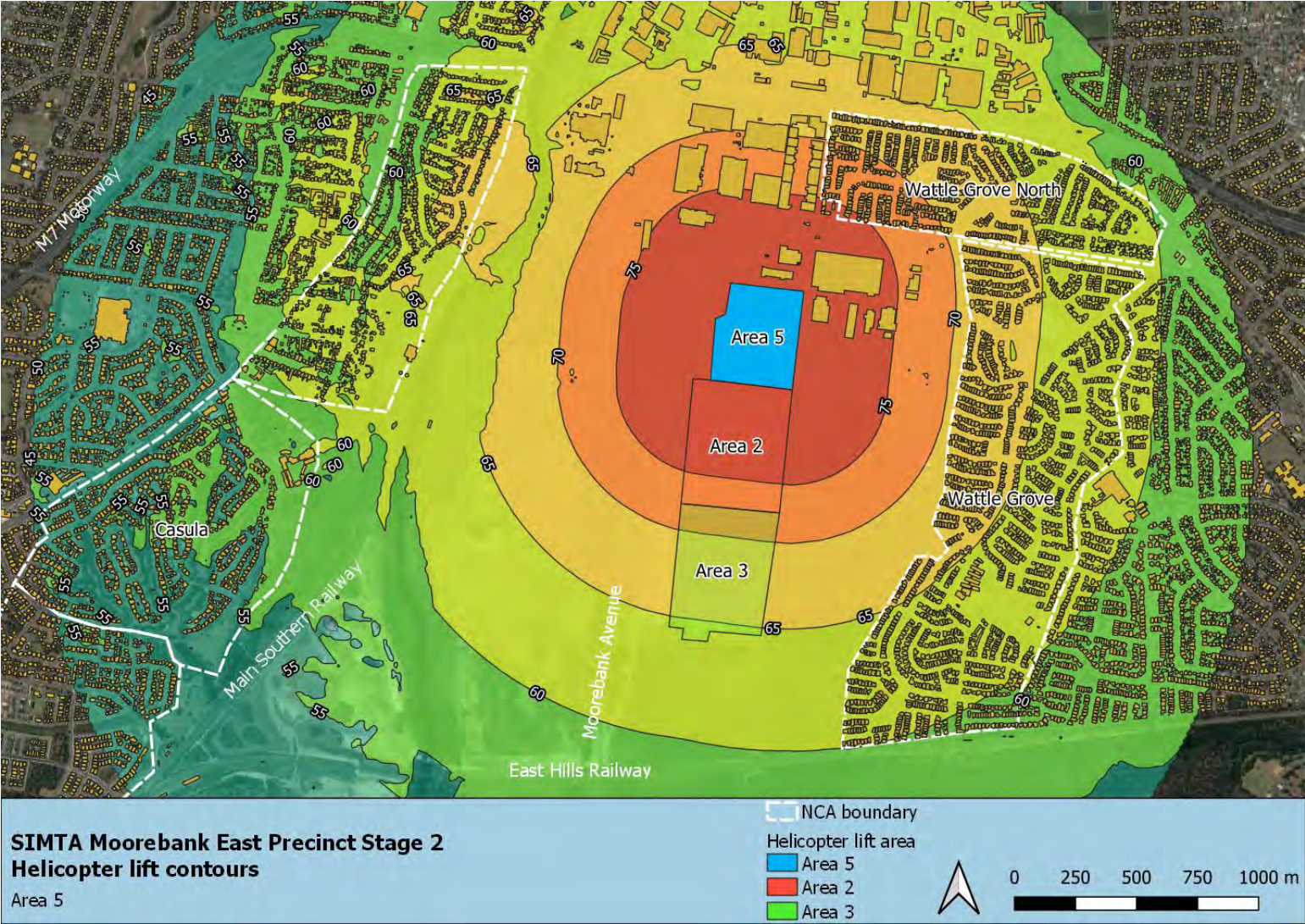


Figure 4-1 Predicted L_{Aeq} , 15 minute noise levels for helicopter lifts in Area 5

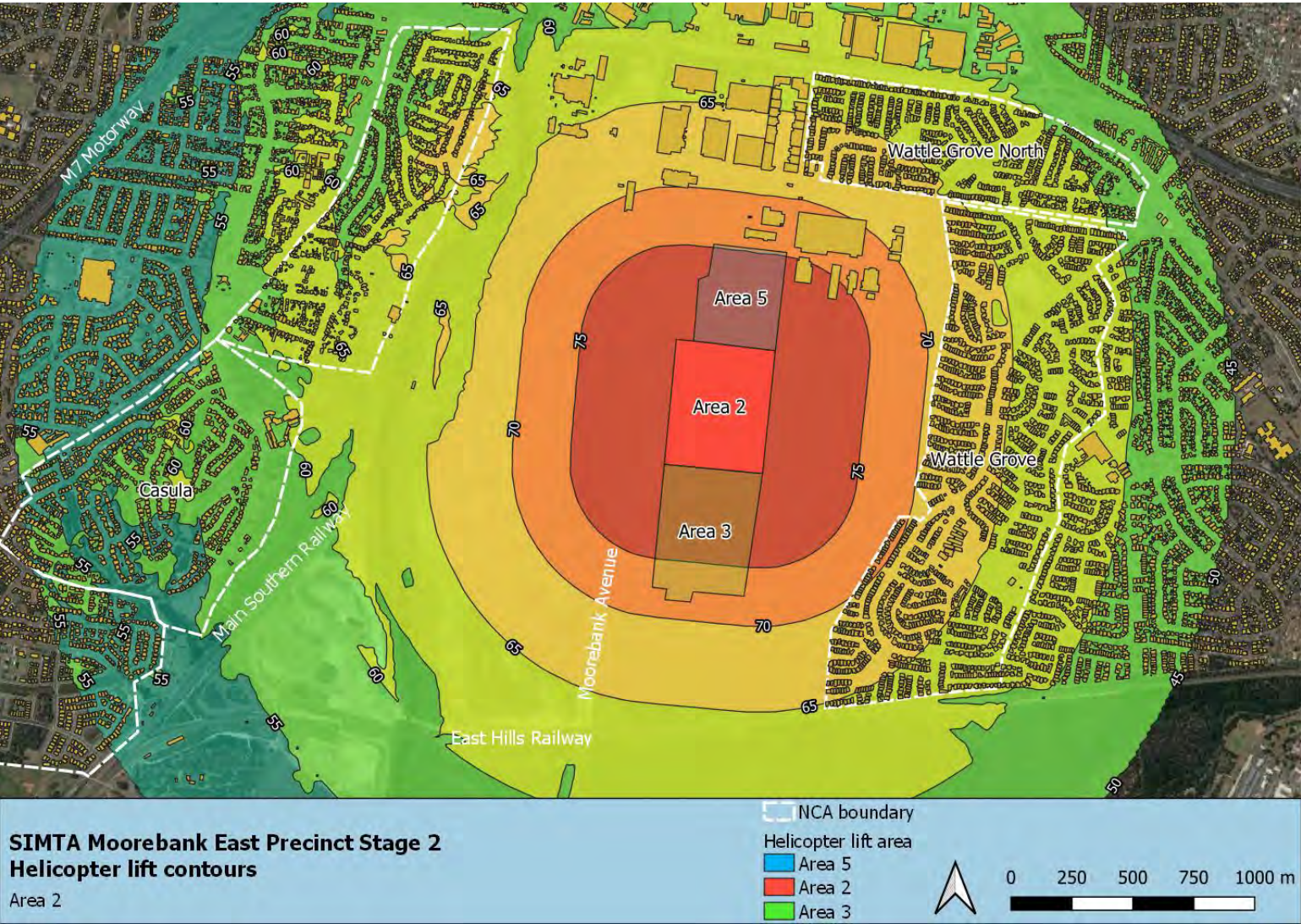


Figure 4-2 Predicted L_{Aeq} , 15 minute noise levels for helicopter lifts in Area 2

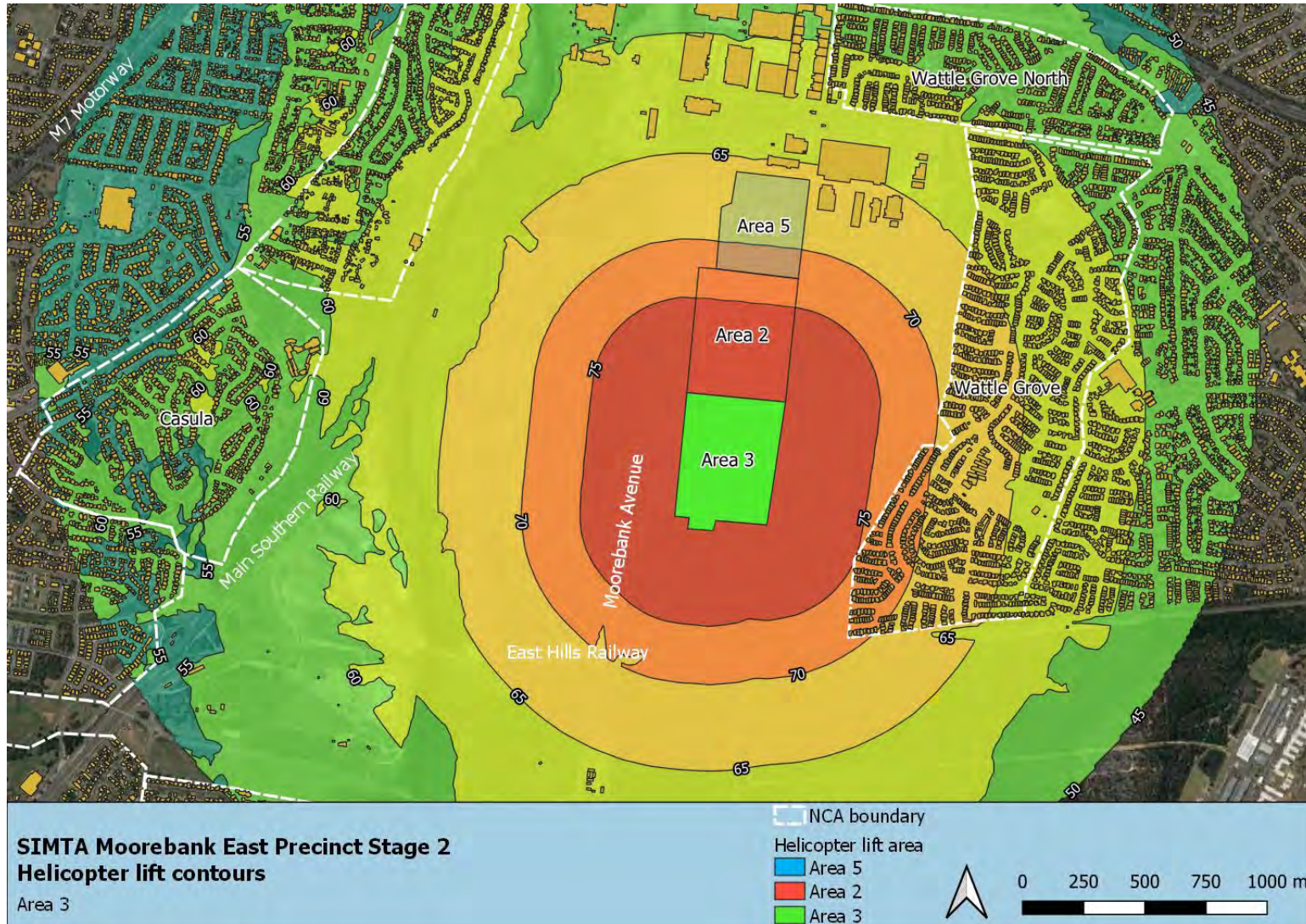


Figure 4-3 Predicted L_{Aeq} , 15 minute noise levels for helicopter lifts in Area 3

5. Summary and recommendations

Predictions demonstrate helicopter lifts are likely to exceed the NML for standard hours and OOHW period 3 and 4. Considering the source of noise, physical mitigation is not feasible while in the air. However, the following mitigation and management measures are recommended.

- Avoid working outside standard hours where possible.
- Where possible, selection of take-off and landing sites to allow buildings to be positioned between source and receiver should be considered to assist in minimizing noise impacts.
- Mitigation measures described in the project NVMP should be implemented with a focus on community consultation and notifications to managing the level of impact. Community concerns would be managed in line with the NVMP.
- As a potential high noise impact and in line with the NVMP, helicopter lifts should be performed in continuous blocks not exceeding three hours each with a minimum respite of not less than one hour between each block.
- Predicted noise levels should be verified at commencement of the works to ensure the assumptions and findings of this CNVIS are appropriate.

Appendix A. Predicted noise levels for individual receivers

(Also see attached spreadsheet)

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
68167 Casula		7 GIBSON AVENUE CASULA	RES	51	39	42	46	46	55.5	49.4	51.4
89249 Casula		7 GILMORE ROAD CASULA	RES	51	39	42	46	46	49.6	52	53
44354 Casula		7 GLORY ROAD GLENFIELD	RES	51	39	42	46	46	47.9	51.8	53.3
87201 Casula		7 GROVE STREET CASULA	RES	51	39	42	46	46	54.8	53.7	51.3
40274 Casula		7 HANS PLACE CASULA	RES	51	39	42	46	46	52.9	55.4	57.1
15723 Casula		7 HARDY PLACE CASULA	RES	51	39	42	46	46	49.4	51.1	51.9
20267 Casula		7 HARPUR PLACE CASULA	RES	51	39	42	46	46	48.2	49.7	52
63834 Casula		7 HEYSEN PLACE CASULA	RES	51	39	42	46	46	53.1	53.4	55.3
28790 Casula		7 HILTON CRESCENT CASULA	RES	51	39	42	46	46	52.4	53.7	53.6
84635 Casula		7 KELLER PLACE CASULA	RES	51	39	42	46	46	57.5	44.8	41.5
7401 Casula		7 KENEALLY WAY CASULA	RES	51	39	42	46	46	50.9	51.3	50.8
25264 Casula		7 KITSON WAY CASULA	RES	51	39	42	46	46	48.9	50.5	49.9
46012 Casula		7 LAKEWOOD CRESCENT CASULA	RES	51	39	42	46	46	60.4	60	56.4
82255 Casula		7 LANG ROAD CASULA	RES	51	39	42	46	46	57.9	58.1	42.9
82101 Casula		7 MACKELLAR STREET CASULA	RES	51	39	42	46	46	48.8	50.1	37.5
78985 Casula		7 MCCUBBIN PLACE CASULA	RES	51	39	42	46	46	49.1	50	50.2
8798 Casula		7 MCKELL AVENUE CASULA	RES	51	39	42	46	46	57.6	57.1	55
19765 Casula		7 MELBA PLACE CASULA	RES	51	39	42	46	46	53.1	55.2	55.4
37560 Casula		7 OLD KURRAJONG ROAD CASULA	RES	51	39	42	46	46	56.9	57.4	55.9
86074 Casula		7 PHOENIX CRESCENT CASULA	RES	51	39	42	46	46	58.7	58.2	54.3
58376 Casula		7 ROBERTS ROAD CASULA	RES	51	39	42	46	46	54.8	55.9	56
71545 Casula		7 RUDD CLOSE CASULA	RES	51	39	42	46	46	50.3	51.7	52.1
59390 Casula		7 SEGEFIELD PLACE CASULA	RES	51	39	42	46	46	58.7	57.8	53
70636 Casula		7 SHUTE WAY CASULA	RES	51	39	42	46	46	51.5	52.7	53
35455 Casula		7 SLESSOR ROAD CASULA	RES	51	39	42	46	46	51.3	52.7	51.9
24109 Casula		7 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	59.4	58.7	55.1
87384 Casula		7 STEAD PLACE CASULA	RES	51	39	42	46	46	50.7	50.5	50.9
76837 Casula		7 TENNANT STREET CASULA	RES	51	39	42	46	46	51.5	52	49.4
17840 Casula		7 TOM WAY CASULA	RES	51	39	42	46	46	53.2	54.3	54.4
39186 Casula		7 TUSCAN PLACE CASULA	RES	51	39	42	46	46	60.6	60.3	56.7
69968 Casula		7 WARATAH AVENUE CASULA	RES	51	39	42	46	46	55.8	55	52.9
30314 Casula		7 WESTCHESTER AVENUE CASULA	RES	51	39	42	46	46	61.8	57.5	54.1
28229 Casula		70 ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.6	50.1	50.8
71973 Casula		70 ASHCROFT AVENUE CASULA	RES	51	39	42	46	46	59.6	60.5	58.7
63850 Casula		70 KENDALL DRIVE CASULA	RES	51	39	42	46	46	49.8	50.7	50.9
68674 Casula		70 MARSH PARADE CASULA	RES	51	39	42	46	46	54.1	55.9	54.5
13364 Casula		70 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	61.9	54.2	45.5
39910 Casula		71 KENDALL DRIVE CASULA	RES	51	39	42	46	46	40.9	43.8	45
56311 Casula		71 LEACOCKS LANE CASULA	RES	51	39	42	46	46	55.1	54.5	54.7
77497 Casula		71 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	61.9	60.4	56.8
35945 Casula		72 ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.6	50.2	50.2
76143 Casula		72 MARSH PARADE CASULA	RES	51	39	42	46	46	56.8	51.3	41.8
47092 Casula		72 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	63.9	62.8	57.5
67011 Casula		73 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.3	52.2	51.1
93243 Casula		73 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	61.4	60.7	58.7
72332 Casula		73A LEACOCKS LANE CASULA	RES	51	39	42	46	46	52.8	54.5	54.7
90567 Casula		73B LEACOCKS LANE CASULA	RES	51	39	42	46	46	54.1	56.5	56.8
11567 Casula		74 ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.5	50	50.8
85849 Casula		74 KENDALL DRIVE CASULA	RES	51	39	42	46	46	49.7	50.6	50.8
87564 Casula		74 MARSH PARADE CASULA	RES	51	39	42	46	46	54	52.8	40.4
98847 Casula		74 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	63.9	63	59.6
55618 Casula		75 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.6	52.4	53.1
77922 Casula		75 LEACOCKS LANE CASULA	RES	51	39	42	46	46	53.3	55.3	55.4
86355 Casula		75 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	61.3	60.7	55.6
81977 Casula		76 ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.5	50	50.7
89351 Casula		76 MARSH PARADE CASULA	RES	51	39	42	46	46	57.4	57.7	55.5
16154 Casula		76 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	62.3	59.2	53
77051 Casula		77 KENDALL DRIVE CASULA	RES	51	39	42	46	46	49.5	49.9	43.4
70894 Casula		77 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	62.8	61.2	56.7
39668 Casula		78 KENDALL DRIVE CASULA	RES	51	39	42	46	46	49.6	50.5	50.7
88428 Casula		78 MARSH PARADE CASULA	RES	51	39	42	46	46	55.4	55.5	55.9
28946 Casula		79 KENDALL DRIVE CASULA	RES	51	39	42	46	46	50.9	51.2	44.2
52968 Casula		79 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	60.5	59.8	55.8
69052 Casula		79-83 LEACOCKS LANE CASULA	RES	51	39	42	46	46	54.1	55.4	54.6
77276 Casula		7A MARSH PARADE CASULA	RES	51	39	42	46	46	59.5	60.2	56.4
30399 Casula		7B KENDALL DRIVE CASULA	RES	51	39	42	46	46	52.3	53.2	53
65890 Casula		7B SIDNEY PLACE CASULA	RES	51	39	42	46	46	49.9	51.6	52.5
101288 Casula		8 ASHCROFT AVENUE CASULA	RES	51	39	42	46	46	57.4	57.6	54.2
73910 Casula		8 ATLANTA PLACE CASULA	RES	51	39	42	46	46	59.1	55.8	46.6
62739 Casula		8 AUGUSTA STREET CASULA	RES	51	39	42	46	46	59.2	55.5	54
85797 Casula		8 BLACKWOOD AVENUE CASULA	RES	51	39	42	46	46	57.8	57.6	48
55281 Casula		8 BUCKLAND ROAD CASULA	RES	51	39	42	46	46	61	60.6	56.3
64515 Casula		8 CASULA ROAD CASULA	RES	51	39	42	46	46	56	57.7	57.6
60128 Casula		8 CLUNE CLOSE CASULA	RES	51	39	42	46	46	47.6	49.3	49.5
70239 Casula		8 COLONIAL PLACE CASULA	RES	51	39	42	46	46	62.2	52.4	46.9
38362 Casula		8 CUSACK AVENUE CASULA	RES	51	39	42	46	46	51.7	53.2	53.7
77982 Casula		8 DE MEYRICK AVENUE CASULA	RES	51	39	42	46	46	56.7	56.9	55.2
84085 Casula		8 DUNMORE CRESCENT CASULA	RES	51	39	42	46	46	59	55.8	54.5
35150 Casula		8 DUNROSSIL AVENUE CASULA	RES	51	39	42	46	46	56.7	54.2	52.1
59549 Casula		8 DURACK PLACE CASULA	RES	51	39	42	46	46	53	53.9	53.9
57258 Casula		8 GIBB AVENUE CASULA	RES	51	39	42	46	46	56.2	54.6	51.1
71567 Casula		8 GLORY ROAD GLENFIELD	RES	51	39	42	46	46	47.5	50.4	54.6
54062 Casula		8 GROVE STREET CASULA	RES	51	39	42	46	46	56	52.4	49.6
18609 Casula		8 HARPUR PLACE CASULA	RES	51	39	42	46	46	48	49.5	50.5
69540 Casula		8 HEYSEN PLACE CASULA	RES	51	39	42	46	46	52	52.3	45.2
10167 Casula		8 HILTON CRESCENT CASULA	RES	51	39	42	46	46	51.6	52.3	52.1
95363 Casula		8 HITTER AVENUE CASULA	RES	51	39	42	46	46	58	56.1	52.2
67613 Casula		8 KELLER PLACE CASULA	RES	51	39	42	46	46	57.5	53.7	47.2
52580 Casula		8 KITSON WAY CASULA	RES	51	39	42	46	46	49.1	49.1	49.3
88359 Casula		8 LAKEWOOD CRESCENT CASULA	RES	51	39	42	46	46	59.3	53.5	50.3
24500 Casula		8 LANG ROAD CASULA	RES	51	39	42	46	46	56	55.2	54.2
89207 Casula		8 LINDSAY STREET CASULA	RES	51	39	42	46	46	49.7	50.5	51
94131 Casula		8 MACKELLAR STREET CASULA	RES	51	39	42	46	46	52	52.7	52.8
35803 Casula		8 MARSH PARADE CASULA	RES	51	39	42	46	46	60.2	60.4	57.7
28469 Casula		8 MCCUBBIN PLACE CASULA	RES	51	39	42	46	46	49.9	48.1	46.7
10880 Casula		8 MCKELL AVENUE CASULA	RES	51	39	42	46	46	57.2	56.8	54.5
87947 Casula		8 MELBA PLACE CASULA	RES	51	39	42	46	46	51.8	52.9	53
45365 Casula		8 NILAND WAY CASULA	RES	51	39	42	46	46	51	52.4	52.7
98379 Casula		8 PENSACOLA PLACE CASULA	RES	51	39	42	46	46	58.7	57.8	55

