

SYDNEY METRO CITY AND SOUTH WEST - LINE-WIDE WORKS

Construction Noise and Vibration Impact Statement Portion 3 - Chatswood early access works

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Systems Connect

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The information contained herein is for the purpose of acoustics only. No claims are made and no liability is accepted in respect of design and construction issues falling outside of the specialist field of acoustics engineering including and not limited to structural integrity, fire rating, architectural buildability and fit-for-purpose, waterproofing and the like.

Supplementary professional advice should be sought in respect of these issues.

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1 Introduction

This Construction Noise and Vibration Impact Statement (CNVIS) has been prepared on behalf of Systems Connect in accordance with the Construction Noise and Vibration Management Plan (CNVMP) [SMCSWLWC-SYC-1NL-PM-PLN-000032] [1], for the Design and Construction of the Line-Wide Works (LWW) of the Sydney Metro City & Southwest Project (the Project).

1.1 Relevant requirements and purpose of this CNVIS

As defined in the CNVMP, the works covered by this CNVIS are part of the Portion 3 – Chatswood to Sydenham LWW delivered under Critical State Significant Infrastructure Approval CSSI 7400. Condition E33 of CSSI-7400 requires that:

Construction Noise and Vibration Impact Statements must be prepared for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers.

This CNVIS applies to Chatswood Dive early access works package, which includes works to be undertaken on the site surface and within the dive and tunnels. Works will be completed during standard construction hours as well as works outside of standard construction hours. The construction hours of work are defined by the Project Planning Approval conditions as outlined in the CNVMP.

This CNVIS forms part of the CNVMP for the Project.

1.2 Structure of this CNVIS

This CNVIS is structured as follows:

- **Section 2** - Description of construction works and hours
- **Section 3** - Nearest sensitive receivers
- **Section 4** - Construction noise and vibration objectives
- **Section 5** - Construction noise assessment
- **Section 6** - Construction vibration impacts
- **Section 7** - Ground-borne noise assessment
- **Section 8** – Traffic noise assessment
- **Section 9** – Cumulative impacts.

1.3 Quality assurance

The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001. Appendix A contains a glossary of acoustic terms used in this report.

2 Description of construction works and hours

2.1 Summary of works addressed in this CNVIS

2.1.1 Construction activities

This CNVIS provides an assessment of noise and vibration impacts from activities associated with the C2S Chatswood early access site. These activities include:

- Early access activities in the tunnels/ station box
 - Site establishment
 - Materials delivery and handling (including delivery of rail)
 - Track works (including flash butt welding).

The site location is identified on an aerial photograph located in APPENDIX B.

The proposed works, likely plant and equipment and indicative Project timing is presented in APPENDIX C. Site layout drawings are also presented in APPENDIX C.

2.1.2 Construction traffic

The Chatswood early access works construction works will generate additional traffic movements in the form of:

- Light vehicle movements generated by construction personnel travelling to and from work
- Heavy vehicle movements generated by delivery vehicles bringing materials, plant and equipment to the worksite

Construction traffic on-site (i.e. within the Project footprint) is included as part of the construction noise assessment of the works activities identified in Sections 5 and APPENDIX C. When construction related traffic moves onto the public road network, a different noise assessment methodology is appropriate as vehicle movements would be regarded as 'additional road traffic' rather than as part of the construction site's activities. Construction traffic noise is addressed in Section 7.

2.1.3 Cumulative construction impacts

CSSI 7400 Condition of Approval E39 requires Systems Connect to consult with proponents of other construction works in the vicinity of the worksite and take reasonable steps to coordinate works to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers. Further to this, Condition E40 requires works to be coordinated to provide the required respite periods identified in accordance with the terms of the CSSI 7400 approval.

All concurrent Sydney Metro construction site works have been considered and addressed in Section 9 of this CNVIS. Potentially concurrent construction activities within the vicinity of the Chatswood site have also been considered, as discussed in Section 9.

2.2 Construction hours

The construction hours for the Project are defined by Project Planning Approval (PPA) Conditions E36, E37, E38, E41, E42, E44 and E48. The Environment Protection Licence (EPL), should it be issued, is anticipated to be consistent with these conditions.

2.2.1 Standard construction hours

The standard construction hours of work are defined by the CSSI-7400 Condition E36. The standard construction hours for the Project are summarised in the table below.

Table 2-1: Standard construction hours

Construction Activity	Monday to Friday	Saturday	Sunday/ Public holiday
Above ground activities: construction sites and construction traffic	7:00 am to 6:00 pm	8:00 am to 1:00 pm	No work

2.2.2 Out of hours work periods

CSSI-7400 Condition E44 and E48 allow standard construction hours to be varied under specific conditions (where justified). Condition E48 allows the following activities to be carried out 24 hours per day, 7 days per week:

- Station and tunnel fit out, and
- Haulage and delivery of spoil and materials.

PPA Condition E44 and Condition E46 allow OOHW where it is permitted or required by an EPL or the Out of Hours Work Protocol. Systems Connect will not undertake OOHW until approved by an EPL. Oversize deliveries may need to take place outside of standard construction hours in order to comply with RMS requirements for oversize vehicle movements.

The Transport for NSW (TfNSW) Construction Noise and Vibration Strategy (CNVS) [9] provides a hierarchy of Out of Hours (OOH) work periods. The impact of OOH works may be reduced by scheduling work and activities with greater impact during the preferred periods when receivers are likely to be less sensitive to noise and vibration, such as in the day out of hours (OOHD) and evening out of hours (OOHE) periods.

Table 2-2 presents the construction work periods as Standard Hours, Out of Hours Work (OOHW) Period 1 and OOHW Period 2.

Table 2-2: Construction hours

Day	12am	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								
Sunday or Public Holiday																								

- Standard construction hours are defined in CSSI-7400 Condition E36 as: Monday to Friday 7:00am to 6:00pm and Saturdays from 8:00am to 1:00pm.
- Work outside of standard construction hours is defined as Out-of-Hours Work (OOHW) and has been divided by the CNVS into 2 periods of sensitivity:
 - OOHW Period 1** is the least sensitive OOH period and is defined as Monday to Friday 6:00pm to 10:00pm (evenings), Saturday 7:00am to 8:00am and 1:00pm to 10:00pm (day/ OOHD and evening/ OOHE) and Sunday and public holidays 8:00am to 6:00pm (day/ OOHD)
 - OOHW Period 2** is the most sensitive OOH period and is defined as Monday to Saturday 10:00pm to 7:00am (night/ OOHN) and Sundays and public holidays 6:00pm to 8:00am (evening/ OOHE and night/ OOHN).

2.2.3 Justification for OOHW

The track works are an essential component of the Project due to be completed and open to rail traffic in 2024. This completion date has been calculated assuming track work, tunnel systems works and fit out works within the tunnel will be undertaken 24 hours a day, seven days per week. Due to time and space constraints it will not be possible to lift all materials into the dive structure and tunnel during standard hours, to allow track works to continue 24 hours per day. The process will need to continue during the evening period (6pm to 10 pm) and night period (10 pm and 7am).

OOHW activity on the surface and inside the dive, particularly after 10pm will be managed to minimise impacts on surrounding sensitive receivers. Stationary plant will be located at the bottom of the dive structure during the night period (10 pm to 7am) to reduce potential noise impact and manage noise from site to within the NMLs.

Allowing track works and tunnel fit out works to occur as OOHW will:

- Ensure key NSW Government program milestones are met.
- Ensure delivery of community and rail commuter user benefits.
- Allow increased project efficiency.
- Reduce the overall duration of the construction phase and in turn reduce the duration of impacts on the surrounding community.

The Project has been identified as Critical State Significant Infrastructure by the NSW Government and will provide an important commuter link connecting the existing Sydney Metro North West with the CBD and South West. There are considerable benefits to the Project, NSW Government and the community from the prompt completion of construction of the Project. For the community particularly,

completion of construction works will allow restoration of amenity and, in many respects, an increase in the quality of this amenity.

This, however, will be reviewed once works start and we have a better understanding of the logistics of the work (how efficiently they run and how heavily they are impacted by effects such as supply, traffic impact, etc).

Any work outside standard construction hours must be undertaken in accordance with the EPL/ Out of Hours Works Protocol and the CNVMP [1].

3 Nearest sensitive receivers

3.1 Residential receivers

To assess and manage construction noise and vibration impacts, the residential areas surrounding the site have been divided into Noise Catchment Areas (NCAs) based on each area's similar acoustic environment prior to the start of construction work. The NCAs are based on those established in the EIS for the Project, with some modifications to allow for site specific characteristics.

All relevant residential sensitive receivers near the worksite are identified on an aerial photograph located in APPENDIX B.

3.2 Other sensitive receivers (PPA Condition E34)

Additional to residential receivers above, 'other' noise and vibration sensitive receivers such as passive recreation areas and places of worship surrounding the construction area have been identified and are summarised on an aerial photograph located in APPENDIX B.

CSSI-7400 Condition E34 states:

Noise generating works in the vicinity of potentially-affected, religious, educational, community institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) must not be timetabled within sensitive periods, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution or as otherwise approved by the Secretary.

Sydney Metro and Systems Connect have undertaken consultation with identified sensitive receivers to determine sensitive periods. This has been taken into consideration in finalising respite strategies for high noise impacts.

3.3 Commercial and industrial premises

All commercial and industrial premises near the worksite have been considered in this assessment.

3.4 Heritage receivers

Heritage receivers have been identified in the Land Use Survey in ANNEXURE A.2 of the CNVMP. There are five heritage-listed buildings close to the work areas:

Table 3.1: Assessment heritage receivers

Name	Address/Location	Significance
Mowbray House	357 Mowbray Rd	Local
Chatswood Zone Substation No 80	348 Mowbray Rd	Local
Chatswood Reservoirs	366 Mowbray Rd	Local

Name	Address/Location	Significance
Great Northern Hotel	367 Mowbray Rd	Local
Chatswood South Uniting Church and Cemetery	372-374 Mowbray Rd	Local

4 Construction noise and vibration objectives

4.1 Noise goals

4.1.1 Noise management levels (NMLs)

Construction noise management levels (NMLs) have been determined using the Construction Environmental Management Framework (CEMF)[10], CSSI-7400 Conditions, in accordance with the Sydney Metro City & Southwest Construction Noise and Vibration Strategy (SMCSNVS) [8] and as set out in the CNVMP.

For the Chatswood site, internal NMLs are applicable at residential receiver locations during the 8 pm to 7 am period per CSSI-7400 Conditions E41 and E42. During daytime and evening periods (between 7 am and 8 pm), external NMLs are derived from the ICNG, as identified in Section 5.1.1 of the CNVMP[1] and summarised in Table 4-1 below.

Table 4-1: Application of NMLs at CS2 Chatswood (CSSI 7400 Conditions of Approval)

Time Period	Area	Receiver Type	Condition	Noise management level ³
Day ¹ (D/ D(O))	All	All	CEMF 9.2a ²	ICNG (see Table B1 in APPENDIX B)
Evening ¹ 6pm to 8pm (E1)	All	All	CEMF 9.2a ²	ICNG (see Table B1 in APPENDIX B)
Evening ¹ 8pm to 10pm (E2)	All	All	CEMF 9.2a ²	ICNG (see Table B1 in APPENDIX B)
Night ¹ 10pm to 7am (N)	All	All	CEMF 9.2a ²	ICNG (see Table B1 in APPENDIX B)
Evening ¹ 8pm to 9pm (E2)	Non-residential zones ²	Residential	SSI-7400 E41	$L_{Aeq(15minute)}$ 60 dB(A) (internal)
Evening ¹ 9pm to 10pm				$L_{Aeq(15minute)}$ 45 dB(A) (internal)
Night ¹ 10pm to 7am (N)				
Evening ¹ 8pm to 10pm (E2)	Residential zones ²	Residential	SSI-7400 E42	$L_{Aeq(15minute)}$ 45 dB(A) (internal)
Night ¹ 10pm to 7am (N)				
All	All	All	SSI-7400 E43	$L_{Aeq(8hour)}$ 85 dB(A) (external) near the CCSI

- Day refers to 7am to 6pm Monday to Friday and 8am to 6pm Saturday, Sunday and Public Holidays; Evening refers to Monday to Sunday 6:00pm to 10:00pm; Night refers to Monday to Friday 10:00pm to 7:00am and Saturdays, Sundays and public holidays 10:00pm to 8:00am.
- These are identified by the applicable Local Environmental Plan land zoning of the receiver.
- Construction Environmental Management Framework – City & Southwest (Sydney Metro 2017)
- A 5 dB penalty shall be applied if rock breaking or any other annoying activity likely to result in ground-borne noise or a perceptible level of vibration is planned

ICNG NMLs

For residential receivers, the ICNG NMLs are based on the background noise levels derived from long-term noise logging conducted by SLR on behalf of Transport for NSW (TfNSW) to quantify ambient noise levels for the Environmental Impact Statement (EIS) [2]. Additional pre-construction noise monitoring was carried out prior to the Tunnels and Stations Excavation (TSE) works to establish more accurate noise goals. This additional long-term, unattended noise monitoring was carried out in July

2017 by RT&A following a review of the EIS noise monitoring and has been incorporated into the CNVMP.

The NMLs for 'other' sensitive receivers are from the ICNG, as reported in Section 5.2.3 of the CNVMP. These are applicable when the other sensitive receiver is in use.

Receivers are considered 'noise affected' where construction noise levels are greater than the NMLs identified in APPENDIX B. The noise affected level represents the point above which there may be some community reaction to noise. Where predicted and/or measured construction noise levels are above the NMLs, all feasible and reasonable work practices will be applied to meet the NMLs.

Where construction activities are tonal or impulsive in nature and are described in the ICNG as being particularly annoying, 5 dB(A) must be added to the activity noise. Activities that are defined in the Interim Construction Noise Guideline (ICNG) [3] as particularly annoying include but are not limited to the use of 'beeper' style reversing or movement alarms; power saws; vibratory rolling; jack hammering, rock hammering or rock breaking; impact piling.

During standard construction hours, a highly affected noise objective of $L_{Aeq(15min)}$ 75 dB(A) applies in relation to airborne noise at all residential receivers.

Internal NMLs (CSSI-7400 Conditions E41 and E42)

CSSI-7400 Conditions E41 and E42 require that residential receivers within non-residential zones or residential zones (respectively) are not above the internal noise levels identified in Table 4-1. In accordance with CSSI-7400 Conditions E41 and E42, if construction works are particularly annoying (as described in *ICNG NMLs* above) or include ground-borne noise or a perceptible level of vibration at the affected receiver, a 5 dB(A) penalty should be added to the predicted construction noise level.

Where the above internal noise levels cannot be achieved, additional mitigation in accordance with the *Sydney Metro City and South West Noise and Vibration Strategy (SMCSNVS)* [8] is to be offered.

Addendum A of the SMCSNVS notes that the applicable Local Environmental Plan land zoning of the receiver be used to identify if residential receivers are located within residential or non-residential zones. An extract from the Willoughby Local Environmental Plan (2012) land zoning map (accessed 26/11/2017) is provided in Red and pink areas (R2, R3 and R4) indicate residential zones.

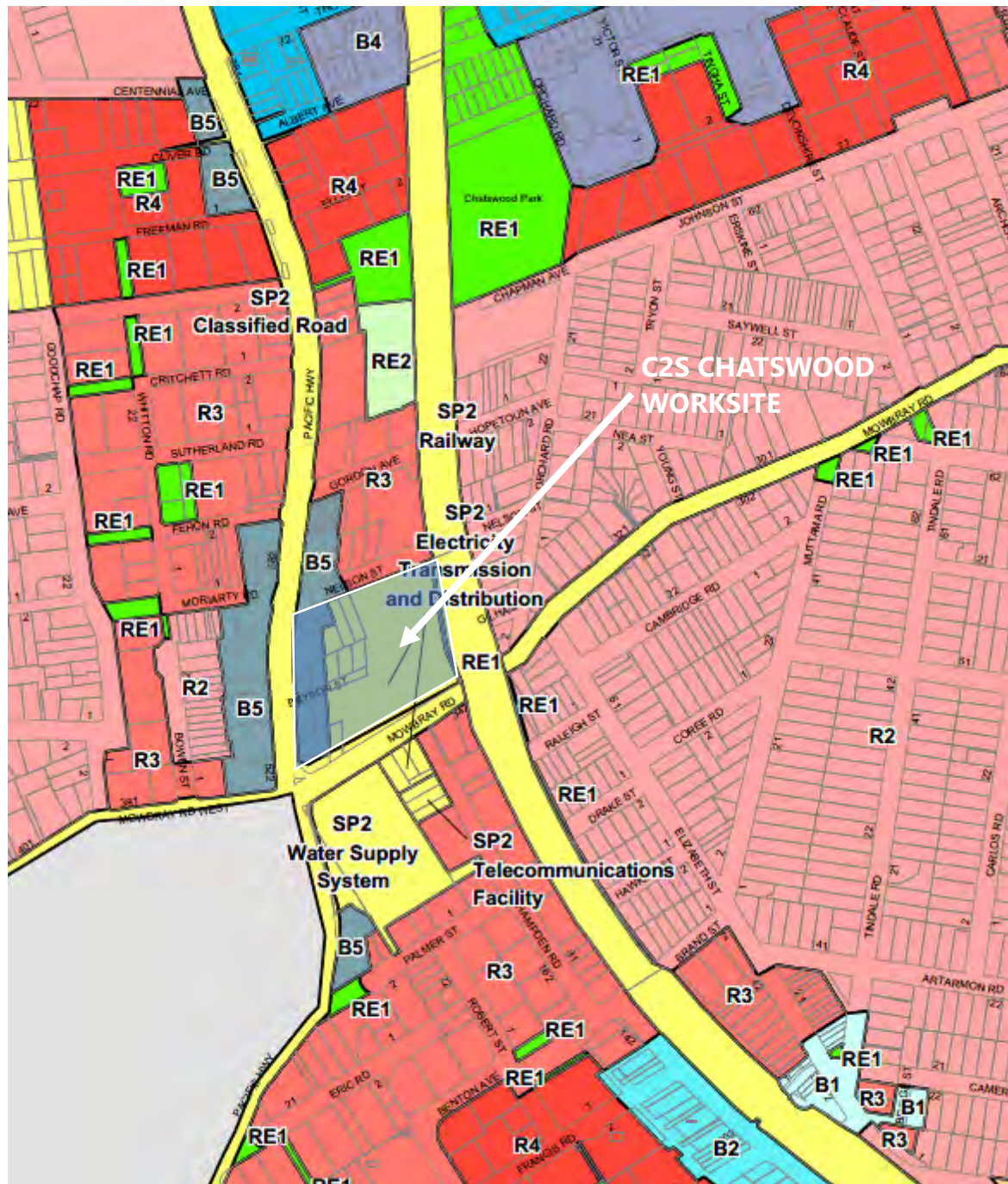
The zoning map indicates that the nearest residential receivers along the rail corridor are in residential areas. The nearest residential receivers on Pacific Highway and north of Albert Avenue are in non-residential areas (B3, B4 and B5 zone in Figure 4.1).

