Sydney Metro West Linewide Project

Construction Noise and Vibration Management Plan

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Document approval

Rev	Date	Prepared By	Reviewed By	Approved By	Remarks
A	06/03/2026	R Muir (JH) Mattia Tabacci (Renzo Tonin & Associates)	S Reynolds	I Karaban	Internal review
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Signature				Ivan Karaban	

Revisions

Draft issues of this document are identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this will be changed to a sequential number commencing from Revision 00, then 01, 02, etc.

Date	Revision	Details
06/03/2026	A	Initial issue for internal review only
18/03/2026	B	Issued for Client, ER & AA review
02/04/2026 08/05/2026	C	Issued for Consultation Updated to address SM, ER and stakeholder comments
13/05/2026	0	ER Endorsement

This plan has been prepared in accordance with the relevant requirements. The initial issue of this plan has been reviewed by the relevant discipline leader and endorsed for use on the Linewide Project.

Revisions of this plan may be required throughout the duration of the contract to reflect changing circumstances or identified opportunities for improvement. Revisions will be proposed by the relevant personnel and reviewed, developed and finalised in conjunction with Sydney Metro.

Revisions of this plan must not reduce the scope or level of management control. Revisions may result from:

- Management review
- Changes to the standard system
- Internal or external audit
- Sydney Metro feedback or non-conformance reports
- Legislative changes
- Improvement initiatives and process changes within John Holland
- Lessons learned.

Initial updates to this plan will be issued alphabetically for review. Once approved by Sydney Metro, subsequent updates will be numbered consecutively and transmitted to holders of controlled copies.

Updates to this plan and any other sub-plans will be provided to Sydney Metro for comment, review and approval.

Distribution

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

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1 Definitions and Abbreviations

Abbreviation/Term	Definition
AA	The Acoustic Advisor for the CSSI approved by the Planning Secretary
AMS	Activity Method Statement is a planning process to determine detailed methodology which breaks down and analyses individual WRA work elements). Also referred in industry as Environmental Work Method Statement (EWMS), Work Method Statement (WMS), Work Pack and/or Safety Activity Pack.
AVTG	NSW Assessing Vibration – a technical guideline
CEMP	Construction Environmental Management Plan
CNVS	Construction Noise and Vibration Standard
DNVIS	Detailed Noise and Vibration Impact statement(s)
DPHI	Department of Planning, Housing and Infrastructure
Client (Principal)	The party to whom John Holland is contracted for a Project. For this project the Client is Sydney Metro.
D&C	Design and Construction
ECM	Environmental Control Map
EIS	Environmental Impact Statement
ENMM	Environmental Noise Management Manual
Environmental aspect	An element of activities or services that can interact with the environment.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from environmental aspects.
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	The Environmental Representative(s) for the CSSI approved by the Planning Secretary
eVDV	Estimated Vibration Dose Value
Environmental Management Subplan	Aspect-specific Subplan to the CEMP
GBN	Ground-borne noise
GIS	Geographic Information System
Highly noise affected	As defined in the ICNG
Highly noise intensive works	Work which is defined as annoying under the Interim Construction Noise Guideline (DECC, 2009) including: (a) use of power saws; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; (h) impact piling; and (i) rail tamping and regulating. Note: Power saws include those used for cutting timber, rail lines, masonry, road pavement or steel work.
Hold Point	A point defined in a process beyond which an activity must not proceed without the approval of a designated authority.
ICNG	NSW Interim Construction Noise Guidelines (DECC,2009)
ISC	Infrastructure Sustainability Council

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Abbreviation/Term	Definition
JH	John Holland Pty Ltd as the organisation responsible for the total performance of the works under the Contract.
LGA	Local government area
NCA	Noise Catchment area
NML	Noise Management Level as defined in the ICNG
NPfI	Noise Policy for Industry
NV Program	Noise and Vibration Monitoring Program
NVMP	Noise and Vibration Management Sub-plan
OOHW	Out-of-Hours Work
POEO Act	Protection of the Environment Operations Act 1997
Plan	A document setting out the specific practices, resources, activities and responsibilities relevant to a particular project or contract.
RBL	Rating Background noise Level
REMM	Revised Environmental Mitigation Measure
RNP	NSW Road Noise Policy
Sensitive land use(s)	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres and passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation, restaurants, office premises, and retail spaces) and industrial premises as identified by the Planning Secretary. Note: For the purpose of determining appropriate mitigation, a multistorey residential flat building must not be counted as one sensitive receiver. Note: Temporary accommodation as set out in this definition includes caravan parks and camping grounds
Sound Power Level (SWL)	Sound Power Level is a measure of the acoustic energy emitted from a source of noise, expressed in decibels.
Sound Pressure Level (SPL)	Sounds Pressure Level is the pressure disturbance in the atmosphere measured using predefined conditions such as the location of the equipment, environmental conditions, and the distance of the measurement from the measurement point.
SEP	Site Environmental Plan (for the purposes of the Linewide Project these Plans will be Environmental Control Map- ECMs)
Structurally sound	When a structure has the ability to withstand normal forces, it is in good condition and is substantially free from flaw, defect, decay or deterioration to the extent that the building or structure is capable of adequately or safely accomplishing the purpose for which it was intended or designed.
VC	Vibration criterion
VDV	Vibration Dose Value
WRA	Workplace Risk Assessment

Note:

- refer to the *Environment Protection Licence 22098 General Dictionary and Special Dictionary (E3)* for terms and meanings used in the licence
- refer to the *Sydney Metro West – Rail infrastructure, stations, precincts and operations Conditions of Approval (SSI 22765520) Table 1: Definitions* for terms used in the approval.

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2 Introduction

2.1 Background

The NSW Government is delivering Sydney Metro West – a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, transforming Sydney for generations to come.

This once-in-a-century infrastructure investment will provide fast, reliable turn-up- and-go metro services with fully accessible stations, link new communities to rail services and support employment growth and housing supply. Stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

Sydney Metro West will target an opening date of 2032.

The Linewide Project is a 24-kilometre underground railway connecting the Sydney and Parramatta CBDs and is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

Sydney Metro has appointed John Holland Pty Ltd (JH) under a Design & Construct Contract, to perform the design, construction, commissioning and completion of the Sydney Metro West Linewide Project (Linewide Project). The Linewide Project is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

The Linewide Project was assessed and approved under the SSI 22765520 on 25 January 2023 as part of the Sydney Metro West – Rail infrastructure, stations, precincts and operations Conditions of Approval.

The existing noise environment and vibration considerations has been detailed in Technical Paper 4 of the Stage 3 EIS. The technical paper considers the requirements of the Sydney Metro Construction Noise and Vibration Standard (CNVS). Existing noise levels vary across the Linewide Project noting that several of the sites are close to major sources of existing transport noise (eg Parramatta Road in Burwood, Victoria Road in Rozelle, and Anzac Bridge near Pyrmont). The tunnel alignment generally runs through areas of suburban residential receivers, with isolated industrial and/or commercial areas. Receivers surrounding the construction sites are generally a mix of residential and various commercial uses, depending on location.

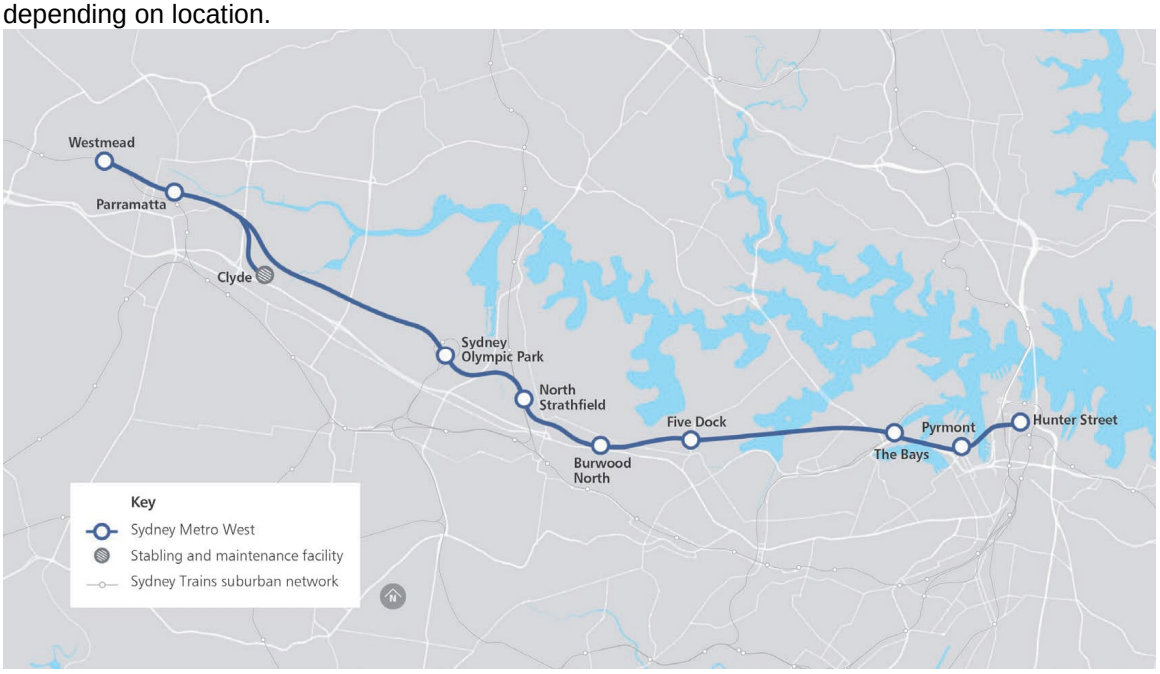


Figure 1 Linewide Project Location Map

2.2 Construction Scope of Works

The Linewide project scope relates to delivery of end-to-end systems for Sydney Metro West, fit out of the tunnels, cross passages and caverns, fit out of Linewide systems at the Stations, an integrated stabling and maintenance facility to clean, maintain, repair and store trains, a service facility at Rosehill and rail infrastructure to support day-to-day operations for Sydney Metro West.

The main scope of works for the Linewide Project includes the following:

- Enabling works and establishment at- The Bays, Burwood North, Clyde Stabling and Maintenance Facility (SMF), Rosehill Service Facility (RSF) and Sydney Olympic Park (SOP) For the remainder of the construction sites between Westmead and the CBD, these sites are under the control of the Stations Contractor and any access (or works) at these sites will be coordinated through the Stations Contractor and in accordance with their CEMP and CEMP Sub Plans to the extent relevant to any Linewide Project Works.;
- The exception to the above is a limited section of concrete invert works within the cross-over cavern at Pyrmont Station. This site will be accessed for concrete delivery and placement for approximately a three month period between Q4 2026 and Q2 2027.
- Tunnel fit out works, including rail delivery, invert and track installation, track drainage, walkway and mechanical and electrical works (M&E)
- Station fit out works, including high voltage (HV) and tunnel ventilation system (TVS)
- Clyde SMF including construction of buildings, civil works, Contained Service Route (CSR), track, overhead wiring (OHW)
- RSF including construction of buildings, civil works, CSR, track, OHW
- Dive building construction
- Trenching for high voltage connection works at The Bays
- Other permanent structures such as Operational Water Treatment Plants
- Treatment and disposal of material not suitable for reuse will be offsite disposal in accordance with approvals
- Project wide testing and commissioning of tunnel systems, facilities and equipment
- Rehabilitation of temporary construction sites and removal of temporary works, including acoustic sheds, site sheds and plant
- Final landscaping at Clyde and Rosehill.

The Linewide project will leverage four key access points during construction: Clyde, Burwood North, Sydney Olympic Park, and The Bays.

2.3 Scope of this Plan

This Construction Noise and Vibration Management Plan forms part of the suite of Subplans that sit under the Construction Environmental Management Plan (CEMP) for the Linewide Project. This Plan outlines the environmental management approach that the Linewide Project team will implement to manage noise and vibration as result of construction for the Project. This Plan does not consider operational noise impacts which will be covered under a separate plan in the future.

This Plan outlines how JH will comply with and implement applicable elements of the following documents (referred to as Project Requirements):

- State Significant Infrastructure Sydney Metro West – Rail Infrastructure, stations, precincts and operations Planning Approval, SSI 22765520 issued on 25 January 2023; and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Planning Approval issued 11 March 2021 and any modifications to the Planning Approval
- Environment Protection Licence 22098 (EPL)
- The Stage 3 Environmental Impact Statement (EIS) and the Submissions Report
- Revised Environmental Mitigation Measures (REMMs);
- The Sydney Metro Construction Environmental Management Framework (CEMF) version 4.5
- Contractual requirements including the Linewide Deed and General and Particular Specifications.

2.4 Objectives and Targets

The key objective of this Plan is to ensure that noise and vibration impacts are minimised during construction and that all works are undertaken in compliance with the Project Requirements.

In order to assess the environmental performance during construction, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of key performance outcomes for each key issue as specified in the Project EIS (Stage 3). The performance outcomes relating to noise and vibration in Technical Paper 4 of the EIS include:

- Construction noise and vibration impacts on local communities are minimised by controlling noise and vibration at the source, on the source to receiver path and at the receiver.
- Structural damage to buildings and heritage items from construction vibration is avoided

The CEMF has specific objectives in relation to noise and vibration management that will apply to construction. Targets established to achieve the relevant performance outcomes outlined in the CEMF are outlined in Table 1 below.

The performance during construction will be monitored against the objectives and targets (refer to Section 4.4 of the CEMP) and performance monitoring will be documented in the compliance reporting and at least on an annual basis as part of auditing requirements (refer to Section 6.2 of the CEMP).

Table 1: Objectives and targets

Objective	Target	Performance Indicator
Minimise unreasonable noise and vibration impacts on residents, businesses and other sensitive receivers during construction by implementing reasonable and feasible mitigation measures in accordance with the CNVS and ICNG.	Zero substantiated avoidable noise or vibration complaints per reporting period	Number of avoidable noise or vibration complaints
Avoid structural damage to buildings or heritage items as a result of construction vibration	No structural damage as a result of the Project	Number of property damage claims (structural damage confirmed as not being applicable to Linewide Project)
Undertake active community consultation	100% notification of potentially affected noise sensitive receivers of works outside standard construction hours not less than 5 calendar days and not more than 14 calendar days before those works are to be undertaken. Consultation on all requirements for CoA E33 (DNVIS mitigation measures) and E44 (respite periods).	Number of avoidable complaints associated with consultation
Maintain positive, cooperative relationships with schools, childcare centres, local residents, building owners and other sensitive receivers.	100% avoidance of noise levels above the predicted level in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas, unless other reasonable arrangements with the affected institutions are made.	Monitoring confirms noise levels are equal to or below the predicted noise level as identified in the DNVIS in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas

3 Environmental Requirements

3.1 Relevant Legislation and Guidelines

Noise and vibration are regulated under the Protection of the Environment Operations Act 1997 (including Protection of the Environment Operations (Noise Control) Regulation 2017). This legislation establishes standards for managing noise pollution in NSW, addressing various sources of noise and providing enforcement mechanisms.

Additionally, there are a significant number of standards and guidelines applicable to noise and vibration management. The key guidelines and standards relevant to the Linewide Project are detailed in Table 2 below:

Table 2: Construction Noise and Vibration Guidelines

Guideline/Standard	Relevance to the Project
Sydney Metro Construction Noise and Vibration Standard SM-20-00098866, v4.5, Sydney Metro July 2022	Assessment and management protocols for construction of Sydney Metro projects. This Sydney Metro standard is based on the requirements of the ICNG and Transport for NSW Construction Noise and Vibration Strategy, as appropriate to Sydney Metro. It ensures consistency in assessing construction noise and vibration impacts across Sydney Metro projects by filling the gap between industry guidelines, community & stakeholder perceptions and Sydney Metro's experience.
West-Rail Infrastructure, stations, precincts and operations (Stage 3) Out-of-Hour Work Protocol, Sydney Metro West Stage 3 Environmental Team, dated 03/09/2025, revision 6	This protocol was developed to comply with condition of approval E28. It described the process for considering, managing, and approving works on the Sydney Metro West Stage 3 that is undertaken outside standard construction hours specified in CoA E25.
Interim Construction Noise Guideline (ICNG), Department of Environment and Climate Change 2009	Assessment of airborne noise and ground-borne noise impacts from construction activity on sensitive receivers
Noise Policy for Industry (NPfI), Environment Protection Authority 2017	Ambient noise monitoring and analysis procedures, and Assessment and management of construction events that might cause sleep disturbance.
NSW Road Noise Policy (RNP), Department of Environment, Climate Change and Water 2011	Provides guidance for assessing road traffic noise impacts where construction related traffic moves off the worksite onto the public road network.
NSW Assessing Vibration – a technical guideline (AVTG), Department of Environment and Conservation 2006	Assessment of vibration impacts on human occupants of sensitive receiver buildings
NSW Approved Methods for the Measurement and Analysis of Environmental Noise, Environment Protection Authority 2022	Sets out minimum requirements and good practice methods for the measurement and analysis of environmental noise, including construction noise, for works under an Environment Protection Licence (EPL).
Australian Standard AS/NZS 2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors	Provides guidance for establishing noise management levels for internal areas of occupied other noise-sensitive receiver buildings not established in the ICNG
Australian Standard AS2436-2010 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites	Provides guidance for minimising and managing construction noise and vibration on construction sites to assist the preparation of Noise and Vibration Management Plans
Australian Standard 2659.1 – 1998 Guide to the use of sound measuring equipment – portable sound level meters	Sets out the setup and operation of portable sound level meters to ensure accurate and reliable noise measurements for environmental assessments.

Guideline/Standard	Relevance to the Project
Australian Standard 1055: 2018 Acoustics – Description and Measurement of Environmental Noise	Provides procedures for describing, measuring and reporting environmental noise, including the selection of measurement locations, equipment requirements, measurement techniques and data interpretation.
Australian Standard 2834-1995 Computer Accommodation, Chapter 2.9 Vibration	Provides guidance on suitable assessment criteria to minimise the risk of damage to computer equipment from construction generated vibration.
British Standard BS 6472-2008 Evaluation of human exposure to vibration in buildings (1-80Hz)	Standard referenced in AVTG for providing guidance on assessing vibration impacts on human occupants of sensitive receiver buildings
British Standard 7385: Part 2-1993 Evaluation and measurement of vibration in buildings	Risk assessment of cosmetic damage to residential, commercial and industrial buildings or structures from construction generated vibration.
German Standard DIN4150-2016 Structural vibration Part 3: Effects of vibration on structures	Risk assessment of cosmetic damage) to vibration sensitive heritage buildings and structures, where the structure is found to be unsound.
Society of Photo-Optical Instrumentation Engineers (Colin G. Gordon - 28 September 1999)	Provides generic vibration reference levels for vibration sensitive equipment, such as electron microscopes and microelectronics manufacturing equipment, where manufacturers data is not available.

3.2 Project Requirements

This Construction Noise and Vibration Management Plan has been developed in accordance with CoA C1, C5 and C6 of the Planning Approval.

This Plan has been developed in accordance with the requirements of Sydney Metro West Linewide Project. These requirements are detailed in Table 3 below. As noted above, this Plan excludes operational noise requirements which will be covered under a separate plan in the future.

Table 3: Project Planning Approval Conditions relevant to this Plan

Condition	Description	Where Addressed
CoA	**Project Planning Approval- SSI 22765520**	
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This Plan. Refer Section 2.4 for performance outcomes. Refer to Section 7 for mitigation measures.
C5	Of the CEMP Sub-plans required to be prepared under Condition C1, the following CEMP Sub- plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6. Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why: CEMP Subplans (a) Noise and Vibration - Place Management NSW and Port Authority of NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)	Section 3.5
C6	The CEMP Sub-plans must state how:	This Plan

Condition	Description	Where Addressed
	- (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved; - (b) the mitigation measures identified in the documents listed in Condition A1 will be implemented; - (c) the relevant terms of this approval will be complied with; and - (d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Refer Section 2.4 for performance outcomes. Refer to Section 7 for mitigation measures. Refer Section 3.2 for compliance with the approval. Refer to Section 3.7, Section 6 and Section 7 for measures.
C7	- With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	Section 3.5
C13	The following Construction Monitoring Program must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP: (a) Noise and Vibration - EPA, Place Management NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)	Section 3.5, and Appendix A: Construction Noise and Vibration Monitoring Program
Note	Note- the requirements of C14 to C21 are detailed in the Noise and Vibration Monitoring Program included in Appendix A.	Appendix A Noise and Vibration Monitoring Program.
E23	A detailed land use survey must be undertaken to confirm the occupants of the sensitive land use(s) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction noise, vibration or groundborne noise in that area. The results of the survey must be included in the Noise and vibration CEMP Sub-plan required by Condition C5. Notes 1. Sensitive land use(s) include critical working areas such as operating theatres and precision laboratories. 2. Detailed land use surveys from previous stages of the CSSI are permitted to be used, provided the land use has not changed.	Section 4.1 and Appendix B: Land Use Survey
E24	Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise and vibration impacts are minimised. Practices must include, but are not limited to: (a) use of regularly serviced low sound power equipment; (b) early occupation and later release of road carriageways and work sites; (c) scheduling of noisiest work during construction hours specified in Condition E26; (d) at-source controls, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment	Section 7.2 and Table 22

Condition	Description	Where Addressed
	and activities; (e) use of non-tonal reversing alarms; and (f) use of alternative construction and demolition techniques.	
E25	Work must be undertaken during the following hours: (a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive; (b) 8:00 am to 6:00 pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 5.1
E26	Except as permitted by an EPL, highly noise intensive work that results in an exceedance of the applicable Noise Management Level (NML) at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.	Section 5.1.2
E27	Notwithstanding Conditions E25 and E26 work may be undertaken outside the hours specified in the following circumstances: (a) Safety and Emergencies, including: (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm. On becoming aware of the need for emergency work in accordance with (a)(ii) above, the AA, the ER, the Planning Secretary and the EPA where an EPL is in force must be notified of the reasons for such work. The Proponent must use best endeavours to notify all noise and / or vibration affected occupants of sensitive land use(s) of the likely impact and duration of those work. (b) Low noise or vibration impact construction, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level (RBL) at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land use(s); or (ii) construction that causes LAFmax noise levels during the night time period of no more than 15 dB(A) above the RBL at any residence; or (iii) construction that causes: • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or • intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006). (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E28; or	Section 5.1.3

Condition	Description	Where Addressed
	(iii) negotiated agreements with directly affected residents and occupants of sensitive land use(s). (d) By Prescribed Activity, including: (i) tunnel fit out works, underground fit out works and /or internal station fit out works, and internal facility fit out works within the Clyde Stabling and Maintenance Facility and the Rosehill Services Facility (which are permitted 24 hours a day, seven (7) days a week); or (ii) work that must be undertaken during rail possessions, including the delivery and removal of material to support those works; or (iii) delivery of material that is required to occur outside the construction hours identified in Condition E25 to directly support: • tunnel fit out works; • underground and / or internal station fit out activities (excluding surface works); and • work for the Clyde Stabling and Maintenance Facility and the Rosehill Services Facility, except where doing so would result in noise levels above LAeq(15 minute) 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and / or LAFmax 52 dB(A) or the prevailing RBL plus 15 dB, whichever is greater for residential receivers above the existing noise environment (as of the date of this approval), unless otherwise approved in accordance with (a) and (c) above; or (iv) haulage of spoil except between the hours of 10:00pm and 7:00am to / from Westmead construction site using any roads / streets, except as permitted by (d)(ii) above; or (v) works within an acoustic shed where there is no exceedance of the noise levels under 'Low noise or vibration impact construction' circumstances identified in (b) above, unless otherwise agreed by the Planning Secretary	
E28	An Out-of-Hours Work Protocol must be prepared before the approval of out-of-hours-work under Condition E27(c)(ii). The Protocol must identify a process for the consideration, management and approval of work which is outside the construction hours defined in Conditions E25 and E26. The Protocol must be approved by the Planning Secretary and implemented before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER and the AA. The Protocol must include: (a) justification for why out-of-hours works are required; (b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: (i) the ER and the AA review all proposed out-of-hours activities and confirm their risk levels, (ii) low risk activities can be approved by the ER in consultation with the AA, and (iii) high risk activities that are approved by the Planning Secretary; (c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria including reasons for why it is required under each situation; (d) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition E44. The measures must take into account the predicted noise levels and	Section 7.3.2

Condition	Description	Where Addressed
	the likely frequency and duration of the out-of-hours works that sensitive land use(s) would be exposed to, including the number of noise awakening events; (e) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respte is provided; and (f) notification arrangements for affected receivers for approved out-of-hours work and notification to the Planning Secretary of approved low risk out-of-hours works. This condition does not apply if the requirements of Condition E27(b) are met. Notes: 1. Out-of-hours work is any work that occurs outside the construction hours identified in Conditions E25 and E26. 2. The Out-of-Hours Work Protocol is intended to be used for activities where these activities cannot be undertaken during the construction hours identified in Conditions E25 and E26	
E29	All reasonable and feasible mitigation measures must be implemented with the aim of achieving the following construction NMLs and vibration objectives: (a) construction 'Noise affected' NMLs established using the ICNG; (b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and (d) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage for structurally unsound Heritage items). Any work identified as exceeding the NMLs and / or vibration criteria must be managed in accordance with the Noise and vibration CEMP Sub-plan. Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction NML	Section 5.2 and 5.3 Section 5.6.1 Section 5.5.2 Section 5.6.3 Section 5.2.3
E30	All reasonable and feasible mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) - internal $L_{Aeq(15\ minute)}$: 40 dB(A); and (b) night (10:00 pm to 7:00 am) - internal $L_{Aeq(15\ minute)}$: 35 dB(A). The mitigation measures must be outlined in the Noise and vibration CEMP Sub-plan, including those set out in an Out-of-Hours Work Protocol, as required by Condition E28	Section 5.3
E31	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas resulting in noise levels above the NMLs must not be timetabled during sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution. Note: Critical working areas include theatres, laboratories and operating theatres	Section 7.2 and Table 22 Section 7.4
E32	At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (8hr) equivalent continuous A-	Section 5.5

Condition	Description	Where Addressed
	weighted sound pressure level of LAeq,8h of 85 dB(A) for any employee working at a location near the CSSI. Note: The reference to employee does not refer to employees involved in the delivery of the CSSI	
E33	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for all work (excluding emergency work) that may exceed the NMLs, vibration limits and / or ground-borne noise levels specified in Condition E29(c), Condition E29(d) and Condition E30 at any residence outside construction hours identified in Condition E25 or where receivers will be highly noise affected. The DNVIS must include specific mitigation measures identified through consultation with affected sensitive land use(s) and the mitigation measures must be implemented for the duration of the works. A copy of the DNVIS must be provided to the AA and ER before the commencement of the associated works. The Planning Secretary may request a copy(ies) of the DNVIS.	Section7.1
E34	A DNVIS must be prepared for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with the occupants of affected sensitive land use(s) and updated as required if site conditions or activities change	Section 7.1
E35	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before work that generates vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers must be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and vibration CEMP Sub-plan and the process for notifying those owners and occupiers within the Community Communication Strategy(s) required by Condition E85	Section 7.2 and Table 22 Section 7.4
E36	The Proponent must ensure that residential receivers, located in non-residential zones, likely to experience an internal noise level exceeding Leq(15 minute) 60 dB(A) between 8:00 pm and 9:00 pm or Leq(15 minute) 45 dB(A) between 9:00 pm and 7:00 am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional noise and vibration mitigation measures as per the CNVS	Section 7.3.4
E37	The Proponent must ensure that residential receivers in residential zones likely to experience an internal noise level of Leq(15 minute) 45 dB(A) or greater between 8:00 pm and 7:00 am (inclusive of a 5 dB penalty if rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration is planned (including works associated with utility adjustments)) must be offered additional noise and vibration mitigation measures as per the CNVS	Section 7.3.4
E38	For all work sites where acoustic sheds are installed, the sheds must be designed, constructed and operated to minimise noise emissions. This would include the following considerations: (a) all significant noise producing equipment used during the night-time be inside the sheds; (b) noise generating ventilation systems be located inside the	Section 7.2 and Table 22

Condition	Description	Where Addressed
	sheds and external air intake / discharge ports be appropriately acoustically treated; and (c) the doors of acoustic sheds be kept closed during the night-time period. Where night-time vehicle access is required at sites with nearby residences, the shed entrances must be designed and constructed to minimise noise breakout. Note: Noise generating ventilation systems include compressors and scrubbers.	
E39	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques	Section 7.2 (Table 22) Section 7.5.2 and Appendix A: Construction Noise and Vibration Monitoring Program
E40	If a Heritage item is found to be structurally unsound (following inspection) a cosmetic damage criterion of 2.5 mm/s peak component particle velocity (from DIN 4150) must be applied.	Section 5.6.6
E41	Where occupants of sensitive land uses would be impacted by prolonged construction noise impacts, the AA may identify that such properties must be considered for additional noise mitigation treatments over and above those measures specified in the CNVS. This could include at-property or other treatment measures in consultation with the property owner and / or occupier	Section 7.5.1
E42	The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long term accommodation	Section 7.5.1
E43	All utility work undertaken for the delivery of the CSSI, including those undertaken by third parties, must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved in accordance with Condition E44; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and (c) provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved critical State significant infrastructure, State significant infrastructure and State significant development projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI. Note: Utility work undertaken includes any utility relocations by the Proponent or third parties.	Section 7.2 (Table 22) and Section 3.7
E44	In order to undertake out-of-hours work outside the hours specified under Condition E25, (except emergency work) appropriate respite periods must be identified for the out-of-hours work in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work;	Section 7.2 (Table 22) and Section 7.3

Condition	Description	Where Addressed
	(b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant NMLs and vibration criteria under Conditions E29(c), E29(d) and E30 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hours work must be provided to the AA and ER before the out-of-hours work commences, and to the EPA and the Planning Secretary on request. Note: Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dB(A) above the rating background noise level at any residence.	
Section	**CEMF**	
Section 7.2(a)	a. Principal Contractors will develop and implement a Construction Noise and Vibration Management Plan for their scope of works consistent with the Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009). The Construction Noise and Vibration Management Plan will include as a minimum: i. Identification of work areas, site compounds and access points; ii. Identification of sensitive receivers and relevant construction noise and vibration goals; iii. Be consistent with, and include the requirements of the noise and vibration mitigation measures as detailed in, the environmental approval documentation, the Sydney Metro Construction Noise and Vibration Standard (CNVS) and Appendix B of this Construction Environmental Management Framework; iv. Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise or vibration impacts on surrounding sensitive receivers, in particular residential areas; v. Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibrations and blasting criteria are achieved, including a suitable blast program; vi. Community consultation requirements and Community notification provisions specifically in relation to blasting; vii. The requirements of any applicable licence or approval (for example EPL); viii. Additional requirements in relation to activities undertaken 24 hours of the day, 7 days per week; ix. Pre-construction compliance requirements and hold points; x. The responsibilities of key project personnel with respect to the implementation of the plan; xi. Noise monitoring requirements; xii. Compliance record generation and management; and xiii. An Out of Hours Works Protocol applicable to all construction methods and sites.	This Plan . . . Section 6.1 Section 5 Section 7.2 (Table 22) and Section 7.5.2 Section 6.1 . . . . Section 5.6.6, Section 7.2 (Table 22). No blasting on this Project. Section 7.4 Section 3.3 . Section 5.1.3 (Table 11) Section 8.1 Section 7.2 (Table 22) . Appendix A Section 8 Section 7.3.2

Condition	Description	Where Addressed
Section 7.2(b)	b. Detailed Construction Noise and Vibration Impact Statements will be prepared for noise-intensive construction sites and or activities, to ensure the adequacy of the noise and vibration mitigation measures. Specifically, Construction Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and to support applications to undertake out of hours works (this includes variations of EPL's and applications to relevant agencies).	Section 7.1
Section 7.2(c)	c. Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	Appendix A: Construction Noise and Vibration Monitoring Program
Section 7.2(d)	d. The following compliance records would be kept by Principal Contractors: i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and ii. Records of community enquiries and complaints, and the Contractor's response.	Section 8.5 . Section 8.5
ID	**EIS Project Specific Construction Noise and Vibration Mitigation Measures**	
EIS-NV4	Impact: Noise impacts to horses at Rosehill Racecourse Stables Consultation with the owners and operators of the horse stables near the Clyde stabling and maintenance facility construction site would be carried out so that potential impacts to horses are appropriately managed.	Section 7.4.1

3.3 Licences and Permits

An Environment Protection Licence (EPL) for Railway activities – railway infrastructure construction under Schedule 1 of the POEO Act has been obtained for the Linewide Project. This licence (no. 22098) was granted on 31 March 2026. Details of the requirements for noise and vibration management as regulated by NSW EPA in accordance with the EPL have been included in this Plan.

Out of Hours Works will be managed in accordance with the EPL and/or the approved Sydney Metro West Stage 3 OOHW Protocol (Revision 6, approved by DPHI 22 October 2025), refer to Section 7.3. In all cases OOHW will be required to be approved under an Out of Hours Works Permit, approved (at a minimum) by the JH Environment, Approvals and Sustainability Director (or delegate) and the JH Stakeholder and Community Director (or delegate). Where required, a variation to the EPL will be obtained if the scope of out of hours work is not already considered. The variation will be supported by a DNVIS.

Refer to Section 7.3 for details of out of hours works approvals.

3.4 Acoustic Advisor

In accordance with Condition A35 of the Planning Approval, Sydney Metro has engaged an independent Acoustic Advisor for the Linewide Project The AA(s) have been appointed by Sydney Metro and approved by the Planning Secretary on 9 July 2025 in accordance with CoA A36.

As required by CoA A38, JH will cooperate with the AA by:

- Providing access to noise and vibration monitoring activities as they take place
- Providing access to the complaints register if requested
- providing for review of noise and vibration documents required to be prepared under the conditions of this approval; and
- considering any recommendations to improve practices and demonstrating, to the satisfaction of the AA, why any recommendation is not adopted.

Full details of the role of the AA are as per CoA A39 and are provided in Section 8.1 of this Plan.

3.5 Consultation and Approval of this Plan

The Noise and Vibration Management Plan required under CoA C5 and the Noise and Vibration Construction Monitoring Program (Appendix A) required under CoA C13 was provided to relevant stakeholders for consultation as detailed in Table 4. Evidence of consultation is included in Appendix D.

In determining Relevant Council's for consultation on this Plan, JH notes that any construction sites which are primarily under the control of the Station Contractor are not included for consultation. This is on the basis that the Stations Contractor will be consulting with those Council's on their works at the Construction Sites. Where JH need to access a Stations controlled site for any minor works, the Linewide works will be done in accordance with the Stations Contractor's environmental documentation.

In this regard, consultation with the following Councils is considered relevant for this Plan:

- City of Parramatta Council (relating to Clyde and Rosehill);
- Inner West Council (relating to The Bays);
- City of Sydney Council (relating to Pyrmont); and
- City of Canada Bay Council (relating to Burwood North)

In this regard, consultation with the following Councils is not considered relevant for this Plan:

- Cumberland Council (relating to Westmead Station)
- City of Parramatta Council (relating to Parramatta Station);
- City of Canada Bay Council (relating to Five Dock and North Strathfield); and
- City of Sydney (relating to Hunter Street).

This Plan will be submitted to the ER for endorsement (refer Appendix E) and to the Planning Secretary for approval one month prior to the commencement of Construction in accordance with CoA C7 of the Planning Approval and as outlined in the Sydney Metro West Stage 3 Phasing Report (v2.0). Construction must not commence until the relevant CEMP(s) and CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary.

Table 4 Stakeholder consultation required in accordance with CoA C5

Stakeholder	Summary of Consultation
Place Management NSW (PMNSW)	Consultation relevant to The Bays on this Subplan and the Noise and Vibration Monitoring Program has been undertaken with PMNSW. Evidence of consultation is included in Appendix D noting PMNSW confirmed no comments on this Plan
Port Authority of NSW (PANSW)	Consultation relevant to The Bays on this Subplan has been undertaken with PANSW. Evidence of consultation is included in Appendix D noting PANSW confirmed no comments on this Plan.
Sydney Olympic Park Authority (SOPA)	Consultation relevant to Sydney Olympic Park on this Subplan and the Noise and Vibration Monitoring Program has been undertaken with SOPA. Evidence of consultation is included in Appendix D.
Relevant Councils	Consultation on this Subplan and the Noise and Vibration Monitoring Program has been undertaken with relevant Councils as noted below: - City of Sydney Council (CoS)- Pyrmont - Inner West Council (IWC) – The Bays - City of Canada Bay Council (CoCB)– Burwood North - City of Parramatta Council (CPC)– Clyde/Rosehill, Evidence of consultation is included in Appendix D noting IWC, CPC and CoCB confirmed no comments on this Plan.
EPA	Consultation on the Noise and Vibration Monitoring Program has been undertaken with EPA. Evidence of consultation is included in Appendix D noting EPA confirmed no comments on the Monitoring Program.

3.6 Community consultation

Consultation will be undertaken with the community affected by out of hours works (OOHW), in accordance with CoA E44 (refer to Section 7.4) and EPL Condition .L5.5. Ongoing consultation with the community will be carried out for issues pertaining to the Project's noise and vibration impacts, including the identification of appropriate respite periods for OOHWs. The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hours work will be provided to the AA and ER before the out-of-hours work commences, and to the EPA and the Planning Secretary on request.

To comply with CoA E33, affected sensitive land users near construction works (excluding emergency work) that exceed the noise and vibration objectives for NSW (Section 6) will be consulted on mitigation measures during the development of the DNVIS for these sites. For works near community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres), consultation will be undertaken where noise or vibration generating works are predicted above the noise and vibration objectives for NSW (CoA E31). Affected stakeholders as identified in the DNVISs will be engaged every two years to review the noise and vibration impacts, mitigation measures and the noise and vibration monitoring and modelling for construction as it relates to them.

Residential receivers affected by construction noise or vibration from the Project will be determined through the assessment included in the DNVIS and noise modelling (refer Section 7.1). Community notification and consultation requirements for these works are identified and described in the DNVIS. Community feedback, complaints and consultation regarding construction noise and vibration will be undertaken in accordance with the Community Communications Plan (CCP).

Further consultation regarding noise impacts to horses at Rosehill Racecourse Stables will be undertaken with the owners and operators of the horse stables near the Clyde stabling and maintenance facility construction site would be carried out so that potential impacts to horses are appropriately managed, to satisfy Revised Mitigation Measure EIS-NV5.

3.7 Cumulative and consecutive noise impact

Ongoing consultation will include regular coordination with other Sydney Metro Packages through documented interface meetings (e.g. Station contractors), Place Management NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park), State significant developments, infrastructure projects and other construction works that may result in cumulative impacts. This consultation will be undertaken with the aim of coordinating works to manage cumulative noise and vibration impacts through SMART principles, in accordance with CoA C6(d), E43 and the EPL.

When the Stations Contractor assumes the role of Principal Contractor, John Holland will operate in accordance with their environmental documentation. This includes the coordination of consultation and notifications as required. Additionally, the Principal Contractor will be responsible for managing and triaging complaints or enquiries in scenarios where concurrent works may occur

4 Existing Environment

4.1 Construction Sites and Surround Communities

The Linewide Project is located in the City of Sydney, Inner West, Canada Bay, Strathfield, Paramatta and Cumberland Local Government Areas (LGA). The construction sites are described in Table 5 below including a brief description of the existing noise environment around these locations as identified in Section 2 of Technical Paper 4 in the Stage 3 EIS. Station sites unlikely to be impacted by the Linewide Project are greyed out in Table 8: Noise Catchment Areas.

Table 5: Noise environment at the key construction sites

Site	Principal contractor	Locality	Existing noise environment
Westmead Metro Station	Station Contractor (Gamuda)	The station Construction Site is located on the corner of Hawesbury Road and Alexandra Avenue, south of the Westmead Train Station.	Existing noise is dominated by road traffic noise from the local road network and train pass by noise.
Parramatta Metro Station	Station Contractor (TBC)	The station Construction Site is located off Macquarie Street, opposite Parramatta Square, north of the Parramatta Train Station	Existing noise is dominated by road traffic noise from Macquarie Street and Smith Street, some rail noise, and general noise from the Parramatta business district.
Clyde Maintenance and Stabling Facility	Linewide Contractor (JH)	The Clyde Maintenance and Stabling Facility and adjacent sites (i.e. Rosehill and Clyde Dive) are located off Unwin Street, adjacent to James Ruse Drive and the Rosehill Gardens Racecourse.	Existing noise is dominated by road traffic noise from James Ruse Drive and the M4 Motorway.
Sydney Olympic Park Metro Station	Station Contractor (TBC)	The station Construction Site is located off Olympic Boulevard, south of the existing Olympic Park Rail Station	Existing noise is dominated by distant road traffic noise from the M4 Motorway and Homebush Bay Drive, some rail noise, and general noise from the sports and entertainment complex.
North Strathfield Metro Station	Station Contractor (Gamuda)	The Construction Site is located to the east of the existing North Strathfield Station and is adjacent to Queen Street.	Existing noise is influenced by the surrounding road network and existing rail line. The area surrounding the Construction Site is generally suburban with a mixture of residential, commercial and educational receivers. The nearest receivers are opposite the site, across Queen Street. The commercial receivers adjacent to the Site are typically of retail use.
Burwood North Metro Station	Station Contractor (Gamuda)	The works will use two separate sites. The main Construction Site is located to the north of Parramatta Road and a smaller site to the south.	Existing noise is controlled by road traffic. The area surrounding the construction site is mostly residential and the nearest receivers are near the northern boundary of the northern construction site and the southern boundary of the southern Construction Site. Commercial receivers are also adjacent to the

Site	Principal contractor	Locality	Existing noise environment
			site, along Parramatta Road, and are of general retail use.
Five Dock Metro Station	Station Contractor (Gamuda)	The works would use two separate sites located opposite each other on either side of Great North Road, near to the intersection with Second Avenue.	Existing noise is generally controlled by road traffic on the surrounding road network. The area surrounding the Construction Site is a mixture of commercial, other sensitive and residential receivers, with the nearest receivers being close to the boundary of both the sites.
The Bays Metro Station	Linewide Contractor (JH)	The construction site is located to the east of the former White Bay Power Station and north of Anzac Bridge	Existing noise is controlled by road traffic noise from Victoria Road and the Western Distributor, and industrial noise from White Bay and Glebe Island including from carrier ships berthing for unloading. The area immediately surrounding the Construction Site is mainly commercial/industrial.
Pyrmont Metro Station	Station Contractor (TBC)	The underground metro station is accessed via two separate surface sites located on the northern side of Pyrmont Bridge Road. The western site is located between Paternoster Row and Pyrmont Street. The eastern worksite is located between Edward Street and Union Street.	Existing noise levels in this study area are dominated by road traffic noise particularly from Pyrmont Bridge Road, Anzac Bridge and the Western Distributor. The areas surrounding the construction sites are mostly residential and commercial.
Hunter Street Metro Station	Station Contractor (Lendlease, Mirvac, and Coombes Property Group)	The underground metro station is accessed via two separate surface sites. The western site is located on the corner of Hunter Street and George Street. The eastern worksite is located between O'Connell Street, Hunter Street and Bligh Street.	Existing noise levels in this study area are controlled by road traffic noise and general urban hum associated with the central business district. As with any central business district, existing noise levels are relatively high during all periods. The area surrounding the construction site is mainly commercial and the nearest receivers are directly adjacent to the boundary of both the western and eastern construction sites.

4.1.1 Sensitive receivers

The Project has the potential to impact nearby receivers that may be sensitive to noise and vibration. The type of receivers that may be impacted by the Project are outlined in Table 5 below and Appendix B: Land Use Survey.

Table 6: Sensitive receivers

Receiver type	Detail
Residential noise sensitive receivers	There are areas of varying density of residential receivers in proximity to the construction sites. Residential receivers dominate the noise catchments in proximity to the Westmead metro station, Clyde stabling facility near the motorway, North Strathfield metro station, Burwood North metro station, Five Dock metro station, The Bays metro station and Pyrmont metro station.
Commercial and Industrial sensitive receivers	While commercial and industrial buildings are not considered sensitive as it relates to road and rail noise, they are considered a sensitive receiver in relation to construction noise and are considered in delivering the Project. Commercial receivers are a large portion of the receivers surrounding the Parramatta metro station, Clyde Maintenance and Stabling Facility and Sydney Olympic Park metro station, The Bays metro station and Hunter Street metro station.
Users of recreation areas	Includes active and passive recreation. Various recreational land uses are located surrounding the key construction sites and along the Project alignment.
Other sensitive receivers	Includes schools and other educational institutions, places of worship, Hospitals including wards and operation theatres, hotels, childcare centres, public buildings, recording studios, theatre/auditoriums and stables. Various recreational land uses are located surrounding the key construction sites and along the Project alignment. Key receivers have been identified in Appendix B: Land Use Survey.
Vibration sensitive receivers	May include receivers sensitive to disturbance, as well as sensitivity to cosmetic (and potentially structural) damage. Noise sensitive receivers identified above may also be sensitive to vibration emitted as a result of construction.

In accordance with CoA E23 a detailed Land Use Survey was undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The Land Use Survey is a live document that will be progressively updated throughout construction as required.

The survey brought the NSW cadastral database and identified land use details into a Geographic Information System (GIS). The GIS allows potentially critical areas that are sensitive to construction noise and vibration impacts to be easily identified and updated as land uses change during the Project timeline. The land-use data will be included into the noise and vibration modelling tool, to allow effective management of noise and vibration impacts on identified sensitive receivers. Current Land Use Survey are included in Appendix B: Land Use Survey and will be considered as part of the Detailed Noise and Vibration impact statements (DNVIS) (see Section 7.1 for detail).

