

Heavy Vehicle Movement Report: Use of Burrows Road South

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Document Approval

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00	16/03/18	CDS-JV				
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Signature:						

HV Movement Report: Burrows Road South

Details of Revision Amendments

Document Control

The Project Director is responsible for ensuring that this Plan is reviewed and approved. The Support Services Director (SSD) is responsible for updating this Plan to reflect changes to the Project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director before being distributed or implemented.

Revision Details

Revision	Details
00	Prepared for WCX M5 AT/RMS review
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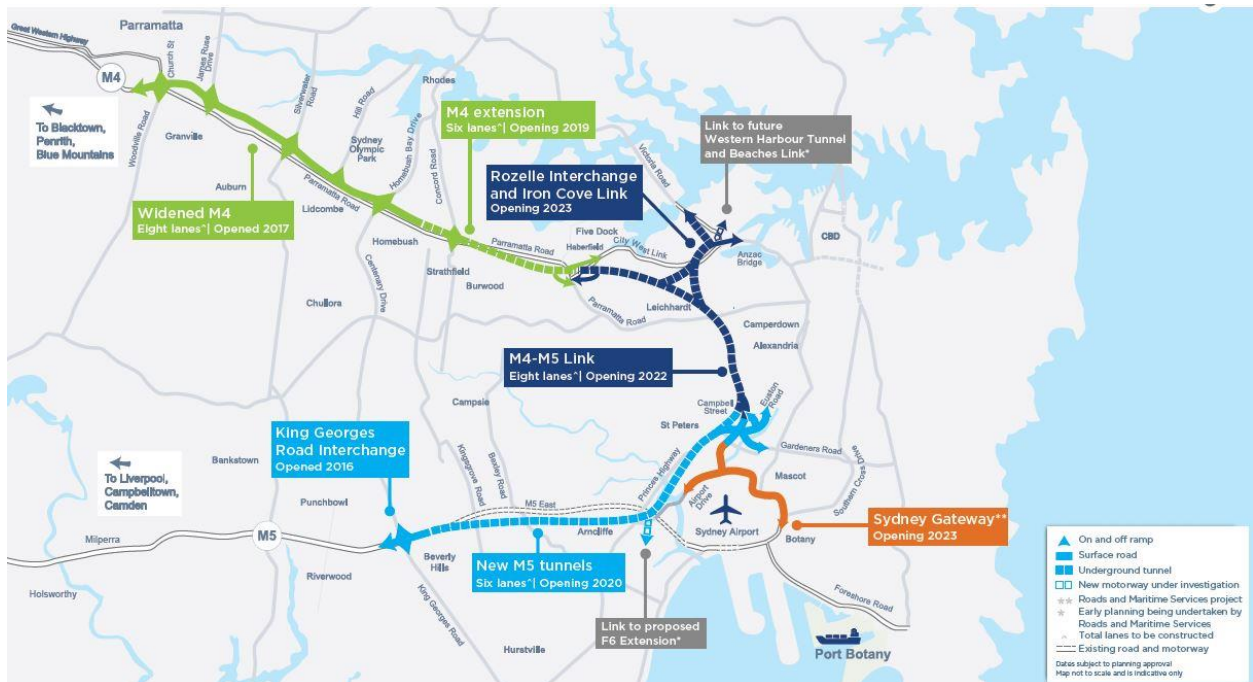
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1. Introduction

1.1 Project description

WestConnex is one of the NSW Government's key infrastructure projects which aims to ease congestion, create jobs and connect communities. It is the largest integrated transport and urban revitalisation project in Australia.

The 33 kilometre project was a key recommendation of the State Infrastructure Strategy released in October 2012. It brings together a number of important road projects which together form a vital link in Sydney's Orbital Network. They include a widening of the M4 east of Parramatta, a duplication of the M5 East and new sections of motorway to provide a connection between the two key corridors.



The New M5 Project (New M5, the project) is designated as State Significant Infrastructure (SSI 6788) and is the Stage 2 component of the WestConnex scheme. The proponent for the project is Roads and Maritime Services (RMS) and the project company (WCX M5 AT). WCX M5 AT has engaged the CPB Samsung Dragados Joint Venture (CDS-JV) to deliver the design and construction of the project. The project was approved by the Minister for Planning on 20 April 2016, subject to conditions.

The Project will run from the existing M5 East corridor at Beverly Hills via tunnel to St Peters, providing improved access to the airport, south Sydney and Port Botany precincts. The Project will substantially improve the east - west corridor access between the Sydney CBD, Port Botany and Sydney Airport precincts and the South West growth areas.

The project comprises the following key features:

- New twin tunnels which are higher, wider and flatter. These will more than double capacity along the M5 East corridor and provide motorway access to north of Sydney Airport
- A new interchange at an industrial site at St Peters, which reduces the impact on nearby, residential areas
- Connections from the interchange to key roads in the area, including Campbell Road/Street, Euston Road and across the canal to Bourke Road
- Widening of Campbell Road/Street and Euston Road through existing road widening reservations
- Western tunnel entry and exit points at Kingsgrove.

1.2 Purpose and scope of this report

The State Significant Infrastructure (SSI) Ministers Conditions of Approval (CoA) for the SSI 6788, Condition D46 states:

“Unless otherwise approved by the Secretary, heavy vehicle movements associated with the construction of the SSI are not permitted to use Wirega Avenue and Garema Circuit at Kingsgrove, or any other local road not identified for use in the documents referred to in conditions A2(b) and A2(c), unless approved by the Secretary. When seeking the Secretary’s approval for use of such local roads, justification must be provided as to why use of the local road(s) is the only feasible and reasonable route along with details on how impacts on surrounding sensitive receivers will be managed.”

CDS-JV has prepared this document to seek approval from the Secretary for the use of Burrows Road South in St Peters to enable access for the establishment and operation of an additional ancillary facility to support St Peters Interchange (SPI) and Local Roads Works (LRW) activities that form part of the approved SSI. This document details the following:

- A review of the current approved access routes around the SPI/LRW construction areas;
- A review of potential construction traffic noise impacts for the proposed route; and
- The mitigation measures that will be adopted to manage heavy vehicle movements and traffic noise for sensitive receivers in this area.

1.3 Need for the proposed route

The Site-specific Ancillary Facility Management Plan (SSAFMP) for Burrows Road South proposes to utilise two vacant plots of land for the purpose of storing equipment and materials to support Local Roads Works (LRW) in St Peters, Alexandria and Mascot, as well as crushing and stockpiling tunnel spoil for capping the St Peters Interchange (SPI) site. The site would be used on a 24/7 basis, subject to DPE approval of the SSAFMP and is located to the south of the SPI in the general industrial area of St Peters. The location has been selected to minimise impacts on sensitive receivers and the surrounding community.

In order to access the proposed facility, light and heavy vehicles will be required to travel along Burrows Road South for the establishment and operation of this facility. Burrows Road South provides the only access to the site and is therefore the only feasible and reasonable route to utilise. No other routes are available for access.

