HANSENYUNCKEN

Noise & Vibration Management Plan

Project: new Sydney Fish Market Early Works

Job No: SC132

Rev: B | Sep 2020

Uncontrolled Document in Hard Copy

Contents

1 Authorisation

1.1 Review & Approval

Refer to PMP Responsibility Matrix for Noise & Vibration Management Plan responsibility, input and approval.

I have read this Management Plan, understood and agree to implement the procedures as defined:

Position	Name	Sign	Date
Review			
Project Manager	Daniel Yarrow		
Site Manager / Safety Coordinator	Peter Dworacek		
Engineer / Project Administrator	Daniel Cessario		
Cadet			
Approval			
HSE Manager	Tim Redmond		
Construction Manager	Dean Marcon		

1.2 Document Control

Revision	Description	Issued by	Issue date
Review			
0	Issue for Consultation	DY	Aug 2020
A	Issue for Construction	DY	Aug 2020
B	IFC w DPIE comments	DY	Sep 2020

2 Definitions & Abbreviations

2.1 Definitions & Abbreviations

The following definitions and abbreviations have been used in this Noise & Vibration Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans:

CORP	Hansen Yuncken Corporate
HSE	Health, Safety & Environment
HY	Hansen Yuncken Pty Ltd
PLN	HY Plan
PPE	Personal Protective Equipment
PR	Procedure
S/C	Subcontract(s) or Subcontractor(s) as the context requires

3 Scope of Works

This scope of work is to undertake demolition and early works on the New Sydney Fish Market, in order to provide unencumbered access for the subsequent works package/s. It includes the following:

- Establishment of construction site facilities and management of site security;
- Utility services and stormwater identification, termination and removal
- Demolition of existing infrastructure and buildings;

A brief description of the activities to be conducted and anticipated time frame for completion during each phase is outlined below.

New Sydney Fish Market Early Works – Demolition works

- Site establishment and mobilisation – 1 month
- Hazardous materials removal – 1 month
- Service isolation – 1 month
- Demolition – 7 months

The Minister for Planning has authorised construction, including the delivery of materials to and from the site, to be undertaken during the following hours:

Demolition shall be undertaken during the following standard construction hours, as defined in SSD 8924 conditions C2-C6;

- 7.00 am to 5.30pm Mondays to Fridays
- 7.30 am to 3.30pm Saturdays
- At no time on Sundays or Public Holidays

Activities which may be undertaken outside of these hours if required

(a) by the Police or a public authority for the delivery of vehicles, plant or materials;

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.

Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9.00 am to 12.00 pm, Monday to Friday;

(b) 2.00 pm to 5.00 pm Monday to Friday; and

(c) 9.00 am to 12.00 pm, Saturday.

Further approvals would be required for work outside of these hours.

4 Purpose & Scope

The purpose of this plan is to:

- Prevent hearing damage to employees due to exposure to loud noise.
- Minimise disturbance to adjacent property owners and the public due to noise and vibration from construction activities.
- Prevent damage to adjacent properties due to vibration from construction activities.
- Ensure compliance with the following:
  - AS/NZS 1269 – 2005 Occupational Noise Management.
  - Model Code of Practice - Managing Noise & Preventing Hearing Loss at Work.
  - NSW WHS Regulation 2011: Chapter 4: Part 4.1 – Noise.
  - The Interim Construction Noise Guideline (ICNG) (DECC,2009)

This plan identifies:

- All potential significant noise and vibration generating activities associated with the activity;
- Feasible and reasonable mitigation measures to be implemented; and
- A monitoring program to assess performance against relevant noise and vibration criteria

Arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures contingency measures will be implemented in the event of non-compliance with noise and vibration criteria.

All sensitive receivers (eg schools, residents) likely to be affected will be notified at least five days before starting any work with an associated activity that may have an adverse noise or vibration impact. The notification will provide details of:

- The proposal;
- The construction period and construction hours;
- Contact information for project management staff;
- Details of complaint and incident reporting; and
- How to obtain further information.

Receivers where noise management levels may be exceeded will receive letter notification. Highly noise affected receivers will receive direct notification through a door knock.

5 Noise & Vibration Management

The Noise & Vibration Management will be carried out and maintained by Liberty Industrial.

See Liberty Industrials Noise & Vibration Management Plans - Appendix 8.1

6 Communications

6.1 Communication

Elton Consulting have been engaged to manage communication between the works and the residents and business. Communications will be as per the Communications Management Plan (Typical details below).

All potentially affected receivers will be notified at least five days before starting the nominated activities.

In order for any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon including the construction contractor and neighbours. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation process is to:

- Inform and educate the groups about the project and the noise controls being implemented;
- Increase understanding of all acoustic issues related to the project and options available;
- Identify group concerns generated by the project, so that they can be addressed; and
- Ensure that concerned individuals or groups are aware of and have access to the Hansen Yuncken Complaints Register which will be used to address any construction noise related problems should they arise.

To ensure that this process is effective, regular information regarding the proposed works and period when they will be required to be conducted should be provided to surrounding receivers.

The community notification is to be conducted within the areas detailed below, including direct communication using phone calls or door knocking and letter drops or mail outs.

The notifications above have been based on the following:

1. All receivers (residential, retail and commercial) where noise levels may exceed criteria – within the purple shaded area – will be notified with a letter drop. Note: these areas outside the purple will not have likely exceedances within the construction noise criteria.

All businesses, residential properties and other key stakeholders (e.g. schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.

Local council and the local community are to be kept informed about details of the works, construction progress, wharf closure, changes to public transport and other impacts throughout the construction period.

Contact details for the info line and website will be clearly displayed at the site leading up to the carrying out of any works at the site and maintained for the duration of works.

An enquiry and complaint tracking system will be established. Any enquiries or complaints will be acknowledged within 24 hours of being received.

6.2 Complaints Handling Process

Refer to Communications Management Plan for details, but typical procedure below:

Should any complaints about noise or vibration occur measures shall be undertaken to investigate the complaint, determine whether criteria have been exceeded and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes to work practices shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and location of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;

- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action by a consultant or as detailed in this report; and
- Summary of feedback to the complainant.
- A permanent register of complaints should be held.

All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

Where non-compliances or noise complaints are raised the following methodology will be implemented:

2. Determine the offending plant/equipment/process.
3. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
4. Implement additional acoustic treatment in the form of localised barriers, silencers, vibration separation etc where practical.
5. Selecting alternative equipment/processes where possible.

7 Noise Controls

7.1 Hours of Works

Construction would normally be limited to between the following standard work times:

Demolition shall be undertaken during the following standard construction hours, as defined in SSD 8924 conditions C2-C6;

- 7.00 am to 5.30pm Mondays to Fridays
- 7.30 am to 3.30pm Saturdays
- At no time on Sundays or Public Holidays

Activities which may be undertaken outside of these hours if required

(a) by the Police or a public authority for the delivery of vehicles, plant or materials;

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.

Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9.00 am to 12.00 pm, Monday to Friday;

(b) 2.00 pm to 5.00 pm Monday to Friday; and

(c) 9.00 am to 12.00 pm, Saturday.

7.2 Monitoring

Noise

Verification measures will be carried out to confirm background noise level already captured as part of the Noise and Vibration Impact Assessment report, and actual construction noise levels monitored using hand-held devices during periods associated with high noise impacts.

The results of monitoring will be used to devise further control methods where required.

Vibration

Due to the distances and locations of the proposed activities to be undertaken there is no expected vibrations from works which will negatively impact surrounding receivers. Verification measures will be carried out to confirm construction vibration levels during periods associated with high vibration impacts do not generate levels of vibration which will exceed criteria detailed in this report.

As a result of the predicted vibrational exceedances, the following additional safeguards have been outlined to reduce the potential impact of vibration causing activities:

- No work with the potential to cause cosmetic damage to property (due to vibration or otherwise) will be undertaken
- A structural condition survey of receivers within 40 metres of the proposal footprint would be completed both before and after the construction work

- An appropriate respite period during scenario S06 piling (hammering) would be agreed upon through consultation with receivers located within 50 metres of the site.

7.3 Worker Noise Exposure

A worker shall not be exposed to greater than 85dB(A) for an eight (8) hour period. The value of 85 dB(A) over 8 hours is equivalent to:

- 88dB(A) over 4 hours
- 91dB(A) over 2 hours
- 94dB(A) over 1 hour
- 97dB(A) over 30 minutes
- 100dB(A) over 15 minutes

Also, a worker shall not be exposed to a C-weighted peak sound pressure of more than 140 dB(C).

Work Permits will be required for entry into areas with excessive Noise Levels. This will be determined onsite using hand held monitors in accordance with the Model Code of Practice - Managing Noise & Preventing Hearing Loss at Work.

7.4 Barricading & Signage

If onsite tasks generate noise that exceeds 85dB over an 8 hour period, barricading and signage will be erected to advise personnel that hearing protection must be worn beyond the barricade.

7.5 Hearing Protection

Hearing protection shall comply with AS/NZS 1270 Acoustics - Hearing Protectors.