4.1.2 Heritage properties

Properties identified in the EIS and/or the NSW Government State Heritage Register (Version: 1.3.15.0) have been identified in the Appendix B: Land Use Survey. Potential impacts on heritage properties are identified in the DNVIS prepared for each worksite (see Section 7.1 for detail).

The following properties have been identified by previous stages of Sydney Metro West which may be potentially impacted by the Project:

Table 7: Non-Aboriginal heritage items within the study area identified by previous stages of Sydney Metro West

Heritage item	Nearest construction site	Significance
41-59 George Street, Parramatta	Parramatta metro station site	Parramatta LEP 2011 (I703)
Convict Drain	Parramatta metro station site	Parramatta LEP 2011 (I647)

Heritage item	Nearest construction site	Significance
Roxy Theatre	Parramatta metro station site	State Heritage Register (00711), Parramatta LEP 2011 (I00711)
Horse Parapet Façade	Parramatta metro station site	Parramatta LEP 2011 (I656)
Kia Ora	Parramatta metro station site	Parramatta LEP 2011 (I716)
Former RTA Depot	Clyde Maintenance and Stabling Facility	Parramatta LEP 2011 (I576)
Former State Abattoirs Sydney Olympic Park	Sydney Olympic Park metro station	State Environmental Planning Policy (State Significant Precincts) 2005 Listing No. A; Sydney Regional Environmental Plan No 24 –Homebush Bay Area Item No. 1
North Strathfield Railway Station Group	North Strathfield metro station	North Strathfield Railcorp's Section 170 4801029
St Alban's Anglican Church	Five Dock metro station	Five Dock Canada Bay LEP Item No. I226
White Bay Power Station	The Bays metro station	SHR Listing No. 01015; Urban Growth NSW Development Corporation S170 4500460
White Bay Power Station (inlet) canal	The Bays metro station	The Bays Port Authority of NSW s170 4560062
Corner Shop and Residence "Charmelu" (35 Union St)	Pyrmont metro station	Sydney LEP 2012 (I1213)
NSW Club House Building, 31 Bligh Street, Sydney	Hunter Street metro station	State Heritage Register (00145), Sydney LEP 2012 (CSH Local Environmental Plan 4)
Former Skinners Family Hotel, 296 George Street, Sydney	Hunter Street metro station	State Heritage Register (00584), Sydney LEP 2012 (CSH Local Environmental Plan 4)
NSW Sports Club, 10-14 Hunter Street, Sydney	Hunter Street metro station	State Heritage Register (00584), Sydney LEP 2012 (CSH Local Environmental Plan 4) Register of the National Estate (2441; 2442)
Pangas House, 15-17 Hunter Street, Sydney	Hunter Street metro station	Unlisted
Paradox Hotel, 64-66 Pitt Street, Sydney	Hunter Street metro station	State Heritage Register (00599), Sydney LEP 2012 (I1808)
Former "Bank of NSW" – Delfin House, 16 O'Connell Street, Sydney	Hunter Street metro station	Sydney LEP 2012 (I1903)
Richard Johnson Square	Hunter Street metro station	Sydney LEP 2012 (I1673)
Tank Stream	Hunter Street metro station	State Heritage Register (00636)
Bennelong Stormwater Channels	Hunter Street metro station	Heritage Act - s.170 NSW State agency heritage register (005146)

The Sydney Metro Construction Noise and Vibration Standard (CNVS) states that heritage buildings and structures should be assessed according to the cosmetic damage screening criteria and should not be assumed to be more sensitive to vibration unless found to be structurally unsound. Condition surveys of

potentially affected buildings and structures near to the tunnel and excavations will be undertaken prior to the commencement of excavation. These surveys will inform the vibration criteria that applies, as discussed further in Section 5.6.3.

4.1.3 Noise Catchment Areas (NCAs)

To facilitate the assessment of noise impacts from the Linewide Project, receivers along the route have been divided into Noise Catchment Areas (NCAs). NCAs group individual sensitive receivers by common traits, such as existing noise environment and location in relation to the Works. The EIS assessment process delineated a total of 26 NCAs between Westmead and Hunter Street. NCAs are shown on the land use maps in Appendix B: Land Use Survey.

NCAs unlikely to be impacted by the Linewide Project are greyed out in Table 8: Noise Catchment Areas. This is due to the Stations Contractor having control of the main construction sites.

Table 8: Noise Catchment Areas

NCA	Extent	Description
Westmead metro station		
NCA01	North of the existing rail corridor in Westmead	Mainly residential. 'Other sensitive' receivers include Westmead Hospital, Western Sydney University – Westmead, and Parramatta Marist High School. A child care centre and a number of medical facilities are to the north of the existing Westmead Station.
NCA02	South of the existing rail corridor	South of the existing rail corridor and is mainly residential. Westmead Primary School is in the north of the catchment on Hawksbury Road.
Parramatta metro station		
NCA03	Predominantly covers Parramatta CBD	Mainly commercial. Residential receivers are generally on the outskirts of the catchment. There are many 'other sensitive' receivers in this catchment, including Western Sydney University – Parramatta, Arthur Phillip High School, Parramatta Public School, and a number of nearby hotels and places of worship.
Clyde Maintenance and Stabling Facility		
NCA04	South of the Parramatta River and west of James Ruse Drive.	Mainly residential with small areas of commercial receive.
NCA05	North of the M4 Motorway and west of James Ruse Drive.	Mainly residential. 'Other sensitive' receivers include Rosehill Public School and a number of hotels and child care centres.
NCA06	South of the M4 Motorway in Granville.	Mostly residential adjacent to the motorway, with some commercial use in the south-east.
NCA07	East of James Ruse Drive	Mostly commercial and covers Rosehill Gardens racecourse (and associated stables), the Clyde commercial/industrial area, and Silverwater and Newington. Residential receivers and Newington Public School are in the south-east.
Sydney Olympic Park metro station		
NCA08	Olympic Park, western portion	Major events precinct with commercial and sporting uses, with other sensitive receivers including hotels and educational facilities. Residential apartment blocks are in the south, east and west. Event patrons are also key sensitive receivers.
NCA09	Olympic Park, eastern portion	Major events precinct with mixture of commercial and residential. There are several high-rise residential apartment buildings near Australia Avenue. Event patrons are also key sensitive receivers.

NCA	Extent	Description
North Strathfield metro station		
NCA10	North Strathfield, West of the existing rail corridor	Mainly residential. Commercial receivers are the M4 Motorway and in the west. 'Other sensitive' receivers include McDonald College and Our Lady of the Assumption Primary School.
NCA11	North Strathfield, East of the existing rail corridor	Mainly residential, with areas of commercial receivers along Queen Street and Concord Road. Strathfield North Public School is in the north.
Burwood North metro station		
NCA12	Burwood, North of Parramatta Road	Mainly residential, with some commercial areas along Parramatta Road. 'Other sensitive' receivers include Concord High School, St Mary's Catholic Primary School, St Marys Catholic Church and St Luke's Anglican Church
NCA13	Burwood, South of Parramatta Road	Mainly residential, with commercial areas along Parramatta Road and Burwood Road. 'Other sensitive' receivers include Sydney Central ENT, Bath Arms Hotel, Southern Cross Catholic College and Methodist Ladies College.
Five Dock metro station		
NCA14	Five Dock, West of Great North Road	Mainly residential. Commercial receivers are along Great North Road. 'Other sensitive' receivers include Five Dock Public School, St Albans Anglican Church, Drummoyne Uniting Church and Awesome Church
NCA15	Five Dock, East of Great North Road	Mainly residential. Commercial receivers are along Great North Road and other receivers include Domremy Catholic Church
NCA16	Drummoyne	N/A more than 600 metres from surface construction site and tunnel alignment
Tunnel NCAs		
NCA17	Five Dock and Rodd Point, east of Augusta Street	Residential only between Augusta Street and Henley Marine Drive. The remainder of the tunnel alignment within NCA17 is beneath Iron Cove.
NCA18	Iron Cove	N/A – with respect to NCA18 the tunnel alignment is beneath Iron Cove only.
NCA19	Lilyfield, west of Manning Street	Commercial receivers, tertiary education and a childcare facility within the Callan Park area. Residential receivers located to the south.
The Bays metro station		
NCA20 (ETP NCA01)	West of Victoria Road, Rozelle	Mainly residential with some commercial receivers along Victoria Road and Lilyfield Road. 'Other sensitive' receivers include Sydney Community College, St Joseph's Catholic Church and Rosebud Cottage child care centre
NCA21A (ETP NCA02A)	White Bay/ Glebe Island, East of Victoria Road, south of Mansfield Street	Mainly commercial and industrial areas surrounding White Bay and Glebe Island (and construction sites).
NCA21B (ETP NCA02B)	Rozelle, East of Victoria Road, north of Mansfield Street, west of Rumsay Street	Mainly residential, with various commercial areas near Victoria Road. 'Other sensitive' receivers include Inner Sydney Montessori School and childcare facilities.
NCA21C (ETP NCA02C)	Rozelle towards Balmain, East of Rumsay Street, north of Mansfield Street	Mainly residential, with some commercial areas near the Port.

NCA	Extent	Description
NCA22 (ETP NCA03)	South of Victoria Road, in Glebe Point	Commercial areas to the south of Victoria Road/Western Distributor and distant residential areas across Rozelle Bay
Pyrmont metro station		
NCA23 (ETP NCA04)	Pyrmont, north of Pyrmont Bridge Road	Mainly residential with some commercial receivers north of Union Street (around the Star Casino) and along Pyrmont Bridge Road. 'Other sensitive' receivers include two recording studios, medical and dental facilities and The Sebel Hotel
NCA24 (ETP NCA05)	Pyrmont, south of Pyrmont Bridge Road	Mainly mixed use residential with some commercial receivers north of along Pyrmont Bridge Road. 'Other sensitive' receivers include several hotels
Hunter Street metro station		
NCA25 (ETP NCA06)	Sydney CBD, west of Pitt Street	Mainly commercial receivers. 'Other sensitive' receivers include several Adina Hotel, The Grand Hotel and the Tank Stream Hotel.
NCA26 (ETP NCA07)	Sydney CBD, east of Pitt Street	Mainly commercial receivers. 'Other sensitive' receivers include several Paradox Hotel, and the Sofitel Sydney Wentworth Hotel. There is one nearby residential receiver on O'Connell Street.

4.2 Existing acoustic environment

Existing noise levels vary across the Linewide Project. The surface worksites are in mixed residential and commercial areas, with some industrial areas around The Bays. The noise environment is typically characterised by urban sounds, road traffic noise, mechanical plant noise (especially in the CBD near Hunter Street) and other transport noise, including the Light Rail and harbour traffic.

As part of the EIS process, baseline noise monitoring was conducted at 24 locations between Westmead and Hunter Street. At The Bays, further review of the NCAs identified in the EIS has been completed; NCA2 has been subdivided into three NCAs to better represent the existing acoustic environment and to provide consistency with the EIS for the Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) project (Renzo Tonin & Associates 2020) and the CNVMP for the Sydney Metro West Eastern Tunnelling Package.

The ambient noise monitoring locations were selected with reference to the procedures outlined in the Noise Policy for Industry (NPfI). The rating background level (RBL) is the overall single figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term and methodology to obtain RBLs and ambient noise levels (L_{Aeq}) for the day, evening and night assessment periods is described in detail within the NPfL. The appropriate RBLs and ambient noise levels (LAeq) for each NCA, as summarised in Table 9, were determined through noise monitoring. Figures showing the NCAs are included in Appendix B.

Table 9: Summary of baseline noise monitoring data from EIS

Monitor ID	Address	RBL[1]				Ambient noise level (L_{Aeq})[1]		
Westmead		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.01	8-12 Alexandra Avenue, Westmead[3]	49	47	37	43	67	67	62
B.02	14A Central Avenue, Westmead	48	46	37[8]	45	58	53	51
Parramatta		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.03	Arthur Phillip High School, Parramatta[3]	58	53	43	51	69	67	62

Monitor ID	Address	RBL[1]				Ambient noise level (L_{Aeq})[1]		
Clyde[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.04	5 Hope Street, Rosehill[3]	51	48	41	46	61	58	57
B.05	9 A'Beckett Street, Granville[3]	50	49	45	48	56	55	53
B.06	4B Gray Street, Granville[3]	52	51	44	48	58	57	55
B.07	10 Carnarvon Street, Silverwater	46	44	41	44	60	57	55
Sydney Olympic Park[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.08	1 Herb Elliot Avenue, Sydney Olympic Park	48	48	46	47	55	54	52
B.09	6 Parkview Drive, Sydney Olympic Park	48	46	41	45	57	58	53
North Strathfield[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.10	17 George Street, North Strathfield	47	47	44	46	60	60	55
B.11	131 Queen Street, North Strathfield	51	47	39	45	61	60	55
Burwood North[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.12	17 Burton Street, Concord	43	43 (47)[6]	42	43	56	55	50
B.13	8 Esher Street, Burwood	48	48	44	46	57	56	55
Five Dock[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.14	3 Henry Street, Five Dock	42	41	33	38	58	56	51
B.15	8 Waterview Street, Five Dock	43	43 (44)[6]	38	41	57	56	50
B.16	11 Chapel Street, Lilyfield	36	36 (39)[6]	33	35	60	60	53
B.17	28 Crescent Street, Haberfield	43	43 (45)[6]	37	40	57	57	51
B.18	102 Henley Marine Drive, Russell Lea	48	45	37	43	64	61	55
The Bays[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.19	21 Mansfield Street, Rozelle	43	43	35	39	56	54	47
B.20	22 Lilyfield Road, Rozelle	51	51	45	48	57	57	54
B.40[7]	23 Smith Street, Rozelle	49	49	46	48	54	51	49
B.35[7]	C13/1 Buchanon Street, Balmain	42	44	38	40	54	53	48
B.21	308 Glebe Point Road, Glebe	48	47	39	44	59	58	51
Pyrmont[4]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.22	200 Paternoster Row, Pyrmont	50	47	45	48	56	50	47
B.23	1-5 Harwood Street, Pyrmont	52	49	46	49	61	59	56
Hunter Street[5]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.24	1 Hosking Place, Sydney	61	56	52	57	66	62	63

Notes:

1. The RBL and LAeq noise levels have been determined with reference to the procedures in the NPfI.
2. Daytime is 7am to 6pm, evening is 6pm to 10pm and night-time is 10pm to 7am.
3. Data taken from Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD (Sydney Metro, 2020).
4. Data taken from Sydney Metro West Environmental Impact Statement – The Bays to Sydney CBD (Sydney Metro, 2021b).
5. Data measured as part of Sydney Metro Chatswood to Sydenham Environmental Impact Statement in 2015. Noise levels in the CBD are typically elevated due to relatively constant sources of noise and are unlikely to significantly change over time. The levels measured in 2015 are considered representative of current ambient noise conditions.
6. The monitored evening level was found to be higher than the daytime. In this situation the NPfI requires that the evening level be reduced to match the daytime.
7. Data taken from Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) Environmental Impact Statement (Renzo Tonin & Associates 2020).
8. Night-time RBL from B.01 is used as we understand that night-time background noise levels were influenced by plant noise near the monitor.
9. Morning shoulder (Ms) from 05:00 to 07:00 Monday to Friday, and from 06:00 to 08:00 Saturday, Sunday and Public holidays

Monitor ID	Address	RBL[1]	Ambient noise level (L_{Aeq}) [1]

10. .Not used
11. Alternative RBLs may be considered on a case-by-case basis in consultation with the AA.

5 Noise and vibration objectives for NSW

The EPA recommends management levels and goals when assessing construction noise and vibration impact on human comfort. Further, the Sydney Metro CNVS requires construction noise and vibration to be managed according to recommended standards and guidelines. The relevant goals, standards and guidelines are outlined in Table 10.

Table 10: Standards and guidelines applicable to construction noise and vibration management

Environmental impact	Standard/ guideline used to establish noise and vibration objectives
Construction hours	• Planning Approvals • EPL (when granted)
Airborne noise	• Planning Approvals • ICNG
Sleep disturbance and maximum noise events	• Construction noise – NPfI • Road traffic noise – RNP and the RMS Environmental Noise Management Manual (ENMM) Practice Note 3
GBN	• Planning Approvals • ICNG • Australian Standard AS/NZS 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors
Construction-related road traffic noise	• No specific guidelines, but guidance taken from the ICNG and the RNP
Vibration (disturbance to building occupants)	• Planning Approvals • AVTG, which incorporates British Standard BS 6472-2008, Evaluation of human exposure to vibration in buildings (1-80Hz)
Vibration (cosmetic damage to buildings)	• Planning Approvals • British Standard 7385:1993 Evaluation and measurement of vibration in buildings – Part 2 Guide to damage from ground-borne vibration • German Standard DIN 4150:2016 – Part 3 Structural vibration in buildings – Effects on structures
Vibration (cosmetic damage to buried services)	• German Standard DIN 4150:2016 – Part 3 Structural vibration in buildings – Effects on structures
Vibration (sensitive scientific and medical equipment)	• ASHRAE Applications Handbook (SI) 2003, Chapter 47 Sound and Vibration Control • Gordon GC 28 September 1999 Generic Vibration Criteria for Vibration Sensitive Equipment • Australian Standard 2834-1995 Computer Accommodation, Chapter 2.9 Vibration
National Standard for occupational noise	• Project worksites will be managed to ensure conformance with the National Standard for exposure to noise in the occupational environment of an eight-hour equivalent continuous A-weighted sound pressure level of $L_{Aeq,8h}$ of 85dB(A)

5.1 Hours of Work

5.1.1 Standard Construction Hours (CoA E25)

Construction can be undertaken during the following construction hours:

- 7:00am to 6:00pm Mondays to Fridays, inclusive

- 8:00am to 6:00pm Saturdays, and
- at no time on Sundays or public holidays.

Work outside these hours must be permitted or approved as outlined in the following sections.

5.1.2 Highly noise intensive work (CoA E26)

Highly noise intensive work is defined in the CoA as 'annoying' under the ICNG, including:

- use of power saws (including those used for cutting timber, rail lines, masonry, road pavement or steel work);
- grinding metal, concrete or masonry;
- rock drilling;
- line drilling;
- vibratory rolling;
- bitumen milling or profiling;
- jackhammering, rock hammering or rock breaking;
- impact piling; and
- rail tamping and regulating.

Highly noise intensive work that results in an exceedance of the NML at the same receiver must, except as permitted by an EPL, be undertaken between the hours of:

- 8:00 am to 6:00 pm Monday to Friday
- 8:00 am to 1:00 pm Saturday.

Where highly noise intensive works exceed the applicable Noise Management Level (NML) at the same receiver, they must be undertaken in continuous blocks not exceeding three hours, each with a minimum respite from those works of not less than one hour between each block. The applicable NML for residential receivers is the highly noise affected NML of 75dB(A).

5.1.3 Variation to Standard Construction Hours (CoA E27)

Construction work may be undertaken outside the standard construction hours described in Section 5.1.1 and Section 5.1.2 in the circumstances summarised in Table 11.

Table 11: Construction activity permitted outside the Approved Construction Hours

Circumstance	Construction activity	Approval or action required	CoA reference
Safety and emergencies	For the delivery of materials required by the NSW Police Force or other authority for safety reasons or	DNVIS may be required, as outlined in Section 7.1.	E27(a)(i)
	Where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property, or to prevent environmental harm.	DNVIS may be required, as outlined in Section 7.1. AA, ER, Planning Secretary and EPA (where EPL is in force) must be notified of the reasons for work. Notify noise / vibration affected receivers of the likely impact and duration of the works.	E27(a)(ii)
Low noise or vibration impact construction	Construction that causes $L_{Aeq(15\ minute)}$ noise levels no more than 5dB(A) above the Rating Back-ground Level (RBL) at any residence; and no more than the 'noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s). Construction that causes $L_{AFmax(15\ minute)}$ noise levels no more than 15 dB(A) above the RBL at any residence. Construction that causes continuous/impulsive/intermittent vibration values at the most affected	Assessment to confirm activity meets low impact requirements. Out of Hours Work (OOHW approval (Section 7.3.2 and Appendix C)	E27(b)

Circumstance	Construction activity	Approval or action required	CoA reference
	residence, no more than the preferred values for human exposure to vibration, specified in Table 2.2 and Table 2.4 of the AVTG.		
By Approval	Where different construction hours are permitted or required **under an EPL** in force in respect of the CSSI	Out of Hours Permit required (obtained through John Holland Environment and Sustainability Director)	E27(c)(i)
	Works which are not subject to an EPL that are approved under an **Out-of-Hours Work Protocol** (see Section 7.3)	Out of Hours Permit required (obtained through OOH work application to Sydney Metro).	E27(c)(ii)
	Negotiated agreements with directly affected residents and occupants of sensitive land use(s)	Evidence of agreement with directly affected land users.	E27(c)(iii)
Prescribed Activity	Tunnel fit out works, underground fit out works and /or internal station fit out works, and internal facility fit out works within the Clyde Stabling and Maintenance Facility and the Rosehill Services Facility	Permitted 24 hours a day, seven (7) days a week) DNVIS may be required, as outlined in Section 7.1. Out of Hours Permit required (obtained through John Holland Environment and Sustainability Director)	E27(d)(i)
	Work that must be undertaken during rail possessions, including the delivery and removal of material to support those works	DNVIS may be required, as outlined in Section 7.1. Out of Hours Permit required (obtained through John Holland Environment and Sustainability Director)	E27(d)(ii)
	Delivery of material that is required to occur outside the Approved Construction Hours (Section 5.1.1) to directly support: - tunnel fit out works; - underground and / or internal station fit out activities (excluding surface works); and - work for the Clyde Stabling and Maintenance Facility and the Rosehill Services Facility, except where doing so would result in noise levels at residential receivers above $L_{Aeq(15\ minute)}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and / or L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is greater for residential receivers above the existing noise environment (as of the date of approval).[1]	DNVIS may be required, as outlined in Section 7.1. Out of Hours Permit required (obtained through John Holland Environment and Sustainability Director)	E27(d)(iii)
	Haulage of spoil except between the hours of 10:00pm and 7:00am to / from Westmead construction site	DNVIS may be required, as outlined in Section 7.1. Out of Hours Permit required (obtained through John Holland	E27(d)(iv)

Circumstance	Construction activity	Approval or action required	CoA reference
	using any roads / streets, except as permitted by (d)(ii) above	Environment and Sustainability Director)	
	Works within an acoustic shed where there is no exceedance of the noise levels under 'Low noise or vibration impact construction' circumstances identified above, unless otherwise agreed by the Planning Secretary.	Assessment to confirm activity meets low impact requirements. Out of Hours Permit required (obtained through John Holland Environment and Sustainability Director)	E27(e)

NOTE: 1. This requirement only applies to the night period from 10 pm to 7 am (Monday to Saturday), and 10 pm to 8 am (Sundays and public holidays).

5.2 Airborne construction noise objectives

Construction noise management levels (NMLs) have been determined using the ICNG as required by CoA E29(a), and in accordance with the Sydney Metro CNVS. The ICNG provides guidelines for the assessment and management of airborne construction noise. It encourages applying a range of work practices to minimise construction noise impacts rather than focusing on achieving numeric noise levels. The main objectives of the ICNG are to:

- Identify and minimise noise from construction works
- Focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts
- Encourage construction during the recommended standard hours only, unless approval is given for works that cannot be undertaken during these hours
- Reduce time spent dealing with complaints at the project implementation stage
- Provide flexibility in selecting site-specific feasible and reasonable work practices to minimise noise impacts.

5.2.1 Residential receivers

Construction NMLs for residential receivers are outlined below in Table 12, from the ICNG.

Table 12: Construction noise management levels for residential receivers

Time of day	NML $L_{Aeq(15min)}$	How to apply
Standard hours: Monday to Friday 07:00 to 18:00 Saturday 08:00 to 18:00 (as permitted by CoA E25)	RBL + 10dB(A)	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq\ (15\ minute)}$ is greater than the noise affected level, we will apply all feasible and reasonable work practices to minimise noise. We will also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, and contact details.
Recommended Standard hours	Highly noise affected 75dB(A)	The highly noise affected level represents the point above where there may be strong community reaction to noise. Where noise is above this level, we will consider other feasible and reasonable ways to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, we will communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.
Outside recommended standard hours	Noise affected RBL + 5dB(A)	A strong justification will be required for works outside the recommended standard hours. We will apply all feasible and reasonable work practices to meet the noise affected level.

Note: Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Sleep disturbance (airborne noise)

The NPfI includes two screening trigger levels (a night-time level, $L_{Aeq,15min}$; and a maximum level, L_{AFmax}):

- $L_{Aeq,15min}$ 40dB(A) or the prevailing RBL plus 5dB, whichever is the greater
- L_{AFmax} 52dB(A) or the prevailing RBL plus 15dB, whichever is the greater.

If either of these levels are exceeded, a detailed assessment of maximum noise level events will be required to determine the potential for sleep disturbance to occur. The screening levels are based on the latest research on sleep disturbance, but do not mark the point at which impacts are unacceptable.

The detailed assessment will consider the maximum noise level, how far it exceeds the RBL, how many maximum-noise events occur during the night, and when they occur. It will also review existing ambient maximum-noise events and identify any periods of noticeably lower background noise, such as early-morning shoulder periods.

The NPfI recommends using guidance from the NSW Road Noise Policy (RNP), which indicates that:

- Internal L_{Amax} levels below 50–55 dB(A) (around 60–65 dB(A) external) are unlikely to wake people, and
- One or two events per night with internal L_{Amax} levels of 65–70 dB(A) (around 75–80 dB(A) external) are unlikely to significantly affect health or wellbeing.

The assessment findings will be compared against these levels, and any additional event-specific mitigation measures not already included in the DNVIS will be identified.

Construction noise management levels for residential receivers

Table 13details the NMLs for residential receivers for each of the NCAs described in Section 4.1.3 of this Sub-plan. NMLs apply at the most noise-affected affected locations within the property boundary and at a height of 1.5 m above ground floor level or alternative most noise-affected floor levels if the receiver is elevated or overlooks into the site above noise barriers or other structures/buildings. If the property boundary is more than 30m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30m of the residence.

Table 13: Construction Noise Management Levels (NMLs) for residential receivers (external)

NCA	Monitor ID	NML $L_{Aeq(15min)}$					Sleep disturbance	
		Standard hours[1, 2]	OOH Day[3]	OOH Eve[3]	OOH Ngt[3]	OOH MS[3]	$L_{Aeq(15min)}$	L_{AFmax}
Westmead metro station								
NCA01/B.01 (night)	B.02	58	53	51	42	48	42	52
NCA02	B.01	59	54	52	42	48	42	52
Parramatta metro station								
NCA03	B.03	68	63	58	48	56	48	58
Clyde Maintenance and Stabling Facility								
NCA04	B.04	61	56	53	46	51	46	56
NCA05	B.05	60	55	54	50	53	50	60
NCA06	B.06	62	57	56	49	53	49	59
NCA07	B.07	56	51	49	46	49	46	56
Sydney Olympic Park metro station								
NCA08	B.08	58	53	53	51	52	51	61
NCA09	B.09	58	53	51	46	50	46	56
North Strathfield metro station								

NCA	Monitor ID	NML $L_{Aeq(15min)}$					Sleep disturbance	
		Standard hours[1, 2]	OOH Day[3]	OOH Eve[3]	OOH Ngt[3]	OOH MS[3]	$L_{Aeq(15min)}$	L_{AFmax}
NCA10	B.10	57	52	52	49	51	49	59
NCA11	B.11	61	56	52	44	50	44	54
Burwood North metro station								
NCA12	B.13	58	53	53	49	51	49	59
NCA13	B.13	58	53	53	49	51	49	59
Five Dock metro station								
NCA14	B.14	52	47	46	38	43	40	52
NCA15	B.15	53	48	48	43	46	43	53
NCA16	B.16	46	41	41	38	40	40	52
Tunnel NCAs								
NCA17	B.18	58	53	50	42	48	42	52
NCA18	B.17	53	48	48	42	45	42	52
NCA19	B.16	46	41	41	38	40	40	52
The Bays metro station								
NCA20	B.20	61	56	56	50	53	50	60
NCA21A	B.19	53	48	48	40	44	40	52
NCA21B	B.40	52	47	47	43	45	43	53
NCA21C	B.35	59	54	54	51	53	51	61
NCA22	B.21	58	53	52	44	49	44	54
Pyrmont metro station								
NCA23	B.22	60	55	52	50	53	50	60
NCA24	B.23	62	57	54	51	54	51	61
Hunter Street metro station								
NCA25 NCA26	B.24	71	66	61	57	62	57	67

NOTE:

1. Standard construction hours from 07:00 to 18:00 Monday to Friday and from 08:00 to 18:00 Saturday
2. Highly noise affected NML LAeq(15min) 75dB(A) also applies during standard construction hours
3. OOH Day (Out-of-hours Day): 08:00 to 18:00 Sunday and Public holidays;
   OOH Eve (Out-of-hours Evening): 18:00 to 22:00
   OOH Ngt (Out-of-hours Night): 22:00 to 07:00 Monday to Friday, and 22:00 to 08:00 Saturday, Sunday and Public holidays;
   OOH MS (Out-of-hours Morning shoulder): 05:00 to 07:00 Monday to Friday, and 06:00 to 08:00 Saturday, Sunday and Public holidays

5.2.2 'Other Sensitive' Land Uses and Commercial Receivers

Non-residential management levels for noise near properties which are sensitive to noise impacts are presented in Table 14. These values are set and based on the principle that the characteristic activities for each will not be unduly disturbed.

Other noise-sensitive businesses require specific noise goals, and the ICNG sets out that the internal construction noise levels at these premises are to be referenced to the 'maximum' internal levels presented in AS 2107. Recommended 'maximum' internal noise levels from AS 2107 are reproduced in Table 14 for other sensitive receiver types.

Table 14: Noise management levels for certain sensitive receivers (applicable when property is in use)[4]

Land use	NML $L_{Aeq(15minute)}$ Internal	NML $L_{Aeq(15minute)}$ External
ICNG 'Other Sensitive' Receivers		
Classrooms at schools and other educational institutions	45	55[1]
Hospital wards and operating theatres	45	65[2]
Places of worship	45	55[1]
Active recreation areas (characterised by sporting activities and activities which generate noise)	-	65
Passive recreation areas (characterised by contemplative activities that generate little noise)	-	60
Commercial	50[2]	70
Industrial	55[2]	75
Non-ICNG 'Other Sensitive' Receivers		
Hotel – daytime & evening[3]	50	70[2]
Hotel – night-time[3]	40	60[2]
Café/Bar/Restaurant[3]	50	60[1]
Childcare centres – sleeping areas[3]	45	55[1]
Public building[3] (when in use)	50	60[1]
Recording studio[3] (when in use)	25	45[2]
Theatre / auditorium[3] (when in use)	30	50[2]

NOTES:
1. It is assumed that these receivers have windows partially open for ventilation which results in internal noise levels being around 10 dB lower than the external noise level
2. It is assumed that these receivers have fixed windows which conservatively results in internal noise levels being around 20 dB lower than the external noise level. Higher façade transmission loss may be applicable subject to further investigation and approval by the AA.
3. Taken from Section 2.2.1, Sydney Metro CNVS (Sydney Metro West) Version 4.3 dated 4 November 2020
4. The applicable NML for non-residential receivers will be determined on a case-by-case basis where receivers are found to be impacted by highly noise intensive works.

5.2.3 Annoying noise

The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction NML. Annoying activities identified in the ICNG include:

- Use of 'beeper' style reversing or movement alarms, particularly at night-time
- Use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work
- Grinding metal, concrete or masonry
- Rock drilling
- Line drilling
- Vibratory rolling
- Rail tamping and regulating
- Bitumen milling or profiling
- Jackhammering, rock hammering or rock breaking
- Impact piling.

Where monitoring has confirmed that activities described above do not possess annoying characteristics in accordance with the ICNG (i.e. tonality or impulsive etc), the above addition of 5 dB(A) will not apply. Where monitoring has confirmed that any other activities (additional to those described above) possess annoying characteristics in accordance with the ICNG (i.e. tonality or impulsive etc), the addition of 5 dB(A) will apply.

5.3 Ground-borne noise management levels

Ground-borne noise management levels (GNMLs) have been determined using the ICNG as required by CoA E29(a) and CoA E30, and in accordance with the Sydney Metro CNVS. Ground-borne construction noise management levels at residential receivers are summarised in Table 15.

Table 15: Ground-borne Construction noise management levels at residential receivers

Time of day	Assessment period	GNML $L_{Aeq(15min)}$
07:00 to 18:00	Daytime	Vibration limits for human disturbance apply
18:00 to 22:00	Evening	40dB(A) internal
22:00 to 07:00	Night	35dB(A) internal

The level of mitigation of GBN at any sensitive receiver would depend on the extent of impacts, as well as the scale and duration of works. Any restriction on the days when construction work is allowed would consider whether the community:

- Has identified times of day when they are more sensitive to noise
- Is prepared to accept a longer construction duration in exchange for days of respite.

5.4 Construction-related road traffic noise

Construction traffic NMLs set at 2dB above the existing road traffic noise levels during the daytime and night-time periods are considered appropriate to identify the onset of potential noise impacts. Where the road traffic noise levels are predicted to increase by more than 2dB because of construction traffic, consideration will be given to applying feasible and reasonable noise mitigation measures to reduce the potential noise impacts and preserve acoustic amenity.

In considering feasible and reasonable mitigation measures where the relevant noise increase is greater than 2dB, consideration will also be given to the actual noise levels associated with construction traffic and whether these levels comply with the following road traffic noise criteria in the RNP:

- 60dB $L_{Aeq(15hour)}$ day and 55dB $L_{Aeq(9hour)}$ night for existing freeway / arterial / sub-arterial roads
- 55dB $L_{Aeq(1hour)}$ day and 50dB $L_{Aeq(1hour)}$ night for existing local roads.

If construction traffic routes are consistent with the EIS, no further assessment is required.

5.5 National Standard for exposure to noise

In accordance with CoA E32, Linewide worksites will be managed to ensure that noise generated by construction will not exceed the National Standard for exposure to noise in the occupational environment of an eight-hour equivalent continuous A-weighted sound pressure level of $L_{Aeq,8h}$ of 85dB(A) for any employee working at a location near a Linewide worksite.

5.6 Vibration criteria

5.6.1 Disturbance to building occupants

Vibration with the potential to disturb human occupants of buildings is managed referencing DECC's Assessing Vibration: a technical guideline (CoA E29(b)). This guideline provides criteria which are based on the British Standard BS 6472-2008 Evaluation of human exposure to vibration in buildings (1-80Hz).

The guideline values for continuous, transient and intermittent vibration events are based on a Vibration Dose Value (VDV), rather than a continuous vibration level. The VDV is dependent upon the level and duration of a short term vibration event, as well as the number of events occurring during the daytime or night-time period (Table 16).

Table 16: Vibration dose value ranges above which adverse comment may be expected

Sensitive land user	Low probability of adverse comment ($m/s^{1.75}$)[1]	Adverse comment possible ($m/s^{1.75}$)	Adverse comment probable ($m/s^{1.75}$)[2]
Residential buildings 16hr day	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8hr night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

Sensitive land user	Low probability of adverse comment ($m/s^{1.75}$)[1]	Adverse comment possible ($m/s^{1.75}$)	Adverse comment probable ($m/s^{1.75}$)[2]
Offices, schools, educational institutions and places of worship	0.4 to 0.8	0.8 to 1.6	1.6 to 3.2
Workshops	0.8 to 1.6	1.6 to 3.2	3.2 to 6.4

NOTES:
1. Below these ranges adverse comment is not expected
2. Above these ranges adverse comment is very likely.

5.6.2 Cosmetic damage to buildings

Cosmetic damage vibration limits for buildings and associated minimum working distances are identified in the CNVS based on British Standard BS7385 Part 2-1993 Evaluation and measurement for vibration in buildings Part 2 (CoA E29(c)). The cosmetic damage levels set by BS7385 are considered 'safe limits' up to which no damage due to vibration effects has been observed for certain particular building types.

Table 17 sets out the recommended vibration limits from BS7385 for transient vibration to ensure minimal risk of cosmetic damage to residential, commercial and industrial buildings and is frequency dependent and specific to particular categories of structure.

Table 17: BS 7385 Transient vibration values for minimal risk of cosmetic damage

Line	Type of building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	15mm/s at 4 Hz increasing to 20 mm/s at 15 Hz

The limits presented in Table 17 relate predominantly to transient vibration which does not give rise to resonant responses in structures, and to low-rise buildings. Where the dynamic loading caused by continuous vibration is such as to give rise to dynamic magnification due to resonance, then the guide values in Table 17 may need to be reduced by up to 50 percent. This is especially applicable at the lower frequencies where lower guide values apply.

5.6.3 Heritage items

BS 7385 notes that heritage buildings and structures should not be assumed to be more sensitive to vibration, unless structurally unsound. The CNVS notes that heritage buildings and structures will be assessed as per the vibration criteria identified in Table 18 (Section 5.6.2) as they should not be assumed to be more sensitive to vibration unless they are found to be structurally unsound.

Where a heritage building/structure is deemed to be sensitive to vibration impacts (i.e. structurally unsound), the more stringent German Standard DIN 4150-2016 Structural Vibration Part 3: Effects of Vibration on Structures guideline values can be applied (consistent with CoA E29(d) and E40). The criteria will be based on the 'Group 3' type structures because of their potential sensitivity to vibration and intrinsic value.

Table 18: DIN 4150-3 guideline values for short-term vibration velocity on structures for Group 3 sensitive structures

Group	Foundations, all directions at a frequency of:			Topmost floor, horizontal	Floor slabs, vertical
	1 to 10Hz	10 to 50 Hz	50 to 100 Hz	All frequencies	All frequencies
3	3mm/s	3 to 8mm/s	3 to 8mm/s	8mm/s	20mm/s

For the purpose of determining relevant vibration criteria for heritage structures, structurally sound means the structure has the ability to withstand normal forces, it is in good condition and is substantially free from

flaw, defect, decay or deterioration to the extent that the building or structure is capable of adequately or safely accomplishing the purpose for which it was intended or designed.

5.6.4 Other structures and utilities

Where structures and utilities are encountered that are sensitive to vibration, a vibration goal, which is different to the cosmetic damage goals presented in Table 19, may need to be adopted. Examples of such structures and utilities include:

- Tunnels
- Buried pipework (e.g. gas pipelines)
- Fibre optic cables.

Specific vibration goals will be determined on a case-by-case basis. Table 19 will be used as a guide and further consultation with utility owners and pipeline operators will be undertaken to apply the most appropriate vibration criteria for each utility. Where consultation confirms that alternate vibration criteria are required for specific utilities or pipeline operators, a technical memorandum will be completed (as required) for that asset and provided to the asset owner (note - these technical memorandums will sit outside of this Sub-plan). Where assets have a specific exclusion zone for vibration intensive works, this will also be considered in the technical memorandum.

Table 19: DIN 4150-3 guideline values for short-term vibration velocity on structures for short-term vibration on buried pipework

Line	Pipe material	Guideline values for vibration velocity measured on the pipe
1	Steel (including welded pipes)	100mm/s
2	Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)	80mm/s
3	Masonry, plastic	50mm/s

5.6.5 Sensitive scientific and medical equipment

Some scientific equipment, such as electron microscopes and microelectronics manufacturing equipment, can require stringent vibration goals than those applicable to human comfort or cosmetic building damage. Where vibration sensitive equipment is potentially affected by construction works, vibration limits for the operation of the equipment will be taken from manufacturer's data or provided by the equipment owner. Where this is not available, the generic Vibration Criterion (VC) curves as published by the Society of Photo-Optical Instrumentation Engineers (Colin G. Gordon - 28 September 1999) may be adopted as vibration goals. These generic VC curves are provided in Table 20.

Table 20: VC curves for Vibration Sensitive Equipment

Criterion curve	Max level (µm/sec, rms)[1]	Detail size (microns)[2]	Description of Use
VC-A	50	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc
VC-B	25	3	An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to three micron line widths
VC-C	12.5	1	A good standard for most lithography and inspection equipment to one micron detail size
VC-D	6	0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability
CV-E	3	0.1	A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser-based, small target systems and other systems requiring extraordinary dynamic stability

NOTE:

1. As measured in one-third octave bands of frequency over the frequency range eight to 100 Hz

2. The detail size refers to the line widths for microelectronics fabrication, the particle (cell) size for medical and pharmaceutical research, etc. The values given consider the observation requirements of many items depend upon the detail size of the process.

5.6.6 Vibration screening criteria assessment approach

5.6.6.1 Human disturbance – screening criteria and assessment approach

To simplify the assessment approach for human disturbance, an initial (conservative) screening test will be done based on peak velocity units, as this metric is also used for the building damage vibration assessment. The screening test is based on the continuous vibration velocity (i.e., vibration that continues uninterrupted for a defined period).

The initial screening test values, taken from Table C1.1 of Assessing Vibration: A technical Guideline are:

- Residential buildings 16hr day: 0.56 mm/s
- Residential buildings 8hr night: 0.40 mm/s
- Offices, schools, educational institutions and places of worship: 1.1 mm/s
- Workshops: 2.2 mm/s.

If the predicted vibration exceeds the initial screening test, the total estimated Vibration Dose Value (i.e., eVDV) will be determined based on the level and duration of the vibration event causing exceedance and assessed against the limits set out in Table 16.

5.6.6.2 Cosmetic damage to buildings – screening criteria and assessment approach

For the purpose of assessing the risk of construction vibration induced cosmetic damage on buildings, assessment is undertaken against a conservative vibration screening level per receiver type, given below:

- Reinforced or framed structures (Line 1): 25.0 mm/s
- Unreinforced or light framed structures (Line 2): 7.5 mm/s
- Heritage buildings (CoA E40): 2.5 mm/s.

At locations where the predicted or measured vibration levels are greater than shown above (peak component particle velocity), a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure will be required to determine the applicable safe vibration level. The analysis will take into consideration the transient vibration guide values for minimal risk of cosmetic damage set out in Table 17.

6 Environmental Aspects and Impacts

6.1 Construction works applicable to this Sub-Plan

The Project is located across 11 surface construction sites and the mainline tunnel and cross passages between Westmead and Hunter Street metro stations. An overview of construction activities are outlined in Table 21.

Table 21: Overview of construction activities and key construction sites

Construction activities	Key worksites												
	Westmead metro station	Parramatta metro station	Clyde Maintenance & Stabling Facility	Rosehill Service Facility	Sydney Olympic Park metro station	North Strathfield metro station	Burwood North metro station	Five Dock metro station	The Bays metro station	Pyrmont metro station	Hunter Street metro station	Mainline tunnels and caverns	Cross passages
Site establishment			x	x			x		x				
Continued use of ancillary facility					x								
Deliveries/ offload	x	x	x	x	x	x	x	x	x	x	x	x	
Rail welding and grinding				x	x								
Operation of Temporary Water Treatment Plant				x			x		x				
Construction and operation of Permanent Water Treatment Plant				x									
Distribution of rail												x	
Concrete Deliveries			x	x			x		x				
Acoustic Shed construction							x		x				
High voltage installation				x					x				
Tunnel fit out works												x	x
Detailed excavation			x	x					x				
Stabling and Maintenance Facility Building			x	x									
Track Laying			x									x	
Tunnel drainage and Ventilation												x	
Rehabilitation and Final Landscaping			x	x									
Testing and commissioning												x	x

Key construction scenarios will be identified in the activity/site specific DNVIS(s). These assessment scenarios will be developed to identify significant noise and vibration generating plant, equipment and machinery that may be in use or activities that will be undertaken as part of the Project.

6.2 Construction noise and vibration impact assessment

The potential for noise and vibration impacts on sensitive receivers or structures (including utilities) will depend on several factors. Typically, these might include:

- The type of equipment in use
- The number of equipment simultaneously in use
- Ground condition
- Topography and other physical barriers
- Proximity to sensitive receivers
- The physical condition of sensitive receiver structure
- Hours or duration of construction works
- Existing background noise.

Noise and vibration impacts attributable to the Project are anticipated and are outlined in Technical Paper 4 of the Stage 3 EIS (March 2022). This Sub-plan provides a suite of mitigation measures that will be implemented to avoid or minimise impacts on the receiving community and built environment.

The construction noise and vibration assessment process, as outlined in Figure 2, will guide all preconstruction and construction phase evaluations. This process includes the identification of sensitive receivers for each worksite, including Aboriginal places (if identified), heritage items, public utilities and other infrastructure. Where new activities, additional works or changes to site layout or construction methodology are proposed, further assessment will be undertaken including a specific noise assessment for any out of hours works.

6.3 Further impact assessment

Further assessment of potential noise and vibration impacts for specific tasks will be undertaken through the planning for out of hours works and the preparation of an Out-of-Hours Works Approval application. This may be undertaken as an addendum to the DNVIS, or as a separate assessment under the DNVIS using the noise and vibration management tool (see Section 6.4).

6.4 Noise and vibration management tool

A 3D construction noise and vibration management tool, Gatewave, may be developed for the Project to allow defined work areas and activities to be planned, assessed and managed as construction works progress. Data relating to cumulative noise impacts from other aspects of the Project or, where relevant, noise from other construction projects, may be entered into Gatewave to enable any additional assessment in accordance with this NVMP.

