Planning Approval Consistency Assessment Form

SM-17-00000111

Metro Body of Knowledge (MBoK)

Assessment name:	The Bays TBM Water Supply
Prepared by:	AFJV
Prepared for:	Sydney Metro
Assessment number:	AFJV17
Status:	For SM approval
Version:	02
Planning approval:	CSSI 10038 Sydney Metro West Concept and Stage 1
Date required:	October 2022
iCentral number:	SM-22-00388532

For information – do not alter:

Applicable to:	Sydney Metro
Document Owner:	Director, Environment, Sustainability & Planning
System Owner:	Deputy Chief Executive, Operations, Customer & Place-making
Status:	Final
Version:	3.0
Date of issue:	27 November 2020

OFFICIAL

Table of contents

The Planning Approval Consistency Assessment Form should be completed in accordance with SM-17-00000103 Planning Approval Consistency Assessment Procedure.

1. Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

- CSSI 10038 Sydney Metro West Concept and Stage 1 (11 March 2021)
- Administrative Modification 1 (28 July 2021).
- Modification 2 Clyde stabling and maintenance facility (3 June 2022)
- Administrative Modification 3 (4 July 2022)

Date of determination:

11 March 2021

Date of modification:

- Modification 1: 28 July 2021
- Modification 2: 3 June 2022
- Modification 3: 4 July 2022

Type of planning approval:

CSSI, Critical State Significant Infrastructure (Division 5.2)

Sydney Metro West (the Concept)

Sydney Metro West (the Concept) would involve the construction and operation of a metro rail line around 24 kilometres long between Westmead and Hunter Street in the Sydney CBD. The key components are expected to include (as described in Chapter 6 of the Environmental Impact Statement (EIS)):

- Construction and operation of new passenger rail infrastructure between Westmead and the central business district of Sydney, including:
  - Tunnels, stations (including surrounding areas) and associated rail facilities
  - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure (including stations and surrounding areas)
- Ancillary development.

Sydney Metro West - all major civil construction works between Westmead and The Bays (the approved project)

The Sydney Metro West Project Concept; and all major civil construction works between Westmead and The Bays, including station excavation and tunnelling was determined on 11 March 2021. The scope of Stage 1 of the planning approval process for Sydney Metro West (the approved project) is described in Chapter 9 of the EIS, with the key features including:

- Tunnel excavation including tunnel support activities between Westmead and The Bays
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for services facilities
- Civil work for the stabling and maintenance facility at Clyde.

To construct the above, the Sydney Metro West Stage 1 is divided into multiple packages, each with their own design and construction scope. The package relevant to this Consistency Assessment (CA) is the Central Tunnel Package (CTP) which has an overall design and construction timeframe of approximately three years, from July 2021 to Q4 2024.

The Bays construction site forms part of the approved project, and covers approximately 61,200m^2 of land in front of the former White Bay Power Station. The Bays construction site would primarily be utilised to:

- Carry out the excavation for The Bays Station, and
- Launch and support two tunnel boring machines (TBMs) for excavation towards Sydney Olympic Park station construction site.

This construction site would include tunnel boring machine support services including high voltage power supply, spoil storage and removal, fresh air ventilation, work train, grout batching plant, water supply, water treatment and disposal, material storage as well as office facilities, worker amenities and parking, and storage and installation of precast concrete lining elements.

Throughout the project, approximately 155,000m^3 of spoil will be removed for the cut-and-cover station box excavation. An additional 860,000m^3 of spoil would be removed during tunnelling works.

Access to and egress from the construction site would be from James Craig Road via Port Access Road, Sommerville Road and Solomons Way.

Relevant background information (including EA, REF, Submissions Report, Director General's Report, CoA):

- Sydney Metro West Concept and Stage 1, Environment Impact Statement, April 2020
- Sydney Metro West Concept and Stage 1, Amendment Report, November 2020
- Sydney Metro West Concept and Stage 1, Submissions Report, November 2020
- Sydney Metro West Concept and Stage 1 - Assessment Report (SSI 10038), March 2021
- Sydney Metro West Concept and Stage 1, Conditions of Approval (CoA), released on 11 March 2021 and updated on 28 July 2021 (Modification 1), 3 June 2022 (Modification 2) and 4 July 2022 (Modification 3).

2. Description of proposed development/activity/works

This CA relates to proposed works to provide a water mains supply to The Bays construction site, required for the operation of the tunnel boring machines (TBMs). Section 9.4.2 and Section 9.6.5 of the EIS (April 2020) identifies that The Bays construction site and TBM operation would require support services, including a water supply, although exact details of these works was not defined. This CA aims to assess the proposed activity of supplying water to the site now that this design has progressed.

A new water mains supply line will be required to be installed to the site from the existing water mains infrastructure located on Robert Street, Rozelle. The proposed activity involves the installation of a connection point to existing water supply infrastructure on Robert Street, and extension of this watermain via underbore and trenching to The Bays construction site. A further description of the proposed activity is described in this section, and design drawings are provided in Appendix A.

The proposed activity requires trenching from the tie in point on Robert Street near Victoria Road, as well as an underbore from a launch pit to be excavated within the east-bound lanes on Robert Street, at a depth of approximately 1.4 metres. The proposed underbore will be approximately 135 metres long and will be installed using horizontal directional drilling (HDD). The receival pit for the underbore is proposed to be installed near the driveway to the White Bay Power Station (WBPS), at a depth of approximately 2.5 metres.

The installation of the new water supply line from the tie in point on Robert Street near Victoria Road to the underbore launch pit and the underbore receival pit to The Bays construction site will be via open trench installation. This activity is proposed to be undertaken utilising a 14t excavator, vacuum trucks and tipper trucks. The open trenched sections of the water supply line will be installed with a trench depth up to 1.5m for majority of the alignment. Any excess material will be removed via tipper truck or bogie for disposal of at a facility licenced to receive the material, or will be stockpiled on site as required to facilitate disposal.

To ensure unintentional impacts to heritage items are avoided during the proposed activity, non-destructive excavation using the vacuum trucks will be utilised along the section where the trenching crosses the heritage listed cooling tunnel. Detailed information on this methodology forms part of the mitigation measures included in the Heritage Assessment provided in Appendix C.

At the site of the underbore launch pit and receival pit, as well as along the alignment of the open trenching works, localised environmental controls would be installed to manage any water run-off. A vacuum truck would also be available to control and capture drilling fluids, as required during the HDD, and would also be used to positively identify existing services within close proximity to the work areas. Work sites would be delineated from surrounding areas by ATF fencing, or similar. Along these work areas, the existing road surface will be saw cut prior to excavation.

Resurfacing of the disturbed areas will be undertaken at the completion of the water mains installation, which will involve backfilling trenches and excavations, compaction and asphalting. Surfaces will be returned to pre-works condition, as required.

The proposed open trench from the connection point on Robert Street near Victoria Road to the HDD launch pit is located within Inner West Local Government Area (LGA).

Plant and Equipment

- Excavators up to 14t (including hammer attachment);
- Saw cutting equipment;
- HDD drill rig and slurry recycling plant;
- Vac trucks;
- Road instatement equipment (including cc10 roller, wacker packers, vib plates);
- Trucks (including 2t tippers, bogies and truck & dogs for material delivery);
- Tool vans; and
- Franna to facilitate lifting operations.

Due to the potential for operational impacts to traffic along Robert Street and due to potential access restrictions to WBPS imposed by Place Management NSW (PMNSW), works are likely to be conducted outside of the standard construction hours for a portion of the works and would be delivered in accordance with the Project's Environmental Protection Licence (EPL), Revised Environmental Mitigation Measures (REMMs) and CoA.

Any works completed outside of the approved construction hours would be completed with an out of hours works (OOHW) permit, which would be developed in accordance with the with the CoAs and REMMs, including the measures contained within the Construction Noise and Vibration Management Sub-Plan. For the purposes of this CA, a DNVIS was produced to model potential noise and vibration impacts to sensitive receivers, which is further discussed in Section 10 and is provided in full in Appendix B.

3. Timeframe

Work associated with the proposed activity would take approximately ten weeks to complete with a proposed commencement date in October 2022, pending design approval by Sydney Water and subcontractor onboarding.

A portion of the proposed activity may be required to be undertaken outside of standard construction hours due to road occupancy licence (ROL) availability for the works. Lane closure and traffic control will be required along Robert Street and at the entrance to the WBPS, which would negatively affect operational traffic capacities if they were implemented during daytime hours.

Restrictions on the number of nights permitted to undertake works that potentially impact sensitive receivers extends the predicted timeframe for the works to be completed. Works are proposed to commence in October 2022 and are anticipated to be completed by December 2022.

The new water supply line will be in place generally until completion of the Project. No change is proposed to the indicative construction program as outlined in Figure 9-31 of the Stage 1 EIS. It is anticipated that the section of water main alignment from the HDD underbore launch pit to The Bays construction site would become redundant at the completion of the project.

4. Site description

The proposed trenching along Robert Street near Victoria Road is within road reserve within Inner West Council LGA. The HDD launch pit would be located within the road reserve outside 26 Robert Street. The HDD would follow the route shown in Appendix A, terminating at the HDD receival pit. The HDD receival pit and the trenching would be within Lot DP1063454/5 (Lot DP1063454/4 if the receival pit is relocated further north as shown in Appendix A). Both the HDD receival pit and trenching from this point until The Bays site would be undertaken on land believed to be owned or leased by Sydney Metro, which already forms part of the Project footprint as adjusted in CA 03, approved in January 2022.

The proposed activity would be undertaken to the north of WBPS along Robert Street and to the east of WBPS, within The Bays construction site. The majority of The Bays construction site is located to the east of WBPS and was previously used for industrial and wharf operations, which is detailed extensively in the revised Archaeological Research and Design Excavation Methodology (ARDEM) prepared in accordance with CoA D25 (note the proposed works are outside of land subject to the ARDEM).

5. Site Environmental Characteristics

The existing environmental characteristics of the adjacent construction site and White Bay Power Station is included in the Stage 1 EIS and a summary is as follows:

- The site is located on the foreshore of White Bay
- White Bay has been heavily modified for port purposes and is unlikely to contain significant aquatic habitat
- Previous land uses of the site include Port and Employment and land zonings include IN2 – Light Industrial and W1 – Maritime Waters

- There is no naturally occurring native vegetation on the site. The site is almost devoid of vegetation except for opportunistic weed species. The land directly adjacent (to the south, west and north) contains a mix of planted vegetation and weeds
- Soils and groundwater have a moderate potential contamination risk associated with current and historic activities
- There is one registered Aboriginal heritage site within The Bays construction site - located within the footprint of the EIS construction site boundary (note: this site was listed in the Aboriginal Heritage Information Management System (AHIMS) after the EIS was prepared).
- The location of the launch pit is within the road reserve of Robert Street and the receival pit and trenching areas are within the WBPS curtilage, which consists of largely paved areas.

The non-Aboriginal heritage site characteristics are described in Table 2.

Table 1 Non-Aboriginal heritage items at The Bays

Item and listing	Significance	Proximity to The Bays Station construction site
White Bay Power Station – SHR (01015), Urban Development Corporation s170 (4500460) and SREP No. 26 – City West Part 3 No. 11	State	The construction site falls partially within the curtilage of the White Bay Power Station.
The Valley Heritage Conservation Area – Leichhardt LEP 2013 (C7)	Local	Located to the north and north-west of the construction site.
White Bay Power Station (outlet) Canal / Circulating Water Conduit – Ports Authority of NSW s170 (4560026)	Local	Located within the approved construction site, and the study area of the approved construction site.
White Bay Power Station (inlet) Canal – Ports Authority s170 (4560062)	Local	Located within the approved construction site, and the study area of the construction site, and extending west under the White Bay Power Station to Rozelle Bay south of the approved construction site.
Beattie Street Stormwater Channel No. 15 – Sydney Water s170 (4570329)	Local	Partially located within the northern part of the study area of the construction site.