For this assessment, all residential receivers are conservatively assumed to be in residential zones, with a corresponding internal noise threshold level of $L_{Aeq(15minute)}$ 45 dB(A) between 8pm and 7am. Based on a minimum (conservative) external to internal noise difference of 10 dB(A) (assuming windows open), an equivalent external noise threshold of $L_{Aeq(15minute)}$ 55 dB(A) is applicable between 8pm and 7am for all receivers except for those that are receiving at-property treatments from TfNSW due to the operation of

the rail corridor. In this case, a conservative external noise threshold of $L_{Aeq(15\text{minute})}$ 65 dB(A) is considered. Where these external equivalent levels are above the external noise threshold, additional mitigation may be required in accordance with the SMCSNVs.

The assessment presented in Section 5.2 has assessed all receivers against the approach outlined in the SMCSNVs [8] and the CNVMP [1] which achieves the requirements of PPA Conditions E41 and E42, and is consistent with the ICNG [3] and the EIS [2].

Figure 4.1: Extract from the Willoughby Local Environmental Plan (2012) land zoning map



4.1.2 Respite for high noise impact works

The CSSI-7400 Conditions set no specific requirements for respite from high noise impact at the Chatswood site. In accordance with the ICNG, respite will be provided for activities which result in any residential receiver being highly noise affected (affected by noise more than 75 dB(A)).

To coordinate respite periods with other contractors working on the Chatswood site, respite from other high noise impact work will be provided by limiting activities to:

- Between the hours of 8:00am to 6:00pm Monday to Friday
- Between the hours of 8:00am to 1:00pm 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, except as expressly permitted by the licence.

Continuous' includes any period during which there is less than one-hour respite between ceasing and recommencing any of the work that is subject to this requirement.

4.1.3 Sleep disturbance

Consistent with Section 5.1.3 of the CNVMP [1], an initial screening level of $L_{Amax} \leq L_{A90(15min)} + 15 \text{ dB(A)}$ is used. In situations where this results in an external screening level of less than 55 dB(A), a minimum screening level of 55 dB(A) is set. Note that this is equivalent to a maximum internal noise level of 45 dB(A) with windows open.

Where noise events are found to be above the screening level, further analysis is made to identify:

- the likely number of events above 45 dB(A) (internal) that might occur during the night assessment period
- whether events are above an 'awakening reaction' level of 55 dB(A) L_{Amax} (internal) that equates to NML of L_{Amax} 65 dB(A) (assuming open windows).

The ICNG recommends that where construction works are planned to extend over more than two consecutive nights, maximum noise levels and the extent and frequency of maximum noise level events above the RBL should be considered.

During construction works at night, attended noise monitoring will be undertaken at representative residences most impacted by the works during night-time periods (see Section 5). The noise monitoring will follow the procedures outlined in APPENDIX E of the CNVMP [1], which includes measurement of L_{Amax} noise metrics. If maximum noise levels are found to be above the sleep NML of 45 dB(A), the responsible noise source(s) will be identified and further analysis undertaken to quantify the extent and frequency of events above the NML. Additional feasible and reasonable mitigation measures may need to be considered to reduce potential impacts.

4.1.4 National Standard for exposure to noise

In accordance with PPA Condition E43, Systems Connect worksites will be managed to ensure that noise generated by construction will not be above the National Standard for exposure to noise in the occupational environment of an eight-hour equivalent continuous A-weighted sound pressure level of LAeq,8h, of 85 dB(A) for any employee working at a location near a Systems Connect worksite.

4.1.5 Construction related road traffic noise objectives

On the roads immediately adjacent to construction sites, the community may associate heavy vehicle movements with the Chatswood site. Construction traffic movements on public roads will aim to limit any increase in existing road traffic noise levels to no more than 2 dB(A). All feasible and reasonable noise mitigation and management measures will be implemented.

4.2 Construction vibration goals

As reported in Section 5.4 and 5.5 of the CNVMP [1], construction vibration goals have been determined using:

- for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) [4]
- for structural damage, the vibration limits set out in the
 - British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from ground-borne vibration [5] and
 - German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures [6].

4.2.1 Disturbance to building occupants (human annoyance)

For disturbance to human occupants of buildings, we refer to '*Assessing Vibration; a technical guideline*' [4]. This document provides criteria which are based on the British Standard BS 6472-1992, '*Evaluation of human exposure to vibration in buildings (1-80Hz)*' [7].

Intermittent vibration is assessed using vibration dose values (VDVs). For the assessment of potential vibration at the nearest vibration sensitive receivers preferred and maximum VDV goals for the day period (7:00am to 10:00pm) are presented in Table 4-2.

Table 4-2: Construction vibration disturbance goals

Location	Assessment period ¹	Vibration Dose Value (VDV), m/s ^{1.75}	
		Preferred values	Maximum values
Critical areas ²	Day or Night	0.10	0.20
Residences	Day	0.20	0.40

Location	Assessment period ¹	Vibration Dose Value (VDV), m/s ^{1.75}	
		Preferred values	Maximum values
	Night	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or Night	0.40	0.80
Workshops	Day or Night	0.80	1.60

Notes: 1. Daytime is 7:00am to 10:00pm and night-time is 10:00pm to 7:00am

2. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas. Source: BS 6472-1992

4.2.2 Structural damage to buildings

A conservative vibration damage screening level per receiver type is given below:

- Reinforced or framed structures (Line 1): 25.0 mm/s
- Unreinforced or light framed structures (Line 2): 7.5 mm/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 would be required to determine the applicable safe vibration level.

It is noted that vibration levels required to cause minor cosmetic damage are typically 10 x higher than levels that will cause disturbance to building occupants. Many building occupants assume that building damage is occurring when they feel vibration or observe rattling of loose objects, however the level of vibration at which people perceive vibration or at which loose objects may rattle is far lower than vibration levels that can cause damage to structures.

4.2.3 Heritage

Section 4.2.3 of the CNVMP [1] outlines the approach to manage potential vibration impacts on heritage items, where identified. The actions to be taken shall be to:

- 1) Identify heritage items where the 2.5 mm/s peak component particle velocity objective may be exceeded during specific construction activities
- 2) Structural engineering report to be undertaken on identified heritage items, to confirm structural integrity of the building and confirm if item is 'structurally sound'
- 3) If item confirmed as 'structurally sound', the screening criteria in Section 4.2.2 shall be adopted, or
- 4) If item confirmed as 'structurally unsound', the more conservative cosmetic damage objectives of 2.5 mm/s peak component particle velocity would be adopted.

4.2.4 Sensitive scientific and medical equipment

No sensitive scientific or medical equipment are known to be located near the assessed works. If they are identified, relevant vibration criteria should be established for each item in line with Section 5.5.3 of the CNVMP [1], and any corresponding management or mitigation measures determined.

4.2.5 Utilities and other vibration sensitive structures

Where utilities or other vibration sensitive structures are identified, relevant vibration criteria will be established for each item per Section 5.5.4 of the CNVMP [1], and any corresponding management or mitigation measures determined.

5 Construction noise assessment

5.1 Noise prediction methodology

Modelling and assessment of airborne noise impacts from activities associated with the construction works were determined by modelling the noise sources, receiver locations, topographical features, and possible noise mitigation measures using a Cadna-A computer noise model developed for this project. The model calculates the contribution of each noise source at identified sensitive receiver locations and allows for the prediction of the total noise from a site for the various stages of the construction works.

The noise prediction models take into account:

- Location of noise sources and sensitive receiver locations.
- Height of sources and receivers referenced to one metre digital ground contours for the site area and surrounding area.
- Sound Power Levels (L_w) of plant and equipment likely to be used during the various construction activities (see Table C1 in APPENDIX C). Table C1 also identifies the plant and equipment that will operate during each assessment period and the likely timing of each activity/aspect.
- Separation distances between sources and receivers.
- Ground type between sources and receivers.
- Attenuation from barriers (natural and purpose built).

Key details regarding the construction site layout, the likely plant and equipment (including truck movements), and hours of operation were informed by the Design and Construction Teams. This information is presented in APPENDIX C and formed the basis for all modelling assumptions used in this assessment. Table C1 in APPENDIX C provides a list of activities for the tunnel fitout works which have been provided for completeness, however have not been included in the noise assessment as they occur underground.

5.1.1 Detailed design outcomes

During the site design process, Renzo Tonin & Associates played a key role in assisting Systems Connect to determine the noise mitigation measures required to reduce the site's noise impact, incorporating existing mitigation measures from previous stages of the project. The key noise mitigation measures that have been included in the noise modelling results presented in this CNVIS are the following:

- Acoustic shed for deliveries;
- Noise boundary walls;
- 4m high noise wall along the western side of the rail corridor;

- 3m high noise wall along the eastern side of the rail corridor;
- Partial/total enclosures for pumps and other plant/equipment;
- At-property treatments for the most affected noise sensitive receivers.

There is an existing noise wall along the eastern side of the station box which will be removed to provide access for construction works. This noise wall has not been considered in the assessment.

The above recommendations are all existing measures which have previously been implemented for past construction works. All noise walls, hoardings and acoustic sheds developed for the TSE works will remain on site and will not be altered from the existing configuration.

In addition to the above, TSE works will be completed between the tunnel portal and the segment shed, which includes completion of the covered solid dive structure which would assist in reducing noise emissions from works being completed underneath the acoustic shed.

5.1.2 Construction activities

Table 5-1 presents a summary of the construction activities and aspects that are proposed to take place during the works.

Table 5-1: Summary of construction activities

Activity	Aspect	Assessment reference	Duration
Site establishment	General worksite & car parking Material handling and deliveries Relocation of gantry crane	S01	August 2020 to September 2020
Track works & tunnel	General worksite & car parking Material handling and deliveries FRP concrete, Material loading/Deliveries, gantry crane operation Weld production and rail distribution Tunnel fit out (inside tunnels, no noise assessment)	S02	September 2020 to December 2020

5.2 Predicted noise levels

Predicted L_{Aeq} noise levels from the worksite are assessed against the NMLs and summarised in the following sections, with colour coding to denote the highest level of exceedance of the NML. Detailed results for each receiver are given in APPENDIX D.

The noise predictions presented in this CNVIS represent a realistic worst-case scenario when construction occurs at work locations close to residences and other sensitive receivers. At each receiver, noise levels will vary during the construction period based on the position of equipment within the worksite, the distance to the receiver, the construction activities being undertaken and the noise levels

of particular plant items and equipment. Actual noise levels will often be less than the predicted levels presented in this CNVIS.

5.2.1 ICNG NMLs

The following sections present the predicted worst-case construction noise levels for each of the construction stages identified in Table 5-1 at the most affected residential receiver in each NCA. The results are presented in terms of level above the ICNG NMLs for standard hours and OOH work periods and, where predicted levels are above the NMLs, the perceived impact. Where predicted and/or measured construction noise levels are above the NMLs, all feasible and reasonable work practices will be applied to meet the NMLs.

5.2.1.1 Standard construction hours

Table 5-2 presents the construction noise impacts for **Standard Hours** as follows:

- Below NML
- < 10dB(A) above NML - construction noise clearly audible
- ◆ > 10dB(A) above NML - construction noise clearly moderately intrusive
- > 75dB(A) - highly noise affected (for residential receivers)

Table 5-2: Summary of construction noise impacts at nearby receivers – standard hours

NCA	S01	S02
CDS_01	●	●
CDS_02	●	●
CDS_03	●	○
CDS_04	●	●
CDS_05	●	●
CDS_06	●	●
CDS_07	●	●
CDS_08	●	●
OSR	●	●

Notes:

Standard hours (7am to 6pm Monday to Friday and 8am to 6pm Saturday)

OSR: this includes all commercial, industrial and other sensitive receivers.

Based on the results presented in Table 5-2 above, noise levels are predicted to comply with the ICNG NMLs during standard construction hours for site establishment works. Construction noise levels from track works and tunnel works are predicted to be less than 10dB(A) above the ICNG NML.

During the track and tunnel works, main sources of noise on the surface would be trucks moving around site and operations within the acoustic shed. Typical sources of noise from the track works at the base of

the station box would be from rail welding and grinding, plant movement and sawing during standard construction hours.

5.2.1.2 OOHW period 1

Table 5-3 presents the construction noise impacts for **OOHW period 1 (E1/E2)** as follows:

- Below NML
- < 5dB(A) above NML - construction noise noticeable
- ◆ 5 to 15dB(A) above NML - construction noise clearly audible
- > 15 to 25dB(A) above NML - construction noise moderately intrusive
- >25dB(A) above NML - construction noise highly intrusive

Table 5-3: Summary of construction noise impacts at nearby receivers – OOHW period 1 (ICNG)

NCA	E1/E2	E1/E2
	S01	S02
CDS_01	●	●
CDS_02	●	●
CDS_03	●	○
CDS_04	●	●
CDS_05	●	●
CDS_06	●	○
CDS_07	●	●
CDS_08	●	●
OSR	●	●

Notes:

1. E1: early evening period from 6pm to 8pm.
2. E2: late evening period from 8pm to 10pm. Assessment against ICNG NMLs for this period is used to guide additional mitigation measures (Section 5.3.3). PPA Conditions E41/42 are applicable for this assessment period (see Section 5.2.2)
3. OSR: this includes all commercial, industrial and other sensitive receivers.

During the site establishment works, construction noise is predicted to comply with the ICNG NMLs at all assessed receivers. Noise from the track and tunnel works are predicted to be within 5dB(A) of the NMLs at the nearest affected residences in NCA CDS_03 and CDS_06, and within NMLs at receivers in all other NCAs. Typical sources of noise from the track works at the base of the station box would be from rail welding and grinding and plant movement.

Proposed measures for managing potential noise impacts are provided in Section 5.3. For more detailed predictions, see APPENDIX D.

5.2.1.3 OOH period 2

Table 5-4 presents the construction noise impacts for **OOHW period 2 (E2)** as follows:

- Below NML
- < 5dB(A) above NML - construction noise noticeable
- ◆ 5 to 15dB(A) above NML - construction noise clearly audible
- > 15 to 25dB(A) above NML - construction noise moderately intrusive
- >25dB(A) above NML - construction noise highly intrusive

Table 5-4: Summary of construction noise impacts at nearby receivers – OOH period 2 (ICNG)

NCA	E1 ¹ /E2 ²	
	S01	S02
CDS_01	●	●
CDS_02	◆	◆
CDS_03	○	◆
CDS_04	○	○
CDS_05	○	○
CDS_06	◆	◆
CDS_07	-	-
CDS_08	●	●
OSR	●	●

Notes:

1. E1: early evening period from 6pm to 8pm.
2. E2: late evening period from 8pm to 10pm. Assessment against ICNG NMLs for this period is used to guide additional mitigation measures (Section 5.3.3). PPA Conditions E41/42 are applicable for this assessment period (see Section 5.2.2).
3. OSR: this includes all commercial, industrial and other sensitive receivers.

Noise from site establishment and track and tunnel works are predicted to be within 15dB(A) of the NMLs at the nearest affected residences in NCAs CDS_02, CDS_03, CDS_04, CDS_05 and CDS_06.

Proposed measures for managing potential noise impacts are provided in Section 5.3. For more detailed predictions, see APPENDIX D.

5.2.2 PPA Conditions E41/42

Table 5-5 summarises the predicted noise impacts for each construction stage in each NCA compared with the internal NMLs in CSSI-7400 Conditions E41 and E42. Where predicted levels are above the E41/42 NMLs at residential receivers, additional mitigation measures will be implemented in accordance with the documented procedure in Addendum A of the SMCSNVS.

The impacts presented are as follow:

- Noise levels predicted to be below internal NMLs in PPA Conditions E41 and E42;
- Noise levels predicted to be above internal NMLs in PPA Conditions E41 and E42.

Table 5-5: Noise level summary for PPA Conditions E41/42 (residential only)

NCA	E2 ¹ /N ²	
	S01	S02
CDS_01	●	●
CDS_02	●	●
CDS_03	●	●
CDS_04	●	●
CDS_05	●	●
CDS_06	●	●
CDS_07	-	-
CDS_08	●	●

Notes:

1. E2: late evening period from 8pm to 10pm.

2. N: Night-time period from 10pm to 7am.

The results in Table 5-5 indicate that construction noise is predicted to comply with the internal noise threshold of PPA Conditions E41/E42 at the nearest residential receivers within all NCAs. The noise predictions are based upon the activities and plant and equipment presented in APPENDIX C.