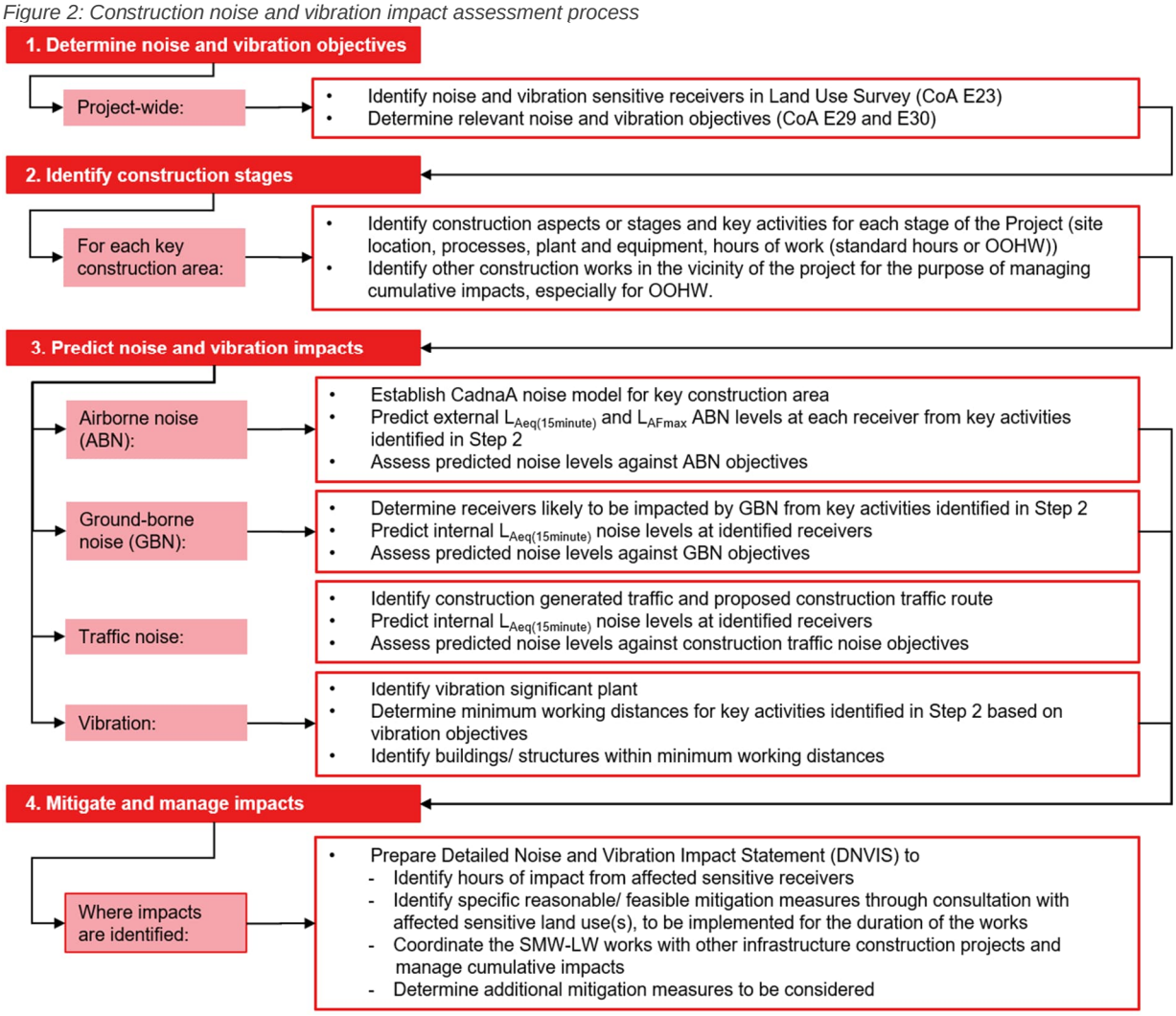
Gatewave incorporates ground elevation contours, building heights, the built environment and atmospheric conditions to predict construction noise in accordance with the International Standard ISO 9613-2. All sensitive receivers identified by the land use survey (Appendix B) are integrated into the Gatewave tool. The

DNVISs prepared for the Project (see Section 7.1) will establish the overall impacts associated with worksites and ancillary facilities. The Gatewave tool would be used to manage construction noise and vibration impact by defining specific work areas and activities in the DNVIS as construction progresses and identifying:

- Sensitive receivers where predicted noise levels are above the NMLs so that, where there are residual impacts even after all feasible and reasonable mitigation measures have been adopted, mitigation and management measures can be applied in accordance with this NVMP
- Buildings or structures within minimum working distances will be established for cosmetic damage and human annoyance so that appropriate mitigation and management measures can be applied.
- Detail potential locations to undertaken attended or unattended noise monitoring to facilitate impact verification.

Noise and vibration monitoring data will be collected throughout the delivery of the Project. This feedback loop will ensure the prediction tool is verified and adjusted as required to ensure accuracy across the Project.

Figure 2: Construction noise and vibration impact assessment process



7 Environmental Controls and Mitigation Measures

7.1 Detailed Noise and Vibration Impact Statements

The Detailed Noise and Vibration Impact Statements (DNVISs) will be a key site management tool with clear instructions for managing construction activities being undertaken on each worksite. As required by CoA E33, DNVIS will be prepared for works that may exceed the NMLs, vibration criteria or GNMLs specified in CoA E29(c), E29(d) and E30 (refer to Section 5) at any residence outside standard construction hours (see Section 5.1.1), or where receivers will be highly noise affected. Each DNVIS will include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures will be implemented for the duration of the works.

Where required DNVIS will be prepared for each construction site before construction noise and vibration impacts commence and will be updated as required if site conditions or activities change. Any construction work identified in the DNVIS as exceeding the NMLs, vibration criteria or GNMLs established in Section 6 will be managed in accordance with this NVMP.

All DNVISs will be prepared by an appropriately qualified and experienced acoustic consultant. Each DNVIS will:

- Identify adjacent residential and other noise and vibration sensitive receivers that may be affected by the works
- Determine the appropriate noise and vibration management levels
- Confirm construction activities, likely plant and equipment, and indicative program to establish the input assumptions for noise and vibration predictions
- Clearly indicate the mitigation and management measures that have been incorporated into the assessment and set out the mitigation measures that must be in place prior to the commencement of:
    - Construction Activities that would exceed the highly noise affected criteria
    - 24/7 operations on relevant worksites.
- Mitigation measures include noise walls, acoustic enclosures around fixed plant and acoustic sheds (where required) and at-property treatments. These will help minimise noise impacts during typical and worst-case construction activities, in addition to enabling tunnelling support activities to continue during 24-hour operations.
- Establish the noise and vibration monitoring requirements and auditing process for the Works
- Provide a subjective classification of the noise (and vibration) impact, evaluated and documented as low, medium or high impact, as required by the CNVS.

A copy of each DNVIS must be provided to the AA and ER before the commencement of the associated works. The Planning Secretary may request a copy of any DNVIS.

7.2 Mitigation and Management Measures

In accordance with CoA E29 and E30, mitigation measures will be implemented with the aim of achieving the construction NMLs and vibration criteria detailed in Section 5 of this Sub-plan. Specific measures and requirements to address contract specifications, Infrastructure Approval Conditions and REMMs in relation to impacts from noise and vibration are detailed in Table 22.

Table 22: Noise and Vibration Mitigation Measures

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
Management						
Project planning, construction hours and scheduling	CNV01	Project and activity specific mitigation measures will be identified and confirmed in the DNVIS prepared for the Project and implemented as early as practicable, as noted in the DNVIS.	Environmental Advisor	Pre-construction	DNVIS or other assessment report Environmental inspection records	CoA E29, E30 and E33 CNVS
	CNV02	Where feasible and reasonable, construction will be carried out during the standard construction hours as outlined in this Sub-Plan	Project Director (or delegate)	Construction	NVMP Environmental inspection records	CoA E24, E25 CNVS CEMF-NV1 CEMF-NV2
Respite from highly noise intensive activity	CNV03	Highly noise intensive work that results in construction noise levels above the applicable NML will be managed by limiting the highly noise intensive work to satisfy the EPL and Condition E26 to: - Between the hours of 8:00am to 6:00pm Monday to Friday; and 8:00am to 1:00pm Saturday. - In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block, except as expressly permitted by the EPL (this requirement is not applied where high noise impact activities and works are conducted outside of standard hours and completed by 12:00am) - Be completed by 12:00am where reasonable and feasible. For the purposes of this requirement, 'continuous' includes any period during which there is less than one hour respite between ceasing and recommencing any of the work that is subject to this requirement. Alternative respite periods may be determined through community engagement and consultation. Where highly noise intensive work is undertaken after 12:00 am (midnight), JH will submit a written report to the EPA within two business days of the activity outlining the justification for continuing high noise impact works after midnight and the reasonable and	Environment, Approvals and Sustainability Director Stakeholder and Community Engagement Director	Pre-construction Construction	DNVIS or other assessment report Consultation records	CoA E24, E26 CEMF-NV2 CEMF-NV3 CEMF-NV6 CEMF-NV17 CEMF-NV21 EIS NV5

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		feasible mitigation measures that were implemented to address night time impacts.				
	CNV04	Work generating high noise or vibration levels will be scheduled during less sensitive time periods, in particular works adjacent to theatres, precision laboratories, educational institutions and places of worship. Scheduling particularly noisy activities around HSC exam times, childcare sleep times and other identified sensitive times will be considered, where feasible and reasonable. The use of noise intensive equipment at construction sites with 'moderate' and 'high' OOH NML exceedances will be scheduled for standard construction hours, where feasible and reasonable. Where this is not feasible and reasonable, the work will be undertaken as early as possible in each work shift.	Environment, Approvals and Sustainability Director Stakeholder and Community Engagement Director	Construction	DNVIS or other assessment report Consultation records	CoA E24, E31 CEMF-NV2 CEMF-NV3 CEMF-NV17 CEMF-NV21 EIS NV5
Cumulative impacts	CNV05	Cumulative and/or consecutive construction noise and vibration impacts will be managed through consultation with other approved Critical SSI, SSI and SSD projects. JH will undertake reasonable steps to coordinate works to minimise impacts and maximise respite for affected sensitive receivers. This may include: - Reschedule work to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition E44 - Consider the provision of alternative respite or mitigation to impacted noise sensitive receivers Provide documentary evidence to the AA in support of any decision made by the Proponent in relation to respite or mitigation.	Environment, Approvals and Sustainability Director Stakeholder and Community Engagement Director	Pre-construction, Construction	DNVIS or other assessment report Community Communications Plan (CCP) Consultation records	CoA C6(d), E43, E44 CEMF-NV21 CEMF-NV29
Site inductions/ training & behavioural practices	CNV06	All employees, contractors and subcontractors will receive a Project induction prior to commencing work on site. Training will be provided to relevant personnel, including sub-contractors on noise and vibration requirements from this NVMP through inductions, ongoing toolboxes or targeted training.	People and Culture Director Environmental Advisors Site Supervisor	Pre-construction Construction	Induction records Toolbox talk records	JH practice CNVS CEMF-NV6

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		The environmental component, covered in either the induction or toolboxes, must include: - Relevant licence and Planning Approval conditions - Permissible hours of work - Limitations on high noise activities - Location of nearest sensitive receivers - Construction employee parking areas - Designated loading and unloading areas and procedures - Relevant site-specific and standard mitigation measures - Site opening and closing times (including deliveries) - OOHW approval process - Appropriate behavioural practices - Environmental incident procedures.				
	CNV07	Prior to arriving on site, heavy vehicle drivers will be advised of: - designated heavy vehicle routes, - parking locations, - acceptable delivery hours for the site (limited to daytime hours, where practicable) - other relevant practices (i.e., minimising the use of engine brakes and no extended periods of engine idling). JH will communicate using notifications under contract provisions and liaising with schedulers from companies using heavy vehicles.	Site Supervisor / Site Engineer	Construction	Construction Traffic Management Plan DNVIS Induction records	JH practice CEMF-NV5
Noise and vibration monitoring	CNV08	Noise and vibration monitoring would be carried out for the duration of the works as specified in Appendix A: Construction Noise and Vibration Monitoring Program. Noise and vibration verification monitoring is to be undertaken in accordance with the Monitoring Program, and as identified in the DNVISs and the EPL. Real time noise and vibration monitoring data recorded by monitoring devices will be made available to the	Environmental Advisors	Construction	NV Monitoring Program DNVIS Monitoring records	CoA C15 CEMF-NV19 CEMF-NV20 CNVS

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		Principal and ER and AA. EPA and Planning Secretary will be provided access to the results on request.				
	CNV09	Compliance checks on significant noise generating items of plant will be undertaken (refer to Appendix A: Construction Noise and Vibration Monitoring Program) where a concern is raised by a sensitive receiver or plant item has not been previously used to confirm plant noise is consistent with the DNVIS or other assessment, or identify defective items of plant or silencing equipment. Failure to meet these levels would result in a re-assessment of predicted noise impacts.	Environmental Advisors Site Supervisor	Construction	DNVIS or other assessment report Plant risk assessment Plant/ site inspection records	JH Practice CEMF-NV20 CNVS
	CNV10	Where the DNVIS identifies potential for exceedance of the vibration objectives (including for heritage items), attended monitoring would be undertaken at the commencement of vibration generating activities to confirm site laws. If, following confirmation of site laws, there continues to be a potential for exceedances, - the construction methodology would be reviewed and/or additional mitigation measures implemented as required. - continuous vibration monitoring (with audible and/or visible alarms) would be conducted at the nearest sensitive receivers. - a detailed assessment of the structure (in consultation with a structural engineer) would be carried out to ensure vibration levels remain below appropriate limits for that structure. - For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.	Environmental Advisors	Construction	NV Monitoring Program DNVIS Monitoring records	CoA E39 CEMF-NV14 CEMF-NV15 CEMF-NV19 CEMF-NV20 CNVS
Community consultation/ notification	CNV11	Implement community consultation or notification measures as detailed in the Community Communication Plan (CCP), this Sub-plan and the EPL.	Stakeholder and Community	Pre-construction / Construction	DNVIS or other assessment report	CoA E33, E34, E41, E44 CNVS

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		The community would be kept informed of upcoming construction work through: - - Notifications (via letter box drop and email distribution) letters - Sydney Metro App - Sydney Metro Website - Response to enquiries through the Community information line and project email - Place Manager engagement	Engagement Director		Consultation records	EIS-NV5 CEMF-NV16
	CNV12	A register of all noise and vibration sensitive receivers will be kept on OpenPoint (previously known as Consultation Manager). The register will include the following details for each receiver: - Address of receiver - Receiver category (eg. residential, commercial etc.) - Contact name and phone number	Environmental Advisor Stakeholder and Community Engagement Director	Pre-construction Construction	Land Use Survey DNVIS Noise and vibration sensitive receiver register Consultation Records	CNVS CEMF-NV18
	CNV13	Sensitive receivers, including owners and occupiers of properties identified as construction noise affected or at risk of exceeding the screening criteria for cosmetic damage, will be identified in a DNVIS or further impact assessment report. Further consultation may be carried out with sensitive receivers to establish preferences for mitigation and management measures, for consideration and implementation where feasible and reasonable to minimise the impacts. Identified sensitive receivers will be notified prior to the commencement of the noise/ vibration generating works. Information provided will include: - A description of the works, types of activities and location of works to be undertaken - The timing of activities including expected start and finish - Mitigation and management measures which aim to achieve the noise and vibration objectives	Stakeholder and Community Engagement Director Environment, Approvals and Sustainability Director	Pre-construction Construction	Community Communications Plan DNVIS or other assessment report Community consultation records	CoA E35, E36 and E37 CEMF-NV17 CNVS

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		- Details of the community information line and how to make an enquiry and or complaint. - If the potential vibration exceedance is to occur more than once or extend over a period of 24 hours, owner and occupiers will be provided a monthly schedule of potential exceedances for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier.				
Building condition surveys	CNV15	Building condition surveys will be completed before and after construction works where buildings or structures are near to vibration significant activities (where appropriate) or within the minimum vibration working distances for cosmetic damage. For heritage buildings and structures the surveys will consider the heritage values of the structure in consultation with a heritage specialist.	Project Director (or delegate)	Prior to construction/ Post Construction	Condition survey reports (pre and post)	CEMF-NV28
At-source control						
Industry best practice construction methods	CNV15	Industry best practice construction methods will be implemented where reasonably practicable to minimised noise and vibration. Long term construction site support equipment and machinery will be low noise emitting and suitable for use in residential areas, where reasonable and feasible. All construction plant and equipment used on the site will, in accordance with the manufacturer's specifications, be: - Fitted with properly maintained noise suppression devices - Operated in a proper and efficient manner - Serviced and maintained in an efficient condition. If a piece of plant or equipment is found to exceed the noise/vibration objectives, the following will occur: - At-source control or a quieter or less vibration emitting piece of plant or equipment will be utilised in place of the offending plant or equipment (If available and appropriate)	Site Supervisor Environmental Advisors	Construction	DNVIS Plant inspection records Environmental inspection records Monitoring records Toolbox talk records	CoA E24 CEMF-NV4 CEMF-NV7 CEMF-NV8 CEMF-NV9 CEMF-NV25 CEMF-NV26

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		- Review and add additional on-site mitigation (e.g. noise blankets), if required - The noise assessment will be repeated with the accurate noise level of the plant or equipment.				
	CNV16	Non-tonal movement alarms will be used in place of tonal reversing alarms for JH owned plant, subcontract plant and other site alarms (as far as is safe and practical) used at night or during the day where the alarm will be audible at the closest receiver Set up and adjust broadband alarm volumes to minimise environmental impact while achieving safety requirements.	Site Supervisor	Construction	Plant risk assessment Toolbox talk records TRAs, AMS or SWMS Environmental inspection records	CoA E24 CEMF-NV12
Plan worksites and activities to Minimise noise and vibration	CNV17	Manage use and siting of plant, where practicable, by: - Maximising the offset distance between noisy or vibration significant plant and adjacent sensitive receivers - Switching off when not in use for more than 15 minutes - Avoiding simultaneous operation of noisy plant within discernible range of a sensitive receiver - Directing noise-emitting plant away from sensitive receivers, particularly during OOHW - Using only necessary size, power and number of equipment on site. NOTE: Due to limited land available for construction this may not at times be practical.	Site Supervisor	Construction	Induction records Toolbox talk records Environmental inspection records DNVIS	JH Practice CEMF- NV4 CEMF-NV10 CEMF-NV22 CNVS
	CNV18	Minimise disturbance arising from heavy vehicle movements (spoil trucks; materials delivery) to worksites, wherever feasible and reasonable by: - Using approved heavy vehicle routes and site access points - Preventing heavy vehicles from queuing or idling in unapproved areas - Loading and unloading of materials and deliveries as far as possible from sensitive receivers	Site Supervisor Site Engineer	Construction	Site planning and design Induction records DNVIS	CoA E27(d)(iii), (iv) and (v) CEMF-NV5 CEMF-NV11 CEMF-NV12 CEMF-NV22 CEMF-NV23 CEMF-NV27

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
		- Shielding dedicated loading and unloading areas if close to sensitive receivers - Maximising on-site spoil storage to reduce the need for truck movements during sensitive times - Minimising out-of-hours deliveries where possible - Applying due care to minimise impacts where out of hours deliveries are required (i.e. no extended engine idling, using radios instead of shouting, non-tonal reversing beepers, unloading/ loading during standard hours, minimising tail gate slam) - Redirecting vehicle movements away from sensitive receiver areas and scheduling during less sensitive times - Limiting vehicle speed and avoiding the use of engine compression brakes - Not permitting heavy vehicles to idle near sensitive receivers - Fitting delivery vehicles with straps rather than chains for unloading - Providing training to heavy vehicle drivers on considerate driving practices in residential areas and managing tailgate slams.				
Noise source mitigation	CNV19	Additional temporary screening or enclosures will be considered for plant and equipment, particularly stationary noise sources, where required to meet relevant NMLs or where equipment is known to exceed those levels. This includes enclosing or shielding items such as generators, stationary concrete cutters, asphalt corers, vacuum trucks and jackhammers, where reasonable and feasible.	Site Supervisor Environmental Advisors	Construction	DNVIS or other assessment report SWMS Environmental inspection records	CoA E24 CEMF-NV10 CEMF-NV13 CEMF-NV24
Alternative construction methodology	CNV20	Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would be investigated and implemented where feasible and reasonable. This would include consideration of:	Site Supervisor Environmental Advisors	Construction	DNVIS or other assessment report SWMS Environmental inspection records	CoA E24 CEMF-NV25 CEMF-NV30

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference

		- Selecting quieter equipment such as smaller, lower powered, newer or better maintained (this could include electric /battery operated equipment if feasible)
		- Use of alternative construction methods, such as:
		  - hydraulic concrete shears or pineapple head/ surface minor in lieu of hammers/rock breakers handheld splitters and pulverisers or hand demolition
		  - Use of bored piling in lieu of impact piling.
		- Sequencing works to shield noise sensitive receivers by retaining building wall elements
		- Minimising structural-borne noise to adjacent buildings including separating the structural connection prior to demolition through saw-cutting and propping,
		- Modifying sequencing / hours to minimise impacts from highly noise intensive works during peak pedestrian times and / or adjoining neighbour outdoor activity periods.				

Path control						
	CNV21	Acoustic sheds will be designed, constructed and operated to minimise noise emissions. Shed design will consider: - All significant noise producing equipment that will be used during the night-time period will be inside the shed, where feasible and reasonable - The doors of acoustic sheds will be kept closed during the night-time period. Where vehicle access is required at sites with nearby residences, the shed entrances will be designed and constructed to minimise noise breakout. Due to low daytime noise impacts rapid close doors are not considered a reasonable/feasible mitigation.	Project Director Environment, Approvals and Sustainability Director	Construction	DNVIS Design reports Environmental inspection records	CoA E38 CEMF-NV10

Action required	ID	Measure/ requirement	Responsibility	Timing	Deliverables	Reference
	CNV22	Noise barriers and boundary screening (such as site hoardings) will be constructed around ancillary facilities as detailed within the DNVIS. Note: this does not include temporary noise blankets, whose location is not specified in the DNVIS. Boundary screening will minimise noise impacts on adjacent sensitive receivers. The Linewide Contractor's Activities that require the installation of acoustic walls or other noise attenuation devices must not commence until the acoustic walls or other noise attenuation devices are erected. Acoustic walls and other noise attenuation devices installed by JH must be made from as-new materials and must at all times be maintained in a neat and tidy condition and be sympathetic with the surroundings.	Project Director	Pre construction Construction	DNVIS	CoA E24 CEMF-NV13 CNVS SM-W-LW-PS-MB-6000 SM-W-LW-PS-MB-6001
	CNV23	Structures will be used as noise barriers at compounds where appropriate.	Project Director (or delegate) Environment, Approvals and Sustainability Director	Construction	DNVIS Site layout drawings	CoA E24 CEMF-NV13 CNVS
	CNV24	Additional temporary screening or enclosures will be considered for plant and equipment where additional measures are required to meet relevant NMLs, or where plant and equipment is known to exceed the NMLs.	Site Supervisor Environmental Advisor	Construction	DNVIS or other assessment reports TRAS, AMS or SWMS Environmental inspection records	CoA E24 CEMF-NV13 CEMF-NV24 CEMF-NV25 CNVS

7.3 Management of out-of-hours work

7.3.1 Safety and emergency works

Where OOHW are required for safety or in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm (Condition E27(a)), JH will notify the AA, ER, the Planning Secretary and the EPA (via EPA's Environment Line) of the reasons for emergency works. JH will use best practice endeavours to notify all potentially noise and/or vibration-affected sensitive receivers of the likely impact and duration of the emergency works at the earliest opportunity.

A report will be submitted to the EPA by 4:00pm on the next business day after the emergency works commenced that describes:

- The cause, time and duration of the emergency
- Action taken by or on behalf of the licensee in relation to the emergency
- Details of any measures taken or proposed to be taken by the licensee to prevent or mitigate against a recurrence of the emergency.

7.3.2 Out Of Hours Work Protocol (works not subject to an EPL)

An OOHW Protocol has been prepared by Sydney Metro in accordance with CoA E28 The OOHW Protocol provides a process for the consideration, management, and approval of work outside the approved construction hours that is not subject to an EPL.

The aim of the OOHW Protocol is to ensure that OOHW not subject to an EPL are assessed and managed via a rigorous process to identify the associated risk of adverse impacts on sensitive receivers including:

- Justification for why OOHW need to occur
- Consideration of the OOHW against the relevant NMLs and vibration criteria, and providing a determination of low or high-risk work
    - the ER and AA to review all proposed out-of-hours activities and confirm their risk levels
    - the ER and AA can approve low risk activities, approval from the Planning Secretary is required for high risk activities
- Processes for selecting and implementing mitigation measures for residual impacts in consultation with the community, including respite periods consistent with the requirements of CoA E44
- Procedures to facilitate the coordination of OOHW with those approved under an EPL or undertaken by a third party, to ensure appropriate respite is provided and is consistent with the requirements of CoA E28
- An approval process for OOHW that considers risks, proposed mitigation, management and coordination, and includes review and approval by the AA for low-risk activities and by the Planning Secretary for high-risk activities
- Details of notification requirements for affected receivers for all approved OOHW, including notification to the Planning Secretary for approved low risk OOHW.

7.3.3 Out Of Hours Work Permit (works subject to an EPL)

All out-of-hours work subject to an EPL will be assessed for potential noise and/or vibration impacts and an Out of Hours Work Permit will be reviewed and approved by the Environment, Approvals and Sustainability Director (or delegate) prior to commencement of works to ensure compliance with EPL conditions. Refer to Appendix C for the out of hours works procedure.

7.3.4 Residential receivers in residential and non-residential zones

Table 23 sets out the internal noise and vibration mitigation levels for residential receivers based on CoA E36 and E37. Additional noise and vibration mitigation measures as per the CNVS (and section 7.5) would be offered to construction noise and/or vibration affected residential receivers to manage impacts from rock breaking or any other annoying activity likely to result in ground-borne noise, or a perceptible level of vibration (including works associated with utility adjustments).

Table 23: Internal construction noise mitigation levels for residential receivers (CoA E36 and E37)

Zone	Time period	internal noise and vibration mitigation level	Requirement
Non-residential zone (E36)	8:00 pm to 9:00 pm	Internal noise level exceeds $L_{eq(15\ minute)}$ 60 dB(A)* or a perceptible level of vibration	Additional noise and vibration mitigation measures must be offered as per the CNVS (see Section 7.5).
	9:00 pm to 7:00 am	Internal noise level exceeds $L_{eq(15\ minute)}$ 45 dB(A)* or a perceptible level of vibration	Additional noise and vibration mitigation measures must be offered as per the CNVS (see Section 7.5).
Residential zone (E37)	8:00 pm to 7:00 am	Internal noise level exceeds $L_{eq(15\ minute)}$ 45 dB(A)* or a perceptible level of vibration	Additional noise and vibration mitigation measures must be offered as per the CNVS (see Section 7.5).

NOTE: *Inclusive of a 5 dB penalty if rock breaking or any other annoying activity (see Section 5.2.3)

7.4 Communication, Community Consultation and Complaints Management

7.4.1 Community Consultation

To satisfy CoA E44, JH will consult with the community to determine appropriate respite periods where works are:

- Undertaken outside standard construction hours
- Likely to exceed the noise and vibration objectives identified in CoA E29 and E30
- The consultation will include, but not be limited to, providing the community with:
  - A progressive schedule of likely OOHW for a period no less than three months
  - A description of the potential work, location and duration
  - The noise characteristics and likely noise levels of the work
  - Likely mitigation and management measures to be implemented which aim to achieve the relevant NMLs under CoA E29(c) and E29(d) (including details about how the affected community can access the respite or relocation offers).

Condition E33 and E34 require consultation with noise and/or vibration affected sensitive land users to assist in determining specific mitigation measures. Consultation with affected sensitive land users will focus on specific mitigation and management measures applicable to each DNVIS. Mitigation measures may include respite periods, scheduling high noise impacts around sensitive periods where feasible and reasonable, substitution of plant and equipment.

Note: Respite periods can be any combination of days or hours where OOHW would not be more than 5 dB(A) above the rating background level at any residence.

Noise-generating work in the vicinity of potentially affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs will not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution (CoA E31).

In addition, consultation with the owners and operators at Rosehill Racecourse near the Clyde stabling and maintenance facility construction site would be carried out so that potential impacts to horses are appropriately managed.

The standard approach to managing noise and vibration impact from OOHW, including respite periods and temporary alternative accommodation, is outlined in the additional mitigation measures (see Section 7.5). These approaches will form the basis of discussions with the community.

The outcomes of the community consultation, including the identified respite periods and the scheduling of OOHW will be documented and provided to the AA and ER and documented through consultation record reporting via the projects consultation management database, meeting minutes and supporting materials (if applicable) before the out-of-hours work commences, and to the EPA and the Planning Secretary on request.

7.4.2 Complaints Management

Complaints will be recorded and managed as detailed in the CEMP and the Community Communications Plan, including reporting of complaints to the ER on a weekly basis where complaints have been received or as requested (AA and DPHI on request) and the EPA. JH is required to provide a verbal response to complaints within 2 hours of receipt wherever a phone number is available or a written response within 24 hours (only when no phone number is available). Noting investigation and complaint resolution may take longer than 2 hours depending on the nature of the complaint. Complaints must be recorded in our consultation management database within 24 hours of receipt. . Where the investigation indicates that the source of the complaint is the Linewide Works, JH will offer to undertake noise or vibration monitoring at their premises if representative monitoring is not available.

Subject to agreement with the complainant, attended or unattended monitoring will be undertaken as soon as practicable or at an agreed time. JH will advise each complainant of the results of its investigation of their complaint and any proposed remedial action within a reasonable period of time.

7.5 Managing residual impacts

7.5.1 At-property mitigation

Construction worksites will be designed with the aim of achieving the ICNG NMLs and vibration criteria. All reasonable and feasible mitigation and management measures will be implemented to achieve these requirements.

Where predicted noise or vibration levels remain above the applicable ICNG criteria after all practicable measures are applied, the affected receivers will be identified as having ‘residual impacts’ within the DNVIS (Section 7.1) for further assessment and management.

In reviewing residual impacts, consideration will be given to receivers that have previously received noise-attenuation treatments (e.g., for road, rail or aircraft noise). For these properties, external NMLs may be increased by 10 dB, with higher adjustments applied where a qualified acoustic consultant verifies that building façades provide attenuation greater than 20 dB and windows are fixed or typically kept closed. Properties still predicted to exceed the adjusted NMLs will be managed in accordance with the Sydney Metro CNVS.

Residual impacts will be addressed according to the degree and duration of exceedance and may include an offer of respite such as noise-cancelling headphones or vouchers.

As required by Condition E41, where occupants of sensitive land uses would be impacted by prolonged construction noise impacts, the AA may identify that such properties must be considered for additional noise mitigation treatments over and above those measures specified in the CNVS. This could include at-property or other treatment measures in consultation with the property owner and / or occupier.

Where at-property treatment is required for Heritage items identified in the EIS, a suitably qualified heritage specialist will advise on treatments to ensure the heritage significance of the item is not adversely affected.

7.5.2 Additional management measures

Where, following application of all reasonable and feasible mitigation measures, the construction noise and vibration levels are still predicted to exceed the and/or vibration objectives, the additional management measures outlined in Table 24 are to be applied.

Table 24: Additional management measures

Measure	Description	Abbreviation
Letter box drops	Letter box drops collectively consist of the following Standard Mitigation Measures a) Newsletters of work activities and progress b) Notification letters prior to especially noisy activities and out-of-hours works.	LB a) b)

Measure	Description	Abbreviation
	These are distributed to local communities, stakeholders and businesses via letterbox drop and/or email to subscribers where relevant email addresses are known, as well as made available on the Sydney Metro website. All letterbox drops will be undertaken in accordance with the Community Communications Plan.	
Monitoring	Where it has been identified that specific construction activities are likely to exceed the relevant noise or vibration goals, noise or vibration monitoring may be conducted at the affected receiver(s) or a nominated representative location (typically the nearest receiver where more than one receiver have been identified). Monitoring can be in the form of either unattended logging or operator attended surveys. The purpose of monitoring is to inform the relevant personnel when the noise or vibration goal has been exceeded so that additional management measures may be implemented.	M
Individual briefings	Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Communications representatives would deliver specific notification, visit in person and/or email / call contact by phone identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project and specific needs etc. Individual briefings may be undertaken when specific contact details of impacted stakeholders are available, or where access to deliver specific notifications or visit is achievable.	IB
Project specific respite offer	The purpose of a project specific respite offer is to provide residents subjected to lengthy periods of noise or vibration respite from an ongoing impact. The offers are made in accordance with the Sydney Metro Construction Noise and Vibration Standard (CNVS) or relevant work approvals and are referred to as additional mitigation measures. The Sydney Metro Project Communication Procedure for AA and Respite Offer Implementation is to be followed and requires Sydney Metro approval for all offers.	RO
Alternative accommodation	Alternative accommodation options may be provided for residents living near construction works that are likely to incur unreasonably high impacts over an extended period of time. Alternative accommodation will be determined on a case-by-case basis. The offers are made in accordance with the Sydney Metro Construction Noise and Vibration Standard (CNVS) or relevant work approvals and are referred to as additional mitigation measures. The Sydney Metro Project Communication Procedure for AA and Respite Offer Implementation it to be followed and requires Sydney Metro approval for all offers.	AA

The following steps need to be carried out to determine the additional mitigation measures to be implemented:

Step 1: Determine the duration (time period) when the work is to be undertaken.

The standard hours and OOHW periods are depicted in Figure 3, based on the CNVS. The OOHW periods are further defined as OOHW Period 1 and 2, where the OOHW period covers more than one assessment period (e.g. OOH Day and Evening periods on Saturdays).

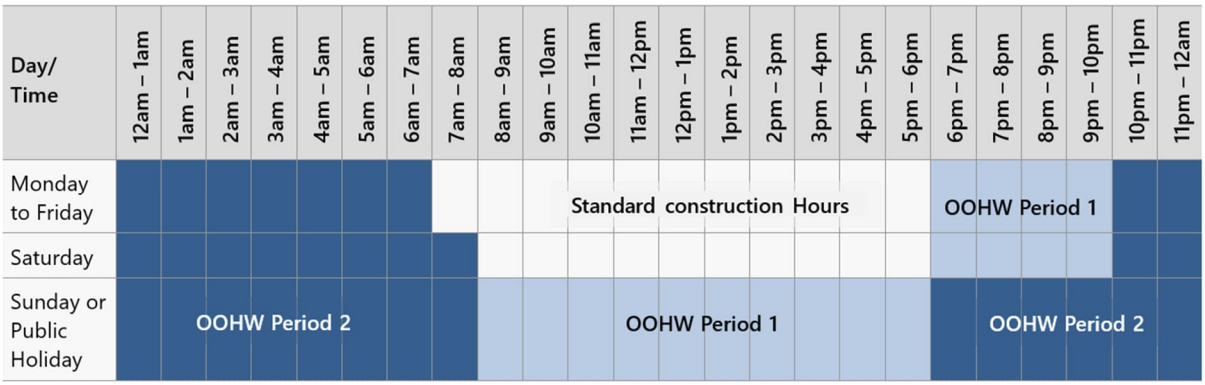


Figure 3: Construction assessment periods

Step 2: Determine the level of exceedance above the NML/ vibration criteria

Step 3: Identify the additional mitigation measures to be implemented.

Table 25, Table 26, and Table 27 detail the additional mitigation measures for airborne noise, ground-borne noise and vibration respectively, as recommended in the CNVS, for standard hours and OOHW.

Where feasible and reasonable, this approach will be implemented. Additional mitigation measures will be considered to ensure additional respite is provided to affected residents including special circumstances. An example is during daytime works where highly sensitive receivers (e.g., shift workers at home during the day) may be subject to high levels of noise.

Some residential receivers may have been provided with at-property treatments (by past projects or independently designed-and-built) which allow windows to be fixed or kept closed. In these cases, the noise benefit achieved by the property treatment can be considered in the assessment of airborne construction noise impacts at these individual receivers and the external NMLs can be conservatively increased by 10dB. Higher adjustments may be adopted, if a qualified acoustic consultant has determined that windows and facades of individual buildings provide a higher level of sound attenuation than 20dB and if it can be demonstrated or reasonably assumed that the windows are fixed or kept closed.

JH may determine if specific receivers have benefitted from at-property treatments. The AA must approve any modifications to the external residential noise management levels for considering Additional Mitigation Measures.

Table 25: Additional Mitigation Measures – Airborne Construction Noise

Time period		**Mitigation Measures Predicted $L_{Aeq\ (15minute)}$ noise level Above NML**				**Predicted $L_{Aeq((15minute)}$ noise level > 75 dB(A)**
		0 to 10 dB	**11 to 20 dB**	**21 to 30 dB**	**>30 dB**	
Standard	Mon-Fri (7.00 am - 6.00 pm)	-	LB	LB, M, SN	LB, M, SN	Must not commence before 8.00am NOTE 1
	Sat (8.00 am - 6.00 pm)					NOTE 1 Must be complete by 1.00pm
	Sun/Pub Hol (Nil)					Additional approval required
OOHW Period 1 DAY	Saturday (7.00 am - 8.00 am) Sunday and Public Holidays (8.00 am - 6.00 pm)	LB	Sun/Pub Hol (Nil)	Sun/Pub Hol (Nil)	Sun/Pub Hol (Nil)	Additional approval required
OOHW Period 1	Mon-Sat (6.00 pm - 10.00 pm)	LB	LB, M	LB, M, SN,	LB, M, SN,	Additional approval required

Time period		Mitigation Measures Predicted $L_{Aeq\ (15minute)}$ noise level Above NML				Predicted $L_{Aeq((15minute)}$ noise level > 75 dB(A)
		0 to 10 dB	11 to 20 dB	21 to 30 dB	>30 dB	
EVENING				RO	IB, PC, RO	
OOHW Period 2 NIGHT	Mon-Fri (10.00 pm -7.00 am) Sat (10.00 pm - 8.00 am Sunday morning) Sunday (6.00 pm - 7.00 am Monday morning) Public Holidays (Before 8.00 am or after 6.00 pm)	LB	LB, M, SN, RO	LB, M, SN, IB, PC, RO, AA	LB, M, SN, IB, PC, RO, AA	Additional approval required

NOTE 1: Except under an EPL or alternate approval, high impacts works must not exceed three (3) hours, with a minimum cessation of work of not less than one (1) hour.

Table 26: Additional Mitigation Measures – Ground-borne Construction Noise

Time period		Mitigation Measures Predicted $L_{Aeq\ (15minute)}$ noise level Above NML		
		0 to 10 dB	11 to 20 dB	>20 dB
Standard	Mon-Fri (7.00 am - 6.00 pm) Sat (8.00 am - 6.00 pm) Sun/Pub Hol (Nil)	No NML for GBN during standard hours Refer to Table 15		
OOHW Period 1 DAY	Saturday (7.00 am - 8.00 am) Sunday and Public Holidays (8.00 am - 6.00 pm)	LB	LB, M, SN	LB, M, SN, IB, PC, RO
OOHW Period 1 EVENING	Mon-Sat (6.00 pm - 10.00 pm)	LB	LB, M, SN	LB, M, SN, IB, PC, RO
OOHW Period 2 NIGHT	Mon-Fri (10.00 pm -7.00 am) Sat (10.00 pm - 8.00 am Sunday morning) Sunday (6.00 pm - 7.00 am Monday morning) Public Holidays (Before 8.00 am or after 6.00 pm)	LB, M, SN	LB, M, SN, IB, PC, RO, AA	LB, M, SN, IB, PC, RO, AA

Table 27: Additional Mitigation Measures – Ground-borne Construction Vibration

Time period		Mitigation Measures Predicted Vibration Levels Exceed the maximum levels predicted to cause adverse comment (See Table 16)
Standard	Mon-Fri (7.00 am - 6.00 pm) Sat (8.00 am - 6.00 pm) Sun/Pub Hol (Nil)	LB, M, RO
OOHW Period 1 DAY	Saturday (7.00 am - 8.00 am) Sunday and Public Holidays (8.00 am - 6.00 pm)	LB, M, IB, RO
OOHW	Mon-Sat (6.00 pm - 10.00 pm)	LB, M, IB, RO

Time period		Mitigation Measures Predicted Vibration Levels Exceed the maximum levels predicted to cause adverse comment (See Table 16)
Period 1 EVENING		
OOHW Period 2 NIGHT	Mon-Fri (10.00 pm -7.00 am) Sat (10.00 pm - 8.00 am Sunday morning) Sunday (6.00 pm - 7.00 am Monday morning) Public Holidays (Before 8.00 am or after 6.00 pm)	LB, M, IB, RO, AA

8 Compliance Management

8.1 Roles and Responsibilities

The Linewide Project organisational structure and overall roles and responsibilities are outlined in Section 4.5 of the CEMP. Responsibilities for implementing the specific mitigation measures are detailed in Section 7.2 of this Plan.

The role of the independent Acoustic Advisor (AA) is important with regards to noise and vibration management throughout the Linewide Project. In accordance with CoA A39 of the Planning Approval, the role of the AA is to:

a) receive and respond to communication from the Planning Secretary in relation to the performance of the CSSI in relation to noise and vibration;
b) consider and, where relevant, inform the Planning Secretary on matters specified in the conditions of this approval relating to noise and vibration;
c) consider and recommend to the Proponent, improvements that may be made to avoid or minimise adverse noise and vibration impacts;
d) review proposed night-time works (with the exception of low risk activities) to determine if sleep disturbance would occur and recommend measures to avoid sleep disturbance or appropriate additional alternative mitigation measures;
e) review noise and vibration documents required to be prepared under the conditions of this approval, and should they be consistent with the conditions of this approval, endorse them before submission to the Planning Secretary (if required to be submitted to the Planning Secretary) or before implementation (if not required to be submitted to the Planning Secretary);
f) regularly monitor the implementation of noise and vibration documents required to be prepared under the conditions of this approval to ensure implementation is in accordance with what is stated in the document(s) and the conditions of this approval;
g) review the Proponent's written notification of noise incidents in accordance with CoA A47 to A49 of this approval;
h) in conjunction with the ER (where required), the AA must:
   (i) as may be requested by the Planning Secretary or Community Complaints Mediator (required by CoA B8), help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits,
   (ii) in the event that conflict arises between the Proponent and the community in relation to the noise and vibration performance of the CSSI, follow the procedure in the Overarching Community Communication Strategy referenced under CoA B1 to attempt to resolve the conflict, and if it cannot be resolved, notify the Planning Secretary,
   (iii) if requested by the ER, consider relevant minor amendments made to the Site Establishment Management Plan, CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the conditions of this approval and the management plans and monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, endorse the amendment, (this does not include any modifications to the conditions of this approval),
   (iv) if requested by the ER, review the noise impacts of minor ancillary facilities, and
   (v) prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, a Monthly Noise and Vibration Report detailing the AA's actions and decisions on matters for which the AA was responsible in the preceding month. The Monthly Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of the AA's engagement for the CSSI, or as otherwise agreed by the Planning Secretary.

In addition to h) above the role of the ER with regards to noise and vibration (in accordance with CoA E28 b(i)) must review all proposed out-of-hours activities undertaken under the Out-of-Hours Work Protocol as approved under CoA E28 to confirm their risk level. Low risk activities can be approved by the ER in consultation with the AA.

8.2 Training

All employees and subcontractors working on site will undergo site induction training that includes construction noise and vibration management issues. The induction training will address elements related to project-specific noise and vibration management including:

- Requirements of this NVMP
- Standard, extended and out of hours construction hours
- The process for seeking approval for out of hours works, including consultation
- Location of noise sensitive areas and receivers
- General noise and vibration management measures
- Complaints reporting
- Specific responsibilities to minimise impacts on the community and built environment

Further details regarding staff induction and training are outlined in Section 4.6 of the CEMP.

8.3 Monitoring and Inspection

Weekly site environmental inspections will be undertaken by the environmental team using a project-specific checklist to assess the ongoing effectiveness and suitability of the project's environmental controls. Refer to Section 6.1 of the CEMP for the indicative list of environmental inspections that may be undertaken during the delivery of the Linewide Project.

Noise and vibration monitoring will also occur throughout the duration of the Linewide Project, in accordance with the Noise and Vibration Construction Monitoring Program (Appendix A). The noise and vibration monitoring program details when monitoring will be undertaken, as well as the representative locations adjacent to the construction works where noise and vibration monitoring will be undertaken.

All environmental monitoring shall be conducted to Australian Standards and the equipment is to be calibrated regularly to ensure data is accurate and reliable.

8.4 Auditing

Auditing will be undertaken to verify compliance with approvals, contractual requirements, and this Plan as detailed in Section 6.2 of the CEMP.

8.5 Reporting and Records

Reporting environmental performance is essential to demonstrate legal and contractual compliance. It also aids in assessing whether Linewide Project's objectives and targets are being achieved. If they are not, additional investigation is required to identify causes and determine the corrective actions required to address the issue.

Reporting requirements relevant to this Plan are detailed in Section 6.3 of the CEMP and in the Noise and Vibration Construction Monitoring Program (Appendix A). In addition, the following records will be retained onsite for the duration of works:

- Records of consultation with other adjacent major Projects with regard to cumulative impacts;
- Unattended monitoring reports and records from consultants and JH;
- Attended noise and vibration monitoring records from consultants and JH;
- Register of OOH Works and Permits;
- Records of environmental inspections undertaken;
- Records of consultation with sensitive receivers on mitigation measures; and
- Records of any community agreements.