Glebe Island Silos – Ports Authority of NSW s170 (4560016) and SREP No. 26 – City West Part No. 1	Local	Located to the south-east of the construction site, and the western end is partially within the study area.

6. Justification for the proposed works

The justification of the proposed activity is to ensure that the TBMs are able to operate to construct the tunnel. Without a water supply, the TBMs are not able to construct the tunnel, and therefore the proposed activity is critical to the development of the project.

The route of the TBM water supply has been designed by a Water Servicing Coordinator hired by AFJV and it takes into account existing utilities, infrastructure, heritage concerns, and project needs.

7. Environmental Benefit

It is not anticipated that the proposed change would result in an environmental benefit. Alternative options that do not utilise the proposed HDD methodology would result in unacceptable impacts to existing infrastructure, which includes the Beattie Street Stormwater Channel, a heritage item of local significance. Therefore, the proposed activity provides environmental benefits when compared to alternative design considerations.

8. Control Measures

The works will be managed under the project Construction Environment Management Plan (CEMP). Appropriate control measures are already identified in the CEMP that will accommodate the changes proposed in this assessment.

9. Climate Change Impacts

The effects of climate change on the Sydney Metro West Stage 1 project were discussed in the EIS Chapter 26. The proposed change is expected to result in a negligible change to that assessed in the EIS.

10. Impact Assessment – Construction

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	Biodiversity impacts were assessed in Chapter 22 of the Stage 1 EIS. It was identified that The Bays site contains opportunistic weed species, and adjoining land contains a mix of planted vegetation and weeds. The proposed activity is located on hardstand and as such no additional impacts as anticipated.	No additional measures	Y	Y	
Water	No change from the Approved Project. The proposed additional construction site land will be managed in accordance with the CoA and Revised Environmental Management Measures (REMMs) relating to erosion and sediment controls.	No additional measures	Y	Y	
Air quality	The proposed works would result in negligible ground disturbance. As a result air quality impacts are expected to be negligible.	No additional measures	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Noise vibration	Construction noise and vibration was assessed in Chapter 11 of the Stage 1 EIS. The extent of noise and vibration impacts of the proposed change are expected to be similar to the Approved Project. It should be noted that the construction footprint required for the proposed works described in this CA was not assessed in the Detailed Noise and Vibration Impact Statement for The Bays construction site (required by CoA D43). As such a supplementary DNVIS has been prepared (see Appendix B). With reference to the DNVIS, 3 receivers are predicted to be classified as Highly Impacted during the Night period, with the worst-case predicted noise level of 78 dB(A) at residential receivers during the works. The DNVIS concluded that there would be no exceedances of vibration criteria for human comfort at residential receivers, nor were there any predicted exceedances for cosmetic damage to any nearby buildings. Potential noise and vibration impacts will be managed in accordance with the CoAs and REMMs, including the measures contained within the Construction Noise and Vibration Management Sub-Plan (CNVMP). This includes the management of cumulative impacts, which is detailed in the CoAs, REMMs and CNVMP.	No additional measures	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Indigenous heritage	Chapter 13 of the Stage 1 EIS assessed Aboriginal heritage impacts from the Approved Project. The EIS study area included a 50m buffer from the EIS site boundary. Since the EIS was prepared an Aboriginal Potential Archaeological Deposit (PAD) at The Bays has been listed in the Aboriginal Heritage Information Management System (AHIMS) as item 45-6-3826. The next closest recorded Aboriginal site is AHIMS ID 45-6-2278, a potential archaeological deposit (PAD) site located approximately 650 metres to the east. Neither of the above items would be impacted. As such, the potential Aboriginal heritage impact would be consistent with the Approved Project.	No additional measures	Y	Y	

Non-indigenous heritage	A heritage assessment was completed for the proposed activity, which is provided in Appendix C. This heritage assessment identified a number of recommendations and mitigation strategies to preserve the heritage value of the WBPS. These have been included to produce a list of mitigation measures that AFJV will implement for the proposed works and are included in the "Proposed Control Measures in addition to project COA and REMMs" column. The heritage assessment concluded that: • Given the depth at which the water main will be under-bored under the Beattie Street Stormwater Channel, the impacts will be nil. • Given that the depth and exact footprint of the Inlet Canal is not confirmed in this location, impacts to it from the proposed work cannot be quantified without further information. The images of the canal's construction show a very wide and deep channel and therefore nondestructive digging (NDD) will be undertaken to inform the design and construction methodology, which may need to be amended as required to ensure impact to the footprint of the canal is consistent with the current project. Considering the implementation of the Artefact recommendations, the proposed works will have a negligible impact on non-indigenous heritage.	• Archaeological monitoring of NDD works where they cross the footprint of the Beattie Street Stormwater Channel and the Inlet Channel. • Accurate survey and archaeological recording of the canal system is to be undertaken in locations where the structural features are exposed. • In relation to the location of the Inlet Canal: o If the NDD works in the area of the canal confirm that the open trench for the proposed water main will be excavated at a depth which is 2m removed from the fabric of the Inlet Canal, works can proceed as planned. o If the NDD works confirm that the proposed water main trenching is within 2m of the canal, or will impact the fabric of Inlet Canal directly, it should be established what percentage of the canal will be impacted. o The wider SSI approval allows minor to moderate impact to the Inlet Canal. If the works will impact the Canal, the Excavation Director for the wider project will need to	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
		determine in tandem with the project team what impact (if any) to the state significant Inlet Canal would be considered minor, whether the proposed works met that threshold, and if the impact to this heritage item is acceptable. o If the works are considered minor and the impact acceptable, the works can go ahead with archaeological monitoring and archival recording. o If the heritage impacts to the Inlet Canal are considered moderate or above, the proposed trenching route must be shifted so that it does not impact the Inlet Canal.			
Community and stakeholder	No change from the approved project. Community and stakeholder notifications will be distributed to provide information of the proposed activity, in accordance with the CoAs and project CEMP.	No additional measures	Y	Y	
Traffic	Access to the work area will be via Robert Street, and the proposed activity will attain Road Occupancy Licences, where required. Traffic changes required for the proposed activity will be short-lived and the ROL approval process will ensure that the works are not likely to result in any significant impacts to traffic conditions or operational capacity of the road.	No additional measures	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Waste	There is the potential to encounter acid sulfate soils at the site during drilling and other ground disturbance. Spoil and waste will be managed in accordance with existing CoAs and REMMs including the CEMF. As such, the potential spoil and waste impacts would be consistent with the Approved Project.	No additional measures	Y	Y	
Social	No change from the approved project.	No additional measures	Y	Y	
Economic	No change from the approved project.	No additional measures	Y	Y	
Visual	The landscape character and visual amenity impacts were assessed in Chapter 15 of the Stage 1 EIS. The approved The Bays Station construction site was assessed as having a negligible landscape character impact, and a negligible or minor adverse visual impact from five viewpoints. The proposed plant and equipment required to install the new water line would result in a temporary minor visual impact adjacent to The Bays Station construction site. Noting that this impact would be limited to only a few weeks, landscape character and visual impacts are considered to be consistent with that assessed in the Stage 1 EIS.	No additional measures	Y	Y	
Urban design	No change from the approved project.	No additional measures	Y	Y	
Geotechnical	No change from the approved project.	No additional measures	Y	Y	
Land use	No change from the approved project.	No additional measures	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Climate Change	No change from the approved project.	No additional measures	Y	Y	
Risk	No change from the approved project.	No additional measures	Y	Y	
Other	There is a moderate risk of encountering contaminated soil or groundwater during the proposed works. The EIS identified the potential for the presence of heavy metals, hydrocarbons, pesticides, PCB, solvents and asbestos at the adjacent The Bays site. Waste material would be classified and managed in accordance with Waste Classification Guidelines (NSW EPA, 2014) and any unexpected contamination would be managed in accordance with the unexpected finds procedure to mitigate the risk of encountering significant contamination.	No additional measures	Y	Y	
Management and mitigation measures	No change from the approved project.	No additional measures	Y	Y	

11. Impact Assessment – Operation

Stage 1 of the planning application for Sydney Metro West (subject of this CA) is for major civil construction work for Sydney Metro West between Westmead and The Bays. At this stage, measures to avoid or minimise impacts have been developed only for major civil construction work for Sydney Metro West between Westmead and The Bays – which involves construction only. Impacts applicable to the operational aspects of Sydney Metro West including operation stage environmental mitigation measures would be developed when planning approval applications are made for future stages. As such, operational impacts of the proposal are not applicable, and therefore there are no changes from the approved project are anticipated.

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change from the approved project.	No additional measures	Y	Y	
Water	No change from the approved project.	No additional measures	Y	Y	
Air quality	No change from the approved project.	No additional measures	Y	Y	
Noise vibration	No change from the approved project.	No additional measures	Y	Y	
Indigenous heritage	No change from the approved project.	No additional measures	Y	Y	
Non-indigenous heritage	No change from the approved project.	No additional measures	Y	Y	
Community and stakeholder	No change from the approved project.	No additional measures	Y	Y	
Traffic	No change from the approved project.	No additional measures	Y	Y	
Waste	No change from the approved project.	No additional measures	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Social	No change from the approved project.	No additional measures	Y	Y	
Economic	No change from the approved project.	No additional measures	Y	Y	
Visual	No change from the approved project.	No additional measures	Y	Y	
Urban design	No change from the approved project.	No additional measures	Y	Y	
Geotechnical	No change from the approved project.	No additional measures	Y	Y	
Land use	No change from the approved project.	No additional measures	Y	Y	
Climate Change	No change from the approved project.	No additional measures	Y	Y	
Risk	No change from the approved project.	No additional measures	Y	Y	
Other	No change from the approved project.	No additional measures	Y	Y	
Management and mitigation measures	No change from the approved project.	No additional measures	Y	Y	

12. Consistency with the Approved Project

Based on a review and understanding of the existing Approved Project and the proposed modifications, is there a transformation of the Project?	No. The proposed change would not transform the project. The project would continue to provide a metro rail line between Westmead and The Bays as part of the Approved Project.
Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?	Yes. The proposed change would be consistent with the objectives and functions of the Approved Project as a whole.
Is the project as modified consistent with the objectives and functions of elements of the Approved Project?	Yes. The proposed change would be consistent with the objectives and functions of elements of the approved project.
Are there any new environmental impacts as a result of the proposed works/modifications?	No. The proposed works do not result in any new environmental impacts beyond those considered in the Approved Project. All potential environmental impacts identified for the proposed change would be adequately addressed through implementation of the Project CEMP, and mitigation measures provided in the Environmental Impact Statement, Submissions Report, Amendment Report and the conditions of approval.
Is the project as modified consistent with the conditions of approval?	Yes. The proposed change is consistent with the conditions of approval.
Are the impacts of the proposed activity/works known and understood?	Yes. The impacts of the proposed change are understood.
Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?	Yes. The impacts of the proposal are understood and will adequately managed through implementation of the Project CEMP, and mitigation measures provided in the Environmental Impact Statement, Submissions Report, Amendment Report and the conditions of approval.

13. Other Environmental Approvals

Identify all other approvals required for the project:	Nil. No additional environmental approvals are required.

Author certification

To be completed by person preparing checklist.