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML		exceeds OOHW 3 NML					
75773 Casula		8 PHOENIX CRESCENT CASULA	RES	51	39	42	46	46	58.3	57.2	53.6
12665 Casula		8 REGALIA CRESCENT GLENFIELD	RES	51	39	42	46	46	48.3	49.2	50.1
66192 Casula		8 RESERVE ROAD CASULA	RES	51	39	42	46	46	53.1	52.7	51.3
12164 Casula		8 ROBERTS ROAD CASULA	RES	51	39	42	46	46	51	45.2	48.5
19989 Casula		8 RUDD CLOSE CASULA	RES	51	39	42	46	46	52.3	51.8	52.3
77685 Casula		8 RUSHTON PLACE CASULA	RES	51	39	42	46	46	58.5	59.1	58.4
50596 Casula		8 SEGEFIELD PLACE CASULA	RES	51	39	42	46	46	60.5	51.1	46.1
77968 Casula		8 SLESSOR ROAD CASULA	RES	51	39	42	46	46	51.6	53.5	54.7
97832 Casula		8 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	57.2	44.7	42
50026 Casula		8 STEAD PLACE CASULA	RES	51	39	42	46	46	50.5	51.5	51.8
18752 Casula		8 TOM WAY CASULA	RES	51	39	42	46	46	55	55.7	54.6
78350 Casula		8 TUSCAN PLACE CASULA	RES	51	39	42	46	46	60.4	58.6	57.5
14245 Casula		8 WARATAH AVENUE CASULA	RES	51	39	42	46	46	55.8	54.6	51.5
68768 Casula		8 WESTCHESTER AVENUE CASULA	RES	51	39	42	46	46	61.1	55.2	44.7
22941 Casula		8 WHITE WAY CASULA	RES	51	39	42	46	46	51.5	51.6	52.1
12037 Casula		80 ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.1	42.1	43
25298 Casula		80 KENDALL DRIVE CASULA	RES	51	39	42	46	46	49.5	50.4	50.6
4167 Casula		80 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	63.9	54.7	48
12824 Casula		81 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.1	51.7	51.2
37246 Casula		81 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	59.9	60.3	55.5
59530 Casula		82 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.9	52.9	53
45098 Casula		82 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	63.6	59.1	49.9
33722 Casula		82A ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.5	50.2	50.6
40295 Casula		83 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51	52.5	53
101600 Casula		83 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	62.2	57.1	46.3
17384 Casula		84 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	62.1	60	51.6
89974 Casula		84A ALCOCK AVENUE CASULA	RES	51	39	42	46	46	48.9	50.3	53.1
57348 Casula		84A KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.8	52.9	53.1
92993 Casula		84B ALCOCK AVENUE CASULA	RES	51	39	42	46	46	49.2	51.2	51.4
78693 Casula		84B KENDALL DRIVE CASULA	RES	51	39	42	46	46	50	52.7	52.8
50519 Casula		85 KENDALL DRIVE CASULA	RES	51	39	42	46	46	50.7	51.1	50.9
66235 Casula		85 LEACOCKS LANE CASULA	RES	51	39	42	46	46	52.4	54.1	54.5
64587 Casula		85 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	59.7	59.4	55.6
82340 Casula		86 KENDALL DRIVE CASULA	RES	51	39	42	46	46	46.8	45.2	45.9
64769 Casula		87 KENDALL DRIVE CASULA	RES	51	39	42	46	46	50.8	52.3	51
38780 Casula		87 LEACOCKS LANE CASULA	RES	51	39	42	46	46	52.3	54	54.4
74383 Casula		87 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	59.6	57.4	53.9
92931 Casula		88 KENDALL DRIVE CASULA	RES	51	39	42	46	46	51.4	52.3	52.4
26397 Casula		88 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	60.2	59.2	54.9
16928 Casula		89 KENDALL DRIVE CASULA	RES	51	39	42	46	46	48.2	49.4	52.3
23971 Casula		89 LEACOCKS LANE CASULA	RES	51	39	42	46	46	52.2	53.9	54.3
94898 Casula		89 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	60.2	60.4	56.1
51377 Casula		8A CATO WAY CASULA	RES	51	39	42	46	46	48.3	48.8	44.7
96589 Casula		8A GILMORE ROAD CASULA	RES	51	39	42	46	46	48	50.5	52.3
11777 Casula		8A KYLIE WAY CASULA	RES	51	39	42	46	46	51	53.6	51
67848 Casula		8A RESERVE ROAD CASULA	RES	51	39	42	46	46	53.2	52.6	47.5
84864 Casula		8A SIDNEY PLACE CASULA	RES	51	39	42	46	46	48.4	48.9	49.9
48078 Casula		8B GILMORE ROAD CASULA	RES	51	39	42	46	46	45.9	44.4	49.6
48801 Casula		8B HANS PLACE CASULA	RES	51	39	42	46	46	52.4	53.6	53.6
35252 Casula		8B KYLIE WAY CASULA	RES	51	39	42	46	46	51	51.9	47.6
28141 Casula		9 ALBION CRESCENT GLENFIELD	RES	51	39	42	46	46	48.7	49.2	50.6
57353 Casula		9 ASHCROFT AVENUE CASULA	RES	51	39	42	46	46	58.2	56.9	46.4
43982 Casula		9 ASTLEY WAY CASULA	RES	51	39	42	46	46	45.5	47.3	50.5
54577 Casula		9 AUGUSTA STREET CASULA	RES	51	39	42	46	46	58.1	58.2	57.2
74689 Casula		9 BLACKWOOD AVENUE CASULA	RES	51	39	42	46	46	56.4	56.9	55.6
35311 Casula		9 BOLDREWOOD AVENUE CASULA	RES	51	39	42	46	46	51.1	53.5	53.7
77237 Casula		9 BUCKLAND ROAD CASULA	RES	51	39	42	46	46	63.4	61.3	57.5
90884 Casula		9 CANBERRA AVENUE CASULA	RES	51	39	42	46	46	58	58.5	45.3
65007 Casula		9 CASULA ROAD CASULA	RES	51	39	42	46	46	59.9	60.8	58.6
74028 Casula		9 COLONIAL PLACE CASULA	RES	51	39	42	46	46	60.9	59.3	56.4
47735 Casula		9 CUSACK AVENUE CASULA	RES	51	39	42	46	46	50.2	53.3	53.4
66266 Casula		9 DE MEYRICK AVENUE CASULA	RES	51	39	42	46	46	57.5	57.7	55.7
34896 Casula		9 DRYSDALE PLACE CASULA	RES	51	39	42	46	46	50.2	51.5	51.8
16531 Casula		9 DUNMORE CRESCENT CASULA	RES	51	39	42	46	46	58.8	59.9	58.5
69276 Casula		9 DUNROSSIL AVENUE CASULA	RES	51	39	42	46	46	54.3	54.1	51.8
83491 Casula		9 GIBB AVENUE CASULA	RES	51	39	42	46	46	53.5	53	50.7
102072 Casula		9 GIBSON AVENUE CASULA	RES	51	39	42	46	46	54.8	53.9	48.8
8567 Casula		9 GILMORE ROAD CASULA	RES	51	39	42	46	46	48.8	50.4	51.2
17478 Casula		9 GLORY ROAD GLENFIELD	RES	51	39	42	46	46	50.3	52.1	53.1
23455 Casula		9 GROVE STREET CASULA	RES	51	39	42	46	46	54.5	53.6	51.2
45508 Casula		9 HANS PLACE CASULA	RES	51	39	42	46	46	52.8	54.3	55.1
62297 Casula		9 HARPUR PLACE CASULA	RES	51	39	42	46	46	47.3	50.2	50.6
35124 Casula		9 HEYSEN PLACE CASULA	RES	51	39	42	46	46	53.2	53.6	52.3
88296 Casula		9 HILTON CRESCENT CASULA	RES	51	39	42	46	46	51.8	53.5	53.1
95500 Casula		9 HITTER AVENUE CASULA	RES	51	39	42	46	46	56.5	55.6	53.9
16487 Casula		9 HOLLAND CRESCENT CASULA	RES	51	39	42	46	46	57.3	56.8	52.9
9657 Casula		9 KELLER PLACE CASULA	RES	51	39	42	46	46	59.4	55.3	51.1
27962 Casula		9 KENDALL DRIVE CASULA	RES	51	39	42	46	46	54.3	54.7	53
9744 Casula		9 KITSON WAY CASULA	RES	51	39	42	46	46	49.1	49.4	50
83166 Casula		9 LANG ROAD CASULA	RES	51	39	42	46	46	57.9	45.8	43.4
37642 Casula		9 LEACOCKS LANE CASULA	RES	51	39	42	46	46	54.2	54.8	54.7
66965 Casula		9 MARSH PARADE CASULA	RES	51	39	42	46	46	57.9	57.9	57.3
67964 Casula		9 MCCUBBIN PLACE CASULA	RES	51	39	42	46	46	50.2	47.8	48.9
99188 Casula		9 MCKELL AVENUE CASULA	RES	51	39	42	46	46	55	54.6	52.5
55412 Casula		9 MELBA PLACE CASULA	RES	51	39	42	46	46	52.5	53.8	53.9
93195 Casula		9 MORLEY PLACE GLENFIELD	RES	51	39	42	46	46	50.5	50	51.7
55001 Casula		9 OLD KURRAJONG ROAD CASULA	RES	51	39	42	46	46	55.4	56.7	53.8
16363 Casula		9 PHOENIX CRESCENT CASULA	RES	51	39	42	46	46	59.4	57.2	53.6
70570 Casula		9 SEGEFIELD PLACE CASULA	RES	51	39	42	46	46	59.7	57.1	54.6
17146 Casula		9 SHUTE WAY CASULA	RES	51	39	42	46	46	48.9	49.7	50.5
42241 Casula		9 SLESSOR ROAD CASULA	RES	51	39	42	46	46	51.6	53.6	52.5
27274 Casula		9 ST ANDREWS BOULEVARD CASULA	RES	51	39	42	46	46	58.9	41.4	38.3
40269 Casula		9 STEAD PLACE CASULA	RES	51	39	42	46	46	49.2	50.7	51.6
15062 Casula		9 TENNANT STREET CASULA	RES	51	39	42	46	46	50.7	51.3	49.9
18075 Casula		9 TUSCAN PLACE CASULA	RES	51	39	42	46	46	62.5	61.9	51.9
72991 Casula		9 WARATAH AVENUE CASULA	RES	51	39	42	46	46	54	53.8	51.1
72443 Casula		9 WESTCHESTER AVENUE CASULA	RES	51	39	42	46	46	60.9	58	54.3
30319 Casula		90 KENDALL DRIVE CASULA	RES	51	39	42	46	46	50.6	50.6	50.4
53374 Casula		90 LEACOCKS LANE CASULA	RES	51	39	42	46	46	55.1	54.5	50.1

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
67532	Glenfield	2 CAMBRIDGE AVENUE GLENFIELD	RES	54	42	49	49	49	50	52.8	55.6
77345	Glenfield	2 MANAM PLACE GLENFIELD	RES	54	42	42	49	49	50.1	52.6	55.2
31402	Glenfield	2 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	49.5	51.9	53.2
45356	Glenfield	20 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.7	51.3	53.4
25652	Glenfield	21 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48.7	50.6	53.6
19520	Glenfield	21 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.4	50.4	53
29579	Glenfield	22 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.4	52.9	55.2
60090	Glenfield	23 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	50.6	52.1	53.7
23176	Glenfield	23 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47.8	50.3	52.7
32524	Glenfield	24 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	51	54.1	57.2
83375	Glenfield	24 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.9	51.1	53.9
47520	Glenfield	25 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.4	52.9	55.2
43183	Glenfield	27 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.4	52.7	54.1
73601	Glenfield	28 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.1	50.7	53
72372	Glenfield	29 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	49.5	52.6	55.3
31723	Glenfield	3 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48.3	50.5	53.4
96073	Glenfield	3 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	49.6	51.6	53.8
79797	Glenfield	30 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.1	50.6	53.1
61767	Glenfield	31 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.3	52.9	55.5
10712	Glenfield	32 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.1	50.7	54.2
86419	Glenfield	33 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	49.3	50.3	50.9
87368	Glenfield	34 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.6	53.3	55.8
25285	Glenfield	35 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47.5	49.9	52.6
30340	Glenfield	36 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	48.5	50.8	52.9
39743	Glenfield	36 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	49.1	51.9	54.7
50115	Glenfield	38 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	50.3	51.9	52.8
14413	Glenfield	38 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	51.5	54.1	56.7
39773	Glenfield	4 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	49.5	50.3	52
74123	Glenfield	4 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	49	51.2	52.6
77667	Glenfield	4 MINJ PLACE GLENFIELD	RES	54	42	49	49	49	48.5	50.8	54.1
49281	Glenfield	4 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47	47.9	45.2
32566	Glenfield	40 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	48.8	51.3	52.8
101483	Glenfield	40 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.9	54	57
33224	Glenfield	42 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	47.9	50.5	51.7
34809	Glenfield	42 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.9	51.6	54.3
25398	Glenfield	44 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	48	50.6	51.8
50398	Glenfield	44 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.8	51.5	54.3
22186	Glenfield	46 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	51.3	53.4	54.2
73000	Glenfield	48 FERGUSSON STREET GLENFIELD	RES	54	42	49	49	49	47.4	49.6	52
21196	Glenfield	48 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	50.7	53.6	56.6
13746	Glenfield	5 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48.3	50.6	53.9
53910	Glenfield	5 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	47.8	50.3	53.5
14385	Glenfield	5 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47.9	50.3	52.5
25860	Glenfield	50 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	46.9	49.1	51.7
12456	Glenfield	52 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	49.7	52.9	56.5
56437	Glenfield	54 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	46.6	48.8	54.4
98718	Glenfield	56 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.4	51.1	53.9
96922	Glenfield	6 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48.2	50.7	51.3
27710	Glenfield	6 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	50.1	52.6	55.5
31311	Glenfield	6 MINJ PLACE GLENFIELD	RES	54	42	49	49	49	48.9	50.9	53.4
75213	Glenfield	6 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	51.3	52.8	53.5
28765	Glenfield	7 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	50.2	52.7	54.1
40342	Glenfield	7 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	50.2	52.6	54.5
31760	Glenfield	7 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47.6	50	52.2
82671	Glenfield	8 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48.3	50.8	53.8
24342	Glenfield	8 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	47.7	50	52.7
77957	Glenfield	8 MINJ PLACE GLENFIELD	RES	54	42	49	49	49	49.9	52.9	54.7
28859	Glenfield	8 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	47.7	49.7	51.3
86979	Glenfield	9 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	48	50.7	51.6
78087	Glenfield	9 MANAM PLACE GLENFIELD	RES	54	42	49	49	49	48.5	50.5	52.9
78958	Glenfield	9 TROBRIAND CRESCENT GLENFIELD	RES	54	42	49	49	49	48.2	49.9	52.2
2283	Glenfield	UNIT 4/ 25 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	51.2	53.5	55.9
5488	Glenfield	UNIT 8/ 25 GOODENOUGH STREET GLENFIELD	RES	54	42	49	49	49	51.2	52.9	55.3
2007	Moorebank	1 BAPAUME ROAD MOOREBANK	IND	75	75	75	75	75	69.3	66.3	61.3
6116	Moorebank	11 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	70.3	63.9	58.5
1232	Moorebank	11A GREENHILLS AVENUE MOOREBANK	IND	75	75	75	75	75	63.3	58.3	54.2
3116	Moorebank	12 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	72.4	64.4	59.4
3389	Moorebank	13 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	71.2	65.3	60.1
4444	Moorebank	14 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	69.1	63.5	58.9
653	Moorebank	16 CHURCH ROAD MOOREBANK	IND	75	75	75	75	75	62.9	58.9	55.1
6631	Moorebank	16 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	68.5	62.8	57.7
2120	Moorebank	17 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	70.8	64.9	59.4
966	Moorebank	17-23 GREENHILLS AVENUE MOOREBANK	IND	75	75	75	75	75	64.2	60.1	56.3
4873	Moorebank	18 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	67.7	61.5	56.8
1742	Moorebank	19 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	67.6	61.8	57
4730	Moorebank	20 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	67.2	61.2	56.3
2182	Moorebank	22 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	62.4	59.2	55.5
2355	Moorebank	24 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	64.5	60.4	56.1
641	Moorebank	25-29 GREENHILLS AVENUE MOOREBANK	IND	75	75	75	75	75	64.7	58.3	54.6
1830	Moorebank	27 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	62	58.3	54
1139	Moorebank	2A HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	62.6	57.9	53.6
328	Moorebank	3 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	60.4	57.4	53.9
5786	Moorebank	3 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	73.2	65.5	59.6
794	Moorebank	31 HEATHCOTE ROAD MOOREBANK	IND	75	75	75	75	75	64.6	60.2	56.3
630	Moorebank	33 HEATHCOTE ROAD MOOREBANK	IND	75	75	75	75	75	59.5	56.2	52
5646	Moorebank	35A HEATHCOTE ROAD MOOREBANK	IND	75	75	75	75	75	60	56.4	52.8
6016	Moorebank	5 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	73.8	66.1	59.9
1447	Moorebank	6 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	77	68.7	62.5
765	Moorebank	7 CENTENARY AVENUE MOOREBANK	IND	75	75	75	75	75	65.1	60.8	56.8
5019	Moorebank	7 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	71.5	64.4	58.7
2576	Moorebank	8-10 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	72	64.4	58.7
1500	Moorebank	9 MOOREBANK AVENUE MOOREBANK	IND	75	75	75	75	75	63.1	59.7	55.8
2088	Moorebank	UNIT 1/ 1 YULONG CLOSE MOOREBANK	IND	75	75	75	75	75	74.6	66.1	59.2
942	Moorebank	UNIT 2/ 14 CHURCH ROAD MOOREBANK	IND	75	75	75	75	75	62.3	60.7	55.4
1679	Moorebank	UNIT 2/ 15-25 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	63.9	60.7	56
2509	Moorebank	UNIT 3/ 9 GREENHILLS AVENUE MOOREBANK	IND	75	75	75	75	75	61.7	57.9	54
310	Moorebank	UNIT 5/ 1 HELLES AVENUE MOOREBANK	IND	75	75	75	75	75	60.2	57	53.6
93269	Wattle Grove	1 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.3	55.5	53.5
28777	Wattle Grove	1 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	58.8	56.8

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
43798 Wattle Grove	11 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.7	48.4
45880 Wattle Grove	11 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	59.5	52.7
30072 Wattle Grove	11 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.1	54.4	52.8
53341 Wattle Grove	11 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	65.5	65.5	61.7
37904 Wattle Grove	11 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	66	60.1
46304 Wattle Grove	11 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	56	57.2	54.6
44941 Wattle Grove	11 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	64.9	62.4	58
44523 Wattle Grove	11 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	60.7	60
37579 Wattle Grove	11 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	57.4	58.1
40252 Wattle Grove	11 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	61	63.7
26603 Wattle Grove	11 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	66.7	66.8
39107 Wattle Grove	11 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	58.3	58.9
63223 Wattle Grove	11 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	59.9	56.5
16890 Wattle Grove	11 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	59.5	57.9
88104 Wattle Grove	11 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	56.1	58.7	59.1
19415 Wattle Grove	11 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	56.1	53.7
40974 Wattle Grove	11 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.2	54.4
19420 Wattle Grove	11 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	66	71.4
34253 Wattle Grove	11 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.1	65.9	66.1
9312 Wattle Grove	11 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.3	56.8	55.6
23516 Wattle Grove	11 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	56	55.8	55.3
73334 Wattle Grove	11 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.5	58	56.3
21667 Wattle Grove	11 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	56.8	54.9
65330 Wattle Grove	11 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64.9	61	59.6
8880 Wattle Grove	11 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	55	56.1	56.6
86474 Wattle Grove	11 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	66.5	60.4
54681 Wattle Grove	11 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	58.2	58.6
29962 Wattle Grove	11 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	58.5	57
9249 Wattle Grove	11 FINSCHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	52.8	53.8	54.4
18618 Wattle Grove	11 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	58.1	57.9
19193 Wattle Grove	11 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	57.3	56.9	55.3
12270 Wattle Grove	11 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	62.6	58.8
39517 Wattle Grove	11 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	54.4	57.7
47784 Wattle Grove	11 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	61.1	58.9
42920 Wattle Grove	11 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	66.3	62.1
17751 Wattle Grove	11 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	58.3	59.3
75370 Wattle Grove	11 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.3	55.3	53.5
57810 Wattle Grove	11 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	59.6	60.3
97327 Wattle Grove	11 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	57.9	57.8
46754 Wattle Grove	11 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59	63.4	66.3
18899 Wattle Grove	11 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	56.7	58.4
24527 Wattle Grove	11 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	52.8	53.3	53.8
12386 Wattle Grove	11 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	61.5	61.3
91106 Wattle Grove	11 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	53.7	53.7
54451 Wattle Grove	11 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	56	56.5	58.4
78230 Wattle Grove	11 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	55.6	55	53.7
21203 Wattle Grove	11 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	56.2	55.2
101264 Wattle Grove	11 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	64.1	61.7
78219 Wattle Grove	11 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	65.5	68.3	64.2
97484 Wattle Grove	11 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	66.7	65	60.9
67100 Wattle Grove	11 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	63.6	67
66418 Wattle Grove	11 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	55.9	57.7	57.9
85777 Wattle Grove	11 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	67.8	60.2	52.6
86991 Wattle Grove	11 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	60.1	65.8
42947 Wattle Grove	11 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	56.6	57.2
75588 Wattle Grove	11 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	57	56.9	56.4
60820 Wattle Grove	11 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	58.9	58.4
87545 Wattle Grove	11 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.7	55	56.4
70852 Wattle Grove	11 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	61	59.5
45945 Wattle Grove	11 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	59.8	55.7
85917 Wattle Grove	11 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	60	57.5
4164 Wattle Grove	11 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	66	63.6	57.7
49354 Wattle Grove	11 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	61.7	63
74380 Wattle Grove	11 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.3	53.3	52.9
14676 Wattle Grove	11 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.9	54.7	53.1
65574 Wattle Grove	11 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	60.3	63.4
26169 Wattle Grove	11 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	60.8	60.4
54799 Wattle Grove	11 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	64	66.2
28214 Wattle Grove	11 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.5	60.5
40114 Wattle Grove	11 TIVOLI COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	58.3	58.5
17270 Wattle Grove	11 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	61.8	61.8
63436 Wattle Grove	11 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	60.4	58.2
50805 Wattle Grove	11 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	62.1	62.3
4970 Wattle Grove	11 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	57.2	55.4
50667 Wattle Grove	11 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	60.6	65.5
80376 Wattle Grove	11 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	64.5	62.5	59.4
53314 Wattle Grove	11 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	61.7	65.7
25420 Wattle Grove	11 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	55.7	55	54.1
14163 Wattle Grove	11 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	56.4	58.1
37389 Wattle Grove	11 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	57.7	59.3
37161 Wattle Grove	11 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	64.8	62.6	54.8
93710 Wattle Grove	11 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	63.8	67.4
41552 Wattle Grove	11 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	63.4	69.3
20225 Wattle Grove	110 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.3	58.6	59.4
46671 Wattle Grove	110 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.7	59.3	59.7
24067 Wattle Grove	111 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	51.9	52	53.5
48010 Wattle Grove	112 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.2	58.7	59.5
33855 Wattle Grove	112 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.8	59.5	59.8
99771 Wattle Grove	113 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	53.4	55.4	55.6
28891 Wattle Grove	114 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.2	58.7	60
94256 Wattle Grove	114 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56	59.6	60.2
93309 Wattle Grove	115 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.9	56.2	53.8
48412 Wattle Grove	116 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.1	58.6	60
10364 Wattle Grove	116 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.5	56.8	61
54022 Wattle Grove	117 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.3	55.4	55.8
22623 Wattle Grove	118 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56	58.5	59.3
66462 Wattle Grove	118 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	59.3	62.3	62.6
63365 Wattle Grove	119 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.7	55.9	56.1
89714 Wattle Grove	11A SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	52	53.5	53.4