Refer to Section 4.7.3 of the CEMP for information relating to the complaints management process and records.

Details on incident and non compliance reporting are presented in Section 5.4 and Section 7.1 of the CEMP.. All incidents and non compliances will be managed and reported in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure.

9 Review and Improvement

9.1 Continuous Improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against the project policies, objectives and targets.

The CEMP, sub-plans and monitoring programs will be updated:

- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law
- In response to internal or external audits that identify matters that require attention
- Following reportable environmental incidents
- Upon identification of new risks, including risks identified during risk register updates
- When non-compliances are identified
- In response to a project change that changes the scope of the works (including modifications).

As outlined in Section 8.3 of the CEMP, this sub-plan will be reviewed within 12 months following the commencement of construction (being the approval of the CEMP and all associated sub plans) and every 12 months thereafter, or within two months of an incident triggering notification under CoA A43.

The complete process of review and improvement to be implemented throughout the Project is outlined in Section 8 of the CEMP.

9.2 Review of this Plan

Any revisions to this Plan will be in accordance with the CEMP. Section 3.3 of this Plan provides information on the process for endorsement and approval of this Plan and any updates.

Appendix A: Construction Noise and Vibration Monitoring Program

Sydney Metro West Linewide Package

Construction Noise and Vibration Monitoring Program

Document number	SMWSTLWD-JHG-SWD-SW000-EN-PRG-000001

Document Approval

Rev	Date	Prepared By	Reviewed By	Approved By
A	16/03/2026	R Muir & Renzo Tonin	S Reynolds	I Karaban
B	12/04/2026	R Muir & Renzo Tonin	S Reynolds	I Karaban
Signature:				

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Revisions

Draft issues of this document are identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this will be changed to a sequential number commencing from Revision 00, then 01, 02, etc.

Date	Revision	Details
16/03/2026	A	Initial issue for review by SM and ER
12/04/2026	B	Updated based on response from SM, ER, AA and stakeholder feedback

This plan has been prepared in accordance with the relevant requirements. The initial issue of this plan has been reviewed by the relevant discipline leader and endorsed for use on the Linewide Project.

Revisions of this plan may be required throughout the duration of the contract to reflect changing circumstances or identified opportunities for improvement. Revisions will be proposed by the relevant personnel and reviewed, developed and finalised in conjunction with Sydney Metro.

Revisions of this plan must not reduce the scope or level of management control. Revisions may result from:

- Management review
- Changes to the standard system
- Internal or external audit
- Sydney Metro feedback or non-conformance reports
- Legislative changes
- Improvement initiatives and process changes within John Holland
- Lessons learned.

Initial updates to this plan will be issued alphabetically for review. Once approved by Sydney Metro, subsequent updates will be numbered consecutively and transmitted to holders of controlled copies.

Updates to this plan and any other sub-plans will be provided to Sydney Metro for comment, review and approval.

Distribution

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

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1 Definitions and Abbreviations

Abbreviation	Definition
AA	The Acoustic Advisor for the CSSI approved by the Planning Secretary
AMS	Activity Method Statement is a planning process to determine detailed methodology which breaks down and analyses individual WRA work elements). Also referred in industry as Environmental Work Method Statement (EWMS), Work Method Statement (WMS), Work Pack and/or Safety Activity Pack.
AVTG	NSW Assessing Vibration – a technical guideline
CEMP	Construction Environmental Management Plan
CNVS	Construction Noise and Vibration Standard
CoA	Condition of Approval
DNVIS	Detailed Noise and Vibration Impact statement(s)
DPHI	Department of Planning, Housing and Infrastructure
Client (Principal)	The party to whom John Holland is contracted for a Project. For this project the Client is Sydney Metro.
D&C	Design and Construction
ECP	Environmental Control Plan
EIS	Environmental Impact Statement
EMM	Environmental Management Manual
EMP	Environmental Management Plan (this document)
EMS	Environmental Management System
ENMM	Environmental Noise Management Manual
Environmental aspect	An element of activities or services that can interact with the environment.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from environmental aspects.
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	The Environmental Representative(s) for the CSSI approved by the Planning Secretary
eVDV	Estimated Vibration Dose Value
Environmental Management Subplan	Aspect-specific Subplan to the CEMP
Feasible and reasonable	Consideration of best practice considering the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
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.
GBN	Ground-borne noise
GIS	Geographic Information System
GNML	Ground-borne noise management level

Abbreviation	Definition
GNVIS	General Noise and Vibration Impact Statement
GMR	Global Mandatory Requirement
Highly noise affected	As defined in the ICNG
Highly noise intensive works	Work which is defined as annoying under the Interim Construction Noise Guideline (DECC, 2009) including: (a) use of power saws; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; (h) impact piling; and (i) rail tamping and regulating. Note: Power saws include those used for cutting timber, rail lines, masonry, road pavement or steel work.
Hold Point	A point defined in a process beyond which an activity must not proceed without the approval of a designated authority.
HSC	Health, Sustainability and Climate
ICAM	Incident Cause Analysis Method
ICNG	NSW Interim Construction Noise Guidelines (DECC,2009)
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.
IMS	Integrated Management System
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.
ISC	Infrastructure Sustainability Council
JHG	John Holland Group as the organisation responsible for the total performance of the works under the Contract.
$L_{A(max)}$	The A-weighted maximum noise level only from the construction works under consideration, measured using the fast time weighting on a sound level meter.
$L_{eq(15min)}$	The A-weighted equivalent continuous (energy average) A-weighted sound pressure level of the construction works under consideration over a 15-minute period and excludes other noise sources such as from industry, road, rail and the community.
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 L_{90} noise level expressed in units of dB(A).
LGA	Local government area
NCA	Noise Catchment area
NML	Noise Management Level as defined in the ICNG
NPfI	Noise Policy for Industry
NV Program	Noise and Vibration Monitoring Program
NVMP	Noise and Vibration Management Sub-plan

Abbreviation	Definition
OOHW	Out-of-Hours Work
POEO Act	Protection of the Environment Operations Act 1997
PDCA	Plan-Do-Check-Act
Plan	A document setting out the specific practices, resources, activities and responsibilities relevant to a particular project or contract.
RBL	Rating Background noise Level
REMM	Revised Environmental Mitigation Measure
RNP	NSW Road Noise Policy
RTA	Renzo Tonin & Associates
SEP	Site Environmental Plan (for the purposes of the Linewide Project these Plans will be Environmental Control Plans- ECPs)
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.
Sensitive land use(s)	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres and passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation, restaurants, office premises, and retail spaces) and industrial premises as identified by the Planning Secretary. Note: For the purpose of determining appropriate mitigation, a multistorey residential flat building must not be counted as one sensitive receiver. Note: Temporary accommodation as set out in this definition includes caravan parks and camping grounds
Sleep disturbance event	Where the subject development / premises night-time noise levels at a residential location exceed (a) $L_{Aeq,15min}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or (b) L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater.
SHR	State Heritage Register
Soteria	Soteria is John Holland's primary HSC event and activity platform which is used to record and manage inspections, actions and incidents.
Sound level meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.
SPL	Sound Pressure Level, the level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone.
Structurally sound heritage item	For the purpose of determining relevant vibration criteria for heritage structures, structurally sound means the structure has the ability to withstand normal forces, it is in good condition and is substantially free from flaw, defect, decay or deterioration to the extent that the building or structure is capable of adequately or safely accomplishing the purpose for which it was intended or designed.
SWL	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.
SQE	Safety, Quality and Environment
SSI	State Significant Infrastructure
VC	Vibration criterion
VDV	Vibration Dose Value

Abbreviation	Definition
WFU	Warringah Freeway Upgrade
WHT	Western Harbour Tunnel project
WRA	Workplace Risk Assessment
WTP	Water Treatment Plant

Note:

- refer to the *Environment Protection Licence 22098 General Dictionary and Special Dictionary (E3)* for terms and meanings used in the licence
- refer to the *Sydney Metro West – Rail infrastructure, stations, precincts and operations Conditions of Approval (SSI 22765520) Table 1: Definitions* for terms used in the approval.

2 Introduction

2.1 Purpose

This Noise and Vibration Monitoring Program (NV Program) is applicable to the Sydney Metro West - Linewide Project (Linewide Project). This NV Program describes how John Holland Pty Ltd (JH) will monitor noise and vibration during construction of the Project.
This NV Program has been prepared to address the requirements of the:

- State Significant Infrastructure (SSI) SSI 22765520 Planning Approval (dated 25 January 2023); and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Planning Approval issued 11 March 2021 (planning approvals)
- Environment Protection Licence 22098 (EPL)
- Environment Protection Authority Approved methods for the measurement and analysis of
- environmental noise in NSW 2022
- Sydney Metro Construction Environmental Management Framework (CEMF) version 4.5
- Sydney Metro Construction Noise and Vibration Standard (CNVS)
- Environmental Impact Statement (EIS) and the Submissions Report, including the Revised Environmental Mitigation Measures (REMMs)
- Contractual requirements including the Linewide Deed and General and Particular Specifications
- Applicable legislation.

2.2 Objectives and targets

The objectives, targets and key performance indicators for the NV Program are detailed in Table 1.

Table 1: Objectives, targets and performance indicators

Objectives	Targets	Performance indicators
Establish adequate and appropriate processes to achieve compliance with the noise and vibration monitoring requirements of the Planning Approval, REMMs, performance outcomes, EPL, CEMF and CNVS	No breaches or regulatory infringements (PINs or prosecutions)	Number of breaches or regulatory infringements
Demonstrate compliance with the noise and vibration monitoring requirements of this NV Program (Table 7 and Table 9).	100% compliance with triggered noise and vibration monitoring requirements	Number of actual noise and vibration monitoring events against the number of triggered monitoring events
Demonstrate continual improvement through the verification of predicted noise and vibration levels.	100% compliance with predicted noise and vibration levels	Number of breaches of predicted noise and vibration levels

2.3 Context and interface with other plans

This NV Program forms part of the Construction Noise and Vibration Management Plan (NVMP), a Subplan that sits under the Construction Environmental Management Plan (CEMP) for the Linewide Project. This NV Program describes the procedures for noise and vibration monitoring to ensure the Project is meeting the requirements of the NVMP and other applicable elements of the following documents (referred to as Project Requirements):

- State Significant Infrastructure Sydney Metro West – Rail Infrastructure, stations, precincts and operations Planning Approval, SSI 22765520 issued on 25 January 2023; and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Planning Approval issued 11 March 2021
- Environment Protection Licence 22098 (EPL)
- The Stage 3 Environmental Impact Statement (EIS) and the Submissions Report
- Revised Environmental Mitigation Measures (REMMs);
- The Sydney Metro Construction Environmental Management Framework (CEMF) version 4.5
- Contractual requirements including the Linewide Deed and General and Particular Specifications.

The NV Program relates to monitoring noise and vibration from the construction for the Project. This NV Program does not consider operational noise or vibration monitoring, which will be covered under a separate plan in the future.

2.4 Consultation and approval of this program

Reflecting the requirements of SSI 22765520 Conditions of Approval (CoA) A6 and C14, this NV Program will be prepared in consultation with the following stakeholders consistent with Section 3.5 of the NVMP:

- Environment Protection Authority (EPA),
- Place Management NSW (in respect of The Bays),
- SOPA (in respect of Sydney Olympic Park),
- Relevant Councils as noted below:
    - City of Sydney Council (CoS)- Pyrmont
    - Inner West Council (IWC) – The Bays
    - City of Canada Bay Council (CoCB)– Burwood North
    - City of Parramatta Council (CPC)– Sydney Olympic Park, and Clyde/Rosehill,

A detailed consultation report, including matters raised by stakeholders and JH responses, is provided in Appendix E of the NVMP. Affected stakeholders as identified in the DNVISs will be engaged every two years to review the noise and vibration impacts, mitigation measures and the noise and vibration monitoring and modelling for construction as it relates to them.

This NV Program will be endorsed by the ER and Acoustic Advisor (AA) and submitted to the Planning Secretary for approval at least one month before the commencement of the relevant construction phase.

The Linewide Project works construction phase will not commence until the CEMP, Sub-plans and monitoring programs have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). This NV Program, including any minor amendments approved by the ER and AA, will be implemented for the duration of the Project. In accordance with the Sydney Metro West Stage 3 Phasing Report, construction of a phase (N) will not commence until the CEMP and CEMP Subplans for that phase have been approved by the Planning Secretary or endorsed by the ER upon nomination by the Planning Secretary (whichever is applicable).

3 Project overview

3.1 Background

The NSW Government is delivering Sydney Metro West – a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, transforming Sydney for generations to come.

This once-in-a-century infrastructure investment will provide fast, reliable turn-up- and-go metro services with fully accessible stations, link new communities to rail services and support employment growth and housing supply. Stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

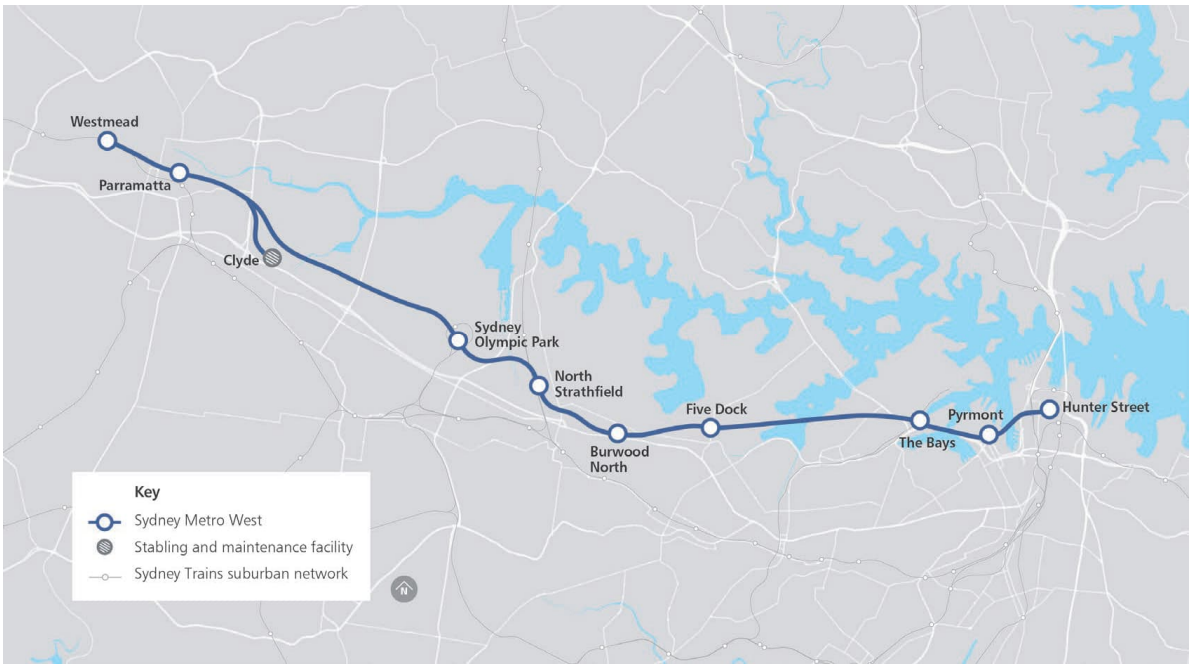
Sydney Metro West will target an opening date of 2032.

The Linewide Project is a 24-kilometre underground railway connecting the Sydney and Parramatta CBDs and is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

Sydney Metro has appointed John Holland Pty Ltd (JH) under a Design & Construct Contract, to perform the design, construction, commissioning and completion of the Sydney Metro West Linewide Project (Linewide Project). The Linewide Project is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

The Linewide Project was assessed and approved under the SSI 22765520 on 25 January 2023 as part of the Sydney Metro West – Rail infrastructure, stations, precincts and operations Conditions of Approval.

The existing noise environment and vibration considerations has been detailed in Technical Paper 4 of the Stage 3 EIS. The technical paper considers the requirements of the Sydney Metro Construction Noise and Vibration Standard (CNVS). Existing noise levels vary across the Linewide Project noting that several of the sites are close to major sources of existing transport noise (eg , Parramatta Road in Burwood, Victoria Road in Rozelle, and Anzac Bridge near Pyrmont). The tunnel alignment generally runs through areas of suburban residential receivers, with isolated industrial and/or commercial areas. Receivers surrounding the construction sites are generally a mix of residential and various commercial uses, depending on location.



3.2 Construction scope of work

The Linewide project scope relates to delivery of end-to-end systems for Sydney Metro West, fit out of the tunnels, cross passages and caverns, fit out of Linewide systems at the Stations, an integrated stabling and maintenance facility to clean, maintain, repair and store trains, a service facility at Rosehill and rail infrastructure to support day-to-day operations for Sydney Metro West.

The main scope of works for the Linewide Project includes the following:

- Enabling works and establishment at- The Bays, Burwood North, Clyde Stabling and Maintenance Facility (SMF), Rosehill Service Facility (RSF) and Sydney Olympic Park (SOP) For the remainder of the construction sites between Westmead and the CBD, these sites are under the control of the Stations Contractor and any access (or works) at these sites will be coordinated through the Stations Contractor and in accordance with their CEMP and CEMP Sub Plans to the extent relevant to any Linewide Project Works.;
- The exception to the above is a limited section of concrete invert works within the cross-over cavern at Pyrmont Station. This site will be accessed for concrete delivery and placement for approximately a three month period between Q4 2026 and Q2 2027.
- Tunnel fit out works, including rail delivery, invert and track installation, track drainage, walkway and mechanical and electrical works (M&E)
- Station fit out works, including high voltage (HV) and tunnel ventilation system (TVS)
- Clyde SMF including construction of buildings, civil works, Contained Service Route (CSR), track, overhead wiring (OHW)
- RSF including construction of buildings, civil works, CSR, track, OHW
- Dive building construction
- Trenching for high voltage connection works at The Bays
- Other permanent structures such as Operational Water Treatment Plants
- Treatment and disposal of material not suitable for reuse will be offsite disposal in accordance with approvals
- Project wide testing and commissioning of tunnel systems, facilities and equipment
- Rehabilitation of temporary construction sites and removal of temporary works, including acoustic sheds, site sheds and plant
- Final landscaping at Clyde and Rosehill.

The Linewide project will leverage four key access points during construction: Clyde, Burwood North, Sydney Olympic Park, and The Bays.

4 Legal and other requirements

4.1 Relevant Legislation and Guidelines

As outlined in Section 3.1 of the NVMP, this NV Program has been prepared in accordance the Protection of the Environment Operations Act 1997 (including Protection of the Environment Operations (Noise Control) Regulation 2017). Additional details on legislative requirements are provided in Section 4.2 of the CEMP.

The standards and guidelines applicable to this NV Program are summarised in Table 2 below.

Table 2: Construction Noise and Vibration Guidelines

Guideline/Standard	Relevance to the Project
Sydney Metro Construction Noise and Vibration Standard SM-20-00098866, v4.5, Sydney Metro July 2022	Assessment and management protocols for construction of Sydney Metro projects. This Sydney Metro standard is based on the requirements of the ICNG and Transport for NSW Construction Noise and Vibration Strategy, as appropriate to Sydney MetroIt ensures consistency in assessing construction noise and vibration impacts across Sydney Metro projects by filling the gap between industry guidelines, community & stakeholder perceptions and Sydney Metro's experience.
West-Rail Infrastructure, stations, precincts and operations (Stage 3) Out-of-Hour Work Protocol, Sydney Metro West Stage 3 Environmental Team, dated 03/09/2025, revision 6	This protocol was developed to comply with CoA E28. It described the process for considering, managing, and approving works on the Sydney Metro West Stage 3 that is undertaken outside standard construction hours specified in CoA E25 and E26.
Interim Construction Noise Guideline (ICNG), Department of Environment and Climate Change 2009	Assessment of airborne noise and ground-borne noise impacts from construction activity on sensitive receivers
Noise Policy for Industry (NPfI), Environment Protection Authority 2017	Ambient noise monitoring and analysis procedures, and Assessment and management of construction events that might cause sleep disturbance.
NSW Road Noise Policy (RNP), Department of Environment, Climate Change and Water 2011	Provides guidance for assessing road traffic noise impacts where construction related traffic moves off the worksite onto the public road network.
NSW Assessing Vibration – a technical guideline (AVTG), Department of Environment and Conservation 2006	Assessment of vibration impacts on human occupants of sensitive receiver buildings
NSW Approved Methods for the Measurement and Analysis of Environmental Noise, Environment Protection Authority 2022	Sets out minimum requirements and good practice methods for the measurement and analysis of environmental noise, including construction noise, for works under an Environment Protection Licence (EPL).
Australian Standard 1055: 2018 Acoustics – Description and Measurement of Environmental Noise	Provides procedures for describing, measuring and reporting environmental noise, including the selection of measurement locations, equipment requirements, measurement techniques and data interpretation.
Australian Standard AS2436-2010 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites	Provides guidance for minimising and managing construction noise and vibration on construction sites to assist the preparation of Noise and Vibration Management Plans
Australian Standard 2659.1 – 1998 Guide to the use of sound measuring equipment – portable sound level meters	Sets out the setup and operation of portable sound level meters to ensure accurate and reliable noise measurements for environmental assessments.

Guideline/Standard	Relevance to the Project
Australian Standard 2775 Mechanical Mounting of Accelerometers	This Standard provides guidance on the correct mounting of accelerometers to ensure accurate and reliable vibration measurements.
British Standard BS 6472-2008 Evaluation of human exposure to vibration in buildings (1-80Hz)	Standard referenced in AVTG for providing guidance on assessing vibration impacts on human occupants of sensitive receiver buildings
British Standard 7385: Part 2-1993 Evaluation and measurement of vibration in buildings	Risk assessment of cosmetic damage to residential, commercial and industrial buildings or structures from construction generated vibration.
German Standard DIN4150-2016 Structural vibration Part 3: Effects of vibration on structures	Risk assessment of cosmetic damage) to vibration sensitive heritage buildings and structures, where the structure is found to be unsound.
International Standard IEC 61672.1 Electroacoustic – Sound Level Meters – Specifications	The Standard defines the performance requirements and specifications for sound level meters used in environmental and occupational noise measurements.
International Standard IEC 60942 'Electroacoustics – Sound calibrators	Specifies the performance requirements, testing methods and accuracy classes for sound calibrators used to verify and calibrate sound level meters.
ISO 3744 Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane	Provides the measurement, instrumentation requirements and calculation procedures for determining the sound power of noise sources.
ISO 3746 Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Survey method using an enveloping measurement surface over a reflecting plane	The Standard sets out the method for determining the sound power levels of noise sources by measuring sound pressure on an enveloping surface in an environment approximating a free field over a reflecting plane.
ISO 6393 Earth-moving machinery – Determination of sound power level – Stationary test conditions	Specifies a standardised method for measuring the sound power level of earth-moving machinery operating under stationary (non-moving) test conditions.
ISO 6395 Earth-moving machinery – Determination of sound power level – Dynamic test conditions	Specifies a standardised method for measuring the sound power level of earth-moving machinery operating under dynamic (moving) test conditions.
NATA General Accreditation Guidance – General Equipment – Calibration and Checks, General Equipment Table 2018.	Provides guidance on the calibration, verification and routine checking requirements for general laboratory and field equipment to ensure measurement accuracy and traceability.

4.2 Project environmental requirements

Other environmental requirements relevant to noise and vibration monitoring include:

- SSI 22765520 Planning Approval (dated 25 January 2023) and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Planning Approval (dated 11 March 2021) (Planning Approvals)
- Environment Protection Licence 22098 (EPL) (details to be added on receipt of the EPL)
- Sydney Metro West Stage 3 – Phasing Report, Rev 2.01
- Sydney Metro Construction Environmental Management Framework (CEMF) version 4.5
- EIS and the Submissions Report, including the REMMs
- Contractual requirements including the Linewide Deed and General and Particular Specifications.

Table 3: Project Planning Approval Conditions and other requirements relevant to this Monitoring Program

ID	Criteria	Reference
CoA	**Project Planning Approval- SSI 22765520**	
C13	The following Construction Monitoring Program must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP: (a) Noise and vibration - EPA, Place Management NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)	This Program Section 2.4
C14	Each Construction Monitoring Program must provide: (a) details of baseline data available including the period of baseline monitoring; (b) details of baseline data to be obtained and when; (c) details of all monitoring of the project to be undertaken; (d) the parameters of the project to be monitored; (e) the frequency of monitoring to be undertaken; (f) the location of monitoring; (g) the reporting of monitoring results and analysis results against relevant criteria; (h) details of the methods that will be used to analyse the monitoring data; (i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicate unacceptable project impacts; (j) a consideration of SMART principles; (k) any consultation to be undertaken in relation to the monitoring programs; and (l) any specific requirements as required by Condition C15.	(a) Section 5 . (b) Section 5 (c) Section 6, 7 (d) Section 6, 7 (e) Section 6, 7 (f) Section 6, 7 (g) Section 8.2, 9.5 (h) Section 6, 7, 9.3 (i) Section 6.4, 7.4 . (j) Section 6.4, 7.4 Section 2.4 See below
C15	The Noise and Vibration Construction Monitoring Program must include: (a) noise and vibration monitoring determined in consultation with the AA to confirm the best achievable construction noise and vibration levels with consideration of all reasonable and feasible mitigation and management measures that will be implemented; (b) for the purposes of (a), noise monitoring must be undertaken during the day, evening and night-time periods (as appropriate) and within the first month of work as well as throughout the construction period and cover the range of activities being undertaken at the sites; and (c) a process to undertake real time noise and vibration monitoring. The results of the monitoring must be readily available to the construction team, the Proponent, ER and the AA. The Planning Secretary and EPA must be provided with access to the results on request (d) noise monitoring methods must be developed and carried out to meet the requirements of the EPA's Approved Methods for the Measurement and Analysis of Environmental Noise (EPA, 2022).	(a) Section 2.4, 6, 7 (b) Section 6, 7 (c) Section 6, 7 (d) Section 6, 7
C16	With the exception of any Construction Monitoring Programs expressly nominated by the Planning Secretary to be endorsed by the ER, all Construction Monitoring Programs must be submitted to the Planning Secretary for approval.	Section 2.4
C17	Construction Monitoring Programs not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all undertakings	N/A

ID	Criteria	Reference
	made in the documents listed in Condition A1. These Construction Monitoring Programs must be submitted to the ER for endorsement at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	
C18	Construction Monitoring Programs which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is phased no later than one (1) month before the commencement of that phase.	Section 2.4
C19	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), the required Construction Monitoring Programs and all relevant baseline data for the specific construction activity has been collected.	Section 2.4
C20	Construction Monitoring Programs, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	Section 2.4
C21	The results of the Construction Monitoring Program must be submitted to the Planning Secretary (upon request), the ER, the AA (where relevant) and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.	Section 8.2, 9.5
Section	**CEMF**	
Section 7.2(c)	Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	Section 2.1
Section 7.2(d)	The following compliance records would be kept by Principal Contractors: i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and ii. Records of community enquiries and complaints, and the Contractor's response.	Section 8.2, 9.5
Appendix B CEMF-NV14	Where there is potential for exceedances of the vibration objectives, attended monitoring would be undertaken at the commencement of vibration generating activities to confirm site laws. If, following confirmation of site laws, there continues to be a potential for exceedances, continuous vibration monitoring including audible and visible alarms would be conducted at the nearest sensitive receivers.	Section 7.2, 7.3
Appendix B CEMF-NV15	Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.	Section 7.2, 7.3
Appendix B CEMF-NV19	A noise monitoring program would be carried out for the duration of the works in accordance with the Construction Noise and Vibration Management Plan and any approval and licence conditions. Where a sensitive receiver has refused monitoring at their property, monitoring would be carried out at an alternate location if available and deemed representative by an acoustic consultant.	Section 2.1, 6.2

ID	Criteria	Reference
Section	**CNVS**	
Section 6.1 Plant noise auditing	In order to compare the noise levels of plant and equipment with the values in Section 4.2, the following guidelines are recommended: - Measurements of Sound Pressure Level (SPL) at 7 m (with plant or equipment stationary) shall be undertaken using procedures that are consistent with the requirements of Australian Standard AS 2012.1–1990 Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery and Agricultural Tractors – Stationary Test Condition Part 1: Determination of Compliance with Limits for Exterior Noise. - Measurements of Sound Power Level (SWL) shall be determined using procedures that are consistent with the requirements of International Standard ISO 9614-2 1996 Acoustics – Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning. - If measuring the SPL at 7 m of moving plant, compliance measurements would be guided by the requirements of Australian Standard AS 2012–1977 Method for Measurement of Airborne Noise from Agricultural Tractors and Earthmoving Machinery.	Section 4.1, 6.2.3
Section 6.2 Noise monitoring	Where a DNVIS or GNVIS has been prepared for a Sydney Metro construction site and it has been predicted that noise levels may be in excess of the nominated construction noise goals at a noise sensitive receiver, noise monitoring would be conducted at: - the affected receiver; or - if more than one affected receiver has been identified, at the nearest affected receiver; or - where the nearest affected receiver refuses noise monitoring on their property, at the near point to that receiver within the site boundary. - If it can be demonstrated that direct measurement of noise from the construction site is impractical, alternative means of determining construction noise levels may be adopted in accordance with Chapter 7 of the NSW EPA's Noise Policy for Industry 2017. All noise monitoring should be assessed against the nominated noise goals before being compiled into a report to be forwarded to the construction contractor and project manager. Reporting would be submitted to the construction contractor and project manager within one week of being undertaken or at weekly intervals for continuous monitoring. All noise monitoring reports would also be made available to the public through a publicly accessible website.	Section 6
Section 6.3 Vibration monitoring	Where it is anticipated that an item of plant will exceed the cosmetic damage criteria given in Section 2.3.2 , vibration monitoring would be required at the nearest affected receiver. Where it is anticipated that an item of plant will exceed the human response / ground borne noise criteria and concerns have been raised regarding vibration, vibration monitoring would also be required at the receiver(s) under question. All vibration monitoring results would be assessed against the nominated vibration goals and compiled into a report to be forwarded to the construction contractor and project manager. Reporting would be submitted to the construction contractor and project manager within one week of being undertaken or at weekly intervals for continuous monitoring. All vibration monitoring reports	Section 7 (more specifically 7.2.2) Section 7 (more specifically 7.2.4) Section 7 (more specifically 7.4) Section 8.2, 9.5

ID	Criteria	Reference
	would also be made available to the public through the publicly accessible website.	

4.3 Infrastructure Sustainability Council requirements

The Linewide works will be assessed by the Infrastructure Sustainability Council (ISC) IS V2.2 Rating. Noise and vibration requirements of the relevant credits (Env-2 Noise and ENV-3 Vibration) are summarised in Table 4, including cross-references to where the requirement is addressed in this NVMP. Additional details on the ISC requirements and the credit objectives are provided in the Sustainability Management Plan. Note, the ISC criteria for this plan and the NVMP pertains to construction only. Operational requirements will be included in a separate plan.

Table 4 ISC Noise and Vibration Credits

ISC Credit	Level	Criteria	Reference
Design ENV-2 Noise	1	SMART noise goals must be established for the project considering the baseline data and predicted impacts, and cover both construction and the operating asset.	Section 2.5 & Table 2 of the NVMP & Section 2.2, Table 1 of this plan
	1	Noise goals must be reviewed by a suitably qualified professional against the requirements above.	Document Approval Table of NVMP
	1	Noise impacts must be modelled (see Definitions) for the construction and operation phases of the project, consider a comparison against the baseline data and demonstrate no recurring or major exceedances of the project's construction and operations noise goals.	Section 6.1-6.2 of the NVMP and DNVISs
	1	Modelled impacts must be developed or interpreted by a suitably qualified professional. For the operation phase, impacts are normally assessed using modelling results from the design development.	DNVISs and NVMP to be developed and/or reviewed by SQP (i.e. Renzo Tonin)
	1	Construction and operational noise modelling must be completed for all scenarios where the risk to sensitive receptors warrants, factoring in cumulative impacts (i.e. multiple impacts affecting the same sensitive receptor, such as fatigue due to concurrent or enduring construction impacts). Risk levels must be justified as well as any exclusions.	Section 6.1-6.2 of the NVMP and DNVISs
	1	No significant or permanent environmental damage pathway **(only if the above cannot be met)**: If modelling indicates reoccurring or major exceedances of noise goals for the construction or operation phases, the project may elect to demonstrate that the reoccurring or major exceedances do not result in significant or permanent environmental damage through the following pathway: The project must prepare a brief memo incorporating the following items: • Summary(ies) of the exceedance of noise goals (major or recurring) modelled. • Confirmation that this exceedance will not result in any notices, fines or penalties (noting that	TBC - pending results of the DNVISs

ISC Credit	Level	Criteria	Reference
		minimum performance targets are typically regulatory requirements) • Confirmation from a suitably qualified professional that the exceedance will not result in any significant or lasting environmental damage (with consideration to sensitive receivers and cumulative impacts). • Details of the mitigation measures and precautions put in place to avoid any direct impacts to sensitive receivers. • Evidence of notification and acceptance of (or no negative response to) proposed impacts and any relevant mitigation measures by affected stakeholders. • Sign off by Project Senior Management (i.e. Project Manager or Project Director). • Sign off by Proponent/Asset Owner.	
	2	Affected stakeholders including those in the local community must be informed of the results of noise modelling for construction and operations as it relates to them and proactively provided the opportunity to review the project's noise goals, and the choices and potential consequences of mitigation measures for construction and operations. These requirements may be linked to aspects of Sta-1 and Sta-2.	Section 3.6 of the NVMP and Section 2.4 of this plan
	2	Where provided, the project must demonstrate how they have considered stakeholder inputs in proposed noise controls and mitigation measures. If any items raised by stakeholders are determined to be outside of the project scope or not relevant, justification must be provided.	Section 3.6 of the NVMP
As-Built Env-2	1	Monitoring for construction and updated modelling for operation (if required) must demonstrate no recurring and major exceedances of the project's noise goals (DL1.1), i.e. all goals will be met, and there are no recurring or major exceedances.	Section 6.2 and Section6.3 and DNVISs
	1	The evidence must include details of the monitoring frequency, duration and locations, any relevant triggers (e.g. high-risk activities) and the results of the parameters monitored.	Section 6.2 and Section6.3 and DNVISs
	1	A review of the effectiveness of construction measures, handling of exceedances, and interpretation of associated monitoring and updated modelling results must be completed by a suitably qualified professional.	Section 6.4 of this plan
	2	Affected stakeholders (as per DL2.1) must be proactively provided the opportunity every two years to review noise impacts, mitigation measures and the noise monitoring and modelling for construction and operations as it relates to them. These requirements may be linked to aspects of Sta-1 and Sta-2. Any improvement actions agreed with stakeholders must be implemented.	Section 3.6 of the NVMP and Section 2.4 of this plan

ISC Credit	Level	Criteria	Reference
Design Env-3 Vibration	1	SMART vibration goals must be established for the project considering the baseline data and predicted project impacts, and cover both construction and operational phases. See Additional Guidance on vibration goals and baseline data	Section 2.5 & Table 2 of the NVMP & Section 2.2, Table 1 of this plan
	1	The project's vibration goals must include no physical damage to buildings or structures attributable to the project.	Section 2.5 & Table 2 of the NVMP & Section 2.2, Table 1 of this plan
	1	Vibration impacts must be modelled (see Definitions) for the construction and operation phases of the project and consider a comparison against the baseline data and demonstrate that there are: • No exceedances of vibration goals for damage to buildings and structures for construction and operations (DL1.1)	Section 6.1-6.2 of the NVMP and DNVISs
	1	Modelled impacts must be developed or interpreted by a suitably qualified professional.	DNVISs and NVMP to be developed and/or reviewed by SQP (i.e. Renzo Tonin)
	1	Construction and operational vibration modelling must be completed for all scenarios where the risk to sensitive receptors warrants, factoring in cumulative impacts (i.e. multiple impacts affecting the same sensitive receptor, such as fatigue due to concurrent or enduring construction impacts). Risk levels must be justified as well as any exclusions.	Section 6.1-6.2 of the NVMP and DNVISs
	1	Dilapidation surveys must be offered to properties at high risk of being impacted by vibration, and undertaken when accepted.	Section 7 of the NVMP
	2	Affected stakeholders (e.g. asset owners, local community, building occupiers) must be informed of the results of vibration modelling for construction and operations as it relates to them and proactively provided the opportunity to review the project's vibration goals, and the choices and potential consequences of mitigation measures for construction and operations. These requirements may be linked to aspects of Sta-1 and Sta-2.	Section 3.6 of the NVMP and Section 2.4 of this plan
	2	Where provided, the project must demonstrate how they have considered stakeholder inputs in proposed vibration controls and mitigation measures. If any items raised by stakeholders are determined to be outside of the project scope or not relevant, justification must be provided.	Section 3.6 of the NVMP
As-Built Env-3	1	Monitoring for construction and updated modelling for operation (if required) must demonstrate that for the project's vibration goals (DL1.1), there are: • No exceedances of vibration goals for damage to buildings and structures for construction and Operations.	Section 7 of this plan and DNVISs
	1	The evidence must include details of the monitoring frequency, duration and locations, any relevant triggers (e.g. high-risk activities) and the results of the parameters monitored.	Section 7, 8 and 9 of this plan

ISC Credit	Level	Criteria	Reference
	1	A review of the effectiveness of construction measures, handling of exceedances, and interpretation of associated monitoring and updated modelling results must be completed by a suitably qualified professional	Section 9.3 of this plan
	2	Affected stakeholders (as per DL2.1) must be proactively provided the opportunity every two years to review vibration impacts, mitigation measures and the vibration monitoring and modelling for construction and operations as it relates to them. These requirements may be linked to aspects of Sta-1 and Sta-2. Any improvement actions agreed with stakeholders must be implemented.	Section 3.6 of the NVMP and Section 2.4 of this plan

5 Existing environment

5.1 Sensitive receptors

In accordance with CoA E23 a detailed Land Use Survey was undertaken to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The Land Use Survey is a live document that will be progressively updated throughout construction as required.

The survey brought the NSW cadastral database and identified land use details into a Geographic Information System (GIS). The GIS allows potentially critical areas that are sensitive to construction noise and vibration impacts to be easily identified and updated as land uses change during the Project timeline.

To facilitate the assessment of noise impacts from the Linewide Project, receivers along the route have been divided into Noise Catchment Areas (NCAs). NCAs group individual sensitive receivers by common traits, such as existing noise environment and location in relation to the Works. The EIS assessment process delineated a total of 26 NCAs between Westmead and Hunter Street. NCAs are shown on the land use maps in Appendix B of the NVMP..

Additional details on the NCAs and land use survey are provided in Section 4.1 and in Appendix B (respectively) of the NVMP.

5.2 Baseline monitoring

As part of the EIS process, baseline noise monitoring was conducted at 24 locations between Westmead and Hunter Street. At The Bays, further review of the NCAs identified in the EIS has been completed. NCA21 has been subdivided into three NCAs to better represent the existing acoustic environment and to provide consistency with the EIS for the Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) project (Renzo Tonin & Associates 2020) and the NVMP for the Sydney Metro West Eastern Tunnelling Package (equivalent NCA2A, B and C). Baseline noise monitoring data from the Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) Environmental Impact Statement (Renzo Tonin & Associates 2020) to better represent the ambient noise environment in NCAs around The Bays.

The ambient noise monitoring locations were selected with reference to the procedures outlined in the Noise Policy for Industry (NPfI). The rating background level (RBL) is the overall single figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term and methodology to obtain RBLs and ambient noise levels (L_{Aeq}) for the day, evening and night assessment periods is described in detail within the NPfL.

The baseline monitoring locations for each NCA are depicted on the land use survey drawings in Appendix B of the NVMP. The appropriate RBLs and ambient noise levels (L_{Aeq}) for each NCA, as summarised in Table 5 were determined through noise monitoring.

Table 5 Summary of baseline noise monitoring data from EIS

Monitor ID	Address	RBL[1]				Ambient noise level (L_{Aeq})[1]		
Westmead		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.01	8-12 Alexandra Avenue, Westmead[3]	49	47	37	43	67	67	62
B.02	14A Central Avenue, Westmead	48	46	37[8]	45	58	53	51
Parramatta		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.03	Arthur Phillip High School, Parramatta[3]	58	53	43	51	69	67	62
Clyde[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.04	5 Hope Street, Rosehill[3]	51	48	41	46	61	58	57
B.05	9 A'Beckett Street, Granville[3]	50	49	45	48	56	55	53

Monitor ID	Address	RBL[1]				Ambient noise level (L_{Aeq})[1]		
B.06	4B Gray Street, Granville[3]	52	51	44	48	58	57	55
B.07	10 Carnarvon Street, Silverwater	46	44	41	44	60	57	55
Sydney Olympic Park[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.08	1 Herb Elliot Avenue, Sydney Olympic Park	48	48	46	47	55	54	52
B.09	6 Parkview Drive, Sydney Olympic Park	48	46	41	45	57	58	53
North Strathfield[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.10	17 George Street, North Strathfield	47	47	44	46	60	60	55
B.11	131 Queen Street, North Strathfield	51	47	39	45	61	60	55
Burwood North[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.12	17 Burton Street, Concord	43	43 (47)[6]	42	43	56	55	50
B.13	8 Esher Street, Burwood	48	48	44	46	57	56	55
Five Dock[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.14	3 Henry Street, Five Dock	42	41	33	38	58	56	51
B.15	8 Waterview Street, Five Dock	43	43 (44)[6]	38	41	57	56	50
B.16	11 Chapel Street, Lilyfield	36	36 (39)[6]	33	35	60	60	53
B.17	28 Crescent Street, Haberfield	43	43 (45)[6]	37	40	57	57	51
B.18	102 Henley Marine Drive, Russell Lea	48	45	37	43	64	61	55
The Bays[3]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.19	21 Mansfield Street, Rozelle	43	43	35	39	56	54	47
B.20	22 Lilyfield Road, Rozelle	51	51	45	48	57	57	54
B.40[7]	23 Smith Street, Rozelle	49	49	46	48	54	51	49
B.35[7]	C13/1 Buchanon Street, Balmain	42	44	38	40	54	53	48
B.21	308 Glebe Point Road, Glebe	48	47	39	44	59	58	51
Pyrmont[4]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.22	200 Paternoster Row, Pyrmont	50	47	45	48	56	50	47
B.23	1-5 Harwood Street, Pyrmont	52	49	46	49	61	59	56
Hunter Street[5]		Day[2]	Eve[2]	Ngt[2]	Ms[9]	Day[2]	Eve[2]	Ngt[2]
B.24	1 Hosking Place, Sydney	61	56	52	57	66	62	63

Notes:

1. The RBL and LAeq noise levels have been determined with reference to the procedures in the NPfI.
2. Daytime is 7am to 6pm, evening is 6pm to 10pm and night-time is 10pm to 7am.
3. Data taken from Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD (Sydney Metro, 2020).
4. Data taken from Sydney Metro West Environmental Impact Statement – The Bays to Sydney CBD (Sydney Metro, 2021b).
5. Data measured as part of Sydney Metro Chatswood to Sydenham Environmental Impact Statement in 2015. Noise levels in the CBD are typically elevated due to relatively constant sources of noise and are unlikely to significantly change over time. The levels measured in 2015 are considered representative of current ambient noise conditions.
6. The monitored evening level was found to be higher than the daytime. In this situation the NPfI requires that the evening level be reduced to match the daytime.
7. Data taken from Western Harbour Tunnel (WHT) and Warringah Freeway Upgrade (WFU) Environmental Impact Statement (Renzo Tonin & Associates 2020).
8. Night-time RBL from B.01 is used as we understand that night-time background noise levels were influenced by plant noise near the monitor.
9. Morning shoulder (Ms) from 05:00 to 07:00 Monday to Friday, and from 06:00 to 08:00 Saturday, Sunday and Public holidays
10. .Not used.
11. Alternative RBLs may be considered on a case-by-case basis in consultation with the AA.

6 Noise monitoring

6.1 Overview

This Section describes monitoring of construction noise during the Linewide Project, including:

- Monitoring locations
- Monitoring frequency and method
- Noise goals.

6.2 Monitoring locations

6.2.1 Fixed, real-time noise monitoring

Real-time noise monitoring will be undertaken to satisfy CoA C15(c). The requirement for real-time monitoring will be confirmed in the Detailed Noise and Vibration Impact Statements (DNVIS) prepared for each worksite (refer to Section 7.1 of the NVMP) based on the extent of impacts, especially during out-of-hours works. Real-time monitoring for a worksite will be triggered where the DNVIS classifies noise impacts as moderate to high.

Real-time noise monitoring will start at the commencement of Linewide works that trigger the requirement for real-time monitoring. The monitoring will verify whether construction noise emissions are within the noise levels predicted at the real-time monitoring locations (which will be included and summarised in the DNVIS) and confirm whether additional mitigation is required to manage noise impacts. This will be used as a management measure not for compliance. Attended monitoring will confirm compliance to relevant NMLs and / or predicted levels considering the contribution from site.
.

Indicative locations of all monitoring stations are found in Annexure 1and coordinates are detailed in Table 6. The monitoring locations are informed by the site layout, receiver locations, and the safety and security of the monitor. The monitoring locations will be confirmed once the monitoring equipment is physically installed. Once confirmed, the monitoring locations will be included in the noise prediction modelling in the DNVIS, to allow ongoing verification of the predicted and measured construction noise levels on site.