Burrows Road, between Campbell Street and Canal Road, is an approved project route for heavy vehicles. Burrows Road South (south of Canal Road) is not identified in the project EIS for use by construction vehicles and therefore requires the approval of the Secretary under CoA D46.

2. Heavy vehicle access routes

2.1 Approved heavy vehicle routes

The approved heavy vehicle access routes for the SPI and LRW construction areas are described in Chapter 9 of the WestConnex New M5 Environmental Impact Statement (EIS)¹ and in the approved Construction Traffic and Access Sub-plan. The roads connecting to Burrows Road South (Burrows Road and Canal Road), are approved project routes.

Construction heavy vehicle traffic volumes predicted for the approved access routes for the SPI and LRW construction compounds are provided in Table 9-32 in Chapter 9 of the EIS. A total of 2,218 heavy vehicle movements per day are identified to occur across these approved routes.

2.2 Proposed use of Burrows Road South

Burrows Road South is proposed to be used by heavy vehicles for access to the proposed Burrows Road South Ancillary Facility. The use of this site is described in detail in the Burrows Road South Site-specific Ancillary Facility Management Plan (SSAFMP). The establishment of the site is anticipated to occur in the second quarter of 2018 and is expected to be operated until March 2020 in line with construction and demobilisation phases for the New M5. Use of this site was not considered at the time of the EIS and Burrows Road South was therefore not anticipated to be used.

Burrows Road South is a local road in the Inner West local government area. The location of Burrows Road South relative to the SPI and LRW is identified in Figure 1. The location of the Burrows Road South ancillary facility has been selected to minimise impacts on sensitive receivers.

It is anticipated that up to 492 HV movements² would be required per 24 hours to access the construction work site. Total HV movements will vary depending on works being undertaken at SPI and LRW and are anticipated to average approximately 213 HV movements per 24 hours.

¹ AECOM Australia Pty Ltd 2015 WestConnex The New M5 Project – Environmental Impact Statement

² 492 truck movements means 246 trucks in total (ie in and out of site)

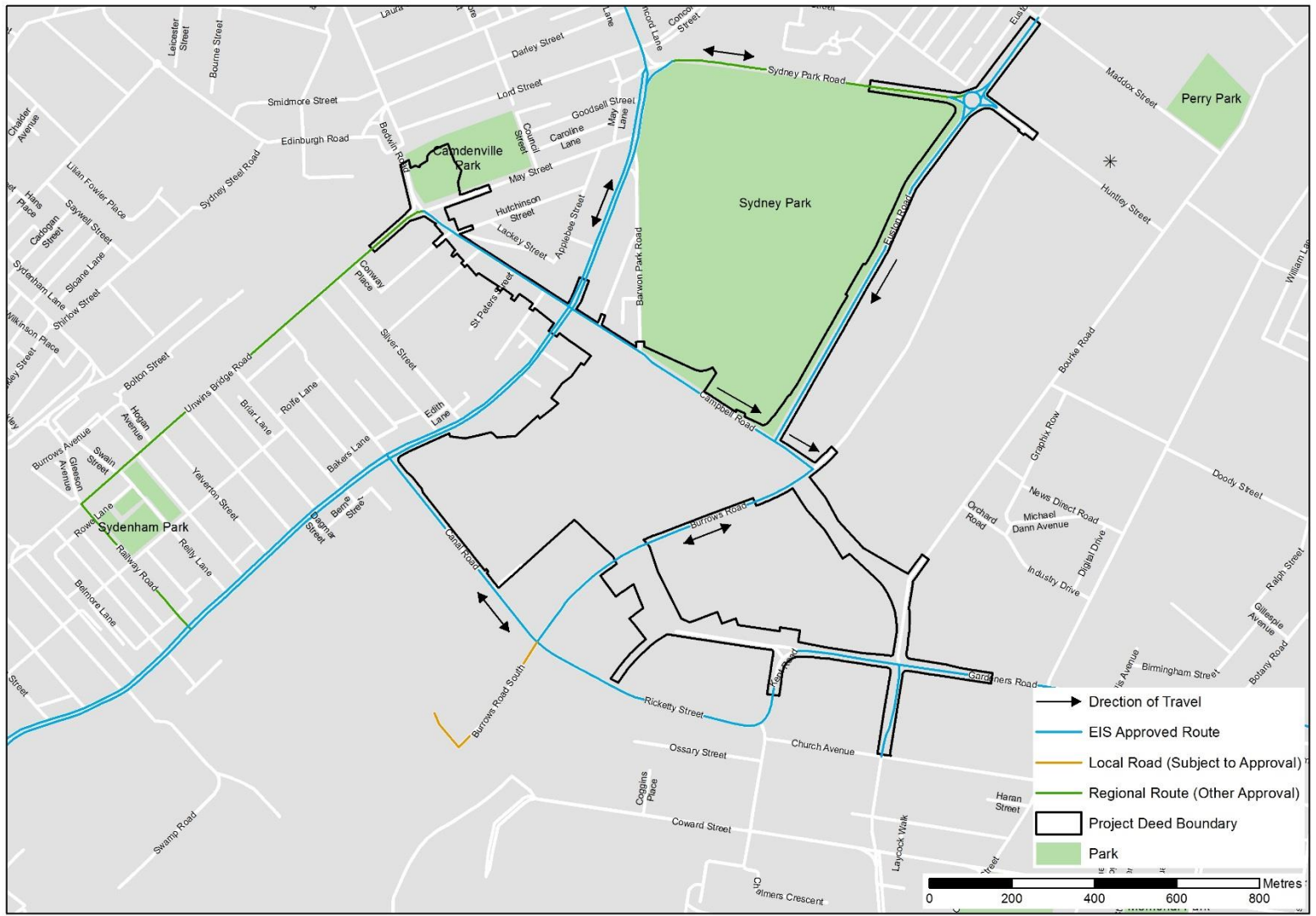


Figure 1: Location of Burrows Road South Park and the existing approved routes around SPI

3. Potential impacts

3.1 Traffic noise impacts

The project area has been divided into Noise Catchment Areas (NCAs), to represent areas of a similar acoustic environment. The project NCAs have been developed based on those identified in the EIS, with some modifications to allow for site-specific characteristics. Refer to the approved Construction Noise and Vibration Management Plan (CNVMP) for a detailed description of all project NCAs.

Burrows Road South is located in NCA10. HV movements would occur on a 24 hour, 7 days per week basis along Burrows Road South. Sensitive receivers within this NCA are identified in the Construction Noise and Vibration Impact Statement (CNVIS) for the proposed ancillary facility (Appendix A), and potential noise and vibration impacts have been assessed. All receivers on Burrows Road South are commercial or industrial. The closest residential receivers are located on Bellevue Street, Tempe and Princes Highway, Sydenham and St Peters. All residential receivers are more than 400 metres from Burrows Road South. Commercial and industrial receivers do not require assessment of road traffic noise under the NSW Road Noise Policy (RNP). Given that no residential or other sensitive receivers have been identified to be potentially impacted by construction road traffic noise, this has not been assessed further.