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
27124 Wattle Grove	12 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	61	58.4	56.4
89690 Wattle Grove	12 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	51.6	47.9
86839 Wattle Grove	12 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.7	53.2
43641 Wattle Grove	12 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	58.3	58
72912 Wattle Grove	12 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	57.2	55.9
40711 Wattle Grove	12 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	58	58	46.5
37243 Wattle Grove	12 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	57.3	56.4	57.4
83246 Wattle Grove	12 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	64.1	60.7
99081 Wattle Grove	12 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.5	55.6	50.3
49646 Wattle Grove	12 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	54.1	54.8
36664 Wattle Grove	12 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	52.9	57.7
25797 Wattle Grove	12 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	65.6	60.5
92048 Wattle Grove	12 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	58	57
22239 Wattle Grove	12 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	59.9	59.7
93522 Wattle Grove	12 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.7	56.6	55.3
46235 Wattle Grove	12 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67.5	62.6	57.4
19014 Wattle Grove	12 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	65	66.3	51.7
8795 Wattle Grove	12 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	60	58.9
32371 Wattle Grove	12 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.2	56.1	56.5
78482 Wattle Grove	12 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	60.3	65
41013 Wattle Grove	12 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	64.8	66.4
47197 Wattle Grove	12 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.8	60.5	57.2
32033 Wattle Grove	12 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	61.6	57.8
33289 Wattle Grove	12 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	57.2	58.1	59.7
7825 Wattle Grove	12 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	59.7	56.4
13884 Wattle Grove	12 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	59.4	58
48179 Wattle Grove	12 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	59.1	55.8
85165 Wattle Grove	12 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	66.8	71.9
53394 Wattle Grove	12 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57	58.1	58.2
95317 Wattle Grove	12 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	56.2	56	55.5
102936 Wattle Grove	12 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.5	55.2	48.8
70984 Wattle Grove	12 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	58.3	56.6
49897 Wattle Grove	12 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	57.1	52.9
38618 Wattle Grove	12 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	63.9	60.9
19141 Wattle Grove	12 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64	60.4	59.4
62401 Wattle Grove	12 ESHER MEWS WATTLE GROVE	RES	52	42	42	47	47	58.5	61.9	59.8
31891 Wattle Grove	12 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	55.9	57.8	58.3
95717 Wattle Grove	12 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	65.6	62.2
18492 Wattle Grove	12 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.7	59.8
12430 Wattle Grove	12 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	59.8	52.7
36812 Wattle Grove	12 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	56.3	57.9
108307 Wattle Grove	12 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	56.8	56.6	55.9
48956 Wattle Grove	12 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	61.4	62.4	62.1
23380 Wattle Grove	12 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	61.7	61.1
55304 Wattle Grove	12 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	58.1	58
30901 Wattle Grove	12 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.1	65.5	51.8
26734 Wattle Grove	12 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.1	58.4
40785 Wattle Grove	12 HICKORY MEWS WATTLE GROVE	RES	52	42	42	47	47	56.5	56.5	56.3
107506 Wattle Grove	12 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.2	56.2	53.1
66637 Wattle Grove	12 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	59	59.6
18138 Wattle Grove	12 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	60.1	48.1
16391 Wattle Grove	12 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	60	63.1	65.1
53874 Wattle Grove	12 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	56.6	58.6
58288 Wattle Grove	12 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	52.4	53.8	54.2
93259 Wattle Grove	12 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	60.2	59.7
48002 Wattle Grove	12 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	48.3	49.1	50.4
98215 Wattle Grove	12 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	57.6	60.9
97840 Wattle Grove	12 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	56.5	61.1	62.5
50923 Wattle Grove	12 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.3	55.8	54.3
31057 Wattle Grove	12 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	62.1	61.7
42507 Wattle Grove	12 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	66.8	69.2
44826 Wattle Grove	12 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	59	61.9
88534 Wattle Grove	12 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	66.6	64.4	60.8
48900 Wattle Grove	12 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	63.5	67.4
35943 Wattle Grove	12 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53.7	53.8	54
8386 Wattle Grove	12 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	59.7	53.7
86884 Wattle Grove	12 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	53.4	53.5	52.9
53941 Wattle Grove	12 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	61.6	60.9
23333 Wattle Grove	12 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.5	56.3	56.1
99909 Wattle Grove	12 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	57.9	58.3	57.1
52964 Wattle Grove	12 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56	56.6	57.3
78398 Wattle Grove	12 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.8	55.3	54.9
35391 Wattle Grove	12 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.2	60.1
46452 Wattle Grove	12 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	58.8	58.6
29866 Wattle Grove	12 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	61.1	62.2
69389 Wattle Grove	12 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.4	56	55.3
31044 Wattle Grove	12 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	59	61.1	64.6
8996 Wattle Grove	12 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	57	59.3
32415 Wattle Grove	12 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	65.6	66.3
63068 Wattle Grove	12 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	56	59	58.8
42873 Wattle Grove	12 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	60.5	59.8
17701 Wattle Grove	12 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	58.8	56.5
80344 Wattle Grove	12 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	59.4	65.2
78337 Wattle Grove	12 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	57.1	55.7
66487 Wattle Grove	12 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	60	62.9
44345 Wattle Grove	12 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	62.5	60.7
30993 Wattle Grove	12 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	61	65.9
60796 Wattle Grove	12 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	59.8	64.7	69.1
9394 Wattle Grove	12 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	54.6	56.1	57.9
39597 Wattle Grove	12 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	57.7	58.2
83680 Wattle Grove	12 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	57.1	57.1
87501 Wattle Grove	12 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	64.7	63.2
23588 Wattle Grove	12 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	61.3	57.4
89920 Wattle Grove	12 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	64.4	71.3
66683 Wattle Grove	120 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	57.6	57.7	54
41326 Wattle Grove	120 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.8	59.2	59.2
49621 Wattle Grove	121 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.8	55.8	51.3
30012 Wattle Grove	122 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	57	58.4	58.8
32807 Wattle Grove	124 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.5	57.7	58.2

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
		Key		Exceeds Standard NML			exceeds OOHW 3 NML			
64310 Wattle Grove	15 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	68.5	68.5	62.1
32883 Wattle Grove	15 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	65.4	63.9	57.8
94362 Wattle Grove	15 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	60	59.6	58.9
68384 Wattle Grove	15 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	65.4	61.6	59
33215 Wattle Grove	15 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.8	62.6
27804 Wattle Grove	15 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	67.1	64.1
26202 Wattle Grove	15 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	63	59.9	56.7
19121 Wattle Grove	15 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	58.9	59.2	58.4
86695 Wattle Grove	15 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	58.1	55.7	54.1
36937 Wattle Grove	15 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	67.8	70.1
10534 Wattle Grove	15 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.1	63.9	62.5
23873 Wattle Grove	15 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.8	57.8	57.9
105274 Wattle Grove	15 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.8	55.6	53.3
43315 Wattle Grove	15 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	56.9	52.5
47143 Wattle Grove	15 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	61.4	58.3
13594 Wattle Grove	15 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	64.8	66.5	61.9
53037 Wattle Grove	15 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	55.7	55.4	57.6
82831 Wattle Grove	15 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	61.7	50.3
79844 Wattle Grove	15 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	55.5	55.8	56.2
39460 Wattle Grove	15 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.1	61.4
21617 Wattle Grove	15 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	56.2	53.9	53.4
98256 Wattle Grove	15 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	64.7	64.6	62.9
24572 Wattle Grove	15 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	60.5	59.9
86930 Wattle Grove	15 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.3	66	59.8
45372 Wattle Grove	15 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.9	55.2	53.3
53014 Wattle Grove	15 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	59.3	53
101666 Wattle Grove	15 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	58.1	60.3
66262 Wattle Grove	15 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	63.6	65.8
8433 Wattle Grove	15 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	56.9	57.8
55678 Wattle Grove	15 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	52.2	53.1	54.5
73089 Wattle Grove	15 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	62.2	61.6
39222 Wattle Grove	15 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.4	53.6	50.8
19652 Wattle Grove	15 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	56.4	58.6
107359 Wattle Grove	15 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	52.4	49.8
32293 Wattle Grove	15 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.6	53.8	55.2
9059 Wattle Grove	15 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	62.1	54.3
10445 Wattle Grove	15 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	65.8	70.2	68.1
19804 Wattle Grove	15 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	65.7	70.5
34700 Wattle Grove	15 MADANG STREET HOLSWORTHY	RES	52	42	42	47	47	52.1	53.2	53.4
64776 Wattle Grove	15 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	54.3	56	54.5
40631 Wattle Grove	15 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	68	62.2	52.5
63429 Wattle Grove	15 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	56	59.6	62.8
38061 Wattle Grove	15 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	60.1	57.4
57251 Wattle Grove	15 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54.3	54.3	53.7
51196 Wattle Grove	15 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	58.8	59.6
94930 Wattle Grove	15 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.5	54.5	54
9820 Wattle Grove	15 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	57	60.1	59.3
59203 Wattle Grove	15 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	55.7	53.7
12684 Wattle Grove	15 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	60.3	64.8
53674 Wattle Grove	15 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.2	54.9	54.6
68392 Wattle Grove	15 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.8	53.3
56882 Wattle Grove	15 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	62.3	64.4
15505 Wattle Grove	15 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	62.6	65.6
59643 Wattle Grove	15 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	59.5	58
90827 Wattle Grove	15 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	64.5	64.1
22950 Wattle Grove	15 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	61.2	56.9
87666 Wattle Grove	15 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	61.9	65.3
44199 Wattle Grove	15 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	53.8	56.2	54.4
86461 Wattle Grove	15 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.4	59.7	65.6
28666 Wattle Grove	15 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	61.5	66.1
67131 Wattle Grove	15 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	60	64.8	66
93874 Wattle Grove	15 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	57.6	57.4	56.5
58371 Wattle Grove	15 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	56.4	57.3
16774 Wattle Grove	15 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	54.2	55.8	55.5
54264 Wattle Grove	15 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	65.1	63	60.5
86649 Wattle Grove	15 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	64.3	71.5
41932 Wattle Grove	15 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	63.7	72.6
34410 Wattle Grove	150 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.4	60.8	63.6
31827 Wattle Grove	151 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.1	54.2	53.5
50393 Wattle Grove	152 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.9	59.8	63.7
70552 Wattle Grove	153 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	58.1	59.2	59.5
35887 Wattle Grove	154 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	57.4	62	64.2
82185 Wattle Grove	155 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	57.8	59	62.4
9990 Wattle Grove	157 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	56.1	60.7	63.2
75280 Wattle Grove	159 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	55.9	60.1	63.7
38499 Wattle Grove	16 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	62	60.8	57.6
79239 Wattle Grove	16 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	57.6	54.9
101341 Wattle Grove	16 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.4	57.3	56.1
69002 Wattle Grove	16 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	53.7	51.4
35310 Wattle Grove	16 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	62	62	53.5
66977 Wattle Grove	16 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.5	54	53.1
89365 Wattle Grove	16 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	53	56	56
52755 Wattle Grove	16 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62	64.2	62
63195 Wattle Grove	16 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	58.1	48.2
37599 Wattle Grove	16 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.2	56.9	52.6
40324 Wattle Grove	16 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	66.5	62.3
81744 Wattle Grove	16 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	65.5	66	52.1
40210 Wattle Grove	16 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	60.3	59.6
8732 Wattle Grove	16 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	53	46.8	50.8
45013 Wattle Grove	16 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	58.8	62.4
32391 Wattle Grove	16 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.4	64.1	58.7
24320 Wattle Grove	16 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	65.1	60.9	57.8
99939 Wattle Grove	16 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	58.7	60.4	58.7
96386 Wattle Grove	16 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	57.3	54.3
75009 Wattle Grove	16 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	58.1	56
28459 Wattle Grove	16 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.1	67	72.6
32160 Wattle Grove	16 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.2	55.4	55.5
104274 Wattle Grove	16 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.6	54.6	51.8
20597 Wattle Grove	16 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	60.3	56.9

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
24304 Wattle Grove	19 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	55.2	54.5	53.2
41141 Wattle Grove	19 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	61	59
8555 Wattle Grove	19 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62	61.9	60.5
73577 Wattle Grove	19 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	58.7	57.5
48526 Wattle Grove	19 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	65.4	66.1	60.9
24101 Wattle Grove	19 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.2	55	53.8
39934 Wattle Grove	19 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	65	67.4	56.1
77444 Wattle Grove	19 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.7	55	52.7
13543 Wattle Grove	19 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	69	68.9	62.3
17858 Wattle Grove	19 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	67	67	56.9
41308 Wattle Grove	19 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	61	60.9
97800 Wattle Grove	19 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	67.7	63.1	58.3
50603 Wattle Grove	19 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.8	61.8
62715 Wattle Grove	19 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	65.6	64.1
9889 Wattle Grove	19 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	63.3	60.2	56.7
9975 Wattle Grove	19 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	58.1	50.7	43.4
60705 Wattle Grove	19 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	67	69.6
73843 Wattle Grove	19 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60	63.7	66.3
34822 Wattle Grove	19 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.2	55.9	55.9
79401 Wattle Grove	19 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.7	57.6	56.6
18210 Wattle Grove	19 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.4	56.3
27442 Wattle Grove	19 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.7	62.6	58.3
29139 Wattle Grove	19 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	69.8	60.5
18006 Wattle Grove	19 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	54.2	54.9	54.9
38085 Wattle Grove	19 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	60.2	49.1
92210 Wattle Grove	19 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	55.2	56.2	56.4
60236 Wattle Grove	19 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	58.6	61.8
20629 Wattle Grove	19 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	65.5	59.1
73040 Wattle Grove	19 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.4	54.5	54.3
31410 Wattle Grove	19 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	60.3	60.1
28225 Wattle Grove	19 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	55.7	56.6	58.2
87935 Wattle Grove	19 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	63.7	65.4
34340 Wattle Grove	19 KINHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	49.4	46.3	47.5
37623 Wattle Grove	19 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.2	56.3	57.2
97260 Wattle Grove	19 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	57	57.1
11561 Wattle Grove	19 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	61.6	60.1
62137 Wattle Grove	19 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	62.8	65.1
52283 Wattle Grove	19 MADANG STREET HOLSWORTHY	RES	52	42	42	47	47	54	54.3	54.4
96683 Wattle Grove	19 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	55.7	56.3	52.7
40464 Wattle Grove	19 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	68.1	65.9	61.4
8768 Wattle Grove	19 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	56.9	56.7	55.4
71016 Wattle Grove	19 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.1	59.7
12753 Wattle Grove	19 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.3	55.7	54.9
67124 Wattle Grove	19 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	58.7	60.4
68005 Wattle Grove	19 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.4	54.9	54.7
8888 Wattle Grove	19 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	61.3	68.1
36342 Wattle Grove	19 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	62.2	60.7
55442 Wattle Grove	19 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	59.2	59.9
10544 Wattle Grove	19 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	63.5	64.5	63
28280 Wattle Grove	19 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	56.7	53.5
85119 Wattle Grove	19 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	60.5	63
55599 Wattle Grove	19 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	57.4	55.5
36977 Wattle Grove	19 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57	60.7	65.9
69887 Wattle Grove	19 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	63.5	70
44861 Wattle Grove	19 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.6	61.7	66.3
2746 Wattle Grove	19 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	56.4	55.5	58.1
82720 Wattle Grove	19 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	56.8	60.6
58689 Wattle Grove	19 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	68	66.7	60.6
28210 Wattle Grove	19 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	65.7	72.3
22502 Wattle Grove	19 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	62.9	68.2
73237 Wattle Grove	1A BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56	46.1	42.8
60454 Wattle Grove	1A LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	55.9	54.1
21301 Wattle Grove	1A LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	59.6	55.7	54.4
79556 Wattle Grove	1A MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.3	54.4	54.2
75221 Wattle Grove	1B BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.7	54.9	52.9
38902 Wattle Grove	1B LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	59.1	55.9	53.5
98955 Wattle Grove	1B MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.1	56.3	52.5
104190 Wattle Grove	1C LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	58.8	54.2	49.3
41658 Wattle Grove	2 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	58	56
34751 Wattle Grove	2 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	55	45.6
105186 Wattle Grove	2 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	57.2	56.8
30629 Wattle Grove	2 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	51.6	48.7
27321 Wattle Grove	2 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	59.2	57.4	56
30808 Wattle Grove	2 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	66.5	64.5	53.6
61725 Wattle Grove	2 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	53.2	54.4	55.7
59797 Wattle Grove	2 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	55.5	47.5
55122 Wattle Grove	2 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	63.9	61.5
48517 Wattle Grove	2 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	58.7	50.5
14077 Wattle Grove	2 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	66	65.8	51
48467 Wattle Grove	2 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	65.9	54.2
79676 Wattle Grove	2 BRUNEI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.2	55.2	50.5
23715 Wattle Grove	2 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	60	59.2
32606 Wattle Grove	2 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	58.8	46.2
13388 Wattle Grove	2 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	60	57
63516 Wattle Grove	2 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.4	57	56.7
14110 Wattle Grove	2 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	59.1	58
24658 Wattle Grove	2 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	65	65.3
73353 Wattle Grove	2 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	57.7	51.6
56858 Wattle Grove	2 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	58.5	61.7	60.1
31651 Wattle Grove	2 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	56.8	55
35220 Wattle Grove	2 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	61.7	47.8
9921 Wattle Grove	2 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	61.4	57.2	56
31716 Wattle Grove	2 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.8	66	66.6
34361 Wattle Grove	2 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.2	59	59
49643 Wattle Grove	2 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	59	56.2
69903 Wattle Grove	2 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	58.5	46.5
24152 Wattle Grove	2 ELDERSLIE COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	65.5	65.6
51010 Wattle Grove	2 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	60.9	58.9
32016 Wattle Grove	2 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64	60.2	49.9

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
		Key		Exceeds Standard NML			exceeds OOHW 3 NML			
20571 Wattle Grove	22 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	66.2	66.6	58.6
65351 Wattle Grove	22 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	52.1	51.8	51.7
46646 Wattle Grove	22 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	55	57.9	58.7
36055 Wattle Grove	22 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	55.1	55.3	55.2
30792 Wattle Grove	22 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	62.3	61.7
31602 Wattle Grove	22 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.8	63.4	55.3
95859 Wattle Grove	22 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	54.5	57.3	59
84739 Wattle Grove	22 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	51.1	54.6	54.1
38663 Wattle Grove	22 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	63	62.6
76728 Wattle Grove	22 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	61.3	60.9
37655 Wattle Grove	22 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	63.2	63.4
74196 Wattle Grove	22 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.6	52.9	52.5
33733 Wattle Grove	22 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	54.9	54.7	52
104301 Wattle Grove	22 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.9	56.7	56.9
14020 Wattle Grove	22 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	63.9	65.8
89453 Wattle Grove	22 MADANG STREET HOLSWORTHY	RES	52	42	42	47	47	55	55.9	56.1
33638 Wattle Grove	22 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53.3	53.4	55.2
11444 Wattle Grove	22 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	67.2	65.9	60.9
37791 Wattle Grove	22 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.3	55.6	55.4
93465 Wattle Grove	22 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	56	55.9	52.4
39697 Wattle Grove	22 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	56.1	57
90873 Wattle Grove	22 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.6	56.6	54.6
83736 Wattle Grove	22 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	57.1	55
56419 Wattle Grove	22 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	54.4	54.6	48.6
40115 Wattle Grove	22 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	65.5	61.8
88191 Wattle Grove	22 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	61.5	61.2
24095 Wattle Grove	22 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	61.5	55.8
76896 Wattle Grove	22 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	61.1	63.9
39427 Wattle Grove	22 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	59.6	56.3
60732 Wattle Grove	22 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	61.3	66.9
44531 Wattle Grove	22 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	58.5	49.2
81849 Wattle Grove	22 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	60.1	64.9
7294 Wattle Grove	22 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.7	66.5	70.3
55231 Wattle Grove	22 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	53.9	55.9	56.9
76928 Wattle Grove	22 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55	57.6	61.6
65507 Wattle Grove	22 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	67.5	74
105266 Wattle Grove	23 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.7	56.4	55
5333 Wattle Grove	23 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	59.4	57.5
45875 Wattle Grove	23 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.3	58.4	58
54755 Wattle Grove	23 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	59.2	57
38050 Wattle Grove	23 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	67.4	68.3	62.6
64903 Wattle Grove	23 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57	56.1	53.4
40925 Wattle Grove	23 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	65.8	61.2
104496 Wattle Grove	23 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.4	53.8	52.5
77340 Wattle Grove	23 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	69.2	69.1	63.8
29254 Wattle Grove	23 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	68.5	66.6
50185 Wattle Grove	23 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	68.2	64.8	60.7
45118 Wattle Grove	23 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	60.9	62.7
40908 Wattle Grove	23 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.4	65.3	65.7
84020 Wattle Grove	23 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	60.4	56.9
36089 Wattle Grove	23 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	67.1	67.9
22129 Wattle Grove	23 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	52.7	54.3	55.5
69625 Wattle Grove	23 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.7	51.1	46.9
84240 Wattle Grove	23 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.9	62.3	58.2
47708 Wattle Grove	23 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	65.7	67.6	61.6
58187 Wattle Grove	23 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	58.2	54.8
76599 Wattle Grove	23 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	67.9	68.7	55
86963 Wattle Grove	23 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.4	53.6	52
30052 Wattle Grove	23 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	59	60.6	62.3
55608 Wattle Grove	23 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	60.9	60.4
43813 Wattle Grove	23 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	52.8	47.9
66397 Wattle Grove	23 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	54.7	53.6
95086 Wattle Grove	23 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.4	55.9	56
54286 Wattle Grove	23 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	52	53.8
32783 Wattle Grove	23 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	61.6	64.1
29528 Wattle Grove	23 MADANG STREET HOLSWORTHY	RES	52	42	42	47	47	53.1	54.2	54
70907 Wattle Grove	23 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53.3	53.9	54
93966 Wattle Grove	23 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	67.8	66.2	61.7
71969 Wattle Grove	23 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54.2	54.2	53.8
96032 Wattle Grove	23 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.1	56.8	55.4
33351 Wattle Grove	23 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	60.2	60.4
35210 Wattle Grove	23 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	61.9	69
53363 Wattle Grove	23 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	56.1	56.8
23037 Wattle Grove	23 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	63.4	63.5
50372 Wattle Grove	23 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	57.6	53.5
76798 Wattle Grove	23 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	62.3	63.9
6495 Wattle Grove	23 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	55.6	50.7
25414 Wattle Grove	23 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	61.2	66.8
44704 Wattle Grove	23 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.7	59.6	59.9
92989 Wattle Grove	23 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	51.1	56.5	61.7
61546 Wattle Grove	23 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	65.8	63.9	60.8
82220 Wattle Grove	23 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	62.3	62.6
16848 Wattle Grove	24 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	56.7	55.3
86211 Wattle Grove	24 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56	55.3	53.3
76481 Wattle Grove	24 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57	56.9	52.3
37974 Wattle Grove	24 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	64.1	61.6
11305 Wattle Grove	24 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	55	57.2	57.5
45902 Wattle Grove	24 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	63.5	56.5	61.1
78363 Wattle Grove	24 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	60.5	53.7
33648 Wattle Grove	24 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.4	52.6	51.2
97174 Wattle Grove	24 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67	66.9	61.1
65333 Wattle Grove	24 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	66.4	67.4	58
51633 Wattle Grove	24 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	60.3	52.5
18348 Wattle Grove	24 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	67.7	50.8	46.9
81472 Wattle Grove	24 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	56.6	57
82120 Wattle Grove	24 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	61.4	62.9
72907 Wattle Grove	24 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	64.5	61.1
69270 Wattle Grove	24 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.9	61.9	56.6
85493 Wattle Grove	24 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	57.7	58.5	51.1