Based on the assessment conducted for this CNVIS, sawing works at the base of the station box for the track works would exceed the internal noise levels and has therefore been excluded during the evening and night-time periods. Onsite measurements should be conducted to validate the noise levels presented in APPENDIX C for the sawing activity. If measured noise levels at the most affected residences are found to comply with the PPA Conditions E41/E42, sawing could be undertaken.

Proposed measures for managing potential noise impacts are provided in Section 5.3. For more detailed predictions, see APPENDIX D. Based upon results presented in Section 5.2, additional noise mitigation is not required.

5.2.3 Sleep disturbance

Review of the truck access finds that a smooth transition from the road to the site has been provided to minimise noise impacts as heavy vehicles arrive on site. Furthermore, traffic lights have been installed to allow safe egress from the site. This allows maximum noise levels from heavy vehicle in/egress to be more controlled. Toolbox talks will be used to advise all personnel of the need to follow quiet work practices during OOHW periods and of the need to respect the residential receivers surrounding the work site. All heavy vehicle drivers will be instructed of the need to minimise unnecessary acceleration on site and when exiting the site, and to reducing the need for sudden or hard braking or application of

the park brake where practicable (as per CNVMP). Other management measures are outlined in Section 5.3 to aid in providing additional noise reduction benefits to assist in meeting the noise objectives.

It is noted that a more detailed analysis of L_{max} noise levels along Mowbray Road has been undertaken. For this assessment, the following has been considered:

- Existing truck volume at night along Mowbray Road:
 - o Mowbray Road: traffic counts over the week of 7 December 2017 to 13 December 2017 were provided by JHCPBG.
- Number of L_{max} noise events above predicted RBL + 15 dB(A) [i.e L_{max} 54 dB(A)] from the existing traffic along Mowbray Road was determined based on the findings of Eric Schreurs at al. [13] in relation to the distribution of noise level maxima for different vehicle types at certain speeds.
- Construction traffic movements from Chatswood construction site at night (see APPENDIX C Table C1): up to 4 concrete / delivery trucks per hour are expected to exit onto Mowbray Road.

The comparison of L_{max} noise events from the existing traffic and the project is presented in Table 5.6.

Table 5.6: Sleep disturbance assessment

Site	Road	Existing traffic	Project
		No of L _{max} events above 54 dB(A)	No of truck movements at night
Chatswood	Mowbray Road	174	144

As can be noted from Table 5.6, there are 30 more maximum noise events from existing road traffic passbys along Mowbray Road above the predicted maximum levels of RBL + 15 dB(A) when compared to the total number of proposed construction movements along Mowbray Road. This is based traffic volumes presented in APPENDIX C of up to 16 heavy vehicles accessing the site per hour during the night period.

The estimated maximum noise levels from the existing traffic are consistent with measurement data from the nearby noise loggers. Noise monitoring results at 14 Nelson Street (i.e. EIS B.24), close to Mowbray Road, identified L_{max} noise levels ranging from 60 dB(A) to 85 dB(A).

Noise monitoring should be undertaken to determine if sleep disturbance is higher than the NML of 65 dB(A) L_{A1} (1 minute) during the night period. If verification monitoring shows noise levels are consistently above the sleep disturbance NML, investigation will be undertaken to understand the cause of the exceedance and additional mitigation and management measures will be implemented in accordance with Sydney Metro City and South West Noise and Vibration Strategy.

For construction works on site other than truck movements, based on the noise levels presented in APPENDIX C, the only activity which may cause sleep disturbance would be from the use of saws down

at the track level. As this assessment has not considered the use of saws at night, sleep disturbance impacts are not predicted from construction activities within the site.

5.3 Noise mitigation and management

5.3.1 Consultation with affected receivers (CSSI-7400 Condition E33)

CSSI-7400 Condition E33 requires consultation with affected receivers to assist in determining site-specific mitigation measures to be included in this CNVIS.

Systems Connect will continue consultation with affected sensitive receivers during early investigation works carried out prior to commencement of works.

Systems Connect will continue to consult with potentially affected sensitive receivers, both prior to and following commencement of construction.

Consultation with affected sensitive receivers is informing and will continue to inform the identification of specific mitigation measures for the Chatswood site. These measures may include minimising high noise impact works during night time hours; limiting night time works in individual locations to no more than two consecutive nights; scheduling high noise impact works around sensitive periods where feasible and reasonable; offers of movie or dinner vouchers; alternative accommodation offers.

5.3.2 Site noise control measures

Table 5-7 shows the noise control measures recommended to reduce potential noise impacts.

Table 5-7: Site noise control measures

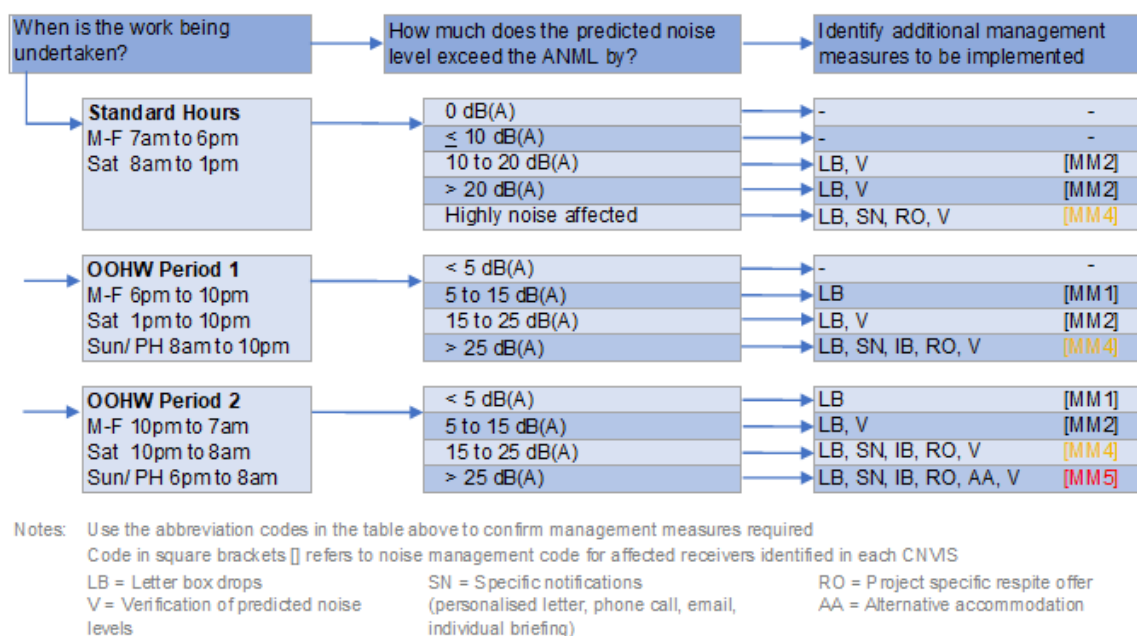
Control type	Control measure	Typical use
At-source control measures	Limit equipment in use	Only the equipment necessary during each stage of the works will be used.
	Timing of equipment in use	Where practicable, activities and plant will be limited as outlined in Table C1 (APPENDIX C).
	Limit activity duration	Any equipment not in use for extended periods shall be switched off. For example, heavy vehicles should switch engines off when not in use.
	Use and siting of plant	Avoid/ limit simultaneous operation of noisy plant and equipment within discernible range of a sensitive receiver. Direct noise-emitting plant away from sensitive receivers where practicable. Locate fixed location plant items as far from sensitive receivers as practicable.
	Equipment selection	Use quieter and less noise/ vibration emitting construction methods where feasible and reasonable.
	Truck movements	Where practicable, avoid the use of park air brakes at night. Air brake silencers are to be correctly installed and fully operational for any heavy vehicles (as per CNVMP). Minimise unnecessary acceleration on site.
	Non-tonal reversing alarms	Alternative reverse alarms, such as 'quackers' will be installed on all vehicles & mobile plant regularly used on site and on all vehicles & mobile plant required for OOHV.

Control type	Control measure	Typical use
Path mitigation measures	Temporary noise screens	Where practicable, temporary noise screens (e.g. Flexshield, Echo-barrier, or similar) should be used to provide additional noise reduction during works. Temporary noise screens can provide 5 to 10 dB noise reduction, where they can break line of sight.
Noise management measures	Site inductions & Toolbox Talks	All employees, contractors and subcontractors will receive a Project induction. The environmental component may be covered in toolboxes and should include: - location of nearest sensitive receivers - relevant project specific and standard noise and vibration mitigation measures; - permitted hours of work; - OOHW Procedure and Form - construction employee parking areas.
	Community consultation	Inform community of construction activity and potential impacts.
	Behavioural practices	No swearing or unnecessary shouting or loud stereos/radios on site. No dropping of materials from height, throwing of metal items and slamming of doors.
	Noise monitoring	Noise monitoring is to be carried out as detailed in Section 5.3.4.

5.3.3 Additional noise mitigation measures

Table 5-8 below should be used to advise the appropriate additional noise mitigation during construction, based on the CNVS [9] and the CNVMP [1].

Table 5-8: Additional airborne noise mitigation measures



Predicted noise levels in Section 5.2 are within the less than 10dB(A) above the daytime NMLs, and comply with E41/E42 NMLs, therefore no AMMs are required. Note that all potentially impacted

receivers will be kept informed of the nature of works to be carried out, the expected noise levels and duration, as well as be given the project enquiries and complaints 1800 numbers (see Section 5.3.5)

5.3.4 Attended noise monitoring

Real time noise monitoring in accordance with CSSI-7400 Condition C11 is not proposed to be undertaken for the Chatswood site. Attended noise monitoring will be undertaken as required by this CNVIS. Noise monitoring is subject to obtaining the property owner/occupier's consent to access the property (where required). If consent to access property is denied, monitoring will be done on public land on the property boundary, provided it is safe to do so.

Attended noise monitoring will be undertaken during works at one of the representative residential receivers identified in the table below. Nominated attended measurement locations have been selected with the best opportunity to validate the predicted noise levels.

Table 5-9: Nominated verification monitoring locations

NCA	Nominated receiver address	Monitoring location at 1 m from
CDS_03	2 NELSON STREET CHATSWOOD	Western facade
CDS_03	7-11 NELSON STREET CHATSWOOD	Southern facade
CDS_03	6 ORCHARD ROAD CHATSWOOD	Western facade
CDS_06	344 MOWBRAY ROAD ARTARMON	Northern facade

Notes:

Monitoring on private property is subject to owner consent and where relevant, occupier consent. If consent to access property is denied, monitoring will be done on public land on the property boundary, provided it is safe to do so.

Noise monitoring should be undertaken to determine if the construction noise levels are higher than the external equivalent NML specified in PPA Conditions E41/E42. If verification monitoring shows that the external noise levels are consistently above the predicted (or required) noise levels presented in 5.2, investigation will be undertaken to understand the cause of the exceedance and additional mitigation and management measures will be implemented in accordance with Sydney Metro City and South West Noise and Vibration Strategy.

5.3.5 Complaints Handling

Noise complaints received and responded to will be managed in accordance with the CNVMP and the Community Consultation Strategy.

Transport for NSW operate a 24-hour construction complaints line (1800 171 386).

Enquiries/ complaints may also be received through the Sydney Metro project email (linewide@transport.nsw.gov.au).

6 Construction vibration impacts

6.1 Minimum working distances for vibration intensive plant

From the plant and equipment listed in APPENDIX C, the dominant vibration generating plant and equipment include:

- Compactor / roller (12 tonnes)

Potential vibration generated to receivers is dependent on separation distances, the intervening soil and rock strata, dominant frequencies of vibration, and the receiver structure.

The recommended minimum working distances for vibration intensive plant are presented in Table 6-1 and Table 6.2. These distances are conservatively based on excavation of hard rock. Site specific minimum working distances for vibration intensive plant items must be measured on site where plant and equipment are likely to operate close to or within the minimum working distances for cosmetic damage (Table 6-1).

Unlike noise, vibration cannot be readily predicted. There are many variables from site to site, such as soil type and conditions, sub surface rock, building types and foundations, and actual plant on site.

The data relied upon in this assessment (tabulated below) is taken from a database of vibration levels measured at various sites or obtained from other sources (such as BS5228-2:2009). They are not specific to this project as final vibration levels are dependent on many factors including the actual plant used, its operation and the intervening geology between the activity and the receiver.

Table 6-1: Minimum working distances (m) for cosmetic damage (continuous vibration)

Plant item	Minimum working distance (m)		
	Reinforced or framed structures (e.g. commercial buildings) ¹	Unreinforced or light framed structures (e.g. residential buildings) ¹	Sensitive structures (e.g. heritage structures) ²
Compactor / roller (4-12t) - low vibration	5	5	10

Notes

1) Initial screening test criteria reduced by 50% due to potential dynamic magnification in accordance with BS7385.

2) In accordance with Section 5.8.1 of CNVMP, a site inspection should determine whether a heritage structure is structurally unsound.

3) Minimum working distances are in 5m increments only to account for the intrinsic uncertainty of this screening method.

Table 6-2: Minimum working distances (m) for human annoyance (continuous vibration)

Plant item	Minimum working distances, m				
	Critical areas ^{1,4}	Residences		Offices ^{3,4}	Workshops ⁴
		Day ²	Night ²		
Compactor / roller (4-12t) - low vibration	25	10	15	10	5

Plant item	Minimum working distances, m			
	Critical areas ^{1,4}	Residences		Offices ^{3,4}
		Day ²	Night ²	

Notes 1: Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.

2: Daytime is 7 am to 10 pm; Night-time is 10 pm to 7am.

3: Examples include offices, schools, educational institutions and place of worship.

4: Applicable when in use.

6.2 Vibration assessment

6.2.1 Structural damage

The numbers of buildings which are close to or within the minimum working distances for cosmetic damage are shown in Table 6-3.

Table 6-3: Number of buildings within minimum working distances for cosmetic damage

Plant item	Number of buildings	
	Screening criteria for non-heritage structures	Screening criteria for heritage structures
Compactor / roller (4-12t) - low vibration	0	0

The roller would be used within the existing acoustic shed above the station which is approximately 60 metres from the nearest residences. There are no buildings within the minimum working distances established for cosmetic damage during use of the vibratory roller.

6.2.2 Human annoyance

The assessing vibration guideline [4] notes that inside dwellings, adverse comments often arise when occupants can perceive (feel) vibration, particularly when the vibration arises from a source located outside their home (or outside their control), and assume that the vibration has the potential to damage their building or contents.

However, it is noted that vibration levels required to cause minor cosmetic damage are typically 10 x higher than levels that will cause disturbance to building occupants. Many building occupants assume that building damage is occurring when they feel vibration or observe rattling of loose objects, however the level of vibration at which people perceive vibration or at which loose objects may rattle is far lower than vibration levels that can cause damage to structures.

Properties where vibration levels may be above the vibration disturbance goals in Table 4-2 and there is a probability of adverse comment are shown in Table 6-4.

Table 6-4: Number of buildings within minimum working distances for human annoyance

Plant item	Critical areas ^{1,4}	Residences ⁵		Offices ^{3,4}	Workshops ⁴
		Day ²	Night ²		
Compactor / roller (4-12t) - low vibration	0	0	0	0	0

Notes:

1. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.
2. Daytime is 7 am to 10 pm; Night-time is 10 pm to 7am.
3. Examples include offices, schools, educational institutions and place of worship.
4. Applicable when in use.
5. Hotels and childcare centres are included in the residence category.

There are up to no receivers predicted to experience vibration which can cause adverse comment when vibration-generating plant is operated nearby.

Attended vibration measurements are proposed to be carried out proactively and in response to vibration complaints. If measurement results indicate exceedances of the vibration objectives for human annoyance at these locations, vibration control and management measures will be provided to reduce vibration impact (see Section 6.3.1).

6.3 Vibration mitigation measures

6.3.1 Vibration control and management measures

In addition to the vibration control measures presented in the CNVMP, the following vibration management measures are provided to minimise vibration impact from construction activities to the nearest affected receivers and to meet the relevant human comfort vibration and structural damage limits identified in Section 4.2.

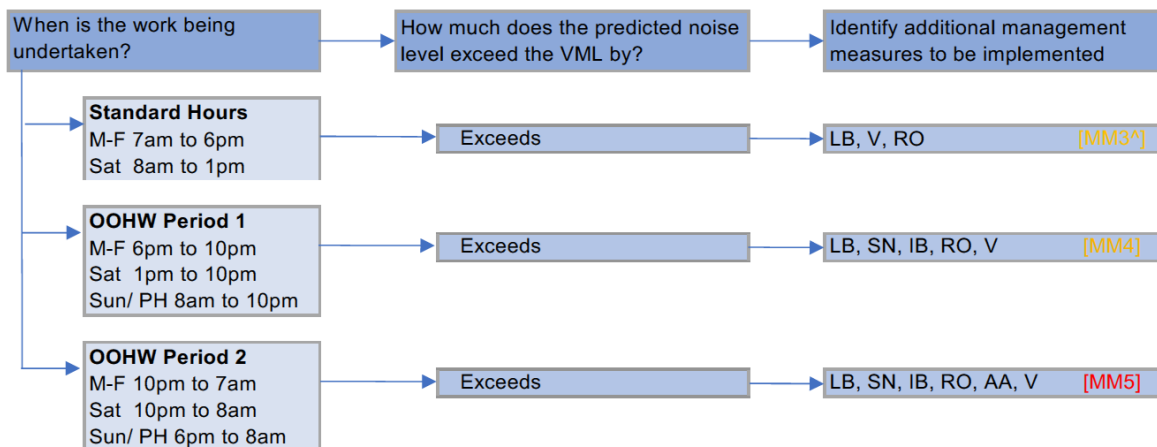
Table 6-5: Site vibration control measures

Control type	Control measure	Typical use
Construction planning	Community consultation	Implement community consultation measures – inform community of construction activity & potential impacts – inform community that the level of vibration at which people perceive it, or at which loose objects may rattle, is far lower than the level at which minor cosmetic damage is expected to occur
	Equipment selection/construction method	Use less vibration emitting construction methods where feasible & reasonable, for example vibratory rollers can, where practicable, be operated with the vibratory mode switched off to reduce vibration impact.
	Plan work activities to minimise vibration.	Plan traffic flow, parking & loading/unloading areas to maximise distances between truck routes and sensitive receivers.
Complaints management	Construction Complaints Management System	Complaints will be managed in accordance with the Construction Complaints Management System (see Section 6.3.4). Each complaint shall be investigated and where vibration levels are established as exceeding the set limits, appropriate amelioration measures shall be put in place to mitigate future occurrences. Management measures may include modification of construction methods such as using smaller equipment and establishment of minimum working distances as mentioned above.