The proposal will reduce HV movements associated with the project overall (refer Burrows Road South SSAFMP). The CNVIS for Tunnel Support at the SPI site identifies that there are no sensitive receivers along Canal Road or Burrows Road and therefore traffic noise impacts are not assessed for these routes. Any vehicle movements required beyond Canal Road and Burrows Road associated with the use of the proposed site would be in accordance with the requirements of the relevant noise assessment and approval.

3.2 Traffic impacts

The proposal would not increase the overall HV movements associated with the project as the approved project includes the requirement to remove tunnel spoil from the SPI site and the provision of capping material for the SPI landfill remediation works. HV movements beyond Burrows Road and Burrows Road South would decrease as spoil trucks would be moving directly between the two project sites rather than in and out via the major road network. HV movements associated with LRW activities would not increase as a result of the proposal.

Total traffic movements on Burrows Road South would increase with the proposed facility. Traffic counts of existing traffic movements on Burrows Road South were undertaken during two one-week periods in November 2017 and January 2018. An average of 1,228 HV movements turned into Burrows Road South (ie one-way movements only) during the hours 7am to 6pm weekdays. Assuming the same number of HV departed Burrows Road South each day, a total of 2,456 HV movements are inferred to occur during standard weekday construction hours. It is considered that up to an additional 492 HV movements per 24 hours would not create an adverse change to the existing traffic at this local road. Existing HV movements outside standard construction hours were not assessed, however, no adverse traffic impacts are anticipated outside of the peak traffic times.

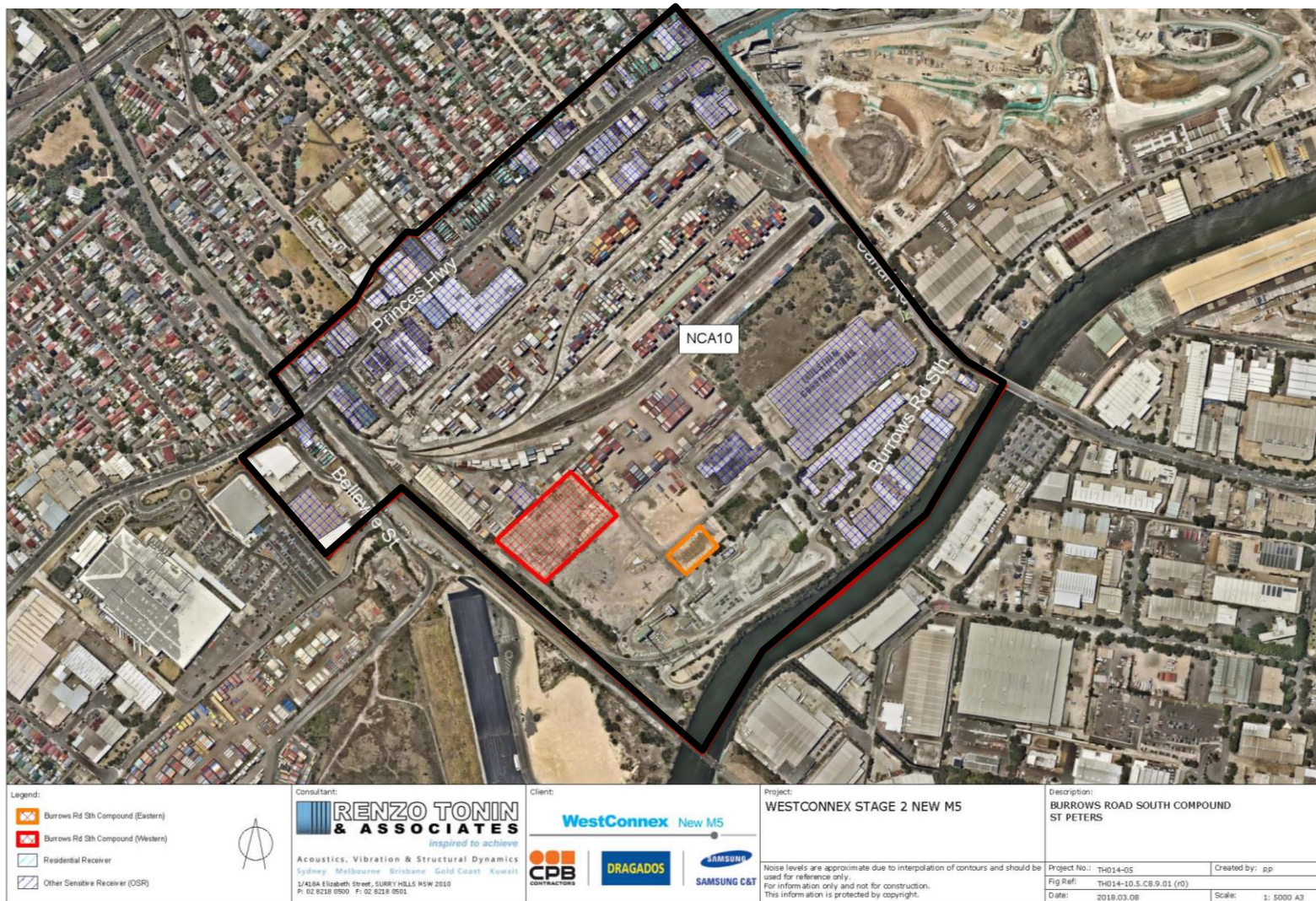


Figure 2 Land uses surrounding Burrows Road South (extract from Construction Noise and Vibration Impact Statement, Renzo Tonin & Assoc, 2018)

4. Traffic Management and Mitigation

4.1 Consultation

Consultation has been undertaken with commercial/industrial stakeholders surrounding the proposed site (refer to the Burrows Road South SSAFMP). There are no residential properties in proximity to the proposed site.

Businesses on Burrows Rd South were receptive and accepting of the proposed facility and the use of Burrows Road South for access. The following current issues (unrelated to WestConnex) were raised, with the businesses requesting that CDS-JV ensure they do not contribute to these practices;

- Trucks double parking to buy lunch
- Speeding
- Dust (uncovered loads and spilt material)

CDS-JV will incorporate mitigation measures into site inductions and training to ensure these issues are not exacerbated.

Consultation with Council has also been undertaken at the Council interface meeting on 8 March 2018. Council had no objection to the proposal (refer Appendix B).

Community notification will be provided to advise the surrounding community of the proposed site use in accordance with the Community Communication Strategy. The notification is provided in Appendix B and will be provided once all relevant approvals are obtained and at least 5 days prior to accessing the site.