Where the real time unattended monitoring location changes during the construction period, the AA will be consulted prior to the change occurring and records of the revised location will be documented in regular Environmental coordination meeting minutes between Sydney Metro, John Holland the ER and AA.

Table 6 Indicative coordinates of fixed real-time noise monitoring locations

Worksite	Monitoring location ID	Easting	Northing
Clyde MSF & Rosehill SF	N_01	316874	6255247
Burwood North metro station	N_02	324839	6250834
Sydney Olympic Park metro station	N_03	321537	6252874
The Bays	N_04	331549	6251280

6.2.2 Activities based airborne noise monitoring

Attended noise monitoring locations may vary throughout the Linewide Project works and will be undertaken for specific construction activities where noise levels exceed the NMLs at a noise sensitive receiver. Locations will be determined on a case-by-case basis in a DNVIS, in response to complaints, as required by the EPA under the EPL or as required by OOH permits under the OOHW Protocol. Predicted noise levels at these locations will be included in the DNVIS.

The identification of monitoring locations will consider the following:

- Most affected noise sensitive receiver location in proximity to the assessed activities (if more than one affected receiver has been identified, the nearest affected receiver will be nominated for monitoring)
- Location of previous monitoring sites
- Proximity of the receiver to a Project worksite
- Sensitivity of the receiver to noise
- Background noise levels
- Safety of personnel undertaking the measurements
- Expected duration of the impact.

Monitoring on private property will be subject to property owner approval prior to the commencement of monitoring. Where the nearest affected receiver refuses noise monitoring on their property, monitoring will be undertaken at the nearest point to that receiver within the site boundary. If it can be demonstrated that direct measurement of noise from the construction site is impractical, alternative means of determining construction noise levels may be adopted in accordance with Chapter 7 of the NPfI.

Noise monitoring should, where practicable, be in positions with unobstructed views of general site activities, whilst shielded as much as possible from non-construction site noise (e.g. road traffic, rail noise and other surrounding noise). In accordance with Australian Standard AS1055, outdoor noise monitoring will be undertaken at least 3.5m from any reflecting structure other than the ground. The preferred measurement height is 1.2-1.5m above the ground. Where the noise monitors are placed within 3.5 metres of building facades, walls or cliffs, then a reflection correction of up to -2.5dB(A) shall be applied to remove the effect of increased noise due to sound reflections from such structures.

Measurements inside buildings will be at least 1m from the walls or other major reflecting surfaces, 1.2 m to 1.5m above the floor, and about 1.5m from windows.

6.2.3 Plant/equipment noise checks

Plant/equipment noise checks will be carried out as required on a case-by-case basis, such as in response to a plant/equipment specific noise related complaint or significant noise generating plant item has not been previously used and during noise and vibration assessment validation monitoring when it is possible to isolate the noise from one piece of plant or equipment. During onboarding of significant noise generating plant items pre acceptance checks will include environmental noise control checks including engine baffling or noise reduction equipment fitted as per manufactures specifications.

Plant/equipment noise checks will consider the following guidelines:

- Sound Pressure Level of stationary plant or equipment – Australian Standard AS2012–1990 Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery and Agricultural Tractors – Stationary Test Condition Part 1: Determination of Compliance with Limits for Exterior Noise
- Sound Pressure Level of moving plant or equipment – Australian Standard AS2012–1977 Method for Measurement of Airborne Noise from Agricultural Tractors and Earthmoving Machinery
- Sound Power Level – International Standard ISO 9614-2 1996 Acoustics – Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning.

Plant/equipment noise checks will typically be carried out at a distance of 7 metres from the plant, depending on site constraints. The measurements should be undertaken at least 3.5m from any reflecting structure other than the ground. The preferred measurement height is 1.2-1.5m above the ground. Where the noise monitors are placed within 3.5 metres of building facades, walls or cliffs, then a reflection correction of up to -2.5dB(A) will be applied to remove the effect of increased noise due to sound reflections from such structures.

For measurements unable to undertaken under typical operating conditions, a stationary test at high idle will be considered. Further guidance for noise monitoring of specific plant items can be obtained from ISO 3744, ISO 3746, ISO 6393 and ISO 6395, referenced in Section 4.2.

In the case of an exceedance in Sound Power Level, the item of plant would either be replaced, or the advice of an acoustic consultant would be sought to provide suitable mitigation measures, which may include:

- Ensuring all bolts are tightened and no parts are loose
- Cleaning and/or lubricating moving parts

- Replacing old or worn parts
- Implementing additional or upgrading existing muffling devices
- Building enclosures around items of stationary plant (e.g. pumps or generators).

A register of measured Sound Pressure Level and/or Sound Power Level for each item of significant noise generating plant will be kept for reference where future noise audits are conducted (and as part of plant onboarding to the construction site). The register will be reviewed annually and where required corresponding revisions made to the Sound Pressure Levels presented in the DNVIS (or other assessment) where required to represent contemporary plant noise emission levels.

6.2.4 Ground-borne noise monitoring

Ground-borne noise monitoring is unlikely to be required for the Linewide Project works. If required, locations will be determined on a case-by-case basis in a DNVIS, or in response to complaints. The monitoring will be undertaken in the most affected habitable room of the sensitive receiver building and will be conducted in conjunction with vibration measurements whenever practicable. The room selected for noise monitoring should be well shielded from airborne noise intrusions, such as road traffic noise to allow the ground-borne noise to dominate over non-construction generated airborne noise.

There may be instances where the resident does not allow access to monitor in the most suitable habitable room. In these instances, JH will endeavour to monitor at the next most suitable available room or location, noting this in the monitoring form.

6.3 Monitoring frequency and method

All environmental noise monitoring equipment used will be at least Type 1 instruments as described in as required by the EPA's Approved methods for the measurement and analysis of environmental noise in NSW. Noise measurement will be taken with the following meter settings:

- Time Constant: Fast (i.e. 125 milliseconds)
- Frequency Weightings: A-weighting.

The minimum range of noise metrics to be recorded for attended noise monitoring are L_{90}, L_{eq}, and L_{max}.

Meteorological conditions during the noise monitoring period, such as wind velocity, wind direction and rainfall will be recorded from the nearest weather station to the project site, including:

- Sydney – Observatory Hill (Station ID 066214)
- Sydney Olympic Park AWS - Archery Centre (Station ID 066212)

Alternatively, local windspeed can be measured on site using a handheld anemometer. Where the maximum wind speed exceeds 5 m/s and noise measurements are required, caution will be applied as described in the AS 1055. Measurements of noise will be disregarded during rain periods, except as described in the AS 1055. Where monitoring cannot be carried out due to adverse weather, arrangements will be made to complete the monitoring as soon as conditions allow.

Monitoring frequency and methods during construction are outlined in Table 7.

Table 7 Monitoring frequency and method

Type of noise monitoring	Timing / Frequency	Duration
Fixed station monitoring[1]	- Continuous, real-time monitoring, as required by CoA C15(c).	15-minute
Activities based airborne noise monitoring	- At the first opportunity within the first month of construction commencement as well as throughout the construction period, during the day, evening and night-time periods, to: - ensure the range of activities being undertaken are measured - confirm that actual noise levels are consistent with predicted noise impacts and that the management measures that have been implemented are appropriate	15-minute

Type of noise monitoring	Timing / Frequency	Duration
	- Where a change in methodology, plant or equipment is anticipated to result in a significant increase in construction noise impact than what has been assessed - In response to a noise related complaint(s) (determined on a case-by-case basis) and in accordance with EPL Conditions - As directed by an authorised officer of the EPA - As otherwise required by the DNVIS - As required by the Out of Hours Works (OOHW) Protocol or EPL - Following implementation of mitigation measures or noise attenuation because of exceedance of predicted noise levels	
Plant/ Equipment checks	- At the first opportunity within the first month of starting Construction Works on significant noise generating items of plant as well as throughout the construction period. - Spot checks would be carried out as required on a case-by-case basis, such as in response to a specific noise related complaint and during noise verification monitoring when it is possible to isolate the noise from one piece of plant or equipment.	Static/stationary plant[1]: 1 to 2-minute Dynamic plant[2]: capture a representative activity, such as one truck-and-trailer load cycle
Ground-borne noise monitoring	- At the first opportunity following commencement of works where ground-borne noise impacts were identified in the DNVIS (unlikely to be required for the Linewide Project works), - Where appropriate in response to ground-borne noise related complaint(s) (determined on a case-by- case basis) and in accordance with the EPL - As otherwise required by a DNVIS, OOHW Protocol or EPL.	15-minute

NOTES: 1. Fixed location or constant noise source (e.g. generator, fan)
2. Variable or inconstant noise source (e.g. front-end loader in spoil bin)

6.4 Noise management

Actions to mitigate or manage noise emissions will be considered as per the measures described in the CNVMP and the relevant DNVIS. The Environment Manager / Site Supervisor will be responsible for implementing the monitoring and review process which follows SMART principles in that the actions are specific and measurable, the outcomes are achievable and realistic, and all steps are time-focussed.

The noise monitoring results will be assessed against the noise management levels (NMLs) outlined in CoA E29, Section 5.2 and 5.3 of the NVMP, and the Sydney Metro CNVS. The results will also be compared with predicted levels in the DNVIS (or other assessment) and documented with discussion about the details of work underway at the time and the mitigation in place.

If exceedance of the NML is identified, a review of site-specific mitigation measures will be undertaken to confirm that all reasonable and feasible mitigation and management measures have been implemented and confirm if there are any opportunities to further reduce noise levels on site.

Where, after all reasonable and feasible mitigation measures have been implemented, measured noise levels above the NMLs will be compared to the predicted noise levels in the relevant DNVIS. If, after all reasonable and feasible mitigation measures have been implemented, an exceedance of the predicted noise levels is identified, a management response will be triggered. The management response is detailed in Section 9.3.

7 Vibration monitoring

7.1 Overview

This Section describes monitoring of vibration impacts during the Linewide Project works, including:

- Monitoring locations
- Monitoring frequency and method
- Vibration management.

7.2 Monitoring locations

7.2.1 Fixed, real time vibration monitoring

Real-time vibration monitoring will be undertaken to satisfy CoA C15(c). The requirement for real-time monitoring will be confirmed in the Detailed Noise and Vibration Impact Statements (DNVIS) prepared for each worksite (refer to Section 7.1 of the NVMP) based on the extent of impacts. Real-time monitoring for a worksite will be triggered where the DNVIS classifies vibration impacts as moderate to high.

Real-time vibration monitoring will start at the commencement of Linewide works that trigger the requirement for real-time monitoring. The monitoring will verify whether construction vibration levels are below the relevant criteria, and confirm whether additional mitigation is required to manage vibration impacts.

Indicative locations of all monitoring stations are found in Annexure 1 and coordinates are detailed in Table 8, based on the site layout and nearest sensitive receivers at the design phase. Other factors, including the safety and security of the monitor, availability of mains power, and the construction program, are considered when determining the location of the equipment on site.

The monitoring locations will be confirmed once the monitoring equipment is physically installed. Where changes to the location of the fixed real time monitoring stations need to occur, the AA will be consulted prior to the change occurring and records of the revised location will be documented in regular Environmental coordination meeting minutes between Sydney Metro, John Holland the ER and AA.

Table 8 Indicative coordinates of fixed real-time vibration monitoring stations

Worksite	Monitoring location ID	Easting	Northing
Clyde MSF & Rosehill SF	V_01	317133	6255233
Burwood North metro station	V_02	324839	6250834
The Bays	V_03	331433	6251147

7.2.2 Building damage vibration monitoring

Attended or unattended vibration monitoring will be undertaken for specific construction activities where vibration levels are predicted to exceed the vibration criteria at a sensitive receiver, refer to Figure 1 for project vibration monitoring (building damage) flow chart. Locations will be determined on a case-by-case basis in a DNVIS, in response to complaints, as required by the EPA under the EPL or as required by OOH permits under the OOHW Protocol.

The focus of monitoring will be at risk buildings, structures and utilities identified in the pre-construction condition surveys required by the Construction Environmental Management Framework (CEMF-NV28) and/or geotechnical analysis.

The identification of a suitable vibration monitoring location will consider the following:

- Whether there is a predicted exceedance of the cosmetic damage criteria and / or community concerns have been raised regarding vibration
- Placement of vibration monitoring equipment outside at the footings or foundations of the building of interest closest to the vibrating plant

- The surface should be solid and rigid to best represent the vibration entering the structure of the building under investigation
- The vibration sensor or transducer shall not be mounted on loose tiles, loose gravel or other resilient surfaces
- The vibration sensor or transducer shall be directly mounted to the vibrating surface using either adhesive, double sided tape or a magnetic mounting plate onto a steel washer, plate or bracket which shall be either fastened or glued to the surface of interest
- Where a suitable mounting surface is unavailable, then a metal ground spike shall be driven into solid ground adjacent to the building of interest, and the vibration sensor or transducer shall be mounted on that.

Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure.

For heritage items, a more detailed assessment will specifically consider the heritage values of the structure in consultation with a heritage specialist to prevent damage to the mounting surface and ensure sensitive heritage fabric is adequately monitored and managed. If a heritage item is found to be structurally unsound (following inspection), a more conservative cosmetic damage screening criterion of 2.5 mm/s peak component particle velocity (from DIN 4150) must be applied.

Specific heritage items where the requirement for monitoring will be reviewed in the DNVISs prepared for worksites are identified in Table 8 (Section 4.1.2) of the NVMP.

Where heritage items are within the minimum working distances for cosmetic damage (see CNV10, Section 7.2 of the NVMP), vibration monitoring will be undertaken to ensure there is little to no impact as per CoA E39. JH will seek the advice of a heritage specialist as early as practicable on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage items. Where vibration generating activities have the potential to impact on heritage items, vibration monitoring will be undertaken to identify minimum working distances to prevent cosmetic damage.
Vibration monitoring results will be assessed and reported against the British Standard 7385 and German Standard DIN 4150, as presented in the CNVS.

In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, JH will review the construction methodology and, if necessary, implement additional mitigation measures. Such measures will include the review or modification of excavation techniques.

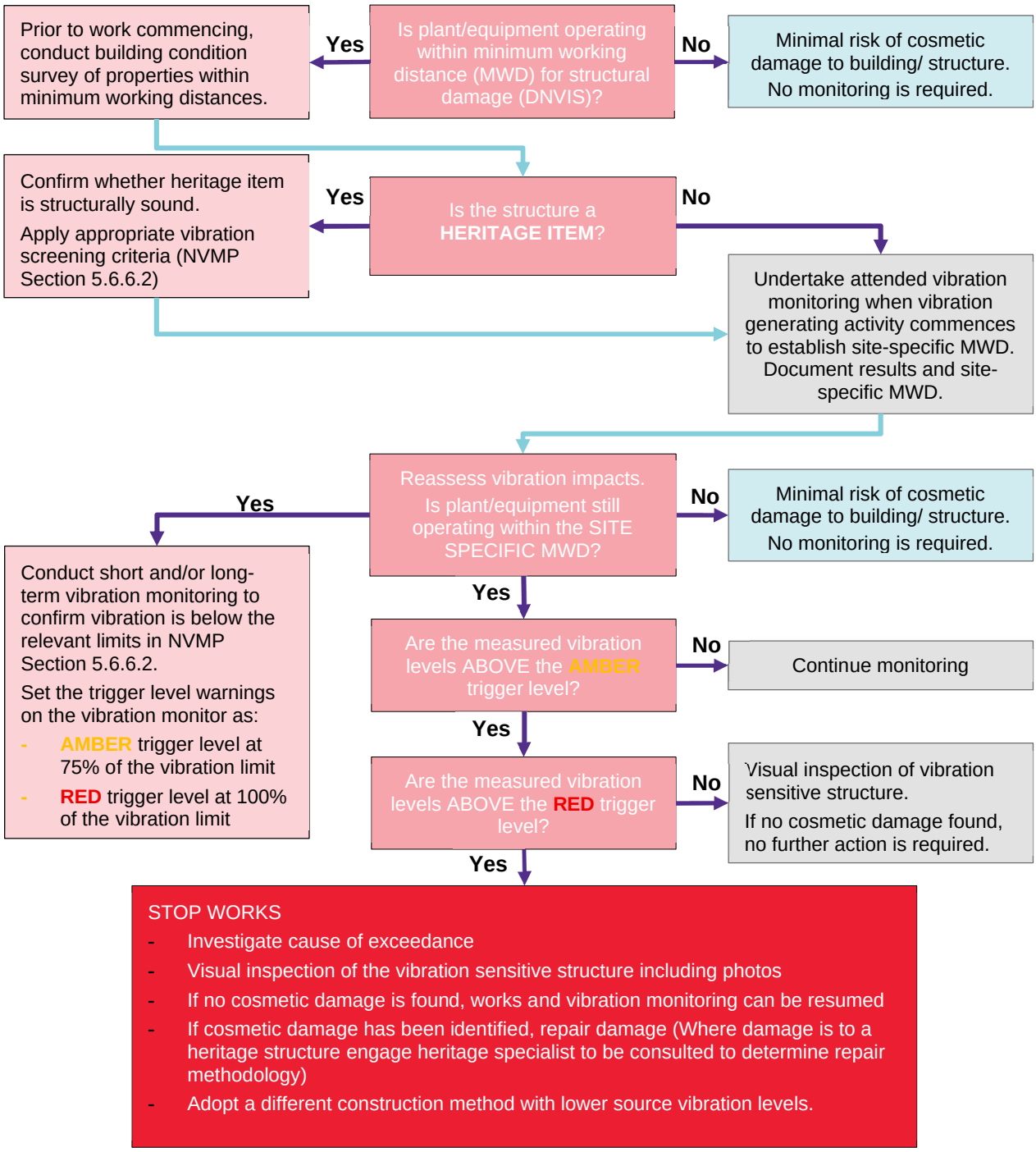


Figure 1: Project vibration monitoring (building damage) flow chart

7.2.3 Plant/ equipment vibration monitoring

Attended vibration monitoring to confirm the site-specific minimum working distances for vibration intensive plant/ equipment will be determined on a case-by-case basis in the DNVIS. Items to consider in the identification of a suitable vibration monitoring location are noted in Section 7.2.2 above.

7.2.4 Human exposure vibration monitoring

Attended vibration monitoring to confirm human exposure to vibration will be determined on a case-by-case basis in a DNVIS or in response to complaints. Reflecting the process detailed in Figure 2, the monitoring will be in conjunction with ground-borne noise measurements where applicable. The room

selected for vibration monitoring should be well shielded from extraneous vibration intrusions, such as heavy vehicle road traffic, condenser units or pumps.

There may be instances where the resident does not allow access to monitor in the most suitable habitable room. In these instances, JH will endeavour to monitor at the next most suitable available room or location, noting this on the monitoring form.

Vibration monitoring results will be assessed and reported against the values set out in Tables 2.2 and 2.4 of the EPA's Assessing Vibration – a technical guideline, as presented in the DNVIS.

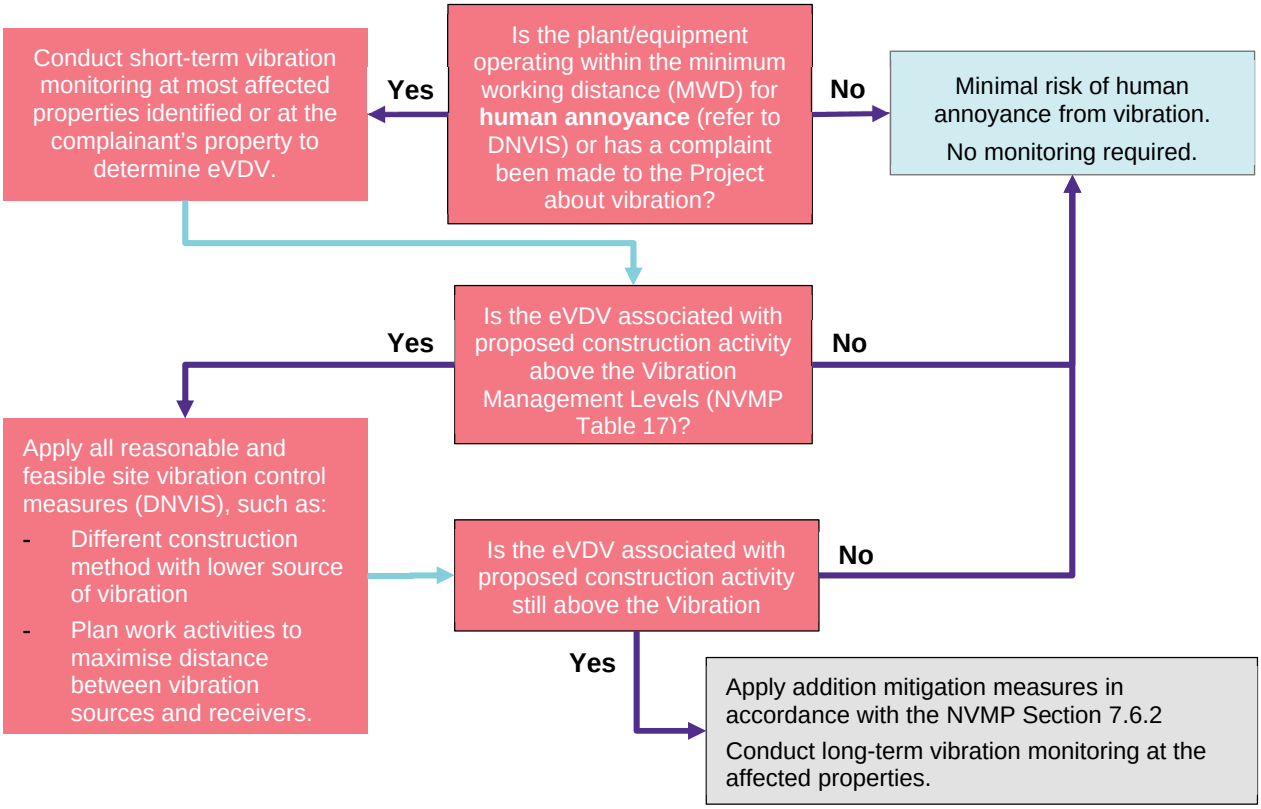


Figure 2: Project vibration monitoring (human exposure) flow chart

7.3 Monitoring frequency and method

The minimum range of vibration metrics to be recorded is the following:

- Root-Mean-Square acceleration (RMS)
- Peak Particle Velocity (PPV) or
- Vibration Dose Values (VDVs) (for human exposure to vibration).

Monitoring frequency and methods during construction are outlined in Table 9.

Table 9: Monitoring frequency and method

Type of vibration monitoring	Timing / frequency	Duration
Unattended monitoring	- Continuous, real-time monitoring	Representative sample of vibration being generated
Building damage vibration monitoring	- At the commencement of vibration generating activities that have the potential to impact at risk buildings, structures and utilities identified in the pre-construction condition surveys, including heritage items.	Representative sample of vibration being generated

Type of vibration monitoring	Timing / frequency	Duration
Plant/ Equipment checks	- At the commencement of vibration intensive activities on site that have been identified in a DNVIS, as likely to exceed the vibration screening criteria	Representative sample of vibration being generated
Human exposure vibration monitoring	- At the first opportunity following commencement of vibration intensive activities on site that have been identified in a DNVIS as likely to exceed the vibration criteria. - Where appropriate in response to vibration related complaint(s) (determined on a case-by- case basis) and in accordance with the EPL. - As otherwise required by a DNVIS, OOHW Procedure or EPL.	Representative sample of vibration being generated (as required)

7.4 Vibration management

Actions to mitigate or manage noise emissions will be considered as per the measures described in the CNVMP and the DNVIS. The Environment Manager / Site Supervisor will be responsible for implementing the monitoring and review process which follows SMART principles in that the actions are specific and measurable, the outcomes are achievable and realistic, and all steps are time-focussed.

The vibration monitoring results will be compared to the vibration goals outlined in Section 5.6 of the NVMP and the DNVIS, as identified in Figure 1 and Figure 2.

If an exceedance is identified, a management response will be triggered as detailed in Section 9.3 of this NV Program.

8 Calibration and documentation

8.1 Calibration

Attended noise monitoring equipment will be at least Type 1 instrument as required by the EPA's Approved methods for the measurement and analysis of environmental noise in NSW and calibrated in accordance with manufacturer specifications or relevant Australian Standards. Records of equipment laboratory calibration will be maintained by JH throughout the delivery of the Tunnelling, Excavation and Associated Works. The calibration of the monitoring equipment will be checked in the field before and after the noise measurement period.

All vibration instruments will be calibrated in accordance with manufacturers specifications or relevant Australian Standards. Records of monitoring equipment calibration will be maintained by JHG.

8.2 Monitoring records

Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria will be maintained by JH.

Noise and vibration monitoring records will record:

- Date and time of measurements
- Name of person(s) undertaking the measurements
- Weather conditions during measurements
- Type and model number of monitoring equipment
- Calibration dates of monitoring equipment
- Time of day, length of measurement and measurement time intervals
    - Monitoring location details including:
    - a sketched map showing the monitoring location, the location of noise/vibration generating items (construction activities and other environmental noise sources), the location and type of mitigation measures, the location of other acoustically relevant items (e.g. walls/barriers)
- photographs clearly identifying the monitoring location
- Number of measurements at each location
- Construction activities under investigation, including load conditions of plant
- Possible extraneous noise (e.g. road traffic, aircraft, insects) or vibration influences from other sources (e.g. domestic vibrations, other mechanical plant, traffic etc.)
- For noise, the following additional items should be recorded:
    - Results of field calibration checks
    - Microphone height
    - Presence (or otherwise) of reflecting surfaces (such as walls), the distance from them in addition to any corrections made for the presence of reflecting surfaces
    - Measured noise levels
    - Estimated noise level from construction activities only
    - Presence of identified annoying characteristics and if a correction has been made to the measured noise levels
    - Estimated noise levels from environmental noise sources other than construction
    - Mitigation measures in place at the time of the measurement and observations on their potential effectiveness.

9 Compliance management

9.1 Roles, responsibility and training

The JH organisational structure and overall roles and responsibilities are outlined in the Section 8.1 of the NVMP. Specific responsibilities for the implementation of environmental controls for construction noise and vibration are detailed in the DNVIS.

All noise and vibration monitoring will be carried out by an appropriately trained and competent person in the measurement and assessment of construction noise and vibration, who is familiar with the requirements of the relevant standards and procedures, detailed in Section 8.2 of the NVMP. Training will be undertaken by the Project Noise and Vibration consultant.

All employees and contractors working on site will undergo a site induction. Further details regarding staff induction and training are outlined in Section 4.6 of the CEMP.

9.2 Monitoring and inspection

This NV Program details the monitoring requirements for noise and vibration. In accordance with Section 4.5 of the CEMP, the Environment, Approvals and Sustainability Director will be responsible for ensuring monitoring activities are undertaken with this NV Program. Additional requirements and responsibilities in relation to inspections are documented in Section 8.3 of the NVMP and Section 6.1 of the CEMP.

Real-time noise and vibration monitoring alerts will be issued via text message and email to relevant construction and environment team members through the monitoring software. This process will ensure that the construction and environment teams are immediately advised of alerts and can take appropriate action (refer to Section 9.3).

Real time noise and vibration monitoring data recorded by monitoring devices will be made available to the Sydney Metro, ER and AA. DPHI and EPA will be provided with access to the real-time monitoring data, on request. Following request monitoring data will be provided within 48 hours.

9.3 Data analysis and management response

Results obtained from monitoring activities will be compared against the predictions made in the relevant noise and vibration assessments. Where monitored levels are found to be above modelling predictions, the following actions will be undertaken:

- Cease the noise and/or vibration generating source which causes the exceeded predictions
- Confirm the monitored levels are not being impacted by other (non-Project related) noise or vibration sources
- Confirm if the exceedance is due to an uncharacteristically loud piece of equipment
- Identify if the equipment can be swapped out for another piece of equipment or alternative equipment or plant, or if additional mitigation can be included in the site design
- Confirm that the modelling reflects the actual activity being undertaken
- Confirm that the noise and vibration management and mitigation measures (Section 7 of the NVMP and specific mitigation and management measures identified in the relevant DNVIS) have been implemented
- Ensure that additional mitigation measures are appropriate and adjust if necessary
- Implement other feasible and reasonable measures which may include reducing plant size, modifying time of works, changing operational settings (such as turning off the vibratory function of the machine), and utilising alternative construction methodology or a combination of these
- Review work practices to ensure compliance with the management levels set out in the NVMP (Section 5)
- Ensure that the learnings from the above are fed back into the noise modelling assessment process for fine-tuning
- Continue work where impacts can be reduced
- Communicate lessons learnt to relevant personnel.

If the exceedance is determined to be attributable to Project works, the event will be treated as an environmental incident and managed in accordance with the requirements of the CEMP. If monitoring

during construction indicates exceedance of the vibration criteria identified in the DNVIS, or levels otherwise determined as appropriate by a suitably qualified structural engineer, then all construction affecting vibration will cease immediately and will not resume until fully rectified or a revised method of construction is established that will ensure protection of affected buildings.

9.4 Compliance and Auditing

Compliance monitoring and auditing (both internal and external) will be undertaken to assess the effectiveness of environmental controls, and verify compliance with this NV Program, the SSI 22765520Planning Approval, and other relevant approvals, licenses and guidelines. Compliance and auditing requirements are detailed in Section 6.2 of the CEMP.

Any non compliance will be managed in accordance with Section 8.5 of the Construction Noise and Vibration Management Plan.

9.5 Reporting

During the Project works, noise and vibration monitoring data will be collected, tabulated and assessed against the criterion identified in the DNVIS. Reporting requirements associated with the NV Program are presented in Table 10.

Table 10: Construction Noise and Vibration Reporting Requirements

Report	Content	Frequency	Recipient
EPL Monitoring Reports and Annual Returns	EPL monitoring reports will be prepared in accordance with the requirements of the EPL. An EPL Annual Return will be prepared in respect of each EPL reporting period (typically 12 months).	Monthly Annual	EPA
Annual Environmental Monitoring Report	Noise and Vibration monitoring program results, including analysis of results against relevant criteria, comparisons with predicted levels, discussion about the work underway at the time and the mitigation in place will be documented in the Annual Environmental Monitoring Report and submitted to nominated recipients within 30 days of the reporting period. Data will be provided in an acceptable format for relevant regulatory agencies.	Annual	Sydney Metro, DPHI, ER and AA

10 Review and improvement

10.1 Continual improvement

Monitoring data will be reviewed throughout the Linewide Works to identify opportunities for continual improvement. The continual improvement process will be undertaken in accordance with the CEMP with a view to:

- Identify opportunities for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Ensure that additional mitigation measures being applied are appropriate or if they require adjustments
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets
- Identify the results of alternative construction methods
- Recognise good behaviour and practice
- Reward innovation
- Identify plant and equipment with good noise/vibration performance and prioritise use in sensitive locations.

10.2 Document review

The processes described in Section 8.1 of the CEMP may result in the need to update or revise this NV Program. This will occur as needed, in accordance with Section 8.3 of the CEMP.
A copy of the updated NV Program and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Annexure 1: Fixed monitoring locations (indicative)

LEGEND

- Noise Monitor (N_01)
- Vibration Monitor (V_01)
- Site Boundary

NSW | sydney METRO

JOHN HOLLAND

Sydney Metro West
LINEWIDE PACKAGE

DESCRIPTION	DRAWN	APPROVED

SCALE: 1:5,000 @ A3

COORDINATE SYSTEM: GDA2020 MGA Zone 56 | HEIGHT DATUM: AHD

Sydney Metro West Linewide

Unattended Monitoring Locations
Clyde MSF & Rosehill SF

LEGEND

- Noise Monitor (N_02)
- Vibration Monitor (V_02)
- Site Boundary

NSW | sydney METRO

JOHN HOLLAND

Sydney Metro West
LINEWIDE PACKAGE

DESCRIPTION	DRAWN	APPROVED

SCALE: 1:5,000 @ A3

COORDINATE SYSTEM: GDA2020 MGA Zone 56 | HEIGHT DATUM: AHD

Sydney Metro West Linewide

Unattended Monitoring Locations
Burwood North

LEGEND

Noise Monitor (N_03)

Site Boundary

NSW | sydney METRO

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Sydney Metro West
LINEWIDE PACKAGE

DESCRIPTION	DRAWN	APPROVED

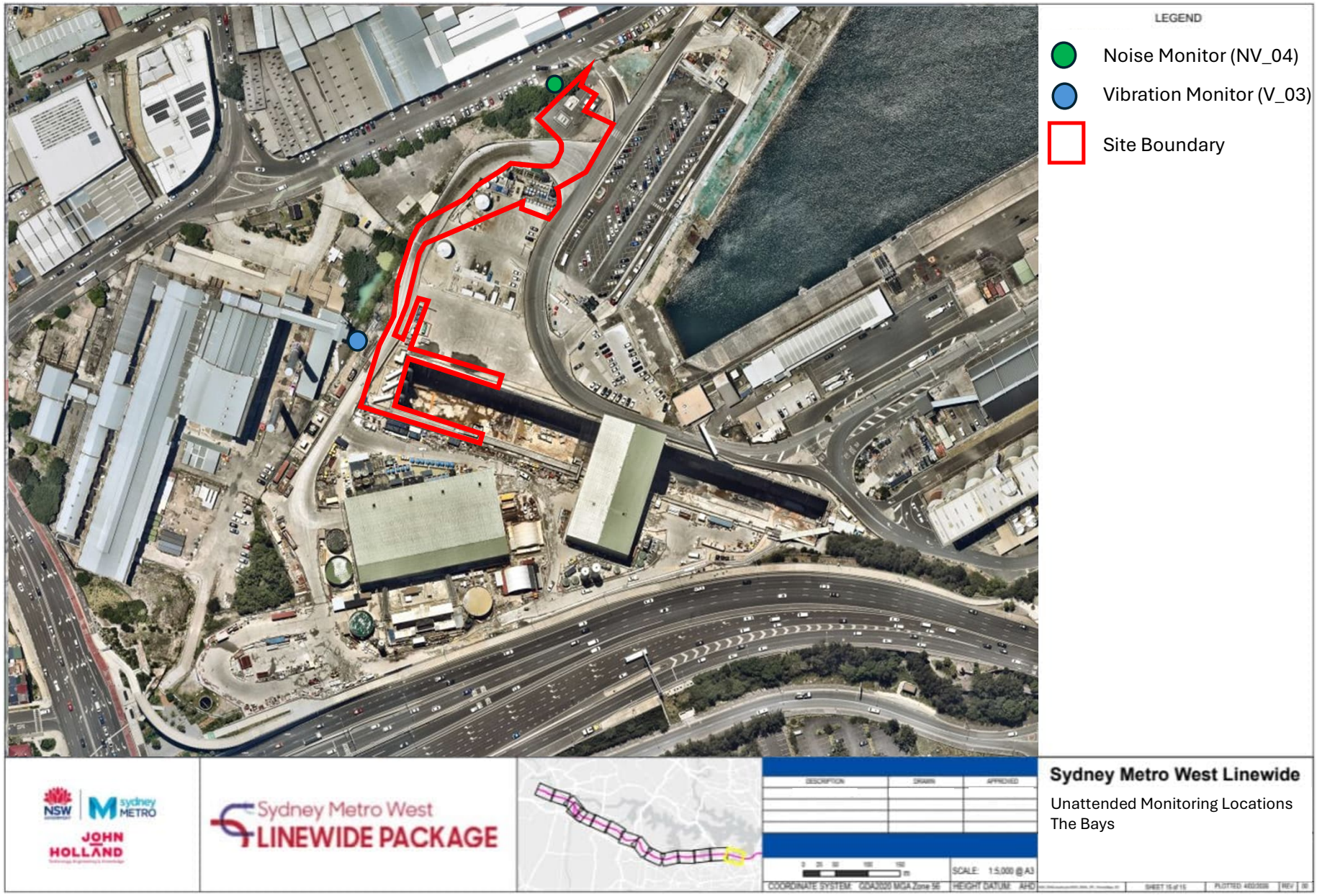
SCALE: 1:5,000 @ A3

COORDINATE SYSTEM: GDA2020 MGA Zone 56 | HEIGHT DATUM: AHD

Sydney Metro West Linewide

Unattended Monitoring Locations
Sydney Olympic Park

SHEET 15 of 15 | PLOTTED 4/03/2026 | REV | 00


LEGEND
Noise Monitor (NV_04)
Vibration Monitor (V_03)
Site Boundary
Sydney Metro West
LINEWIDE PACKAGE
Sydney Metro West Linewide
Unattended Monitoring Locations
The Bays
SCALE: 1:5,000 @ A3
COORDINATE SYSTEM: GDA2020 MGA Zone 56
HEIGHT DATUM: AHD

Appendix B: Land Use Survey

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Atlas: ATLAS TN013 Overall
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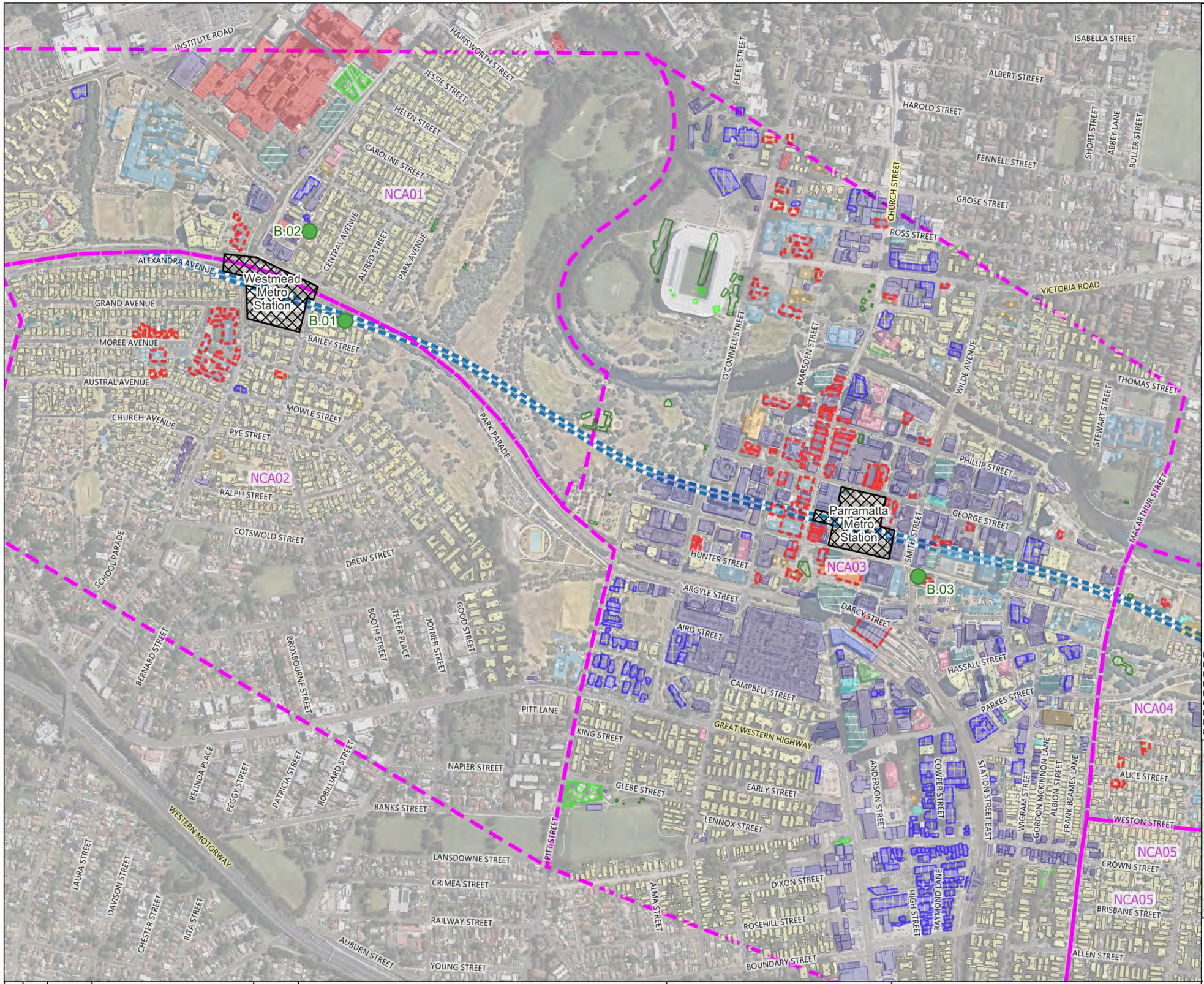

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LEGEND

Receivers

- Residential
- Mixed use
- Commercial
- Industrial
- Hotel/Motel/Hostel
- Medical facility
- Place of Worship
- Community centre
- Recording studio
- Library/Museum
- Childcare
- Educational
- Theatre/Auditorium
- Animal Enclosure
- Recreational - Passive
- Recreational - Active
- Other
- Heritage

- Baseline Monitoring Locations
- Project NCAs
- Project Work Sites

Project Tunnel Alignment

- Western Tunneling Package
- Central Tunneling Package
- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA01	58	53	46	46
NCA02	59	54	42	42
NCA03	68	63	48	48
NCA04	61	56	46	46
NCA05	60	55	50	50

NCA: Noise Catchment Area
NML: Noise Management Level
D(S): standard construction hours from 7 am to 6 pm Monday to Friday and from 8 am to 6 pm Saturday
D(O): out-of-hours day period from 8 am to 6 pm Sunday and Public holidays - OOHW P1
E: evening period from 6 pm to 10 pm Monday to Sunday - OOHW P1
N: night-time period from 10 pm to 7 am Monday to Friday, from 10 pm am to 8 am Saturday, Sunday and Public holidays - OOHW P2

SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

REV	BY	DATE	DESCRIPTION	APPROVER
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..	..	..	..	..
r0	SS	13/03/26	Prepare figures	MT

A3 Original

Co-ordinates: GDA94 / MGA zone 56 (EPSG:28356)

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ORIGINAL SCALE FOR A3 SIZE PAPER

NOTES: Do not scale from this drawing

CLIENT

JOHN HOLLAND

ACOUSTIC CONSULTANT

RENZO TONIN & ASSOCIATES
inspired to achieve

Ph (02) 8218 0500 Fax (02) 8218 0501

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Atlas: ATLAS TN013 Overall
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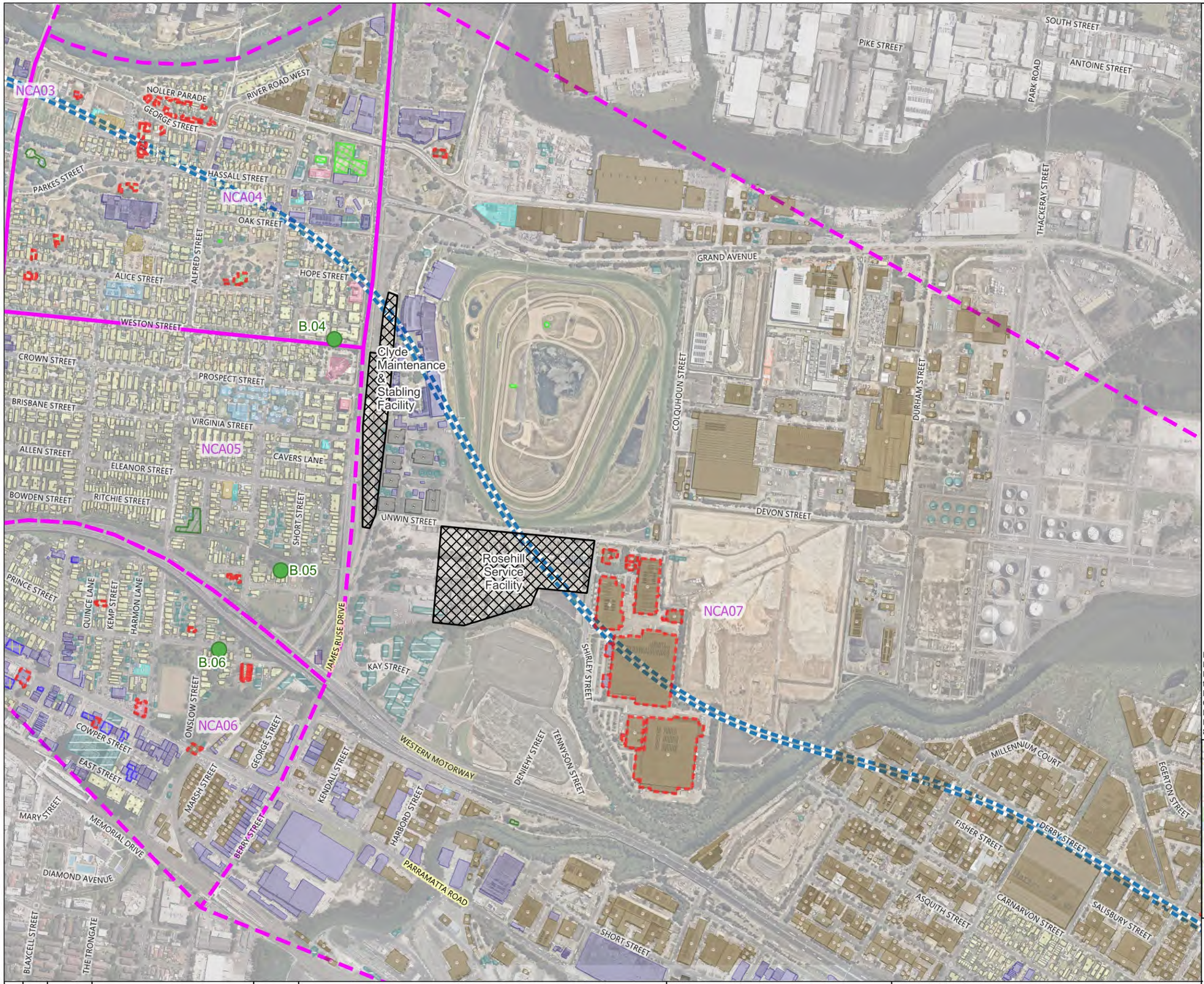