6.3.2 Additional vibration mitigation measures

After applying all feasible and reasonable mitigation measures identified in Table 6-5, if vibration monitoring at representative locations are still above relevant vibration objectives for human annoyance, the appropriate additional vibration mitigations measures, as outlined in Section 8.2 of the CNVMP.

Table 6-6: Additional vibration mitigation measures



Notes: Use the abbreviation codes in the table above to confirm management measures required
Code in square brackets [] refers to noise management code for affected receivers identified in each CNVIS

LB = Letter box drops

SN = Specific notifications

RO = Project specific respite offer

V = Verification monitoring

IB = individual briefing

AA = Alternative accommodation

6.3.3 Vibration monitoring

Vibration monitoring may be required in response to vibration complaints. Real-time vibration monitoring in accordance with PPA Condition C11 is not proposed for this site.

6.3.4 Management of complaints

Vibration complaints received and responded to will be managed in accordance with the CNVMP and the Community Consultation Strategy.

Transport for NSW operate a 24-hour construction complaints line (1800 171 386).

Enquiries/ complaints may also be received through the Sydney Metro project email (linewide@transport.nsw.gov.au).

7 Ground-borne noise assessment

Due to the nature of the Chatswood station, which are surface works, airborne noise is expected to be much higher than ground-borne noise levels at the nearest sensitive receivers.

The risk of annoyance due to ground-borne noise is therefore considered low and has not been addressed further in this CNVIS.

8 Traffic noise assessment

8.1 Traffic sources

All heavy vehicles will access the C2S Chatswood worksite via Mowbray Road and Pacific Highway which are arterial roads with significant daytime and night-time flows, and exit the construction site as follows:

- During day and evening periods, all heavy trucks will exit on to Mowbray Road and turn right to merge on to Pacific Highway. However, RMS has requested heavy vehicles to turn left into Mowbray Road during morning and afternoon peak times to minimise impact to already congested traffic on this road.

Details of projected heavy vehicle movements associated with the construction works were provided by Systems Connect and described in APPENDIX C Table C1. Light vehicle movements associated with construction were not considered to be significant.

To predict road traffic noise levels on the existing road network, the most recent available traffic count data for each road forming part of the site access route was obtained by reviewing the following reference source:

- RMS Traffic volume viewer (last access 19/12/2017) – location: 80m south of Mowbray Road, station id 33014;
- Traffic counts for Mowbray Road over the week of 7 December 2017 to 13 December 2017 were provided by JHCPBG.

Traffic volumes are detailed in Table 8.1.

Table 8.1: Traffic noise modelling data - existing road network

Site	Road	Road category (RNP)	15-hour day period (7am-10pm)				9-hour night period (10pm-7am)			
			Existing		Project		Existing		Project	
			TOTAL	HV	TOTAL	HV	TOTAL	HV	TOTAL	HV
Chatswood	Pacific Highway	Arterial	51155	3237	840	600	10201	1003	432	288
Chatswood	Mowbray Road	Arterial	24668	730	840	600	2477	174	432	288

8.2 Predicted construction traffic noise

The potential impact of construction road traffic noise to nearby residential receivers has been estimated using the United Kingdom Department of Environment's 'Calculation of Road Traffic Noise' (1988) method.

Table 8.2 below summarises the predicted increase in traffic noise levels during day and night periods due to construction related road traffic noise.

Table 8.2: Predicted traffic noise levels (with/ without construction)

Site	Road	Road category (RNP)	Increase, dB(A)	
			Day $L_{Aeq(15h)}$	Night $L_{Aeq(9h)}$
Chatswood	Pacific Highway	Arterial	0.3	0.6
Chatswood	Mowbray Road	Arterial	0.5	1.6

Notes:

* Predicted increases are based on the most impacted receiver

The predicted road traffic noise levels indicate a less than 2dB(A) increase in overall day $L_{Aeq(15h)}$ and night $L_{Aeq(9h)}$ noise on nearby main roads and so construction traffic is predicted to have minimal impact on this road used to access/exit the site.

Predicted noise levels therefore comply with the traffic NMLs identified in Section 4.1.4.

8.3 Traffic noise mitigation and management

The Heavy Vehicle Code of Conduct includes several measures, including limiting of compression braking, which will ensure that noise impacts of heavy vehicle traffic on surrounding streets are minimised.

9 Cumulative impacts

The impacts addressed in this assessment have not considered the additional works that are proposed to occur for the northern connection works. These impacts have been considered in the C2B northern connection CNVIS [ref:TK685-03-02F01 CNVIS C2B_P3 Northern Connection (r5)]. The impacts predicted in the northern connection CNVIS are considerably higher than those presented in this CNVIS. This is due to the requirement for high noise generating plant and equipment to be operating within the rail corridor adjacent to surrounding residences. As a result, any increase in noise from the Chatswood early works would not be significant, therefore the cumulative impacts from all works are addressed in the northern connection CNVIS.

It is noted that the permanent works being undertaken by the TSE works are forecast to be completed by the end of October 2020. The Chatswood early works is forecast to commence work on site in August 2020.

During standard construction hours, cumulative noise levels may be at times 2dB(A) higher than indicated in this assessment at receivers closer to the worksite. This is not considered a significant increase for work activities undertaken during standard construction hours.

The TSE contractor is required to meet ICNG NMLs for works outside standard construction hours. The cumulative impacts would therefore have a negligible impact at the nearby noise sensitive receivers compared to the OOH LWW works which are required to meet the internal NMLs in PPA Conditions E41 and E42.

Systems Connect are aware of other ongoing, potentially concurrent construction activities within the vicinity of the Chatswood worksite. These works, summarised in Table 9.1, may have the potential to generate cumulative noise impacts on receivers. These works have been considered but it has been determined that, due to the nature of the other unrelated construction works, no additional physical mitigation measures are deemed reasonable. Nevertheless, Systems Connect will endeavour to take all reasonable steps to collaborate with other Projects to minimise cumulative noise and vibration impact where Systems Connect are above management levels and coordinate respite for affected sensitive receivers, whenever practicable.

Table 9.1: Other construction works close to Chatswood worksite

Construction company	Project	Timing of activities	Hours of works	Works location	Activity types	General plant types
Laing O'Rourke	Sydney Metro - Main North and North Shore Corridor Works	September 2018 to 2021	Standard construction hours, outside construction hours and rail possession works. Intermittent out of hours works between Chatswood and Artarmon train stations on the eastern extent	Between Chatswood and Artarmon train stations on the eastern extent	Rail and signalling modification works	Utility relocation, minor earthworks, signal and rail modification.
Sydney Trains	Sydney Train maintenance works	Based on Sydney Trains trackwork schedule	Based on Sydney Trains trackwork schedule	Any point along the railway corridor. Immediately adjacent to LWW worksite	Rail and signalling maintenance works	Utility relocation, minor earthworks, signal and rail modification.
JHCPBG JV	Sydney Metro TSE Works	May 2020 to October 2020	Standard construction hours, outside construction hours and rail possession works.	Northern portal Zone 4 and Zone 5		Stage 3 - Post piling

10 Conclusion

Works associated with the C2S Chatswood early works have been identified and described in this report. Potentially affected noise and vibration sensitive receivers and relevant construction noise and vibration objectives have been identified and discussed to allow the assessment of potential construction impacts.

Expected construction noise levels have been predicted and presented in Section 5.2 and APPENDIX D. The expected duration of construction activities is outlined in Table C1 of APPENDIX C.

Construction noise is predicted to be less than 10dB(A) above the daytime NML at the most affected residential receivers and is compliant with Conditions E41 and E42 at all assessed residential receivers.

Noise mitigation and management measures have been presented in Section 5.3 to aid in providing additional noise reduction benefits where exceedance of the objective occurs.

Vibration impacts and management measures have been presented in Section 6 to aid in minimising any potential vibration impacts.

The potential impact of ground-borne noise from construction activities is expected to be negligible due to the expectation that airborne noise (potentially from sources other than construction, such as road and rail traffic) will be much higher than ground-borne noise levels at the nearest sensitive receivers.

Construction traffic noise on the local road network associated with the works is predicted to have minimal impact on receivers in proximity to public roads.

References

- [1] Sydney Metro City & Southwest – Line Wide Works Contract Construction Noise and Vibration Management Plan (SMCSWLWC-SYC-1NL-PM-PLN-000032-A-CNVMP-C2B)
- [2] SLR Consulting Australia Pty Ltd 2016 Sydney Metro Chatswood to Sydenham - Technical Paper 2: Noise and Vibration Report Number 610.14718R1 – 28 April 2016
- [3] Department of Environment and Climate Change 2009 NSW Interim Construction Noise Guideline
- [4] Department of Environment Conservation NSW 2006 Assessing Vibration; a technical guideline
- [5] British Standard BS 7385 Part 2 1993, Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration
- [6] German Standard DIN 4150-3:2016-12 Vibration in buildings – Part 3: Effects on structures
- [7] British Standard BS 6472-2008, Evaluation of human exposure to vibration in buildings (1-80Hz)
- [8] Transport for NSW Sydney Metro City & Southwest Construction Noise Strategy (ref: 610.14213-R3) 08 August 2016
- [9] Transport for NSW Construction Noise and Vibration Strategy (ref: 7TP-ST-157/4.0) May 2018
- [10] Transport for NSW Sydney Metro Construction Environmental Management Framework August 2016
- [11] Department of Environment, Climate Change and Water 2011 NSW Road Noise Policy
- [12] NSW Department of Planning – Development near rail corridors and busy road – interim guideline 2008
- [13] Eric Schreurs, Lex Browns and Deanna Tomerini – Maximum pass-by noise levels from vehicles in real road traffic streams: comparison to modelled levels and measurement protocol issues. Internoise 2011, Osaka Japan, September 4-7

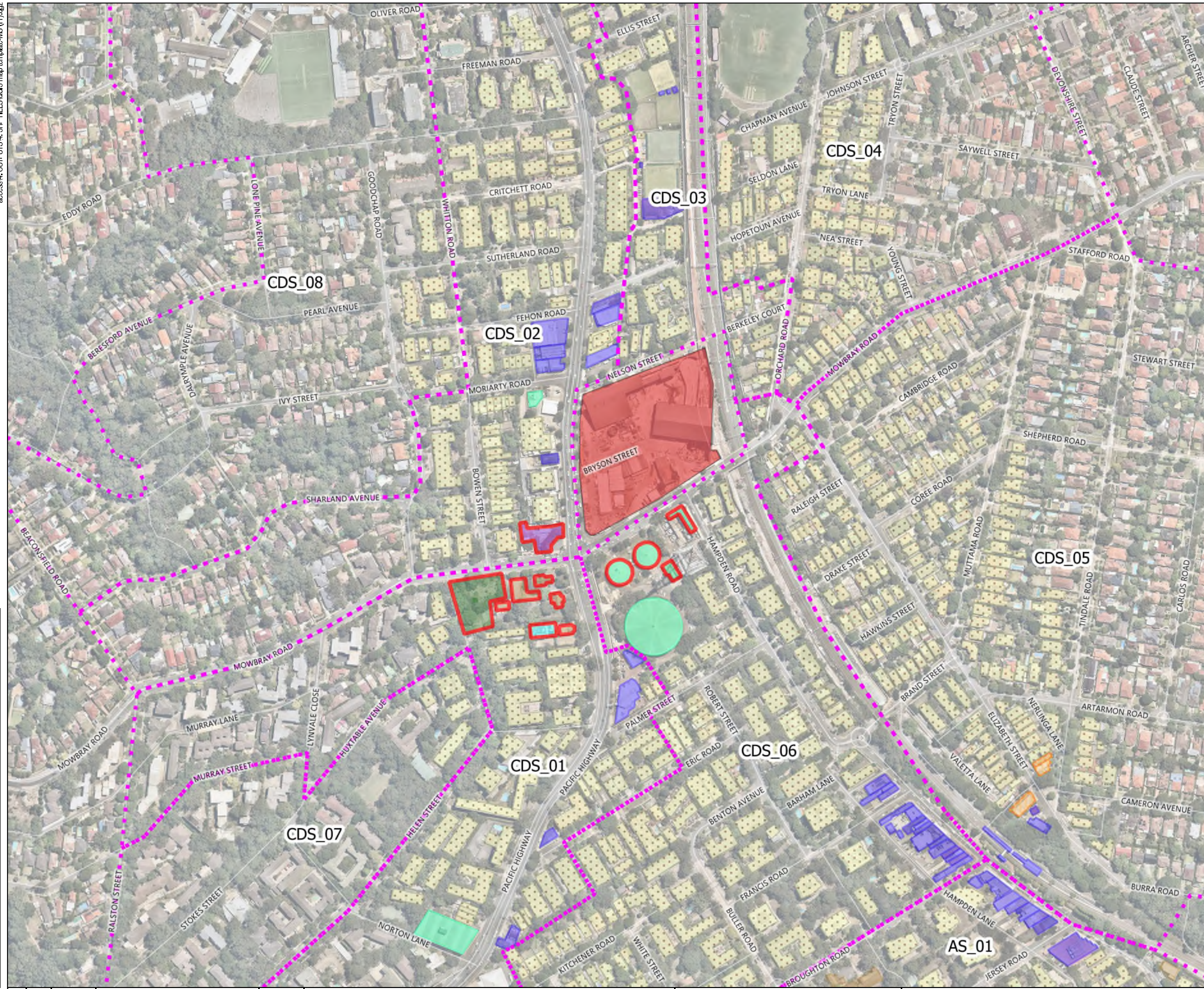
APPENDIX A Glossary of terminology

The following is a brief description of the technical terms used to describe noise to assist in understanding the technical issues presented.

Adverse weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the 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.
Assessment period	The period in a day over which assessments are made.
Assessment point	A point at which noise measurements are taken or estimated. A point at which noise measurements are taken or estimated.
Background noise	Background noise is the term used to describe the underlying level of noise 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 meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L90 noise level (see below).
Decibel [dB]	The units that sound is measured in. The following are examples of the decibel readings of every day sounds: 0dB The faintest sound we can hear 30dB A quiet library or in a quiet location in the country 45dB Typical office space. Ambience in the city at night 60dB CBD mall at lunch time 70dB The sound of a car passing on the street 80dB Loud music played at home 90dB The sound of a truck passing on the street 100dB The sound of a rock band 115dB Limit of sound permitted in industry 120dB Deafening
dB(A)	A-weighted decibels. The A-weighting noise filter simulates the response of the human ear at relatively low levels, where the ear is not as effective in hearing low frequency sounds as it is in 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 dB(A). Practically all noise is measured using the A filter.
dB(C)	C-weighted decibels. The C-weighting noise filter simulates the response of the human ear at relatively high levels, where the human ear is nearly equally effective at hearing from mid-low frequency (63Hz) to mid-high frequency (4kHz), but is less effective outside these frequencies.
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 or Hz.
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.
Intermittent noise	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 _{Max}	The maximum sound pressure level measured over a given period.
L _{Min}	The minimum sound pressure level measured over a given period.

L ₁	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L ₁₀	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L ₉₀	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 _{eq}	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.
Reflection	Sound wave changed in direction of propagation due to a solid object obscuring its path.
SEL	Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain L _{eq} sound levels over any period of time and can be used for predicting noise at various locations.
Sound	A fluctuation of air pressure which is propagated as a wave through air.
Sound absorption	The ability of a material to absorb sound energy through its conversion into thermal energy.
Sound level meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.
Sound pressure level	The level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound power level	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.
Tonal noise	Containing a prominent frequency and characterised by a definite pitch.

APPENDIX B **Nearest sensitive receivers and noise management levels**



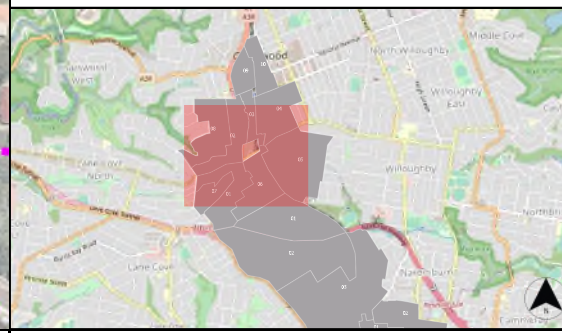
LEGEND

Noise sensitive receivers

- | | | | |
|---|------------------------|---|---------------------|
|  | Childcare |  | Theatre/Auditorium |
|  | Commercial |  | Mixed use |
|  | Educational |  | Project acquisition |
|  | Hotel/Motel/Hostel |  | Film/TV studio |
|  | Industrial |  | Cinema |
|  | Medical |  | Community centre |
|  | Place of Worship |  | Library |
|  | Recording studio |  | Laboratory |
|  | Recreational - Active |  | Other |
|  | Recreational - Passive |  | Heritage |
|  | Residential | | |



 Chatswood work area



..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
r0	RP	24/04/20	Prepare figures	RP
REV	BY	DATE	DESCRIPTION	APPROVER
A3 Original			Co-ordinate System: MGA Zone 56	

0 50 100 150 200 m

1:4500

FULL SIZE A3

NOTE: Do not scale from this drawing.