4.2 Traffic and noise management and mitigation

Vehicles will be managed in accordance with the relevant sub-plans of the Construction Environment Management Plan (CEMP). In particular, the management measures outlined in the Construction Traffic and Access Sub-Plan and the Construction Noise and Vibration Management Plan (CNVMP) would apply.

Traffic management and mitigation measures described in the CPAS would also apply. This includes the management of staff parking and transport and ongoing communication and engagement with stakeholders.

Specific noise management measures for the works are also specified in the CNVIS for the proposed ancillary facility, which includes measures relevant to construction traffic, summarised in Table 1 below.

Table 1: Summary of noise mitigation measures relevant to heavy vehicle use of Burrows Road South (Source: Burrows Road South Construction Noise and Vibration Impact Statement)

Control measure	Typical use
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.
Non-tonal reversing alarms	Alternative reverse alarms, such as 'quackers' will be installed on all plant and equipment, where practicable.
Site induction and toolbox talks	All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolboxes and should include: <ul style="list-style-type: none"> • location of nearest sensitive receivers • relevant project specific and standard noise and vibration mitigation measures • permissible 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.

4.3 Road dilapidation reports

A road condition report will be completed for Burrows Road South in accordance with Condition of Approval B59 and submitted to Inner West Council prior to use of the road. A subsequent road dilapidation report will be prepared at the completion of construction to assess any damage that may have occurred as a result of the project's use of this road.

5. Conclusion

Use of Burrows Road South for the proposed ancillary facility is considered justified for the following reasons:

- The proposed ancillary facility on Burrows Road South is assessed and described in the Burrows Road South SSAFMP and is not anticipated to have any additional adverse impacts on surrounding receivers
- The proposed use of the ancillary facility is considered justified as it will minimise HV movements associated with spoil movement for the project and will minimise out of hours impacts from LRW activities on sensitive receivers
- The use of Burrows Road South by heavy vehicles will not impact on any sensitive receivers, and
- Consultation has determined that both Council and the surrounding businesses have no issues/objections to the proposed use of this site.

The use of Burrows Road South by heavy vehicles for the establishment and operation of the proposed Burrows Road South SSAFMP is considered justified for the overall benefits to the project. It is considered that the use of the road would have minimal impact on other road users and the surrounding community.

With the implementation of the mitigation and management measures provided in Section 4, the CNVIS and the relevant sub-plans of the CEMP, no major adverse impacts are anticipated to occur.

HV Movement Report: Burrows Road South

Appendix A Construction Noise and Vibration Impact Statement: Burrows Road South Compound



WESTCONNEX NEW M5

Construction Noise and Vibration Impact Statement: Burrows Road South Compound

8 March 2018

CPB Dragados Samsung Joint Venture

TH014-06 01F41 (r1) WXC_NM5 CNVIS SPI Burrows Rd Compound

Document details

Detail	Reference
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Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Authorised
08.03.2018	Draft	0	1	RP	-	MG

Important Disclaimer:

The work presented in this document was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

This document is issued subject to review and authorisation by the Team Leader noted by the initials printed in the last column above. If no initials appear, this document shall be considered as preliminary or draft only and no reliance shall be placed upon it other than for information to be verified later.

This document is prepared for the particular requirements of our Client referred to above in the 'Document details' which are based on a specific brief with limitations as agreed to with the Client. It is not intended for and should not be relied upon by a third party and no responsibility is undertaken to any third party without prior consent provided by Renzo Tonin & Associates. The information herein should not be reproduced, presented or reviewed except in full. Prior to passing on to a third party, the Client is to fully inform the third party of the specific brief and limitations associated with the commission.

In preparing this report, we have relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

We have derived data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination and re-evaluation of the data, findings, observations and conclusions expressed in this report.

We have prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

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 CPB Contractors Dragados Samsung Joint Venture (CDS JV) prepared in accordance with the Construction Noise and Vibration Management Plan (CNVMP) [TH014-05 01F01 WCX_NM5 CNVMP] for the construction of the WestConnex New M5 Project (New M5 or Project).

1.1 Relevant requirements and purpose of this CNVIS

This CNVIS applies to the works associated with the Burrows Road South Compound, St Peters. The eastern site of the compound will be used as a storage yard and would also have site sheds and amenities. The western site will be used for crushing and screening of spoil materials. Activities in the Burrows Road South compound will occur 24 hours per day, however the crushing and screening activities will not occur during the night period.

This CNVIS may be submitted to the Department of Environment and Planning (DEP) upon request.

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; and
- **Section 5** - Construction noise assessment.

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

This CNVIS provides an assessment of noise and vibration impacts from activities associated with the Burrows Road South Compound, St Peters. The works include:

- Eastern compound site: Storage yard, site sheds and amenities
- Western compound site: crushing and screening of spoil materials

A detailed summary of construction activities, plant and equipment, and timetable is provided in APPENDIX C Table C1.

2.2 Justification for out-of-hours work (OOHW)

The Burrows Road South Compound would contain shipping containers, site sheds and amenities to support Local Roads Upgrades. This facility would reduce dependence on currently approved compounds which are in close proximity to residents and will provide a facility to support night time roadworks which has no impact on local residents due to the absence of residential neighbours.

2.3 Construction hours

The construction hours for the Project are defined by Conditions of Approval D12, D13, D14, and D15. D15 applies to all construction works other than tunnelling (and tunnel support) work and outlines the out-of-hours work periods for site establishment works (as indicated in Table 1).

The out-of-hours work (OOHW) period is defined in Table 1 as OOHW Period 1 and 2. The standard construction hours of work are also summarised in the table below, as are the admissible hours for tunnelling (including tunnel support) and for activities resulting in impulsive or tonal noise emissions (e.g. rock hammering, sheet piling etc.).

Table 1: Construction hours

Reference	Construction Activity	Monday to Friday	Saturday	Sunday/ Public holiday
Recommended standard construction hours				
D12	Standard Construction	7am to 6pm	8am to 1pm	No work
D13	Tunnelling (and tunnel support)	24 hours	24 hours	24 hours
D14	Construction activities with impulsive or tonal noise emissions	8am to 6pm [^]	8am to 1pm [^]	No work
Outside recommended standard construction hours				
D15 and TfNSW CNS*	Out of Hours Work (OOHW) Period 1	6pm to 10pm	7am to 8am 1pm to 10pm	8am to 6pm
	Out of Hours Work (OOHW) Shoulder (applicable to ROL works only)	10pm to 12am	10pm to 12am	10pm to 12am

Reference	Construction Activity	Monday to Friday	Saturday	Sunday/ Public holiday
	Out of Hours Work (OOHW) Period 2	12am to 7am	12am to 7am	6pm to 8am

Notes: ^ 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 in accordance with D14 (see CNVMP Section 3.2.3)

* Transport for NSW Construction Noise Strategy (ref: 7TP-ST-157/2.0) April 2012

Not applicable to the site establishment out-of-hours construction works

2.4 Construction traffic

The site would be accessed via Burrows Road South. Burrows Road South is a local road which would require an assessment of traffic noise under Condition of Approval D46 of Project. However, all receivers along Burrows Road South have been identified as either commercial or industrial, which do not require an assessment of road traffic noise under the NSW Road Noise Policy (RNP).