7.6 Radios, iPods & MP3 Players

The use of radios, iPods or MP3 players or similar are prohibited on site and in all work areas at all times. They may be used in the site lunchrooms during breaks on condition that they not disturb others using the facilities.

7.7 Additional Controls

- Construction personnel will be informed of the location of sensitive receivers, and the need to minimise noise and vibration from the works, through the site induction and regular toolbox talks.
- The use of portable radios, public address systems or other methods of site communication that may unnecessarily impact on residents will be avoided
- Re-sequencing/organising the works to minimise concurrent noise generation from multiple activities in an area.
- Plant and equipment will be regularly inspected to ensure they are in good working order and not emitting excessive noise levels. Non-tonal alarms will be used at night.
- Plant & equipment shall be fitted with an effective and operational noise suppression device.
- All plant and equipment shall be regularly maintained and serviced to the manufacturer's specifications to ensure noise generation is minimised.
- Implementation of controls in accordance with AS 2436 Guide to Noise Control on Construction, Maintenance & Demolition Sites.
- In the event that OOHW is required, lighting would be directionally controlled to limit impacts from light spill to surrounding receivers, including residential properties. Lighting direction would also include consideration of any reflective impacts from the river.
- Controls to implemented shall be defined in the relevant Safe Work Method Statements.

8 Consultation
Comments from Authorities / Stakeholders

8.1 EPA

RE: new Sydney Fish Market Early Works - Consultation of Management Plans

Anna Timbrell <Anna.Timbrell@epa.nsw.gov.au>
To Daniel Yarrow
Cc Sarah Thomson

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Hi Daniel

I refer to your email of 3 August 2020 below. My apologies for not responding by the requested date.

Please note that as the EPA is the appropriate regulatory authority for the Sydney Fish Markets, it is not in a position to review or endorse post-approval management plans, as it must maintain a regulatory arms-length from these matters.

Accordingly the EPA has no further comment.

Kind regards

Anna Timbrell
Environmental Planning Officer – Metropolitan Infrastructure
Metropolitan Branch, NSW Environment Protection Authority
Ph: 02 9274 6345
anna.timbrell@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555
Please send all official correspondence to metropolitan.transport@epa.nsw.gov.au

Action:

Nil

8.2 City of Sydney

RE: new Sydney Fish Market - Early Works | Management Plans Consultation

Marie Burge <MBurge@cityofsydney.nsw.gov.au>
To Daniel Yarrow
Cc Daniel Cessario

Reply Reply All Forward
Thu 13/08/2020 11:16 AM

You forwarded this message on 14/08/2020 10:59 AM.

Hi Daniel,

I have received the following advice from Council's internal health and building unit regarding the submitted construction noise and vibration management plan and air quality management plan for early works at the new Sydney Fish Markets site.

Construction Noise and Vibration Management Plan

Council raises no objection with the submitted plans and notes that it's quite well-documented. Demolition works are to occur over a 10 month period, working hours include 7:00am to 5:30pm Monday to Friday with 7:30am to 3:30pm on Saturdays. The plan also identifies respite periods which is beneficial to reprieve noise sensitive receivers especially zones NCA3 and NCA4.

The highest predicted noise level is 78 dBA during demolition works at the nearest sensitive receptor area, which is an exceedance of 8/9 dBA of the noise management level of 70 dBA for this receptor. The applicant is committed to ongoing noise and vibration noise monitoring across all business and residential zones weekly for the first 4 weeks. Pending these results they may drop to lesser testings or remain as is.

It is recommended that the plan include that Council will obtain a copy of all monitoring results within the first 4 weeks of phase one work or when requested have such material available within 48 hours. This way if the City receives complaints we will have an idea of noise monitoring levels at that time.

It is also noted that an adequate community consultation procedure is to be in place employing a consultant to undertake this end of the project and a complaints handling procedure.

Air Quality Management Plan

The City's health and building staff don't have much expertise regarding air quality for a project of this size, however some broad comments are provided. Additional consultation should be undertaken with NSW EPA.

The submitted plan has stipulated air quality monitoring throughout the project which will minimise any pollution incidents. Along with this, air quality KPI's have been set, so if for example they are exceeded at any given time, exact corrective actions have been set out which will ensure a fast response to any potential incidents.

No further comments or recommendations are made for the air quality management plan.

If you have any questions regarding the above advice, please let me know.

Kind regards,

Marie Burge
Planner
Planning Assessments

CITY OF SYDNEY

Action:

A copy of all monitoring results within the first 4 weeks of phase one work or when requested to have such material available within 48 hours will be issued to Council

9 Appendix

9.1 Liberty Industrial Noise & Vibration Management Plan

Construction Noise and Vibration Management Plan

New Sydney Fish Market Stage 1

Prepared by

Liberty Industrial Pty Ltd / EMM Consulting

for

Revision No.	Revision Date	Authority	Changes
0	31.07.2020	DD	Draft For Consultation

KEY TERMS AND ACRONYMS

Acronym/Term	Meaning
ACM	Asbestos Containing Material
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
DPIE	NSW Department of Planning Industry and Environment
EA	Environmental Assessment
EIS	Environmental Impact Statement titled Environmental Impact Statement New Sydney Fish Market At Blackwattle Bay Concept Development Application, prepared by BBC Consulting Planners, dated October 2019
Environmental Aspect	means the interaction, relationship or impact of an operation or activity with the
Environmental Law	relating to the storage, handling or transportation of waste, dangerous goods or hazardous material relating to Workplace health and safety; or which has as one of its purposes or
Environmental Notice	means any direction, order, demand, license or other requirement from a Government Agency to take action or refrain from taking any action in respect of the Site or the Works in
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Planning and Assessment
EWMS	Environmental Work Method Statements
NCA	Noise Catchment Area
NSFM	New Sydney Fish Market
OEH	Office of Environment and Heritage
NSWHC	NSW Heritage Council
Non-compliance	An occurrence, set of circumstances, or development that results in a non-compliance or is non-compliant with Conditions of Approval but is not an incident
Non-conformance	Observations or actions that are not in strict accordance with the CEMP and the aspect specific subplan
Site	Means the project site or work area where the Contractor is undertaking activities on behalf of Hansen Yuncken
SoHI	Statement of Heritage Impact
SSD 8924	Means State Significant Development number 8924 – New Sydney Fish Market – Concept and Stage 1
Standards	Standards are published documents setting out specifications and procedure
The Contractor	The company, companies or other legal entity appointed by Hansen Yuncken to undertake works under the Project Approval

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EXECUTIVE SUMMARY

EMM Consulting Pty Ltd were engaged to prepare a Construction Noise and Vibration Management Plan for Stage 1 of the New Sydney Fish Market (NSFM) project, which includes the demolition of existing structures and wharf infrastructure of the (NSFM site at Blackwattle Bay..

Works will include, establishment of the site, mobilization of equipment and plant, hazardous materials removal, strip out of existing buildings and wharf infrastructure and isolation of services.

The major noise sources associated with the project are mobile plant and machinery to be used during the demolition, and the transport of materials to and from the site.

The highest predicted noise level is 78 dBA during demolition works at the nearest sensitive receptor area, which is an exceedance of 8 dBA of the noise management level of 70 dBA for this receptor.

Attended noise and vibration compliance monitoring will be conducted weekly at five representative locations around Glebe and Pyrmont, to confirm the level of noise and vibration received at the location from the Stage 1 works. Monitoring will also be carried out in response to complaints or if work is scheduled out of standard construction hours.

Given the distances to the nearest sensitive receptors, exceedance of the vibration criteria is unlikely. Further vibration monitoring will be carried out in response to complaints reported during the works.

This Construction Noise and Vibration Management Plan has been prepared in accordance with the Australian Standard AS2436 – 2010 *"Guide to noise and vibration control on construction, demolition and maintenance sites"*. Construction noise management levels have been derived from the Environment Protection Authority's *Interim Construction Noise Guideline* and are used for a quantitative assessment at the nearest affected residential receiver locations.

All feasible and reasonable methods to limit the noise emissions and minimise the noise impact on neighbouring properties have been provided in Section 6 of this report. These include; selecting quiet equipment, incorporating periods of respite, maintaining community consultation relations, managing noise complaints and conducting noise and vibration monitoring.

1 SITE & DEVELOPMENT DESCRIPTION

The New Sydney Fish Market site is located at the head of Blackwattle Bay between the Pyrmont Peninsula and the foreshore of Glebe, situated less than 2 kilometres (km) west of Sydney's CBD and partially within the City of Sydney Local Government Area.

Currently the site's uses include a concrete batching plant at the Western end and concrete hardstand and wharf area at the Eastern end, which is currently vacant. The site includes wharves and land-based structures and part of the site is the water of Blackwattle Bay. Works will be undertaken on Bridge Road and its intersections with Wattle Street and Wentworth Park Road.