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
58798 Wattle Grove		26 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	68.3	69.2	56.5
33938 Wattle Grove		26 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	56.6	58.1
75043 Wattle Grove		26 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	61	63.7	63.8
58554 Wattle Grove		26 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	55.9	56.1
97226 Wattle Grove		26 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	57	57.2
37441 Wattle Grove		26 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	63.8	65.7
20549 Wattle Grove		26 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	68.6	64.6	60.4
97911 Wattle Grove		26 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	58.6	58.9
87653 Wattle Grove		26 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.2	54.6	54.7
105234 Wattle Grove		26 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	59	57.1
51105 Wattle Grove		26 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	65.4	53.8
19138 Wattle Grove		26 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	62.5	64.2
62099 Wattle Grove		26 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	61.1	65
14104 Wattle Grove		26 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	63	57.2	57.1
57153 Wattle Grove		26 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	61.1	67.9
45535 Wattle Grove		26 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	61	63.9	65
21653 Wattle Grove		26 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	55.8	57.1
79488 Wattle Grove		26 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	58.5	59.7
59250 Wattle Grove		26 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	69.3	59.4	51.3
13609 Wattle Grove		27 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	54.8	54.3	53.1
24878 Wattle Grove		27 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	59.6	58.2
34995 Wattle Grove		27 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.2	62.9	61.4
75967 Wattle Grove		27 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	68.9	69	63
92479 Wattle Grove		27 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	65.7	65.8	61.7
12089 Wattle Grove		27 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.9	54.4	52.6
43518 Wattle Grove		27 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	69.5	70.3	64.9
45667 Wattle Grove		27 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	67.9	68.2	62.6
94648 Wattle Grove		27 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	67.9	64.4	59.4
14553 Wattle Grove		27 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	61	58.2
18936 Wattle Grove		27 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	68.2	69.5
35736 Wattle Grove		27 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.2	58.1	58.3
51953 Wattle Grove		27 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57	56.6	54.1
43300 Wattle Grove		27 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.7	62.6	58.4
6716 Wattle Grove		27 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	56	51.5
56362 Wattle Grove		27 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	62.1	60.9
63009 Wattle Grove		27 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	57.2	56.9	55.3
48788 Wattle Grove		27 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.9	54.9	55.4
93387 Wattle Grove		27 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	61.2	58.9
46328 Wattle Grove		27 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	61.9	63.7
91877 Wattle Grove		27 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	54.5	54.1	54.3
54279 Wattle Grove		27 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	66.6	66.5	62.9
92059 Wattle Grove		27 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54.1	54.2	54
36480 Wattle Grove		27 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.2	56.3	56.1
51586 Wattle Grove		27 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	60.4	60.6
80445 Wattle Grove		27 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	57	56.7	55.7
90195 Wattle Grove		27 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	57.2	58.5
29775 Wattle Grove		27 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	64	62.2
21016 Wattle Grove		27 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	62.3	67.5
72625 Wattle Grove		27 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	59.5	63.4	65.8
61287 Wattle Grove		27 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	58.2	55.8
8905 Wattle Grove		27 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.1	63.9	60.5
12168 Wattle Grove		28 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	56.6	54.4
15115 Wattle Grove		28 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.2	56.8	53.3
59272 Wattle Grove		28 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	63.3	61.5
19352 Wattle Grove		28 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.9	51.9	51
10939 Wattle Grove		28 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	62.4	51.5
15198 Wattle Grove		28 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.3	56.8	55.2
81631 Wattle Grove		28 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	60.7	59.9
51666 Wattle Grove		28 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.4	55.6	56.5
25041 Wattle Grove		28 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	63.5	64.4
64296 Wattle Grove		28 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	67.5	64	58.7
49777 Wattle Grove		28 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	56.3	57.4	56.6
20675 Wattle Grove		28 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.5	55.3	55.5
40757 Wattle Grove		28 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.5	58	56.8
88305 Wattle Grove		28 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	58.4	47.7
23679 Wattle Grove		28 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	69.5	63.5	58.4
65385 Wattle Grove		28 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	58	59.1
95461 Wattle Grove		28 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	55.9	55.9	55.6
65679 Wattle Grove		28 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	57.7	58.7
13662 Wattle Grove		28 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	54.9	55.1
72187 Wattle Grove		28 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.4	54.5	55.4
8457 Wattle Grove		28 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	64.6	64.7
26866 Wattle Grove		28 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	68.7	66.9	61.2
74426 Wattle Grove		28 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	57.2	54.8
49852 Wattle Grove		28 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.4	54.5	54.7
31569 Wattle Grove		28 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	65.8	53.8
24483 Wattle Grove		28 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	61.2	64.3
43787 Wattle Grove		28 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	60.5	65.7
55267 Wattle Grove		28 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	55.1	49.9
15590 Wattle Grove		28 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	61.2	69.2
16030 Wattle Grove		28 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.1	61.9	63.5
27295 Wattle Grove		28 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.2	58	59.9
73487 Wattle Grove		28 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	68.3	66.2	61.1
61717 Wattle Grove		29 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	54.6	54.3	53.1
26682 Wattle Grove		29 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60	56.8	46
37933 Wattle Grove		29 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.8	63.4	59.2
40033 Wattle Grove		29 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	69.6	70.5	63.3
90989 Wattle Grove		29 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	61	52.6
43146 Wattle Grove		29 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.6	53.8	52.6
45493 Wattle Grove		29 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	68.6	64.5	59
56465 Wattle Grove		29 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	61.2	57.1
26761 Wattle Grove		29 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	65.9	69
91264 Wattle Grove		29 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	52.8	53.4	55.9
85951 Wattle Grove		29 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	54.2	53.8
26038 Wattle Grove		29 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.3	62.6	58.1
53701 Wattle Grove		29 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	54.1	48.5
36929 Wattle Grove		29 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54.3	53.6	53.1
14486 Wattle Grove		29 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	60.9	57.7
38624 Wattle Grove		29 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.9	56.5	56.6

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
39214 Wattle Grove		29 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	61.8	59
26617 Wattle Grove		29 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	62.6	64.4
30050 Wattle Grove		29 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	52.9	53.9	54
26628 Wattle Grove		29 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	69.2	66.8	64.3
31444 Wattle Grove		29 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	56.6	56.8	54
88691 Wattle Grove		29 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.8	55.2	48.3
35655 Wattle Grove		29 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.9	54.6	53.7
68706 Wattle Grove		29 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	63.5	69.4
55251 Wattle Grove		29 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	65	62.3
53051 Wattle Grove		29 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	61.9	67.6
42209 Wattle Grove		29 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	59.3	61.9
9853 Wattle Grove		29 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.3	66.7	59.8
71697 Wattle Grove		2A CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	57.9	55.4
9766 Wattle Grove		2A KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	56	56.1	54.1
87445 Wattle Grove		2A LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	58.1	55.2	45.2
46466 Wattle Grove		2A MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55	54.8	54.6
11431 Wattle Grove		2B CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	55.1	54.6
8697 Wattle Grove		2B KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	53.9	53	45.2
12866 Wattle Grove		2B LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	59.1	58.9	55
77738 Wattle Grove		2B MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	61.6	55.9
68145 Wattle Grove		2B MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.1	54	55.5
74117 Wattle Grove		2B WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	56.8	57.4	57.6
11100 Wattle Grove		2C LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	59	57.1	54.9
69439 Wattle Grove		2D LABUAN ROAD WATTLE GROVE	RES	52	42	42	47	47	59.7	59.6	56.9
35399 Wattle Grove		3 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	60.3	58.7
39831 Wattle Grove		3 AITAPE PLACE HOLSWORTHY	RES	52	42	42	47	47	57	57	54.8
74329 Wattle Grove		3 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	58	55.6
88339 Wattle Grove		3 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.1	53.3
73290 Wattle Grove		3 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	54.1	53.4
82801 Wattle Grove		3 ANEURA COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	56.2	54.6
84038 Wattle Grove		3 ANZAC ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	47.4	42.9
36185 Wattle Grove		3 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	57.7	56.4
30187 Wattle Grove		3 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	63.9	63.1	60.1
5123 Wattle Grove		3 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	59.5	56.1
34852 Wattle Grove		3 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	60.5	59
54900 Wattle Grove		3 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	59.4	58.3	56.1
27290 Wattle Grove		3 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	61.4	57.3
75397 Wattle Grove		3 BENA BENA PLACE HOLSWORTHY	RES	52	42	42	47	47	55.3	56.2	55.2
37267 Wattle Grove		3 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	59.5	54.6
21958 Wattle Grove		3 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	59	59.1	60.1
41685 Wattle Grove		3 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.2	57	55.4
15346 Wattle Grove		3 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	63.4	52.3
65449 Wattle Grove		3 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	65.1	58.7
78977 Wattle Grove		3 BUNA STREET HOLSWORTHY	RES	52	42	42	47	47	54.4	54.5	56.1
42632 Wattle Grove		3 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	61	61.1	54.5
20426 Wattle Grove		3 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	58.4	52.3
107361 Wattle Grove		3 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	58.9	58
52196 Wattle Grove		3 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	60.1	58.1
73398 Wattle Grove		3 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	55.1	62.1
52220 Wattle Grove		3 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	58.1	52.1
83984 Wattle Grove		3 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	62	60.8	56.5
59266 Wattle Grove		3 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	58	57.1
54895 Wattle Grove		3 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	56.6	56.1
66187 Wattle Grove		3 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	61.4	53.6
59439 Wattle Grove		3 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	58.9	57
51472 Wattle Grove		3 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	64.8	70.4
55460 Wattle Grove		3 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.5	66.1	66
45441 Wattle Grove		3 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.8	57.5	57.7
4415 Wattle Grove		3 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	54.6	54.4	53
80719 Wattle Grove		3 DERNIA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.6	54.2	42.9
58923 Wattle Grove		3 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	60.7	58.2
19574 Wattle Grove		3 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	59	52.3
46510 Wattle Grove		3 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	57.9	53.3
70047 Wattle Grove		3 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	61.2	50.4
61078 Wattle Grove		3 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	56.9	57.9
52015 Wattle Grove		3 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	54.9	57.9
18121 Wattle Grove		3 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	66.6	60.2
74430 Wattle Grove		3 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	58.3	58.5
40126 Wattle Grove		3 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	57	52.9
20755 Wattle Grove		3 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	55.2	54.5	52
19682 Wattle Grove		3 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	58.3	57.6
2421 Wattle Grove		3 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	63.3	63	62.8
57075 Wattle Grove		3 HAMPTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	57.2	56.8
33018 Wattle Grove		3 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	51.9	53.2	51.7
68038 Wattle Grove		3 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	62.9	60.5
19366 Wattle Grove		3 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.7	55.2	54.3
58588 Wattle Grove		3 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	58.3	58
39842 Wattle Grove		3 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	63.3	65.5
37834 Wattle Grove		3 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	56.3	56.3	53.4
29674 Wattle Grove		3 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	54.1	54.6
99784 Wattle Grove		3 KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	57.2	57.2	55.3
29412 Wattle Grove		3 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	61.4	60
48658 Wattle Grove		3 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	57.2	59.1
57834 Wattle Grove		3 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	57.1	63.4	65.3
76772 Wattle Grove		3 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	57.9	57.5	55.6
72867 Wattle Grove		3 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.8	55.6	55.3
44175 Wattle Grove		3 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	64.1	57.9
9945 Wattle Grove		3 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	66.7	63.3
8435 Wattle Grove		3 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	59.9	61.2
63853 Wattle Grove		3 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	67.5	65.9	59
37947 Wattle Grove		3 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	65.2	67.8
13055 Wattle Grove		3 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53.6	54	55
37556 Wattle Grove		3 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	52.9	55.2
83153 Wattle Grove		3 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	53.5	53.4	55.2
49056 Wattle Grove		3 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	59.8	61.3
19266 Wattle Grove		3 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	63.5	64.1	64
66015 Wattle Grove		3 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.7	54.7	53.9
76206 Wattle Grove		3 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54	54	52
57484 Wattle Grove		3 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	56.1	48.7

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
99111 Wattle Grove		3 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	57.7	57.3	56.1
12486 Wattle Grove		3 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	61.3	49.2
35994 Wattle Grove		3 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	54.4	58.8
96989 Wattle Grove		3 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	65.6	50.2	46.7
43443 Wattle Grove		3 PILLIGA COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	56.9	57
40467 Wattle Grove		3 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	59	67.1
49501 Wattle Grove		3 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.4	53.6	54.2
99586 Wattle Grove		3 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	54.7	52.6
48017 Wattle Grove		3 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	58.7	64.4
63893 Wattle Grove		3 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	58.6	60
30529 Wattle Grove		3 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.4	57.5	58.7
66254 Wattle Grove		3 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	67.3	67.1	62.7
70222 Wattle Grove		3 TICAL COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	62	60.7
11610 Wattle Grove		3 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	62.5	53.3
54469 Wattle Grove		3 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	63.4	57.9
11253 Wattle Grove		3 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	60.6	62.6
35550 Wattle Grove		3 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	57.4	56
23563 Wattle Grove		3 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	59.6	64.4
4498 Wattle Grove		3 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	62.5	59.8
31836 Wattle Grove		3 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.8	66.1	68.1
101475 Wattle Grove		3 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	57.5	57.7	53.4
89501 Wattle Grove		3 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	58.8	60.3
22494 Wattle Grove		3 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	58.3	59.6
79063 Wattle Grove		3 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	55.5	54.3
15573 Wattle Grove		3 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	65.8	67.7
37877 Wattle Grove		3 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	64.5	66.9
49323 Wattle Grove		3 YARRAN COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	59.2	57.9
8806 Wattle Grove		30 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	52	56.1	54.4
101562 Wattle Grove		30 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.3	56.9	55.8
23684 Wattle Grove		30 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	63.3	62.4
80655 Wattle Grove		30 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.8	53.3	52.9
58118 Wattle Grove		30 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	62	57.8
86333 Wattle Grove		30 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.1	54.4	52
29970 Wattle Grove		30 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	53.3	54.9	55.7
77424 Wattle Grove		30 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	57.1	61.7
35871 Wattle Grove		30 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	67.3	62.7	58.7
82546 Wattle Grove		30 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	56.3	57.8	55.7
58169 Wattle Grove		30 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	68.6	71.5
45793 Wattle Grove		30 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.5	64	62.1
51560 Wattle Grove		30 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.5	55.4	55.6
66918 Wattle Grove		30 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.5	54.3
17811 Wattle Grove		30 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	69.2	64.6	60.1
8898 Wattle Grove		30 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.4	59.4	59.6
11946 Wattle Grove		30 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54	53.8	53.4
16010 Wattle Grove		30 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	55.2	55.5
48346 Wattle Grove		30 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	53.4	55.7	56.3
56799 Wattle Grove		30 LYNDRHURST COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	63.6	66
61792 Wattle Grove		30 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	68.4	66.7	62.1
42647 Wattle Grove		30 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55	57.3	58.3
85343 Wattle Grove		30 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54	55.1	55
14936 Wattle Grove		30 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	61	63.7	62.1
49038 Wattle Grove		30 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	61.6	58.2
47582 Wattle Grove		30 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	58.1	62.9	69.3
13470 Wattle Grove		30 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.5	62.2	62.2
68436 Wattle Grove		30 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	58.1	60
13334 Wattle Grove		30 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	68.3	61	51.1
70400 Wattle Grove		30B LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.2	54.5	54.7
107467 Wattle Grove		31 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	52.5	51.2	50.7
42077 Wattle Grove		31 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	57.3	46.3
34889 Wattle Grove		31 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.8	62	60.7
45338 Wattle Grove		31 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	68.7	69.3	65.1
35277 Wattle Grove		31 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	67.1	67.2	53.3
12724 Wattle Grove		31 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.3	53.8	52.6
95204 Wattle Grove		31 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	64.6	60.9
35361 Wattle Grove		31 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	61.2	57.2
43012 Wattle Grove		31 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	67.5	70.2
50792 Wattle Grove		31 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.3	55.7	57.3
85186 Wattle Grove		31 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.6	56	54.5
50149 Wattle Grove		31 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.5	63.6	58.2
14928 Wattle Grove		31 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	61.2	56.1
66635 Wattle Grove		31 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54.2	53.6	53.3
32385 Wattle Grove		31 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	59.4	59.2
101278 Wattle Grove		31 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.2	56	56.1
31503 Wattle Grove		31 LYNDRHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.4	62.5	64.1
66764 Wattle Grove		31 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53.1	53.5	54.2
66035 Wattle Grove		31 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	69.4	66.8	63.8
96661 Wattle Grove		31 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	56.3	56.3	54.2
50795 Wattle Grove		31 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	48.3	50.6	50.9
50014 Wattle Grove		31 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	59.7	61.9
74112 Wattle Grove		31 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.7	53.4	52.8
93300 Wattle Grove		31 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	63.5	69.1
24702 Wattle Grove		31 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	64.6	64.2
21962 Wattle Grove		31 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	61.6	69.6
41843 Wattle Grove		31 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	58.2	62.5
41783 Wattle Grove		31 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.3	65	57.5
92276 Wattle Grove		31A AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	54.8	54.1	53.9
101764 Wattle Grove		31A BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.3	55.6	47.8
38062 Wattle Grove		32 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	57.7	54.3
96302 Wattle Grove		32 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	56.1	53.3
38353 Wattle Grove		32 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	63.1	63.7	62.7
52489 Wattle Grove		32 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.6	55.1	54.4
20013 Wattle Grove		32 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62	62.9	57.5
104261 Wattle Grove		32 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.8	47.1	45.8
66700 Wattle Grove		32 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	53.1	54.8	55.6
23163 Wattle Grove		32 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	69.7	66.7	61.8
18814 Wattle Grove		32 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	68.1	71.5
37477 Wattle Grove		32 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	63.9	66.1	68
19318 Wattle Grove		32 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.4	55.4	55.5
55037 Wattle Grove		32 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.4	56.8	47.1

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
26746 Wattle Grove		32 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	57.1	57.4
14747 Wattle Grove		32 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54.5	54.5	49.6
27578 Wattle Grove		32 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	56.8	57
10468 Wattle Grove		32 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.3	54	53.9
76113 Wattle Grove		32 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.9	54.4	54.6
32916 Wattle Grove		32 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	60	66.3
23595 Wattle Grove		32 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	69.2	69.2	61.2
41424 Wattle Grove		32 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	55.9	56.6
90624 Wattle Grove		32 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.9	54.3	54.6
14813 Wattle Grove		32 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	60.9	60.8
97908 Wattle Grove		32 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	59.4	60.9	61.6
23031 Wattle Grove		32 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.7	62.5	65.6
86876 Wattle Grove		32 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	58.1	60.2
20852 Wattle Grove		32 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	68.4	61.5	49.9
104445 Wattle Grove		33 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.7	56.6	52.4
57330 Wattle Grove		33 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.8	62.9	55
79879 Wattle Grove		33 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	69.4	69.4	67.2
92343 Wattle Grove		33 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.9	58.8	52.5
48934 Wattle Grove		33 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	67.6	70.6	60.3
85892 Wattle Grove		33 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.4	56.3	55.6
51812 Wattle Grove		33 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	64.7	61
22718 Wattle Grove		33 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	61.5	57.2
25443 Wattle Grove		33 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	68.4	68.8
13479 Wattle Grove		33 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55	55.4	54.1
79232 Wattle Grove		33 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	69.2	66.6	59.1
48821 Wattle Grove		33 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	55	50.9
57538 Wattle Grove		33 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	53.9	53.8	53.2
60716 Wattle Grove		33 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	56.5	55.9
47666 Wattle Grove		33 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	63.2	64.2
35552 Wattle Grove		33 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	53	53.1	54.2
74080 Wattle Grove		33 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	55.7	56	54.5
24123 Wattle Grove		33 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	59.8	59.9
81182 Wattle Grove		33 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	62	63.4
42733 Wattle Grove		33 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	62.3	61.7
95586 Wattle Grove		33 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	62.1	69.1
91983 Wattle Grove		33 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	59.2	61.9
40478 Wattle Grove		33 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.1	64.2	60.3
54481 Wattle Grove		34 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	58.1	56.3	54.2
83799 Wattle Grove		34 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	55.6	54.3	53.4
42428 Wattle Grove		34 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	63.1	63.9	62.3
48119 Wattle Grove		34 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.7	57.6	54.6
21141 Wattle Grove		34 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	64.7	56.1
72235 Wattle Grove		34 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.1	53.6	52.8
6924 Wattle Grove		34 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	58.7	58.5	53.5
27542 Wattle Grove		34 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	68.1	71.3
23169 Wattle Grove		34 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.7	55.2	55.5
72526 Wattle Grove		34 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	58.2	59.8
27953 Wattle Grove		34 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54.1	50.9	50.7
43688 Wattle Grove		34 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	52.1	54	53.8
73757 Wattle Grove		34 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.1	54.6	54.6
10525 Wattle Grove		34 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	63.2	66
43437 Wattle Grove		34 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	69.3	59.9	51.1
39059 Wattle Grove		34 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	56.9	58.2
46099 Wattle Grove		34 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.9	54.4	54.6
27719 Wattle Grove		34 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	63.9	62.2
12730 Wattle Grove		34 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	60.6	61.4
65434 Wattle Grove		34 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.6	61.1	61.5
54793 Wattle Grove		34 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	58.3	60.4
35536 Wattle Grove		34 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	68.2	64.1	56.9
67659 Wattle Grove		35 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56	54	52.9
11556 Wattle Grove		35 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	63.1	62.7	56.1
97250 Wattle Grove		35 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	69.4	69.4	52.8
71279 Wattle Grove		35 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.9	57.6	51
49271 Wattle Grove		35 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	69.3	64.9	60.9
81070 Wattle Grove		35 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.7	61.1	58.4
5002 Wattle Grove		35 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	67.9	67.4
66866 Wattle Grove		35 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54	55.9	57.3
91251 Wattle Grove		35 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	69.3	64.2	59.8
46418 Wattle Grove		35 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	61.4	59.3
55354 Wattle Grove		35 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	52.9	53.8	53.9
50969 Wattle Grove		35 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59	62.6	65.4
86536 Wattle Grove		35 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	52.9	53.9	54.1
81773 Wattle Grove		35 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54.7	54.6	53.6
74538 Wattle Grove		35 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.6	55.7	55.8
11912 Wattle Grove		35 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	57	57.2	56.9
51264 Wattle Grove		35 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.3	66.9
18340 Wattle Grove		35 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	61.7	63.8
94583 Wattle Grove		35 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	61.6	68.8
43289 Wattle Grove		3-5 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	53.6	61.1
77183 Wattle Grove		35 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	52.9	55.3	56
9070 Wattle Grove		35 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.5	62.7	55.2
90956 Wattle Grove		36 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	58.1	56.2	54.1
103012 Wattle Grove		36 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.6	56.4	53.4
79706 Wattle Grove		36 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.5	62.6	60.7
67722 Wattle Grove		36 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	63.5	60.3
29734 Wattle Grove		36 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	65.1	56.6
11116 Wattle Grove		36 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.4	56.3	55.3
54621 Wattle Grove		36 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	68.2	71.3
25963 Wattle Grove		36 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.6	57.5	57.7
39180 Wattle Grove		36 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.7	57.5	54.8
81462 Wattle Grove		36 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	53.5	54.4	53.5
76526 Wattle Grove		36 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.2	54.8	54.5
60234 Wattle Grove		36 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	59.5	56.6
11031 Wattle Grove		36 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	58.1	57.6
29044 Wattle Grove		36 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.8	54.1	54.4
15398 Wattle Grove		36 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	63.3	54.4
39229 Wattle Grove		36 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	59	61.1	62.3
55350 Wattle Grove		36 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.3	61.5	67
91152 Wattle Grove		36 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.9	58.4	60.5