Given that no residential or other sensitive receivers have been identified that would be potentially impacted by construction related road traffic noise arriving and departing the site, construction road traffic has not been assessed in this CNVIS.

3 Nearest sensitive receivers

3.1 Residential receivers

To assess and manage construction noise and vibration impact, the residential areas surrounding the Project have been divided into Noise Catchment Areas (NCAs) based on each area's similar acoustic environment prior to the commencement of construction works. The NCAs have been based on those established in the EIS for the New M5 project [3], with some modifications to allow for site specific characteristics.

All relevant residential sensitive receivers near the worksite are identified on aerial photographs located in APPENDIX B. At receivers more than approximately 500 metres from the construction area, potential construction noise and vibration levels are expected to be within the adopted noise and vibration management levels described in Section 4 of this CNVIS. Receivers beyond 500 metres are typically not included in this CNVIS assessment.

3.2 Other sensitive receivers

Additional to residential receivers, there are 'other' noise and vibration sensitive receivers (e.g. educational institutions, places of worship, recreational areas, etc.) surrounding the construction sites that have been identified and the nearest sensitive properties to the proposed works are shown in APPENDIX B.

4 Construction noise and vibration objectives

4.1 Noise management levels

Construction noise management levels have been determined using the NSW Interim Construction Noise Guideline (ICNG).

Table B1 in APPENDIX B identifies the adopted construction noise management levels (NML's) for the nearest noise sensitive receivers to the worksite. The NML's for residential receivers are based on long-term noise logging conducted by AECOM on behalf of Sydney Motorway Corporation (SMC) to quantify ambient noise levels for the Environmental Impact Statement (EIS).

The NML's for 'other' sensitive receivers are from the ICNG, as reported in Section 3.1.1 of the CNVMP.

Residential receivers are considered 'noise affected' where construction noise levels are greater than the noise management levels 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 exceed NML's, all feasible and reasonable work practices will be applied to meet the NML's.

In addition to the objectives identified in APPENDIX B, where construction activities are tonal or impulsive in nature and are described in the ICNG as being particularly annoying, a +5 dB(A) correction must be added to the activity noise. Activities that are defined in the ICNG as particularly annoying include the use of 'beeper' style reversing or movement alarms.

Any construction related activities that could exceed the NML's shall be identified and managed in accordance with this CNVIS and the CNVMP.

4.2 Vibration goals

As reported in Section 3.3 of the CNVMP, construction vibration goals have been determined in accordance with D16(b) and D16(c) as follows:

- **Human annoyance** - the acceptable vibration values set out in the NSW 'Environmental Noise Management Assessing Vibration: A Technical Guideline' (Department of Environment and Conservation, 2006) and
- **Structural damage** - the vibration limits set out in the German Standard DIN 4150: Part 3-1999.02 'Structural vibration in buildings - Effects of vibration on structures'.

4.2.1 Disturbance to building occupants (human annoyance)

For disturbance to human occupants of buildings, we refer to the NSW 'Assessing Vibration; a technical guideline', in accordance with D16(b). This document provides criteria which are based on the British Standard BS 6472-1992, 'Evaluation of human exposure to vibration in buildings (1-80Hz)'.

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 (7am to 10pm) are presented in Table 2. Also included are indicative limits (for continuous vibration (not intermittent vibration) in terms of peak velocity units, in order to present human exposure limits in the same form as structural damage limits for comparison purposes. Note that the continuous vibration limits are conservative, but can be used as an initial screening criteria for human disturbance.

Table 2: Construction vibration disturbance goals

Location	Assessment period ¹	Vibration Dose Value (VDV), $m/s^{1.75}$		Continuous vibration velocity, PEAK, mm/s (>8Hz)
		Preferred	Maximum	
Critical areas ²	Day or Night	0.10	0.20	0.28
Residences	Day	0.20	0.40	0.56
	Night	0.13	0.26	0.40
Offices, schools, educational institutions and places of worship	Day or Night	0.40	0.80	1.10
Workshops	Day or Night	0.80	1.60	2.20

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

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

Currently there exists no Australian Standard for assessment of structural building damage caused by vibrational energy. To satisfy Condition D16(c), reference is made to the German Standard below which is relevant to the assessment of structural damage.

The German Standard DIN 4150: Part 3-1999.02 'Structural vibration in buildings - Effects of vibration on structures', provides recommended maximum levels of vibration that reduce the likelihood of building damage caused by vibration. This standard too, presents recommended maximum limits over a range of frequencies measured in any direction at the foundation or in the plane of the uppermost floor of buildings.

The minimum 'safe limit' of vibration at low frequencies for commercial and industrial buildings is 20mm/s. For dwellings it is 5mm/s and for particularly sensitive structures (e.g. historical with preservation orders etc.) it is 3mm/s. These limits are generally recognised to be conservatively stringent and are presented in terms of velocity peak levels in Table 3 below.

Table 3: DIN 4150-3 structural damage criteria

Group	Type of structure	Vibration velocity, mm/s			
		At foundation at frequency of			Plane of floor Uppermost Storey
		1 to 10 Hz	10 to 50Hz	50 to 100Hz ¹	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Group 1 or 2 and have intrinsic value (e.g. buildings under a preservation order)	3	3 to 8	8 to 10	8

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

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 (see Figure B1 in APPENDIX B);
- 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 construction activities (See Table C1, APPENDIX C, including the likely construction hours plant and equipment that will be in use and the number of nights works will be carried out over);
- Separation distances between sources and receivers;
- Ground type between sources and receivers; and
- Attenuation from barriers (natural and purpose built).

Key details regarding the construction work locations, the likely plant and equipment, 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.

The key construction activities that have been modelled based on the information in APPENDIX C are detailed in Table 4 below.

Table 4: Key construction activities

Area	Description of works
Eastern site	Storage yard, site sheds and amenities
Western site	Crushing and screening of materials

5.2 Predicted noise levels

The predicted L_{Aeq} noise levels from the sites are presented in APPENDIX D for all receivers in each NCA. The predictions are representative of noise levels during the works. For the purpose of the assessment, it has been assumed that the noise sources for each of the eastern and western areas are located near the centre of the sites.

Table 5 summarises the predicted impacts for each construction stage in each NCA in terms of compliance with the NML's. The colours in the table indicate whether or not receivers in the NCA comply with the NML and, where exceedance of the NML occurs, the perceived impact of the exceedance.