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NCA03	68	63	48	48
NCA04	61	56	46	46
NCA05	60	55	50	50
NCA06	62	57	49	49
NCA07	56	51	46	46

NCA: Noise Catchment Area
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SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

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User: Sooraj Sekhar

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NCA08	58	53	51	51
NCA09	58	53	46	46

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SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

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ORIGINAL SCALE FOR A3 SIZE PAPER

CLIENT: JOHN HOLLAND

ACOUSTIC CONSULTANT: RENZO TONIN & ASSOCIATES — inspired to achieve
Ph (02) 8218 0500 Fax (02) 8218 0501

A3 Original | Co-ordinates: GDA94 / MGA zone 56 (EPSG:28356) | NOTES: Do not scale from this drawing

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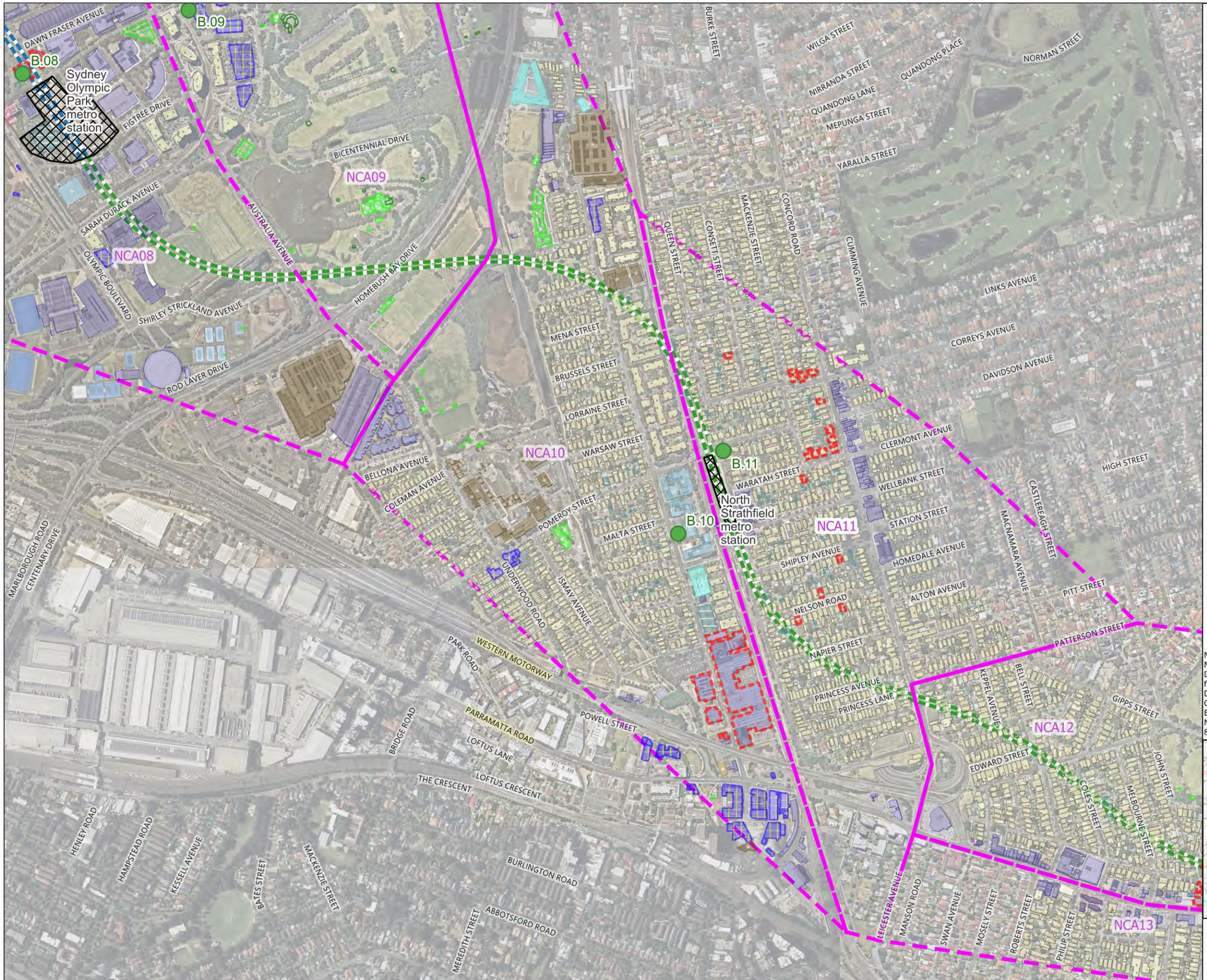

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- Other
- Heritage

- Baseline Monitoring Locations
- Project NCAs
- Project Work Sites

Project Tunnel Alignment

- Western Tunneling Package
- Central Tunneling Package
- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA08	58	53	51	51
NCA09	58	53	46	46
NCA10	57	52	49	49
NCA11	61	56	44	44
NCA12	53	48	47	47
NCA13	58	53	49	49

NCA: Noise Catchment Area
NML: Noise Management Level
D(S): standard construction hours from 7 am to 6 pm Monday to Friday and from 8 am to 6 pm Saturday
D(O): out-of-hours day period from 8 am to 6 pm Sunday and Public holidays - OOHW P1
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N: night-time period from 10 pm to 7 am Monday to Friday, from 10 pm am to 8 am Saturday, Sunday and Public holidays - OOHW P2

SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

REV	BY	DATE	DESCRIPTION	APPROVER
r0	SS	13/03/26	Prepare figures	MT

A3 Original

Co-ordinates: GDA94 / MGA zone 56 (EPSG:28356)

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Plot Date: 13/03/26 - 14:10
Layout: TN013 Landuse
Atlas: ATLAS TN013 Overall
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User: Sooraj Sekhar

LEGEND

Receivers

- Residential
- Mixed use
- Commercial
- Industrial
- Hotel/Motel/Hostel
- Medical facility
- Place of Worship
- Community centre
- Recording studio
- Library/Museum
- Childcare
- Educational
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Project Tunnel Alignment

- Western Tunneling Package
- Central Tunneling Package
- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA11	61	56	44	44
NCA12	53	48	47	47
NCA13	58	53	49	49
NCA14	52	47	38	38
NCA15	53	48	43	43

NCA: Noise Catchment Area
NML: Noise Management Level
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SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

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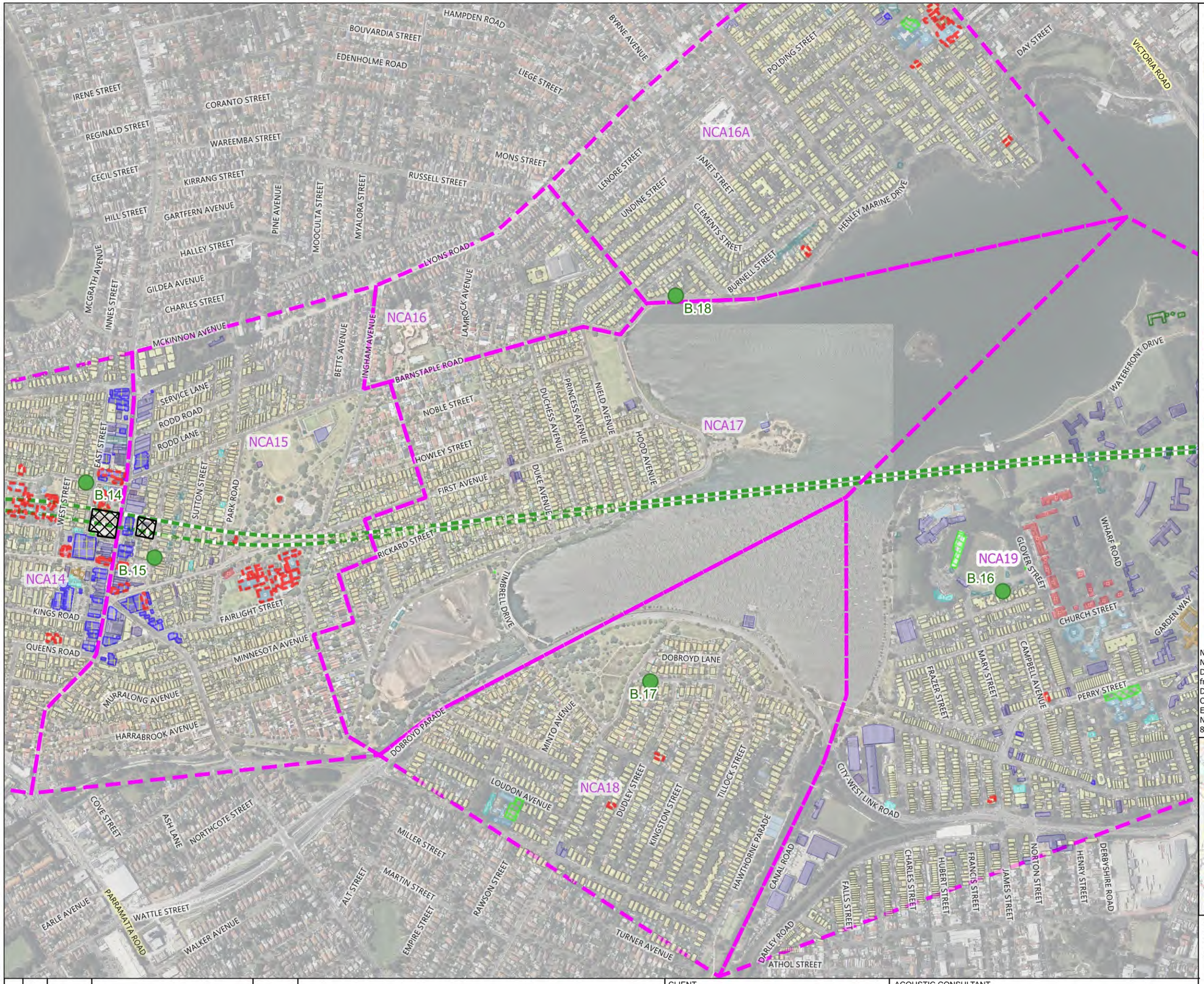

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Project Tunnel Alignment

- Western Tunneling Package
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- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA14	52	47	38	38
NCA15	53	48	43	43
NCA16	58	53	50	42
NCA16A	58	53	50	42
NCA17	58	53	42	42
NCA18	53	48	42	42

NCA: Noise Catchment Area
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SYDNEY METRO WEST - LINEWIDE

Landuse and NCAs

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Plot Date: 13/03/26 - 14:11
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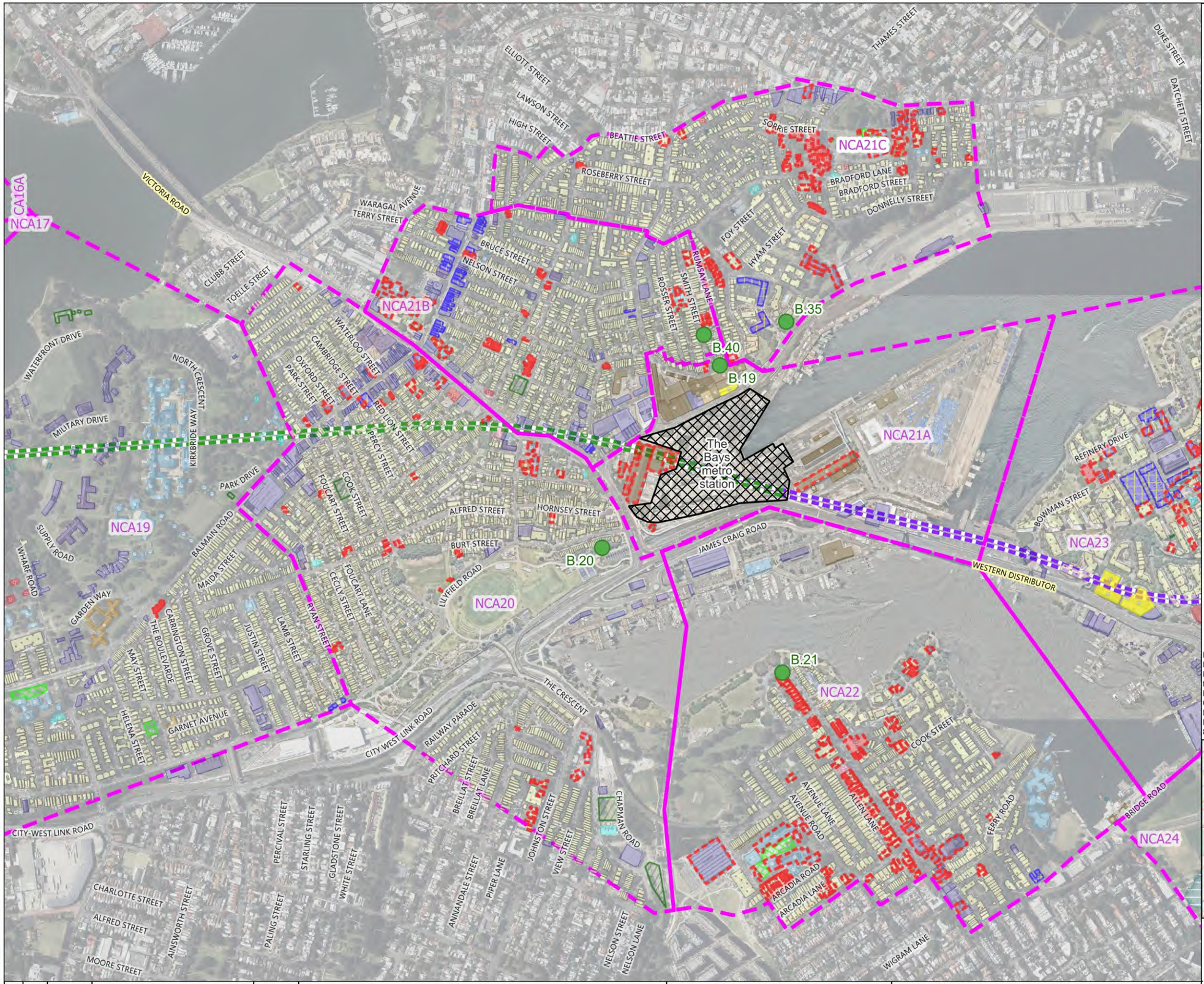

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Project Tunnel Alignment

- Western Tunneling Package
- Central Tunneling Package
- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA16A	58	53	50	42
NCA17	58	53	42	42
NCA19	46	41	38	38
NCA20	61	56	56	50
NCA21A	53	48	48	40
NCA21B	52	47	47	43

NCA: Noise Catchment Area
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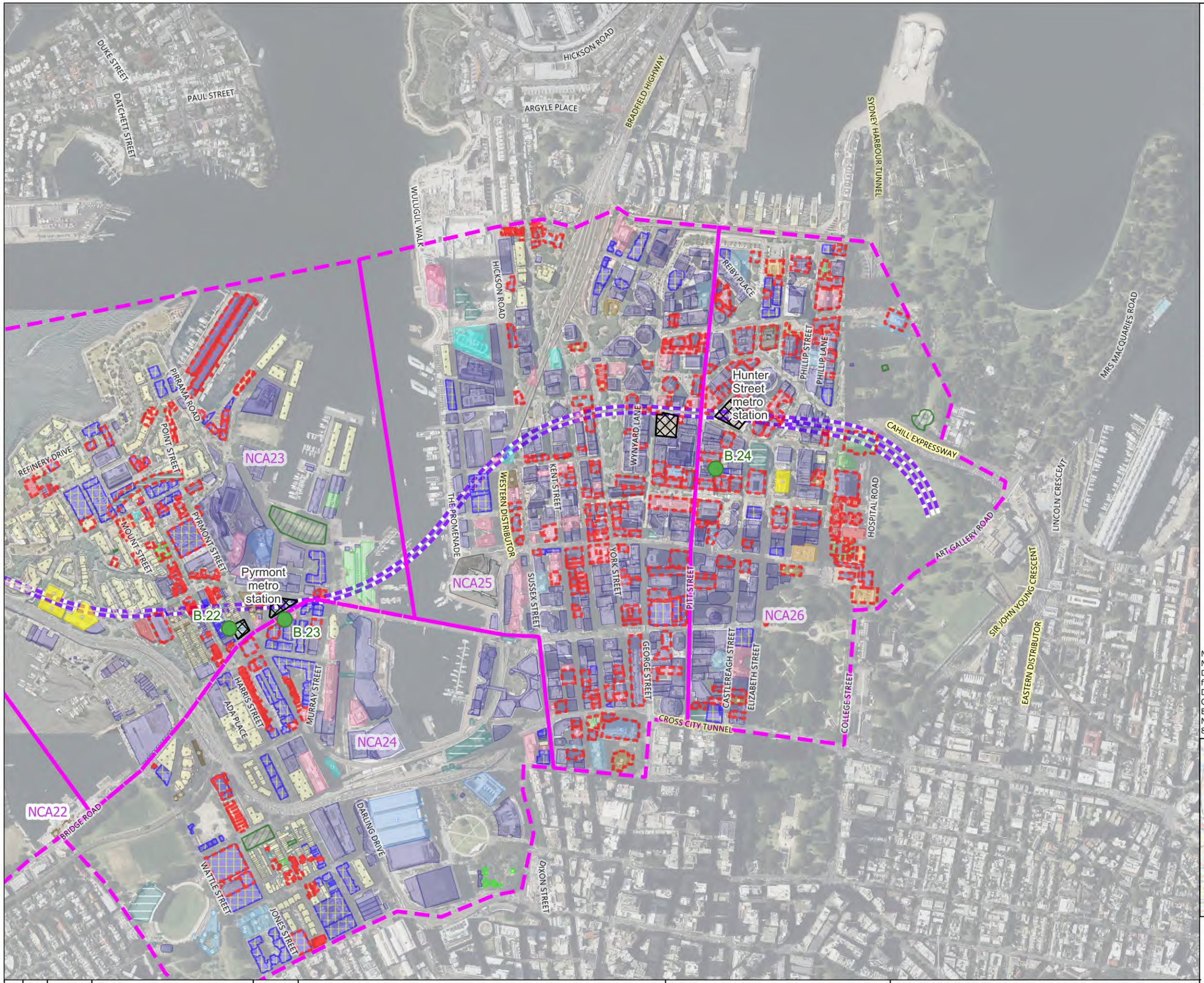

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Project Tunnel Alignment

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- Eastern Tunneling Package

NCA	NML DS	NML DO	NML E	NML N
NCA22	58	53	52	44
NCA23	60	55	52	50
NCA24	62	57	54	51
NCA25	71	66	61	57
NCA26	71	66	61	57

NCA: Noise Catchment Area
NML: Noise Management Level
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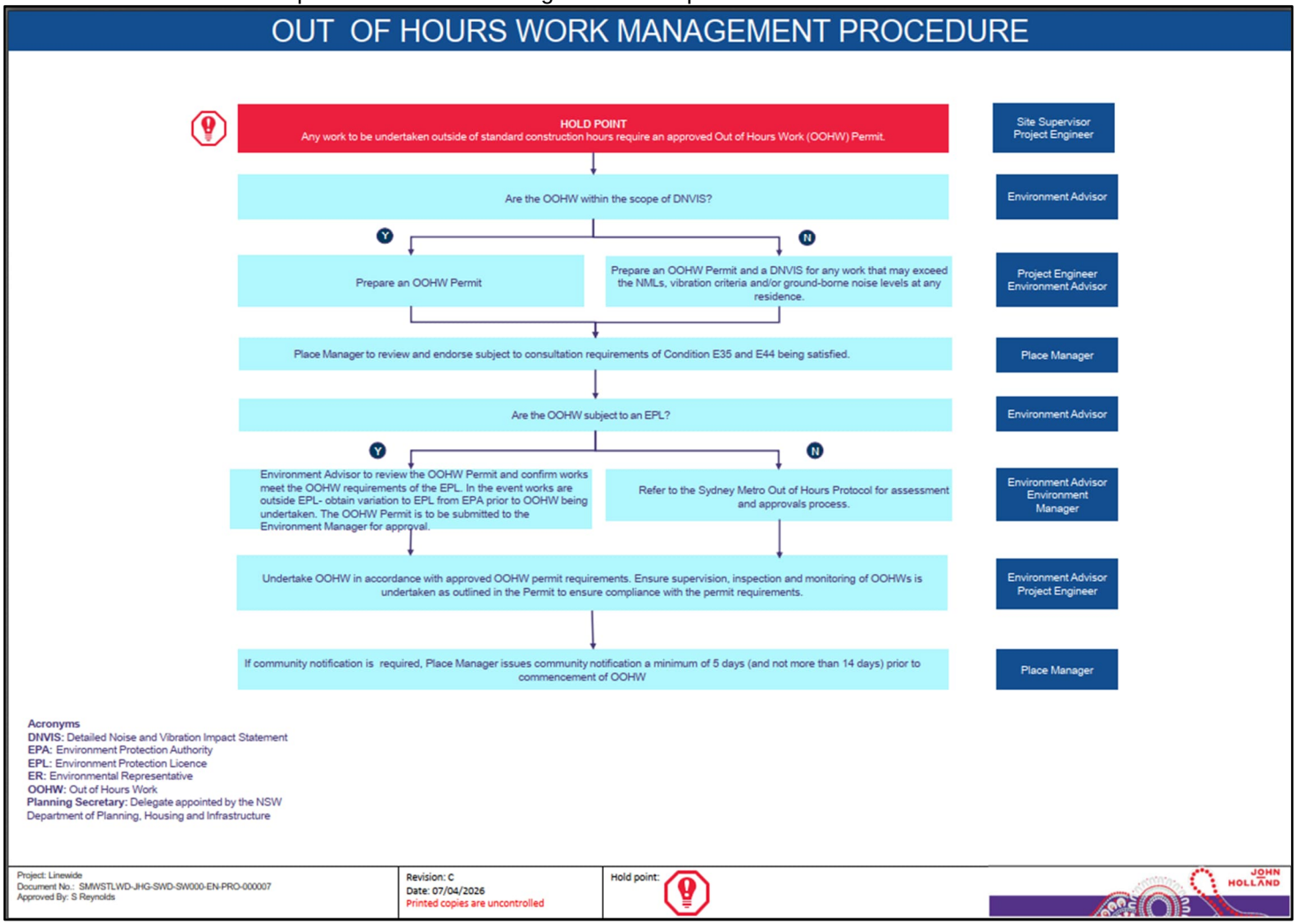
Appendix C: Out of Hours Work Procedure

Procedures for the Linewide Project have been incorporated into Appendix D2 of the CEMP. This procedure is provided here for context noting the relevance to this Plan. Any updates to this environmental procedure will be managed via Sharepoint and in accordance with the JH IMS for the Linewide Project.



Appendix D: Consultation

Sydney Metro West Linewide Project

Consultation Summary Report - Construction Noise and Vibration Management Plan

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Contents

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1.2 Report Scope 3

2 Consultation Requirements **3**

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Annexure C: Place Making NSW **7**

Annexure D: Port Authority of NSW **8**

Annexure E: City of Parramatta Council **9**

Annexure F: City of Canada Bay Council **10**

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1 Introduction

1.1 Background

The Linewide Project is a 24-kilometre underground railway connecting the Sydney and Parramatta CBDs and is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

Sydney Metro has appointed John Holland Pty Ltd (JH) under a Design & Construct Contract, to perform the design, construction, commissioning and completion of the Sydney Metro West Linewide Project (Linewide Project). The Linewide Project is the backbone of the Sydney Metro West, seamlessly connecting all its elements and delivering the critical rail infrastructure and systems needed for metro train operations.

The Linewide Project was assessed and approved under the SSI 22765520 on 25 January 2023 as part of the Sydney Metro West – Rail infrastructure, stations, precincts and operations Conditions of Approval.

1.2 Report Scope

Reflecting the requirements of the SSI 22765520 Planning Approval, this report has been prepared to provide the evidence of consultation with the identified parties during the development of the Construction Noise and Vibration Management Sub-Plan (Subject Document).

2 Consultation Requirements

2.1 SSI 22765520 Planning Approval

The Conditions of Approval relevant to stakeholder consultation on the Subject Document are listed in Table 1.

Table 1 Relevant conditions of approval relating to consultation

Condition	Description
C5	Of the CEMP Sub-plans required to be prepared under Condition C1, the following CEMP Sub- plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6. Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why: CEMP Subplans (a) Noise and Vibration - Place Management NSW and Port Authority of NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)
C13	The following Construction Monitoring Program must be prepared in consultation with the relevant government agencies identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP: (a) Noise and Vibration - EPA, Place Management NSW (in respect of The Bays), SOPA (in respect of Sydney Olympic Park) and Relevant Council(s)

2.2 Revised Environmental Mitigation Measures

There are no Revised Environmental Mitigation Measures (REMMs) relevant to stakeholder consultation on the Subject Document.

3 Consultation Summary

In accordance with the SSI 22765520 Planning Approval, the Subject Document has been prepared in consultation with the identified parties. A summary of the consultation is provided in Table 2 below.

A copy of the presentation provided to Stakeholders is included in Annexure A. This presentation was tailored for each Stakeholder based on the sites applicable to the Linewide scope of work in their relevant jurisdiction.

Table 2 Summary of Consultation on Subplan

Stakeholder	Consultation Summary	Status	Reference
NSW EPA	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure B
Place Making NSW (PMNSW)	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure C
Port Authority of NSW (PANSW)	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure D
City of Parramatta Council	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure E
City of Canada Bay Council	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure F
Inner West Council	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure G
City of Sydney Council	Stakeholder confirmed that there are no issues with the Subject Document.	No action required.	Annexure H
Sydney Olympic Park Authority	Issues raised have been adequately addressed in the Subject Document; there are no outstanding issues.	No further action required.	Annexure I

Annexure A: Stakeholder Presentation

Linewide project key stakeholder consultation

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Introductions

JOHN HOLLAND

Agenda

- Project update
- Noise and Vibration
- Heritage

Project Introduction

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Linewide Project

The Linewide project scope relates to delivery of end-to-end systems for Sydney Metro West, fit out of the tunnels, cross passages and caverns, fit out of Linewide systems at the Stations, an integrated a stabling and maintenance facility to clean, maintain, repair and store trains, a service facility at Rosehill and rail infrastructure to support day-to-day operations for Sydney Metro West

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Linewide Project Scope

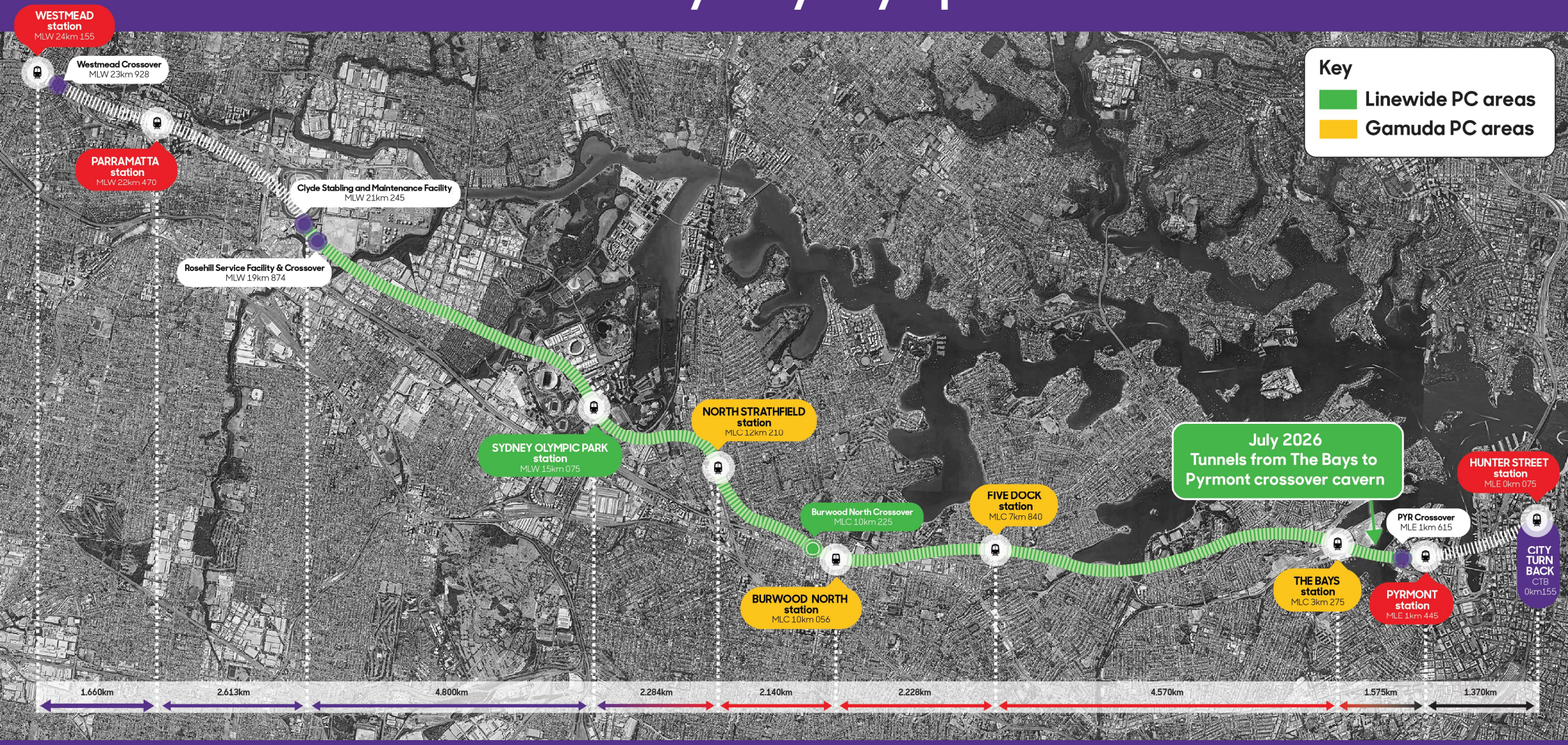
- Enabling works and site establishment at:
  - The Bays
  - Burwood North
  - Clyde Stabling and Maintenance Facility (SMF)
  - Rosehill Service Facility (RSF) and
  - Sydney Olympic Park

- Tunnel fit out works, including track, overhead wiring, track drainage, walkway and mechanical & electrical components
- Station fit out works, including high voltage and tunnel ventilation system
- Project wide testing and commissioning of tunnel systems, facilities and equipment
- Clyde Service & Maintenance Facility including buildings, civil works, combined service route (CSR), track, overhead wiring
- Rosehill Service Facility including buildings, civil works, CSR, track, overhead wiring
- Rosehill tunnel dive building construction
- Management of excavated material onsite or disposal off site of material not suitable for reuse in accordance with approvals
- Rehabilitation of temporary construction sites and removal of temporary works, including acoustic sheds

High level Program

	Activity / Milestone	2025	2026	2027	2028	2029	2030	2031	2032
Project Commencement	**Project Commencement**	Q4 2025							
	Design - Timeline				Q3 2028				
	Procurement & Deliveries					Q1 2029			
Construction	**Tunnel - Fitout Works Timeline**						Q2 2030		
	Tunnel - Rail Delivery		Q3 2026						
	Tunnel - Concrete Train Mobilisation			Q3 2027					
	Tunnel - All track Installed					Q3 2029			
	Rosehill - Works Timeline						Q2 2030		
	Rosehill - Building Works Complete				Q4 2028				
	Rosehill - HV Power On					Q3 2029			
	Clyde - Works Timeline						Q1 2030		
	Clyde - Building Works Complete					Q1 2029			
	Clyde - Trackworks Complete					Q3 2029			
	Clyde - Traction Power Energisation					Q4 2029			
	Linewide Station Fitout Works						Q4 2030		
Testing & Commissioning	**Testing & Commissioning**							Q2 2031	
	First Passenger Service								2032

Tunnel Handover and Sydney Olympic Park Station Box



Construction Environmental Management Plans

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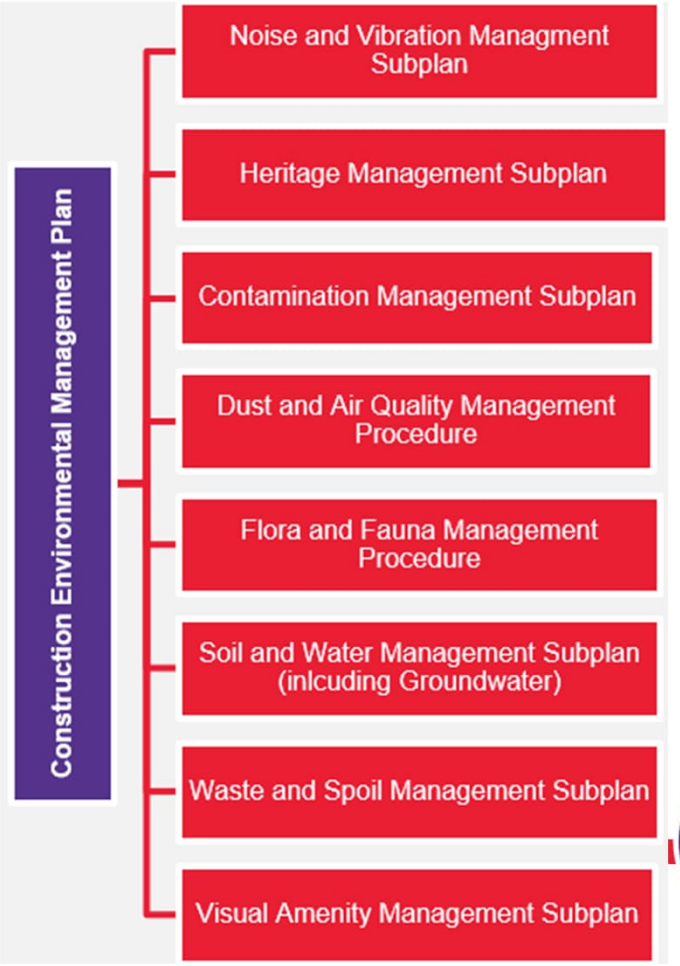
Construction Environmental Management Plan and Sub Plans

The Project Planning Approval requires several CEMP Sub Plans to be developed in consultation with key stakeholders:

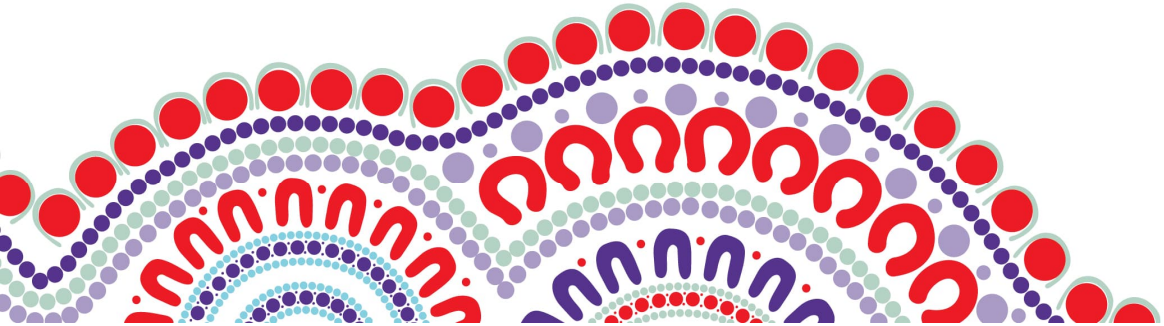
- **Noise and Vibration Management Plan (including Monitoring Program)**
- **Heritage Management Plan**
- **Contamination Management Plan** (consultation only required with SOPA in relation to Sydney Olympic Park)

Plans developed based on applicable Linewide scope of works.

Where access managed by a Station Contractor (e.g Five Dock or North Strathfield), the environmental documents developed by the Station Contractor will be adhered to.



The Bays



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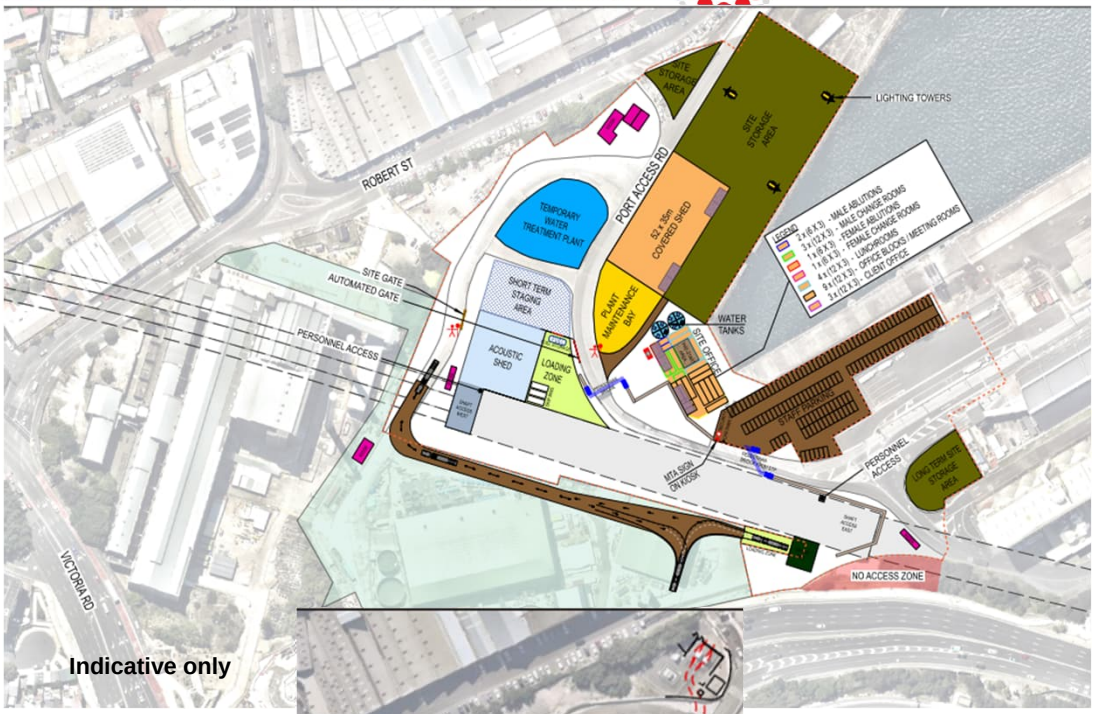
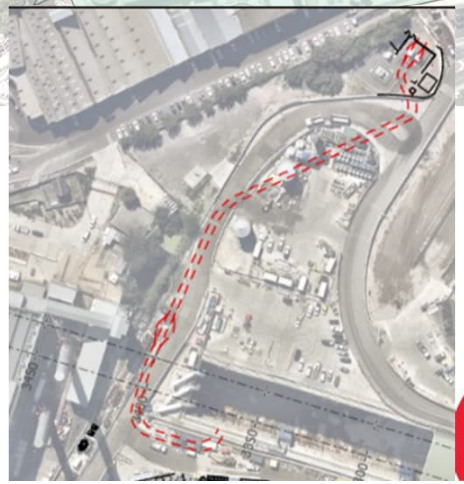
Linewide Project Scope- The Bays

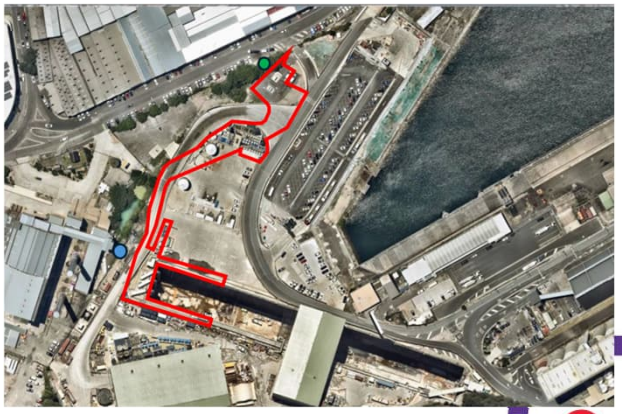
- Tunnel fitout logistics including concrete deliveries for track slab
- Temporary acoustic sheds to support scope of works
- Ongoing operation of construction WTP
- Trenching for high voltage route (within site)
- Site is shared with Stations Contractor.





Noise and Vibration – The Bays

- Primarily industrial/commercial setting with nearby residential receivers
- Potential noise impacts from plant and rail fitout works
- Standard construction hours 7am- 6pm Mon-Fri, 8am-6pm Sat. No work on Sundays or Public Holidays.
- Out of hours works will be required for some activities.
- Noise impacts managed using acoustic sheds, and localised acoustic controls /noise barriers where required.
- Out-of-hours work governed by the EPL and OOHW Protocol (includes noise assessment, community notifications and additional management measures if assessment determines these are required eg respite offers).
- Noise and vibration monitoring program developed and implemented
- Detailed Noise & Vibration Impact Statements prepared as required by E33
- Impacts are temporary, localised and manageable
- Requirement to comply with EPL (NCA management- 2 consecutive nights (no more than 3 nights/week) and 10 nights/month.



Heritage- The Bays

- Non Aboriginal Heritage - White Bay Power Station curtilage and canals. No anticipated impacts.
- Aboriginal Heritage – PAD in south west corner- **not** within Linewide site area, no anticipated impacts to known Aboriginal heritage under Linewide scope.
- Registered Aboriginal Parties (RAPs) will be consulted and kept informed.
- Any excavation managed under approved ARDEM (Excavation Director on site during excavation works) and Unexpected Finds Procedure (stop-work, protection and assessment for all unexpected finds)
- Routine inspections, monitoring and audits during construction.
- Vibration criteria/monitoring applied to protect heritage structures where relevant.
- Heritage Interpretation Plan prepared for Clyde/Rosehill (previous Stages have completed HIPs).

Burwood North

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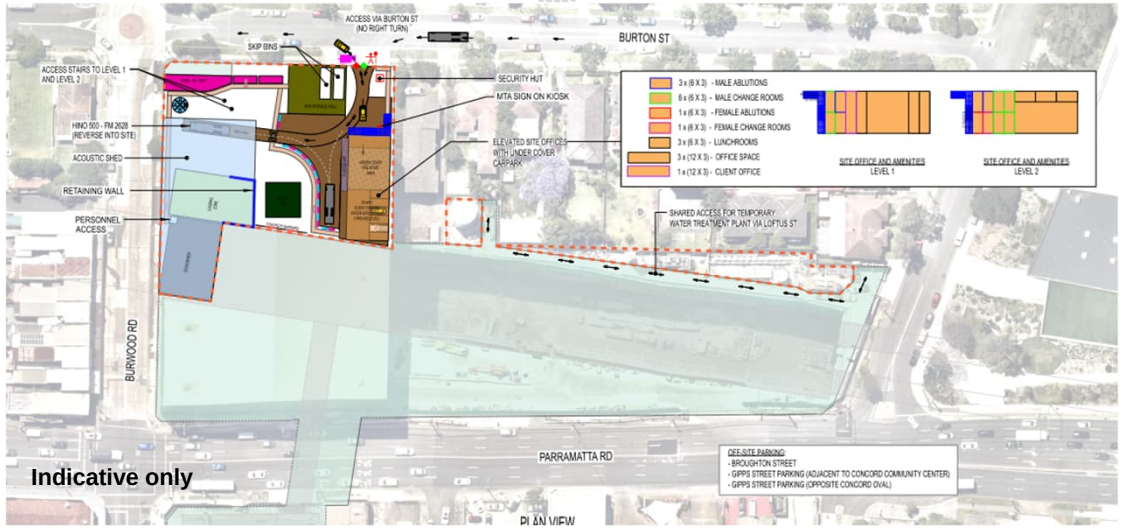
Linewide Project Scope- Burwood North

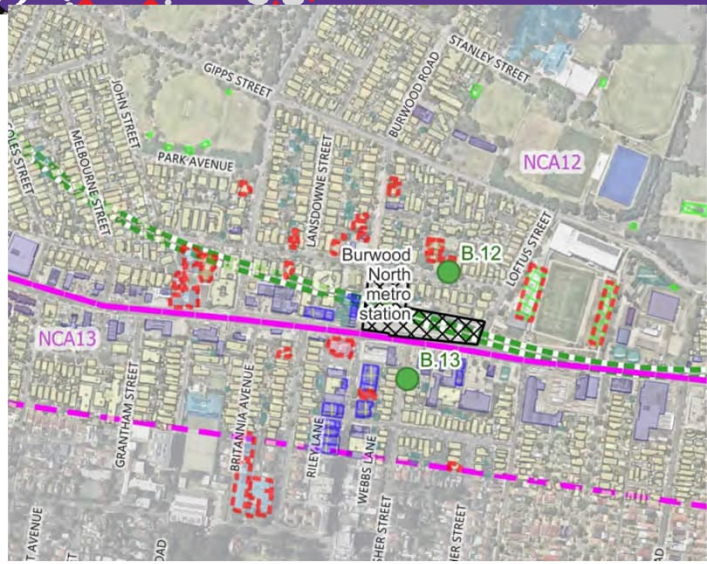
- Tunnel fitout logistics including concrete deliveries for track slab construction within the tunnel
- Temporary acoustic shed to minimse noise from deliveries required to support tunnel fitout
- Ongoing operation of construction WTP
- Site is shared with Stations Contractor.