CLIENT



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SYDNEY METRO - CHATSWOOD TO SYDENHAM

LINE WIDE WORKS

Land Use, NCAs

Work area: Chatswood early access

Sheet 0 of 2

Table B1: Noise sensitive receivers and construction noise management levels CHATSWOOD EARLY ACCESS

NCA	Receiver Type	Reference RBL	Existing Noise Levels, dB(A)			ICNG NMLs				E41/42 NMLs	Sleep Dist. L _{Amax}		Comments
			RBL Day	RBL Evening	RBL Night	Day (S)	Day (O)	E	N	E2/N * (from 8pm to 7am)	Screening**	Max**	
CDS_01	Residential	RTA TH511-L02 516 Pacific Hwy, 55 Chatswood		54	42	65	60	59	47	55-65	57	65	
CDS_02	Residential	RTA TH511-L02 516 Pacific Hwy, 55 Chatswood		54	42	65	60	59	47	55-65	57	65	
CDS_03	Residential	EIS B.24	50	47	39	60	55	52	44	55-65	55	65	
CDS_04	Residential	EIS B.25	41	40	35	51	46	45	40	55-65	55	65	
CDS_05	Residential	EIS B.22	42	41	34	52	47	46	39	55-65	55	65	
CDS_06	Residential	EIS B.24	50	47	39	60	55	52	44	55-65	55	65	
CDS_07	Residential	EIS B.22	42	41	34	52	47	46	39	55-65	55	65	
CDS_08	Residential	EIS B.25	41	40	35	51	46	45	40	55-65	55	65	
CDS_09	Residential/ commercial		50	47	39	60	55	52	44	55-65	54	65	
CDS_10	Residential/ commercial		41	40	35	51	46	45	40	55-65	50	65	
AS_01	Predominantly Residential	EIS B.21	49	46	41	59	54	51	46	55-65	56	65	
AS_02	Commercial/ industrial area	EIS B.21	49	46	41	59	54	51	46	55-65	56	65	
Other sensitive receivers													
OSR	Studio building (music recording studio)					25							AS2107 ‘maximum’ (internal noise level)
OSR	Studio building (film or television studio)					30							AS2107 ‘maximum’ (internal noise level)
OSR	Cinema Space					35							AS2107 ‘maximum’ (internal noise level)
OSR	Hotel (Sleeping areas: Hotels near major roads)					40							AS2107 ‘maximum’ (internal noise level)
OSR	Classrooms at schools and other educational institutions					45							ICNG (internal noise level)
OSR	Hospital wards and operating theatres					45							ICNG (internal noise level)
OSR	Places of worship					45							ICNG (internal noise level)
OSR	Library (reading areas)					45							AS2107 ‘maximum’ (internal noise level)
OSR	Office building (general office areas)					45							AS2107 ‘maximum’ (internal noise level)
OSR	Community centres – Municipal Buildings					50							AS2107 ‘maximum’ (internal noise level)
OSR	Cafe/ Restaurant/ Bar (bars and lounges) – indoor areas					50							AS2107 ‘maximum’ (internal noise level)
OSR	Medical facilities					55							AS2107 ‘maximum’ (internal noise level)
OSR	Railway platform and concourse areas					55							AS2107 ‘maximum’ (internal noise level)
OSR	Cafe/ Restaurant/ Bar (bars and lounges) – outdoor areas					60							AS2107 ‘maximum’ ¹ (external noise level)
OSR	Passive recreation areas (e.g. area used for reading, meditation)					60							ICNG (external noise level)
OSR	Active recreation areas (e.g. sports fields)					65							ICNG (external noise level)
OSR	Commercial premises (including offices and retail outlets)					70							ICNG (external noise level)
OSR	Industrial premises					75							ICNG (external noise level)
Notes:	1 - Outdoor noise level based on recommended maximum internal noise level in AS 2107 plus 10 dB (10dB is a conservative estimate of the difference between internal and external noise levels, taken from ICNG p13)												
	D(S): standard construction hours from 7 am to 6 pm Monday to Friday and from 8 am to 6 pm Saturday												
	E: evening period from 6pm to 10pm (Monday to Saturday) - OOHW P1												
	N: night-time period from 10 pm to 7 am Monday to Friday, from 10 pm to 8 am Saturday, Sunday and Public holidays - OOHW P2												

APPENDIX C **Construction details**



- LEGEND
- Spoil shed
 - Laydown
 - Acoustic shed (walls on all four sides to ground level)
 - Shared access
 - SCLWW Area (initial EPL boundary)
 - Flash butt welding set-up
 - Location of 300t crane
 - Entry/exit
 - Hoarding
 - Movement between spoil shed and acoustic shed

Note: Shared access from 1st of August to 30th of November. After 30th of November Systems Connect will be PC of entire dive site.

NOTES Scale 1: 1,128 0 43.0 86 Meters	FOR INFORMATION ONLY This map is a user generated static output from the New SCLWW GIS tool and is for reference only. Data layers appearing on this map may or may not be accurate, current or otherwise reliable. Image courtesy of 	Status GIS OUTPUT NOT USED FOR CONSTRUCTION Original Size A3 Coordinate System MGA56 Author Date Printed 3-Apr-2020		SCLWW Indicative Chatswood Dive Site Layout for CNVIS
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APPENDIX D Detailed predicted noise levels

The impacts presented in the following table are identified by colour coding of the text.

For **Standard Hours**:

- XX Complies with NML
- **XX** < 10dB(A) above NML - construction noise clearly audible
- **XX** > 10dB(A) above NML - construction noise moderately intrusive
- **XX** > 75dB(A) - highly noise affected

For **OOH**

- XX Complies with NML
- **XX** < 5 dB(A) above NML - construction noise noticeable
- **XX** 5 to 15 dB(A) above NML - construction noise clearly audible
- **XX** > 15 to 25 dB(A) above NML - construction noise moderately intrusive
- **XX** > 25 dB(A) above NML - construction noise highly intrusive

The detailed predicted levels have provided to Systems Connect in a spreadsheet table in order to more adequately mitigate and manage potential noise impacts.

Table D1: Predicted construction noise levels

CHATSWOOD - EARLY ACCES

Receiver		Coordinates		Predicted noise levels, dB(A)														
NCA	Address	X	Y	Day (Standard)			Evening (OOHW)			Night (OOHW)			E2 (E41/E42)			N (E41/E42)		
				NML	S01	S02	NML	S01	S02	NML	S01	S02	NML	S01	S02	NML	S01	S02
CDS_01	539-541 PACIFIC HIGHWAY ARTARMON	331496	6257664	65	36	36	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	4 PALMER STREET ARTARMON	331529	6257687	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	13 PALMER STREET ARTARMON	331565	6257770	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	15 PALMER STREET ARTARMON	331556	6257764	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	1-3 HELEN STREET LANE COVE NORTH	331305	6257829	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	4-6 HELEN STREET LANE COVE NORTH	331412	6257839	65	36	39	59	36	37	47	36	36	55	36	37	55	36	36
CDS_01	8-10 HELEN STREET LANE COVE NORTH	331369	6257809	65	-	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	12-14 HELEN STREET LANE COVE NORTH	331426	6257790	65	34	37	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	16-22 HELEN STREET LANE COVE NORTH	331398	6257765	65	35	37	59	34	35	47	34	35	55	34	35	55	34	35
CDS_01	24-28 HELEN STREET LANE COVE NORTH	331406	6257709	65	38	40	59	37	38	47	37	38	55	37	38	55	37	38
CDS_01	30-36 HELEN STREET LANE COVE NORTH	331375	6257672	65	35	35	59	34	35	47	34	35	55	34	35	55	34	35
CDS_01	1-5 HUXTABLE AVENUE LANE COVE NORTH	331268	6257809	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	7 HUXTABLE AVENUE LANE COVE NORTH	331248	6257796	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	9 HUXTABLE AVENUE LANE COVE NORTH	331237	6257790	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	380 MOWBRAY ROAD WEST LANE COVE NORTH	331309	6257873	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	382-384 MOWBRAY ROAD WEST LANE COVE NOR	331279	6257866	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	386-390 MOWBRAY ROAD WEST LANE COVE NOR	331241	6257845	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	394 MOWBRAY ROAD WEST LANE COVE NORTH	331202	6257823	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	472 PACIFIC HIGHWAY LANE COVE NORTH	331393	6257606	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	494-502 PACIFIC HIGHWAY LANE COVE NORTH	331448	6257718	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	504 PACIFIC HIGHWAY LANE COVE NORTH	331473	6257750	65	34	37	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	506-512 PACIFIC HIGHWAY LANE COVE NORTH	331439	6257778	65	39	39	59	36	37	47	36	37	55	36	37	55	36	37
CDS_01	514 PACIFIC HIGHWAY LANE COVE NORTH	331439	6257811	65	39	40	59	36	37	47	36	37	55	36	37	55	36	37
CDS_01	1 ERIC ROAD ARTARMON	331586	6257693	65	-	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	7 ERIC ROAD ARTARMON	331561	6257676	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	9 ERIC ROAD ARTARMON	331531	6257662	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	15 ERIC ROAD ARTARMON	331484	6257655	65	35	36	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	21 ERIC ROAD ARTARMON	331458	6257623	65	34	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	9 ERIC ROAD ARTARMON	331516	6257685	65	36	36	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	4 PALMER STREET ARTARMON	331519	6257690	65	36	37	59	-	34	47	-	34	55	-	34	55	-	34
CDS_01	4 PALMER STREET ARTARMON	331552	6257694	65	34	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	494-502 PACIFIC HIGHWAY LANE COVE NORTH	331470	6257720	65	34	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	494-502 PACIFIC HIGHWAY LANE COVE NORTH	331441	6257687	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	494-502 PACIFIC HIGHWAY LANE COVE NORTH	331432	6257695	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_01	482-492 PACIFIC HIGHWAY LANE COVE NORTH	331410	6257643	65	36	37	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	18 BOWEN STREET CHATSWOOD	331385	6257978	65	-	39	59	-	34	47	-	34	55	-	34	55	-	34
CDS_02	1A BOWEN STREET CHATSWOOD	331399	6257971	65	-	39	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1 BOWEN STREET CHATSWOOD	331402	6257941	65	35	39	59	34	36	47	34	35	55	34	36	55	34	35
CDS_02	2 BOWEN STREET CHATSWOOD	331349	6257963	65	35	38	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	2-6 BOWEN STREET CHATSWOOD	331329	6257981	65	37	38	59	35	35	47	34	35	55	35	35	55	34	35
CDS_02	3 BOWEN STREET CHATSWOOD	331398	6257987	65	37	41	59	36	37	47	36	37	55	36	37	55	36	37
CDS_02	5 BOWEN STREET CHATSWOOD	331397	6257994	65	36	40	59	35	36	47	35	36	55	35	36	55	35	36
CDS_02	7 BOWEN STREET CHATSWOOD	331390	6258001	65	37	41	59	37	38	47	37	38	55	37	38	55	37	38
CDS_02	8-14 BOWEN STREET CHATSWOOD	331320	6258041	65	35	38	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	9 BOWEN STREET CHATSWOOD	331379	6258010	65	38	41	59	38	38	47	37	38	55	38	38	55	37	38
CDS_02	11 BOWEN STREET CHATSWOOD	331393	6258017	65	42	42	59	40	40	47	40	40	55	40	40	55	40	40
CDS_02	13 BOWEN STREET CHATSWOOD	331392	6258024	65	42	44	59	41	42	47	41	42	55	41	42	55	41	42
CDS_02	15 BOWEN STREET CHATSWOOD	331391	6258032	65	41	43	59	40	41	47	40	40	55	40	41	55	40	40
CDS_02	17 BOWEN STREET CHATSWOOD	331391	6258039	65	42	44	59	42	42	47	42	42	55	42	42	55	42	42
CDS_02	19 BOWEN STREET CHATSWOOD	331380	6258050	65	39	42	59	37	39	47	37	39	55	37	39	55	37	39
CDS_02	21 BOWEN STREET CHATSWOOD	331386	6258054	65	35	40	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	23-25 BOWEN STREET CHATSWOOD	331384	6258066	65	34	40	59	34	35	47	-	35	55	34	35	55	-	35
CDS_02	27 BOWEN STREET CHATSWOOD	331381	6258077	65	37	41	59	37	37	47	36	37	55	37	37	55	36	37
CDS_02	29 BOWEN STREET CHATSWOOD	331382	6258083	65	40	42	59	40	40	47	40	40	55	40	40	55	40	40
CDS_02	1 CRITCHETT ROAD CHATSWOOD	331423	6258398	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	2A CRITCHETT ROAD CHATSWOOD	331422	6258344	65	35	38	59	-	34	47	-	-	55	-	34	55	-	-
CDS_02	2 CRITCHETT ROAD CHATSWOOD	331431	6258345	65	38	39	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	4 CRITCHETT ROAD CHATSWOOD	331415	6258346	65	35	38	59	34	34	47	34	34	55	34	34	55	34	34
CDS_02	1-3 EDDY ROAD CHATSWOOD	331421	6258472	65	37	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	6 EDDY ROAD CHATSWOOD	331382	6258398	65	-	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	8-10 EDDY ROAD CHATSWOOD	331337	6258417	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	15 ELLIS STREET CHATSWOOD	331490	6258554	65	37	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1 FREEMAN ROAD CHATSWOOD	331386	6258540	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	6-8 FREEMAN ROAD CHATSWOOD	331373	6258495	65	35	36	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	10 FREEMAN ROAD CHATSWOOD	331329	6258473	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1 GOODCHAP ROAD CHATSWOOD	331296	6257964	65	36	37	59	34	34	47	34	34	55	34	34	55	34	34
CDS_02	2 GOODCHAP ROAD CHATSWOOD	331246	6257946															