The impacts presented are as follow for **Standard Hours**:

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

The impacts presented are as follows for **OOHW Evening and Night**:

- ◆ Complies with 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: Summary of construction noise impacts

NCA	Level of compliance with NML		
	Day	Evening	Night
NCA10	◆	◆	◆
OSR	◆	◆	◆

5.3 Discussion of results

5.3.1 Burrows Road South Compound (eastern and western sites)

Based upon the construction activities and construction plant and equipment presented in APPENDIX C, construction noise levels at all residential and other sensitive receivers are predicted to comply with their respective NML's during all time periods.

5.3.2 Sleep disturbance

The potential for maximum noise levels from sources such front end loader activities, truck airbrakes and banging from metal on metal contact (i.e. dropped chains and excavator usage) to exceed the sleep disturbance NML of 65 dB(A) L_{Amax} have been assessed. As the nearest affected residence is approximately 300 metres from the compound, maximum noise level events are not predicted to exceed the sleep disturbance NML of 65 dB(A) L_{Amax} .

5.4 Noise mitigation and management

5.4.1 Noise control measures

Whilst noise levels are predicted to comply with the NMLs for all assessed activities during all time periods, the following noise control measures are recommended to reduce noise emission from the site.

Table 6: Noise control measures

Control Type	Control Measure	Typical Use
At-Source Control Measures	Plant and equipment noise verification monitoring	Where practicable, plant and equipment to be used on site should have the sound power level verified as soon as practicable after equipment arriving on site for long term (more than two months) use to confirm actual plant sound power levels are within the limits prescribed in Table C1 (APPENDIX C).
	Noise control kits	Plant that is brought to site should meet the sound power limits identified in Table C1. Where plant exceeds limits then the plant may require installation of 'noise control kits' in order to comply with the noise limits set in Table C1. Such 'noise control kits' comprise: <ul style="list-style-type: none"> • high performance 'residential-grade' exhaust mufflers, • additional engine cowling / enclosure lined inside with sound absorbent industrial-grade foam, and • air intake and discharge silencers / louvres. The requirement of fitting 'noise control kits' onto the identified plant, shall be confirmed once each plant is tested prior to its regular use on site.
	Limit equipment in use	Only the equipment necessary during each stage of the OOHW will be used
	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.

Control Type	Control Measure	Typical Use
	Use and siting of plant	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.
	Use of plant as a noise screen	Plant should be positioned, where practicable, to provide additional shielding to receivers.
	Non-tonal reversing alarms	Alternative reverse alarms, such as 'quackers' will be installed on all plant and equipment, where practicable.
	Site inductions & Toolbox Talks	All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolboxes and should include: <ul style="list-style-type: none"> • location of nearest sensitive receivers • relevant project specific and standard noise and vibration mitigation measures • permissible hours of work • OOHW Procedure and Form • construction employee parking areas.
Noise Management Measures	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.
Verification	Noise monitoring	Noise monitoring is to be carried out as detailed in Section 5.4.2.

5.4.2 Attended noise monitoring

Attended noise monitoring is to be undertaken to verify that noise levels resulting from construction works are in accordance with the levels predicted in this CNVIS, subject to obtaining the property owner/occupier's consent to access the property (where required).

Attended noise monitoring will be undertaken during works at one (1) representative residential receiver identified in the table below.

Table 7: Nominated verification monitoring locations

NCA	Nominated receiver address	Monitoring location	Construction activity
NCA10	4 Bellevue Street, Tempe	Front yard	Full site usage (with crushing and screening)

Noise monitoring should follow the procedures outlined in APPENDIX F of the CNVMP. Note that monitoring at properties listed above may be undertaken from the property boundary to limit any inconvenience to property owners.

5.4.3 Complaints handling

Noise complaints received and responded to will be managed in accordance with the CNVMP and Construction Complaints Management System.

Sydney Motorway Corporation (SMC) operate a 24-hour construction complaints line (1800 660 248). Enquiries/ complaints may also be received through the New M5 project email (info@westconnex.com.au).

6 Construction vibration assessment

6.1 Minimum buffer distances for vibration intensive plant

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

- Excavator travelling (35T)

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 8 and

Table 9. Site specific buffer distances for vibration significant 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 8).

Unlike noise, vibration cannot be readily predicted. There are many variables from site to site, for example soil type and conditions, sub surface rock, building types and foundations, and actual plant on site. The data relied upon in this assessment (tabulated above) is taken from a database of vibration levels measured at various sites or obtained from other sources (e.g. 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 8: Minimum working distances for cosmetic damage (continuous vibration)

Plant item	Minimum working distance (m)		
	Commercial and industrial buildings ¹	Dwellings and similar structures ¹	Sensitive structures (e.g. heritage) ¹
Excavator (35T)	5	10	10

Notes:

1. Criteria referenced from DIN 4150 Structural Damage - Safe Limits for Short-term Building Vibration.

Table 9: Minimum working distances 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		
Excavator (35T)	80	50	65	30	20

Notes

1. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.
2. Daytime is 7am to 10pm; Night-time is 10pm 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 Cosmetic damage

The adjoining receivers to the Burrows Road South Compound are the Maritime Container Services and Boral Recycling, which are both industrial receivers.

For the eastern compound site, there are no buildings within the safe buffer distance for cosmetic damage. For the western compound site, there is one building across the western boundary which could potentially be within the safe working distance for cosmetic damage. A buffer distance of minimum 5 metres should be maintained from the western boundary of the site for vibration generating plant.

6.2.2 Human annoyance

Given that the sites are located within an industrial complex, from a review of the site and surrounds it is not likely that adverse reactions for human annoyance are likely. Human annoyance is not predicted to be an issue.

7 Conclusion

Construction works associated with the Burrows Road South compound for the Westconnex New M5 Project have been identified and described in this report. The potentially affected noise sensitive receivers and relevant construction noise and vibration objectives have been identified and discussed to allow the assessment of potential construction noise impacts.

The expected construction noise levels have been predicted and presented in Section 5.2 and APPENDIX D.

Noise mitigation and management measures have been presented in Section 5.4 to aid in providing additional noise reduction benefits where practical.

Construction vibration has been assessed in Section 6. Minimum buffer distances for structural damage and human comfort have been provided in Section 6.1.

References

1. Department of Environment and Climate Change 2009 NSW Interim Construction Noise Guideline (ICNG)
2. Environment Protection Authority 1999 NSW Environmental Criteria for Rd Traffic Noise
3. AECOM Australia Pty Ltd 2015 WestConnex The New M5 project - Technical Working Paper: Noise and Vibration Revision 8 – 20-Nov-2015
4. Australian Standard AS/NZS 2107:2000 *Acoustics - Recommended design sound levels and reverberation times for building interiors*
5. Roads and Maritime Services 2014 QA Specification G36 Environmental Protection Edition 4 / Revision 3
6. Transport for NSW Construction Noise Strategy (ref: 7TP-ST-157/2.0) April 2012

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 Leq 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**





Table B1: Noise sensitive receivers and construction noise management levels

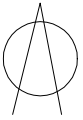
Burrows Road South Compound

NCA	Receiver Type	Reference RBL	Rating Background Levels (RBLs)			Residential Noise Management Levels (NMLs) $L_{Aeq(15\ min)}$			Sleep Dist. L_{Amax}		Comments
			Day	Evening	Night	Day	Evening	Night	Screening	Max	
NCA10	Residential Commercial/ Industrial	EIS L06	58	56	49	68	61	54	64	65	Based on NCAs and NMLs presented in the EIS.
ID	Other Sensitive Receivers										
OSR	Commercial Receivers/ Offices	ICNG	-	-	-	70	70	70	-	-	When premise is in use. External.
OSR	Industrial Receivers	ICNG	-	-	-	75	75	75	-	-	When premise is in use. External.