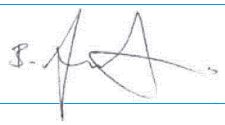
I certify that to the best of my knowledge this Consistency Checklist: • Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and • Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.			
Name:	Colm Kennedy	Signature:	
Title:	Environmental Advisor		
Company:	AFJV	Date:	10/08/22

This section is for Sydney Metro only.

Application supported and submitted by			
Name:	Yvette Buchli	Date:	11/10/2022
Title:	Associate Director Planning Approvals	Comments:	
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

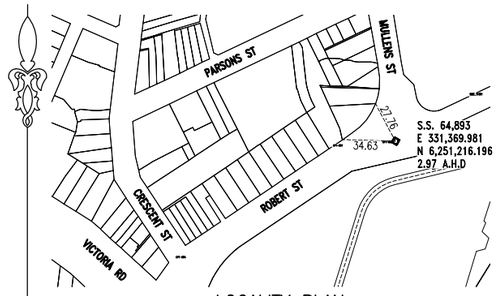
Yes	The proposed activity/works are consistent and no further assessment is required.
No	The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	Ben Armstrong	Date:	15 October 2022
Title:	Director Environment, Sustainability & Planning, West	Comments:	
Signature:			

Appendix A TBM Water Supply Design

A1

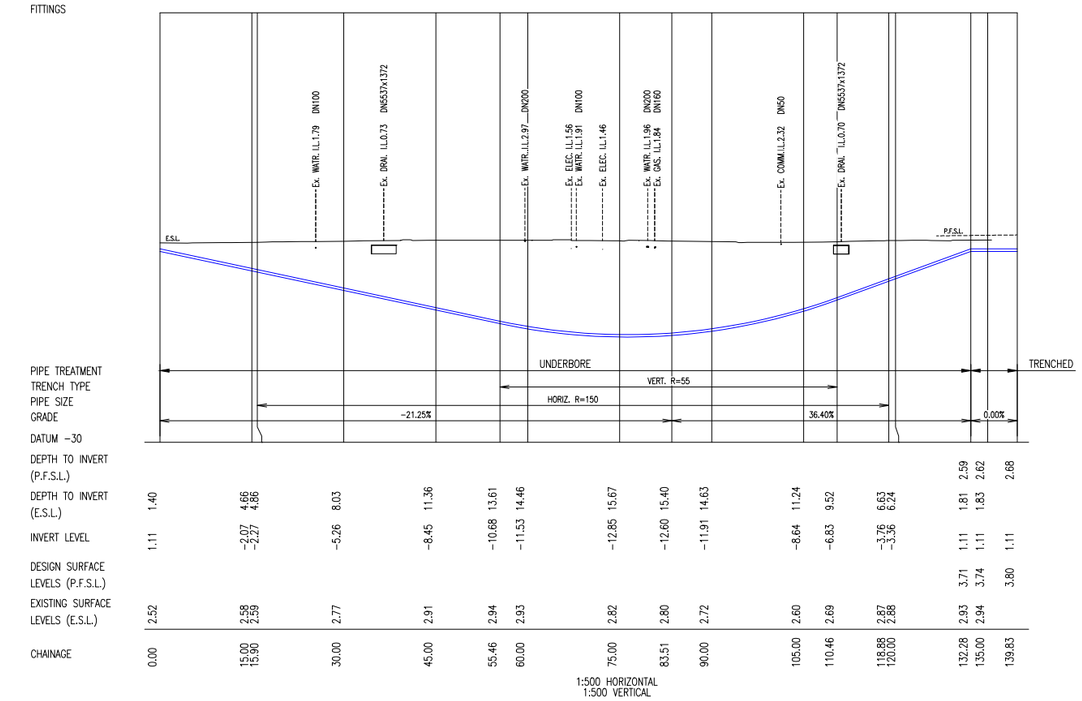
DEVELOPER CONTRACT PLAN

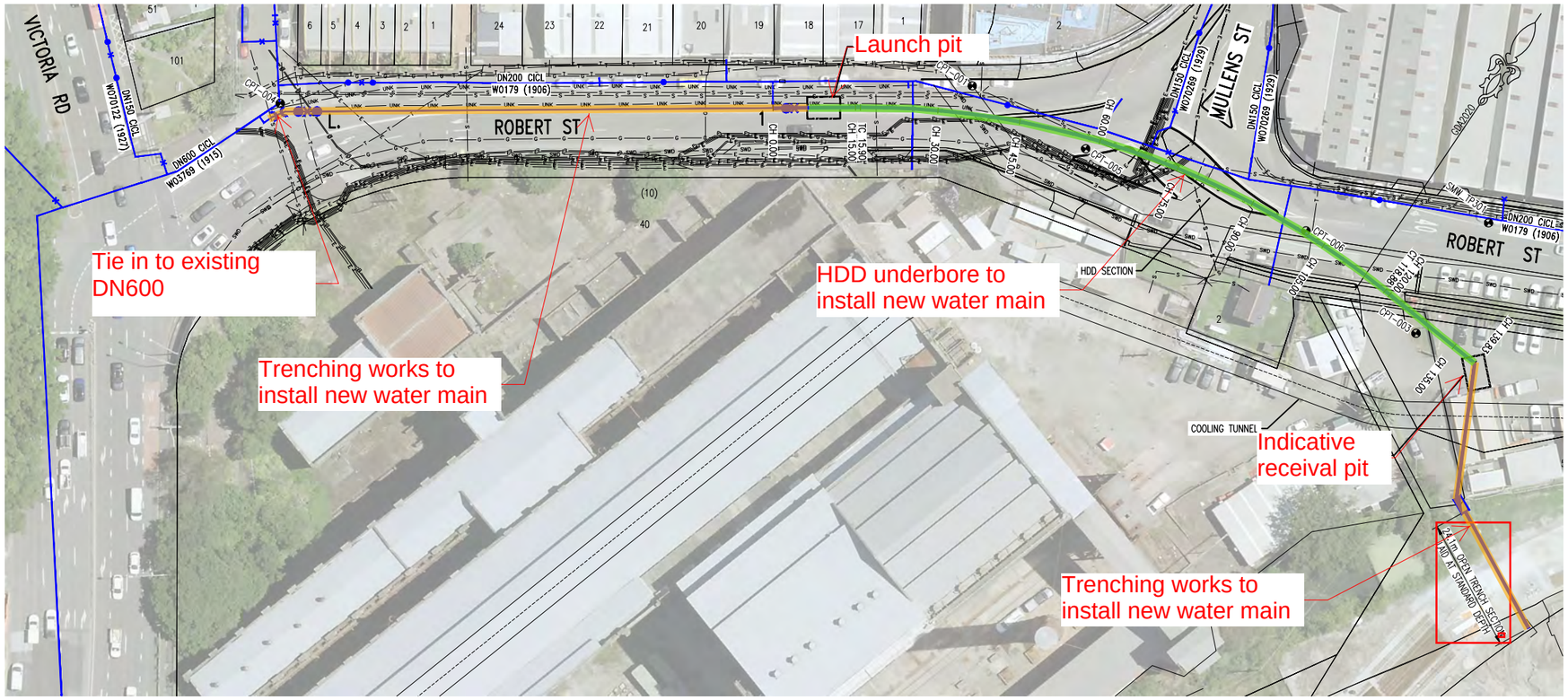


LOCALITY PLAN
NOT TO SCALE

CO-ORDINATE SETOUT TABLE

CHAINAGE	EASTING	NORTHING	I.L.	DESCRIPTION
0.00	331308.978	6251189.955	1.11	–
15.00	331321.364	6251198.416	-2.08	–
15.90	331322.106	6251198.923	-2.27	–
30.00	331334.107	6251206.318	-5.26	–
45.00	331347.573	6251212.911	-8.45	–
60.00	331361.631	6251218.127	-11.53	–
75.00	331376.138	6251221.913	-12.85	–
90.00	331390.952	6251224.232	-11.91	–
105.00	331405.923	6251225.060	-8.64	–
118.88	331419.789	6251224.492	-3.76	–
120.00	331420.902	6251224.394	-3.36	–
135.00	331435.845	6251223.087	1.11	–
139.83	331440.66	6251222.666	1.11	–





HDD WATER LAYOUT PLAN
SCALE 1:500

0 5 10 20 30 40 50 100 METRES

GENERAL WATER NOTES:

1. WATER SERVICE COORDINATOR & DESIGNER:
   CARDNO (NSW/ACT) PTY LTD
   GROUND FLOOR, 16 BURELLI ST
   WOLLONGONG 2500
   PH: (02) 4228 4133

   DEVELOPER:
   SYDNEY METRO
   680 GEORGE STREET, SYDNEY, NSW 2000
   PH: 0435 106 173
2. THE WORKS DETAILED HEREON TO BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA03-2011-3.1 SYDNEY WATER EDITION 2014 & SYDNEY WATER TECHNICAL SPECIFICATION – CIVIL. THE CONTRACTOR MUST HAVE A COPY OF THESE DOCUMENTS ON SITE AT ALL TIMES.
3. THE MINIMUM NUMBER OF FIELD COMPACTION TESTS COMPLETED TO SATISFY SECTION C2.8 OF THE SYDNEY WATER TECHNICAL SPECIFICATION – CIVIL.
   PIPE EMBEDMENT ZONE – 0 (20:1 STABILISED SAND TO BE USED)
   TRENCH FILL ZONE – 0 (TRAFFICABLE)
   TRENCH FILL ZONE – 0 (NON-TRAFFICABLE)