1.1 Scope of Work

This scope of work is to undertake demolition and early works on the New Sydney Fish Market Stage 1 site, in order to provide unencumbered access for the subsequent works package/s. It includes the following:

- Establishment of construction site facilities and management of site security;
- Utility services and stormwater identification, termination and removal
- Demolition of existing infrastructure and buildings;

A brief description of the activities to be conducted and anticipated time frame for completion during each phase is outlined below.

New Sydney Fish Market Phase 1 – Demolition works

- Site establishment and mobilisation – 1 month
- Hazardous materials removal – 1 month
- Service isolation – 1 month
- Demolition – 7 months

The Minister for Planning has authorised construction, including the delivery of materials to and from the site, to be undertaken during the following hours:

Demolition shall be undertaken during the following standard construction hours, as defined in SSD 8924 conditions C2-C6;

- 7.00 am to 5.30pm Mondays to Fridays
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Activities which may be undertaken outside of these hours if required

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Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9.00 am to 12.00 pm, Monday to Friday;
(b) 2.00 pm to 5.00 pm Monday to Friday; and
(c) 9.00 am to 12.00 pm, Saturday.

Further approvals would be required for work outside of these hours.

The sensitive receivers identified in the vicinity of the Project are shown in Figure 1. A number of Noise Catchment Areas (NCAs) that reflect the changing land use around the project site have been defined and are also shown in the figure. Each NCA location is considered representative of all receptors in each direction from the site.

Receptor locations within each suburb have been taken from Figure 1, of the SLR, Noise Impact Assessment report dated April 2019.

Table 1: Noise Sensitive Receptors

Receiver ID	Address	Noise Catchment Area	Receiver Type
R01	Commercial receivers east of development	NCA1	Commercial
R02	1 Wattle Crescent, Pyrmont	NCA2	Residential
R03	6-10 Wattle Street, Pyrmont		Residential
R04	Trojan Recruitment Group, 22 Bridge Road, Glebe	NCA3	Commercial
R05	Reece Plumbing, 20 Bridge Road, Glebe		Commercial
R06	Quro Health Studio, 18 Bridge Road, Glebe		Commercial
R07	BWS Glebe, 14 Bridge Road, Glebe		Commercial
R08	Unknown Tenancy, 10-12 Bridge Road, Glebe		Commercial
R09	Hello Happy Holdings, 8 Bridge Road, Glebe		Commercial
R10	Flat, 4-6 Bridge Road, Glebe		Commercial
R11	Kauri Foreshore Hotel, 2 Bridge Road, Glebe		Commercial
R12	The Binocular & Telescope Shop and residential shop-top dwelling, 84 Wentworth Park Road		Commercial ground floor, residential first floor
R13	82 Wentworth Park Road, Glebe		Residential
R14	Polyglot Group, 25 Burton Street, Glebe	NCA4	Commercial
R15	23 Burton Street, Glebe		Residential
R16	21 Burton Street, Glebe		Residential
R17	19 Burton Street, Glebe		Residential
R18	17 Burton Street, Glebe		Residential

R19	15 Burton Street, Glebe		Residential
R20	13 Burton Street, Glebe		Residential
R21	11 Burton Street, Glebe		Residential
R22	9 Burton Street, Glebe		Residential
R23	7 Burton Street, Glebe		Residential
R24	5 Burton Street, Glebe		Residential
R25	3 Burton Street, Glebe		Residential
R26	1 Burton Street, Glebe		Residential
R27	1A Burton Street, Glebe		Residential
R28	11 Bridge Road, Glebe		Residential
R29	Sydney Secondary College, Taylor Street, Glebe		Educational
R30	Sydney University Boat House, 123 Ferry Road, Glebe		Commercial
R31	Glebe Rowing Club, End of Ferry Road, Glebe		Commercial
R32	40 Ferry Road, Glebe		Residential
R33	92-119 Ferry Road, Glebe		Residential
R34	14-16 Leichhardt Street, Glebe	NCA5	Residential
R35	26 Cook Street, Glebe		Residential
R36	29-31 Cook Street, Glebe		Residential
R37	13 Griffin Place, Glebe		Residential
R38	45 Griffin Place, Glebe		Commercial
R39	Commercial Property 53 Griffin Place, Glebe		Residential

The New Sydney Fish Market Stage 1 Early Works footprint and site layout is shown in Figure 2.