Legend:

-  Burrows Rd Sth Compound (Eastern)
-  Burrows Rd Sth Compound (Western)
-  Residential Receiver
-  Other Sensitive Receiver (OSR)



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Project:
WESTCONNEX STAGE 2 NEW M5

Noise levels are approximate due to interpolation of contours and should be used for reference only.
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Description:
BURROWS ROAD SOUTH COMPOUND ST PETERS

Project No.:	TH014-05	Created by:	rp
Fig Ref:	TH014-10.5.C8.9.01 (r0)		
Date:	2018.03.08	Scale:	1: 5000 A3

APPENDIX C Construction timetable/ activities/ management

Table C1: Construction Timetable/ Activities/ Equipment

Burrows Road South Compound

Activity/ Work Area	Aspect	Plant/ Equipment	Net Power kW	Operating Weight kg	Day	Evening	Night	Sound Power		Database Notes
					7am - 6pm	6pm - 10pm	10pm - 7am	L _{Aeq}	L _{A1}	
Burrows Rd South Compound										
West	Crushing & Screening	Excavator		35T	2	1	1	103		
		Front end loader	130kW		2	1	1	110		
		Truck and dog			6p.h.	6p.h.	6p.h.	108		
		Crushing and screening plant			1	1	-	117		
East	Storage yard	Telehandler			1	1	1	98		4T lifting capacity. 10% utilisation
		Bogey tipper			1p.h.	1p.h.	1p.h.	108		
		Flatbed truck			1p.h.	1p.h.	1p.h.	108		
		Excavator		12T	1	1	1	103		10% utilisation
		Tip truck		8T	4p.h.	4p.h.	4p.h.	108		
		Light vehicles (Ute)			8p.h.	8p.h.	8p.h.	89		

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 clearly moderately intrusive
- **XX** > 75dB(A) - highly noise affected For

For OOHW Evening and Night:

- 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

Table D1 Predicted construction noise levels Burrows Road South Compound

Receiver		Predicted noise levels, dB(A)					
		Day (Standard)		Evening (OOHW)		Night (OOHW)	
NCA	Address	NML	V01	NML	V01	NML	V01
NCA10	1 BELLEVUE STREET TEMPE	68	50	61	49	54	43
NCA10	2 BELLEVUE STREET TEMPE	68	50	61	49	54	43
NCA10	3 BELLEVUE STREET TEMPE	68	50	61	50	54	43
NCA10	4 BELLEVUE STREET TEMPE	68	50	61	50	54	43
NCA10	1 FREDERICK STREET ST PETERS	68	51	61	51	54	45
NCA10	6 FREDERICK STREET SYDENHAM	68	45	61	44	54	38
NCA10	1 GEORGE STREET SYDENHAM	68	47	61	46	54	40
NCA10	3 GEORGE STREET SYDENHAM	68	46	61	45	54	39
NCA10	4 GEORGE STREET SYDENHAM	68	47	61	47	54	41
NCA10	6 GEORGE STREET SYDENHAM	68	35	61	35	54	34
NCA10	8 GEORGE STREET SYDENHAM	68	46	61	45	54	39
NCA10	10 GEORGE STREET SYDENHAM	68	36	61	36	54	34
NCA10	12 GEORGE STREET SYDENHAM	68	33	61	32	54	30
NCA10	14 GEORGE STREET SYDENHAM	68	38	61	37	54	32
NCA10	16 GEORGE STREET SYDENHAM	68	36	61	35	54	34
NCA10	18 GEORGE STREET SYDENHAM	68	36	61	36	54	34
NCA10	20 GEORGE STREET SYDENHAM	68	38	61	37	54	34
NCA10	22 GEORGE STREET SYDENHAM	68	33	61	32	54	29
NCA10	12 MARY STREET ST PETERS	68	38	61	37	54	33
NCA10	307-309 PRINCES HIGHWAY ST PETERS	68	47	61	46	54	41
NCA10	311 PRINCES HIGHWAY ST PETERS	68	43	61	42	54	37
NCA10	313 PRINCES HIGHWAY ST PETERS	68	43	61	42	54	37
NCA10	315 PRINCES HIGHWAY ST PETERS	68	43	61	43	54	38
NCA10	317 PRINCES HIGHWAY ST PETERS	68	43	61	43	54	37
NCA10	319 PRINCES HIGHWAY ST PETERS	68	43	61	43	54	37
NCA10	383 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	41
NCA10	385 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	40
NCA10	387 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	40
NCA10	389 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	41
NCA10	391 PRINCES HIGHWAY SYDENHAM	68	47	61	47	54	42
NCA10	393 PRINCES HIGHWAY SYDENHAM	68	47	61	47	54	42
NCA10	395 PRINCES HIGHWAY SYDENHAM	68	47	61	47	54	41
NCA10	397 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	41
NCA10	399 PRINCES HIGHWAY SYDENHAM	68	47	61	46	54	41
NCA10	401 PRINCES HIGHWAY SYDENHAM	68	47	61	47	54	41
NCA10	1 SUTHERLAND STREET ST PETERS	68	43	61	42	54	37
NCA10	2 SUTHERLAND STREET ST PETERS	68	44	61	44	54	38
NCA10	3 SUTHERLAND STREET ST PETERS	68	36	61	35	54	32
NCA10	2 YELVERTON STREET SYDENHAM	68	45	61	44	54	39
NCA10	4 YELVERTON STREET SYDENHAM	68	46	61	45	54	39
NCA10	5 YELVERTON STREET SYDENHAM	68	46	61	46	54	41
NCA10	7 YELVERTON STREET SYDENHAM	68	46	61	46	54	40
NCA10	9 YELVERTON STREET SYDENHAM	68	45	61	45	54	40
NCA10	11 YELVERTON STREET SYDENHAM	68	46	61	45	54	40
NCA10	11A YELVERTON STREET SYDENHAM	68	45	61	44	54	39
OSR	5 BELLEVUE STREET TEMPE	70	57	70	56	70	50
OSR	2 BERNE STREET ST PETERS	70	53	70	52	70	46
OSR	1 BURROWS ROAD SOUTH ST PETERS	70	44	70	43	70	39
OSR	2 BURROWS ROAD SOUTH ST PETERS	75	58	75	58	75	55
OSR	3 BURROWS ROAD SOUTH ST PETERS	75	41	75	40	75	37
OSR	4 BURROWS ROAD SOUTH ST PETERS	70	58	70	58	70	58
OSR	5 BURROWS ROAD SOUTH ST PETERS	75	45	75	45	75	40
OSR	6-10 BURROWS ROAD SOUTH ST PETERS	75	66	75	66	75	66
OSR	7 BURROWS ROAD SOUTH ST PETERS	75	46	75	45	75	41
OSR	9 BURROWS ROAD SOUTH ST PETERS	75	46	75	45	75	40
OSR	11 BURROWS ROAD SOUTH ST PETERS	75	47	75	46	75	42
OSR	13-15 BURROWS ROAD SOUTH ST PETERS	75	46	75	45	75	41
OSR	17 BURROWS ROAD SOUTH ST PETERS	70	51	70	50	70	47
OSR	19 BURROWS ROAD SOUTH ST PETERS	75	55	75	54	75	49
OSR	21 BURROWS ROAD SOUTH ST PETERS	70	56	70	55	70	52
OSR	4-6 CANAL ROAD ST PETERS	70	50	70	49	70	43
OSR	8 CANAL ROAD ST PETERS	70	50	70	49	70	43
OSR	1 HILTON AVENUE SYDENHAM	70	46	70	45	70	40
OSR	293 PRINCES HIGHWAY ST PETERS	70	44	70	43	70	38
OSR	295 PRINCES HIGHWAY ST PETERS	70	47	70	46	70	40
OSR	321-323 PRINCES HIGHWAY ST PETERS	70	43	70	43	70	37
OSR	327-337 PRINCES HIGHWAY ST PETERS	70	45	70	44	70	38
OSR	340 PRINCES HIGHWAY ST PETERS	60	49	60	48	60	42
OSR	344 PRINCES HIGHWAY ST PETERS	70	44	70	43	70	39
OSR	345 PRINCES HIGHWAY ST PETERS	70	45	70	45	70	39
OSR	347 PRINCES HIGHWAY ST PETERS	70	46	70	46	70	40
OSR	358 PRINCES HIGHWAY ST PETERS	70	45	70	44	70	40
OSR	364 PRINCES HIGHWAY ST PETERS	70	46	70	45	70	41
OSR	370 PRINCES HIGHWAY ST PETERS	70	45	70	45	70	39
OSR	372 PRINCES HIGHWAY ST PETERS	70	45	70	44	70	38
OSR	374 PRINCES HIGHWAY ST PETERS	70	45	70	44	70	39