   NUMBER OF TESTS TO BE VERIFIED BY AN ACCREDITED FIELD TESTER, NUMBERS PROVIDED ABOVE TO BE USED AS A GUIDE ONLY.
4. i) HORIZONTAL BENDS (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1110 (ISSUE A, 31/01/12) OR DTC-1111 (ISSUE B, 29/02/12)
   ii) ALL TEES (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1113 (ISSUE B, 29/02/12)
   iii) VERTICAL BENDS AND HYDRANT BENDS (DN150 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1114 (ISSUE A, 31/01/12)
   iv) STOP VALVE TO BE ANCHORED IN ACCORDANCE WITH DTC-1115
5. MAIN TO BE LAID AS PER CO-ORDINATE SETOUT TABLE AND AT STANDARD DEPTH EXCEPT WHERE OTHERWISE INDICATED.
6. MAINLAYING NOT TO PROCEED PRIOR TO FORMATION OF FOOTWAYS AND KERBS TO FINISHED SURFACE LEVELS.
7. MAIN TO BE LAID OVER ALL STORMWATER DRAINAGE PIPES UNLESS NOTED OTHERWISE.
8. SERVICES SHOWN ARE INDICATIVE ONLY. CURRENT SERVICES SEARCH AND SITE CHECK.OF ALL EXISTING SERVICES WILL BE NECESSARY PRIOR TO COMMENCEMENT OF THE WORK AND APPROPRIATE PROCEDURES AND PRECAUTIONS NEED TO BE TAKEN WHEN WORKING WITHIN CLOSE PROXIMITY OF SERVICES. THE CONTRACTOR MUST HAVE A COPY OF THECURRENT SERVICES SEARCH ON SITE AT ALL TIMES.
9. EASE AROUND STORMWATER DRAINAGE PITS WHEN MAINS TO BE LAID HAVE A HORIZONTAL CLEARANCE OF LESS THAN 150mm TO THE EDGE OF THE STORMWATER DRAINAGE PIT (FOR MAXIMUM LENGTHS OF 2m).
10. EASE AROUND ALL ELECTRICAL AND TELECOM STRUCTURES AND MAINTAIN A MINIMUM HORIZONTAL CLEARANCE OF 150mm TO THE EDGE OF THE ELECTRICAL AND TELECOM STRUCTURES (FOR MAXIMUM LENGTHS OF 2m).
11. ALL MAIN TO METER (PROPERTY) SERVICES MUST BE CONSTRUCTED TO SYDNEY WATER'S INSTALLATION REQUIREMENTS BY A LICENSED PLUMBER. THE WORKS MUST BE INSTALLED IN ACCORDANCE WITH THE CURRENT SYDNEY WATER MAIN TO METER SERVICE INSTALLATIONS TECHNICAL REQUIREMENTS, NSW CODE OF PRACTICE FOR PLUMBING AND DRAINAGE AND AS/NZS3500.
12. ALL VALVES TO BE RESILIENT SEATED.
13. DICL FITTINGS TO BE CLASS PN35 U.N.O.
14. 1% SOLUTION OF SODIUM OR CALCIUM HYPOCHLORITE TO BE USED ON ALL JOINTS IMMEDIATELY PRIOR TO INSTALLATION DURING CONNECTION OF MAIN.
15. CONTRACTOR TO VERIFY EXACT LOCATION OF ALL EXISTING SERVICES WITH RELEVANT AUTHORITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER & WSC. ANY DAMAGE TO EXISTING SERVICES TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.
16. THE CONTRACTOR TO SUBMIT A SAFE WORK PLAN TO THE WATER SERVICING COORDINATOR FOR APPROVAL PRIOR TO COMMENCING THE WORKS.
17. THE CONTRACTOR TO SUBMIT A CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP) TO THE WATER SERVICING COORDINATOR FOR APPROVAL PRIOR TO COMMENCING THE WORKS.
18. THE CONTRACTOR IS TO CARRY OUT ALL NECESSARY GEOTECHNICAL INVESTIGATIONS TO UNDERTAKE THE WORKS DETAILED IN THIS DRAWING SET.
19. PRIOR TO COMMENCEMENT OF WORK, 2 WORKING DAYS NOTICE SHALL BE GIVEN TO SYDNEY WATER.
20. THE NOMINATED CONSTRUCTION COMPANY MUST HAVE AN ACCREDITED/APPROVED PERSON ONSITE AT ALL TIMES DURING CONSTRUCTION.
21. THE CONTRACTOR IS TO PROVIDE TEST REPORTS TO THE WATER SERVICING COORDINATOR TO SYDNEY WATER STANDARDS PRIOR TO THE PRE CONNECTION.
22. CONSTRUCTOR TO PROVIDE DETAILED WORKS AS CONSTRUCTED INFORMATION IN ELECTRONIC FORMAT AT COMPLETION OF WORKS OF THE FOLLOWING:
    22.1. LOCATION OF EACH FITTING INSTALLED, INCLUDING TEES, BENDS AND TAPERS
    22.2. LOCATION OF MAIN TO METERS
    22.3. CONCRETE ENCASEMENT EXTENTS
    22.4. PROPERTY DRILLING CHAINAGE
    22.5. THE ABOVE INFORMATION IS TO BE PROVIDED IN THE FORM OF EASTINGS AND NORTHINGS OR CHAINAGES IN RELATION TO A NOMINATED DATUM POINT

ENVIRONMENTAL NOTES :

E1. CONSTRUCTION SHALL COMPLY WITH ALL REQUIREMENTS AS DETAILED IN THE REVIEW OF ENVIRONMENTAL FACTORS (REF) AND THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

E2. AREAS DOWNSLOPE OF CONSTRUCTION ACTIVITY TO BE ADEQUATELY PROTECTED FROM SEDIMENT POLLUTION ETC. SILT TRAP DEVICES TO BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY, EFFECTIVELY MAINTAINED AND ARE TO BE REMOVED ONLY AFTER THE AREA HAS BEEN SATISFACTORILY REVEGETATED OR RESTORED.

E3. ALL STORMWATER GRATES, OPEN CHANNELS, SWALES, TABLE DRAINS, GULLIES ETC. DOWNSLOPE OF CONSTRUCTION ACTIVITY TO BE ADEQUATELY PROTECTED BY STRAWBALES WRAPPED IN GEOTEXTILE FABRIC OR GEOTEXTILE FENCE.

PLAN DRAWN DATE: 30/06/22 VERSION: 1 SHEET 1 OF 3 SHEETS

PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS
SYDNEY WATER CORPORATION

PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :-

DIAL BEFORE YOU DIG	Ph. 1100
ELECTRICITY ENDEAVOUR ENERGY	Ph. 0298534161
GAS JEMENA GAS WEST	Ph. 1300880906
TELECOMMUNICATIONS TELSTRA	Ph. 1800653935
TELECOMMUNICATIONS NBN	Ph. 1800626329

GIVING AT LEAST 48 HOURS NOTICE.

UTILITIES

TYPE		DATE	REF	TYPE		DATE	REF
EXIST WATER:		24/05/22	(SURV)	PROP WATER:		24/05/22	(CDNO)
EXIST ELEC:	E	24/05/22	(SURV)				
EXIST GAS:	GMP	24/05/22	(SURV)				
EXIST COMMS:	TEL	24/05/22	(SURV)				
EXIST STORMWATER:	SWD	24/05/22	(SURV)				
EXIST SEWER:	S	24/05/22	(SURV)				

WORK AS CONSTRUCTED CERTIFICATION

DEVELOPER .....
WATER SERVICE CO-ORDINATOR .....
CONSTRUCTOR .....
COMPLETED ..... W.A.C. PREPARED .....

DESIGNER .....

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.

PIPE SCHEDULE

SIZE ON	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES
400	HDD			

DESIGN HEAD 120 m
BOUNDARY TRAPS REQUIRED.

AUSTRALIAN HEIGHT DATUM

SCALES
PLAN 1:500 SECTION HOR. —— VERT. ——
CROSS SECTIONS —— NATURAL
LENGTHS, DEPTHS & LEVELS ARE IN METRES.

NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.

U.B. DIRECTORY Sydney UBD Ed 41 MAP 12 A2

SHEET 1 OF 3 File No. N/A

SYDNEY WATER CORPORATION
Sydney WATER
Case No. PRIVATE

ROBERT ST, ROZELLE
WATERMAIN EXTENSION
ROBERT STREET
ROZELLE

FILE LOCATION: ######## – CASE197462PW | DESIGNED: LBM | DRAFTED: LBM | VERIFIED: JS | REVIEWED: JS | APPROVED: RD | ISSUED: 30/06/22

Appendix B DNVIS

TBM Water Supply

Project	SMW - CTP: The Bays (Updated April 22)		
Client	AFJV		
Assessment Date	24/07/2022	Assessment Id	CA17
Proposed start date	05/09/2022	Proposed end date	06/09/2022

Contents

Acoustic terms and acronyms

AA	Acoustic Advisor
AMM	Additional mitigation measures – applicable where standard measures have been implemented and NML is still expected to be exceeded.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
ICNG	Interim Construction Noise Guideline (Department of Environment and Climate Change 2009)
NCA	Noise Catchment Area
Noise level statistics	L_{A90} - The A-weighted sound pressure level exceeded 90% of the monitoring period. This is considered to represent the background noise. L_{Aeq} - The equivalent continuous A-weighted noise level—the level of noise equivalent to the energy average of noise levels occurring over a measurement period. L_{A1} – The A-weighted sound pressure level exceeded 1% of the monitoring period. L_{Amax} – The maximum A-weighted noise level associated with the measurement period.
NML	Noise Management Level
PPV	Peak Particle Velocity – Measurement of ground-borne vibration in units of mm/s
RBL	Rating Background Level - a single figure that represents the background noise level for assessment purposes
ROL	Road Occupancy Licence – granted by Transport for NSW and required for any activity likely to impact on traffic flow.
SWL	Sound Power Level - The A-weighted sound power level is a logarithmic ratio of the acoustic power output of a source relative to 10-12 watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.
SPL	Sound pressure level - This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of noise. A technical definition for the sound pressure level, in decibels, is 20 times the logarithm (base 10) of the ratio of any two quantities related to a given sound pressure to a reference pressure (typically 20 µPa equivalent to 0 dB).
Tonal noise	Noise with perceptible and definite pitch or tone
VDV	Vibration dose value – used when assessing intermittent vibration as it is sensitive to peaks in vibration acceleration and accumulates the vibration energy received over the daytime and night-time periods

1 Introduction

1.1 Overview

The Sydney Metro Central Tunnelling Package is being delivered by the Acciona Ferrovial Joint Venture (ACJV) and involves excavation of around 11.5 kilometres of twin-bore tunnel linking five station boxes at The Bays, Five Dock, Strathfield, Burwood North and Sydney Olympic Park (the Project).

During the Project, there is potential for nearby sensitive receivers to experience adverse impacts relating to noise and vibration. The project's Noise and Vibration Management Sub Plan (NVMP) was developed to satisfy the project's Conditions of Approval (CoA) and addresses the assessment and management of noise and vibration impacts during construction.

CoA D43 requires planned works to be assessed within a Detailed Noise and Vibration Impact Statement (DNVIS) where works may exceed the NMLs, vibration criteria and/or ground-borne noise levels specified in CoA D39 and D40 at any residence outside construction hours identified in CoA D35, or where receivers will be highly noise affected.

Under the NVMP, KNOWnoise™, a project-specific noise prediction tool, has been developed to prepare site and activity-specific noise assessments for ongoing risk analysis during project delivery and for when out-of-hours work is proposed (as per the Project's out-of-hours protocol).

This DNVIS has been prepared using KNOWnoise™ and addresses activities for construction of The Bays Station box and south shaft, as illustrated in Figure 1.

The structure of this DNVIS meets the requirements of CoA D43 and the CNVS and includes:

- Section 1.2 – Construction works and hours with justification for these works in Section 1.3
- Section 2 – Existing environment
- Section 3 – Assessment framework including noise and vibration management levels
- Section 4 – Construction noise assessment
- Section 5 – Construction vibration assessment
- Section 6 – Mitigation and management, including consultation

1.2 Planned works

The AFJV plans to carry out the works described in Appendix A, which lists each assessed activity, its timing and proposed equipment.

1.3 Justification of the works

In line with the Interim Construction Noise Guidelines (DECC 2009), justification is typically required to work outside approved construction hours. These situations may involve low impact or emergency works and works under an out-of-hours work protocol.

The AFJV proposes the works subject to this assessment outside approved construction hours for the following reason.

- The proposed activity will be required to be undertaken outside of standard construction hours due to road occupancy licence (ROL) availability for the works. Lane closure and traffic control will be required along Robert Street and at the entrance to the WBPS, which would negatively affect operational traffic capacities if they were implemented during day time hours.

Figure 1 Location map

1 Existing environment

1.1 Sensitive receivers

The Bays construction site occupies around 4 ha in the White Bay area south of Balmain and East of Rozelle as illustrated in Figure 1. Land uses adjacent to the site are industrial and commercial to the north, east and west. The closest receiver to the site is the defunct White Bay Power Station. To the south across City West Link and James Craig Drive are additional commercial premises and Rozelle Bay.

Residential receivers that may be impacted by works on The Bays site include the nearest in Balmain, around 120 metres north, and in Rozelle, around 250 metres to the south west. Residences in Glebe are around 500 metres across Rozelle Bay to the south.

St Joseph's Catholic Church and Sydney Community College are located around 350 metres west of the site. The Bald Rock Hotel is located around 130 metres north of the construction site on Mansfield Street and the Rosebud Cottage Child Care is located around 180 metres west of the construction site on Quirk Street.

1.2 Heritage items

Parts of The Bays area have been identified in the EIS as possessing items of heritage value, which include the following. These items will be considered for impacts of vibration-intensive activities.