CDS_02	393 MOWBRAY ROAD WEST CHATSWOOD	331208	6257905	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	401 MOWBRAY ROAD WEST CHATSWOOD	331196	6257891	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	405 MOWBRAY ROAD WEST CHATSWOOD	331160	6257873	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	2A OLIVER ROAD CHATSWOOD	331394	6258554	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	524-542 PACIFIC HIGHWAY CHATSWOOD	331434	6257998	65	52	53	59	51	52	47	51	51	55	51	52	55	51	51
CDS_02	544 PACIFIC HIGHWAY CHATSWOOD	331420	6258016	65	54	54	59	53	53	47	52	53	55	53	53	55	52	53
CDS_02	552-554 PACIFIC HIGHWAY CHATSWOOD	331419	6258093	65	55	55	59	54	54	47	53	54	55	54	54	55	53	54
CDS_02	592 PACIFIC HIGHWAY CHATSWOOD	331463	6258229	65	41	44	59	41	41	47	41	41	55	41	41	55	41	41
CDS_02	594 PACIFIC HIGHWAY CHATSWOOD	331462	6258235	65	41	44	59	40	41	47	40	41	55	40	41	55	40	41
CDS_02	596 PACIFIC HIGHWAY CHATSWOOD	331468	6258268	65	41	43	59	39	40	47	39	40	55	39	40	55	39	40
CDS_02	598 PACIFIC HIGHWAY CHATSWOOD	331462	6258317	65	37	41	59	36	36	47	36	36	55	36	36	55	36	36
CDS_02	614 PACIFIC HIGHWAY CHATSWOOD	331446	6258344	65	39	41	59	36	36	47	36	36	55	36	36	55	36	36
CDS_02	621-627 PACIFIC HIGHWAY CHATSWOOD	331500	6258178	65	53	49	59	47	47	47	47	47	55	47	47	55	47	47
CDS_02	628 PACIFIC HIGHWAY CHATSWOOD	331461	6258391	65	35	38	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	630 PACIFIC HIGHWAY CHATSWOOD	331459	6258405	65	34	38	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	632 PACIFIC HIGHWAY CHATSWOOD	331458	6258422	65	34	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	638 PACIFIC HIGHWAY CHATSWOOD	331454	6258436	65	34	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	640-650 PACIFIC HIGHWAY CHATSWOOD	331434	6258512	65	37	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	641-653 PACIFIC HIGHWAY CHATSWOOD	331518	6258302	65	40	44	59	37	38	47	37	38	55	37	38	55	37	38
CDS_02	654 PACIFIC HIGHWAY CHATSWOOD	331424	6258530	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	655A PACIFIC HIGHWAY CHATSWOOD	331522	6258387	65	37	41	59	34	35	47	34	35	55	34	35	55	34	35
CDS_02	666 PACIFIC HIGHWAY CHATSWOOD	331424	6258557	65	-	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	689 PACIFIC HIGHWAY CHATSWOOD	331518	6258407	65	-	38	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	691-693 PACIFIC HIGHWAY CHATSWOOD	331517	6258423	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	695 PACIFIC HIGHWAY CHATSWOOD	331521	6258438	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	699 PACIFIC HIGHWAY CHATSWOOD	331512	6258450	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	701-705 PACIFIC HIGHWAY CHATSWOOD	331508	6258487	65	34	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	745 PACIFIC HIGHWAY CHATSWOOD	331494	6258507	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	753 PACIFIC HIGHWAY CHATSWOOD	331472	6258573	65	36	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	755-759 PACIFIC HIGHWAY CHATSWOOD	331467	6258580	65	38	-	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	2 SHARLAND AVENUE CHATSWOOD	331244	6257977	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	4 SHARLAND AVENUE CHATSWOOD	331210	6257970	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	6 SHARLAND AVENUE CHATSWOOD	331185	6257970	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	8 SHARLAND AVENUE CHATSWOOD	331170	6257967	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	12 SHARLAND AVENUE CHATSWOOD	331158	6257960	65	-	34	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1 SUTHERLAND ROAD CHATSWOOD	331434	6258311	65	36	40	59	35	35	47	35	35	55	35	35	55	35	35
CDS_02	3 SUTHERLAND ROAD CHATSWOOD	331417	6258317	65	36	39	59	35	36	47	35	36	55	35	36	55	35	36
CDS_02	4 SUTHERLAND ROAD CHATSWOOD	331455	6258264	65	39	42	59	38	39	47	38	39	55	38	39	55	38	39
CDS_02	5-7 SUTHERLAND ROAD CHATSWOOD	331390	6258333	65	42	40	59	37	37	47	37	37	55	37	37	55	37	37
CDS_02	6 SUTHERLAND ROAD CHATSWOOD	331441	6258263	65	38	42	59	37	38	47	37	38	55	37	38	55	37	38
CDS_02	8-12 SUTHERLAND ROAD CHATSWOOD	331417	6258253	65	49	45	59	42	43	47	42	42	55	42	43	55	42	42
CDS_02	11-13 SUTHERLAND ROAD CHATSWOOD	331358	6258334	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1-7 WHITTON ROAD CHATSWOOD	331363	6258179	65	45	46	59	45	45	47	44	44	55	45	45	55	44	44
CDS_02	9 WHITTON ROAD CHATSWOOD	331364	6258192	65	35	39	59	35	35	47	34	35	55	35	35	55	34	35
CDS_02	5 MORIARTY ROAD CHATSWOOD	331392	6258193	65	41	43	59	40	40	47	40	40	55	40	40	55	40	40
CDS_02	7 MORIARTY ROAD CHATSWOOD	331389	6258165	65	46	47	59	46	46	47	45	46	55	46	46	55	45	46
CDS_02	1 MORIARTY ROAD CHATSWOOD	331416	6258190	65	43	44	59	42	42	47	42	42	55	42	42	55	42	42
CDS_02	3 MORIARTY ROAD CHATSWOOD	331399	6258194	65	41	43	59	41	41	47	41	41	55	41	41	55	41	41
CDS_02	6 EDDY ROAD CHATSWOOD	331380	6258421	65	-	35	59	-	-	47	-	-	55	-	-	55	-	-
CDS_02	1 CRITCHETT ROAD CHATSWOOD	331434	6258420	65	-	37	59	-	-	47	-	-	55	-	-	55	-	-
CDS_03	96 - 100 ALBERT AVENUE CHATSWOOD	331498	6258596	60	38	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	84-86 ALBERT AVENUE CHATSWOOD	331590	6258631	60	38	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	88 ALBERT AVENUE CHATSWOOD	331528	6258617	60	36	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	96-100 ALBERT AVENUE CHATSWOOD	331525	6258577	60	39	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	2 ELLIS STREET CHATSWOOD	331590	6258549	60	36	35	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	3 ELLIS STREET CHATSWOOD	331572	6258585	60	37	35	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	4-6 ELLIS STREET CHATSWOOD	331580	6258540	60	37	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	8-14 ELLIS STREET CHATSWOOD	331548	6258527	60	39	39	52	-	-	44	-	-	55	-	-	55	-	-
CDS_03	1-3 GORDON AVENUE CHATSWOOD	331579	6258307	60	44	44	52	34	36	44	34	36	55	34	36	55	34	36
CDS_03	2A GORDON AVENUE CHATSWOOD	331582	6258258	60	43	48	52	39	40	44	39	40	55	39	40	55	39	40
CDS_03	5-9 GORDON AVENUE CHATSWOOD	331543	6258295	60	39	43	52	36	37	44	36	37	55	36	37	55	36	37
CDS_03	10 GORDON AVENUE CHATSWOOD	331538	6258239	60	44	48	52	43	44	44	43	44	55	43	44	55	43	44
CDS_03	1 NELSON STREET CHATSWOOD	331675	6258250	60	50	49	52	42	43	44	42	43	55	42	43	55	42	43
CDS_03	2 NELSON STREET CHATSWOOD	331663	6258186	60	59	64	52	46	53	44	45	53	55	46	53	55	45	53
CDS_03	3 NELSON STREET CHATSWOOD	331665	6258237	60	47	48	52	40	41	44	40	41	55	40	41	55	40	41
CDS_03	5 NELSON STREET CHATSWOOD	331655	6258233	60	47	48	52	39	41	44	39	40	55	39	41	55	39	40
CDS_03	7-11 NELSON STREET CHATSWOOD	331570	6258192	60	53	52	52	45	46	44	45	46	55	45	46	55	45	46
CDS_03	15 NELSON STREET CHATSWOOD	331554	6258174	60	51	51	52	47	48	44	47	47	55	47	48	55	47	47
CDS_03	17 NELSON STREET CHATSWOOD	331544	6258197	60	52	51	52	47	48	44	47	48	55	47	48	55	47	48
CDS_03	19 NELSON STREET CHATSWOOD	331530	6258185	60	49	51	52	48	48	44	48	48	55	48	48	55	48	48
CDS_03	6 ORCHARD ROAD CHATSWOOD	331695	6258144	60	53	56	52	44	47	44	44	47	55	44	47	55	44	47
CDS_03	8 ORCHARD ROAD CHATSWOOD	331696	6258160	60	52	54	52	44	46	44	44	46	55	44	46	55	44	46
CDS_03	10 ORCHARD ROAD CHATSWOOD	331703	6258174	60	50	52	52	43	45	44	43	44	55	43	45	55	43	44
CDS_03	12 ORCHARD ROAD CHATSWOOD	331681	6258176	60	50	52	52	41	43	44	40	43	55	41	43	55	40	43
CDS_03	14 ORCHARD ROAD CHATSWOOD	331683	6258191	60	42	50	52	37	40	44	37	40	55	37	40	55	37	40
CDS_03	16 ORCHARD ROAD CHATSWOOD	331699	6258242	60	47	46	52	40	41	44	40	41	55	40	41	55	40	41
CDS_03	2A GORDON AVENUE CHATSWOOD	331567	6258218	60	45	48	52	41	42	44	41	42	55	41	42	55	41	42
CDS_04	0 NELSON STREET CHATSWOOD	331657	6258430	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	6 ERSKINE STREET CHATSWOOD	331925	6258480	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1A HOPETOUN AVENUE CHATSWOOD	331707	6258356	51	42	42	45	35	37	40	35	36	55	35	37	55	35	36
CDS_04	1 HOPETOUN AVENUE CHATSWOOD	331693	6258360	51	39	41	45	-	35	40	-	34	55	-	35	55	-	34
CDS_04	2 HOPETOUN AVENUE CHATSWOOD	331719	6258286	51	39	43	45	35	37	40	35	37	55	35	37	55	35	37
CDS_04	3 HOPETOUN AVENUE CHATSWOOD	331688																

CDS_04	10 HOPETOUN AVENUE CHATSWOOD	331665	6258291	51	43	45	45	36	38	40	36	38	55	36	38	55	36	38
CDS_04	11-13 HOPETOUN AVENUE CHATSWOOD	331648	6258342	51	42	48	45	34	37	40	-	37	55	34	37	55	-	37
CDS_04	12 HOPETOUN AVENUE CHATSWOOD	331651	6258255	51	43	46	45	34	37	40	34	37	55	34	37	55	34	37
CDS_04	43-45 JOHNSON STREET CHATSWOOD	331821	6258541	51	38	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	64 JOHNSON STREET CHATSWOOD	331915	6258504	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	66 JOHNSON STREET CHATSWOOD	331890	6258494	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	287 MOWBRAY ROAD CHATSWOOD	332069	6258333	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	293 MOWBRAY ROAD CHATSWOOD	332031	6258321	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	297 MOWBRAY ROAD CHATSWOOD	331989	6258314	51	35	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	299 MOWBRAY ROAD CHATSWOOD	331968	6258304	51	35	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	301 MOWBRAY ROAD CHATSWOOD	331955	6258292	51	35	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	305 MOWBRAY ROAD CHATSWOOD	331938	6258294	51	35	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	307 MOWBRAY ROAD CHATSWOOD	331928	6258273	51	35	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	315 MOWBRAY ROAD CHATSWOOD	331890	6258261	51	36	39	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	317 MOWBRAY ROAD CHATSWOOD	331840	6258243	51	-	40	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331785	6258252	51	39	43	45	34	35	40	-	35	55	34	35	55	-	35
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331785	6258243	51	42	44	45	36	38	40	36	37	55	36	38	55	36	37
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331806	6258263	51	39	42	45	34	36	40	34	36	55	34	36	55	34	36
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331819	6258253	51	44	43	45	37	38	40	36	37	55	37	38	55	36	37
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331797	6258255	51	36	42	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331830	6258236	51	44	43	45	38	39	40	38	38	55	38	39	55	38	38
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331829	6258225	51	41	42	45	37	38	40	37	38	55	37	38	55	37	38
CDS_04	319 MOWBRAY ROAD CHATSWOOD	331829	6258251	51	44	43	45	38	39	40	38	39	55	38	39	55	38	39
CDS_04	321 MOWBRAY ROAD CHATSWOOD	331794	6258204	51	42	44	45	37	38	40	37	38	55	37	38	55	37	38
CDS_04	325 MOWBRAY ROAD CHATSWOOD	331785	6258191	51	46	45	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	327 MOWBRAY ROAD CHATSWOOD	331768	6258200	51	44	46	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	329 MOWBRAY ROAD CHATSWOOD	331760	6258184	51	44	46	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	331 MOWBRAY ROAD CHATSWOOD	331748	6258173	51	44	47	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	333 MOWBRAY ROAD CHATSWOOD	331736	6258163	51	45	49	45	40	41	40	40	41	55	40	41	55	40	41
CDS_04	335 MOWBRAY ROAD CHATSWOOD	331727	6258144	51	48	51	45	42	43	40	42	43	55	42	43	55	42	43
CDS_04	1 NEA STREET CHATSWOOD	331918	6258316	51	34	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1A NEA STREET CHATSWOOD	331940	6258340	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	2A NEA STREET CHATSWOOD	331826	6258276	51	38	40	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	2 NEA STREET CHATSWOOD	331804	6258276	51	36	41	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	3 NEA STREET CHATSWOOD	331907	6258317	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	4 NEA STREET CHATSWOOD	331785	6258283	51	40	42	45	35	36	40	34	35	55	35	36	55	34	35
CDS_04	5 NEA STREET CHATSWOOD	331896	6258319	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	6 NEA STREET CHATSWOOD	331778	6258296	51	36	41	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	7 NEA STREET CHATSWOOD	331884	6258321	51	34	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	9 NEA STREET CHATSWOOD	331872	6258322	51	-	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	11 NEA STREET CHATSWOOD	331860	6258324	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	13 NEA STREET CHATSWOOD	331841	6258322	51	38	40	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	17 NEA STREET CHATSWOOD	331810	6258321	51	42	41	45	36	37	40	36	36	55	36	37	55	36	36
CDS_04	19 NEA STREET CHATSWOOD	331792	6258325	51	37	40	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	21 NEA STREET CHATSWOOD	331786	6258328	51	38	41	45	35	36	40	35	35	55	35	36	55	35	35
CDS_04	1A ORCHARD ROAD CHATSWOOD	331736	6258201	51	46	48	45	41	42	40	40	41	55	41	42	55	40	41
CDS_04	3 ORCHARD ROAD CHATSWOOD	331735	6258209	51	44	47	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	5 ORCHARD ROAD CHATSWOOD	331748	6258229	51	44	46	45	38	39	40	38	39	55	38	39	55	38	39
CDS_04	7A ORCHARD ROAD CHATSWOOD	331762	6258236	51	45	45	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	7 ORCHARD ROAD CHATSWOOD	331750	6258245	51	43	45	45	38	39	40	38	39	55	38	39	55	38	39
CDS_04	9 ORCHARD ROAD CHATSWOOD	331766	6258259	51	44	44	45	37	38	40	37	38	55	37	38	55	37	38
CDS_04	9A ORCHARD ROAD CHATSWOOD	331743	6258261	51	45	45	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	11 ORCHARD ROAD CHATSWOOD	331759	6258297	51	45	43	45	38	39	40	38	39	55	38	39	55	38	39
CDS_04	15 ORCHARD ROAD CHATSWOOD	331752	6258331	51	43	42	45	36	37	40	36	37	55	36	37	55	36	37
CDS_04	17 ORCHARD ROAD CHATSWOOD	331756	6258349	51	40	41	45	35	36	40	35	36	55	35	36	55	35	36
CDS_04	18 ORCHARD ROAD CHATSWOOD	331700	6258259	51	45	45	45	39	40	40	39	40	55	39	40	55	39	40
CDS_04	19A ORCHARD ROAD CHATSWOOD	331776	6258370	51	40	40	45	35	36	40	35	36	55	35	36	55	35	36
CDS_04	20 ORCHARD ROAD CHATSWOOD	331723	6258363	51	38	40	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	21 ORCHARD ROAD CHATSWOOD	331762	6258400	51	39	39	45	34	35	40	34	35	55	34	35	55	34	35
CDS_04	22 ORCHARD ROAD CHATSWOOD	331732	6258377	51	-	39	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	23 ORCHARD ROAD CHATSWOOD	331788	6258409	51	36	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	25 ORCHARD ROAD CHATSWOOD	331764	6258422	51	37	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	27 ORCHARD ROAD CHATSWOOD	331765	6258434	51	36	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	29 ORCHARD ROAD CHATSWOOD	331767	6258447	51	35	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	31 ORCHARD ROAD CHATSWOOD	331766	6258457	51	35	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	33 ORCHARD ROAD CHATSWOOD	331767	6258462	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	35-43 ORCHARD ROAD CHATSWOOD	331794	6258553	51	40	37	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	6 SAYWELL STREET CHATSWOOD	332049	6258361	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	8 SAYWELL STREET CHATSWOOD	332037	6258365	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	10 SAYWELL STREET CHATSWOOD	332025	6258367	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	11 SAYWELL STREET CHATSWOOD	331998	6258436	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	12 SAYWELL STREET CHATSWOOD	332013	6258368	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	13 SAYWELL STREET CHATSWOOD	331989	6258438	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	14 SAYWELL STREET CHATSWOOD	332001	6258369	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	15 SAYWELL STREET CHATSWOOD	331983	6258440	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	16 SAYWELL STREET CHATSWOOD	331988	6258371	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	17A SAYWELL STREET CHATSWOOD	331963	6258442	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	17 SAYWELL STREET CHATSWOOD	331974	6258440	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	18 SAYWELL STREET CHATSWOOD	331976	6258373	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	19 SAYWELL STREET CHATSWOOD	331951	6258443	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	19B SAYWELL STREET CHATSWOOD	331931	6258447	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	19A SAYWELL STREET CHATSWOOD	331937	6258445	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	20 SAYWELL STREET CHATSWOOD	331964	6258375	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	21 SAYWELL STREET CHATSWOOD	331923	6258447	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	22 SAYWELL STREET CHATSWOOD	331944	6258378	51	-	35												