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
3813 Wattle Grove		36 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	67.6	52.8	48.2
72287 Wattle Grove		36A BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.9	54.8	47.5
97386 Wattle Grove		36B BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56	55.4	54.2
104500 Wattle Grove		37 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	56.2	55.8
49943 Wattle Grove		37 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.3	62.4	55.4
54095 Wattle Grove		37 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.7	55	54.9
77207 Wattle Grove		37 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.6	55	52.4
56784 Wattle Grove		37 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.5	62.1	57.3
51482 Wattle Grove		37 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	67.8	68.3
84096 Wattle Grove		37 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.4	54.2	55.7
15534 Wattle Grove		37 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.3	51.8	55.7
24218 Wattle Grove		37 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	67.3	64.3	59.8
101406 Wattle Grove		37 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55	55.7	55.8
66300 Wattle Grove		37 LYNTHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	63.6	65.6
12217 Wattle Grove		37 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	57.9	54.3
27821 Wattle Grove		37 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	64.6	71.1
15383 Wattle Grove		37 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	61.7	62.9
10504 Wattle Grove		37 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	62.6	64.4
92158 Wattle Grove		37 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	56.9	62.6
21572 Wattle Grove		37 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.2	64.7	61.2
30881 Wattle Grove		38 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	67.3	67.3	57.6
41610 Wattle Grove		38 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	67	60.9
35343 Wattle Grove		38 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	56.2	50.3	52.1
29455 Wattle Grove		38 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	65	70.8	73.2
81325 Wattle Grove		38 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.5	56.3	57.7
97297 Wattle Grove		38 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.2	58	54.6
50771 Wattle Grove		38 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	54.5	54.5	53.5
76973 Wattle Grove		38 LYNTHURST COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	61.1	64.1
18071 Wattle Grove		38 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	57.3	57.4
58779 Wattle Grove		38 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.7	54.4	54.4
25030 Wattle Grove		38 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	61.5	61.8
20065 Wattle Grove		38 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.8	59.5	60.5
11043 Wattle Grove		38 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	58.5	62.5
14290 Wattle Grove		38 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66.9	65.8	61.8
92644 Wattle Grove		38B LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.8	56.4	55.5
64303 Wattle Grove		39 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	64.1	64.8	59.5
60370 Wattle Grove		39 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.1	55.9	53
92579 Wattle Grove		39 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54	53.5	52.7
68178 Wattle Grove		39 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	66.9	61.3	57.3
32585 Wattle Grove		39 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.8	66.7	68.3
42861 Wattle Grove		39 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.4	53.5	55.9
19871 Wattle Grove		39 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	51.3	52.6
83406 Wattle Grove		39 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.5	55.7	53.4
24721 Wattle Grove		39 LYNTHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	62.4	66.1
45737 Wattle Grove		39 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.8	59.7
14249 Wattle Grove		39 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	61.6	61.8
66108 Wattle Grove		39 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	62.4	65.3
77751 Wattle Grove		39 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56	60.8	62.3
39370 Wattle Grove		39 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	66	64.4	54.5
104550 Wattle Grove		3A BUNA STREET HOLSWORTHY	RES	52	42	42	47	47	55.3	55.9	56
82245 Wattle Grove		3A WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	53.1	53.6	43.9
95459 Wattle Grove		3B WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	54.3	55	55
81515 Wattle Grove		4 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	58.9	55.9
5606 Wattle Grove		4 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	56.7	52.9
85358 Wattle Grove		4 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	55.4	53.4	52.3
41727 Wattle Grove		4 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	60.5	56.2
61195 Wattle Grove		4 ANEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	54.7	53.7
24972 Wattle Grove		4 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	59.6	59.2
24503 Wattle Grove		4 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	61.3	59.8
38379 Wattle Grove		4 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	63	56.3
23609 Wattle Grove		4 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	61.3	59.5	58.5
22971 Wattle Grove		4 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	62	50
49972 Wattle Grove		4 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	55.4	54.7
72107 Wattle Grove		4 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	60.9	59.2
23709 Wattle Grove		4 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	62	63.9	62
85226 Wattle Grove		4 BENA BENA PLACE HOLSWORTHY	RES	52	42	42	47	47	54.3	51.8	50.8
39476 Wattle Grove		4 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	59.1	47.5
86124 Wattle Grove		4 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	58.7	58.4
78009 Wattle Grove		4 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.8	56.4	55.5
25847 Wattle Grove		4 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67	65.9	53.1
91057 Wattle Grove		4 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	65.4	56.9
101339 Wattle Grove		4 BRUNEI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.8	44.8	44.2
25335 Wattle Grove		4 BUNA STREET HOLSWORTHY	RES	52	42	42	47	47	55.6	55.6	53.7
85840 Wattle Grove		4 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	59.7	59.3
48545 Wattle Grove		4 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	62.5	47.7
40233 Wattle Grove		4 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	60.3	59.2
61116 Wattle Grove		4 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	56.6	56.5
53388 Wattle Grove		4 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	63.9	60.9
23708 Wattle Grove		4 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	59.4	61.3
44867 Wattle Grove		4 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	60	60.6	57.7
99150 Wattle Grove		4 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	59.1	59.9	55.6
9345 Wattle Grove		4 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	56.8	49.9
26650 Wattle Grove		4 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	59.4	52.7
64276 Wattle Grove		4 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	59.4	54.6	53
33138 Wattle Grove		4 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	61.9	62.1
58294 Wattle Grove		4 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.7	64.7	64.3
39287 Wattle Grove		4 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.6	59.1	56.7
92405 Wattle Grove		4 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	54	55.7	55.2
104197 Wattle Grove		4 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	55.8	52.7
85799 Wattle Grove		4 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	58.7	56.2
13046 Wattle Grove		4 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	59.4	59.5	55.8
20955 Wattle Grove		4 ELDERSLIE COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	64.5	65.3
15923 Wattle Grove		4 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	62.5	61.3
59771 Wattle Grove		4 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	59.8	46.3
78388 Wattle Grove		4 ESHER MEWS WATTLE GROVE	RES	52	42	42	47	47	59	61.4	60.6
64039 Wattle Grove		4 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	61.3	58.1
55047 Wattle Grove		4 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	54.5	55.8	56.6
39014 Wattle Grove		4 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	65.1	64.1
26238 Wattle Grove		4 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	58.7	57.8

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
34555 Wattle Grove		4 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	51.6	45.7
68640 Wattle Grove		4 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	56.8	58.5
94171 Wattle Grove		4 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	56.5	56.6	56
44201 Wattle Grove		4 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	62.2	59.3
3199 Wattle Grove		4 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	54.5	59.4
35338 Wattle Grove		4 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	63.6	60.1
91014 Wattle Grove		4 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	63.5	64.5	57.5
28556 Wattle Grove		4 HAMPTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	59.8	58.4
96243 Wattle Grove		4 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	57.4	57.6
33718 Wattle Grove		4 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	61.8	49.9
78403 Wattle Grove		4 HICKORY MEWS WATTLE GROVE	RES	52	42	42	47	47	57.9	57.8	54.4
96575 Wattle Grove		4 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54	55.7	54.9
19184 Wattle Grove		4 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	61.2	49.3
19935 Wattle Grove		4 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	57.8	57
93347 Wattle Grove		4 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	64.1	65.9
81586 Wattle Grove		4 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	53.5	53.8	55.3
72097 Wattle Grove		4 KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	56.3	56.4	56.3
12021 Wattle Grove		4 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	60.7	60.9
6826 Wattle Grove		4 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	55	55.9	55.6
26955 Wattle Grove		4 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	57.5	58.5
50273 Wattle Grove		4 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	58.9	61.4	63.6
10346 Wattle Grove		4 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	58	57.2	53.9
61499 Wattle Grove		4 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.9	54.4	54.6
69727 Wattle Grove		4 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	61.8	61.5
55288 Wattle Grove		4 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	66.3	66.4
56406 Wattle Grove		4 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	60.5	62.7
32680 Wattle Grove		4 LINIFOLIA MEWS WATTLE GROVE	RES	52	42	42	47	47	60.5	60	58.7
2390 Wattle Grove		4 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	61.9	58.6
64547 Wattle Grove		4 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	65	65.8
96011 Wattle Grove		4 MALLEE COURT WATTLE GROVE	RES	52	42	42	47	47	52.3	53.3	53.8
33757 Wattle Grove		4 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	55.5	55.6	46.3
11507 Wattle Grove		4 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	61.9	59.8
28905 Wattle Grove		4 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	55.1	55.7	53.1
66241 Wattle Grove		4 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	61.7	64.5
29545 Wattle Grove		4 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	62.1	62.2
87060 Wattle Grove		4 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.5	56.5	56.3
57736 Wattle Grove		4 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	58	55.9	54.2
58386 Wattle Grove		4 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	53.8	50
51180 Wattle Grove		4 MURNDAL COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	68.2	72.6
37415 Wattle Grove		4 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	60	54.4
56162 Wattle Grove		4 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	62.5	62.4
43516 Wattle Grove		4 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	61	59.2	57.6
10988 Wattle Grove		4 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	62.8	61.1	57.8
43958 Wattle Grove		4 PILLIGA COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	56.3	56.3
12075 Wattle Grove		4 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	57	61.7	66.9
60260 Wattle Grove		4 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.1	53.4	53.2
12180 Wattle Grove		4 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	61.8	67.4
9885 Wattle Grove		4 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.5	61.1
12188 Wattle Grove		4 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	62	64.8	67.8
22531 Wattle Grove		4 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	57.5	58.8
36286 Wattle Grove		4 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	68.3	60.1	56.7
70562 Wattle Grove		4 TARAKAN STREET HOLSWORTHY	RES	52	42	42	47	47	56.1	55.9	55
38825 Wattle Grove		4 TIVOLI COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	56.2	55
9201 Wattle Grove		4 TOCAL COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	57.8	55.2
32766 Wattle Grove		4 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	63.3	59.3	54
14967 Wattle Grove		4 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.4	62.4
86772 Wattle Grove		4 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	57.9	51.8
87414 Wattle Grove		4 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	62.7	49.4
90012 Wattle Grove		4 VILLAGE WAY HOLSWORTHY	RES	52	42	42	47	47	55.7	55.3	55.2
39136 Wattle Grove		4 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	57	62.1	67.3
2838 Wattle Grove		4 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.2	65	67.2
75979 Wattle Grove		4 WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	54.3	56.1	55.1
51016 Wattle Grove		4 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	55.9	55.4	54.3
49697 Wattle Grove		4 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	54.5	56.4	57.9
28169 Wattle Grove		4 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	54.4	54.8
38856 Wattle Grove		4 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	56	58	58.7
11934 Wattle Grove		4 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	64.6	68.9
50232 Wattle Grove		4 YARRAN COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	58.6	58.3
71254 Wattle Grove		40 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.6	63	61
35587 Wattle Grove		40 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	65.3	64.2	58.2
46059 Wattle Grove		40 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.5	55.2	54.8
8955 Wattle Grove		40 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	65.6	61.3
95215 Wattle Grove		40 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.1	43.2	42.9
8578 Wattle Grove		40 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	68.4	71
80433 Wattle Grove		40 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56	57.2	57.7
42602 Wattle Grove		40 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.6	56.2	55.3
9896 Wattle Grove		40 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	53.9	53.8	53.4
30242 Wattle Grove		40 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.4	54.2	54.5
81056 Wattle Grove		40 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	59.1	55.2
58072 Wattle Grove		40 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.1	53.9	54.4
32699 Wattle Grove		40 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.9	58.5	58.5
93162 Wattle Grove		40 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	59.1	61.3
39632 Wattle Grove		40 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	67	65.3	52.9
78446 Wattle Grove		41 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.4	55.3	54.5
35049 Wattle Grove		41 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	66.2	61.4	58
65997 Wattle Grove		41 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.3	68	68.3
47224 Wattle Grove		41 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.2	53.6	51.7
23917 Wattle Grove		41 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.5	57.6	53.3
39340 Wattle Grove		41 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.6	52.9	52.6
86457 Wattle Grove		41 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	62	65.9
63932 Wattle Grove		41 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	55.9	59	59.6
21460 Wattle Grove		41 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	61.6	62.9
54340 Wattle Grove		41 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	60.7	64.4
90423 Wattle Grove		41 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	59.2	63.2
26697 Wattle Grove		41 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	67.8	63.2	59.8
46726 Wattle Grove		42 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	65.5	64	57.8
89402 Wattle Grove		42 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56	55	54.3
42118 Wattle Grove		42 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	65.8	59.1
97177 Wattle Grove		42 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.3	55	54.3

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
74578 Wattle Grove		5 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	57.1	56.6
69009 Wattle Grove		5 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	60.1	60.1
66106 Wattle Grove		5 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	55.9	57.1
50365 Wattle Grove		5 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	63.1	63.8
78505 Wattle Grove		5 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.6	58.8
19688 Wattle Grove		5 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64	60	57
27795 Wattle Grove		5 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	60	58.1	57.1
22805 Wattle Grove		5 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	57.3	58.2	50.3
48342 Wattle Grove		5 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	56.5	55
26018 Wattle Grove		5 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	59.6	49.9
33816 Wattle Grove		5 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	58.8	55.6
25680 Wattle Grove		5 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	66.6	69.5
45810 Wattle Grove		5 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.9	66.1	65.2
26167 Wattle Grove		5 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.4	57.8	55.4
81042 Wattle Grove		5 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	53.8	53.7	53
64400 Wattle Grove		5 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56	55.4	55.4
55203 Wattle Grove		5 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	60.7	58.2
79592 Wattle Grove		5 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	60	59.9	53.9
45187 Wattle Grove		5 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	52.8	49.4
47905 Wattle Grove		5 ELLESmere COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	60.4	50.9
57548 Wattle Grove		5 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	58.8	58
56713 Wattle Grove		5 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	55.5	57.8
46066 Wattle Grove		5 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	66.3	61.2
35249 Wattle Grove		5 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	58.9	56.2
105264 Wattle Grove		5 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	60.5	57.5
55805 Wattle Grove		5 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	51.5	52.7	53.4
68134 Wattle Grove		5 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	56.2	55	44.4
52943 Wattle Grove		5 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	64.2	64.9
56983 Wattle Grove		5 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	59	57.9	55.1
33924 Wattle Grove		5 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	62.3	57.9
34482 Wattle Grove		5 HAMPTON COURT WATTLE GROVE	RES	52	42	42	47	47	57	57.5	55.7
54131 Wattle Grove		5 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	53.9	56.1	59.1
28571 Wattle Grove		5 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	62.5	60.5
88684 Wattle Grove		5 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.3	54.7	53
45181 Wattle Grove		5 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58	58.9	58.4
45220 Wattle Grove		5 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	57	59.7	59.7
61087 Wattle Grove		5 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	63.5	66.5
17347 Wattle Grove		5 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	54.6	56.7	56.9
11347 Wattle Grove		5 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	50.2	52.9	54.6
60017 Wattle Grove		5 KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	55.8	55.9	55.7
87208 Wattle Grove		5 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	58	61.1	59.9
52010 Wattle Grove		5 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.6	57.1	58.9
25612 Wattle Grove		5 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	58.1	62.6	63.3
44585 Wattle Grove		5 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	55.3	54.1
98990 Wattle Grove		5 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.8	55.2
67489 Wattle Grove		5 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	64.2	53.2
24594 Wattle Grove		5 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	68.3	65.6
15846 Wattle Grove		5 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	60	60.8
22729 Wattle Grove		5 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	68.4	67.1	59
48191 Wattle Grove		5 LYNTHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	61.5	67.3
87496 Wattle Grove		5 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	56	56.3	56.1
39800 Wattle Grove		5 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	64.5	52.3	48.5
85665 Wattle Grove		5 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	53.3	53.3	52.6
16050 Wattle Grove		5 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	61.8	63.1
26584 Wattle Grove		5 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	51	57.2
10797 Wattle Grove		5 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.5	55.5	54.8
89897 Wattle Grove		5 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	56.5	56.1	55.1
67760 Wattle Grove		5 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	56.4	56.1
52354 Wattle Grove		5 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.2	53.9	54
33027 Wattle Grove		5 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	60.6	52.1
62176 Wattle Grove		5 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	61.4	60
64169 Wattle Grove		5 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	51.1	45.2
45972 Wattle Grove		5 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	64	50.6	47
73981 Wattle Grove		5 PILLIGA COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	57.9	58.2
48891 Wattle Grove		5 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	61.1	64.2
29148 Wattle Grove		5 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.7	56.1	55.9
100076 Wattle Grove		5 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	56	54.1
34533 Wattle Grove		5 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	59.4	61.8
28543 Wattle Grove		5 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	59.3	60
95950 Wattle Grove		5 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	60.1	60.4
8685 Wattle Grove		5 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	70.6	69.8	63.1
55149 Wattle Grove		5 Tocal COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	64.1	60
37138 Wattle Grove		5 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	63.9	62.9
16270 Wattle Grove		5 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	63.5	58.6
54830 Wattle Grove		5 TRENTAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	58.2	56
35018 Wattle Grove		5 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	47.8	44.7
11297 Wattle Grove		5 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.3	60.5	63.7
49882 Wattle Grove		5 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	62.1	59.7
3253 Wattle Grove		5 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	59.3	63.9	68.3
62061 Wattle Grove		5 WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	55.9	56.5	56.8
75783 Wattle Grove		5 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	55.5	55.4	54.9
20578 Wattle Grove		5 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	55.7	58.1	59.2
58484 Wattle Grove		5 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	58.4	59
82953 Wattle Grove		5 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	56.7	52.6
16911 Wattle Grove		5 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	59.1	47.8
27032 Wattle Grove		5 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	63.2	67.5
61424 Wattle Grove		5 YARRAN COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	59.3	58.1
68025 Wattle Grove		50 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	66.1	61.3	59
21760 Wattle Grove		50 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	65.7	66.3	54.3
52705 Wattle Grove		50 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	65.6	71.1	72.3
46292 Wattle Grove		50 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.8	56.6	57.3
17079 Wattle Grove		50 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56	55.5	54.8
78093 Wattle Grove		50 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.2	55.1	54.6
33324 Wattle Grove		50 LYNTHURST COURT WATTLE GROVE	RES	52	42	42	47	47	54	62.2	63.5
14255 Wattle Grove		50 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	61.4	62.8
45224 Wattle Grove		50A BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	49.8	54.6	54.4
107497 Wattle Grove		50A BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	52.2	52.9	51.1
92460 Wattle Grove		50B BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.3	54.9	54.6
101874 Wattle Grove		51 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.5	57.4	56.7

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
10769 Wattle Grove	51 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	66.9	63.9	59.3
20166 Wattle Grove	51 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	66.9	67.4
29941 Wattle Grove	51 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.1	55.5	56.1
42132 Wattle Grove	51 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.8	56	52.7
101549 Wattle Grove	51 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.1	55.6	54.5
58875 Wattle Grove	51 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	61.8	63.3
24670 Wattle Grove	51 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	57.9	56.1
25661 Wattle Grove	52 AUSTRALIS AVENUE WATTLE GROVE	RES	52	42	42	47	47	60.8	60.8	58.9
17869 Wattle Grove	52 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	67.1	67	58.7
59231 Wattle Grove	52 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.3	56	51.5
78154 Wattle Grove	52 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	66.2	68.9	56.6
92293 Wattle Grove	52 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	54.9	53.5	52.9
96842 Wattle Grove	52 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.9	54.9	56.7
18366 Wattle Grove	52 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.7	55.8	54.8
51805 Wattle Grove	52 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	52.7	53.3	53.5
35297 Wattle Grove	52 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	61.3	64.2
102410 Wattle Grove	52A LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.9	53.3	53.5
62113 Wattle Grove	53 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.3	55.7	54.6
30864 Wattle Grove	53 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	69.5	63.9	59.4
34717 Wattle Grove	53 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63	66.3	66.3
27069 Wattle Grove	53 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55	56.2	57.5
99618 Wattle Grove	53 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.4	55.4	45.2
90578 Wattle Grove	53 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	52.8	53.9	55.2
17430 Wattle Grove	53 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	61.9	65.6
46825 Wattle Grove	53 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	57.9	59
42967 Wattle Grove	54 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	69.6	69.7	55.2
15766 Wattle Grove	54 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	58.5	57.6	57.4
68417 Wattle Grove	54 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	66.1	67.2	62.1
23479 Wattle Grove	54 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	65.8	71.1	71.8
32989 Wattle Grove	54 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.9	55	55.4
8825 Wattle Grove	54 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	57.7	55.5
85408 Wattle Grove	54 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	53.8	55	57.1
37650 Wattle Grove	54 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.4	61.1	62.8
91712 Wattle Grove	55 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.6	57.6	54.8
51442 Wattle Grove	55 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	66.1	66.1
34203 Wattle Grove	55 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.2	56.9	57.2
84267 Wattle Grove	55 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.7	58.6	57.3
72247 Wattle Grove	55 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	52.8	52.8	51
23003 Wattle Grove	55 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	57.5	58.9
40208 Wattle Grove	56 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.9	56.9	54
53324 Wattle Grove	56 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.5	68.7	69.9
29605 Wattle Grove	56 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.9	54.9	56.1
58790 Wattle Grove	56 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.8	57.3	46.9
20364 Wattle Grove	56 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	60	63.8
83854 Wattle Grove	57 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.5	57.5	55.4
26401 Wattle Grove	57 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	66.8	65.9
85702 Wattle Grove	57 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	52.3	57.1	58.6
84920 Wattle Grove	57 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.9	56.6	47.9
89258 Wattle Grove	57 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	52.6	53.7	55.3
26481 Wattle Grove	58 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.9	56.4	54.7
26139 Wattle Grove	58 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	68.9	69.6
56922 Wattle Grove	58 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.9	55.1	56
86192 Wattle Grove	58 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.2	58	55.2
66414 Wattle Grove	58 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	62.4	65.7
89302 Wattle Grove	59 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.1	54.8	54.6
29171 Wattle Grove	59 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64	67.7	67.8
101633 Wattle Grove	59 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.2	57.2	56.4
69406 Wattle Grove	59 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.9	57.6	56.6
76362 Wattle Grove	59 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.6	55.6	52.5
21385 Wattle Grove	6 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.3	59.4	55.5
46269 Wattle Grove	6 AITAPE PLACE HOLSWORTHY	RES	52	42	42	47	47	55.4	56	55.2
39499 Wattle Grove	6 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	55.3	52.4
69162 Wattle Grove	6 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	58.6	58.3
62348 Wattle Grove	6 ANEURA COURT WATTLE GROVE	RES	52	42	42	47	47	58	57.3	54.2
105396 Wattle Grove	6 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	57.3	56.7
17714 Wattle Grove	6 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.2	58.2	57.7
38091 Wattle Grove	6 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.3	56.4
31584 Wattle Grove	6 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	60.7	54.8
42540 Wattle Grove	6 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	59.9	56.8	51.1
41364 Wattle Grove	6 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	62.6	50.1
97036 Wattle Grove	6 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.6	56.5	54.4
43565 Wattle Grove	6 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	52.9	54.3	54.9
25711 Wattle Grove	6 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	62	62.8	61.4
43480 Wattle Grove	6 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	64.7	58.1
11233 Wattle Grove	6 BENA BENA PLACE HOLSWORTHY	RES	52	42	42	47	47	55	55	52
75917 Wattle Grove	6 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	58.8	57.4	51.2
98875 Wattle Grove	6 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	58.1	57	55.1
15130 Wattle Grove	6 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67.2	66	58.9
15030 Wattle Grove	6 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	65.2	59.4
107552 Wattle Grove	6 BRUNEI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.5	55.6	51.5
89069 Wattle Grove	6 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	60.8	60.8	59.8
74995 Wattle Grove	6 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	65.6	60.5	50.1
47383 Wattle Grove	6 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	56.3	56.4	55.3
91417 Wattle Grove	6 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	60	60.3	59.8
30307 Wattle Grove	6 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.1	56.5	53.3
35805 Wattle Grove	6 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	66.7	65.6
22148 Wattle Grove	6 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	61.1	61.2
74828 Wattle Grove	6 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.1	59.5
75337 Wattle Grove	6 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	59.4	59.9	49
76340 Wattle Grove	6 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	58.6	55
20083 Wattle Grove	6 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	61.6	47.9
31232 Wattle Grove	6 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	58	55.8
47030 Wattle Grove	6 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	66.6	70.9
13317 Wattle Grove	6 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.8	63.9	64
59943 Wattle Grove	6 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	55.1	53.4	50.1
86506 Wattle Grove	6 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.3	57.4	54.8
30615 Wattle Grove	6 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	60	49	47.6
80021 Wattle Grove	6 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.3	47.2
40002 Wattle Grove	6 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	62.4	58.7