- White Bay Power Station, including buried assets such as culverts or inlet/outlet structures
- Australian Cement Silos

1.3 Noise catchment areas

To facilitate the assessment of noise impacts from the project and to apply representative Noise Management Levels (NMLs) to all receivers, receivers adjacent to the The Bays sites have been divided into Noise Catchment Areas (NCAs).

NCAs group individual sensitive receivers by representative traits such as existing noise environment and potential exposure to noise and vibration from the Project.

NCAs established as part of the EIS are summarised in Table 1 and illustrated in Figure 1. Background noise monitoring has been completed as part of the EIS to apply appropriate NML to each NCA.

Table 1 Summary of work areas, Noise Catchment Areas and land uses

NCA	Location	Description	Ambient noise influences
19	North of City West Link in Lilyfield.	Mainly residential. 'Other sensitive' receivers include the University of Tasmania, NSW/Ambulance, Sydney University College of the Arts, Orange Grove Public School, and outdoor recreation areas.	Road traffic on Victoria Road and City West Link including heavy vehicles. Frequent aircraft
20	West of Victoria Road in 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.	Road traffic on Victoria Road and City West Link including heavy vehicles. Frequent aircraft
21	East of Victoria Road in Rozelle and Balmain	Includes White Bay, the former White Bay Power Station and Glebe Island. This catchment is mainly residential, with various commercial areas surrounding White Bay and Glebe Island. 'Other sensitive' receivers include Inner Sydney Montessori School.	Road traffic on Victoria Road and City West Link including heavy vehicles. Frequent aircraft
22	South of Victoria Road/Western Distributor in Glebe.	Commercial areas associated with Rozelle Bay area to the south of Victoria Road/Western Distributor and the more distant areas across Rozelle Bay are residential.	Road traffic on City West Link and The Crescent including heavy vehicles. Frequent aircraft

2 Assessment framework

2.1 Approved construction hours

Working hours are set by CoA D35 to D36 as summarised in Table 2. Use of power saws, rock breakers, drills and other tonal or impulsive activities are defined as annoying under the Interim Construction Noise Guideline (ICNG) and are 'highly noise intensive works'.

Table 2 Approved construction hours

CoA	Construction activity	Monday to Friday	Saturday	Sunday / Public holiday
D35	Approved construction	7:00 am to 6:00 pm	8:00 am to 6:00 pm	No work (unless approved under out-of-hours work protocol)
D36	Highly noise intensive works	8:00 am to 6:00 pm[1]	8:00 am to 1:00 pm[1]	No work (unless approved under out-of-hours work protocol)

Notes:

1. if continuously, then not exceeding three hours, with a minimum cessation of work of not less than one hour.

2.2 Noise assessment criteria

2.2.1 Construction noise

The ICNG describes noise in excess of the background level as potentially having an adverse impact on sensitive receivers and increasing the likelihood of complaint. During standard construction hours, where construction noise is within 10 dB(A) of the RBL, impacts would be acceptable.

Where construction noise is more than 10 dB(A) above the RBL during standard construction hours, a residential receiver is considered noise affected and the proponent should undertake all reasonable and feasible steps necessary to manage the impact and consult with the affected community.

Above a $L_{Aeq,\ 15\ minute}$ noise level of 75 dB(A), a receiver is highly affected, requiring consideration of additional mitigation measures including alternative accommodation in the night period.

Outside standard construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected. Table 1 (reproduced from Table 2 of the ICNG) sets out the NMLs for residences and how they are to be applied.

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

2.2.2 Sleep disturbance

The CNVS requires maximum noise levels to be analysed in terms of the extent and number of times the maximum noise exceeds specific noise trigger levels, in general accordance with the Noise Policy for Industry (NPfI) (EPA 2017). These triggers are:

- LAeq, 15 minute 40 dBA or the prevailing RBL plus 5 dB, whichever is greater, and the
- LAmax 52 dBA or the prevailing RBL plus 15 dB, whichever is greater.

The NPfI also recommends the DECCW (2011) Road Noise Policy (RNP) be reviewed for further risk assessment. The RNP recommends maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep and one or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly.

Table 3 Residential noise management levels

Time of day	NML $L_{Aeq\ (15\ min)}$ *	How to apply
Standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq\ (15\ min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: - times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences); - if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.

* 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.

Other sensitive land uses, such as schools and offices, typically find noise from construction disruptive when the properties are being used (such as during work and school times). The noise management levels for non-residential receivers set in accordance with the Interim Construction Noise Guideline are provided in Table 4. These levels apply only during hours when the non-residential premises are being used.

The difference between an internal noise level and the external noise level is about 10 dB(A), which provides a conservative assumption that windows are open for ventilation. Buildings where windows are fixed or cannot otherwise be opened may achieve a greater noise level performance.

Table 4 Non-residential sensitive land uses noise management levels

Land use	Noise assessment location	NML ($L_{Aeq,15min}$)
Classrooms at schools and other educational institutions	Internal	45
Places of worship		
Active recreation areas (such as sporting activities and activities which generate their own noise or focus for participants)	External	65
Passive recreation areas (contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation)	External	60
Industrial premises	External	75
Office, retail outlets	External	70

2.3 Project construction noise management levels

The Project specific construction noise management levels for residential receivers have been established in line with the ICNG, based on the RBLs relevant to each NCA. These are presented in Table 5. NMLs for non-residential sensitive receivers are described in Table 4.

Table 5 Project specific construction NMLs

NCA	Noise Management Level, $L_{Aeq\ 15\ minute}$						
	Approved hours		Outside approved hours				
	Noise affected	Highly noise affected	Day	Evening	Night	Sleep disturbance (CNVS)	
						$L_{Aeq,\ 15\ minute}$	L_{Amax}
19	46	75	41	41	38	40	52
20	61	75	56	56	50	50	60
21	53	75	48	48	40	40	50
22	58	75	53	52	44	44	54

As part of planning for out of hours works, standard mitigation measures, as described in the CNVMP, are implemented where reasonable and feasible. However, after these measures have been applied, noise and vibration levels may continue to exceed the NMLs.

In this case, additional mitigation measures outlined in the CNVS, which largely focus on engagement with affected sensitive receivers, should be implemented where reasonable and feasible, unless other agreements are in place with the impacted receiver.

Triggers and additional mitigation measures for airborne noise are taken from the Project's OOHW Protocol and the CNVS and are summarised in Table 3. Further details of specific additional mitigation measures are described in the CNVS.

Table 6 Triggers for additional mitigation measures – Airborne noise

Construction hours	Class	dB above NML	Additional management measures
Approved hours Monday – Friday: 7am – 6pm Saturday: 8am to 6pm	B	0 to 10	-
	C	10 to 20	LB
	D	20 to 30	LB, M, SN
	E	>30	LB, M, SN
Evening Monday – Friday: 6pm – 10pm Saturday: 7am – 8am, 6pm – 10pm Sunday / PH: 8am – 6pm	B	0 to 10	LB
	C	10 to 20	LB, M
	D	20 to 30	LB, M, SN, RO
	E	> 30	LB, M, SN, IB, PC, RO
Night Monday – Saturday: 10am – 7am Saturday: 10pm –8am) Sunday / PH: 6pm –7am	B	0 to 10	LB
	C	10 to 20	LB, M, SN, RO
	D	20 to 30	LB, M, SN, IB, PC, RO, AA
	E	> 30	LB, M, SN, IB, PC, RO, AA

Notes: PC = Phone Calls and emails; M = Monitoring; IB = Individual briefings; AA = Alternative accommodation; SN = Specific notification; LB = Letterbox drops; RO = Project specific respite offer

2.4 Vibration management

2.4.1 Human comfort

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

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

Table 7 VDV Vibration criteria

Receiver type	Low probability of adverse comment ($m/s^{1.75}$)	Adverse comment possible ($m/s^{1.75}$)	Adverse comment probable ($m/s^{1.75}$)
Residential buildings – 16 hour day (7am to 11pm)[1]	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings – 8 hour night (11pm to 7am)[1]	0.13	0.26	0.51

Note 1: Day time and night time as described in BS6472:1992 (as referenced in the CNVS), i.e. a daytime period of 16 h or a night time period of 8 h, for example 23.00 h to 07.00 h.

2.4.2 Buildings

Potential building damage from construction vibration requires the application of values in BS 7385 Part 2-1993 *Evaluation and measurement for vibration in buildings* Part 2. These values are presented in Table 8 and relate to transient vibration which does not give rise to resonant responses in structures, and to low-rise buildings.

Table 8 Guideline values for vibration velocity for the effects of short-term vibration on structures (BS 7385).

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	50	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz to 50 mm/s at 40 Hz and above

Where vibration may give rise to magnification due to resonance, especially at lower frequencies where lower guide values apply, the guide values may be reduced by 50%. The CNVS describes rock breaking/hammering and sheet piling activities as having potential to cause dynamic loading in some structures (e.g. residences).

For activity involving rock breakers, piling rigs, vibratory rollers, excavators, vibration predominantly occurs at frequencies in the 10 Hz to 100 Hz range. On this basis, a conservative vibration damage screening level is:

- Reinforced or framed structures: 25.0 mm/s
- Unreinforced or light framed structures: 7.5 mm/s

2.4.3 Heritage

Heritage buildings and structures would be assessed under a conservative cosmetic damage objectives of 2.5 mm/s peak component particle velocity (from DIN 4150). Where vibration levels at heritage items are identified as exceeding this screening level, structural assessment would be completed by the Project team to confirm the structure's sensitivity to vibration. If a heritage building or structure is found to be structurally unsound (following inspection) the conservative criterion would stand. Where the structure is suitably sound, the guideline values from Table 8 would be applicable.

2.4.4 Additional mitigation measures

The CNVS recommends additional mitigation measures where all standard mitigation measures to minimise vibration at the nearest receivers have been implemented and vibration is still predicted to exceed the maximum guideline values. The Additional Mitigation Measures Matrix (AMMM) for vibration from the CNVS is presented in Table 9.

Table 9 Additional Vibration Mitigation Measures (CNVS)

Construction hours	Mitigation measures where predicted vibration levels exceed maximum levels
Approved hours Monday – Friday: 7am – 6pm, Saturday: 8am to 6pm	LB, M, RO
Evening Monday – Friday: 6pm – 10pm; Saturday: 7am – 8am, 6pm – 10pm; Sunday / PH: 8am – 6pm	LB, M, IB, PC, RO, SN
Night Monday – Saturday: 10am – 7am Saturday: 10pm –8am); Sunday / PH: 6pm –7am	LB, M, IB, PC, RO, SN, AA

3 Impact assessment

3.1 Modelling method

Predictions of noise impacts were performed using KNOWnoise™, a project-specific noise assessment tool developed by Hutchison Weller for the CTP Project. KNOWnoise calculates the maximum $L_{Aeq,15minute}$ noise level for each identified receiver for each proposed activity using predictions from SoundPlan noise modelling software. Predictions include geometric spreading, air and ground absorptions as well as topographical and structural screening and reflection.

The following components were incorporated in the model:

- Topography – Based on terrain data of 1 m resolution.
- Individual sensitive receivers – Worst-affected façade of each building to 700 metres from the works
- Construction noise sources –Activities and equipment provided by AFJV were included in the noise model as individual sources across the nominated work areas for each activity. The maximum predicted LAeq noise level within each work area was identified for each receiver.
- Cumulative impacts – all activities with overlapping time periods are included in cumulative results
- Source height – construction noise sources assumed to be at 1.5 metres above ground level.
- Ground Absorption – Ground assumed to be mixed hard and soft with absorption factor of 0.5
- Meteorology –worst-case meteorological conditions (gentle breeze from source to receiver and stable conditions).
- Residential building structures are included in the model, meaning screening provided by neighboring houses is considered.
- Results are shown for all floors of assessed buildings with the worst-case façade result assumed for the whole floor.