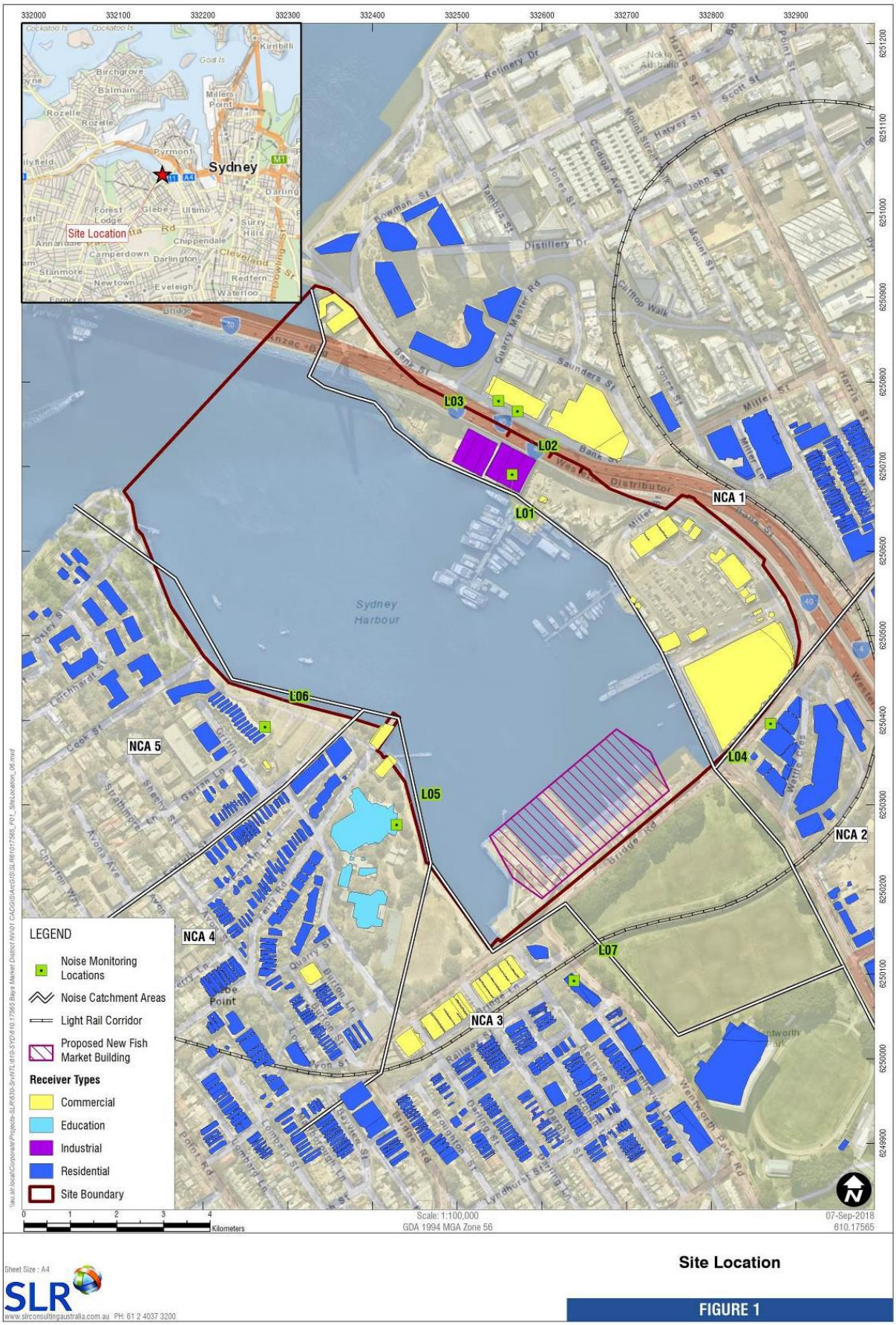


Figure 1 Residential Location Plan

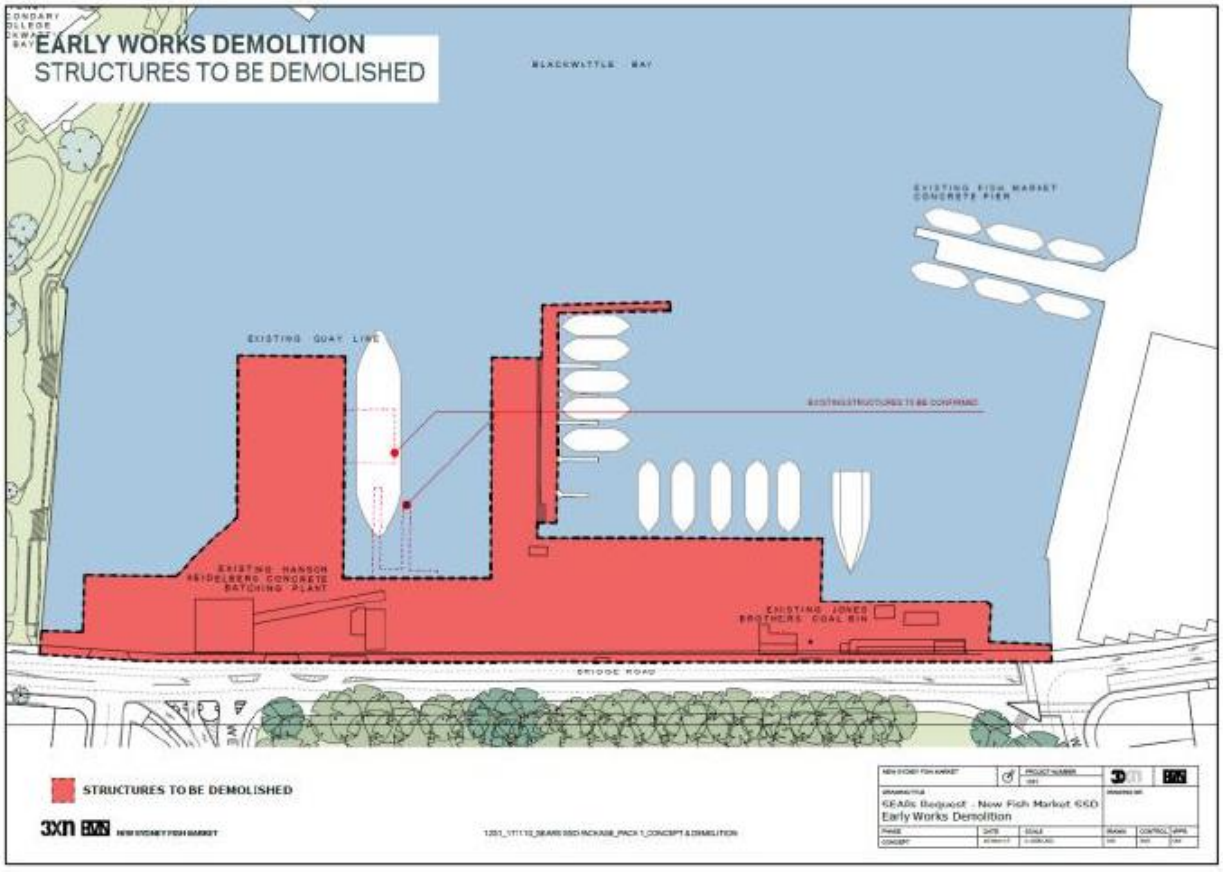


Figure 2 Site Layout

2 CONDITIONS OF CONSENT & NOISE CRITERIA

The NSW Minister for Planning granted approval for Application No SSD 8924 which consists of the Demolition & Early Works (NSMF Stage 1) on the New Sydney Fish Market site, as defined in the Consent. The Consent contains several conditions relating to noise and vibration impact as detailed below.

2.1 Planning Assessment Commission of NSW

The following table lists the Conditions of Approval required to be satisfied, as issued by DPIE.

Table 2 Conditions of Consent

Condition No.	Consent Condition	Sub- Plan Ref.
B18	Prior to the commencement of works, a Construction Noise and Vibration Management Plan (CNVMP) prepared by a suitably qualified person shall be submitted to the Certifier. The CNVMP must be prepared in consultation with, and address the relevant requirements of, Council and the EPA. The CNVMP shall address (but not be limited to): a) Identification of each work area, site compound and access route (both private and public); b) Identification of the specific activities that will be carried out and associated noise sources at the premises and access routes; c) Identification of all potentially affected sensitive receivers using the construction noise objectives identified in accordance with the EPA's Interim Construction Noise Guideline, vibration objectives as identified in accordance with the document Assessing Vibration: A Technical Guideline (DEC 2006), and the road traffic noise objectives as identified in accordance with the NSW Road Noise Po/icy (DECCW 2011); d) Identification of non-project related constriction activities in the area that may be; e) identify the noise management levels for the project; f) identify the construction methodology and equipment to be used and the key sources of noise and vibration; g) details of all reasonable and feasible management and mitigation measures to be implemented to minimise construction noise and vibration; h) be consistent with and incorporate all relevant recommendations and noise and vibration mitigation measures outlined in the Noise and Vibration Assessment, prepared by SLR, dated April 2019; i) ensure all potentially impacted sensitive receivers are informed by letterbox drops prior to the commencement of construction of the nature of works to be carried out, the expected noise levels and duration, as well as contact details for a construction community liaison officer; and j) include a suitable proactive construction noise and vibration monitoring program which aims to ensure the construction noise and vibration criteria in this consent are not exceeded. Prior to the commencement of works, details demonstrating compliance with the above requirements (B19 (a)-(j)) must be submitted to the Certifier. A copy of the CNVMP must be submitted to the Certifier, Council and the Planning Secretary.	This Plan

Condition No.	Consent Condition	Sub- Plan Ref.
C7	The development must be constructed with the aim of achieving the construction noise management levels detailed in the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009). All feasible and reasonable noise and vibration mitigation measures shall be implemented and any activities that could exceed the construction noise or vibration management levels shall be identified and managed in accordance with the CEMP and CNVMP.	Section 3.7, 4.1, 5
C8	If the noise from a construction activity is substantially tonal or impulsive in nature (as described in Chapter 4 of the NSW Industrial Noise Policy), 5 dB(A) must be added to the measured construction noise level when comparing the measured noise with the construction noise management levels	Section 5
C9	The Applicant must schedule intra-day 'respite periods' for construction activities predicted to result in noise levels in excess of the "highly noise affected" levels, including the addition of 5 dB to the predicted levels for those activities identified in the Interim Construction Noise Guideline as being particularly annoying to noise sensitive **receivers.**	Section 5.6
C10	Wherever practical, and where sensitive receivers may be affected, piling activities are completed using bored piles. If driven piles are required, they must only be installed where outlined in the CEMP.	Section 5
C11	Vibration caused by construction at any residence or structure outside the subject site must be limited to: (a) for structural damage vibration to buildings (excluding heritage buildings), British Standard BS 7385 Part 2- 1993 Evaluation and Measurement for Vibration in Buildings; (b) for structural damage vibration to heritage buildings, German Standard DIN 4150 Part 3 Structural Vibration in Buildings Effects on Structure; (c) for human exposure to vibration, the evaluation criteria presented in British Standard BS 6472- Guide to Evaluate Human Exposure to Vibration in Buildings (1Hz to 80 Hz) for low probability of adverse comment; and (d) these limits apply unless otherwise outlined in the CEMP.	Section 3.4, 3.7, 4.2

2.2 EPA Interim Construction Noise Guideline

The NSW Environment Protection Authority published the *Interim Construction Noise Guideline* in July 2009. While some noise from construction sites is inevitable, the aim of the Guideline is to protect the majority of residences and other sensitive land uses from noise pollution most of the time.

The Guideline presents two ways of assessing construction noise impacts; the quantitative method and the qualitative method.

The quantitative method is generally suited to longer term construction projects and involves predicting noise levels from the construction phase and comparing them with noise management levels given in the guideline.

The qualitative method for assessing construction noise is a simplified way to identify the cause of potential noise impacts and may be used for short-term works, such as repair and maintenance projects of short duration.

In this instance, the quantitative method is the most appropriate and has been used in this assessment. Details of the quantitative method are given in Section 4 of the Guideline.

Table 2 in Section 4 of the Guideline sets out noise management levels at affected residences and how they are to be applied during normal construction hours. The noise management level is derived from the rating background level (RBL) plus 10 dB in accordance with the Guideline. This level is considered to be the 'noise affected level' which represents the point above which there may be some community reaction to noise.

The 'highly noise affected' level of 75 dBA represents the point above which there may be strong community reaction to noise. This level is provided in the Guideline and is not based on the RBL. Restrictions to the hours of construction may apply to activities that generate noise at residences above the 'highly noise affected' noise management level.

2.3 German Standard DIN 4150-3 – Effects of Vibration on Structures

2.3.1 Buried Pipework

Service pipelines exist on the southern boundary of the NSFM site, running parallel with Bridge Road. German Standard DIN 4150-3:1999 provides guideline vibration values for vibration velocity on buried pipework, which is summarised as follows in Table 3.

Table 3 Guideline Value for Vibration on Buried Pipework

Line	Pipe Material	Guideline Values for Peak Particle Velocity Measured On the Pipe – mm/s
1	Steel (including welded pipes)	100
2	Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)	80
3	Masonry, Plastic	50

2.3.2 Structural Damage

The German Standard DIN 4150-Part 3 provides guideline values for vibration relating to structural damage, summarised in Table 4 below.

Table 4 Vibration Guide Values for Structural Damage

Guideline Values for Velocity – mm/s				
Type of Building	**Vibration at the Foundations**			**Horizontal plane on highest floor – All**
	<10 Hz	**0-50 Hz**	**50-100 Hz**	
Commercial	20	20 - 40	40 - 50	40
Residential	5	5 - 15	15 - 20	15
Structures particularly	3	3 - 8	8 - 10	8

2.4 EPA Vibration Guideline – Human Exposure

The NSW EPA published the *Assessing Vibration: a technical guideline in February 2006*. This guideline is based on the British Standard BS 6472:1992 *"Evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz)."*

The guideline presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. The guideline considers vibration from construction activities as Intermittent Vibration. Table 2.4 of the guideline sets out qualitative limits for Vibration Dose Values to assess intermittent vibration and is replicated in Table 5 below for residential receptor locations.