CDS_04	28 SAYWELL STREET CHATSWOOD	331924	6258389	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	30 SAYWELL STREET CHATSWOOD	331903	6258385	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1 TRYON STREET CHATSWOOD	331886	6258349	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1 TRYON LANE CHATSWOOD	331795	6258345	51	-	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1A TRYON STREET CHATSWOOD	331833	6258337	51	-	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	2A TRYON STREET CHATSWOOD	331821	6258363	51	36	39	45	-	34	40	-	34	55	-	34	55	-	34
CDS_04	2A TRYON LANE CHATSWOOD	331815	6258341	51	-	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	3 TRYON STREET CHATSWOOD	331875	6258362	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	4 TRYON STREET CHATSWOOD	331802	6258381	51	-	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	5 TRYON STREET CHATSWOOD	331870	6258375	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	6A TRYON STREET CHATSWOOD	331798	6258406	51	34	37	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	7 TRYON STREET CHATSWOOD	331873	6258389	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	8 TRYON STREET CHATSWOOD	331816	6258410	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	9 TRYON STREET CHATSWOOD	331875	6258404	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	10 TRYON STREET CHATSWOOD	331831	6258429	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	11A TRYON STREET CHATSWOOD	331883	6258460	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	11 TRYON STREET CHATSWOOD	331881	6258443	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	12 TRYON STREET CHATSWOOD	331813	6258447	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	14 TRYON STREET CHATSWOOD	331825	6258455	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	15 TRYON STREET CHATSWOOD	331885	6258471	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	16 TRYON STREET CHATSWOOD	331838	6258471	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	1 VICTOR STREET CHATSWOOD	331791	6258573	51	37	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	4 CHAPMAN AVENUE CHATSWOOD	331698	6258416	51	37	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	4 CHAPMAN AVENUE CHATSWOOD	331652	6258422	51	40	40	45	-	-	40	-	-	55	-	-	55	-	-
CDS_04	4 CHAPMAN AVENUE CHATSWOOD	331725	6258402	51	37	38	45	-	-	40	-	-	55	-	-	55	-	-
CDS_05	290 MOWBRAY ROAD ARTARMON	332040	6258257	52	-	34	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	292 MOWBRAY ROAD ARTARMON	331999	6258248	52	34	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	300 MOWBRAY ROAD ARTARMON	331968	6258236	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	302 MOWBRAY ROAD ARTARMON	331946	6258225	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	312 MOWBRAY ROAD ARTARMON	331891	6258211	52	39	40	46	35	35	39	34	35	55	35	35	55	34	35
CDS_05	314 MOWBRAY ROAD ARTARMON	331881	6258195	52	42	42	46	36	38	39	36	37	55	36	38	55	36	37
CDS_05	316 MOWBRAY ROAD ARTARMON	331871	6258200	52	34	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	318A MOWBRAY ROAD ARTARMON	331857	6258195	52	39	42	46	35	36	39	35	36	55	35	36	55	35	36
CDS_05	322 MOWBRAY ROAD ARTARMON	331851	6258171	52	-	41	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	324 MOWBRAY ROAD ARTARMON	331839	6258167	52	34	42	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	326 MOWBRAY ROAD ARTARMON	331831	6258158	52	-	41	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	328 MOWBRAY ROAD ARTARMON	331822	6258140	52	-	43	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	330 MOWBRAY ROAD ARTARMON	331809	6258145	52	-	43	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	332 MOWBRAY ROAD ARTARMON	331800	6258138	52	36	44	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	334 MOWBRAY ROAD ARTARMON	331794	6258115	52	-	44	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	336 MOWBRAY ROAD ARTARMON	331784	6258118	52	-	44	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	338 MOWBRAY ROAD ARTARMON	331768	6258106	52	46	48	46	41	42	39	40	42	55	41	42	55	40	42
CDS_05	1A MUTTAMA ROAD ARTARMON	331993	6257828	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	1 MUTTAMA ROAD ARTARMON	331956	6257834	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 MUTTAMA ROAD ARTARMON	331912	6257876	52	35	37	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	3 MUTTAMA ROAD ARTARMON	331956	6257845	52	34	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	4 MUTTAMA ROAD ARTARMON	331898	6257878	52	35	38	46	-	35	39	-	34	55	-	35	55	-	34
CDS_05	5 MUTTAMA ROAD ARTARMON	331945	6257866	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	6 MUTTAMA ROAD ARTARMON	331917	6257896	52	37	39	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	7 MUTTAMA ROAD ARTARMON	331954	6257882	52	34	37	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	8 MUTTAMA ROAD ARTARMON	331921	6257923	52	36	38	46	34	36	39	34	35	55	34	36	55	34	35
CDS_05	9 MUTTAMA ROAD ARTARMON	331970	6257900	52	35	37	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	10 MUTTAMA ROAD ARTARMON	331928	6257929	52	35	38	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	11 MUTTAMA ROAD ARTARMON	331960	6257911	52	34	37	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	12 MUTTAMA ROAD ARTARMON	331923	6257958	52	35	39	46	34	36	39	34	35	55	34	36	55	34	35
CDS_05	13 MUTTAMA ROAD ARTARMON	331961	6257928	52	34	37	46	-	35	39	-	34	55	-	35	55	-	34
CDS_05	14 MUTTAMA ROAD ARTARMON	331930	6257980	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	15 MUTTAMA ROAD ARTARMON	331967	6257946	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	16 MUTTAMA ROAD ARTARMON	331927	6257995	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	17 MUTTAMA ROAD ARTARMON	331989	6257952	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	18 MUTTAMA ROAD ARTARMON	331929	6258014	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	19 MUTTAMA ROAD ARTARMON	331995	6257963	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	20 MUTTAMA ROAD ARTARMON	331958	6258068	52	35	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	21 MUTTAMA ROAD ARTARMON	331993	6257986	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	22 MUTTAMA ROAD ARTARMON	331952	6258082	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	23 MUTTAMA ROAD ARTARMON	331990	6257992	52	35	38	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	24 MUTTAMA ROAD ARTARMON	331958	6258111	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	24A MUTTAMA ROAD ARTARMON	331946	6258094	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	25 MUTTAMA ROAD ARTARMON	331990	6258008	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	26 MUTTAMA ROAD ARTARMON	331965	6258135	52	34	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	27 MUTTAMA ROAD ARTARMON	331994	6258022	52	34	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	28 MUTTAMA ROAD ARTARMON	331966	6258144	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	29 MUTTAMA ROAD ARTARMON	331995	6258037	52	34	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	30 MUTTAMA ROAD ARTARMON	331978	6258169	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	31 MUTTAMA ROAD ARTARMON	331999	6258052	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	32 MUTTAMA ROAD ARTARMON	331990	6258237	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	33 MUTTAMA ROAD ARTARMON	332019	6258089	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	35 MUTTAMA ROAD ARTARMON	332022	6258104	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	37 MUTTAMA ROAD ARTARMON	332025	6258119	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	39 MUTTAMA ROAD ARTARMON	332029	6258134	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	41 MUTTAMA ROAD ARTARMON	332032	6258149	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	43 MUTTAMA ROAD ARTARMON	332035	6258164	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	45 MUTTAMA ROAD ARTARMON	332038	6258179	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	47 MUTTAMA ROAD ARTARMON	332042	6258194	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	49 MUTTAMA ROAD ARTARMON	332045	6258209	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	51 MUTTAMA ROAD ARTARMON	332048	6258224	52	-	34	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	1 RALEIGH STREET ARTARMON	331753	6258027	52	41	46	46	37	41	39	37	41	55	37	41	55	37	41
CDS_05	3 RALEIGH STREET ARTARMON	331736																

CDS_05	7 RALEIGH STREET ARTARMON	331714	6258000	52	48	49	46	41	44	39	41	44	55	41	44	55	41	44
CDS_05	8 RALEIGH STREET ARTARMON	331765	6257967	52	36	42	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	10 RALEIGH STREET ARTARMON	331746	6257959	52	39	44	46	37	39	39	36	39	55	37	39	55	36	39
CDS_05	12 RALEIGH STREET ARTARMON	331739	6257955	52	39	45	46	35	38	39	35	38	55	35	38	55	35	38
CDS_05	14 RALEIGH STREET ARTARMON	331731	6257950	52	42	47	46	35	38	39	34	37	55	35	38	55	34	37
CDS_05	28 SHEPHERD ROAD ARTARMON	332045	6258043	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	30 SHEPHERD ROAD ARTARMON	332028	6258053	52	-	34	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	64 STAFFORD ROAD ARTARMON	332088	6258259	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	66A STAFFORD ROAD ARTARMON	332071	6258255	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	66 STAFFORD ROAD ARTARMON	332056	6258257	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	12 TINDALE ROAD ARTARMON	332026	6257823	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	14 TINDALE ROAD ARTARMON	332036	6257831	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	16 TINDALE ROAD ARTARMON	332036	6257845	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	18 TINDALE ROAD ARTARMON	332038	6257874	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	20 TINDALE ROAD ARTARMON	332043	6257888	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	22 TINDALE ROAD ARTARMON	332041	6257896	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	24 TINDALE ROAD ARTARMON	332043	6257912	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	26 TINDALE ROAD ARTARMON	332046	6257927	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	28 TINDALE ROAD ARTARMON	332048	6257942	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	30 TINDALE ROAD ARTARMON	332051	6257956	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	32 TINDALE ROAD ARTARMON	332053	6257972	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	34 TINDALE ROAD ARTARMON	332056	6257987	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	36 TINDALE ROAD ARTARMON	332059	6258002	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	38 TINDALE ROAD ARTARMON	332061	6258017	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	40 TINDALE ROAD ARTARMON	332072	6258031	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	42 TINDALE ROAD ARTARMON	332074	6258046	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	44 TINDALE ROAD ARTARMON	332072	6258082	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	46 TINDALE ROAD ARTARMON	332074	6258097	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	48 TINDALE ROAD ARTARMON	332077	6258112	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	50 TINDALE ROAD ARTARMON	332080	6258127	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	52 TINDALE ROAD ARTARMON	332082	6258142	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	54 TINDALE ROAD ARTARMON	332085	6258157	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	56 TINDALE ROAD ARTARMON	332088	6258172	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	58 TINDALE ROAD ARTARMON	332090	6258187	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	60 TINDALE ROAD ARTARMON	332093	6258202	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	62 TINDALE ROAD ARTARMON	332095	6258217	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	64 TINDALE ROAD ARTARMON	332100	6258237	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	141 ARTARMON ROAD ARTARMON	332012	6257790	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	143 ARTARMON ROAD ARTARMON	331999	6257780	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	145 ARTARMON ROAD ARTARMON	331993	6257785	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	147 ARTARMON ROAD ARTARMON	331977	6257789	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	149 ARTARMON ROAD ARTARMON	331964	6257795	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	1 BRAND STREET ARTARMON	331895	6257817	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 BRAND STREET ARTARMON	331916	6257782	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	3 BRAND STREET ARTARMON	331893	6257815	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	4 BRAND STREET ARTARMON	331909	6257749	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	5 BRAND STREET ARTARMON	331886	6257807	52	-	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	7 BRAND STREET ARTARMON	331876	6257799	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	8-10 BRAND STREET ARTARMON	331892	6257732	52	34	34	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	9 BRAND STREET ARTARMON	331866	6257792	52	35	35	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	11 BRAND STREET ARTARMON	331856	6257786	52	36	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	13 BRAND STREET ARTARMON	331844	6257784	52	37	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	1A CAMBRIDGE ROAD ARTARMON	331945	6258155	52	35	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 CAMBRIDGE ROAD ARTARMON	331981	6258217	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	3 CAMBRIDGE ROAD ARTARMON	331932	6258143	52	36	39	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	4 CAMBRIDGE ROAD ARTARMON	331960	6258203	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	5 CAMBRIDGE ROAD ARTARMON	331920	6258129	52	34	39	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	6 CAMBRIDGE ROAD ARTARMON	331930	6258219	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	7 CAMBRIDGE ROAD ARTARMON	331908	6258118	52	34	39	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	8 CAMBRIDGE ROAD ARTARMON	331914	6258209	52	39	40	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	9 CAMBRIDGE ROAD ARTARMON	331897	6258120	52	37	40	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	9A CAMBRIDGE ROAD ARTARMON	331894	6258108	52	36	40	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	10 CAMBRIDGE ROAD ARTARMON	331904	6258203	52	39	40	46	34	35	39	34	35	55	34	35	55	34	35
CDS_05	11 CAMBRIDGE ROAD ARTARMON	331892	6258106	52	35	40	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	13A CAMBRIDGE ROAD ARTARMON	331872	6258107	52	-	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	13 CAMBRIDGE ROAD ARTARMON	331868	6258096	52	-	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	14 CAMBRIDGE ROAD ARTARMON	331909	6258163	52	-	39	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	15 CAMBRIDGE ROAD ARTARMON	331857	6258081	52	35	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	16 CAMBRIDGE ROAD ARTARMON	331894	6258171	52	37	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	17 CAMBRIDGE ROAD ARTARMON	331843	6258075	52	36	42	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	19 CAMBRIDGE ROAD ARTARMON	331831	6258064	52	38	42	46	35	37	39	35	37	55	35	37	55	35	37
CDS_05	20 CAMBRIDGE ROAD ARTARMON	331884	6258157	52	37	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	22 CAMBRIDGE ROAD ARTARMON	331865	6258148	52	36	41	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	24 CAMBRIDGE ROAD ARTARMON	331855	6258143	52	37	42	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	30 CAMBRIDGE ROAD ARTARMON	331823	6258122	52	-	42	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	32 CAMBRIDGE ROAD ARTARMON	331814	6258116	52	-	42	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	1 COREE ROAD ARTARMON	331925	6258075	52	-	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 COREE ROAD ARTARMON	331907	6257993	52	36	39	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	3 COREE ROAD ARTARMON	331922	6258064	52	-	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	4 COREE ROAD ARTARMON	331890	6257983	52	37	40	46	35	37	39	35	36	55	35	37	55	35	36
CDS_05	5 COREE ROAD ARTARMON	331923	6258040	52	-	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	7B COREE ROAD ARTARMON	331899	6258038	52	34	39	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	9 COREE ROAD ARTARMON	331885	6258032	52	37	40	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	11 COREE ROAD ARTARMON	331873	6258024	52	36	40	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	13 COREE ROAD ARTARMON	331860	6258014	52	36	41	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	1 DRAKE STREET ARTARMON	331807	6257955	52	-	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 DRAKE STREET ARTARMON	331840	6257917	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	3 DRAKE STREET ARTARMON	331798	6257957	52	36	41	46	34	36	39	34	36	55	34				

CDS_05	5 DRAKE STREET ARTARMON	331789	6257948	52	35	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	6 DRAKE STREET ARTARMON	331809	6257896	52	-	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	7 DRAKE STREET ARTARMON	331787	6257938	52	35	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	8 DRAKE STREET ARTARMON	331801	6257889	52	-	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	9 DRAKE STREET ARTARMON	331775	6257933	52	37	41	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	10 DRAKE STREET ARTARMON	331794	6257877	52	38	41	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	11 DRAKE STREET ARTARMON	331767	6257924	52	40	43	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	12 DRAKE STREET ARTARMON	331782	6257872	52	37	41	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	13 DRAKE STREET ARTARMON	331757	6257918	52	35	43	46	-	34	39	-	34	55	-	34	55	-	34
CDS_05	29 ELIZABETH STREET ARTARMON	331973	6257754	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	31 ELIZABETH STREET ARTARMON	331934	6257819	52	34	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	40 ELIZABETH STREET ARTARMON	331944	6257722	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	42 ELIZABETH STREET ARTARMON	331953	6257734	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	43 ELIZABETH STREET ARTARMON	331901	6257901	52	36	38	46	34	35	39	34	35	55	34	35	55	34	35
CDS_05	44 ELIZABETH STREET ARTARMON	331953	6257742	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	44A ELIZABETH STREET ARTARMON	331801	6257980	52	37	42	46	34	37	39	34	37	55	34	37	55	34	37
CDS_05	44B ELIZABETH STREET ARTARMON	331797	6257986	52	35	42	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	45 ELIZABETH STREET ARTARMON	331884	6257915	52	37	39	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	46 ELIZABETH STREET ARTARMON	331790	6257996	52	37	43	46	35	37	39	35	37	55	35	37	55	35	37
CDS_05	47 ELIZABETH STREET ARTARMON	331875	6257928	52	36	39	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	49 ELIZABETH STREET ARTARMON	331868	6257941	52	36	39	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	51 ELIZABETH STREET ARTARMON	331873	6257950	52	36	40	46	34	36	39	34	36	55	34	36	55	34	36
CDS_05	53 ELIZABETH STREET ARTARMON	331868	6257969	52	37	40	46	35	37	39	35	37	55	35	37	55	35	37
CDS_05	55 ELIZABETH STREET ARTARMON	331851	6258001	52	36	41	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	57 ELIZABETH STREET ARTARMON	331829	6258011	52	36	41	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	59 ELIZABETH STREET ARTARMON	331821	6258025	52	35	41	46	-	35	39	-	35	55	-	35	55	-	35
CDS_05	61 ELIZABETH STREET ARTARMON	331810	6258036	52	36	42	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	63 ELIZABETH STREET ARTARMON	331812	6258048	52	36	43	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	65 ELIZABETH STREET ARTARMON	331792	6258049	52	36	43	46	-	36	39	-	36	55	-	36	55	-	36
CDS_05	67 ELIZABETH STREET ARTARMON	331789	6258055	52	38	43	46	35	37	39	35	37	55	35	37	55	35	37
CDS_05	1 HAWKINS STREET ARTARMON	331860	6257879	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	2 HAWKINS STREET ARTARMON	331877	6257845	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	3 HAWKINS STREET ARTARMON	331839	6257877	52	-	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	4 HAWKINS STREET ARTARMON	331877	6257834	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	5 HAWKINS STREET ARTARMON	331828	6257869	52	38	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	6 HAWKINS STREET ARTARMON	331866	6257828	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	7 HAWKINS STREET ARTARMON	331816	6257861	52	34	37	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	8 HAWKINS STREET ARTARMON	331855	6257830	52	-	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	9 HAWKINS STREET ARTARMON	331800	6257852	52	38	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	10 HAWKINS STREET ARTARMON	331846	6257815	52	36	36	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	11 HAWKINS STREET ARTARMON	331790	6257846	52	38	40	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	12 HAWKINS STREET ARTARMON	331836	6257808	52	36	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_05	14 HAWKINS STREET ARTARMON	331823	6257803	52	35	38	46	-	-	39	-	-	55	-	-	55	-	-
CDS_06	340 MOWBRAY ROAD ARTARMON	331707	6258049	60	53	52	52	44	47	44	44	47	55	44	47	55	44	47
CDS_06	342 MOWBRAY ROAD ARTARMON	331647	6258015	60	54	56	52	48	53	44	48	53	55	48	53	55	48	53
CDS_06	344 MOWBRAY ROAD ARTARMON	331625	6257993	60	54	57	52	50	55	44	50	55	55	50	55	55	50	55
CDS_06	1 PALMER STREET ARTARMON	331627	6257823	60	36	40	52	34	36	44	34	36	55	34	36	55	34	36
CDS_06	2 PALMER STREET ARTARMON	331586	6257738	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	7 PALMER STREET ARTARMON	331612	6257793	60	34	38	52	-	34	44	-	34	55	-	34	55	-	34
CDS_06	9-11 PALMER STREET ARTARMON	331580	6257782	60	37	39	52	36	37	44	36	36	55	36	37	55	36	36
CDS_06	1 ROBERT STREET ARTARMON	331719	6257701	60	-	35	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	1A ROBERT STREET ARTARMON	331760	6257676	60	35	34	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	3 ROBERT STREET ARTARMON	331678	6257751	60	34	37	52	-	34	44	-	34	55	-	34	55	-	34
CDS_06	5 ROBERT STREET ARTARMON	331656	6257781	60	34	38	52	-	34	44	-	34	55	-	34	55	-	34
CDS_06	8 ROBERT STREET ARTARMON	331649	6257679	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	22 ROBERT STREET ARTARMON	331634	6257740	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	24 ROBERT STREET ARTARMON	331618	6257742	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	26 ROBERT STREET ARTARMON	331626	6257755	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	28 ROBERT STREET ARTARMON	331619	6257762	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	2 ORCHARD ROAD CHATSWOOD	331693	6258093	60	53	55	52	44	47	44	44	47	55	44	47	55	44	47
CDS_06	3 BENTON AVENUE ARTARMON	331637	6257660	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	4 BENTON AVENUE ARTARMON	331696	6257621	60	-	34	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	5-11 BENTON AVENUE ARTARMON	331603	6257651	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	48 ELIZABETH STREET ARTARMON	331734	6258052	60	42	47	52	37	40	44	37	40	55	37	40	55	37	40
CDS_06	50 ELIZABETH STREET ARTARMON	331728	6258058	60	45	49	52	40	43	44	39	43	55	40	43	55	39	43
CDS_06	52 ELIZABETH STREET ARTARMON	331727	6258079	60	48	49	52	41	44	44	40	44	55	41	44	55	40	44
CDS_06	18 ERIC ROAD ARTARMON	331627	6257711	60	-	35	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	1A ERIC ROAD ARTARMON	331639	6257726	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	2A ERIC ROAD ARTARMON	331573	6257627	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	4-6 ERIC ROAD ARTARMON	331557	6257620	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	1 FRANCIS ROAD ARTARMON	331757	6257634	60	34	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	67 HAMPDEN ROAD ARTARMON	331799	6257738	60	40	43	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	77 HAMPDEN ROAD ARTARMON	331790	6257752	60	35	42	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	79 HAMPDEN ROAD ARTARMON	331778	6257759	60	34	38	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	81 HAMPDEN ROAD ARTARMON	331774	6257769	60	35	38	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	83 HAMPDEN ROAD ARTARMON	331766	6257779	60	-	38	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	85-91 HAMPDEN ROAD ARTARMON	331738	6257820	60	43	44	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	93-97 HAMPDEN ROAD ARTARMON	331717	6257851	60	44	45	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	99 HAMPDEN ROAD ARTARMON	331713	6257881	60	44	46	52	34	37	44	34	37	55	34	37	55	34	37
CDS_06	107-113 HAMPDEN ROAD ARTARMON	331662	6257920	60	47	46	52	40	44	44	40	43	55	40	44	55	40	43
CDS_06	115 HAMPDEN ROAD ARTARMON	331661	6257944	60	45	48	52	42	47	44	42	46	55	42	47	55	42	46
CDS_06	117-119 HAMPDEN ROAD ARTARMON	331655	6257966	60	50	49	52	43	47	44	43	46	55	43	47	55	43	46
CDS_06	142 HAMPDEN ROAD ARTARMON	331826	6257677	60	35	37	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	148 HAMPDEN ROAD ARTARMON	331807	6257696	60	-	37	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	152-156 HAMPDEN ROAD ARTARMON	331739	6257694	60	38	38	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	158-162 H																	