Equipment proposed to be used for OOHW activities together with estimated sound power levels for each item are summarised in Appendix A.

The sound power levels and ultimate predicted noise levels will depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. In practice, the predicted levels will vary due to plant moving around the site and not operating intensively or concurrently for a 15 minute assessment period. Shielding and reflection provided by buildings will also vary as plant moves around the site. Therefore, predicted noise levels are conservative.

3.2 Predicted noise levels

Detailed predicted noise levels for each potentially affected receiver are presented Appendix C.

A summary of predicted noise levels for the Night period is presented in Table 10, with the worst-case predicted noise level of 93 dB(A) during the works, resulting in 11 receivers classed as highly noise affected.

With reference to the CNVS, 3 receivers are predicted to be classified as Highly Impacted during the Night period.

Table 10 Summary of predicted noise levels with comparison against ICNG criteria for the Night period.

Maximum cumulative predicted $L_{Aeq,\ 15\ minute}$ noise level		93 dB(A)
Number of highly noise affected receivers (>75 dB)		11
Impact class	**Predicted exceedance**	**Predicted number of receivers**
Noticable	0 <= 10 dB above NML	726
Clearly Audible	10 <= 20 dB above NML	83
Moderately Intrusive	20 <= 30 dB above NML	3
Highly Intrusive	> 30 dB above NML	3

Predicted impact classes for the Night period are illustrated graphically in Appendix B. Each identified receiver in the study area has been coloured to highlight the predicted level of impact.

In the event works are planned for more than two consecutive nights, sleep disturbance is considered. Table 11 summarises the number of residents predicted to exceed the sleep disturbance screening criteria. Further analysis is provided to indicate the number of receivers expected to be woken, at LAmax noise levels greater than 65 dBA.

Where exceedances of the awakening criteria are predicted, additional care should be taken, and mitigation measures implemented to minimise the frequency and duration of such events.

Table 11 Summary of predicted exceedances of sleep disturbance screening criterion and awakening criterion.

Criterion	**Predicted number of receivers**
Potentially Sleep Disturbed (exceed RBL + 15 screening criterion)	191
Exceed 65 dBA awakening criterion	14

3.3 Vibration

The CNVS requires attended vibration measurements at commencement of vibration generating activities to confirm vibration levels satisfy the criteria for that activity.

Where there is potential for exceedances of the criteria further vibration site law investigations would be undertaken to determine the site-specific safe working distances for that vibration generating activity. Continuous vibration monitoring with audible and visible alarms would be conducted at the nearest sensitive receivers whenever vibration generating activities need to take place inside the calculated safe-working distances.

Based on the proposed work locations and selected equipment, indicative exceedances of the vibration criteria are summarised in Table 12. The exceedances are based on recommended minimum working distances from vibration intensive plant given in Appendix D of the Construction Noise and Vibration Strategy (Transport for NSW 2019). Vibration impacts for each sensitive receiver are listed in Appendix C.

Table 12 Predicted exceedances of vibration criteria

Impact classification	Number of potentially affected receivers
Human comfort	2
Cosmetic damage	0
Heritage structure	0

4 Controls and safeguards

The Project represents a risk of adverse impacts on sensitive receivers, particularly when working close to the project boundary and outside approved hours.

Where short term noise impacts are unavoidable, mitigation measures described in the project construction environment management plan should be implemented together with the recommendations in Table 13 and additional mitigation measures for each receiver identified in Appendix B and summarised in

Table 14.

Table 13 Standard mitigation measures

Community consultation	• Potentially affected receivers will be notified of OOH works in accordance with project requirements. • Where practicable, works will be scheduled to not conflict with major student examination periods, church congregation times, and other sensitive periods identified through community consultation.
Site induction	• All workers will be inducted to the project prior to commencing work and will be cognisant of their noise and vibration obligations under the CNVMP.
Behavioural practices	• Avoid swearing and unnecessary shouting or loud radios onsite. • Avoid dropping materials from height.
Equipment selection	• Priority given to the use of quieter and less vibration emitting construction methods and plant alternatives where feasible and reasonable. • The noise levels of plant and equipment would meet the maximum noise requirements of the CNVS.
Use and siting of plant	• Locate compounds away from sensitive receivers and discourage access from local roads. • Plant used intermittently to be throttled down or shut down. • Noise-emitting plant to be directed away from sensitive receivers where possible. • Stationary plant should be located behind a structure or enclosed if practicable. • Deliveries should be made as far as practical from sensitive receivers. Dedicated loading/unloading sites should be shielded where possible, if close to receivers. • Plan traffic flow, parking and loading/unloading areas to minimise reversing. • Avoid compression breaking on approach to the site. • Where additional activities or plant may result in marginal noise increases and speed works up, consider concentrating activities at one location and complete works as quickly as possible.
Non-tonal reversing alarms.	• Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.
Noise monitoring	• Monitoring should be completed to verify the assumptions of this CNVIS regarding estimated equipment noise emissions and to ensure compliance with the CNVS.
Vibration monitoring	• Attended vibration measurements should be completed at commencement of vibration generating activities predicted to occur within safe working distances for cosmetic damage. • Where monitoring demonstrates maximum levels exceeded, consider alternative methodologies/equipment
Implement any project specific mitigation measures	
1	Utilising correct equipment for the job, switching off machinery when not in use, use of noise mats around noise intensive works, where appropriate.

Table 14 Additional mitigation measures

Code	Measure	Description
AA	Alternative accommodation	Alternative accommodation options may be provided for residents living in close proximity to 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.
M	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.
IB	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 from the contractor would visit 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.
LB	Letterbox drops	For each Sydney Metro project, a newsletter is produced and distributed to the local community via letterbox drop and the project mailing list. These newsletters provide an overview of current and upcoming works across the project and other topics of interest. The objective is to engage and inform and provide project-specific messages. Advanced warning of potential disruptions (e.g. traffic changes or noisy works) can assist in reducing the impact on the community. Content and newsletter length is determined on a project-by-project basis. Most projects distribute notifications on a monthly basis. Each newsletter is graphically designed within a branded template.
RO	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.
PC	Phone calls	Phone calls and/or emails detailing relevant information would be made to identified/affected stakeholders within 7 days of proposed work. Phone calls and/or emails provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs etc.
SN	Specific notifications	Specific notifications would be letterbox dropped or hand distributed to identified stakeholders no later than 7 days ahead of construction activities that are likely to exceed the noise objectives. This form of communication is used to support periodic notifications, or to advertise unscheduled works.

Appendix A Proposed activities and associated sound power levels

Excavation of HDD launch pit (night)

Excavation of HDD launch pit will require excavation of the launch pit on Robert Street, and removal of material.
9/5/2022 10:00:46 PM - 9/6/2022 7:00:12 AM

Equipment	Quantity	Usage	Reduction	SWL
Daymakers / Lighting plant	1	100 %	0	93
Bogies	1	30 %	0	95
Excavator (15 tonne)	1	40 %	0	99
Vacc truck	1	100 %	0	112

Activity Sound Power Level: 112
* includes 5 dB penalty for potentially annoying characteristics in line with the ICNG

Excavation of HDD retrieval pit (night)

Excavation of HDD launch pit will require excavation of the launch pit on Robert Street, and removal of material.
9/5/2022 10:00:46 PM - 9/6/2022 6:00:12 AM

Equipment	Quantity	Usage	Reduction	SWL
Daymakers / Lighting plant	1	100 %	0	93
Bogies	1	30 %	0	95
Excavator (15 tonne)	1	40 %	0	99
Vacc truck	1	100 %	0	112

Activity Sound Power Level: 112
* includes 5 dB penalty for potentially annoying characteristics in line with the ICNG

HDD underbore

Operate the HDD rig at the launch pit to complete the underbore
9/5/2022 6:00:46 PM - 9/6/2022 7:00:12 AM

Equipment	Quantity	Usage	Reduction	SWL
Daymakers / Lighting plant	1	100 %	0	93
Horizontal direction drill	1	50 %	0	100

Activity Sound Power Level: 101
* includes 5 dB penalty for potentially annoying characteristics in line with the ICNG

Trenching (Victoria Road to HDD launch pit)

NDD and Trenching (night)
9/5/2022 6:00:46 PM - 9/6/2022 7:00:12 AM

Equipment	Quantity	Usage	Reduction	SWL
Daymakers / Lighting plant	1	100 %	0	93
Bogies	1	30 %	0	95
Excavator (15 tonne)	1	40 %	0	99
Vacc truck	1	100 %	0	112

Activity Sound Power Level: 112
* includes 5 dB penalty for potentially annoying characteristics in line with the ICNG