The EPA published the Interim Construction Noise Guidelines in July 2009. This recent document is designed to simplify the assessment of the impact of construction noise on neighbouring properties.

Table 5 Vibration Dose Values (VDV) from Construction Activities

Receptor Locations	**Daytime Preferred value (m/s1.75)**	**Maximum value (m/s1.75)**
All Residences	0.20	0.40

2.5 Commercial and Industrial Premises

Given the broad range of operations within commercial and industrial land use types, the Interim Construction Noise Guideline recommends the following noise levels, as shown in Table 6 below. The external noise levels should be assessed at the most affected occupied point on the premises. A conservative estimate of 10 dB is generally applied as the difference between the external and internal level for noise sensitive businesses that require internal noise measurement.

Table 6 Commercial and Industrial Premises

Land Use	Noise Management Level, LAeq, (15 minute) Applies when properties are being used
Industrial Premises	75dBA – External Noise Level
Offices and retail outlets	70dBA – External Noise Level
Noise sensitive businesses	Refer to AS2107 for specific internal noise levels appropriate to individual business type

2.6 Sleep Disturbance Criteria

Section 4.3 of the Interim Construction Noise Guideline discusses the consideration of sleep disturbance at residences. The section refers to the EPA's NSW Environmental Criteria for Road Traffic Noise for guidance on the assessment of sleep disturbance.

Appendix B5 of the NSW EPA's Environmental Criteria for Road Traffic Noise (ECRTN) reviews the current level of knowledge and concludes that maximum internal noise levels below 50– 55 dBA are unlikely to cause awakening reactions, and that one or two noise events per night with maximum internal noise levels of 65–70 dBA are not likely to affect health and wellbeing significantly.

For the purposes of assessment at external locations, 10 dB is added to the internal noise level. Therefore, the sleep disturbance criteria is 60-65 dBA outside a residential window.

In addition, in an application note to the Industrial Noise Policy, the EPA states: -

"Peak noise level events, such as reversing beepers, noise from heavy items being dropped or other high noise level events, have the potential to cause sleep disturbance. The potential for high noise level events at night and effects on sleep should be addressed in noise assessments for both the construction and operational phases of a development. The INP does not specifically address sleep disturbance from high noise level events."

2.7 Project Specific Criteria

The Environmental Impact Statement, prepared by BBC Consulting Planners dated October 2019, provides a list of RBL's for various residential locations around Glebe and Pyrmont. These values have been adopted for this assessment.

Table 7 Receiver NMLs for Construction

NCA	Nearest Receiver Location	Standard Construction[1] (RBL+10db)	Highly Noise Affected	Out of Hours (RBL+5dB)				Sleep Disturbance Screening (RBL+15dB)	
		Daytime	Daytime	Daytime	Evening	Night-time	Morning	Night-time	Morning
NCA1	31-35 Bank Street, Pyrmont (Commercial	70	n/a	70[2]	70[2]	70[2]	70[2]	n/a[3]	n/a[3]
NCA2	217/1 Wattle Crescent, Glebe	72	75	67	62	55	57	65	67
NCA3	Corner of Wentworth Park and Bridge Road, Glebe	72	75	67	62	55	57	65	67
NCA4	1A Burton Street, Glebe	64	75	59	55	47	49	57	59
	Sydney Secondary College, Glebe	65[4]	n/a	65[2,4]	65[2,4]	65[2,4]	65[2,4]	n/a[3]	n/a[3]
NCA5	13 Griffin Place, Glebe	60	75	55	55[7]	51	53	61	63

Note 1: ICNG recommended standard hours are 7.00 am to 6.00 pm Mon-Fri; 8.00 am to 1.00 pm Sat.
Note 2: Criteria is only applicable when receiver is in use.
Note 3: Sleep disturbance criteria does not apply to this receiver type.
Note 4: An external criterion of 65 dBA has been set for Sydney Secondary College. The ICNG sets an internal level of 45 dBA and 20 dB external to internal transmission loss is assumed.
Note 5: These values have been lowered to be no greater than the applicable OOH daytime NML, based on the approach for determining RBLs in the NPfI.

The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

* Section 6, 'work practices' of The Interim Construction Noise Guideline, states: *"there are no prescribed noise controls for construction works. Instead, all feasible and reasonable work practices should be implemented to minimise noise impacts. This approach gives construction site managers and construction workers the greatest flexibility to manage noise".*

Definitions of the terms feasible and reasonable are given in Section 1.4 of the Guideline.

Further to the Construction Noise Management levels outlined above in Table 7, the Interim Construction Noise Guideline recommends noise levels for other sensitive land uses. These levels are to be assessed at either the most affected point within 50 metres of the area boundary. Where internal noise levels cannot be measured, external noise levels may be used. A conservative estimate of 10 dB is generally applied as the difference between the external and internal level for buildings other than residences. The recommended levels are shown below in Table 8.

Table 8 Other Sensitive Land Uses

Land Use	Management Level, LAeq,(15 minute) Applies when properties are being used.
Classrooms, other educational institutions, hospital wards, place of worship	45 dBA – Internal Noise Level
Active recreation areas, (areas which generate their own noise during use)	65 dBA – External Noise Level
Passive Recreation Areas, (areas that generate no or little noise during use)	60 dBA – External Noise Level
Community Centres	Refer to AS2107 for maximum internal noise levels for areas with specific uses.

In addition to Table 7 and Table 8, the noise management levels for this proposal are summarised as follows:-

- 60 to 65 dBA LAmax external noise management level, outside of standard construction hours as measured at the nearest residential façade, for sleep disturbance;
- Internal noise management level of 45 dBA ($L_{eq,\ 15\ minute}$) for classrooms and educational facilities, hospital wards and places of worship;
- External noise management level of 65 dBA ($L_{eq,\ 15\ minute}$) for active recreation areas;
- External noise management level of 60 dBA ($L_{eq,\ 15\ minute}$) for passive recreation areas;
- External noise management level of 70 dBA ($L_{eq,\ 15\ minute}$) for offices and retail outlets;
- External noise management level of 75 dBA ($L_{eq,\ 15\ minute}$) for industrial premises.

The vibration management levels for this proposal are summarised as follows: -

- Vibration dose values (VDV), for human exposure of 0.2 ($m/s^{1.75}$), and;
- Peak Particle Velocity values for residential premises, as measured at the foundations of the structure for structural damage of: 5mm/s below 10Hz, 5 – 15mm/s between 10 – 50 Hz, 40 – 50mm/s between 50 – 100Hz. For multi-storey residential structures, 15mm/s measured on the horizontal plane of the highest floor.
- Peak Particle Velocity values for buried pipework, as measured on or within close proximity to the buried pipework for structural damage of: 50 mm/s for masonry or plastic pipes, 80 mm/s for concrete, clay or metal pipes and 100 mm/s for steel pipes.
- Peak Particle Velocity values for rail infrastructure or other civil engineering structures, as measured on or within close proximity to the structure for structural damage of:
  40 mm/s below 10Hz, 40 – 80 mm/s between 10 – 50 Hz, 80 – 100 mm/s between 50 – 100Hz.

3 NOISE AND VIBRATION IMPACTS

The main sources of noise on the site will be from heavy machinery such as piling rigs, concrete saws, excavators, dump trucks and handheld pneumatic and electric power tools, etc. Activities that may cause particular annoyance, due to tonality, spectral content or impulsiveness include generator motors, hand tools such as grinders, jackhammering and other activities involving impacts. These activities will require particular attention with regard to mitigation.

3.1 Stage 1 Works

It is anticipated that the majority of the NSFM Stage 1 works will be completed within 6 months. Works will involve the use of excavators, piling rigs, hydraulic hammering and regular truck movements transporting waste materials from the site. The equipment likely to be used and their corresponding sound power levels are presented in Table 9 below.

Table 9 Typical Demolition Equipment Phase 1 - Sound Power Levels

Description	Sound Power Level, dBA^
Concrete Sawing	115
Angle Grinders	114
Bobcat	105
Excavator / Bulldozer	114
Screw Piling	100
Hydraulic Hammering	120
Trucks	108
Concrete Pumps	110
Drilling	94
Electric Saw	111
Impact Drill	105

^All sound power levels are based on AS2436-2010 of various plant noise measurements.

As a conservative approach, it is assumed that all items of plant will be operating simultaneously.

SLR performed calculations using SoundPlan version 7.3. Levels are based on the closest potential distance and furthest potential distance at which each item of plant may operate from each respective residential location, taking into account topography and objects. The calculated noise levels at nearby residential receptors are presented in Table 10 below.