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
39782 Wattle Grove		6 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	62.9	57.4
38011 Wattle Grove		6 ESHER MEWS WATTLE GROVE	RES	52	42	42	47	47	59.4	60.6	59.8
26440 Wattle Grove		6 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	57.5	54.4
21370 Wattle Grove		6 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	55.7	56.2
45231 Wattle Grove		6 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	62.1	62.8	65
65030 Wattle Grove		6 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	59.7	60.3
45584 Wattle Grove		6 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61.9	60.2	50.9
52363 Wattle Grove		6 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.1	56.6	57.3
16494 Wattle Grove		6 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	57.4	57.3	55.2
38593 Wattle Grove		6 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	60.9	58.6
57307 Wattle Grove		6 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	62.4	62.4
36575 Wattle Grove		6 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	59.2	58.2
39865 Wattle Grove		6 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	64.8	57.4
19388 Wattle Grove		6 HAMPTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.2	55.3	54.4
26912 Wattle Grove		6 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	54.3	55.7	55.9
56194 Wattle Grove		6 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	61.1	58.7
73587 Wattle Grove		6 HICKORY MEWS WATTLE GROVE	RES	52	42	42	47	47	58.4	58.2	44.7
64340 Wattle Grove		6 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56	54.6	54.9
3775 Wattle Grove		6 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	59	59.1
42887 Wattle Grove		6 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	58	58.9	52.7
22585 Wattle Grove		6 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	61.5	61.9
51436 Wattle Grove		6 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	56.2	57.2
33331 Wattle Grove		6 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	53.5	53.8	55.7
74960 Wattle Grove		6 KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	54.2	55.6	55.5
47916 Wattle Grove		6 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	60.6	54.6
92994 Wattle Grove		6 KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	53.9	55.6
76684 Wattle Grove		6 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	57.7	58.5
28609 Wattle Grove		6 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	59.7	60.6	64.2
34221 Wattle Grove		6 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	55.7	55.8	54
58195 Wattle Grove		6 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.1	50.2	47.6
12478 Wattle Grove		6 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	61.3	62.3
66379 Wattle Grove		6 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	66.4	66.4
11331 Wattle Grove		6 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	58.3	56
21441 Wattle Grove		6 LINIFOLIA MEWS WATTLE GROVE	RES	52	42	42	47	47	59	48.4	45.3
7084 Wattle Grove		6 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	65.1	51.9	48
45627 Wattle Grove		6 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	64.5	66.9
79163 Wattle Grove		6 MALLEE COURT WATTLE GROVE	RES	52	42	42	47	47	52.3	52.8	52.5
30309 Wattle Grove		6 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	54	54	54.2
4825 Wattle Grove		6 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	57.9	48.1
38465 Wattle Grove		6 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	52.8	50.3	49.9
30344 Wattle Grove		6 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	60.6	64.2
33799 Wattle Grove		6 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	64.4	63.8
15090 Wattle Grove		6 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.4	57.1	56.3
96905 Wattle Grove		6 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	57.1	57	55.4
9475 Wattle Grove		6 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	58.1	57.5
61447 Wattle Grove		6 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56.3	55.1	54.9
9545 Wattle Grove		6 MURNDAL COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	70.1	73.8
59534 Wattle Grove		6 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	58.7	58.9
46661 Wattle Grove		6 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	62	62.2	60.7
44594 Wattle Grove		6 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	61.2	57.9
21373 Wattle Grove		6 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	61.4	58.8
10306 Wattle Grove		6 PILLIGA COURT WATTLE GROVE	RES	52	42	42	47	47	54.9	55.5	55.6
37442 Wattle Grove		6 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	61.4	64.5
15263 Wattle Grove		6 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.3	55.4	53.9
55422 Wattle Grove		6 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	62.1	67.6
23406 Wattle Grove		6 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	61.8	62.3
23161 Wattle Grove		6 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	65.6	66.7
34918 Wattle Grove		6 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	57.6	58.6
44832 Wattle Grove		6 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	68.6	60.5	60.2
4852 Wattle Grove		6 TIVOLI COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	58.9	58.8
20804 Wattle Grove		6 TICAL COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	57.4	51.6
19914 Wattle Grove		6 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	59.9	52.4
56635 Wattle Grove		6 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	58.9	61
8815 Wattle Grove		6 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	57.1	52.5
21430 Wattle Grove		6 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	60.5	57.9
5420 Wattle Grove		6 VILLAGE WAY WATTLE GROVE	RES	52	42	42	47	47	56.5	56.3	55.7
60586 Wattle Grove		6 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	59.9	60.1
9089 Wattle Grove		6 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.5	66.1	69.1
73087 Wattle Grove		6 WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	55.1	57.2	55.4
3624 Wattle Grove		6 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	55.4	54.9	54.2
22303 Wattle Grove		6 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	54.5	56.5	58
29055 Wattle Grove		6 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	57	57.8	60.1
48404 Wattle Grove		6 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.4	59.3
81506 Wattle Grove		6 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	64.5	62.4	51.2
18112 Wattle Grove		6 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	58	62.6	68.8
49195 Wattle Grove		6 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	63.3	70.2
63919 Wattle Grove		60 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.7	54.6	54.7
60393 Wattle Grove		60 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	68.8	69.8
45292 Wattle Grove		60 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.8	55	56
23393 Wattle Grove		60 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	60.3	64.3
75710 Wattle Grove		61 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.2	55.2	54.7
9560 Wattle Grove		61 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	65.2	67.2	59.1
61780 Wattle Grove		61 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.6	54.8	55.1
67834 Wattle Grove		61 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.3	57	48.1
46688 Wattle Grove		61 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	52.5	53.5	54.9
43537 Wattle Grove		62 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.5	54.7	54.5
13423 Wattle Grove		62 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	70.4	70.5
16901 Wattle Grove		62 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.8	55	56
62227 Wattle Grove		62 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	58	60.2	62.7
90918 Wattle Grove		63 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.2	55.1	48.7
19702 Wattle Grove		63 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56	57.5	57.6
55877 Wattle Grove		63 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	57	55.7
78999 Wattle Grove		63 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.7	55.6	54.8
10791 Wattle Grove		64 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	68.8	71.5
50463 Wattle Grove		64 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.7	54.8	55.3
56990 Wattle Grove		64 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57	57	46.5
54197 Wattle Grove		64 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	63.5	64.4
99875 Wattle Grove		65 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.4	57.3	54.3
15610 Wattle Grove		65 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.9	57.6	58.2

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
101303 Wattle Grove		65 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.2	58	56.7
9867 Wattle Grove		65 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.6	54.9	53.7
18361 Wattle Grove		66 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	66.4	71.2	69.3
45869 Wattle Grove		66 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.7	54.9	55.2
86408 Wattle Grove		66 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.5	55.5	54.9
15043 Wattle Grove		66 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	61.8	62.6
93316 Wattle Grove		67 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.3	57.3	56.6
54052 Wattle Grove		67 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.4	60.8	61
99801 Wattle Grove		67 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.2	58.2	45.9
40822 Wattle Grove		68 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64	68.8	69.4
46583 Wattle Grove		68 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.4	54.9	55.2
93240 Wattle Grove		68 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.8	57.8	53.1
51828 Wattle Grove		68 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	58.3	62	64.4
71711 Wattle Grove		69 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.3	55.3	55.9
19238 Wattle Grove		69 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.2	58.5	59
78376 Wattle Grove		69 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.6	59	53.8
87063 Wattle Grove		6A AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	57.9	56.4	54.5
53380 Wattle Grove		6B BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	60.1	57.3
58479 Wattle Grove		7 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	60.4	54.9
11636 Wattle Grove		7 AITAPE PLACE HOLSWORTHY	RES	52	42	42	47	47	58.1	57.9	55.8
11575 Wattle Grove		7 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	59.5	55.6
58803 Wattle Grove		7 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	55.4	55.5	53.3
54120 Wattle Grove		7 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	56.1	45.6
27636 Wattle Grove		7 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	57.6	56.4
29026 Wattle Grove		7 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	61	62.1	59.4
11135 Wattle Grove		7 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	61.7	62	60.4
25987 Wattle Grove		7 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	61.5	59.1
104220 Wattle Grove		7 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	58.3	58.2	52.9
57779 Wattle Grove		7 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	65.2	65.2	59.8
81229 Wattle Grove		7 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.6	56.1	54.8
66814 Wattle Grove		7 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	58	53.4
12936 Wattle Grove		7 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	61.3	65.4	64
19233 Wattle Grove		7 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	58.8	53
49543 Wattle Grove		7 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	61	59.8
33230 Wattle Grove		7 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	57.4	56.9	53.9
18174 Wattle Grove		7 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	66.4	59.9	49.3
82684 Wattle Grove		7 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	62.5	62.1	51.6
32132 Wattle Grove		7 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	60.3	55
70287 Wattle Grove		7 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	54.6	53	51.3
46864 Wattle Grove		7 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	53.2	55.8
95116 Wattle Grove		7 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.4	56.1	56.1
57043 Wattle Grove		7 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	58.7	61.6
37125 Wattle Grove		7 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	65.7	65.7
83831 Wattle Grove		7 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	58.5	58.8
15227 Wattle Grove		7 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	60.6	56.8
22909 Wattle Grove		7 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	60.5	57.3
73275 Wattle Grove		7 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	57.9	57.9	57.4
48464 Wattle Grove		7 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	57	56.5	54.7
65600 Wattle Grove		7 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.4	51.8
43200 Wattle Grove		7 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	57.8	55.8
79323 Wattle Grove		7 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	66.3	70.1
37294 Wattle Grove		7 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.2	66.9	66.9
26769 Wattle Grove		7 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.2	56.1	56.2
51874 Wattle Grove		7 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	53.7	53.5	52.9
104278 Wattle Grove		7 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.3	58	56.2
9128 Wattle Grove		7 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	63.1	60.6
81380 Wattle Grove		7 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	59.1	46.4
64072 Wattle Grove		7 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.4	60	58.2
44381 Wattle Grove		7 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64	60.8	57.3
24367 Wattle Grove		7 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	62	62.6	51.1
58619 Wattle Grove		7 EVANDALE COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	59.3	62.9
53420 Wattle Grove		7 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	53.8	57	57.2
34525 Wattle Grove		7 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	65.4	59.8
60190 Wattle Grove		7 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	58.6	60
99612 Wattle Grove		7 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	58.8	57
83772 Wattle Grove		7 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	53.8	54.3	54
96635 Wattle Grove		7 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	57.2	57	57.2
24559 Wattle Grove		7 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	59	52.2
52551 Wattle Grove		7 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	62.4	61.5	59.4
48980 Wattle Grove		7 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	61.7	59.3
17359 Wattle Grove		7 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	66.2	57.9
21450 Wattle Grove		7 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	57.4	57.6
20910 Wattle Grove		7 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	55.6	49.7
48411 Wattle Grove		7 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.1	56.6	55.1
82346 Wattle Grove		7 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	59.6	59.5
60225 Wattle Grove		7 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	61.9	62
38561 Wattle Grove		7 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	56.1	56.3
16756 Wattle Grove		7 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	52.6	52.2	52.3
17597 Wattle Grove		7 KESAWAI PLACE HOLSWORTHY	RES	52	42	42	47	47	53.5	53.9	56.8
69959 Wattle Grove		7 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	61.2	58.9
37523 Wattle Grove		7 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	56.8	59.1
94383 Wattle Grove		7 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	58.5	60.6	59.7
45752 Wattle Grove		7 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.9	55.1	53.8
17775 Wattle Grove		7 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	55.7	57.3	57.5
42452 Wattle Grove		7 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	65.8	54.7
52951 Wattle Grove		7 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	68.1	63.6
30744 Wattle Grove		7 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	57.6	58.9	59.2
42786 Wattle Grove		7 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	68.5	66.7	60
43037 Wattle Grove		7 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	67.1	69.5
85201 Wattle Grove		7 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	55.6	55.8	53.9
90895 Wattle Grove		7 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	64.9	52	52.6
21783 Wattle Grove		7 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	61.5	64.1
49429 Wattle Grove		7 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	64	64.4	61.3
19591 Wattle Grove		7 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.8	55.5	50.5
60122 Wattle Grove		7 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	57	57.1	55.6
26729 Wattle Grove		7 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	56	58.4	57.5
76026 Wattle Grove		7 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.8	56.2	55.2
21644 Wattle Grove		7 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	59.5	50.9
47185 Wattle Grove		7 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	61	63	61.9

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
52709 Wattle Grove		7 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	59.1	55.9
48371 Wattle Grove		7 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	63.1	61.7	59.1
19958 Wattle Grove		7 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	60.6	62.3
66349 Wattle Grove		7 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.1	53.2	53.1
73562 Wattle Grove		7 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	53.8	55	54.6
63054 Wattle Grove		7 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	59.5	60.9
52251 Wattle Grove		7 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	59.1	60
59009 Wattle Grove		7 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	61.8	68.1	68.4
48073 Wattle Grove		7 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	57.7	60.2
15598 Wattle Grove		7 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	69.4	67.1	63.1
51725 Wattle Grove		7 TICAL COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	64	60
24844 Wattle Grove		7 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	64	64.9	64.8
32198 Wattle Grove		7 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	59.3	57.2
20558 Wattle Grove		7 TRENTAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	59.4	63.3
52093 Wattle Grove		7 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	58	55.9	54.4
24614 Wattle Grove		7 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	60.7	62.7
35912 Wattle Grove		7 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	62.7	60.8
40734 Wattle Grove		7 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	60.2	67
54373 Wattle Grove		7 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	59.5	63	68
98334 Wattle Grove		7 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	56.3	55.9	55.8
88531 Wattle Grove		7 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	55	56.5	56.7
59984 Wattle Grove		7 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.5	58.6	59.5
91839 Wattle Grove		7 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	58.4	58
21516 Wattle Grove		7 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	62.5	58.4
20117 Wattle Grove		7 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	58.3	64	69.7
23902 Wattle Grove		7 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	65.6	68.6
30918 Wattle Grove		7 YARRAN COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	58.7	58.2
66371 Wattle Grove		70 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.1	55.6	54.5
38947 Wattle Grove		70 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	68.8	69.3
62321 Wattle Grove		70 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56	57.2	57.6
50577 Wattle Grove		70 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	57.4	56	55.7
63645 Wattle Grove		71 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.3	57.3	59.2
16553 Wattle Grove		71 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	58	57.4	47.5
25536 Wattle Grove		72 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	68.8	69.2
85302 Wattle Grove		72 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.2	57.4	57.6
56579 Wattle Grove		72 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	57.9	57.5
9957 Wattle Grove		73 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55.4	57.5	59.4
104241 Wattle Grove		73 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	58	56.9	54.3
65724 Wattle Grove		74 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	68.7	69.1
89564 Wattle Grove		74 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.6	54.8	55.1
58741 Wattle Grove		74 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	55.6	55.5	55
45983 Wattle Grove		75 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.9	57.5	47.7
49835 Wattle Grove		75 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	58.5	58.4	57.7
45910 Wattle Grove		76 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.1	54.4	55.2
87843 Wattle Grove		76 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	68.7	69
72558 Wattle Grove		76 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	54.4	54.9	57.6
96345 Wattle Grove		76 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	57.3	56	50
22260 Wattle Grove		77 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.7	58.5	59.2
73972 Wattle Grove		77 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	56.7	57.1
52633 Wattle Grove		78 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.4	54.3	54.9
40367 Wattle Grove		78 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	68.7	69
69753 Wattle Grove		78 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.6	54.8	55.2
32713 Wattle Grove		78 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	58	58	55.7
35370 Wattle Grove		79 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58	59.7	60.8
40775 Wattle Grove		79 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	58.9	58.8	55
31270 Wattle Grove		8 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	57.4	57.4
58811 Wattle Grove		8 AITAPE PLACE HOLSWORTHY	RES	52	42	42	47	47	54	55.7	55.6
50289 Wattle Grove		8 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	51.3	46.1
75024 Wattle Grove		8 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.3	55.4	55.1
50913 Wattle Grove		8 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	60.2	57.9
22694 Wattle Grove		8 ANEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60	56.5	44.2
81010 Wattle Grove		8 ARMATA COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	57.1	56.7
7050 Wattle Grove		8 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	62.2	59.8	58.3
61491 Wattle Grove		8 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	59.3	47.1
19336 Wattle Grove		8 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	54.1	51.2
42044 Wattle Grove		8 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	58.7	57	55.4
28520 Wattle Grove		8 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	65.8	62.6
98157 Wattle Grove		8 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	57.2	55.5	53.7
21002 Wattle Grove		8 BEDDINGTON COURT WATTLE GROVE	RES	52	42	42	47	47	52.9	54.4	55
16546 Wattle Grove		8 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	61.5	60	54.1
78177 Wattle Grove		8 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	64	62.8
31576 Wattle Grove		8 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	58.5	55.7
49810 Wattle Grove		8 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	60.6	59.9
38341 Wattle Grove		8 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.7	54.8	53.8
80621 Wattle Grove		8 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67.4	65.6	59.3
79513 Wattle Grove		8 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	65.2	58.8
94216 Wattle Grove		8 BRUNEI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53	53.6	53.3
88263 Wattle Grove		8 CASSINIA COURT WATTLE GROVE	RES	52	42	42	47	47	60.2	60.2	58.9
17469 Wattle Grove		8 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	66.3	60.4	47.7
107347 Wattle Grove		8 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	57.9	55
61679 Wattle Grove		8 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	62.6	62.7	57.8
19797 Wattle Grove		8 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	54.1	55.8	57
51872 Wattle Grove		8 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	57	60	65
72083 Wattle Grove		8 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	61	65.1	66
30788 Wattle Grove		8 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	57.7	55.9
57522 Wattle Grove		8 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	59.1	57.6
38257 Wattle Grove		8 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	59.6	60.3	48.1
75878 Wattle Grove		8 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	57.9	55.3
31282 Wattle Grove		8 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	56.8	55.7
10060 Wattle Grove		8 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	58.6	55.5
19775 Wattle Grove		8 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	66.7	70.2
85789 Wattle Grove		8 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.6	65	64.4
25569 Wattle Grove		8 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	54.8	55.1	54
69063 Wattle Grove		8 DERNAL ROAD HOLSWORTHY	RES	52	42	42	47	47	57.6	54.9	52.5
32328 Wattle Grove		8 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	58.5	56.1
70550 Wattle Grove		8 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	57.1	54.8
5852 Wattle Grove		8 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	62.1	58.6
72886 Wattle Grove		8 ELLESMERE COURT WATTLE GROVE	RES	52	42	42	47	47	61.2	57.7	55.6
45841 Wattle Grove		8 ESHER MEWS WATTLE GROVE	RES	52	42	42	47	47	58.9	60.4	57

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
Key				Exceeds Standard NML	exceeds OOHW 3 NML						
66961 Wattle Grove		8 EUMUNG COURT WATTLE GROVE	RES	52	42	42	47	47	60.6	60.2	57.6
35963 Wattle Grove		8 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	53.6	55.5	56.4
12929 Wattle Grove		8 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	63.7	64.3	63.7
77996 Wattle Grove		8 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	58.3	57.7
65226 Wattle Grove		8 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	60.9	59.2	55.5
75331 Wattle Grove		8 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.3	59	60.2
48498 Wattle Grove		8 GEMAS STREET HOLSWORTHY	RES	52	42	42	47	47	55.9	56.2	52.9
60668 Wattle Grove		8 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	63.3	61.5
39159 Wattle Grove		8 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	59.8	59.2
39440 Wattle Grove		8 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	61	59.6
9482 Wattle Grove		8 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	64.7	66	57
27504 Wattle Grove		8 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	58.1	58.4
66854 Wattle Grove		8 HAVILAH COURT WATTLE GROVE	RES	52	42	42	47	47	61.1	59.9	47.7
71330 Wattle Grove		8 HICKORY MEWS WATTLE GROVE	RES	52	42	42	47	47	58.2	58.9	44.7
96205 Wattle Grove		8 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.1	54.2	55.1
14873 Wattle Grove		8 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	60.5	60.9
11475 Wattle Grove		8 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	59.4	47.6
73541 Wattle Grove		8 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	63.8	66.2
25679 Wattle Grove		8 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	55	56.2	55.5
84011 Wattle Grove		8 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	52.7	54.6	55.8
36616 Wattle Grove		8 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	60.9	60.9
28919 Wattle Grove		8 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	58.8	60.5
53128 Wattle Grove		8 KIRKHAM MEWS WATTLE GROVE	RES	52	42	42	47	47	59.4	62.8	64.3
76311 Wattle Grove		8 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	55.6	55.2	54
50880 Wattle Grove		8 LAE ROAD HOLSWORTHY	RES	52	42	42	47	47	54.6	51.7	45.2
58929 Wattle Grove		8 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	62.3	66.6	66.6
11037 Wattle Grove		8 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	58.7	60.6
39096 Wattle Grove		8 LINIFOLIA MEWS WATTLE GROVE	RES	52	42	42	47	47	59.9	59.7	54.8
19649 Wattle Grove		8 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	66.7	65.3	60.7
15838 Wattle Grove		8 LYNDHURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.7	63.7	67
62407 Wattle Grove		8 MALLEE COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	54.9	54.1
46227 Wattle Grove		8 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	64	58.1
60911 Wattle Grove		8 MCKINNON CLOSE HOLSWORTHY	RES	52	42	42	47	47	51.4	51.4	51.2
38874 Wattle Grove		8 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	60	63.3
101484 Wattle Grove		8 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	56	55.7	54.1
59158 Wattle Grove		8 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	52.7	52.6	51.8
10383 Wattle Grove		8 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	55.4	56.4	56.5
101891 Wattle Grove		8 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.8	55.8	55
67145 Wattle Grove		8 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	60.5	60.6
42270 Wattle Grove		8 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	60.7	61.9	60.5
22430 Wattle Grove		8 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	59	58.5	56
43173 Wattle Grove		8 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	63.6	61	58.2
29892 Wattle Grove		8 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	56.7	60.7	65.1
72563 Wattle Grove		8 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	53.1	53.3	53.2
19150 Wattle Grove		8 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	57.4	62.8	69
65130 Wattle Grove		8 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	59.8	61.8
48029 Wattle Grove		8 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	58.9	65.7	65.2
56813 Wattle Grove		8 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	56.2	57.7	58.6
8924 Wattle Grove		8 TALBOT COURT WATTLE GROVE	RES	52	42	42	47	47	68.7	56.7	50
84492 Wattle Grove		8 TARAKAN STREET HOLSWORTHY	RES	52	42	42	47	47	53.9	53.8	51.9
56235 Wattle Grove		8 TIVOLI COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	52	50.7
95899 Wattle Grove		8 TICAL COURT WATTLE GROVE	RES	52	42	42	47	47	63.8	56.5	51.2
81027 Wattle Grove		8 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	63.9	63.1
84438 Wattle Grove		8 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	59.6	55.9
2929 Wattle Grove		8 TRENTAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.7	59.9	60.1
21118 Wattle Grove		8 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	60.2	57.6
22007 Wattle Grove		8 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	64.3	59.5
29214 Wattle Grove		8 VILLAGE WAY WATTLE GROVE	RES	52	42	42	47	47	58.3	58.6	58
61854 Wattle Grove		8 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	58.6	60.5	60.6
56413 Wattle Grove		8 WATTLE GROVE DRIVE WATTLE GROVE	RES	52	42	42	47	47	60.4	65.8	68.1
79778 Wattle Grove		8 WAU PLACE HOLSWORTHY	RES	52	42	42	47	47	57	57.6	57.7
12535 Wattle Grove		8 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	55.5	55.6	54.1
43217 Wattle Grove		8 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	54.4	56.8	58
66996 Wattle Grove		8 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	59.4	59.6
82292 Wattle Grove		8 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	57.6	58.6
41838 Wattle Grove		8 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	64.2	62.6	48.5
56343 Wattle Grove		8 WOOLMERS COURT WATTLE GROVE	RES	52	42	42	47	47	60.4	65.1	66.3
92855 Wattle Grove		8 YALLUM COURT WATTLE GROVE	RES	52	42	42	47	47	59.3	63.5	70.7
42631 Wattle Grove		80 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	68.7	68.9
65646 Wattle Grove		80 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.6	54.8	55.2
33428 Wattle Grove		80 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.5	57.2	56.4
17013 Wattle Grove		81 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.6	55.4	54.6
53636 Wattle Grove		81 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.2	59.1	61.1
74302 Wattle Grove		81 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.2	57.8	52.7
26492 Wattle Grove		82 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	66.8	70.1	61.4
28369 Wattle Grove		82 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.8	55.4	55
22640 Wattle Grove		82B BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	53.7	54.1	54.1
98566 Wattle Grove		83 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.5	56.2	54.7
41712 Wattle Grove		83 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58	60.1	60.4
58078 Wattle Grove		83 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	55.7	55.8	56.3
93339 Wattle Grove		84 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	53.7	53.9	53.8
31013 Wattle Grove		84 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	56.2	50.1
80049 Wattle Grove		85 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.5	57.1	54.6
70363 Wattle Grove		85 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	58.2	58.8	61.2
35039 Wattle Grove		85 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	56.4	56.4
91538 Wattle Grove		86 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	54.3	54.4	54.2
25181 Wattle Grove		86 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	55	57.5	58.6
51319 Wattle Grove		86 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.1	57.1	53.1
90695 Wattle Grove		87 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	56.3	56.4	54.6
22696 Wattle Grove		87 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	56.6	60.4	60.8
30029 Wattle Grove		87 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.1	57	55.5
10093 Wattle Grove		88 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	53.5	53.8	53.8
10885 Wattle Grove		88 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	53.8	54.3	52.3
56965 Wattle Grove		88 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	57.7	57.7	55.8
72877 Wattle Grove		89 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	58.5	59.8	53.7
66912 Wattle Grove		89B BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	52.9	54.7	54.7
54731 Wattle Grove		8A KINCHEGA COURT HOLSWORTHY	RES	52	42	42	47	47	54.5	55	54.9
66119 Wattle Grove		8A KINCHEGA COURT WATTLE GROVE	RES	52	42	42	47	47	54.8	54.5	54.8
43061 Wattle Grove		8B BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.2	55	54