CDS_06	182-190 HAMPDEN ROAD ARTARMON	331654	6257871	60	39	44	52	36	41	44	36	41	55	36	41	55	36	41
CDS_06	8 ROBERT STREET ARTARMON	331666	6257658	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	8 ROBERT STREET ARTARMON	331661	6257679	60	-	35	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	2 PALMER STREET ARTARMON	331575	6257730	60	-	36	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	5-11 BENTON AVENUE ARTARMON	331614	6257631	60	-	-	52	-	-	44	-	-	55	-	-	55	-	-
CDS_06	340 MOWBRAY ROAD ARTARMON	331704	6258053	60	52	52	52	43	47	44	43	47	55	43	47	55	43	47
CDS_07	5-9 HELEN STREET LANE COVE NORTH	331325	6257774	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_07	11-13 HELEN STREET LANE COVE NORTH	331332	6257744	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_07	2 HUXTABLE AVENUE LANE COVE NORTH	331296	6257760	52	-	-	46	-	-	39	-	-	55	-	-	55	-	-
CDS_08	7-9 GOODCHAP ROAD CHATSWOOD	331285	6258157	51	37	39	45	36	37	40	36	36	55	36	37	55	36	36
CDS_08	8 GOODCHAP ROAD CHATSWOOD	331257	6258035	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	10A GOODCHAP ROAD CHATSWOOD	331262	6258060	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	10 GOODCHAP ROAD CHATSWOOD	331263	6258048	51	34	37	45	-	34	40	-	34	55	-	34	55	-	34
CDS_08	11-15 GOODCHAP ROAD CHATSWOOD	331291	6258231	51	34	37	45	34	34	40	34	34	55	34	34	55	34	34
CDS_08	12 GOODCHAP ROAD CHATSWOOD	331234	6258058	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	12A GOODCHAP ROAD CHATSWOOD	331235	6258046	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	14 GOODCHAP ROAD CHATSWOOD	331244	6258071	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	16 GOODCHAP ROAD CHATSWOOD	331242	6258084	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	18 GOODCHAP ROAD CHATSWOOD	331249	6258096	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	19 GOODCHAP ROAD CHATSWOOD	331265	6258310	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	20 GOODCHAP ROAD CHATSWOOD	331246	6258112	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	21-23 GOODCHAP ROAD CHATSWOOD	331275	6258370	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	22 GOODCHAP ROAD CHATSWOOD	331230	6258143	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	24 GOODCHAP ROAD CHATSWOOD	331221	6258166	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	25 GOODCHAP ROAD CHATSWOOD	331271	6258400	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	26 GOODCHAP ROAD CHATSWOOD	331223	6258189	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	28 GOODCHAP ROAD CHATSWOOD	331221	6258208	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	30C GOODCHAP ROAD CHATSWOOD	331190	6258299	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	30D GOODCHAP ROAD CHATSWOOD	331208	6258324	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	30B GOODCHAP ROAD CHATSWOOD	331192	6258278	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	30A GOODCHAP ROAD CHATSWOOD	331193	6258272	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	30 GOODCHAP ROAD CHATSWOOD	331211	6258297	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	32 GOODCHAP ROAD CHATSWOOD	331193	6258345	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	1 IVY STREET CHATSWOOD	331190	6258148	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	2 IVY STREET CHATSWOOD	331204	6258090	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	2A IVY STREET CHATSWOOD	331217	6258103	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	3 IVY STREET CHATSWOOD	331176	6258147	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	4 IVY STREET CHATSWOOD	331192	6258088	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	5 IVY STREET CHATSWOOD	331161	6258145	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	6 IVY STREET CHATSWOOD	331180	6258086	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	7 IVY STREET CHATSWOOD	331146	6258143	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	8 IVY STREET CHATSWOOD	331168	6258085	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	9 IVY STREET CHATSWOOD	331132	6258141	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	10 IVY STREET CHATSWOOD	331156	6258083	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	12 IVY STREET CHATSWOOD	331144	6258082	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	14 IVY STREET CHATSWOOD	331131	6258080	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	2 PEARL AVENUE CHATSWOOD	331223	6258256	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	4 PEARL AVENUE CHATSWOOD	331203	6258253	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	5 PEARL AVENUE CHATSWOOD	331195	6258195	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	6 PEARL AVENUE CHATSWOOD	331186	6258251	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	7 PEARL AVENUE CHATSWOOD	331180	6258190	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	8 PEARL AVENUE CHATSWOOD	331170	6258249	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	9 PEARL AVENUE CHATSWOOD	331166	6258188	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	10 PEARL AVENUE CHATSWOOD	331154	6258246	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	11 PEARL AVENUE CHATSWOOD	331152	6258187	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	13 PEARL AVENUE CHATSWOOD	331139	6258185	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	1 SHARLAND AVENUE CHATSWOOD	331268	6258017	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	3C SHARLAND AVENUE CHATSWOOD	331206	6258025	51	-	34	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	3 SHARLAND AVENUE CHATSWOOD	331247	6258017	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	3B SHARLAND AVENUE CHATSWOOD	331200	6258053	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	3A SHARLAND AVENUE CHATSWOOD	331227	6258022	51	-	35	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	5 SHARLAND AVENUE CHATSWOOD	331189	6258024	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	7 SHARLAND AVENUE CHATSWOOD	331174	6258032	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	9 SHARLAND AVENUE CHATSWOOD	331158	6258030	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	11 SHARLAND AVENUE CHATSWOOD	331140	6258027	51	-	-	45	-	-	40	-	-	55	-	-	55	-	-
CDS_08	10 WHITTON ROAD CHATSWOOD	331320	6258140	51	40	41	45	39	39	40	39	39	55	39	39	55	39	39
CDS_08	12 WHITTON ROAD CHATSWOOD	331318	6258158	51	39	41	45	39	39	40	38	39	55	39	39	55	38	39
CDS_08	14 WHITTON ROAD CHATSWOOD	331316	6258179	51	36	39	45	35	35	40	35	35	55	35	35	55	35	35
CDS_08	16 WHITTON ROAD CHATSWOOD	331311	6258219	51	35	38	45	35	35	40	34	35	55	35	35	55	34	35
CDS_08	22 WHITTON ROAD CHATSWOOD	331299	6258314	51	-	36	45	-	-	40	-	-	55	-	-	55	-	-
OSR	0 NELSON STREET CHATSWOOD	331650	6258449	65	36	37	65	-	-	65	-	-	65	-	-	65	-	-
OSR	0 NELSON STREET CHATSWOOD	331635	6258527	65	38	41	65	-	-	65	-	-	65	-	-	65	-	-
OSR	80 ALBERT AVENUE CHATSWOOD	331653	6258597	65	36	34	65	-	-	65	-	-	65	-	-	65	-	-
OSR	348 MOWBRAY ROAD ARTARMON	331589	6257975	75	53	56	75	51	55	75	51	55	75	-	-	75	-	-
OSR	551-559 PACIFIC HIGHWAY ARTARMON	331527	6257734	70	37	38	70	34	35	70	34	35	70	-	-	70	-	-
OSR	565 PACIFIC HIGHWAY ARTARMON	331533	6257858	75	38	41	75	36	38	75	36	37	75	-	-	75	-	-
OSR	80 ALBERT AVENUE CHATSWOOD	331696	6258577	65	-	34	65	-	-	65	-	-	65	-	-	65	-	-
OSR	522 PACIFIC HIGHWAY CHATSWOOD	331438	6257933	60	47	48	60	46	47	60	46	46	60	-	-	60	-	-
OSR	546 PACIFIC HIGHWAY CHATSWOOD	331432	6258043	70	55	53	70	52	53	70	52	52	70	-	-	70	-	-
OSR	572 PACIFIC HIGHWAY CHATSWOOD	331421	6258106	75	49	49	75	48	49	75	48	48	75	-	-	75	-	-
OSR	574 PACIFIC HIGHWAY CHATSWOOD	331425	6258154	70	50	50	70	49	49	70	49	49	70	-	-	70	-	-
OSR	582 PACIFIC HIGHWAY CHATSWOOD	331423	6258169	70	47	48	70	47	47	70	47	47	70	-	-	70	-	-
OSR	586 PACIFIC HIGHWAY CHATSWOOD	331421	6258191	70	45	46	70	44	44	70	44	44	70	-	-	70	-	-
OSR	613 PACIFIC HIGHWAY CHATSWOOD	331485	6258159	70	50	51	70	50	50	70	50	50	70	-	-	70	-	-
OSR	629 PACIFIC HIGHWAY CHATSWOOD	331508	6258222	70	41	46	70	40	41	70	40	41	70	-	-	70	-	-
OSR	637 PACIFIC HIGHWAY CHATSWOOD	331509	6258235	70	41	45	70	39	40	70	39	40	70	-	-	70	-	-
OSR	655 PACIFIC HIGHWAY CHATSWOOD	331552	6258341	65	36	40	65	-	34	65	-	34	65	-	-	65	-	-
OSR	699A PACIFIC HIGHWAY CHATSWOOD	331545																

OSR	516 PACIFIC HIGHWAY LANE COVE NORTH	331453	6257840	55	39	41	55	38	39	55	38	39	55	-	-	55	-	-
OSR	518 PACIFIC HIGHWAY LANE COVE NORTH	331443	6257883	55	42	43	55	41	42	55	41	42	55	-	-	55	-	-
OSR	134 HAMPDEN ROAD ARTARMON	331844	6257665	70	-	41	70	-	-	70	-	-	70	-	-	70	-	-
OSR	196 HAMPDEN ROAD ARTARMON	331577	6257911	75	45	46	75	44	44	75	44	44	75	-	-	75	-	-
OSR	518 PACIFIC HIGHWAY LANE COVE NORTH	331429	6257882	55	35	39	55	35	35	55	35	35	55	-	-	55	-	-
OSR	551-559 PACIFIC HIGHWAY ARTARMON	331534	6257805	70	38	40	70	35	37	70	35	36	70	-	-	70	-	-
OSR	565 PACIFIC HIGHWAY ARTARMON	331549	6257916	75	47	49	75	43	47	75	43	47	75	-	-	75	-	-
OSR	565 PACIFIC HIGHWAY ARTARMON	331510	6257916	75	45	47	75	42	45	75	41	44	75	-	-	75	-	-
OSR	516 PACIFIC HIGHWAY LANE COVE NORTH	331449	6257841	55	39	41	55	38	39	55	38	39	55	-	-	55	-	-
OSR	518 PACIFIC HIGHWAY LANE COVE NORTH	331423	6257898	55	43	44	55	42	43	55	42	42	55	-	-	55	-	-
OSR	522 PACIFIC HIGHWAY CHATSWOOD	331428	6257963	60	43	45	60	43	43	60	43	43	60	-	-	60	-	-

APPENDIX E Additional noise mitigation

The table below is replicated from Table 5-8, and identifies the additional mitigation measures to be applied at construction noise affected receivers.

When is the work being undertaken?	How much does the predicted noise level exceed the ANML by?	Identify additional management measures to be implemented
Standard Hours M-F 7am to 6pm Sat 8am to 1pm	0 dB(A)	- -
	≤ 10 dB(A)	- -
	10 to 20 dB(A)	LB, V [MM2]
	> 20 dB(A)	LB, V [MM2]
	Highly noise affected	LB, SN, RO, V [MM4]
OOHW Period 1 M-F 6pm to 10pm Sat 1pm to 10pm Sun/ PH 8am to 10pm	< 5 dB(A)	- -
	5 to 15 dB(A)	LB [MM1]
	15 to 25 dB(A)	LB, V [MM2]
	> 25 dB(A)	LB, SN, IB, RO, V [MM4]
OOHW Period 2 M-F 10pm to 7am Sat 10pm to 8am Sun/ PH 6pm to 8am	< 5 dB(A)	LB [MM1]
	5 to 15 dB(A)	LB, V [MM2]
	15 to 25 dB(A)	LB, SN, IB, RO, V [MM4]
	> 25 dB(A)	LB, SN, IB, RO, AA, V [MM5]

Notes: Use the abbreviation codes in the table above to confirm management measures required

Code in square brackets [] refers to noise management code for affected receivers identified in each CNVIS

LB = Letter box drops

V = Verification of predicted noise levels

SN = Specific notifications

(personalised letter, phone call, email, individual briefing)

RO = Project specific respite offer

AA = Alternative accommodation

ENDORSEMENT

CITY & SOUTHWEST ACOUSTIC ADVISOR

Review of	Construction Noise and Vibration Impact Statement for Line-Wide works Portion 3 Chatswood early access works	Document reference:	Construction Noise and Vibration Impact Statement Portion 3 – Chatswood early access works Prepared by Renzo Tonin and Associates for Systems Connect.
Prepared by:	Larry Clark, Alternate Acoustics Advisor		<i>TK685-03-08F01 CNVIS C2S_P3 CHW (r3)</i>
Date of issue:	19 June 2020		<i>Dated 15 June 2020</i>

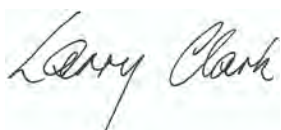
As approved Alternate Acoustics Advisor for the Sydney Metro City & Southwest project, I have reviewed and provided comment on the Construction Noise and Vibration Impact Statement (CNVIS) for Line-Wide works Portion 3 – Chatswood early access works, as required under A27 (d) of the project approval conditions (SSI 15-7400).

At this time NSW continues to respond to the COVID-19 situation. One outcome is that at least some of these works may take place whilst people are working from home. Sydney Metro, its contractors and other stakeholders should continue to work closely to review work practices and ensure that all feasible and reasonable noise and vibration mitigation measures are implemented, in light of the COVID-19 situation, at the time of the works. The details should be confirmed as part of the Out Of Hours Applications for the works.

I note that the CNVIS includes:

- commitments in 5.3.1 for consultation by Systems Connect in regard to specific mitigation measures;
- that Systems Connect will not undertake OOHW until approved by an EPL;
- that sawing works at the base of the station box for the track works have been excluded during evening and night-time, unless measured levels comply with PPA conditions;
- that sleep disturbance assessment will be needed if saws are used at night.

I am satisfied that revision 3 of the CNVIS is technically valid, and includes appropriate noise and vibration mitigation and management. On this basis I endorse revision 3 of the CNVIS for Line-Wide works in respect of the Chatswood early access works.



Larry Clark, City & Southwest Alternate Acoustics Advisor

Hugh Chapman
Associate Director Environment
Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240

19 June 2020

Ref: CSW LWW CEAW CNVIS r3 Rev01

Dear Hugh

RE: Endorsement of Sydney Metro City & Southwest – Chatswood Early Access Works - Construction Noise and Vibration Impact Statement Rev 3

Thank you for providing the following document for Environmental Representative (ER) review and endorsement as requested by Sydney Metro.

- Sydney Metro City & Southwest - Construction Noise and Vibration Impact Statement – Chatswood Early Access Works r3

The document was prepared by Renzo Tonin & Associates on behalf of Systems Connect.

I have reviewed the CNVIS and can confirm that it complies with the requirements of SSI-7400 MCoA E33 and Section 9.2(b) of the Construction Environmental Framework (CEMF) Chatswood to Sydenham (February 2017).

As an approved ER for the Sydney Metro City & Southwest project, I consider that the CNVIS is consistent with the requirements under the CEMF and SSI-7400 and is endorsed for implementation.

Yours sincerely



Peter Hatton
Environmental Representative – Sydney Metro – City and South West