Table 10 Summary of Construction Noise Assessment – Daytime (SLR 2019)

NCA	Receiver Type	Noise Level – LAeq (15 minute) (dBA)		
		NML – Standard Daytime	Worst-case Predicted	Exceedance
NCA1	Commercial	70	69	-
NCA2	Residential	72	68	-

NCA3	Residential	72	**78**	6
	Commercial	70	**78**	8
NCA4	Residential	64	64	-
	Educational	65	74	9
	Commercial	70	74	4
NCA5	Residential	60	54	-

Note 1: Bold text indicates exceendance of the "highly noise effected" NML

When considering the predicted noise levels and NML exceedances from the project, the above tables indicate that:

- The highest impacts are generally seen in NCAs that have receivers in close proximity to the worksites, and includes NCA3 and NCA4.
- Noise levels at the nearest receiver in NCA3 are predicted to exceed the "highly noise affected" NML.
- The highest noise levels are seen during the use of noise intensive plant items such as the hydraulic hammer and concrete saw. When these items of plant are not in use, noise levels would be significantly lower.
- The receivers in closest proximity to construction in NCA4 are likely to be highly noise affected during 'worst case scenario' construction periods

The SoundPlan noise level contour maps and a complete list of corresponding predicted levels at various receptors for the works, and are included as Appendix B

3.2 Vibration Impacts

Past measurements of ground borne vibration show that vibration levels can vary significantly at different distances and receptor locations. Recommended safe working distances for various items of vibration generating plant are given in Section 6.3 of Transport for NSW Construction Noise Strategy 2012. This information is shown below in Table 11.

Table 11 Recommended safe working distances for vibration generating plant

Plant Item	Rating/ Description	Safe Cosmetic Damage (BS 7385)	Human Response (OH&E Assessing Vibration – A Technical Guideline)
Small Hydraulic Hammer	300 kg – 5 to 12T Excavator	2 m	7 m
Medium Hydraulic Hammer	900 kg – 12 to 18T Excavator	7 m	23 m
Large Hydraulic Hammer	1600 kg – 18 to 34T Excavator	22 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	20 m
Pile Boring	≤800 mm	2 m (nominal)	N/A
Jackhammer	Hand held	1 m (nominal)	Avoid contact with structure

4 NOISE AND VIBRATION MITIGATION

The predicted level of noise (Section 5.1) and vibration (Section 5.2) emissions from the works show that noise levels may exceed the Noise Management Levels established in Section 4.7 of this report in predicted worst-case scenarios at three representative receivers.

The following work practices will be implemented where necessary and practicable, to ensure compliance and conformance throughout the project;

- Judicious selection of mechanical plant and equipment (eg quieter machinery and power tools).
- Maximising the offset distance between noisy plant items and nearby noise sensitive receivers.
- The use of appropriate respite periods where receivers are likely to be highly noise affected.
  - For example, the RMS *Construction Noise and Vibration Guideline* states that (noise intensive) work may be carried out 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.
- Avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers.
- Orienting equipment away from noise sensitive areas.
- Carrying out loading and unloading away from noise sensitive areas.
- Localised shielding of noisy equipment.
- Minimising consecutive works in the same locality.
- Considering periods of respite

4.1 Noise Measurement Equipment

All acoustic instrumentation employed throughout the attended monitoring programme will comply with the requirements of AS IEC 61672.1-2004 *Electroacoustics – Sound level Meters- Specifications*. All sound level meters must have a current calibration certificate from a NATA accredited laboratory in accordance with NATA guidelines. Instrument calibration shall be checked before and after each measurement survey, with the variation in calibrated levels not exceeding ±0.5 dB.

4.2 Attended Residential Noise Monitoring Procedure

The measurements will be conducted in accordance with the procedures outlined in Australian Standard AS1055 *Acoustics – Description and measurement of environmental noise* and in accordance with methods outlined in the NSW Industrial Noise Policy (INP). The following points should be followed when conducting noise monitoring:

- A field calibration should be conducted before and after measurements;
- The sound level meters must be set to A-weighting and Fast response;
- The sound level meters sample period should be set to 15 minutes;
- The following descriptors should be measured as a minimum: L_{A1}, L_{Aeq} and L_{A90}; and
- Measurements should be conducted a minimum of 3 metres from the nearest façade and/or solid fence/wall. If it is not possible to do this, corrections for façade reflection should be applied to the measurement results.

4.3 Noise Monitoring of Equipment

In addition to the residential noise monitoring procedures described above, the following equipment measurements will be undertaken:

- Noise emission levels of all critical items of mobile plant and equipment will be checked by the site environmental officer for compliance and conformance with noise limits appropriate to those items prior to the equipment going into regular service;
- For equipment and mobile plant used for construction works, L_{Aeq} measurements will be taken at an appropriate distance, normally 7m and converted to a Sound Power Level;
- An *Equipment Noise Certificate*, presenting relevant sound levels of the equipment tested, will be issued by the Construction Contractor's site environmental officer within the first week of the equipment commencing at the construction site.

The equipment sound power levels will be compared to the levels contained in Table 8 & Table 10. If noise checks on any equipment result in a prediction of non-compliance or non-conformance, quieter equipment will be substituted.

4.4 Attended Monitoring Schedule

Table 12 below provides a preliminary schedule for noise monitoring.

Table 12 Noise Monitoring Schedule

Monitoring Schedule	Measurement Procedure	Reporting
Weekly throughout the duration of the project	Complete one round of operator-attended 15-minute noise monitoring on separate days at each NCA location	Reporting procedure as outlined in Section 6.5
During subsequent months	Carry out equipment noise level checks on any new (untested) critical items of plant and issue Equipment Noise Certificates	
	Carry out attended noise monitoring in the event of complaints and/or recorded exceedances. Continue noise monitoring after noise mitigation measures have been employed to confirm compliance and conformance	

4.5 Reporting on Attended Noise Monitoring

The following information must be included in the weekly reports when applicable:

- Field calibration results (before and after measurements);
- Measurement times and dates;
- Qualitative description of the noise environment during measurement;
- L_{A1}, L_{Aeq} and L_{A90} levels;
- Meteorological conditions during the measurements;
- Estimation of recorded noise contribution from other major noise sources.

The Site Supervisor shall establish and maintain a system of records which provides full documentation of all noise monitoring results, complaint handling and responses to non-compliances and non-conformances.

4.6 Periods of Respite

All activities associated with the Project shall take place within the standard hours, as shown below:

- 7:00am to 5:30pm, Monday to Friday inclusive; and

- 7:30am to 3:30pm Saturdays;
- At no time on Sundays or public holidays.

Works that result in impulsive or tonal noise emissions such as rock breaking, rock hammering, sheet piling, pile driving and similar shall only be undertaken;

- 9:00am to 12:00pm Monday to Friday;
- 2:00pm to 5:00 pm Monday to Friday;
- 9:00am to 12:00pm Saturday; and,
- In continuous blocks, not exceeding 3 hours each, with a minimum respite from those activities and works of not less than one hour between each block.

Activities required to be conducted outside of the standard hours will be undertaken in accordance with the OOH protocol in Section 6.12.

4.7 Work Practices

Workers and contractors shall be trained in work practices to minimise noise emission such as the following:

- Avoid dropping materials from a height.
- Avoid shouting and talking loudly outdoors.
- Turn off equipment when not being used.
- Carry out work only within the approved hours of operation.

Activities required to be conducted outside of the standard hours will be undertaken in accordance with the OOH protocol in Section 6.12.

4.8 Heavy Vehicles and Staff Vehicles

The following points shall be implemented in conjunction with the Construction Pedestrian and Traffic Management Plan, as required under Condition B17of the COA

- Truck drivers shall be informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling).
- Site vehicle entrances shall be located away from residences where practicable.
- The number of vehicle trips shall be configured to reduce the number of trips to and from the site – movements shall be organised to amalgamate loads rather than using a number of vehicles with smaller loads.
- Staff parking areas shall be located as far from residential receiver locations as practicable, preferably within a dedicated area within the site.
- Parking and queuing of staff vehicles and other construction vehicles shall be avoided as far as is practicable on streets outside of the site.
- There shall be no access the site via, or park within residential areas prior to 7 am on any occasion, in order to avoid sleep disturbance.
- Vehicles shall be fitted with broadband reversing alarms or alternative, non-tonal proximity warning systems.
- For the duration of Works, use of compression braking shall not be permitted on the site or nearby the site, such as on access roads within close proximity to residential premises.

4.9 Consultation for Preparation of the CNVMP

This CNVMP has been developed in consultation with NSW EPA and City of Sydney, in accordance with COA B18. A summary of consultation undertaken during the preparation of this CNVMP is provided in Table 13 below.