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level				Predicted helicopter noise			
				Standard hours	OOHW Period			Area 5	Area 2	Area 3	
					1	2	3				
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
78688	Wattle Grove	9 ACOLA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	58	56.2
47977	Wattle Grove	9 AITAPE PLACE HOLSWORTHY	RES	52	42	42	47	47	56.4	57.6	55.5
47153	Wattle Grove	9 ALEXANDRINA COURT WATTLE GROVE	RES	52	42	42	47	47	60.1	58.4	54.7
24289	Wattle Grove	9 AMBON ROAD HOLSWORTHY	RES	52	42	42	47	47	56.7	54.8	53.3
18515	Wattle Grove	9 ANCURA COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	58.1	48.5
12643	Wattle Grove	9 ARROWFIELD DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.9	61.8	58.1
9609	Wattle Grove	9 BAILEYANA COURT WATTLE GROVE	RES	52	42	42	47	47	59.4	59.2	57.9
22420	Wattle Grove	9 BALALA COURT WATTLE GROVE	RES	52	42	42	47	47	62.2	61.6	59.1
50155	Wattle Grove	9 BANKSIA PLACE WATTLE GROVE	RES	52	42	42	47	47	58.7	58.6	48.5
75765	Wattle Grove	9 BANYULE COURT WATTLE GROVE	RES	52	42	42	47	47	67.4	67.3	58.8
69511	Wattle Grove	9 BARDIA PARADE HOLSWORTHY	RES	52	42	42	47	47	55.2	55.1	52.6
38774	Wattle Grove	9 BEDERVALE COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	52.1	53.5
15768	Wattle Grove	9 BELTANA COURT WATTLE GROVE	RES	52	42	42	47	47	64.5	67.3	59.1
53482	Wattle Grove	9 BODALLA COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	59.3	53.6
63450	Wattle Grove	9 BOOREE COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	61.8	61.3
37314	Wattle Grove	9 BRALLOS AVENUE HOLSWORTHY	RES	52	42	42	47	47	55.2	54.5	52.8
64060	Wattle Grove	9 BRICKENDON COURT WATTLE GROVE	RES	52	42	42	47	47	67.1	63.6	60.2
44641	Wattle Grove	9 BROWNLOW COURT WATTLE GROVE	RES	52	42	42	47	47	62.8	64.3	60.9
62072	Wattle Grove	9 CASTLE ROCK COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	61.3	59
38714	Wattle Grove	9 CASUARINA COURT WATTLE GROVE	RES	52	42	42	47	47	56.9	57.5	54.1
38445	Wattle Grove	9 CENTENNIAL PARK COURT WATTLE GROVE	RES	52	42	42	47	47	59	60.7	60.8
42232	Wattle Grove	9 CHELSEA GARDEN COURT WATTLE GROVE	RES	52	42	42	47	47	55.2	55.7	55.6
18778	Wattle Grove	9 CLAREMONT COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	61.1	62
23503	Wattle Grove	9 CLARENDON COURT WATTLE GROVE	RES	52	42	42	47	47	64.1	66.4	66.5
62508	Wattle Grove	9 CLIVEDEN COURT WATTLE GROVE	RES	52	42	42	47	47	56.6	60.3	59.4
53192	Wattle Grove	9 COMO COURT WATTLE GROVE	RES	52	42	42	47	47	64.7	62	54.9
12568	Wattle Grove	9 CONFERTA COURT WATTLE GROVE	RES	52	42	42	47	47	59.5	59.8	58.3
73822	Wattle Grove	9 CONROY ROAD WATTLE GROVE	RES	52	42	42	47	47	58.5	61	59.9
49477	Wattle Grove	9 CONTINUA COURT WATTLE GROVE	RES	52	42	42	47	47	56.8	54.8	53
22345	Wattle Grove	9 COOMA COURT WATTLE GROVE	RES	52	42	42	47	47	59.8	59.3	53.8
23673	Wattle Grove	9 CORRIN COURT WATTLE GROVE	RES	52	42	42	47	47	59	57.8	56.5
38190	Wattle Grove	9 CORRYTON COURT WATTLE GROVE	RES	52	42	42	47	47	60	65.4	70.6
64488	Wattle Grove	9 CRESSBROOK DRIVE WATTLE GROVE	RES	52	42	42	47	47	61.8	66	66.2
55714	Wattle Grove	9 DAINTREE DRIVE WATTLE GROVE	RES	52	42	42	47	47	57.2	57	55.4
31097	Wattle Grove	9 DAMOUR STREET HOLSWORTHY	RES	52	42	42	47	47	54.5	54.6	52.1
68534	Wattle Grove	9 DERNA ROAD HOLSWORTHY	RES	52	42	42	47	47	56.2	55.7	55
61458	Wattle Grove	9 EILDON COURT WATTLE GROVE	RES	52	42	42	47	47	59.2	59.7	55.4
21237	Wattle Grove	9 ELATA COURT WATTLE GROVE	RES	52	42	42	47	47	58.4	58.1	46.1
7059	Wattle Grove	9 ELLERSTON COURT WATTLE GROVE	RES	52	42	42	47	47	61.6	52	48.6
50732	Wattle Grove	9 ELLESHERE COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	60.9	57.4
45449	Wattle Grove	9 EVANDALE COURT WATTLE GROVE	RES	52	42	42	47	47	56.1	59.6	62.6
63690	Wattle Grove	9 EXBURY COURT WATTLE GROVE	RES	52	42	42	47	47	53.7	55.6	57.1
48590	Wattle Grove	9 EXFORD COURT WATTLE GROVE	RES	52	42	42	47	47	64.3	64.7	59.6
12639	Wattle Grove	9 FARNBOROUGH COURT WATTLE GROVE	RES	52	42	42	47	47	58.7	60.8	61
17398	Wattle Grove	9 FERNLEAF COURT WATTLE GROVE	RES	52	42	42	47	47	61	60.8	53.1
42769	Wattle Grove	9 FINSCHHAFEN STREET HOLSWORTHY	RES	52	42	42	47	47	54.4	54.9	54.5
75560	Wattle Grove	9 GATLEY COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	59.5	59.7
11717	Wattle Grove	9 GLANARA COURT WATTLE GROVE	RES	52	42	42	47	47	63.9	59.2	57.1
15211	Wattle Grove	9 GLENGYLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	61.2	58.2
17827	Wattle Grove	9 GLENROCK COURT WATTLE GROVE	RES	52	42	42	47	47	59.9	61.8	58.6
86544	Wattle Grove	9 GRACEMERE COURT WATTLE GROVE	RES	52	42	42	47	47	62.7	68.2	63.1
32424	Wattle Grove	9 HAUGHTON COURT WATTLE GROVE	RES	52	42	42	47	47	52	57.2	55.3
54191	Wattle Grove	9 HUON CRESCENT HOLSWORTHY	RES	52	42	42	47	47	54.3	55.2	54.6
83961	Wattle Grove	9 HYDE PARK COURT WATTLE GROVE	RES	52	42	42	47	47	57.8	60.4	57.6
81673	Wattle Grove	9 IMPLEXA COURT WATTLE GROVE	RES	52	42	42	47	47	58	56.6	54.8
17625	Wattle Grove	9 JIMBOUR COURT WATTLE GROVE	RES	52	42	42	47	47	58.5	60.1	62.5
40162	Wattle Grove	9 KANANGRA COURT WATTLE GROVE	RES	52	42	42	47	47	54.7	55.2	55.3
19431	Wattle Grove	9 KAPUTAR COURT WATTLE GROVE	RES	52	42	42	47	47	53.8	53.8	52.3
91984	Wattle Grove	9 KEW GARDENS COURT WATTLE GROVE	RES	52	42	42	47	47	55.9	59.3	59.4
39272	Wattle Grove	9 KINROSS COURT WATTLE GROVE	RES	52	42	42	47	47	55.3	56.7	59.6
27783	Wattle Grove	9 LABUAN ROAD HOLSWORTHY	RES	52	42	42	47	47	56.9	55	53.8
55656	Wattle Grove	9 LANYON COURT WATTLE GROVE	RES	52	42	42	47	47	62.9	65.5	53.6
97304	Wattle Grove	9 LARRA COURT WATTLE GROVE	RES	52	42	42	47	47	62.5	67.7	64.6
40083	Wattle Grove	9 LEESWOOD COURT WATTLE GROVE	RES	52	42	42	47	47	59.1	59.5	59.5
36649	Wattle Grove	9 LOMOND COURT WATTLE GROVE	RES	52	42	42	47	47	68.5	66	61
47562	Wattle Grove	9 LYNDBURST COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	63.1	67.3
7405	Wattle Grove	9 MARKHAM STREET HOLSWORTHY	RES	52	42	42	47	47	56.1	56.8	57
97402	Wattle Grove	9 MARTINDALE COURT WATTLE GROVE	RES	52	42	42	47	47	67.1	51.7	50.7
64854	Wattle Grove	9 MERRANG COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	60.6	64.5
40851	Wattle Grove	9 MERRYVILLE COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	59.4	58.7
34732	Wattle Grove	9 MIRI CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.3	56.1	55.6
33496	Wattle Grove	9 MIVO STREET HOLSWORTHY	RES	52	42	42	47	47	54.7	54.6	54
59098	Wattle Grove	9 MORTON COURT WATTLE GROVE	RES	52	42	42	47	47	57.3	58.8	59.5
86553	Wattle Grove	9 MUBO CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55	55.4	50.3
20484	Wattle Grove	9 OATLANDS COURT WATTLE GROVE	RES	52	42	42	47	47	59.6	60.8	59
22453	Wattle Grove	9 OLDBURY COURT WATTLE GROVE	RES	52	42	42	47	47	60	60.8	60.1
70053	Wattle Grove	9 PEDDER COURT WATTLE GROVE	RES	52	42	42	47	47	60.5	57.8	54.9
8372	Wattle Grove	9 PERI COURT WATTLE GROVE	RES	52	42	42	47	47	63.2	50	46.8
26228	Wattle Grove	9 QUAMBY COURT WATTLE GROVE	RES	52	42	42	47	47	57.5	60.8	64.3
9991	Wattle Grove	9 SALAMAUA CRESCENT HOLSWORTHY	RES	52	42	42	47	47	55.6	56.2	56
103017	Wattle Grove	9 SANANANDA ROAD HOLSWORTHY	RES	52	42	42	47	47	56	55.9	55.3
27054	Wattle Grove	9 SOMERCOTES COURT WATTLE GROVE	RES	52	42	42	47	47	53.5	60.1	67.5
60134	Wattle Grove	9 SOMERSET COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	61.1	56.6
65047	Wattle Grove	9 SPRINGFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	60.3	65.1	67.7
26914	Wattle Grove	9 STOWE COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	59.8	59
43922	Wattle Grove	9 TIVOLI COURT WATTLE GROVE	RES	52	42	42	47	47	56.4	56.5	58.3
57629	Wattle Grove	9 TOLAC COURT WATTLE GROVE	RES	52	42	42	47	47	64.4	65	62.3
61142	Wattle Grove	9 TOMAGO COURT WATTLE GROVE	RES	52	42	42	47	47	63.4	63.5	54
8589	Wattle Grove	9 TORRENS COURT WATTLE GROVE	RES	52	42	42	47	47	63.1	59.9	57.8
44766	Wattle Grove	9 TRENTHAM PARK COURT WATTLE GROVE	RES	52	42	42	47	47	56.4	61.6	62.3
64552	Wattle Grove	9 TRINEURA COURT WATTLE GROVE	RES	52	42	42	47	47	57.9	57.1	47.3
52788	Wattle Grove	9 TUSCULUM COURT WATTLE GROVE	RES	52	42	42	47	47	58.2	62.6	64.4
9911	Wattle Grove	9 VALLEYFIELD COURT WATTLE GROVE	RES	52	42	42	47	47	65.5	65	58.6
66610	Wattle Grove	9 WALLCLIFFE COURT WATTLE GROVE	RES	52	42	42	47	47	56.5	62.1	67
30544	Wattle Grove	9 WEWAK ROAD HOLSWORTHY	RES	52	42	42	47	47	57.9	57.4	54.1
18820	Wattle Grove	9 WIMBLEDON COURT WATTLE GROVE	RES	52	42	42	47	47	55.6	57.5	57.8
19409	Wattle Grove	9 WOBURN ABBEY COURT WATTLE GROVE	RES	52	42	42	47	47	55.8	56.4	56.7
85946	Wattle Grove	9 WOLLEMI COURT WATTLE GROVE	RES	52	42	42	47	47	57.1	59.4	59.5
36389	Wattle Grove	9 WOODLAKE COURT WATTLE GROVE	RES	52	42	42	47	47	64.7	64.4	54.8

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
60741 Wattle Grove North	10 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	70.2	64.9	59.1
22427 Wattle Grove North	10 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.8	62.5	57.6
94766 Wattle Grove North	10 MONASH AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.4	57.1	54
48611 Wattle Grove North	10 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	64.1	60.2	56.1
61043 Wattle Grove North	10 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	69.9	65.2	58.4
70415 Wattle Grove North	10 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	63.4	61.4	56.5
44346 Wattle Grove North	10 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	63.2	61.3	56.7
43916 Wattle Grove North	10 ROBERTSON CLOSE WATTLE GROVE	RES	46	41	41	41	41	60.2	58.6	53.7
10552 Wattle Grove North	10 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	66	61.1	57
27884 Wattle Grove North	10 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	60.8	57.8	54.1
46088 Wattle Grove North	10 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	67.8	61.4	56.9
57691 Wattle Grove North	10 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	63.1	62.2	57.3
15219 Wattle Grove North	10 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	64.2	59.3	55.2
54641 Wattle Grove North	10 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	64.6	59.9	55.4
71692 Wattle Grove North	11 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	62.7	58.7	54.8
90861 Wattle Grove North	11 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59	56.2	54.8
64586 Wattle Grove North	11 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.9	57.2	54.4
45113 Wattle Grove North	11 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	56.9	55.9	53.4
72634 Wattle Grove North	11 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	62	59	54.9
38110 Wattle Grove North	11 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65	60.7	56.2
23958 Wattle Grove North	11 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	62.1	60.3	57.3
38712 Wattle Grove North	11 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.5	58.8	56.1
43528 Wattle Grove North	11 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.7	62.9	57.9
91407 Wattle Grove North	11 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	66.5	62	56.6
30435 Wattle Grove North	11 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	64.8	61	56.2
58946 Wattle Grove North	11 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	68.4	63	58.4
44192 Wattle Grove North	11 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	68.9	61.8	57.4
63320 Wattle Grove North	11 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.5	62.2	58.1
19289 Wattle Grove North	11 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.9	59.3	54.5
41571 Wattle Grove North	11 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	70	60.4	54
17226 Wattle Grove North	11 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	66.1	60.7	57.6
97019 Wattle Grove North	11 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	64.9	61.1	56.6
64451 Wattle Grove North	11 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	60.8	57.8	54.3
6319 Wattle Grove North	11 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66.3	61.2	56.1
43736 Wattle Grove North	11 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	63.9	60.5	56.7
71313 Wattle Grove North	11 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	62.9	59.5	53.4
17128 Wattle Grove North	11 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.4	62.3	57
44603 Wattle Grove North	115 HEATHCOTE ROAD WATTLE GROVE	RES	46	41	41	41	41	57.5	55	53.6
11109 Wattle Grove North	12 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	61.3	58.3	55.1
45172 Wattle Grove North	12 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	65.8	60.6	55
14384 Wattle Grove North	12 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.8	58.5	54.3
35574 Wattle Grove North	12 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	61.4	58.4	54.4
107294 Wattle Grove North	12 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.2	57.8	54.7
63336 Wattle Grove North	12 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	63	57.5	50.2
46483 Wattle Grove North	12 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65	61.6	56.8
13755 Wattle Grove North	12 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	61.9	60.4	55.7
98497 Wattle Grove North	12 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.9	56.8	54.1
26258 Wattle Grove North	12 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.6	62.9	57.6
33005 Wattle Grove North	12 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	65.4	62.1	55.4
69378 Wattle Grove North	12 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	68.8	64.3	59.3
20006 Wattle Grove North	12 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	62.3	58.5	50.5
16282 Wattle Grove North	12 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	68.9	62.8	57.2
54431 Wattle Grove North	12 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	58.4	54.3	52.4
63006 Wattle Grove North	12 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	71.9	65.1	59
9091 Wattle Grove North	12 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.1	62.7	57.7
66571 Wattle Grove North	12 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	63.1	58.7	54.8
52298 Wattle Grove North	12 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	71.3	65.2	58.3
27685 Wattle Grove North	12 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	65.2	59.8	54.3
95745 Wattle Grove North	12 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	65.4	61.9	56.6
64317 Wattle Grove North	12 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	68.5	61.3	57.6
44773 Wattle Grove North	12 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	63.2	57.4	53.2
23744 Wattle Grove North	12 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	69.6	64	59.3
39119 Wattle Grove North	12 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	62.3	59.6	57.2
19674 Wattle Grove North	12 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	63.6	58.7	55.1
53950 Wattle Grove North	12 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	65.1	60.2	55.9
69791 Wattle Grove North	13 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	63.2	58.8	54.8
90249 Wattle Grove North	13 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.9	55.9	54.7
35163 Wattle Grove North	13 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.3	57	52.9
27856 Wattle Grove North	13 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.6	56	52.6
9375 Wattle Grove North	13 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.8	59	54.8
61762 Wattle Grove North	13 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.9	60.4	55.9
37730 Wattle Grove North	13 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	63.5	60.3	54.7
64838 Wattle Grove North	13 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.3	56.5	55.6
62953 Wattle Grove North	13 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.1	62.2	57.1
25564 Wattle Grove North	13 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	66.6	62.3	56.7
13776 Wattle Grove North	13 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	66.6	60.6	56.7
39656 Wattle Grove North	13 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	70.2	62.6	58.1
27173 Wattle Grove North	13 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.5	64	58.6
56487 Wattle Grove North	13 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.9	59.6	56.2
58353 Wattle Grove North	13 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	70.8	65.5	58.4
88027 Wattle Grove North	13 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	66.6	60.7	56
35283 Wattle Grove North	13 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	65.2	61.6	56.5
4900 Wattle Grove North	13 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	62.5	58.5	53.8
23834 Wattle Grove North	13 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66	60.6	56.1
38552 Wattle Grove North	13 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	66.1	62.7	58.4
54162 Wattle Grove North	13 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	62.3	59.4	55.9
37818 Wattle Grove North	13 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.2	62.2	57
34911 Wattle Grove North	14 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	64.1	59.5	55.2
93198 Wattle Grove North	14 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.4	59.3	54.3
87970 Wattle Grove North	14 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	60.5	60.3	57.3
60665 Wattle Grove North	14 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	56.8	55.3	53
58182 Wattle Grove North	14 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	62.4	58.6	54.4
14158 Wattle Grove North	14 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.7	61.7	57.6
51187 Wattle Grove North	14 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	62.9	57.5	54.6
22214 Wattle Grove North	14 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	56.6	55.9	54.2
30841 Wattle Grove North	14 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.7	61.6	56.7
51928 Wattle Grove North	14 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	62.9	59.9	55
72473 Wattle Grove North	14 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	69	64.4	59.4
54206 Wattle Grove North	14 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	62	53.9	49.7