Indicative only

Noise and Vibration- Burwood North

- Primarily residential receivers /commercial setting. Residential interface near Parramatta Road, Burwood Road and Burton Street
- Key impacts from surface works, plant operation and deliveries
- Standard construction hours 7am- 6pm Mon-Fri, 8am-6pm Sat. No work on Sundays or Public Holidays.
- Out of hours works will be required for some activities.
- Noise impacts managed using acoustic shed, and localised acoustic controls /noise barriers where required.
- Out-of-hours work governed by EPL and OOHW Protocol (includes noise assessment, community notifications and additional management measures if assessment determines these are required eg respite offers).
- Noise and vibration monitoring program developed and implemented
- Detailed Noise & Vibration Impact Statements prepared as required by E33
- Requirement to comply with EPL (NCA management- 2 consecutive nights (no more than 3 nights/week) and 10 nights/month.



Heritage – Burwood North

- No known heritage items (Aboriginal and Non-Aboriginal) in Linewide footprint; no subsurface works outside of acoustic shed footings.
- Any excavation managed under Unexpected Finds Procedure (stop-work, protection and assessment for all unexpected finds)
- Routine inspections, monitoring and audits during construction.

Sydney Olympic Park

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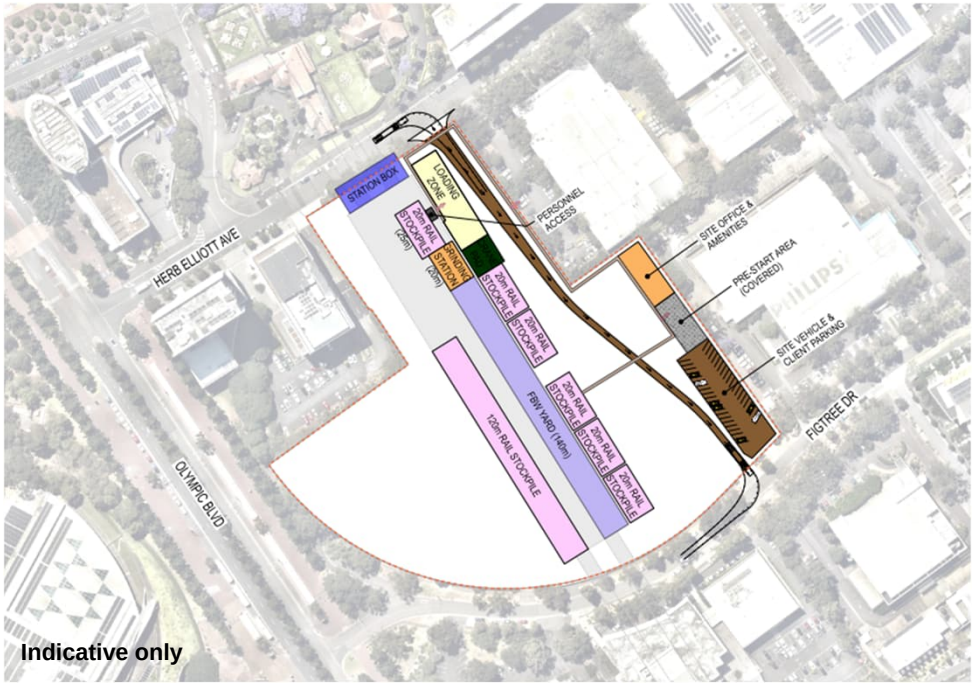
Linewide Project Scope- Sydney Olympic Park

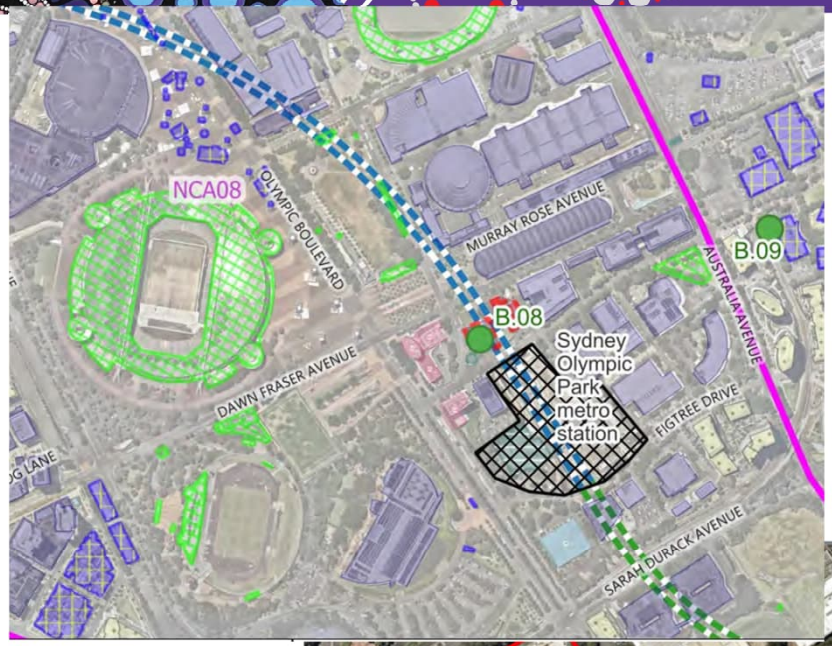
- Rail delivery at surface, rail welding and grinding in station box.
- Ancillary facilities in use (occupying site office and amenities from CTP Contractor)
- Site in use for Linewide scope until mid 2027 only.



Indicative only

Noise and Vibration- Sydney Olympic Park

- Mixed commercial, residential and event-based environment
- Linewide works largely non-intrusive with limited surface activities
- Standard construction hours 7am- 6pm Mon-Fri, 8am-6pm Sat. No work on Sundays or Public Holidays.
- Out of hours works will be undertaken.
- Out-of-hours work governed by approvals and OOHW Protocol (includes noise assessment, community notifications and additional management measures if assessment determines these are required eg respite offers).
- Noise and vibration monitoring program developed and implemented
- Detailed Noise & Vibration Impact Statements prepared as required by E33
- Requirement to comply with EPL (NCA management- 2 consecutive nights (no more than 3 nights/week) and 10 nights/month.



Heritage – Sydney Olympic Park

- No known Aboriginal heritage items in Linewide footprint
- Site is adjacent to State Abattoirs heritage item however no direct impact or anticipated indirect impact from Linewide Works.
- No subsurface excavation works. All works managed under Unexpected Finds Procedure (stop-work, protection and assessment for all unexpected finds)
- Routine inspections, monitoring and audits during construction.

Contamination

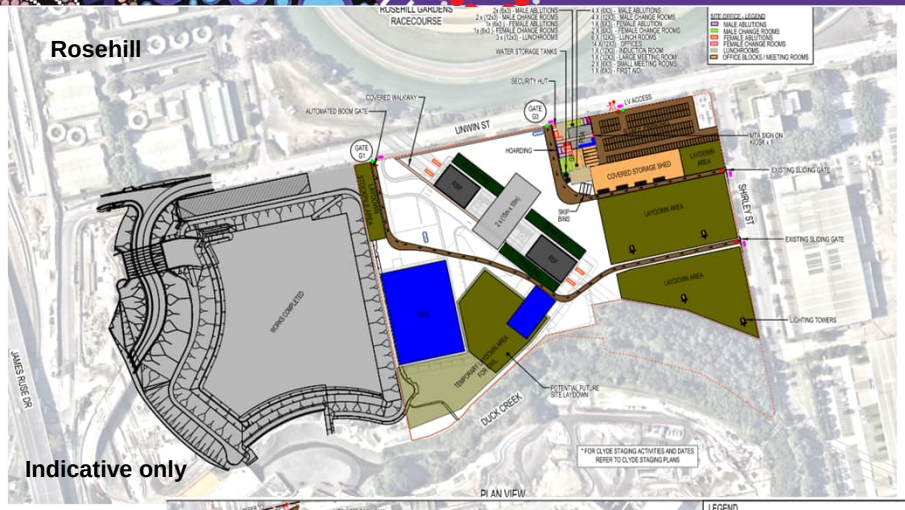
- Construction site previously investigated and validated by the Tunnelling Contractor.
- The Site is certified suitable for commercial / industrial use for Metro Station.
- The Site will be used for rail delivery, welding and logistics.
- No bulk excavation required for Linewide works.
- Implementation of the approved Contamination Management Plan under the CEMP.
- Unexpected Contamination Finds Procedure – stop work, assess, notify.
- Waste classification and disposal per NSW EPA requirements.
- Overall contamination risk has been assessed as low.
- No additional assessment, remediation or LTEMP required.
- Routine inspections and compliance reporting provide assurance.

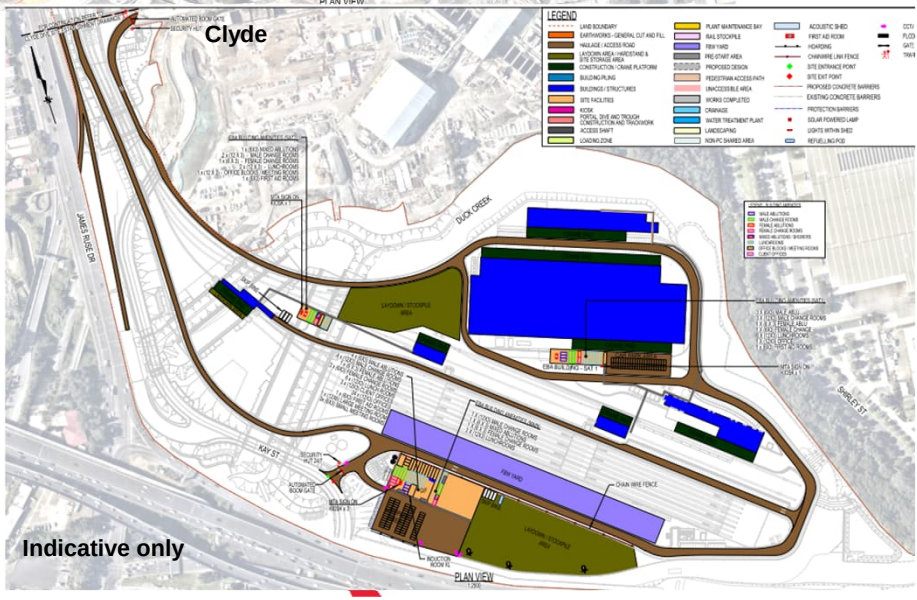
Clyde MSF and Rosehill SF

JOHN HOLLAND

Linewide Project Scope- Clyde and Rosehill

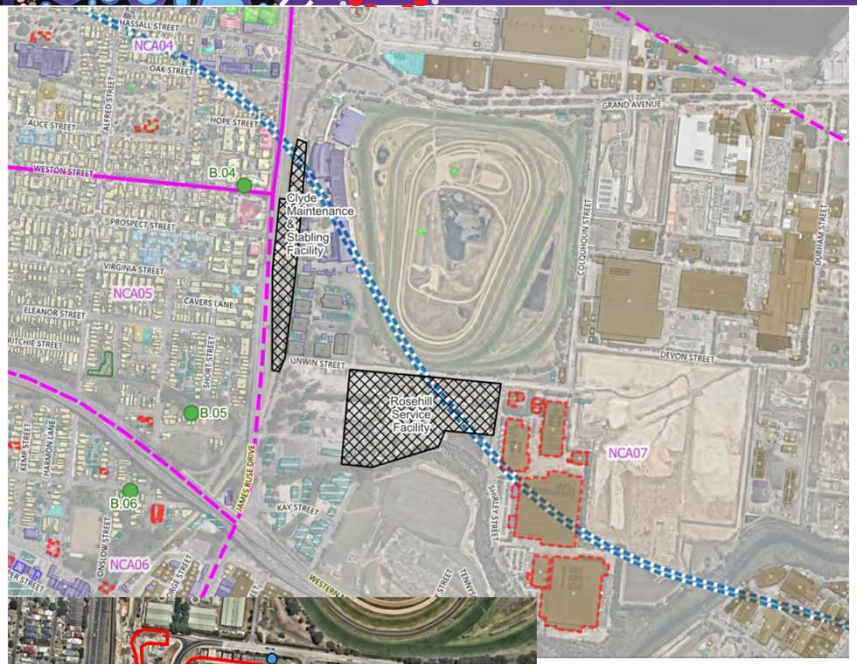
- Ongoing use of ancillary facilities.
- Utility services works.
- Tunnel fit out works, including rail delivery, invert and track installation, track drainage, walkway and mechanical and electrical works (M&E)
- Station fit out works, including high voltage (HV) and tunnel ventilation system (TVS)
- Clyde SMF including construction of buildings, civil works, Combined Service Route (CSR), track, overhead wiring (OHW)
- Rosehill SF including construction of buildings, civil works, CSR, track, OHW
- Rosehill Dive building construction





Noise and Vibration- Clyde and Rosehill

- Proximity to residential receivers, racecourse and stabling facilities
- Potential higher noise and vibration risk from rail and facility works and excavation for building foundations
- Standard construction hours 7am- 6pm Mon-Fri, 8am-6pm Sat. No work on Sundays or Public Holidays.
- Out of hours works will be undertaken.
- Out-of-hours work governed by EPL and OOHW Protocol (includes noise assessment, community notifications and additional management measures if assessment determines these are required eg respite offers).
- Noise and vibration monitoring program developed and implemented
- Detailed Noise & Vibration Impact Statements prepared as required by E33
- Requirement to comply with EPL (NCA management- 2 consecutive nights (no more than 3 nights/week) and 10 nights/month.



Heritage- Clyde and Rosehill

- No known Aboriginal heritage items in Linewide footprint.
- TfNSW Depot (former RTA Depot) within site.
- Routine inspections, monitoring and audits during construction.
- Vibration criteria/monitoring applied to protect heritage structures where relevant.
- Heritage Interpretation Plan prepared for Clyde/Rosehill (previous Stages have completed HIPs).

Questions and comments

- Comments and feedback on subplans requested by Wednesday 29 April 2026

johnholland.com.au

JOHN HOLLAND

Annexure B: NSW EPA

In/Out	Date	Medium	Details of Contact
Out	14 April 2026	Email	JH emailed copy of draft Noise and Vibration Monitoring Program to NSW EPA.
In	15 April 2026	Email and Letter	NSW EPA confirmed no comments on the Monitoring Program and provided an enclosed letter to confirm their position.

Anne Andersen-JHG

From:	Sally Reynolds-JHG
Sent:	Tuesday, 14 April 2026 1:15 PM
To:	info@epa.nsw.gov.au; Jen Brown
Cc:	Leanna Fuller-JHG; Anne Andersen-JHG
Subject:	Draft Monitoring Programs for Consultation with EPA
Attachments:	NVMP_consultation.pdf; SMWSTLWD-JHG-SWD-SW000-EV-PRG-000001 SMW Linewide - Water Quality Monitoring Program_RevA.pdf

Hi Jen,

I hope this email finds you well.

I am reaching out to you to fulfill our obligations under the Planning Approval Condition C13 (a) to consult with EPA on the Noise and Vibration Monitoring Program (NVMP) and as required by the Sydney Metro CEMF for the Water Quality Monitoring Program (WQMP).

The programs outline the monitoring requirements for the construction of the Linewide Project. They have been prepared to address the relevant requirements of Sydney Metro's Construction Environmental Management Framework (CEMF), the Environmental Impact Statement, Revised Environmental Mitigation Measures (REMMs), the Project Planning Approval, applicable legislation, including the EPL, and contractual requirements.

The NVMP will be appended to the Noise & Vibration Management Sub Plan. The WQMP will be appended to the Soil and Water Management Sub Plan.

To satisfy the consultation requirements, please find attached the draft NVMP and WQMP for EPAs review.

Please let me know if you would like a meeting to discuss the Programs or if you have any comments, could you please provide by **Friday 24 April.**

Regards
Sally

Sally Reynolds
Environment & Sustainability Director
Sydney Metro West Linewide Package

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0499 923019
E sally.reynolds@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From:	Jen Brown <jennifer.brown@epa.nsw.gov.au>
Sent:	Thursday, 16 April 2026 11:45 AM
To:	Sally Reynolds-JHG
Cc:	Leanna Fuller-JHG; Anne Andersen-JHG; Larissa Borysko; Joanne Bell
Subject:	RE: Draft Monitoring Programs for Consultation with EPA
Attachments:	LETTER - EPL 22098 John Holland - EPA No comment - Environmental Monitoring Programs - April 2026.PDF

Good afternoon, Sally.

Thank you for seeking the NSW Environment Protection Authority's comment on environmental management plans that have been prepared by John Holland Pty Ltd, in relation to EPL no. 22098 and SSI-22765520.

I have attached the EPA's letter of response to this email for your review. Please do not hesitate to contact me directly by phone should you have any questions.

Please direct any written enquiries to **info@epa.nsw.gov.au**, referencing *EPL 22098* and *DOC26/209749-1*.

Do not reply to this email directly.
To ensure your correspondence is received by the EPA, please direct all replies and general enquiries to info@epa.nsw.gov.au, clearly stating the nature of your enquiry in the email subject line.

Kind regards,

Jennifer Brown *she/her (pronouns)*
A/Unit Head
Operations – Sydney West and City
NSW Environment Protection Authority
T 02 8289 6829 | **M** 0477 964 685 | www.epa.nsw.gov.au

Join us on our mission to protect tomorrow together.

The EPA acknowledges the Traditional Custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal Elders past and present.

I work on Burramattagal Country of the Dharug Nation.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

From: Environment Line <info@environment.nsw.gov.au>
Sent: Tuesday, 14 April 2026 2:34 PM

Our ref: DOC26/209749-1

Sally Reynolds
Environment and Sustainability Director
John Holland Pty Ltd
Darling Park Tower 1
Level 13/201 Sussex Street
SYDNEY NSW 2000

By email: sally.reynolds@jhg.com.au

Dear Sally Reynolds

EPA No Comment – Environmental Monitoring Programs
Sydney Metro West – Linewide Package Works

Thank you for inviting the NSW Environment Protection Authority (**EPA**) to review the Construction Noise and Vibration Monitoring Program (**CNVMP**) and Water Quality Monitoring Program (**WQMP**) that have been prepared in relation to environment protection licence (**EPL**) no. 22098 (**the Licence**), held by John Holland Pty Ltd (**JHPL**).

The EPA issued the Licence to JHPL (**the Licensee**) in March 2026, under the *Protection of the Environment Operations Act 1997* (**the Act**). The Licence authorises the Licensee to carry out scheduled railway infrastructure activities related to the delivery of the Sydney Metro West – Linewide Works Package (**LWP**).

The EPA understands that the relevant Conditions of Approval (SSI-22765520) for the LWP require the Licensee to prepare environmental monitoring programs in consultation with relevant government agencies. The EPA encourages the development of such plans to ensure that proponents and licensees have determined how they will meet their statutory obligations and environmental objectives.

However, the EPA generally does not review, approve, or endorse monitoring plans and programs, as the role of the EPA is to set objectives for environmental protection and management and not to be directly involved in the development of strategies to comply with such objectives. It is the responsibility of proponents and licensees to ensure that that monitoring programs proposed are in line with the Conditions of Approval, conditions of licence, and relevant environmental legislation.

Please be aware that any potential environmental impacts, including water, noise and vibration pollution, that are likely to be generated by project activities must be managed. Any impacts on the amenity, wellbeing, and health of the surrounding community and environment should be minimised, and feasible and reasonable mitigation measures that have been developed with reference to relevant guidelines and standards must be implemented.

Please refer to the EPA's webpage for further information on noise and water environmental matters, which may assist in the development of the relevant environmental monitoring programs.

If you have any further questions about this issue, please contact Jen Brown, Senior Operations Officer on (02) 8289 6829 or via email to **info@epa.nsw.gov.au**, referencing *EPL 22098* and *DOC26/209749-1.*

Yours sincerely

Larissa Borysko
A/Manager - Operations
Environment Protection Authority

15 April 2026

Annexure C: Place Making NSW

In/Out	Date	Medium	Details of Contact
Out	21 April 2026 11:01am	Email	JH send Place Making NSW (PMNSW) draft copies of Subplans for consultation of Heritage and Noise and Vibration.
Out	22 April 2026 3:00pm	Meeting	JH presented sub plans to PMNSW including summary of anticipated impacts and mitigation measures. A copy of the presentation is included in Annexure A.
In	28 April 2026	Email/Letter	PMNSW confirmed no comments on the Noise and Vibration and provided an enclosed letter to confirm their position.

Anne Andersen-JHG

From:	Leanna Fuller-JHG
Sent:	Tuesday, 21 April 2026 11:01 AM
To:	Vincenzo Falato; Humfrey Whitaker; annie.tenant@property.nsw.gov.au; Nina.pollock@property.nsw.gov.au
Cc:	Sally Reynolds-JHG; Alex Charalambous; John Ieroklis; Robert Muir-JHG; Anne Andersen-JHG; katarina.simunic@property.nsw.gov.au; Chris Wills-JHG; Russell Huggins; Wayne Johnson
Subject:	Sydney Metro West Linewide Project Consultation on Heritage and Noise & Vibration Management Plans with Placemaking NSW

Hi Vincenzo,

Please find below the draft copies of the subplans that John Holland is required to consult on with Placemaking NSW under our conditions of approval. Below is a summary for your reference specific to the Bays location:

Heritage
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- At The Bays, excavation works for trenching and acoustic shed foundations are not in the vicinity of the known Aboriginal heritage PAD area (and importantly the Linewide Project does not receive access to the land area under the Linewide Contract).
- For non-Aboriginal heritage at The Bays, any excavation works will continue to be managed in accordance with the Sydney Metro West Stage 1 (CTP) ARDEM and where required an addendum will be developed in consultation with appropriate stakeholders.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The Bays site will primarily be used for concrete deliveries and logistics to support construction of the rail line within the tunnels. Additionally, trenching will be required for additional high voltage works at this site. The works at this site will be undertaken during standard construction hours as well as out of hours.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

Please let me know if you require any additional information prior our meeting tomorrow.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000

28 April 2026

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project
Darling Park
Tower 1, Level 13
201 Sussex Street
SYDNEY NSW 2000

Dear Ms Fuller

Re: Sydney Metro West - Linewide – Construction Noise & Vibration Management Rev C Consultation
Reference Number: #13215

PMNSW has reviewed the Sydney Metro West - Linewide - Noise & Vibration CNVMP Rev C Consultation is noted and there and no further comments from Place Management NSW

For Further Assistance:
If you require any further information or wish to discuss the contents of this letter, please contact Michelle King on 02 9240 8806 or Michelle.King@property.nsw.gov.au

Yours sincerely

Katarina Simunic
Director, Leasing & Commercial
Place Management NSW - Land Owner

Place Management NSW
Placemaking NSW
Level 3, 66 Harrington Street, The Rocks NSW 2000
PO Box N408, Grosvenor Place NSW 1220
Tel: 02 9240 8500

Placemaking NSW is the registered business name of Place Management NSW

Anne Andersen-JHG

From: Anne Andersen-JHG
Sent: Tuesday, 28 April 2026 1:11 PM
To: michelle.king@property.nsw.gov.au; Katarina Simunic
Cc: Leanna Fuller-JHG; Sally Reynolds-JHG; John Ieroklis; Chris Wills-JHG; Vincenzo.falato@property.nsw.gov.au
Subject: RE: 13216 - Comments - Sydney Metro-Linewide-Construction Noise and Vibration Management Plan (Rev C) Consultation - 28.04.26 -Letter

Hi Michelle and Katarina

Thank you for your comments on the Construction Noise and Vibration Management Subplan and for reviewing the Plan so quickly. We note that PMNSW does not have any comments on this Plan.

The CEMP and Management Subplans will be publicly available on the Project website once they are endorsed by the ER (and, where relevant, approved by DPHI).

Thanks and kind regards

Anne Andersen
Environmental Approvals Support
Sydney Metro West Linewide Package

M 0408115870
E anne.andersen@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Tuesday, 28 April 2026 11:30 AM
To: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: Fw: 13216 - Comments - Sydney Metro-Linewide-Construction Noise and Vibration Management Plan (Rev C) Consultation - 28.04.26 -Letter

FYI

From: Michelle King <michelle.king@property.nsw.gov.au>
Sent: Tuesday, April 28, 2026 12:32:50 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Subject: 13216 - Comments - Sydney Metro-Linewide-Construction Noise and Vibration Management Plan (Rev C) Consultation - 28.04.26 -Letter

Good Morning Leanna

Please find attached PMNSW comments

Cheers
Michelle

Michelle King
Leasing & Place Management Officer
Placemaking NSW
Department of Planning, Housing and Infrastructure

M 0419 400 842 | E michelle.king@property.nsw.gov.au
Level 3, 66 Harrington Street, The Rocks NSW 2000

Placemaking NSW is the registered business name of Place Management NSW.

We acknowledge Gadi Country, her lands, sea and sky, we acknowledge her custodians, the people of the Grass tree, their kin the Wangal, Bidjigal, Cabrogal and Cammeraygal who often visited this Country to connect and share. We offer our respect to their Elders both past and present.

Annexure D: Port Authority of NSW

In/Out	Date	Medium	Details of Contact
Out	9 April 2026 8:35am	Email	JH sent PANSW draft Subplans for consultation on Heritage and Noise and Vibration (reference specific to the Bays location).
Out	13 April 2026	Presentation	JH presented sub plans to PANSW including summary of anticipated impacts and mitigation measures. A copy of the presentation is included in Annexure A.
Out	16 April 2026 2:14pm	Email	Copy of presentation provided to PANSW.
In	16 April 2026 3:52pm	Email	Response received from PANSW to confirm plans well structured to manage impacts of the development One comment from stakeholder on the Heritage Management plan and no comments on Noise &Vibration Management Plan.

Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Thursday, 9 April 2026 8:35 AM
To: Glenn Johnson
Cc: Sally Reynolds-JHG; Anne Andersen-JHG; Robert Muir-JHG; Alex Charalambous; John Ieroklis; Kevin Barry
Subject: Draft Subplans for Consultation with Port Authority NSW

Hi Glenn,

Please find below the draft copies of the subplans that John Holland is required to consult on with Port Authority NSW under our conditions of approval. Below is a summary for your reference specific to the Bays location:

Heritage
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- At The Bays, excavation works for trenching and acoustic shed foundations are not in the vicinity of the known Aboriginal heritage PAD area (and importantly the Linewide Project does not receive access to the land area under the Linewide Contract).
- For non-Aboriginal heritage at The Bays, any excavation works will continue to be managed in accordance with the Sydney Metro West Stage 1 (CTP) ARDEM and where required an addendum will be developed in consultation with appropriate stakeholders.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The Bays site will primarily be used for concrete deliveries and logistics to support construction of the rail line within the tunnels. Additionally, trenching will be required for additional high voltage works at this site. The works at this site will be undertaken during standard construction hours as well as out of hours.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

Please let me know if you require any additional information prior to the meeting next week.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From: Miguel Frohlich <mfrohlich@portauthoritynsw.com.au>
Sent: Thursday, 16 April 2026 3:52 PM
To: Leanna Fuller-JHG; Glenn Johnson
Cc: Sally Reynolds-JHG; Anne Andersen-JHG; Robert Muir-JHG; Dan O'Connell; Chris Wills-JHG; Lisa Francis; Ryan Bennett
Subject: RE: Sydney Metro West Linewide consultation with Ports NSW

Hi Leanna,

Thanks for sharing the presentation.

I have conducted a high-level review of the three subplans that were shared with us, with a primary focus on the sections relevant to the Bays site. Overall, the subplans appear to be well structured to manage the impacts of the development. I have a single minor comment for your consideration, should you consider it appropriate to make an update:

> Sydney Regional Environmental Plan (SREP) No. 26 – City West has been repealed and superseded by the State Environmental Planning Policy (SEPP) (Precincts – Eastern Harbour City) 2021. The SEPP lists the Glebe Island Silos as a heritage item (see Appendix 8, Schedule 4, Part 3). I suggest updating the table 10 of the Heritage Management Plan accordingly.

Kind regards,

Miguel Frohlich | Senior Environment & Planning Specialist

Port Authority of New South Wales
Level 4, 20 Windmill Street | Walsh Bay NSW 2000 Australia
PO Box 25 | Millers Point NSW 2000 Australia

E: mfrohlich@portauthoritynsw.com.au
T: +61 437 705 459 |
www.portauthoritynsw.com.au

We acknowledge and pay our respect to the traditional custodians of the lands and waters of NSW and all Aboriginal Elders, past, present and emerging.

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Thursday, 16 April 2026 2:14 PM
To: Glenn Johnson <GJohnson@portauthoritynsw.com.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Miguel Frohlich <mfrohlich@portauthoritynsw.com.au>; Dan O'Connell <doconnell@portauthoritynsw.com.au>; Chris Wills-JHG <Chris.Wills@jhg.com.au>; Lisa Francis <LFrancis@portauthoritynsw.com.au>
Subject: Sydney Metro West Linewide consultation with Ports NSW

Hi Glenn, Miguel & Dan,

Thank you once again for taking the time to meet with us on Monday.

As promised, please find attached a copy of the presentation we discussed.

Confirming that we are looking to receive your comments and feedback by Monday 20 April via email.

Please don't hesitate to reach out if you have any questions or need further clarification in the meantime.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of the Port Authority of New South Wales.

Annexure E: City of Parramatta Council

In/Out	Date	Medium	Details of Contact
Out	7 April 2026 11:56am	Email	JH sent Parramatta Council draft Subplans for consultation on Heritage and Noise and Vibration.
Out	9 April 2026	Email	JH followed up with Council to confirm to confirm receipt of the Plans and request a meeting time.
In	9 April 2026	Email	Council replied to confirm they were pending availability of key representatives.
Out	10 April	Email	JH followed up to advise timing on consultation and requested a meeting time.
In	28 April	Email	Council replied to advise SMEs are on leave until 28 April 2026.
In	30 April 2026	Email	Email from Parramatta Council advising of time for a presentation on the Management Plans.
Out	30 May 2026	Email and Invite	JH presented the NVMP to Council and requested feedback on the Management Plan
Out	7 May 2026	Email	Follow up email sent to Council requesting comments on the NVMP.
In	8 May 2026	Email	Email from Parramatta Council advising they have not had time to review (confusing LW with a TfNSW project)
Out	11 May 2026	Phone Call and email	Email from JH clarifying request for comments and confirming the relevant project.
In	12 May 2026	Email	Email from Parramatta Council confirming no comments on the HMP and NVMP.

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Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Thursday, 9 April 2026 9:33 AM
To: Ian Taylor
Cc: Sally Reynolds-JHG; Anne Andersen-JHG; Robert Muir-JHG; Alex Charalambous; John Ieroklis; Liam Barns
Subject: RE: Draft Subplans for Consultation with City of Paramatta Council

Hi Ian,

I just want to follow up on my email from Monday.

We have updated the Noise and Vibration plan with a missing appendix, please see updated link below:

SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

We would like to meet with City of Parramatta Council week commencing **Monday 13 April 2026**. Could you please advise your availability, and I will send an invite (please allow 1 hour as we will also include a scope overview). If you could please give me a couple of options as I need to coordinate relevant attendees our end as well.

Thanks, Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Tuesday, April 7, 2026 11:56 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: Draft Subplans for Consultation with City of Paramatta Council

Hi Ian

I hope you had a great long weekend.

As per my email last week, please find below the draft copies of the subplans that John Holland is required to consult on with City of Parramatta Council under our conditions of approval. Below is a summary for your reference specific to Clyde / Rosehill.

Heritage

Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- There are no anticipated impacts on Aboriginal or non-Aboriginal heritage or known existing heritage items arising from the works at Clyde stabling and maintenance facility and the Rosehill stabling facility.
- A post-construction condition report will be completed for the RTA Depot facade fronting Unwin Street.
- A Heritage Interpretation Plan (HIP) for the Clyde stabling and maintenance facility and Rosehill services facility will be produced during the Linewide works.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration

Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The works at the Clyde and Rosehill sites will include excavation of foundations as well as building construction. These works will be undertaken during standard construction hours as well as out of hours.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

We would like to meet with City of Parramatta Council week commencing Monday 13 April 2026. Could you please advise your availability, and I will send an invite (please allow 1 hour as we will also include a scope overview). If you could please give me a couple of options as I need to coordinate relevant attendees our end as well.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Tuesday, 28 April 2026 6:11 PM
To: Sally Reynolds-JHG; Anne Andersen-JHG
Subject: Fw: Draft Subplans for Consultation with City of Paramatta Council

FYI

Get Outlook for iOS

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Tuesday, April 28, 2026 6:23:18 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Subject: RE: Draft Subplans for Consultation with City of Paramatta Council

Hi Leanna

One of our key SME's was on leave 4-28 April and so has not been available to meet.

I have asked for availability this week and next, hoping this is OK

Regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

City of Parramatta
9 Wentworth Street, Parramatta NSW 2150 Australia
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

CITY OF PARRAMATTA

Council acknowledges the Traditional Owners of the land, the Dharug Peoples and pays respect to their Elders past and present.

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Friday, 10 April 2026 8:43 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Subject: RE: Draft Subplans for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian,

Thanks for the update, we are targeting to conclude consultation by Friday 24 April, so we can meet the following week also if that helps with calendars.

Thanks, Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Thursday, April 9, 2026 1:15 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Subject: RE: Draft Subplans for Consultation with City of Paramatta Council

HI Leanna

I don't have all response back from staff to determine joint availability yet, and staff that have not advised are showing out of office, and I would suggest they are on leave taking advantage of school break.

I expected I won't be able to advise further until Monday.

regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

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Sent: Thursday, 9 April 2026 9:33 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John

Ieroklis <john.ieroklis@transport.nsw.gov.au>; Liam Barns <liam.barns@transport.nsw.gov.au>
Subject: RE: Draft Subplans for Consultation with City of Paramatta Council

*****[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking on links or responding. *******

Hi Ian,

I just want to follow up on my email from Monday.

We have updated the Noise and Vibration plan with a missing appendix, please see updated link below:

SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

We would like to meet with City of Parramatta Council week commencing **Monday 13 April 2026**. Could you please advise your availability, and I will send an invite (please allow 1 hour as we will also include a scope overview). If you could please give me a couple of options as I need to coordinate relevant attendees our end as well.

Thanks, Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Tuesday, April 7, 2026 11:56 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: Draft Subplans for Consultation with City of Paramatta Council

Hi Ian

I hope you had a great long weekend.

As per my email last week, please find below the draft copies of the subplans that John Holland is required to consult on with City of Parramatta Council under our conditions of approval. Below is a summary for your reference specific to Clyde / Rosehill.

Heritage
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- There are no anticipated impacts on Aboriginal or non-Aboriginal heritage or known existing heritage items arising from the works at Clyde stabling and maintenance facility and the Rosehill stabling facility.
- A post-construction condition report will be completed for the RTA Depot facade fronting Unwin Street.
- A Heritage Interpretation Plan (HIP) for the Clyde stabling and maintenance facility and Rosehill services facility will be produced during the Linewide works.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration

Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The works at the Clyde and Rosehill sites will include excavation of foundations as well as building construction. These works will be undertaken during standard construction hours as well as out of hours.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

We would like to meet with City of Parramatta Council week commencing Monday 13 April 2026. Could you please advise your availability, and I will send an invite (please allow 1 hour as we will also include a scope overview). If you could please give me a couple of options as I need to coordinate relevant attendees our end as well.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
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Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Thursday, 7 May 2026 3:50 PM
To: Ian Taylor; Sally Reynolds-JHG
Cc: Chris Wills-JHG; Anne Andersen-JHG
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Ian,

The management plans cover Linewide's scope of work for the entire alignment. As discussed with Sally and Chris, the key heritage aspects related to the CoPC were identified and presented during the meeting and presentation shared after.

To ensure we accommodate feedback as much as possible, we're happy to extend the consultation period until COB tomorrow. If we don't receive any comments by then, could you kindly confirm that's CoPC has no further feedback?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Thursday, 7 May 2026 1:22 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Leanna

It was planned to meet re Heritage, however the period time coincided with school holidays which staff took advantage of.

Ideally, I am sure staff would provided comment, however none to date.

Are these Plans across the whole alignment ? or just confined to the Enabling Works area?

regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

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From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Thursday, 7 May 2026 11:56 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian,

Hope this email finds you well, I am now back form leave and understand you have met with Chris and Sally whilst I was away.

We are now closing the consultation on our plans from COB today, can I please confirm if CoPC have any feedback or comments on both of the plans provided please?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Monday, 4 May 2026 2:35 PM
To: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG

<anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Sally

I have invited our Heritage SME to today's meeting however, but suggest a further meeting and will ask for availability of dates and times

Regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
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From: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Sent: Friday, 1 May 2026 2:17 PM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: FW: Draft Heritage Subplan for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian

Please see below, I'll cancel the meeting for today, could you please confirm who is the most appropriate person to consult with on the Linewide Heritage Management Plan. Could we please arrange a meeting for **Monday 4 May**

Regards
Sally

-----Original Appointment-----
From: Suzanne Buljan <sbuljan@cityofparramatta.nsw.gov.au>
Sent: Friday, 1 May 2026 2:03 PM
To: Sally Reynolds-JHG
Subject: Declined: Draft Heritage Subplan for Consultation with City of Paramatta Council
When: Friday, 1 May 2026 2:30 PM-3:00 PM (UTC+10:00) Canberra, Melbourne, Sydney.
Where: Microsoft Teams Meeting; MWL.IPO.Martin Place (4, VC)

Hi Sally, I've checked the invitation responses, and it looks like I am the only person who has accepted. The document you have shared is comprehensive and I have not had time to read in-depth. I suggest a reschedule to next week when key people can be at the meeting, noting no City of Parramatta heritage SME's have been invited to this meeting. Best regards, Suzanne

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Anne Andersen-JHG

From: Sally Reynolds-JHG
Sent: Thursday, 30 April 2026 2:32 PM
To: SPike@cityofparramatta.nsw.gov.au
Cc: Ian Taylor; Chris Wills-JHG; Leanna Fuller-JHG; Anne Andersen-JHG
Subject: RE: Sydney Metro West - Linewide - N&V Subplan Consultation with CoPC
Attachments: SMW_Linewide_Key Stakeholder Consultation Presentation_CoPC_NV.pdf; SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

Hi Stuart

Thank you for your time today, please find attached the presentation and the **Noise and Vibration Management Sub – plan**.

If you have any comments on the sub plan, could you please send through by Wednesday 6 May 2026.

We will add you to the community notification distribution list.

Regards
Sally

-----Original Appointment-----
From: Chris Wills-JHG <Chris.Wills@jhg.com.au>
Sent: Wednesday, 29 April 2026 3:29 PM
To: Chris Wills-JHG; Chris Wills-JHG; Anne Andersen-JHG; Sally Reynolds-JHG; SPike@cityofparramatta.nsw.gov.au
Cc: Ian Taylor
Subject: Sydney Metro West - Linewide - N&V Subplan Consultation with CoPC
When: Thursday, 30 April 2026 2:00 PM-2:30 PM (UTC+10:00) Canberra, Melbourne, Sydney.
Where: MWL.IPO.Bella Vista (AU)

Hi Stuart,

As discussed with Ian, we are hoping to discuss our Noise and Vibration subplan which has been issued and any comments you may have.

Thanks

Chris

Microsoft Teams meeting

Join:
https://teams.microsoft.com/meet/48923728367413?p=PJLI3BMvgfAe9WyzGb

Meeting ID: 489 237 283 674 13

Passcode: Gq6UD2oU

Need help? | System reference

Dial in by phone

+61 3 7019 2837,,973817755# Australia, Melbourne

Find a local number

Phone conference ID: 973 817 755#

Join on a video conferencing device

Tenant key: teams@jhg.onpexip.com

Video ID: 138 946 014 2

More info

For organizers: Meeting options | Reset dial-in PIN

AU 03-7019-2837 : NZ 09-886-5022 : HK 3008-2696 : SG 3157-2662 : CN 400-842-8061 : US 929-229-5243 : UK 020-3443-9716 : DE 089-2080-46634

Privacy and security

Anne Andersen-JHG

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Thursday, 7 May 2026 1:22 PM
To: Leanna Fuller-JHG; Sally Reynolds-JHG
Cc: Chris Wills-JHG; Anne Andersen-JHG
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Leanna

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Ideally, I am sure staff would provided comment, however none to date.

Are these Plans across the whole alignment ? or just confined to the Enabling Works area?

regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

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Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

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Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

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M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Monday, 4 May 2026 2:35 PM
To: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

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Sent: Friday, 1 May 2026 2:17 PM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: FW: Draft Heritage Subplan for Consultation with City of Paramatta Council

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Regards
Sally

-----Original Appointment-----
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Sent: Friday, 1 May 2026 2:03 PM
To: Sally Reynolds-JHG
Subject: Declined: Draft Heritage Subplan for Consultation with City of Paramatta Council
When: Friday, 1 May 2026 2:30 PM-3:00 PM (UTC+10:00) Canberra, Melbourne, Sydney.
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Anne Andersen-JHG

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Tuesday, 12 May 2026 9:14 AM
To: Leanna Fuller-JHG; Sally Reynolds-JHG
Cc: Chris Wills-JHG; Anne Andersen-JHG
Subject: RE: Draft Noise and Vibration and Heritage Subplan for Consultation with City of Paramatta Council

Hi Leanna

Apologies.

CoPC note from your email 7 May below that JHG were closing the consultation on plans from COB that day.

Unfortunately, we have not been able to review in the timeframe, and therefore have no feedback or comments on the Sydney Metro West Linewide Noise and Vibration Management Plan and Heritage Subplan for Construction

regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

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From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Monday, 11 May 2026 11:26 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: Draft Noise and Vibration and Heritage Subplan for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian,

Thanks for your time on the phone today.

As discussed, can you please confirm City of Parramatta Council have no feedback or comments on the Sydney Metro West Linewide Noise and Vibration Management Plan and Heritage Subplan for Construction?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Friday, 8 May 2026 10:33 AM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Leanna,

Thank you for providing us with the opportunity to comment on the Draft Heritage Subplan. I want to clarify that while we are unable to provide specific feedback at this time, this should not be taken as confirmation that CoPC has no feedback on the Subplan. Our position is simply reflective of current circumstances.

To provide some context, TfNSW has only recently re-engaged with council, which follows closely after the reannouncement of funding for Stage 2a. It does seem unusual that the ECI process for a D+C contractor for the linewide contract has yet to commence, while Subplans for the entire alignment are already moving forward. We acknowledge and respect that JHG has been engaged for this matter and appreciate their involvement, but it appears that the commencement of consultation is occurring well in advance of the contractor engagement process.

Additionally, while the plans themselves are comprehensive—as has been noted by our staff—I want to highlight that CoPC staff continue to manage other important business-as-usual workloads, which impacts our capacity to review and respond at this stage.

Thank you again for reaching out, and please be assured that we are committed to engaging further as the process progresses.

Best regards,
Ian Taylor

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

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Sent: Thursday, 7 May 2026 3:50 PM
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Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

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Hi Ian,

The management plans cover Linewide's scope of work for the entire alignment. As discussed with Sally and Chris, the key heritage aspects related to the CoPC were identified and presented during the meeting and presentation shared after.

To ensure we accommodate feedback as much as possible, we're happy to extend the consultation period until COB tomorrow. If we don't receive any comments by then, could you kindly confirm that's CoPC has no further feedback?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Thursday, 7 May 2026 1:22 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Leanna

It was planned to meet re Heritage, however the period time coincided with school holidays which staff took advantage of.

Ideally, I am sure staff would provided comment, however none to date.

Are these Plans across the whole alignment ? or just confined to the Enabling Works area?

regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

City of Parramatta
9 Wentworth Street, Parramatta NSW 2150 Australia
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

Council acknowledges the Traditional Owners of the land, the Dharug Peoples and pays respect to their Elders past and present.

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Thursday, 7 May 2026 11:56 AM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian,

Hope this email finds you well, I am now back form leave and understand you have met with Chris and Sally whilst I was away.

We are now closing the consultation on our plans from COB today, can I please confirm if CoPC have any feedback or comments on both of the plans provided please?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Sent: Monday, 4 May 2026 2:35 PM
To: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Draft Heritage Subplan for Consultation with City of Paramatta Council

Hi Sally

I have invited our Heritage SME to today's meeting however, but suggest a further meeting and will ask for availability of dates and times

Regards

Ian Taylor
Rail Projects Interface Manager | Infrastructure Planning and Design
02 9806 8484

City of Parramatta
9 Wentworth Street, Parramatta NSW 2150 Australia
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

Council acknowledges the Traditional Owners of the land, the Dharug Peoples and pays respect to their Elders past and present.

From: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Sent: Friday, 1 May 2026 2:17 PM
To: Ian Taylor <itaylor@cityofparramatta.nsw.gov.au>
Cc: Chris Wills-JHG <Chris.Wills@jhg.com.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: FW: Draft Heritage Subplan for Consultation with City of Paramatta Council

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking on links or responding. ***

Hi Ian

Please see below, I'll cancel the meeting for today, could you please confirm who is the most appropriate person to consult with on the Linewide Heritage Management Plan. Could we please arrange a meeting for **Monday 4 May**

Annexure F: City of Canada Bay Council

In/Out	Date	Medium	Details of Contact
Out	7 April 2026 11:21am	Email	JH send City of Canada Bay Council draft Subplans for consultation of Heritage and Noise and Vibration.
Out	15 April 2026	Presentation	JH met with COCB and presented Management Subplans. A copy of the presentation is included in Annexure A
In	16 April 2026 10:42am	Email	City of Canada Bay Council requesting extension of noise and Vibration Plan to 22 April 2026. Stakeholders return to office 20 April 2026.
Out	16 April 2026 12:24pm	Email/Presentation	JH confirming that comments on the Noise and Vibration Plan are due 22 April 2026 via email and provided copy of presentation from the meeting 15 April 2026.
Out	23 April 2026 2:06pm	Email/Presentation	JH follow up email of presentation week prior regarding feedback on the review of the Noise and Vibration Plan.
In	28 April 2026 8:33am	Email	City of Canada Bay Council issues response to JH confirming no comments on the Noise and Vibration Plan.

Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Tuesday, 7 April 2026 11:21 AM
To: Steven Mrmacovski
Cc: Sally Reynolds-JHG; Anne Andersen-JHG; Alex Charalambous; John Ieroklis; kevin.barry@transport.nsw.gov.au
Subject: Draft Subplans for Consultation with City of Canada Bay

Hi Steven

As promised, please find below the draft copies of the subplans that John Holland is required to consult on with City of Canada Bay under our conditions of approval. Below is a summary for your reference specific to Burwood North Station:

Heritage

Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- There are no anticipated impacts on Aboriginal or non-Aboriginal heritage at the Burwood North site, as there are no known or potential heritage items within the construction site boundary.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration

Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The Burwood North site will primarily be used for concrete deliveries and logistics support for the construction of the rail line within the tunnels. These works will be conducted during standard construction hours, as well as out-of-hours where required.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From: Steven Mrmacovski <Steven.Mrmacovski@canadabay.nsw.gov.au>
Sent: Tuesday, 28 April 2026 8:33 AM
To: Leanna Fuller-JHG
Cc: Sally Reynolds-JHG; Chris Wills-JHG; Robert Muir-JHG; Anne Andersen-JHG
Subject: RE: Sydney Metro West Linewide consultation with City of Canada Bay

Hi Leanna,
In terms of the Noise and Vibration Plan our stakeholder advises that she has no comments or objections.
I am chasing up the Heritage adviser and will come back to you shortly.

Steve

Steven Mrmacovski | Senior Project Manager
City of Canada Bay

15-17 Regatta Road Five Dock NSW 2046 | www.canadabay.nsw.gov.au
T: 02 9121 0095 **|** M: 0419 441 879 **|** Steven.Mrmacovski@canadabay.nsw.gov.au

We acknowledge the Aboriginal and Torres Strait Islander peoples, in particular the Wangal people, as the first inhabitants and traditional custodians of the lands where we live, learn and work.

Any information transmitted in this message and its attachments is intended only for the person or entity to which it is addressed. The above email correspondence should be read in conjunction with our standard disclaimer/terms which can be found at https://www.canadabay.nsw.gov.au/email-disclaimer

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Thursday, 23 April, 2026 2:06 PM
To: Steven Mrmacovski <Steven.Mrmacovski@canadabay.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Chris Wills-JHG <Chris.Wills@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: Sydney Metro West Linewide consultation with City of Canada Bay

Hi Steven,

I hope this email finds you well.

I'm reaching out to follow up on our presentation last week. I was wondering if Canada Bay has had a chance to review the plans we provided and whether there's any feedback or comments you'd like to share?

Looking forward to hearing from you.

Many thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656

E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Thursday, 16 April 2026 12:24 PM
To: 'Steven Mrmacovski' <Steven.Mrmacovski@canadabay.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Chris Wills-JHG <Chris.Wills@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>
Subject: Sydney Metro West Linewide consultation with City of Canada Bay

Hi Steven,

Thank you once again for taking the time to meet with me yesterday.

As promised, please find attached a copy of the presentation we discussed.

Confirming that we are happy to receive your comments and feedback by Wednesday 22 April via email.

Please don't hesitate to reach out if you have any questions or need further clarification in the meantime.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Steven Mrmacovski <Steven.Mrmacovski@canadabay.nsw.gov.au>
Sent: Thursday, 16 April 2026 10:42 AM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Subject: RE: Draft Subplans for Consultation with City of Canada Bay

Hi All,
The stakeholders that need to review these plans have advised if they could get an extension till Wednesday 22nd April? If received earlier I will forward responses back.
They both return to the office on 20th April.

Steve

Annexure G: Inner West Council

In/Out	Date	Medium	Details of Contact
Out	7 April 2026 3:05pm	Email	JH project meeting request for 13 April 2026. Consultation on Heritage and Noise and Vibration Management Plans.
Out	7 April 2026 3:18pm	Email	JH forwards email IWC members (Minas Kassiou and Joe Bertacco) to assist in absence of David Paton and Michael Huy.
Out	17 April 2026 10:45am	Email	JH send IWC draft Subplans for consultation of Heritage and Noise and Vibration.
In	28 April 2026 3:19pm	Email	Comments raised for Heritage Management plan. Stakeholder has no feedback or comments on the Noise and Vibration management plan.

Anne Andersen-JHG

From:	Leanna Fuller-JHG
Sent:	Friday, 17 April 2026 10:45 AM
To:	michael.huy@innerwest.nsw.gov.au; david.paton@innerwest.nsw.gov.au; Minas.Kassiou@innerwest.nsw.gov.au; joe.bertacco@innerwest.nsw.gov.au
Cc:	Sally Reynolds-JHG; Anne Andersen-JHG; Alex Charalambous; John Ieroklis
Subject:	Follow-Up: Consultation on Subplans for The Bays Location - John Holland Linewide Project
Importance:	High

Hi Michael, David, Minas & Joe,

I hope this email finds you well.

I am following up on my previous email sent last week regarding the consultation process for the draft subplans that John Holland is required to undertake with Inner West Council as part of our conditions of approval. For your reference, I have outlined a summary specific to The Bays location below, along with links to the relevant documents:

Heritage
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- At The Bays, excavation works for trenching and acoustic shed foundations are not in the vicinity of the known Aboriginal heritage PAD area (and importantly the Linewide Project does not receive access to the land area under the Linewide Contract).
- For non-Aboriginal heritage at The Bays, any excavation works will continue to be managed in accordance with the Sydney Metro West Stage 1 (CTP) ARDEM and where required an addendum will be developed in consultation with appropriate stakeholders.
- As part of the project, John Holland will implement an Unexpected Heritage Finds Procedure to ensure appropriate management of any unforeseen heritage discoveries during construction.

Noise and Vibration
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The Bays site will primarily be used for concrete deliveries and logistics to support construction of the rail line within the tunnels. Additionally, trenching will be required for additional high voltage works at this site. The works at this site will be undertaken during standard construction hours as well as out of hours.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

Could you please confirm if a meeting to discuss these plans would be helpful? If so, kindly provide your availability for next week, allowing approximately one hour for the discussion. During the meeting, we will also include a scope overview of the project.

Please note that consultation will conclude on Friday, 24 April. Kindly send your comments by this date to ensure they are incorporated into the final plans.

Thank you for your assistance. I look forward to hearing from you soon.

Kind regards,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Tuesday, 7 April 2026 3:18 PM
To: 'michael.huy@innerwest.nsw.gov.au' <michael.huy@innerwest.nsw.gov.au>; 'david.paton@innerwest.nsw.gov.au' <david.paton@innerwest.nsw.gov.au>; 'Minas.Kassiou@innerwest.nsw.gov.au' <Minas.Kassiou@innerwest.nsw.gov.au>; 'joe.bertacco@innerwest.nsw.gov.au' <joe.bertacco@innerwest.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; 'Alex Charalambous' <alex.charalambous@transport.nsw.gov.au>; 'John Ieroklis' <john.ieroklis@transport.nsw.gov.au>
Subject: RE: Sydney Metro West Linewide Project Meeting Request: Consultation on Heritage and Noise & Vibration Management Plans

Hi Minas and Joe,

I am reforwarding email below as per David and Michael's out of office auto replies.

If you could please assist in their absence, it would be greatly appreciated.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Tuesday, April 7, 2026 3:05 PM
To: 'michael.huy@innerwest.nsw.gov.au' <michael.huy@innerwest.nsw.gov.au>;

'david.paton@innerwest.nsw.gov.au' <david.paton@innerwest.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: Sydney Metro West Linewide Project Meeting Request: Consultation on Heritage and Noise & Vibration Management Plans
Importance: High

Hi David and Michael,

I hope this email finds you both well.

My name is Leanna, and I am the Stakeholder and Community Director for the Sydney Metro West Linewide Project at John Holland. I am reaching out to arrange a meeting to fulfill our obligations under the Planning Approval to consult with Inner West Council on the Heritage Management Plan and Noise and Vibration Management Plan including monitoring program.

We would like to propose a meeting during the **week commencing Monday 13 April 2026.** Could you please confirm your availability and suggest a couple of options for meeting times? This will help us coordinate the attendance of relevant stakeholders on our end. Please allow for approximately 1 hour, as we will also include a scope overview during the discussion.

Ahead of the meeting, we will share the plans via Teambinder and email to provide you with an opportunity to review the content in advance.

Thank you for your assistance, and I look forward to hearing from you soon.

Kind regards,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From:	Michael Huy <michael.huy@innerwest.nsw.gov.au>
Sent:	Tuesday, 28 April 2026 3:19 PM
To:	Leanna Fuller-JHG
Cc:	Sally Reynolds-JHG; Anne Andersen-JHG; Alex Charalambous; John Ieroklis; David Paton; Minas Kassiou; Joe Bertacco
Subject:	RE: Follow-Up: Consultation on Subplans for The Bays Location - John Holland Linewide Project
Attachments:	Heritage Comments - John Holland HMP.docx

Hi Leanna,

Thank you for allowing Council with additional time to provide comments.

Please find the attached Council's heritage comments in relation to the Heritage Management Plan.

No comments have been raised within the given timeframe in relation to the Noise and Vibration Management Plans.

Thanks

Regards,

Michael Huy
Road Access Project Engineer (Acting)
p +61 2 9392 5908 e michael.huy@innerwest.nsw.gov.au

To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.
Inner West Council

We acknowledge that this land area traditionally belonged to the Gadigal and Wangal peoples of the Sydney Basin.

To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.
Hall Environment Awards

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Friday, 17 April 2026 10:45 AM
To: Michael Huy <michael.huy@innerwest.nsw.gov.au>; David Paton <David.Paton@innerwest.nsw.gov.au>; Minas Kassiou <minas.kassiou@innerwest.nsw.gov.au>; Joe Bertacco <Joe.Bertacco@innerwest.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: Follow-Up: Consultation on Subplans for The Bays Location - John Holland Linewide Project
Importance: High

> Some people who received this message don't often get email from leanna.fuller@jhg.com.au. Learn why this is important

Hi Michael, David, Minas & Joe,

Annexure H: City of Sydney Council

In/Out	Date	Medium	Details of Contact
Out	21 April 2026	Email	JH sends Council draft Subplans for consultation of Heritage and Noise and Vibration.
In	22 April 2026	Email	Email response from Council confirming point of contact and confirming comments can be provided by 5 May 2026
Out	22 April 2026	Email	Further email from JH resending plans for consultation to the corrected contact person.
Out	6 May 2026	Email	JH sent follow up email to request any comments on the management plans
In	6 May 2026	Email	Council responded to advise no comments on the Noise and Vibration Management Plan .

Anne Andersen-JHG

From: Michael Stephens <MJStephens@cityofsydney.nsw.gov.au>
Sent: Wednesday, 6 May 2026 12:13 PM
To: Leanna Fuller-JHG; Tegan Mitchell
Cc: Sally Reynolds-JHG; Anne Andersen-JHG
Subject: RE: TRIM CM: RE: Sydney Metro West Linewide consultation with City of Sydney

Hi Leanna,

Apologies for the delay.

The City has reviewed the CNVMP and raises no issues with the Plan.

The Heritage Management Sub-Plan is still under review. I will follow up with the Heritage Planner looking after this today.

Thanks,

Michael Stephens (he/him)
Senior Planner
Planning Assessments

Telephone: +612 9265 9040
cityofsydney.nsw.gov.au

The City of Sydney acknowledges the Gadigal of the Eora nation as the Traditional Custodians of our local area.

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Wednesday, 6 May 2026 11:56 AM
To: Michael Stephens <MJStephens@cityofsydney.nsw.gov.au>; Tegan Mitchell <TMitchell@cityofsydney.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Anne Andersen-JHG <anne.andersen@jhg.com.au>
Subject: RE: TRIM CM: RE: Sydney Metro West Linewide consultation with City of Sydney

Caution: This email came from outside the organisation. Don't click links or open attachments unless you know the sender, and were expecting this email.

Hi Michael & Team,

I hope this email finds you well.

I wanted to follow up on the below management plans and see if City of Sydney have any feedback or comments to be incorporate into our plans?

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Leanna Fuller-JHG
Sent: Wednesday, 22 April 2026 9:47 AM
To: 'Michael Stephens' <MJStephens@cityofsydney.nsw.gov.au>
Cc: Tegan Mitchell <TMitchell@cityofsydney.nsw.gov.au>
Subject: RE: TRIM CM: RE: Sydney Metro West Linewide consultation with City of Sydney

Hi Michael,

Thank you for your email and reviewing our plans.

I have now granted you access to the below documents.

SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf
SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

From: Michael Stephens <MJStephens@cityofsydney.nsw.gov.au>
Sent: Wednesday, 22 April 2026 9:37 AM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Cc: Tegan Mitchell <TMitchell@cityofsydney.nsw.gov.au>
Subject: FW: TRIM CM: RE: Sydney Metro West Linewide consultation with City of Sydney

Hi Leanna,

Tegan Mitchell has forwarded me your email regarding Sydney Metro West. I will be able to assist with reviewing these matters by 5 May. Could you please provide me access to the below documents.

Thanks,

Michael Stephens (he/him)
Senior Planner
Planning Assessments

Telephone: +612 9265 9040
cityofsydney.nsw.gov.au

The City of Sydney acknowledges the Gadigal of the Eora nation as the Traditional Custodians of our local area.

From: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Sent: Tuesday, 21 April 2026 10:19 AM
To: Tegan Mitchell <TMitchell@cityofsydney.nsw.gov.au>
Cc: Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Mirjana Vidovic <mirjana.vidovic2@transport.nsw.gov.au>; Alex Charalambous <alex.charalambous@transport.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: Sydney Metro West Linewide consultation with City of Sydney

Caution: This email came from outside the organisation. Don't click links or open attachments unless you know the sender, and were expecting this email.

Hi Tegan,

I hope this email finds you well.

My name is Leanna, and I am the Stakeholder and Community Director for the Sydney Metro West Linewide Project at John Holland. I am reaching out to arrange a meeting to fulfill our obligations under the Planning Approval to consult with City of Sydney on the Heritage Management Plan and Noise and Vibration Management Plan including monitoring program.

The plans outline the requirements for the construction of the Sydney Metro Linewide Project. They have been prepared to address the relevant requirements of Sydney Metro's Construction Environmental Management Framework (CEMF), the Environmental Impact Statement, Revised Environmental Mitigation Measures (REMMs), the Project Planning Approval, applicable legislation, including the EPL, and contractual requirements.

Whilst the Linewide Project geographically extends from Westmead to Hunter Street, there is limited above ground works within the City of Sydney LGA required for the Project. A high level summary relevant to Noise & Vibration and Heritage is provided below along with both plans:

Noise & Vibration

SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

Construction of the Project will involve the following works that have the potential to generate noise:

- Pyrmont cross over cavern concrete invert install.

- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- In addition, community notifications will be distributed to residents and businesses in the surrounding area prior to the commencement of works.

Heritage Summary
SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf
Construction of the Project will involve the following works that have the potential to encounter heritage items:

- No activities within the CoS LGA will have an impact on heritage
- In the event that any unknown or unexpected potential Aboriginal and non-Aboriginal heritage finds are encountered, works will cease in the vicinity of the potential find and the Unexpected Heritage Finds Procedure will be implemented (refer to HMP Section 5 and Appendix A for further details).

If you would like a meeting to discuss the Plans and Project scope further please let me know.
Please note that consultation will conclude on **Friday 1 May**. We kindly ask if you could please send your comments by this date to ensure they are incorporated into the final plans.

Thank you for your assistance. I look forward to hearing from you soon.

Kind Regards
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

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_ This email and any files transmitted with it are intended solely for the use of the addressee(s) and

Annexure I: Sydney Olympic Park Authority

In/Out	Date	Medium	Details of Contact
Out	7 April 2026 10:16am	Email	JH send SOPA draft Subplans for consultation of Heritage, Contamination and Noise and Vibration
Out	15 April 2026	Presentation	JH met with SOPA and presented Management Subplan. A copy of the presentation is included in Annexure A
In	20 April 2026 5:04pm	Email	Comments received from SOPA raised for the Contamination Management Plan, Heritage Management Plan and Construction Noise & Vibration Management Plan.
Out	22 April 2026 8:02am	Email	JH issued response to SOPA comments via email.
In	23 April 2026 8:51am	Email	SOPA confirmed responses to comments were accepted and can be closed out.

Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Tuesday, 7 April 2026 10:16 AM
To: Viveca Mcghie
Cc: Madeleine Lloyd; Anne Andersen-JHG; Sally Reynolds-JHG; Robert Muir-JHG; John Ieroklis; kevin.barry@transport.nsw.gov.au; Alex Charalambous
Subject: Draft Subplans for Consultation with Sydney Olympic Park Authority

Morning Viveca,

I hope you had a lovely long weekend.

As promised, please find below the draft copies of the subplans that John Holland is required to consult on with Sydney Olympic Park Authority under our conditions of approval. Below is a summary for your reference:

Heritage
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - Heritage Management Subplan_consultation.pdf

- No subsurface impacts are required at the Sydney Olympic Park site as part of the current Linewide scope of works, and there is no potential impact to Aboriginal heritage objects or values from this scope.
- The State Abattoir heritage item is located adjacent to the construction site and will not be impacted by the Linewide Project.
- John Holland will implement an Unexpected Heritage Finds Procedure throughout the project.

Contamination
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000068 SMW Linewide - Contamination Subplan_consultation.pdf

- No subsurface impacts are required at the Sydney Olympic Park site as part of the current Linewide scope of works.
- Contamination assessments for Sydney Metro West Stage 1 at Sydney Olympic Park (CTP Project) have previously been completed. The site has been certified as suitable for commercial and industrial use, consistent with the Sydney Metro West Sydney Olympic Park Station.
- Based on the above, no further contamination assessments of the Sydney Olympic Park construction site are required for the Linewide Project.

Noise and Vibration
Document: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_Rev C consultation.pdf

- The Sydney Olympic Park site will primarily be used for rail delivery, rail welding, and rail distribution into the tunnels.
- These works will be conducted during standard construction hours and out of hours as required.
- All works will be subject to a **Detailed Noise and Vibration Impact Statement** (DNVIS) and will include the implementation of reasonable and feasible noise mitigation measures.
- Community notifications and details will be issued to residents and businesses surrounding the site prior to the commencement of works.

Please let me know if you require any additional information prior to the meeting next week.

Many Thanks,
Leanna

Leanna Fuller
Stakeholder and Community Director
Sydney Metro West Linewide Project

A Darling Park Tower 1, Level 13, 201 Sussex St, Sydney NSW 2000
M 0447 219 656
E leanna.fuller@jhg.com.au
www.johnholland.com.au

Anne Andersen-JHG

From: Leanna Fuller-JHG
Sent: Monday, 20 April 2026 7:55 PM
To: Sally Reynolds-JHG; Robert Muir-JHG; Anne Andersen-JHG
Subject: Fw: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026
Attachments: SMWSTLWD-JHG-SWD-SW000-PM-PLN-000068 SMW Linewide - CMP.pdf; SMWSTLWD-JHG-SWD-SW000-PM-PLN-000065 SMW Linewide - HMP.pdf; SMWSTLWD-JHG-SWD-SW000-PM-PLN-000066 SMW Linewide - CNVMP_ Rev C.pdf

FYI SOPA comments below.

Get Outlook for iOS

From: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Sent: Monday, April 20, 2026 5:04:26 PM
To: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>
Cc: Madeleine Lloyd <madeleine.lloyd@sopa.nsw.gov.au>
Subject: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Hi Leanna,

Following SOPA review of the attached Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP), please see SOPA comments in the table below.

Document	Section	PDF page #	SOPA comments
Contamination Management Plan (CMP)	Section 4.3 Vapour and Ground Gas	Page 23	SOPA notes the scope of works for the project outlined in the report primarily involves goods receipt and welding at the Sydney Olympic Park Metro site prior to installation of tracks within the tunnel, with no excavation required. Based on the scope of works presented, and that a Detailed Site Investigation Report was completed for the site was endorsed by the Site Auditor in July 2023, SOPA understands the site to present a low contamination risk. While SOPA understands the tunnel was sealed during construction, SOPA recommends that the risk of gas migration into the tunnel be considered to ensure safety of workers installing the tracks, particularly if track installation requires equipment that could generate sparks and become an ignition source. Please updated Section 4.3 to acknowledge there is a low risk of gas ingress into the tunnel beneath SOPA's remediated lands, including Kronos Hill and Golf Driving Range which are areas known to generate landfill gas. Any separation or imperfect sealing of tunnel sections could provide a pathway for gas ingress and gas may accumulate inside the tunnel. The risk is low but the consequence to workers may be high and therefore warrants consideration as part of the contamination report. Simple measure to monitor gas inside the tunnel during installation of tracks should be included along with a response protocol. This detailed should be prepared by a suitable qualified professional with expertise in landfill gas.
Heritage Management Plan (HMP)	Section 6.3.2 Environmental Monitoring	Page 39	Environmental monitoring undertaken on SOPA land can only proceed under an approved SOPA Work Permit. See details on SOPA's Work Permit approval process on SOPA's website : https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-

			building/site-permits Please update to reference where appropriate.
Heritage Management Plan (HMP)	Section 6.5 Reporting	Page 39	Upon SOPA request, John Holland and Sydney Metro should make available any relevant reporting records or registers. Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	Section 7.5.2 Additional management measures	Page 58	In addition to John Holland's letter box drops and emails to subscribers as a measure to manage residual impacts, please note that SOPA has a weekly Community Notification that SOPA would like to have incorporated as part of John Holland's community consultation. Approved copy and relevant links sent through to SOPA can be relayed in SOPA's Community Notification. Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	Section 7.5.2 Additional management measures	Page 58	In addition to information made available on the Sydney Metro website as a measure to manage residual impacts, please note the SOPA has a site works MySOP Engage webpage that SOPA would like to have incorporated as part of John Holland's community consultation. Approved copy and relevant links sent through to SOPA can be relayed on the MySOP Engage webpage : https://mysop.sydneyolympicpark.nsw.gov.au/site-works Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	8.5 Reporting and Records	Page 63	Upon SOPA request, John Holland and Sydney Metro should make available any relevant reporting records or registers. Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	8.5 Reporting and Records	Page 63	Identify the John Holland email and phone contact for noise and/or vibration related complaints so that SOPA can pass on this information in the event SOPA is contacted by members of the public with complaints relevant to the works. Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	Appendix A: Construction Noise and Vibration Monitoring Program		Noise and vibration monitoring undertaken on SOPA land can only proceed under an approved SOPA Work Permit. See details on SOPA's Work Permit approval process on SOPA's website : https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-building/site-permits Please update to reference where appropriate.
Construction Noise and Vibration Management Plan (CNVMP)	Appendix A: Construction Noise and Vibration Monitoring Program Section 9.5 Reporting	Page 98	SOPA would like to receive the Annual Environmental Monitoring Report. Please update to reference where appropriate.

We look forward to John Holland's response.

If you would like further information on any of the above items, please reach out to me to coordinate.

Best regards,

Viv

Viveca McGhie
Infrastructure and Environmental Compliance Officer
Sydney Olympic Park Authority
Department of Planning, Housing and Infrastructure

M 0438 916 584
viveca.mcghie@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park NSW 2127

Anne Andersen-JHG

From: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Sent: Thursday, 23 April 2026 8:51 AM
To: Anne Andersen-JHG
Cc: Madeleine Lloyd; Leanna Fuller-JHG; Sally Reynolds-JHG
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026
Attachments: JH Response to SOPA Comments on Sub Plans.pdf

Hi Anne 😊

Following SOPA review of John Holland's response to SOPA comments as per the attached, I can confirm that SOPA is okay to close out all items based on execution of the proposed amendments in the Contamination Management Plan, Heritage Management Plan and Construction Noise and Vibration Management Plan.

Best regards,

Viv

Viveca McGhie
Infrastructure and Environmental Compliance Officer
Sydney Olympic Park Authority
Department of Planning, Housing and Infrastructure

M 0438 916 584
viveca.mcghie@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park NSW 2127

My typical working hours are 7:00am-4:00pm Monday – Thursday.
My preferred method of contact is via email. If your call is missed, please relay message via email and I will get back to you shortly.

From: Anne Andersen-JHG <anne.andersen@jhg.com.au>
Sent: Wednesday, 22 April 2026 10:46 AM

To: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Cc: Madeleine Lloyd <madeleine.lloyd@sopa.nsw.gov.au>; Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Hi Viveca

Please see attached CCP as requested.

Kind regards

Anne Andersen
Environmental Approvals Support
Sydney Metro West Linewide Package

M 0408115870
E anne.andersen@jhg.com.au
www.johnholland.com.au

From: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Sent: Wednesday, 22 April 2026 10:08 AM
To: Anne Andersen-JHG <anne.andersen@jhg.com.au>
Cc: Madeleine Lloyd <madeleine.lloyd@sopa.nsw.gov.au>
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Hi Anne 😊

To assist in closing out SOPA's comments efficiently – with reference to Item 7 in the attached – can you please send through a copy of the Community Communications Plan via email to me as an attachment?

Best regards,

Viv

Viveca McGhie
Infrastructure and Environmental Compliance Officer
Sydney Olympic Park Authority
Department of Planning, Housing and Infrastructure

M 0438 916 584
viveca.mcghie@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park NSW 2127

My typical working hours are 7:00am-4:00pm Monday – Thursday.
My preferred method of contact is via email. If your call is missed, please relay message via email and I will get back to you shortly.

From: Viveca Mcghie
Sent: Wednesday, 22 April 2026 9:59 AM
To: Anne Andersen-JHG <anne.andersen@jhg.com.au>
Cc: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Madeleine Lloyd <madeleine.lloyd@sopa.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Hi Anne 😊

Thank you for providing John Holland's response to SOPA comments as attached.

I will circulate responses with relevant SOPA staff and come back to you to confirm SOPA is okay to close out the remaining items.

In the meantime, I'm having trouble accessing the webpage via link provided in the PDF:
https://smwlm.com.au/document-library/

Is this website currently up and running?

Best regards,

Viv

Viveca McGhie
Infrastructure and Environmental Compliance Officer
Sydney Olympic Park Authority
Department of Planning, Housing and Infrastructure

M 0438 916 584
viveca.mcghie@sopa.nsw.gov.au
Level 8, 5 Olympic Boulevard, Sydney Olympic Park NSW 2127

My typical working hours are 7:00am-4:00pm Monday – Thursday.
My preferred method of contact is via email. If your call is missed, please relay message via email and I will get back to you shortly.

From: Anne Andersen-JHG <anne.andersen@jhg.com.au>
Sent: Wednesday, 22 April 2026 8:02 AM
To: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Cc: Leanna Fuller-JHG <Leanna.Fuller@jhg.com.au>; Sally Reynolds-JHG <Sally.Reynolds@jhg.com.au>; Robert Muir-JHG <Robert.Muir@jhg.com.au>; Madeleine Lloyd <madeleine.lloyd@sopa.nsw.gov.au>; John Ieroklis <john.ieroklis@transport.nsw.gov.au>
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Hi Viveca

Thank you for providing SOPAs comments on the Heritage Management Sub Plan and the Construction Noise and Vibration Management Plan for the Linewide Project.

Please see attached John Holland's response to SOPAs comment on the above Plans (noting for completeness the responses to the Contamination Management Plan are included but noted as 'closed'). The attachment also includes 'snips' showing the tracked changes in the updated Plans for your reference so you can see the changes have been made.

As advised, final versions of the Sub Plans will also be made publicly available once endorsed by the ER and approved by DPHI. JH will keep you updated once the Plans are approved and available.

Could you please confirm this closes SOPAs comment on the Heritage Management Plan and the Construction Noise and Vibration Management Plan.

Your earliest response this week would be appreciated.

Thanks and kind regards

Anne Andersen
Environmental Approvals Support
Sydney Metro West Linewide Package

M 0408115870
E anne.andersen@jhg.com.au
www.johnholland.com.au

From: Viveca Mcghie <Viveca.McGhie@sopa.nsw.gov.au>
Sent: Tuesday, 21 April 2026 3:18 PM
To: Anne Andersen-JHG anne.andersen@jhg.com.au
Cc: Leanna Fuller-JHG Leanna.Fuller@jhg.com.au; Sally Reynolds-JHG Sally.Reynolds@jhg.com.au; Robert Muir-JHG Robert.Muir@jhg.com.au; Madeleine Lloyd madeleine.lloyd@sopa.nsw.gov.au; John Ieroklis john.ieroklis@transport.nsw.gov.au
Subject: RE: SOPA review comments _ John Holland's Contamination Management Plan (CMP), Heritage Management Plan (HMP) and Construction Noise & Vibration Management Plan (CNVMP) _ 20.04.2026

Perfect – thank you Anne 😊 !

Best regards,

Viv

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
1	Contamination Management Plan (CMP)	Section 4.3 Vapour and Ground Gas	Page 23	SOPA notes the scope of works for the project outlined in the report primarily involves goods receipt and welding at the Sydney Olympic Park Metro site prior to installation of tracks within the tunnel, with no excavation required. Based on the scope of works presented, and that a Detailed Site Investigation Report was completed for the site was endorsed by the Site Auditor in July 2023, SOPA understands the site to present a low contamination risk. While SOPA understands the tunnel was sealed during construction, SOPA recommends that the risk of gas migration into the tunnel be considered to ensure safety of workers installing the tracks, particularly if track installation requires equipment that could generate sparks and become an ignition source. Please updated Section 4.3 to acknowledge there is a low risk of gas ingress into the tunnel beneath SOPA's remediated lands, including Kronos Hill and Golf Driving Range	Section 4.3 updated to include reference to SOPA concern on landfill gas. Additional mitigation measure added to Section 6.4. **Closed by SOPA in email 21/04/2026.**

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
				which are areas known to generate landfill gas. Any separation or imperfect sealing of tunnel sections could provide a pathway for gas ingress and gas may accumulate inside the tunnel. The risk is low but the consequence to workers may be high and therefore warrants consideration as part of the contamination report. Simple measure to monitor gas inside the tunnel during installation of tracks should be included along with a response protocol. This detailed should be prepared by a suitable qualified professional with expertise in landfill gas.	
2	Heritage Management Plan (HMP)	Section 6.3.2 Environmental Monitoring	Page 39	Environmental monitoring undertaken on SOPA land can only proceed under an approved SOPA Work Permit. See details on SOPA's Work Permit approval process on SOPA's website : https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-building/site-permits Please update to reference where appropriate.	The requirement for a SOPA permit for any works on SOPA land is noted. This has been added to the CEMP in Section 4.2 (Table 8) for completeness to cover all environmental aspects.

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
3	Heritage Management Plan (HMP)	Section 6.5 Reporting	Page 39	Upon SOPA request, John Holland and Sydney Metro should make available any relevant reporting records or registers. Please update to reference where appropriate.	Noted. Reference added to Section 6.5 of the HMP.
4	Construction Noise and Vibration Management Plan (CNVMP)	Section 7.5.2 Additional management measures	Page 58	In addition to John Holland's letter box drops and emails to subscribers as a measure to manage residual impacts, please note that SOPA has a weekly Community Notification that SOPA would like to have incorporated as part of John Holland's community consultation. Approved copy and relevant links sent through to SOPA can be relayed in SOPA's Community Notification. Please update to reference where appropriate.	John Holland (JH) is happy for SOPA to include the monthly notifications in their weekly communications. As these communications are not managed directly by JH, we view this as a supplementary option rather than a primary or dedicated communication tool. Please note this detail is not relevant to the CNVMP and therefore no update to the Plan is proposed.
5	Construction Noise and Vibration Management Plan (CNVMP)	Section 7.5.2 Additional management measures	Page 58	In addition to information made available on the Sydney Metro website as a measure to manage residual impacts, please note the SOPA has a site works MySOP Engage webpage that SOPA would like to have incorporated as part of John Holland's community consultation. Approved copy	JH is happy for SOPA to include the John Holland scope of works from the Monthly Notification on MySOP. As these communications are not managed directly by JH, we consider this a supplementary option rather than a primary or dedicated

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
				and relevant links sent through to SOPA can be relayed on the MySOP Engage webpage : https://mysop.sydneyolympicpark.nsw.gov.au/site-works Please update to reference where appropriate.	communication channel. Additionally, Sydney Metro manages its own construction app, which is updated by Sydney Metro on our behalf. Please note this detail is not relevant to the CNVMP and therefore no update to the Plan is proposed.
6	Construction Noise and Vibration Management Plan (CNVMP)	8.5 Reporting and Records	Page 63	Upon SOPA request, John Holland and Sydney Metro should make available any relevant reporting records or registers. Please update to reference where appropriate.	Information relevant to noise and vibration reporting will be publicly available as part of the John Holland EPL for the Linewide Project and will be uploaded to the John Holland Website once available. The link for the website is: Documents – Sydney Metro West Linewide Project (Snip provided below so you can see information is already available- when works are relevant to SOP then monitoring will be included for SOP).

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
7	Construction Noise and Vibration Management Plan (CNVMP)	8.5 Reporting and Records	Page 63	Identify the John Holland email and phone contact for noise and/or vibration related complaints so that SOPA can pass on this information in the event SOPA is contacted by members of the public with complaints relevant to the works. Please update to reference where appropriate.	John Holland notes that the contact details for complaints and enquiries are included in all communications which are issued by Sydney Metro and John Holland. These requirements are detailed in the Community Communications Plan which is also publicly available. The link for the website is: Documents – Sydney Metro West Linewide Project
8	Construction Noise and Vibration Management Plan (CNVMP)	Appendix A: Construction Noise and Vibration Monitoring Program		Noise and vibration monitoring undertaken on SOPA land can only proceed under an approved SOPA Work Permit. See details on SOPA's Work Permit approval process on SOPA's website : https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-building/site-permits Please update to reference where appropriate.	The requirement for a SOPA permit for any works on SOPA land is noted. This has been added to the CEMP in Section 4.2 (Table 8) for completeness to cover all environmental aspects.
9	Construction Noise and Vibration	Appendix A: Construction Noise and	Page 98	SOPA would like to receive the Annual Environmental Monitoring Report.	Noted. This report will be a publicly available document and will be uploaded to the John Holland

No.	Document	Section	PDF page #	SOPA comments	JH response to SOPA comments
	Management Plan (CNVMP)	Vibration Monitoring Program Section 9.5 Reporting		Please update to reference where appropriate.	Website once completed. The link for the website is: Documents – Sydney Metro West Linewide Project

Responses to comments on Contamination Management Plan (Response to Comment 1)- Closed in email from SOPA 21/04/2026

Snip from Section 4.3

4.2.3 Clyde and Rosehill

There is potential for Saline soils to be present on site, the site has also been mapped as Class 4 acid sulfate soils risk, with a high probability of potential acid sulfate soils at depths greater than two meters below ground level. Large areas around Clyde and Rosehill are identified as 'disturbed terrain', including areas within and surrounding the construction sites, which are often located on reclaimed land or land subject to dredging or mining, with the potential presence of acid sulfate soils.

4.3 Vapour and Ground Gas

The Sydney Metro West EIS Stage 3 makes reference to vapour/ hazardous ground gases from historical landfill areas at Rosehill and Sydney Olympic Park.

No ground disturbance works are being undertaken at Sydney Olympic Park as part of the Linewide project. It is noted that SOPA has raised concern about the potential for landfill gas ingress within the running tunnels from the remediated land areas located above the tunnel alignment (including Kronos Hill and Golf Driving Range). The risk of landfill gas ingress is considered extremely low due to the segmental lining of the running tunnels. Refer to Section 6.4 relating to landfill gas monitoring.

Summaries of potential interactions with ground gas applicable to the project for Burwood, the Bays, and Clyde /Rosehill sites are provided within respective contamination Risk memos (Appendix A).

Snip from Section 6.4

Reference No.	Requirement	Timing	Source of Requirement	Responsibility	Action/-Evidence
CM-13	Reuse excavated material where the material is suitable and meets the reuse criteria for the site or beneficially reuse/recycle at an off-site location that is legally able to accept the material.	During Construction	LTEMP	Construction Team / Environment Team	Waste & Spoil Management Plan
CM-14	Detailed design of permanent structures to minimise excavation below the marker layer to avoid disturbance of contaminated material.	Detailed Design	CEMF	Design Team Environment Team	~~Refer Section 6.1 of this plan~~Earthworks Design Package
CM-15	Volume of contaminated material excavated below marker layers will be minimised to avoid over excavation of contaminated material to reduce excess offsite disposal.	During Construction	LTEMP	Construction Team / Environment Team	Waste & Spoil Management Plan
CM-16	Gas monitoring will be undertaken as part of the WHS ventilation requirements within the tunnel. In the event any gas monitoring indicates landfill gas infiltration, the advice of a suitable qualified professional will be sought.	During construction	Consultation	Safety Team	Gas monitoring record

Section Break (Next Page)

Responses to Comments on Heritage Management Plan (Response to Comment 2 and Comment 3)

Snip from CEMP- Section 4.2, Table 8

Construction Environmental Management Plan

Legislation	Applicability
Biodiversity Conservation Act 2016	Areas of biodiversity will be managed in accordance with the Tree Replacement Plan and Site Specific Precinct Plans
Contaminated Land Management Act 1997	Contaminated land will be managed in accordance with the Contamination Management Plan
Environmental Planning and Assessment Act 1979	Any modifications to the Planning Approval would be assessed under the EP&A Act.
Fisheries Management Act 1994	Permits not required for an approved CSSI.
Heritage Act 1977	Permits not required for an approved CSSI. Potential impacts to heritage items during construction will be managed in accordance with the Heritage Management Plan
National Parks and Wildlife Act 1974	Permits not required for an approved CSSI.
Protection of the Environment Operations Act 1997	An Environment Protection Licence (EPL) will be sought for scheduled activities.
Roads Act 1993	Where required, consent under Section 138 will be sought.
Waste Avoidance and Resource Recovery Act 2001	Procedures for waste avoidance and resource recovery are identified in the Sustainability Management Plan and the Waste Management Plan
Water Management Act 2000	Permits not required for an approved CSSI under Section 89, 90 and 91 of the Water Management Act.

Table 8: Applicable Permits and Licences

Regulatory Authority	Project Requirement
DPHI	SSI 22765520 Infrastructure Approval Modifications to the Planning Approval require the approval of DPHI Approval of management plans and reports as required by the Conditions of Approval
NSW EPA	An Environment Protection Licence is required for the Scheduled Activity *Railway activities - railway infrastructure construction and concrete works* under Schedule 1 of the POEO Act. Under Part 5.7A the licence holder has a duty to prepare and implement a Pollution Incident Response Management Plan (PIRMP).
Sydney Olympic Park Authority (SOPA)	Any works undertaken on SOPA land require an approved SOPA Work Permit. SOPA's Work Permit approval process is located on SOPA's website: https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-building/site-permits

Snip Section 6.5 of HMP

Project and then undertaken based on a risk based approach.

6.5 Reporting

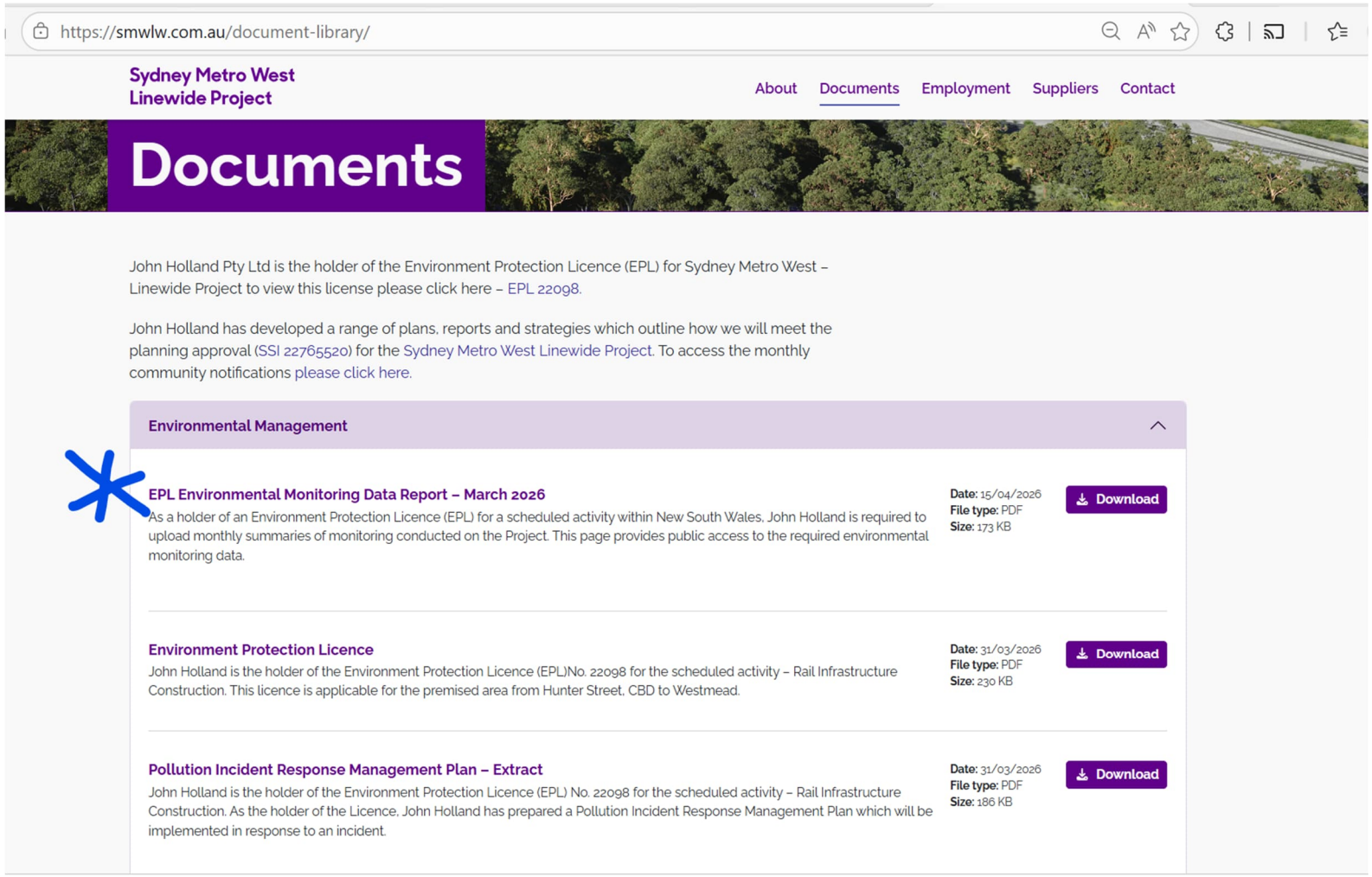
Section 6.3 of the CEMP details relevant environmental reporting requirements for the Linewide Project. AMBS will produce an annotated index, created as an Excel spreadsheet (or alternative), with reference to all heritage works undertaken for the Linewide scope of works and any relevant existing documents where required, upon the completion of the Linewide works.

Upon SOPA request, John Holland and Sydney Metro will provide any available relevant reporting records or registers relating to heritage reporting from the Linewide Project.

Responses to Comments on Noise and Vibration Management Plan (Response to Comments 4 to 8)

Note – responses to comments 4, 5, and 7 do not require the Plan to be updated. The response to comment 6 and comment 8 is snipped below.

Snip from project Website showing location of monitoring reports.



Snip from CEMP- Section 4.2, Table 8

Legislation	Applicability
Biodiversity Conservation Act 2016	Areas of biodiversity will be managed in accordance with the Tree Replacement Plan and Site Specific Precinct Plans
Contaminated Land Management Act 1997	Contaminated land will be managed in accordance with the Contamination Management Plan
Environmental Planning and Assessment Act 1979	Any modifications to the Planning Approval would be assessed under the EP&A Act.
Fisheries Management Act 1994	Permits not required for an approved CSSI.
Heritage Act 1977	Permits not required for an approved CSSI. Potential impacts to heritage items during construction will be managed in accordance with the Heritage Management Plan
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Protection of the Environment Operations Act 1997	An Environment Protection Licence (EPL) will be sought for scheduled activities.
Roads Act 1993	Where required, consent under Section 138 will be sought.
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Table 8: Applicable Permits and Licences

Regulatory Authority	Project Requirement
DPHI	SSI 22765520 Infrastructure Approval Modifications to the Planning Approval require the approval of DPHI Approval of management plans and reports as required by the Conditions of Approval
NSW EPA	An Environment Protection Licence is required for the Scheduled Activity *Railway activities - railway infrastructure construction and concrete works* under Schedule 1 of the POEO Act. Under Part 5.7A the licence holder has a duty to prepare and implement a Pollution Incident Response Management Plan (PIRMP).
Sydney Olympic Park Authority (SOPA)	Any works undertaken on SOPA land require an approved SOPA Work Permit. SOPA's Work Permit approval process is located on SOPA's website. https://www.sydneyolympicpark.nsw.gov.au/development/planning-and-building/site-permits

Appendix E: ER Endorsement