Table 13 Consultation Summary

Organisation	Date	Outcome

4.10 Community Relations

- Hansen Yuncken will manage Community Relations through Elton Consulting. Refer to Hansen Yuncken's Stakeholder Management & Communications Management Plan for further information.
- A community information telephone number has been established to provide access and information about the project.
- An email address has been established to manage correspondence and to provide access and information about the project.
- A postal address has been established to manage correspondence and to provide access and information about the project.
- Community notifications and newsletters shall be prepared and distributed as per Hansen Yuncken's Stakeholder Management & Communications Management Plan, to the community in areas that are potentially affected by the project. The contents of the notifications shall include information on the nature of the works, location of works being carried out, possible impacts to amenity, traffic flow or services, and the contact details as listed above.
- Information boards with the above contact details shall be prepared and installed on the site boundary hoarding detailing contacts for information / complaints for the project.
- Should the public enter site they are to be directed to the site office to talk to Hansen Yuncken management.

Once works commence, communication with the community shall be maintained via the aforementioned methods.

Consultation and cooperation between the contractor and the neighbours and the removal of uncertainty and rumour can help to reduce adverse reaction to noise.

4.11 Managing a Noise Complaint

Refer to the Hansen Yuncken Stakeholder Management & Communications Management Plan for complaint management.

Direct the complainant to register their complaint to the phone number or email address so it can be logged and responded to accordingly.

4.12 Out-of-Hours Work Protocol

Any work proposed to be conducted out of standard construction hours shall be subject to review and approval using the following process from the EIS approved CEMP document (Thelem Consulting 2019)

Details of proposed work shall be submitted for evaluation which will include; location of work to be conducted, types of plant and equipment proposed, character and likelihood of noise being generated, anticipated effect on traffic flow to and from the site. An example of an Out-of-Hours request form is included in Appendix A.

Noise management levels outside of standard construction hours are given in Sections 2 and 3. Activity during these times should be limited to those which do not involve the use of heavy vehicles, heavy machinery or other mechanical plant or activities that involve, or result in, increased traffic flow through residential areas.

In the event that it is unavoidable to conduct work outside of standard construction hours and work is likely to include noisy activities, an acoustic assessment shall be required to determine the extent of potential exceedance, recommendations for reasonable and feasible noise mitigation measures to be employed and predicted levels at the nearest sensitive receptors.

The relevant local council, residential areas and other sensitive receivers and stakeholders that are potentially affected by any work approved to be conducted outside of standard construction hours shall be notified at least 7 days prior to the commencement of work. Methods of notification may include letter drops, door-knocking, publications in local media and on the project website. The Community Liaison Officer shall promptly be informed of all work approved outside of standard construction hours to allow appropriate time to arrange community notifications.

4.13 Amendments to this Noise and Vibration Plan

Should changes to the Conditions of Approval schedule, nature of the works, equipment used during the works or locations of work change significantly during the course of the project, amendments to this plan and the calculations and recommendations contain herein, may be amended to reflect the changes.

A review should be carried out once a month by the Construction Contractor Project Manager and be revised if necessary.

This NVMP should be viewed as a live document and updated as necessary, noting that revision of the NVMP may result in the monitoring regime increasing or decreasing.

4.14 Noise Monitoring

Noise monitoring shall be conducted at the most affected residence at each NCA, within the first four weeks from the commencement of works at each Phase.

Subject to consultation, attended noise and vibration monitoring will be undertaken weekly at the nearest receivers to the site for a period of one month.

Data will be reviewed following that period and where exceedances are identified, logging instruments will be deployed at these locations. Where compliance is noted, attended monitoring may be reduced to monthly following agreement with the project team.

4.15 Non-compliance, Non-conformance and Actions

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

Non-compliances, non-conformances and corrective and preventative actions will be managed in accordance with Section 10.3 of the CEMP.

4.16 Vibration Monitoring

Given the distances to the nearest sensitive receptors, it is not anticipated that vibration levels will approach Criteria.

Following an initial monitoring period of one month, if new impact activities, such as rock hammering or piling are to be conducted, vibration measurements shall be carried out at the nearest receiver to determine the maximum levels of vibration generated.

In the event of an exceedance of the Peak Particle Velocity (PPV) vibration criteria, additional investigations will be carried out to modify activities to comply with structural damage criteria.

In the event that levels of ground-borne vibration exceed the recommended acceptable levels for cosmetic damage works should cease immediately and alternative methods shall be considered.

APPENDIX A SAMPLE OUT-OF-HOURS WORK REQUEST

Out of hours request No.	**Application Date**
Name of person requesting the work:	**Why Out of hours work is proposed**

Item	Description	Information /Comments
1	Description Of works	
2	Plant and equipment to be used: (list all plant and noise generating equipment to be used during the work activities) e.g. hand tool generators crane etc.	
	Details on any concurrent demolition activities being undertaken OOWH adjacent to the proposed	
3	Names of Foremen Supervising the work	
4	Subcontractors Details (if applicable)	
5	Location of work	
6	Proposed Dates/Duration:	
7	Start Time:	
8	Finish Time:	
9	NOISE: Will the work generate noise audible at the nearest residence? Attach map	
	What measures are being taken to reduce impacts Proposed noise & Vibration Monitoring	
10	Traffic Will the work require traffic control	
	Describe the location and Nature of disruption to traffic	
	Who is planning the traffic control	
	Who will be responsible for the traffic control during the work	
11	What lighting is to be provided	
12	Does the work team comprise a minimum of two persons	
13	Who in the work team holds a current first aid certification	
14	Where is the first aid to be located	
15	What means of communications is to be used to summon assistance in an emergency	

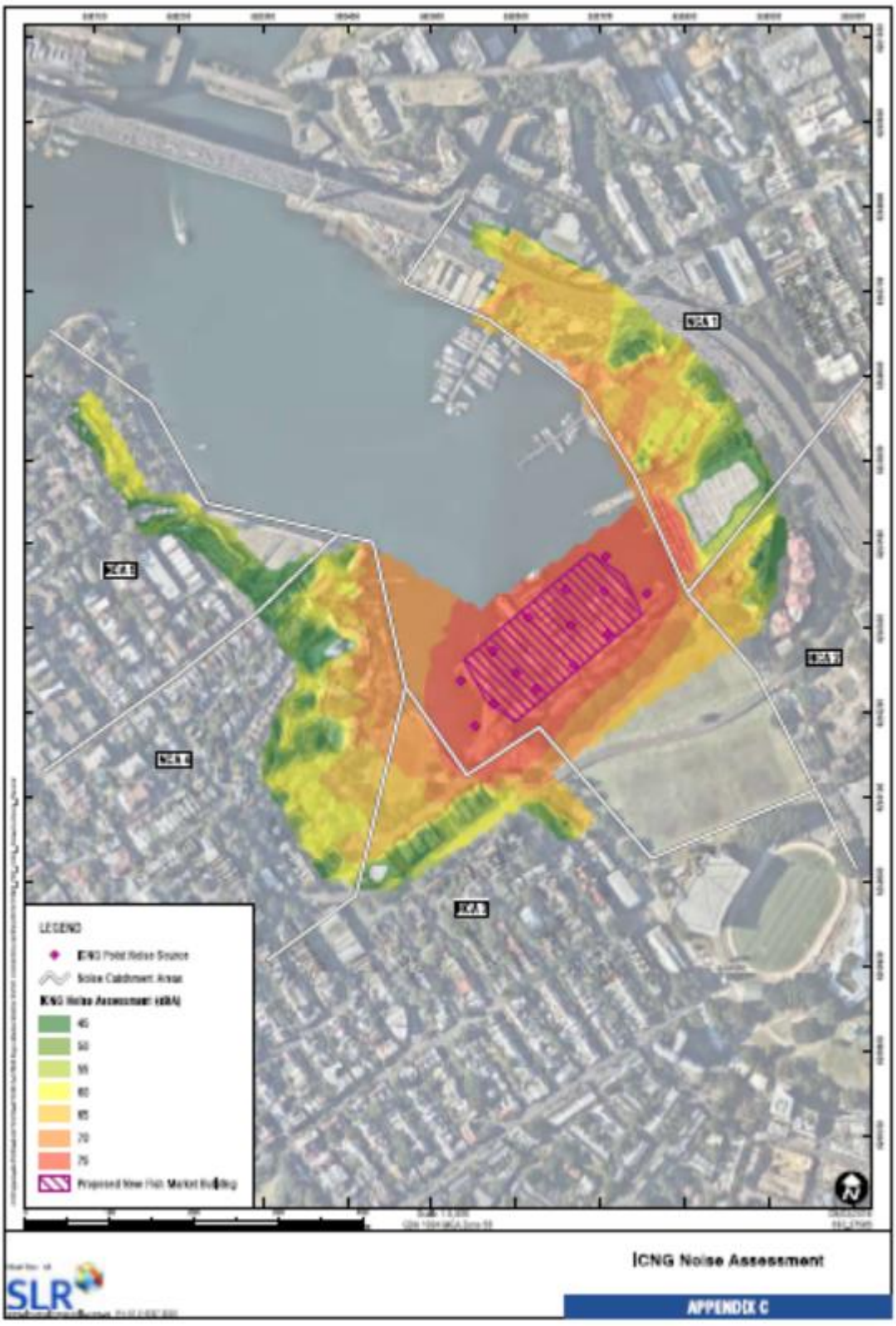
Out of hours request No. 1	**Application Date**
Name of person requesting the work:	**Why Out of hours work is proposed**