Table D1 Predicted construction noise levels Burrows Road South Compound

Receiver		Predicted noise levels, dB(A)					
		Day (Standard)		Evening (OOHW)		Night (OOHW)	
NCA	Address	NML	V01	NML	V01	NML	V01
OSR	375-377 PRINCES HIGHWAY SYDENHAM	70	52	70	51	70	45
OSR	376 PRINCES HIGHWAY ST PETERS	70	45	70	45	70	39
OSR	378 PRINCES HIGHWAY ST PETERS	70	47	70	46	70	40
OSR	379 PRINCES HIGHWAY SYDENHAM	70	52	70	52	70	45
OSR	380 PRINCES HIGHWAY ST PETERS	70	52	70	51	70	45
OSR	396 PRINCES HIGHWAY ST PETERS	70	52	70	52	70	46
OSR	400 PRINCES HIGHWAY ST PETERS	70	51	70	50	70	44
OSR	405 PRINCES HIGHWAY SYDENHAM	70	48	70	47	70	41
OSR	407 PRINCES HIGHWAY SYDENHAM	70	49	70	48	70	44
OSR	409 PRINCES HIGHWAY SYDENHAM	70	39	70	39	70	33
OSR	411 PRINCES HIGHWAY SYDENHAM	70	50	70	50	70	42
OSR	455 PRINCES HIGHWAY SYDENHAM	70	45	70	45	70	42
OSR	475 PRINCES HIGHWAY SYDENHAM	70	42	70	41	70	37
OSR	483 PRINCES HIGHWAY SYDENHAM	70	42	70	41	70	37
OSR	485 PRINCES HIGHWAY SYDENHAM	70	42	70	41	70	36
OSR	487 PRINCES HIGHWAY SYDENHAM	70	46	70	44	70	40
OSR	489 PRINCES HIGHWAY SYDENHAM	70	52	70	51	70	47
OSR	493 PRINCES HIGHWAY SYDENHAM	70	49	70	48	70	42
OSR	500 PRINCES HIGHWAY ST PETERS	70	57	70	56	70	50
OSR	574 PRINCES HIGHWAY SYDENHAM	75	56	75	56	75	47
OSR	576 PRINCES HIGHWAY SYDENHAM	75	52	75	51	75	46
OSR	578 PRINCES HIGHWAY SYDENHAM	75	52	75	51	75	46
OSR	580-590 PRINCES HIGHWAY SYDENHAM	75	43	75	42	75	38
OSR	594 PRINCES HIGHWAY SYDENHAM	70	54	70	52	70	48
OSR	598 PRINCES HIGHWAY SYDENHAM	70	36	70	35	70	30
OSR	600 PRINCES HIGHWAY TEMPE	70	49	70	49	70	42
OSR	2 TALBOT STREET ST PETERS	75	55	75	54	75	49
OSR	4 TALBOT STREET ST PETERS	75	58	75	57	75	50
OSR	5 TALBOT STREET ST PETERS	75	53	75	52	75	47
OSR	20 CANAL ROAD ST PETERS	75	74	75	73	75	66
OSR	25 BURROWS ROAD SOUTH ST PETERS	75	63	75	63	75	62

HV Movement Report: Burrows Road South

Appendix B Council Meeting Minutes



Item	Description	Action By	Action Date
2.5	<ul style="list-style-type: none"> Tempe Reserve [Redacted] Barwon Park Road [Redacted] Burrows Road South compounds. Consultation brief and report discussed with IWC No issues raised in relation to Community impact from compound set up and activity 	MH Note Note	
3.	Design		
3.1	<ul style="list-style-type: none"> Landscaping [Redacted] 	IWC	
3.2	<ul style="list-style-type: none"> Removal of on-street parking [Redacted] 	Note	
4.	Items raised by Council		
4.1	<ul style="list-style-type: none"> [Redacted] 		
4.2	<ul style="list-style-type: none"> [Redacted] 		
4.3	<ul style="list-style-type: none"> [Redacted] 		
4.4	<ul style="list-style-type: none"> [Redacted] 		
4.5	<ul style="list-style-type: none"> [Redacted] 		
4.6	<ul style="list-style-type: none"> [Redacted] 		
5.	General business		
5.1	<ul style="list-style-type: none"> [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] 	CDS JV Note	

Item	Description	Action By	Action Date
	<ul style="list-style-type: none"> • [REDACTED] 	SP	

Next meeting: Thursday 5 April