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
30153 Wattle Grove North	14 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	70.9	64.7	59.5
80438 Wattle Grove North	14 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	55.9	52.6	37.8
3629 Wattle Grove North	14 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	72.1	65.2	58.9
62608 Wattle Grove North	14 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.6	63.3	58.4
83062 Wattle Grove North	14 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	65.2	61.2	57.3
33977 Wattle Grove North	14 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	72.1	65.4	58.3
61656 Wattle Grove North	14 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	65.9	61	56.9
13847 Wattle Grove North	14 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	64.4	58.5	54.7
15761 Wattle Grove North	14 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	66.2	63	57.1
12911 Wattle Grove North	14 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	62.1	58.1	54.5
30136 Wattle Grove North	14 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	69.9	63.7	58.5
15741 Wattle Grove North	14 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	62.7	60	56.2
89643 Wattle Grove North	14 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	62.2	58.4	54.6
46914 Wattle Grove North	14 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	65.3	60.5	56.4
107291 Wattle Grove North	140 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57	56.9	54
58529 Wattle Grove North	148 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57	54.3	52.3
81396 Wattle Grove North	14A ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	59.2	56.6	54.2
17240 Wattle Grove North	15 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	63	58.9	54.9
96328 Wattle Grove North	15 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59	58.6	56.4
37911 Wattle Grove North	15 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.6	57.9	56.6
21860 Wattle Grove North	15 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.3	57.7	53.5
88082 Wattle Grove North	15 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	62.3	58.4	54.4
64731 Wattle Grove North	15 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.7	60.2	56.5
18975 Wattle Grove North	15 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	56.9	52.5
33503 Wattle Grove North	15 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.2	63.2	58
57879 Wattle Grove North	15 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	65.2	59.9	55.5
62053 Wattle Grove North	15 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	68.2	62.5	59.3
68650 Wattle Grove North	15 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.6	62.3	55.4
86622 Wattle Grove North	15 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.6	58.5	54.6
6715 Wattle Grove North	15 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	73.3	66.5	59.2
42520 Wattle Grove North	15 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	64.4	60.3	56
44225 Wattle Grove North	15 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	67.1	62.1	56.7
56014 Wattle Grove North	15 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	61.3	53.1	47.5
12362 Wattle Grove North	15 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	65.9	61	56.2
74434 Wattle Grove North	15 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	60.4	60.2	56.7
21660 Wattle Grove North	15 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	61.8	58.2	54.5
80578 Wattle Grove North	15 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.8	62	56.9
102919 Wattle Grove North	150 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.7	55.1	53.1
83485 Wattle Grove North	152 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.1	55.4	52.3
63944 Wattle Grove North	154 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.2	58	54.3
8616 Wattle Grove North	156 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.7	54.2	53.2
99199 Wattle Grove North	16 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	59.9	57.9	54.1
59310 Wattle Grove North	16 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	63.3	59.5	55.9
47674 Wattle Grove North	16 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.9	57.7	54.8
3928 Wattle Grove North	16 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.1	57.8	55.9
16956 Wattle Grove North	16 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	56.8	55.4	53
58957 Wattle Grove North	16 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	62.6	59.2	54.9
42080 Wattle Grove North	16 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.8	60.4	55.5
40055 Wattle Grove North	16 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	62.2	60.8	57.5
49535 Wattle Grove North	16 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.9	55.7	51.9
37896 Wattle Grove North	16 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.9	65	59.7
54650 Wattle Grove North	16 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	65	59.6	55.8
70758 Wattle Grove North	16 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	69.3	64.5	59.4
97286 Wattle Grove North	16 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	63.2	58.8	55.1
23921 Wattle Grove North	16 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	68.4	62.6	57.6
47554 Wattle Grove North	16 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	56.9	55.1	52.6
24281 Wattle Grove North	16 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	72.4	65.3	58.7
29608 Wattle Grove North	16 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	69	62.3	58
12412 Wattle Grove North	16 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.6	58.6	54.7
22921 Wattle Grove North	16 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	72.4	65.6	60.7
16875 Wattle Grove North	16 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	66	61.1	56.7
87780 Wattle Grove North	16 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.7	58.7	52.9
70311 Wattle Grove North	16 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	66.4	63.3	57.7
81923 Wattle Grove North	16 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	63.4	58.8	52
22074 Wattle Grove North	16 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	68.2	62	56.8
49538 Wattle Grove North	16 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	61.8	59.5	56.4
92330 Wattle Grove North	16 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	62.1	58.4	54.6
95272 Wattle Grove North	16 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	64.1	57.3	51.3
107310 Wattle Grove North	160 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.1	55.5	52.3
21606 Wattle Grove North	162 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.9	57.9	52.3
29018 Wattle Grove North	164A HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.3	54.2	52.4
104162 Wattle Grove North	166 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.2	53.9	52.5
91600 Wattle Grove North	168 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	55.3	53.7	52.4
51356 Wattle Grove North	168 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.8	57.6	54.4
54839 Wattle Grove North	17 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.9	58	55.8
95652 Wattle Grove North	17 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.7	56.9	54
79852 Wattle Grove North	17 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.1	54.2	48.6
39735 Wattle Grove North	17 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	63.3	58.9	51.8
18227 Wattle Grove North	17 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.5	60.1	56.4
12762 Wattle Grove North	17 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	60.5	59	55.3
30143 Wattle Grove North	17 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	71.7	65.6	60.1
61592 Wattle Grove North	17 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	59.2	55.4	46.6
90804 Wattle Grove North	17 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	71.4	64	58.3
56275 Wattle Grove North	17 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	74.1	68.1	60.7
8948 Wattle Grove North	17 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.4	58.6	54.7
86636 Wattle Grove North	17 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	65.6	60.5	56
92287 Wattle Grove North	17 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	67.1	61.1	56.6
61565 Wattle Grove North	17 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	62	57.7	54.2
9132 Wattle Grove North	17 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	65.8	61.3	56.3
34256 Wattle Grove North	17 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	63.6	60.2	56.5
44242 Wattle Grove North	17 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	63.2	58.4	54.6
44128 Wattle Grove North	17 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.1	61.9	56.3
55524 Wattle Grove North	18 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	59.7	57	56.3
54503 Wattle Grove North	18 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	63.8	59	55
97129 Wattle Grove North	18 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.5	58.9	56.7
17874 Wattle Grove North	18 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	61.2	57.6	55.9
16734 Wattle Grove North	18 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.1	55.4	53
27633 Wattle Grove North	18 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.9	61.4	56.8
71574 Wattle Grove North	18 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	62.5	60.5	56.1

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level				Predicted helicopter noise		
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
22013 Wattle Grove North	18 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.9	58.1	54.6
12948 Wattle Grove North	18 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	69.4	65	60
93045 Wattle Grove North	18 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	64.7	61.6	57
69082 Wattle Grove North	18 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	71	64.6	59.5
86436 Wattle Grove North	18 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	64.7	62.1	57.5
37516 Wattle Grove North	18 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	68.2	62.5	57.5
15930 Wattle Grove North	18 FREDIA PLACE HAMMONDVILLE	RES	46	41	41	41	41	59.4	57.7	52.6
16206 Wattle Grove North	18 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	72.6	65.5	58.6
78275 Wattle Grove North	18 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	70.1	63.1	57.4
44680 Wattle Grove North	18 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	72.8	65.7	58.3
28388 Wattle Grove North	18 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	65.2	60.7	55.1
46447 Wattle Grove North	18 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.5	62.1	57.3
67865 Wattle Grove North	18 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	66	63.2	58.8
55696 Wattle Grove North	18 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66.2	61.8	56.9
82784 Wattle Grove North	18 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	62	59.6	57
52880 Wattle Grove North	18 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	61.9	58.3	54.6
82316 Wattle Grove North	18 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	66.3	60.8	56.3
41080 Wattle Grove North	18A BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	64.4	60.9	56.3
67852 Wattle Grove North	19 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.8	56.8	53.6
27744 Wattle Grove North	19 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	60.9	58	53.9
104191 Wattle Grove North	19 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.6	58	53.6
2794 Wattle Grove North	19 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.7	58.3	54.6
85216 Wattle Grove North	19 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.5	60.7	56.1
18603 Wattle Grove North	19 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	62.2	59.3	54.9
46719 Wattle Grove North	19 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	68.3	60.8	56.1
96099 Wattle Grove North	19 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	65.8	61.2	57.2
50417 Wattle Grove North	19 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	65.8	61	56.6
74664 Wattle Grove North	19 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	72	65.9	61
36515 Wattle Grove North	19 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	71.3	66	58.6
39576 Wattle Grove North	19 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	62.8	58.8	55.2
85350 Wattle Grove North	19 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	65.5	61.2	57.9
30797 Wattle Grove North	19 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	60.7	57.9	54.2
57858 Wattle Grove North	19 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	65.5	60.7	56.2
22475 Wattle Grove North	19 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	64.8	60	56.4
54289 Wattle Grove North	19 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.5	61.9	56.3
28050 Wattle Grove North	1A BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.1	57.4	53.6
76828 Wattle Grove North	2 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	58.4	56.1	53.7
44166 Wattle Grove North	2 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	66	61.2	54.8
76687 Wattle Grove North	2 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.6	56.2	53.9
47627 Wattle Grove North	2 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	61.2	57.5	55.3
89373 Wattle Grove North	2 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	70.4	63.2	57.8
12772 Wattle Grove North	2 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	65	63.3	59.5
101442 Wattle Grove North	2 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	67.7	63.6	58
12475 Wattle Grove North	2 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	64.9	60	55.7
66302 Wattle Grove North	2 FREDIA PLACE HAMMONDVILLE	RES	46	41	41	41	41	56.4	55	52.5
70727 Wattle Grove North	2 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	67.7	62.5	56.9
25639 Wattle Grove North	2 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	68.8	64.3	59.2
47394 Wattle Grove North	2 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	63.7	55.7	46.6
38937 Wattle Grove North	2 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	62.3	59.5	54.5
75617 Wattle Grove North	2 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	65	60.7	56.9
15520 Wattle Grove North	2 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	68	61.3	57.3
64418 Wattle Grove North	2 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	64.9	60.9	57.5
38532 Wattle Grove North	2 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	65	59.7	56.2
25914 Wattle Grove North	20 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	61.6	57	54.5
77407 Wattle Grove North	20 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	63.3	58.9	54.9
33160 Wattle Grove North	20 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.1	59.2	55.2
72163 Wattle Grove North	20 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	58.2	55.6	53.2
47526 Wattle Grove North	20 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	63.4	60.8	57.2
12336 Wattle Grove North	20 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65	58.9	51.1
43386 Wattle Grove North	20 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	61.1	58.9	56.1
63247 Wattle Grove North	20 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.9	58.4	53.7
17260 Wattle Grove North	20 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	70.5	62.9	57.6
57868 Wattle Grove North	20 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	62.3	59.4	55.6
61513 Wattle Grove North	20 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	66.6	60.4	56.6
42626 Wattle Grove North	20 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	72.9	65.7	58.4
39279 Wattle Grove North	20 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	69.3	65.2	57.7
13430 Wattle Grove North	20 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	64	59.9	54
57434 Wattle Grove North	20 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.3	62.2	58.6
56974 Wattle Grove North	20 SANDOVER COURT WATTLE GROVE	RES	46	41	41	41	41	68.6	63.3	59
20073 Wattle Grove North	20 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66	61.9	56.9
35742 Wattle Grove North	20 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	62.2	61.6	58.3
37193 Wattle Grove North	20 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	66.5	61.8	57.6
81440 Wattle Grove North	20A FREDIA PLACE HAMMONDVILLE	RES	46	41	41	41	41	59.9	55.2	52.7
87537 Wattle Grove North	20B FREDIA PLACE HAMMONDVILLE	RES	46	41	41	41	41	57.2	56.2	53.7
29362 Wattle Grove North	21 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	61.7	59.3	56.2
42007 Wattle Grove North	21 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.6	56.6	54
36065 Wattle Grove North	21 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.4	56.4	52.4
66729 Wattle Grove North	21 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	63.1	60.5	57.1
56548 Wattle Grove North	21 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.6	60.3	56.1
62625 Wattle Grove North	21 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	60.3	58.7	54.8
17803 Wattle Grove North	21 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	70	63.7	58.3
59300 Wattle Grove North	21 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	67.8	61.6	57.1
10584 Wattle Grove North	21 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	67.5	60	56.4
80365 Wattle Grove North	21 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	68.9	63.4	58.8
21035 Wattle Grove North	21 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	71	65.3	58.1
84663 Wattle Grove North	21 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.1	62.2	56.7
42406 Wattle Grove North	21 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	60.8	57.6	54.1
76985 Wattle Grove North	21 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	63.6	59.1	55
89140 Wattle Grove North	21 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	65.5	60	56.5
65628 Wattle Grove North	21 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	60.7	54.8	51.6
69207 Wattle Grove North	22 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	59.8	57.2	54.6
61418 Wattle Grove North	22 BARWON COURT WATTLE GROVE	RES	46	41	41	41	41	64.4	59.3	54.9
37210 Wattle Grove North	22 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.6	59	53
53522 Wattle Grove North	22 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	60.3	56.9	54.1
92662 Wattle Grove North	22 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.2	55.6	53.2
32814 Wattle Grove North	22 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	58.3	54.7
35923 Wattle Grove North	22 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.7	60	55.4
42830 Wattle Grove North	22 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	61.9	58.5	55.1
62356 Wattle Grove North	22 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.8	56.5	53.6

ID	NCA	Address	Land use	Laeq, 15 minute noise level						
				Noise management level					Predicted helicopter noise	
				Standard hours	OOHW Period			Area 5	Area 2	Area 3
					1	2	3			
Key				Exceeds Standard NML	exceeds OOHW 3 NML					
45605 Wattle Grove North	22 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	71.8	64.5	59.4
12864 Wattle Grove North	22 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	61.6	52.3	47
31545 Wattle Grove North	22 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	74.9	68.2	60.6
28913 Wattle Grove North	22 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	69	64.4	59.9
85445 Wattle Grove North	22 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	64.7	59.3	55.1
56050 Wattle Grove North	22 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	65.4	60.8	56.2
9000 Wattle Grove North	22 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	63.5	56.6	50.6
43747 Wattle Grove North	22 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	61.7	59.3	57.8
13079 Wattle Grove North	22 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	64.4	59.9	55.5
77168 Wattle Grove North	22A FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	57	55.1	50.8
62453 Wattle Grove North	22B FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	57.2	55.3	52.7
30716 Wattle Grove North	23 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.5	57.1	54.9
60657 Wattle Grove North	23 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	58.6	56.7	54.3
43136 Wattle Grove North	23 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	59	56.8	54.2
10755 Wattle Grove North	23 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	62.1	56.3	52
52431 Wattle Grove North	23 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64.9	60.4	56.2
44920 Wattle Grove North	23 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	60.2	57.9	54.8
54710 Wattle Grove North	23 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	72.6	66.2	60.8
91156 Wattle Grove North	23 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	65.6	62.7	57.4
31092 Wattle Grove North	23 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	66.6	59.8	56.5
72267 Wattle Grove North	23 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	71.4	63.1	58.9
48109 Wattle Grove North	23 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	72.7	65.1	59.5
87242 Wattle Grove North	23 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.5	62.4	56.7
53981 Wattle Grove North	23 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	60.9	57.5	55.3
71043 Wattle Grove North	23 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	64.9	60.3	55.5
22365 Wattle Grove North	23 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	62.8	59.9	56.4
25736 Wattle Grove North	23 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	66.4	62.1	56.7
10171 Wattle Grove North	24 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	59.8	57.2	54.7
9866 Wattle Grove North	24 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.2	57.8	54.8
17195 Wattle Grove North	24 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	59.4	56.2	55
34196 Wattle Grove North	24 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	59	57.8	55.4
61407 Wattle Grove North	24 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.7	58.1	54.5
47906 Wattle Grove North	24 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.6	60.7	56.4
37962 Wattle Grove North	24 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	58.7	56.3
66712 Wattle Grove North	24 CHAUVEL AVENUE WATTLE GROVE	RES	46	41	41	41	41	54.3	55.1	53.5
15048 Wattle Grove North	24 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	71.9	63.6	58.6
77097 Wattle Grove North	24 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	62	56.6	47.5
50052 Wattle Grove North	24 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	59.7	57.8	55
46116 Wattle Grove North	24 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	73.6	66.1	58.4
75266 Wattle Grove North	24 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.4	64.4	60.5
87455 Wattle Grove North	24 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	64.8	60.7	56.4
41275 Wattle Grove North	24 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.2	60.5	47.3
15797 Wattle Grove North	24 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66.1	61.9	57.4
38267 Wattle Grove North	24 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	69.7	63.8	58.6
80233 Wattle Grove North	240 NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.8	55.4	52.6
68908 Wattle Grove North	242 NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.2	56.2	54.6
26196 Wattle Grove North	244A NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	57	55.7	51.9
84295 Wattle Grove North	244B NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.1	55.5	52
30625 Wattle Grove North	246A NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.7	54.2	52.1
29130 Wattle Grove North	246B NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	54.5	53.3	51.7
8870 Wattle Grove North	248 NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.9	56.5	53.9
29927 Wattle Grove North	25 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	58.7	54.2	51.3
16110 Wattle Grove North	25 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	57.6	54.5
38890 Wattle Grove North	25 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.1	60.6	56.5
52834 Wattle Grove North	25 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	60.6	57.8	54.7
71179 Wattle Grove North	25 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	71.4	65.2	59.9
42977 Wattle Grove North	25 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	66.4	61.6	58.5
83500 Wattle Grove North	25 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	68.3	62.5	58.2
22196 Wattle Grove North	25 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	71.5	64.7	59.2
92298 Wattle Grove North	25 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	73	67.6	62.2
81503 Wattle Grove North	25 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	65.8	61.4	56.7
18584 Wattle Grove North	25 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	63.7	59.4	55.1
63863 Wattle Grove North	25 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	63.6	59.7	56.4
49678 Wattle Grove North	25 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	66	62.3	57.5
9772 Wattle Grove North	250 NUWARRA ROAD HAMMONDVILLE	RES	46	41	41	41	41	58.5	56.9	53.8
60798 Wattle Grove North	26 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	60.6	57.6	54.9
48206 Wattle Grove North	26 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	61	58.8	54.9
57466 Wattle Grove North	26 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	60.4	57.7	54.3
23101 Wattle Grove North	26 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	57.3	55.7	53.2
62744 Wattle Grove North	26 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	58.1	54.4
52517 Wattle Grove North	26 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	57.7	56.8	54.7
61221 Wattle Grove North	26 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	60.2	55.7	53.5
13768 Wattle Grove North	26 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	66	60.7	55.9
67044 Wattle Grove North	26 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	69.3	64.6	59.7
64700 Wattle Grove North	26 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	67.9	62.9	58.8
64015 Wattle Grove North	27 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	60.4	57.3	53.8
91723 Wattle Grove North	27 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.1	57.8	54.2
77135 Wattle Grove North	27 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	63.2	59	54.9
18675 Wattle Grove North	27 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	60	57.7	54.6
43803 Wattle Grove North	27 COLLIE COURT WATTLE GROVE	RES	46	41	41	41	41	71	64.3	58.7
20871 Wattle Grove North	27 CULGOA COURT WATTLE GROVE	RES	46	41	41	41	41	66.3	61.8	57.3
4509 Wattle Grove North	27 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	67.4	60.8	56.3
42048 Wattle Grove North	27 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	71.8	64.9	59.2
2772 Wattle Grove North	27 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	70.2	65	59.7
90340 Wattle Grove North	27 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.4	61.3	56.8
52931 Wattle Grove North	27 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	63.5	59.1	55
49662 Wattle Grove North	27 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	61.5	59.5	56.2
52616 Wattle Grove North	27 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	62.7	56.9	52.9
60985 Wattle Grove North	28 ANZAC MEWS WATTLE GROVE	RES	46	41	41	41	41	61.2	57.8	55.1
16071 Wattle Grove North	28 BLAMEY ROAD WATTLE GROVE	RES	46	41	41	41	41	60.6	57.9	54.3
107279 Wattle Grove North	28 BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	59.2	58	53.1
68186 Wattle Grove North	28 BURDEKIN COURT WATTLE GROVE	RES	46	41	41	41	41	59.3	57.7	54.3
94367 Wattle Grove North	28 COLO COURT WATTLE GROVE	RES	46	41	41	41	41	61.9	59.1	55.1
28162 Wattle Grove North	28 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	66.9	59.3	51
44036 Wattle Grove North	28 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66.6	61.2	56.5
42496 Wattle Grove North	28A BRIDGES AVENUE WATTLE GROVE	RES	46	41	41	41	41	58	55.8	53.3
73944 Wattle Grove North	29 BIRDWOOD AVENUE WATTLE GROVE	RES	46	41	41	41	41	62.1	57.8	54.8
22755 Wattle Grove North	29 BUNDARRA COURT WATTLE GROVE	RES	46	41	41	41	41	61.1	57.8	54.3
44313 Wattle Grove North	29 BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	64	59.4	55

ID	NCA	Address	Land use	Laeq, 15 minute noise level							
				Noise management level					Predicted helicopter noise		
				Standard hours	OOHW Period				Area 5	Area 2	Area 3
					1	2	3	4			
		Key		Exceeds Standard NML			exceeds OOHW 3 NML				
37852	Wattle Grove North	9 DELFIN DRIVE WATTLE GROVE	RES	46	41	41	41	41	64.7	61	56.2
27116	Wattle Grove North	9 DERWENT COURT WATTLE GROVE	RES	46	41	41	41	41	66.1	61	56.2
11643	Wattle Grove North	9 GLENELG COURT WATTLE GROVE	RES	46	41	41	41	41	68.3	63	58.7
65936	Wattle Grove North	9 JENOLAN COURT WATTLE GROVE	RES	46	41	41	41	41	69.2	64	59.2
16940	Wattle Grove North	9 MURRAY COURT WATTLE GROVE	RES	46	41	41	41	41	63	60.7	55.2
39833	Wattle Grove North	9 NAMOI COURT WATTLE GROVE	RES	46	41	41	41	41	70	65	59.3
15657	Wattle Grove North	9 ORARA COURT WATTLE GROVE	RES	46	41	41	41	41	64.6	60.8	56.2
69703	Wattle Grove North	9 PAROO COURT WATTLE GROVE	RES	46	41	41	41	41	64.6	60.8	56.9
82429	Wattle Grove North	9 TIMBARA COURT WATTLE GROVE	RES	46	41	41	41	41	61.2	57.9	53.5
31560	Wattle Grove North	9 TODD COURT WATTLE GROVE	RES	46	41	41	41	41	66.4	60.8	56.2
34170	Wattle Grove North	9 TWEED COURT WATTLE GROVE	RES	46	41	41	41	41	64.7	60.7	56.8
69350	Wattle Grove North	9 WARREGO COURT WATTLE GROVE	RES	46	41	41	41	41	62.4	58.8	55.1
61814	Wattle Grove North	9 WOMBEYAN COURT WATTLE GROVE	RES	46	41	41	41	41	68.4	62.4	57.2
85538	Wattle Grove North	9A BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	65.3	61.3	56.8
87639	Wattle Grove North	9B BUNGONIA COURT WATTLE GROVE	RES	46	41	41	41	41	62.4	54.4	51.3
6338	Wattle Grove North	UNIT 1/ 136-138 HEATHCOTE ROAD HAMMONDVI	RES	46	41	41	41	41	58.3	54.7	52.4
48880	Wattle Grove North	UNIT 1/ 142 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	55.9	54.5	52.4
8859	Wattle Grove North	UNIT 1/ 6 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	58.7	56.8	53.2
4924	Wattle Grove North	UNIT 10/ 136-138 HEATHCOTE ROAD HAMMONDV	RES	46	41	41	41	41	57.2	54.4	49.9
41219	Wattle Grove North	UNIT 12/ 142 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	55.3	54	51.8
32413	Wattle Grove North	UNIT 12/ 144 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.6	56.3	52.1
39326	Wattle Grove North	UNIT 13/ 136-138 HEATHCOTE ROAD HAMMONDV	RES	46	41	41	41	41	57.1	56.1	54.4
21916	Wattle Grove North	UNIT 13/ 144 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.2	54.5	52.3
55157	Wattle Grove North	UNIT 15/ 136-138 HEATHCOTE ROAD HAMMONDV	RES	46	41	41	41	41	56.9	57	55
23627	Wattle Grove North	UNIT 18/ 136-138 HEATHCOTE ROAD HAMMONDV	RES	46	41	41	41	41	57.7	54.7	52.6
15667	Wattle Grove North	UNIT 2/ 144 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	55.9	52	50.2
24407	Wattle Grove North	UNIT 3/ 142 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	55.2	54.4	52.2
41390	Wattle Grove North	UNIT 5/ 136-138 HEATHCOTE ROAD HAMMONDVI	RES	46	41	41	41	41	57.8	56.5	53.8
9434	Wattle Grove North	UNIT 6/ 140 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.3	54	50.2
19053	Wattle Grove North	UNIT 7/ 142 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	56.8	56.2	52.7
53813	Wattle Grove North	UNIT 8/ 12 FRED A PLACE HAMMONDVILLE	RES	46	41	41	41	41	56.8	55.1	52.6
4120	Wattle Grove North	UNIT 9/ 144 HEATHCOTE ROAD HAMMONDVILLE	RES	46	41	41	41	41	57.8	54.7	51.9