Appendix B Map showing predicted noise impacts by impact class

Appendix C Detailed predictions

C.1 Noise

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 22	695517	118/501 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	50		0	-	0	1	-	1	None		None	Noticable
NCA 22	695502	70/501 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	50		0	-	0	1	-	1	None		None	Noticable
NCA 22	695459	308 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	49		0	-	0	1	-	1	None		None	Noticable
NCA 22	695431	312 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			46	50		0	-	0	2	-	2	None		None	Noticable
NCA 22	695428	17 NORTHCOTE RD, GLEBE NSW 2037	1	RES	58		52	44			45	48		0	-	0	1	-	1	None		None	Noticable
NCA 22	695380	42/501 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	50		0	-	0	1	-	1	None		None	Noticable
NCA 22	695375	115/501 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	49		0	-	0	1	-	1	None		None	Noticable
NCA 22	695366	39/501 GLEBE POINT RD, GLEBE NSW 2037	1	RES	58		52	44			45	49		0	-	0	1	-	1	None		None	Noticable
NCA 20	695265	31 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			51	55		0	-	0	1	-	1	None		None	Noticable
NCA 20	695259	10A QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	65	69		4	-	9	15	4	15	Noticable		Noticable	Clearly Audible
NCA 20	695250	17 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		61	64		0	-	5	11	-	11	Noticable		Noticable	Clearly Audible
NCA 20	695242	18/3 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	64	68		3	-	8	14	3	14	Noticable		Noticable	Clearly Audible
NCA 20	695207	28 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			53	56		0	-	0	3	-	3	None		None	Noticable
NCA 20	695198	15 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		59	63		0	-	3	9	-	9	None		Noticable	Noticable
NCA 20	695192	12 MANEY ST, ROZELLE NSW 2039	1	RES	61		56	50			52	55		0	-	0	2	-	2	None		None	Noticable
NCA 20	695188	7 GRAHAM ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		61	65		0	-	5	11	-	11	Noticable		Noticable	Clearly Audible
NCA 20	695186	19 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		60	63		0	-	4	10	-	10	None		Noticable	Clearly Audible
NCA 20	695176	16A QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			58	60		0	-	2	8	-	8	None		Noticable	Noticable
NCA 20	695155	33 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			51	55		0	-	0	1	-	1	None		None	Noticable
NCA 20	695147	11 LILYFIELD RD, ROZELLE NSW 2039	1	RES	61		56	50			53	58		0	-	0	3	-	3	None		None	Noticable
NCA 20	695088	14 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	63	67		2	-	7	13	2	13	Noticable		Noticable	Clearly Audible
NCA 20	695067	20 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			55	57		0	-	0	5	-	5	None		None	Noticable
NCA 20	695053	7 LILYFIELD RD, ROZELLE NSW 2039	1	RES	61		56	50	Y		58	61		0	-	2	8	-	8	None		Noticable	Noticable
NCA 20	695008	STRATA SCHEME 18-28 HORNSEY ST, ROZELLE	1	RES	61		56	50			53	54		0	-	0	3	-	3	None		None	Noticable
NCA 20	694993	43 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			51	54		0	-	0	1	-	1	None		None	Noticable
NCA 20	694989	25 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			53	56		0	-	0	3	-	3	None		None	Noticable
NCA 20	694971	9 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	64	68		3	-	8	14	3	14	Noticable		Noticable	Clearly Audible
NCA 20	694939	6 LILYFIELD RD, ROZELLE NSW 2039	1	RES	61		56	50			52	56		0	-	0	2	-	2	None		None	Noticable
NCA 20	694934	13 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	63	66		2	-	7	13	1	13	Noticable		Noticable	Clearly Audible
NCA 20	694890	5 GRAHAM ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		61	65		0	-	5	11	-	11	Noticable		Noticable	Clearly Audible
NCA 20	694803	UNIT 1 19 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			56	60		0	-	0	6	-	6	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 20	694800	28 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			54	57		0	-	0	4	-	4	None		None	Noticable
NCA 20	694795	2/11 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			56	60		0	-	0	6	-	6	None		Noticable	Noticable
NCA 20	694758	30 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			55	58		0	-	0	5	-	5	None		None	Noticable
NCA 20	694747	4 MANEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		58	61		0	-	2	8	-	8	None		Noticable	Noticable
NCA 20	694741	10A QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	66	70		5	-	10	16	5	16	Noticable		Clearly Audible	Clearly Audible
NCA 20	694692	7 QUIRK ST, ROZELLE NSW 2039	1	EDU	55		55	55			60	63		5	-	5	5	-	5	Noticable		Noticable	Noticable
NCA 20	694691	7 QUIRK ST, ROZELLE NSW 2039	1	EDU	55		55	55	Y		70	75		15	-	15	15	-	15	Clearly Audible		Clearly Audible	Clearly Audible
NCA 20	694668	20 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			56	59		0	-	0	6	-	6	None		None	Noticable
NCA 20	694663	41 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			51	55		0	-	0	1	-	1	None		None	Noticable
NCA 20	694661	13 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		62	65		1	-	6	12	-	12	Noticable		Noticable	Clearly Audible
NCA 20	694660	4 MANEY ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		57	61		0	-	1	7	-	7	None		Noticable	Noticable
NCA 20	694637	4 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			54	58		0	-	0	4	-	4	None		None	Noticable
NCA 20	694622	2A-2B GORDON ST, ROZELLE NSW 2039	1	EDU	55		55	55			55	58		0	-	0	0	-	0	None		None	Noticable
NCA 20	694610	9 LILYFIELD RD, ROZELLE NSW 2039	1	RES	61		56	50			56	58		0	-	0	6	-	6	None		None	Noticable
NCA 20	694607	8 MANEY ST, ROZELLE NSW 2039	1	RES	61		56	50			51	52		0	-	0	1	-	1	None		None	Noticable
NCA 20	694597	15 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y		62	65		1	-	6	12	-	12	Noticable		Noticable	Clearly Audible
NCA 20	694535	7 LILYFIELD RD, ROZELLE NSW 2039	1	RES	61		56	50	Y		59	62		0	-	3	9	-	9	None		Noticable	Noticable
NCA 20	694497	22 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			54	56		0	-	0	4	-	4	None		None	Noticable
NCA 20	694406	13 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			57	59		0	-	1	7	-	7	None		Noticable	Noticable
NCA 20	694397	5/12 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	67	71		6	-	11	17	6	17	Noticable		Clearly Audible	Clearly Audible
NCA 20	694390	6 MANEY ST, ROZELLE NSW 2039	1	RES	61		56	50			53	55		0	-	0	3	-	3	None		None	Noticable
NCA 20	694389	16A QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			56	58		0	-	0	6	-	6	None		Noticable	Noticable
NCA 20	694359	32 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50			52	54		0	-	0	2	-	2	None		None	Noticable
NCA 20	694341	4 HORNSEY ST, ROZELLE NSW 2039	1	RES	61		56	50			53	58		0	-	0	3	-	3	None		None	Noticable
NCA 20	694338	10 QUIRK ST, ROZELLE NSW 2039	1	RES	61		56	50	Y	Y	65	69		4	-	9	15	4	15	Noticable		Noticable	Clearly Audible
NCA 21	694156	32 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	54		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	694155	30 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	54		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	694153	26 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	694151	24 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	694150	37 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	694149	39 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	694146	47 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	694144	49 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	694143	45 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	694142	43 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	694140	33 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	694137	31 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	46		0	-	0	6	-	6	None		None	Noticable
NCA 21	694135	2 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	694133	8 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		None	Noticable
NCA 21	694131	6 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	694129	12 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	694127	10 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	694125	1/20 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	694123	1/20 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	694121	21 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	46		0	-	0	5	-	5	None		None	Noticable
NCA 21	694119	23 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	694117	25 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	694115	9 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	694113	11 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	694111	4 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	694109	8 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	694107	8 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	694105	5 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	51		0	-	2	10	-	10	None		None	Noticable
NCA 21	694068	39 BOOTH ST, BALMAIN NSW 2041	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	694035	45 BOOTH ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693919	SOMERSET MEWS 9/2 ROSEBERY PL, BALMAIN N	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693859	55 BRADFORD ST, BALMAIN NSW 2041	1	RES	53		48	40			41	46		0	-	0	1	-	1	None		None	Noticable
NCA 21	693828	20 BOOTH ST, BALMAIN NSW 2041	1	RES	53		48	40			40	40		0	-	0	0	-	0	None		None	Noticable
NCA 21	693797	47 BOOTH ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693685	20 BOOTH ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693567	SHOP 2 582-584 DARLING ST, ROZELLE NSW 2	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693565	3 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	693557	572 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693546	616 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693536	43A The Crescent, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	69	74		16	-	21	29	9	29	Clearly Audible		Moderately Intrusive	Moderately Intrusive
NCA 21	693511	2/166 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	693509	11 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693507	BALD ROCK HOTEL 17 MANSFIELD ST, ROZELLE	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	693506	23 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693503	77 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	46		0	-	0	5	-	5	None		None	Noticable
NCA 21	693502	101 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	693496	1/133 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	693495	26 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	693493	4 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693492	13/36 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693490	29 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	693486	6 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693485	33 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693481	5 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693480	5 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	45		0	-	0	4	-	4	None		None	Noticable
NCA 21	693478	13 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	693477	12 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	55		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	693475	86 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693468	4 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40			47	48		0	-	0	7	-	7	None		None	Noticable
NCA 21	693467	5 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	693466	104 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	693462	5 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693459	131 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	693453	3A HENRY ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	693450	134 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693443	SOMERSET MEWS 77 PALMER ST, BALMAIN NSW	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	693439	14 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	693436	157 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693434	6/28 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	693429	16 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	693420	8 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	693418	19 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	693416	125 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693415	1 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	693413	1/138-140 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	693405	6 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693403	143 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	693402	38 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	693401	8 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			49	50		0	-	1	9	-	9	None		None	Noticable
NCA 21	693399	23 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	693395	67 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	693393	31 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	693392	21 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	693389	17 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693377	13/56-62 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	693372	24 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	693369	2 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	693365	82 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	693361	79 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	693355	WATERDALE 84/24 BUCHANAN ST, BALMAIN NSW	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693354	38 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693351	15 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Clearly Audible
NCA 21	693346	2 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	693345	108 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	54		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	693343	1/1 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	693340	12 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		54	58		1	-	6	14	-	14	Noticable		Noticable	Clearly Audible
NCA 21	693338	15 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	693334	6 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693332	75 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	693330	4 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	55		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	693327	127 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		46	51		0	-	0	6	-	6	None		None	Noticable
NCA 21	693322	18 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	693320	11/29-41 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693315	1/55 SMITH ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693311	2 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	693309	23 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Noticable
NCA 21	693307	6 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693304	14 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693302	11 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		None	Clearly Audible
NCA 21	693301	5 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	693293	58 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	693291	1/40 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	693288	144 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	693287	5 HENRY ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693284	2 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			41	46		0	-	0	1	-	1	None		None	Noticable
NCA 21	693270	10A EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693269	28 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	42		0	-	0	2	-	2	None		None	Noticable
NCA 21	693264	29 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693259	90 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	693257	45 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693255	11 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693253	12 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	693248	6 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			85	89	Y	15	-	15	15	-	15	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	693240	9 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693237	15 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	54		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	693232	10 CLAY ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693231	4 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			84	89	Y	14	-	14	14	-	14	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	693226	4 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693224	15A HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693221	137 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693219	17 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	693216	11 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		46	51		0	-	0	6	-	6	None		None	Noticable
NCA 21	693215	24 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693209	25 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	693208	SHOP 2 582-584 DARLING ST, ROZELLE NSW 2	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693206	4 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	693205	30 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	693203	20 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693202	3 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	693199	7 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	693198	20 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	693191	37 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693189	40 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	43		0	-	0	2	-	2	None		None	Noticable
NCA 21	693186	207 BEATTIE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693185	11 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	693182	26 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	693181	12 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	693173	135 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693171	47 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	693169	161 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	693158	21 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	693148	11 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	693146	19 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	693142	3/14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	48		0	-	0	7	-	7	None		None	Noticable
NCA 21	693140	122 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	693133	12 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			84	89	Y	14	-	14	14	-	14	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	693131	22 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693127	82 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	693126	32 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	693119	31 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	693116	112 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693115	11 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693113	30 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693108	25 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	693107	1 PINE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693105	16 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	693101	2/14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	693100	91 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693099	1 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693096	35 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693092	7 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	693088	11 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693082	9 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693078	122 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	693065	20 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	693063	111 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	693056	8 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	693051	2 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	693047	31 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	693044	7 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	693042	28 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	693037	13 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	693035	8 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	55		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	693030	7 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	693027	2/95 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	693025	127 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	693024	49 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	78	83	Y	25	-	30	38	18	38	Moderately Intrusive		Moderately Intrusive	Highly Intrusive
NCA 21	693018	97 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	693005	142A MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692994	2/29-41 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692990	29 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	692989	125 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692985	16 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Noticable
NCA 21	692983	81 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	692982	69 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692980	3 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692976	24 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692974	5/53 SMITH ST, BALMAIN NSW 2041	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692971	9 RUMSAY LANE, ROZELLE NSW 2039	1	RES	53		48	40			40	42		0	-	0	0	-	0	None		None	Noticable
NCA 21	692969	1 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	47		0	-	0	6	-	6	None		None	Noticable
NCA 21	692965	106 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	54		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692962	31 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692959	4 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692958	8 STARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692957	120 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692956	11 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692952	19 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	46		0	-	0	5	-	5	None		None	Noticable
NCA 21	692951	5/14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692942	176 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692935	74 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692929	2 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692921	49 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692914	14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			46	47		0	-	0	6	-	6	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692911	17 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692906	5 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692903	41 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692902	21 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	55		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692900	1/6 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	692898	105 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692894	17 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692893	68 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			42	43		0	-	0	2	-	2	None		None	Noticable
NCA 21	692887	10/56-62 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692881	15 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692873	3 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			49	50		0	-	1	9	-	9	None		None	Noticable
NCA 21	692865	6 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692864	36 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	45		0	-	0	0	-	0	None		None	Noticable
NCA 21	692862	26 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	50		0	-	0	5	-	5	None		None	Noticable
NCA 21	692861	128 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	692859	2/141 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	53		0	-	0	8	-	8	None		Noticable	Noticable
NCA 21	692851	1 SLADE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692848	6 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692845	186 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692841	169 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692840	34 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	692829	22 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	692823	117 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692822	1 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692819	21 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	692808	41 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692798	31 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692790	16 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	692786	48 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	692781	73 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692780	4/14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	692773	3 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Noticable
NCA 21	692772	5 MOORE LANE, ROZELLE NSW 2039	1	RES	53		48	40			46	47		0	-	0	6	-	6	None		None	Noticable
NCA 21	692769	175 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692762	15 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692760	101 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692758	6 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	692751	10 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	48		0	-	0	3	-	3	None		None	Noticable
NCA 21	692749	14 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692747	20 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	692742	18 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	56		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692740	122 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692732	34 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	54		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692729	10/51 VICTORIA RD, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	72	77		19	-	24	32	12	32	Clearly Audible		Moderately Intrusive	Highly Intrusive
NCA 21	692717	7 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692711	10 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	48		0	-	0	7	-	7	None		None	Noticable