Item	**Description**	**Information /Comments**
16	Has a check of the Functionality of the proposed emergency means been made?	
17	Who from the project team will be supervising the work	

Assessment	
Acoustic Assessment prepared to determine if works are above RBL+5dB(A) at closest receiver	☐ Less than RBL +5dB(A) ☐ Above RBL +5dB(A)
Noise Report Required	☐ Yes ☐ No less than 5dB(A)

Approvals			
1	Environmental	NAME	
		SIGNATURE	Date
2	Community	NAME	
		SIGNATURE	Date
3	Traffic	NAME	
		SIGNATURE	Date
4	Safety	NAME	
		SIGNATURE	Date
5	Project Manager	NAME	
		SIGNATURE	Date

APPENDIX B SOUNDPLAN NOISE PROPAGATION CONTOURS



APPENDIX C ASSESSED RECEIVER LEVELS

CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

Table 9 Receiver NMLs for Construction

NCA	Nearest Receiver Location	Representative Noise Logger Location	Standard Construction[1] (RBL+10dB)	Highly Noise Affected	Out of Hours (RBL+5dB)				Sleep Disturbance Screening (RBL+15dB)	
			Daytime	Daytime	Daytime	Evening	Night-time	Morning	Night-time	Morning
NCA1	31-33 Bank Street, Pyrmont (Commercial)	L01	70	n/a	70[2]	70[2]	70[2]	70[2]	n/a[3]	n/a[3]
NCA2	217/1 Wattle Crescent, Glebe	L04	72	75	67	62	55	57	65	67
NCA3	Corner of Wentworth Park and Bridge Road, Glebe	L04[4]	72	75	67	62	55	57	65	67
NCA4	1A Burton Street, Glebe	L07[5]	66	75	59	55	47	49	57	59
	Sydney Secondary College, Glebe	L05	65[6]	n/a	65[2,6]	65[2,6]	65[1,6]	65[1,6]	n/a[3]	n/a[3]
NCA5	13 Griffin Place, Glebe	L06	80	73	55	53[7]	51	53	61	63

Note 1: ICNG recommended standard hours are 7:00 am to 6:00 pm Mon-Fri, 8:30 am to 1:00 pm Sat.

Note 2: Criteria is only applicable when receiver is in use.

Note 3: Sleep disturbance criteria does not apply to this receiver type.

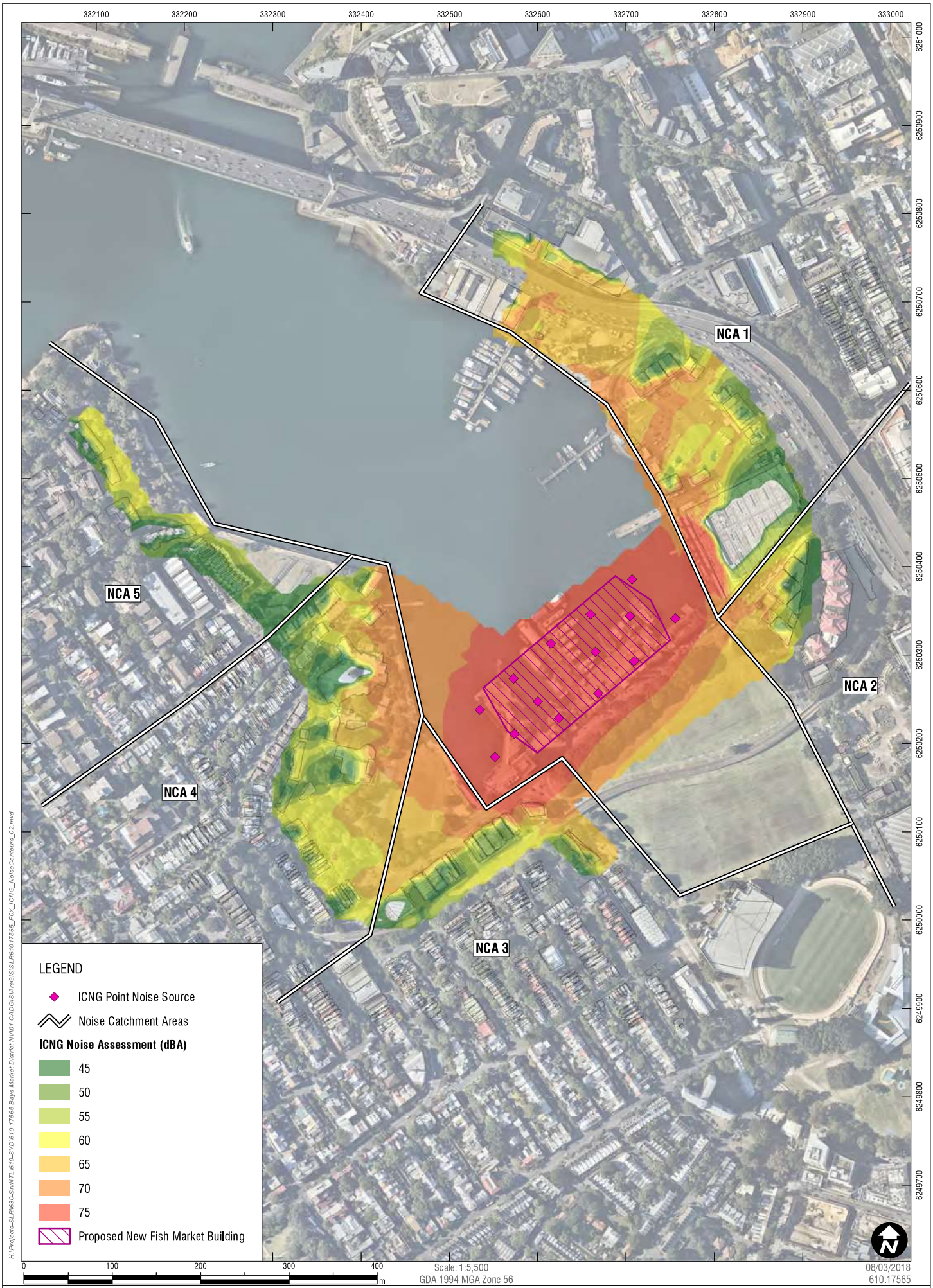
Note 4: Due to the nearest receivers' proximity to Bridge Road, L04 has been used as the representative noise logger location.

Note 5: Based on site observations of the similarities of the surrounding road network for the nearest receiver, L07 has been used as the representative noise logger location.

Note 6: An external criterion of 65 dBA has been set for Sydney Secondary College. The ICNG sets an internal level of 45 dBA and 20 dB external to internal transmission loss is assumed.

Note 7: These values have been lowered to be no greater than the applicable OOH daytime NML, based on the approach for determining RBLs in the NPI.

Source: Noise Impact Assessment (SLR 2019)



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Scale: 1:5,500
GDA 1994 MGA Zone 56

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610.17565

Sheet Size : A4

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ICNG Noise Assessment

APPENDIX C

Table 9 Receiver NMLs for Construction

NCA	Nearest Receiver Location	Representative Noise Logger Location	Standard Construction[1] (RBL+10dB)	Highly Noise Affected	Out of Hours (RBL+5dB)				Sleep Disturbance Screening (RBL+15dB)	
			Daytime	Daytime	Daytime	Evening	Night-time	Morning	Night-time	Morning
NCA1	31-35 Bank Street, Pyrmont (Commercial)	L01	70	n/a	70[2]	70[2]	70[2]	70[2]	n/a[3]	n/a[3]
NCA2	217/1 Wattle Crescent, Glebe	L04	72	75	67	62	55	57	65	67
NCA3	Corner of Wentworth Park and Bridge Road, Glebe	L04[4]	72	75	67	62	55	57	65	67
NCA4	1A Burton Street, Glebe	L07[5]	64	75	59	55	47	49	57	59
	Sydney Secondary College, Glebe	L05	65[6]	n/a	65[2,6]	65[2,6]	65[2,6]	65[2,6]	n/a[3]	n/a[3]
NCA5	13 Griffin Place, Glebe	L06	60	75	55	55[7]	51	53	61	63

Note 1: ICNG recommended standard hours are 7.00 am to 6.00 pm Mon-Fri; 8.00 am to 1.00 pm Sat.

Note 2: Criteria is only applicable when receiver is in use.

Note 3: Sleep disturbance criteria does not apply to this receiver type.

Note 4: Due to the nearest receivers' proximity to Bridge Road, L04 has been used as the representative noise logger location.

Note 5: Based on site observations of the similarities of the surrounding road network for the nearest receiver, L07 has been used as the representative noise logger location.

Note 6: An external criterion of 65 dBA has been set for Sydney Secondary College. The ICNG sets an internal level of 45 dBA and 20 dB external to internal transmission loss is assumed.

Note 7: These values have been lowered to be no greater than the applicable OOH daytime NML, based on the approach for determining RBLs in the NPfI.

Source: Noise Impact Assessment (SLR 2019)