NCA 21	692706	17 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692702	18 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692697	27 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692691	21/36 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692690	2 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			84	89	Y	14	-	14	14	-	14	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	692685	84 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	692677	151 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692675	17 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	692674	8 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	692673	10 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			85	89	Y	15	-	15	15	-	15	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	692666	89 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	692664	10 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692662	1/18 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	692660	9 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692658	4 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692656	51 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	692649	27 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	692643	57 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692641	2 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	57		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692635	21 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	692630	12 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	692628	133 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692626	118 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	692623	133 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692617	154 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692616	16 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692615	18 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692607	97 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692599	134 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692596	1/168 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	692595	36 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692589	101 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692586	96 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692579	98 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	692578	99 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692575	112 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	692571	7 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692566	7 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692565	34 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	692563	9 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	53		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692559	5 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692558	40 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	55		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692556	19 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	692554	153 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	692552	11 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692548	2 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	692542	36 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692539	14 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692537	5 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692535	17 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692529	3 CROSS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692527	10 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692525	37 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692521	28/18-20 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	692520	36 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692516	22 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692512	116 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692511	127 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692510	100 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	692505	17 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692502	197 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	692484	76B EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	692483	69 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692477	155 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692469	108 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	692461	5 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692457	10 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692452	1A PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692450	29 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			40	42		0	-	0	0	-	0	None		None	Noticable
NCA 21	692444	14 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	692442	75 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692440	4 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692439	9 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692435	31 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692434	8 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692431	87 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692429	92 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692422	125 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692420	32 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692418	10A LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	54		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	692416	562 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	692413	26 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692412	179 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		53	57		0	-	5	13	-	13	None		None	Clearly Audible
NCA 21	692410	28 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692406	16 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	692401	113 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692397	104 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	56		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692396	4 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692390	86 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692387	31 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692383	4/40 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692381	20-28 ROBERT ST, ROZELLE NSW 2039	1	IND	75		75	75			87	90	Y	12	-	12	12	-	12	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	692379	9 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692377	25 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	692375	117 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	692373	8 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	692369	2 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		53	57		0	-	5	13	-	13	None		Noticable	Clearly Audible
NCA 21	692367	154 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692359	26 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692355	10 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692352	180 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692345	44 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	692340	9 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692336	65 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	692335	70 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692330	94 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692327	10 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	692321	18 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692319	17 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692317	13 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	692315	18 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	55		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692310	70 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692307	70 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692306	169 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	54		0	-	2	10	-	10	None		None	Clearly Audible
NCA 21	692293	15 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692290	96 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692285	36 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692278	7 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	692275	107 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692272	46 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692262	2/140 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692258	17 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692252	2/9 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692240	4 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692236	41 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692234	153 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	692233	3 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40			47	48		0	-	0	7	-	7	None		None	Noticable
NCA 21	692230	129 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692229	2 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	692224	6/1 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692219	28 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692216	107 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	692213	26 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	54		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	692212	5 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		None	Noticable
NCA 21	692203	5 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692201	18 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692198	12 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692197	15A HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692192	1 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	48		0	-	0	3	-	3	None		None	Noticable
NCA 21	692185	62 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	692177	14 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692175	90 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692169	9/1 BUCHANAN ST, BALMAIN NSW 2041	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	692165	BALD ROCK HOTEL 17 MANSFIELD ST, ROZELLE	1	RES	53		48	40			45	46		0	-	0	5	-	5	None		None	Noticable
NCA 21	692164	2/28 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692162	3 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692158	34 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692154	3 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692153	21 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692151	14/29-41 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692146	88 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692138	106 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	54		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	692137	30 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	692136	3 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	692131	9 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	692125	29 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		55	60		2	-	7	15	-	15	Noticable		Noticable	Clearly Audible
NCA 21	692121	145 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	692120	17/36 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	692113	82 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	50		0	-	0	5	-	5	None		None	Noticable
NCA 21	692109	44 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692093	2 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	692084	13/18-20 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	692083	32 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	692077	127 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	692075	109 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	692074	14 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692071	10 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692070	68 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	692069	29 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	692067	36 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692064	13 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	692060	171A MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	45		0	-	0	4	-	4	None		None	Noticable
NCA 21	692057	4/29-41 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	692052	12 STARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	692050	65 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	692043	71 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	692037	5 SLADE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	692036	40 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	692034	16 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	692032	11 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	692029	30 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	692028	93 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692024	37 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692021	119 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	692020	19 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	692017	29 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	692016	41 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	63	68		10	-	15	23	3	23	Noticable		Clearly Audible	Moderately Intrusive
NCA 21	692010	3-5 PINE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	692008	8 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			40	42		0	-	0	0	-	0	None		None	Noticable
NCA 21	692006	98 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	692005	8 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	692001	68 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	52		0	-	0	7	-	7	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691998	41 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	62	66		9	-	14	22	1	22	Noticable		Clearly Audible	Moderately Intrusive
NCA 21	691996	43 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691994	40 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	691992	98 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	54		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691988	9 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	55		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	691987	1 MOORE LANE, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691980	2 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	691979	4/124 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691977	111 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691975	107 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691974	120 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691972	141 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691968	14 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	691965	20 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691961	153 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691959	7 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	691958	76 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	691957	23 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691955	2/6 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691954	8 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691947	21 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691946	43 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691945	4 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691943	8 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	691938	6 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	691936	5/14-16 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691934	9 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	49		0	-	0	4	-	4	None		None	Noticable
NCA 21	691931	28 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691927	163A MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691925	129 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691924	4 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691922	1 CARRINGTON ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691920	5 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691919	21 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691913	148 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691911	4 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	55		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	691909	22 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691904	144 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691898	126 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691896	17 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691894	7 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691891	25 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691890	19/36 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691889	94 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691887	12 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	691882	6 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691880	42 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691875	27 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691873	14 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691871	9 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			42	43		0	-	0	2	-	2	None		None	Noticable
NCA 21	691869	107 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691864	147 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691857	9 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691855	3 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691845	32 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	691838	4/3-5 PINE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691834	22 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691829	26 ROBERT ST, ROZELLE NSW 2039	1	IND	75		75	75	Y		89	94	Y	14	-	14	14	-	14	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	691823	49 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y	Y	76	80	Y	23	-	28	36	15	36	Moderately Intrusive		Moderately Intrusive	Highly Intrusive
NCA 21	691811	16 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	691809	9 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	691807	3 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	691790	3/3-5 PINE ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691786	9 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691785	2 STARLING ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691775	12 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691774	2/141 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691770	24A MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691766	7 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	691761	2 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691758	15 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691757	5 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	691754	29 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691752	616 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691751	5 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691750	1 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691747	3 SLADE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	691743	19 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691741	59 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	691735	29 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	691734	16 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691733	1/1 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	691729	16 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	57		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	691727	176 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691719	155A MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691715	7 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691713	4 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691711	11 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691705	151 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691702	27 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		None	Clearly Audible
NCA 21	691701	15 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691690	2 ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691688	20 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691675	13 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691673	134 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691670	1/640 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	691667	2/146 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	691661	46 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691656	42 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691654	18/18-20 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	691650	53 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			40	45		0	-	0	0	-	0	None		None	Noticable
NCA 21	691648	116 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691646	17 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691642	9 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691640	11 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	46		0	-	0	5	-	5	None		None	Noticable
NCA 21	691637	8 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691635	8 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691634	12 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691633	21 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691632	2/138-140 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	691624	5/51 VICTORIA RD, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	53		0	-	1	9	-	9	None		Noticable	Noticable
NCA 21	691623	20 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691620	22 ROBERT ST, ROZELLE NSW 2039	1	IND	75		75	75	Y		93	94	Y	18	-	18	18	-	18	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	691619	1 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691618	113 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	691610	13 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691608	10 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	691606	2 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691605	12 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691604	23 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		56	60		3	-	8	16	-	16	Noticable		Noticable	Clearly Audible
NCA 21	691589	12 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	691588	16 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691584	18 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691573	16 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691568	7 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	691567	20 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	691565	12 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	691561	14 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	691557	1/28 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	691555	59 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691553	3 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	691536	130 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691528	32 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	691526	15 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	691522	10 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691513	6 SLADE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691509	82 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691507	27 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	691506	UNIT 3 28 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691503	31 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	54		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	691499	29 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	691495	11 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691487	10 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		53	57		0	-	5	13	-	13	None		Noticable	Clearly Audible
NCA 21	691482	16 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691478	5 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		None	Clearly Audible
NCA 21	691469	143 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691467	WEST END HOTEL 72-74 MULLENS ST, BALMAIN	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691465	13 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691461	2 NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			40	43		0	-	0	0	-	0	None		None	Noticable
NCA 21	691459	8 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691458	45 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	45		0	-	0	0	-	0	None		None	Noticable
NCA 21	691456	3 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691454	44 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691452	24 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			41	42		0	-	0	1	-	1	None		None	Noticable
NCA 21	691448	10 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691447	91 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691442	17 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691439	6 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	48		0	-	0	3	-	3	None		None	Noticable
NCA 21	691437	46A EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691436	9 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	691434	2A ELLEN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	53		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	691430	41 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691428	6 COULON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	691426	9 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	691422	18 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691421	5 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691418	98 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691414	5 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691413	47 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	691403	36 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	43		0	-	0	2	-	2	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691401	BALD ROCK HOTEL 17 MANSFIELD ST, ROZELLE	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691399	6 CRESCENT ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691392	21 REYNOLDS AV, ROZELLE NSW 2039	1	RES	53		48	40			42	43		0	-	0	2	-	2	None		None	Noticable
NCA 21	691388	141A MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691386	3 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691384	60 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	44		0	-	0	4	-	4	None		None	Noticable
NCA 21	691381	45 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	691379	15 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691378	181 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		53	57		0	-	5	13	-	13	None		None	Clearly Audible
NCA 21	691377	16 LOUGHLIN ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691374	25 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691364	572 DARLING ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691357	2/12 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	52		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691356	95 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	46		0	-	0	4	-	4	None		None	Noticable
NCA 21	691350	9 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691346	8 ROBERT ST, ROZELLE NSW 2039	1	COM	70		70	70			84	88	Y	14	-	14	14	-	14	Clearly Audible		Clearly Audible	Clearly Audible
NCA 21	691340	78 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691339	20 HARTLEY ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		52	56		0	-	4	12	-	12	None		Noticable	Clearly Audible
NCA 21	691337	10 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691335	147 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691331	14 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	691329	59 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691323	7 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691320	42 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691306	22 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	47		0	-	0	2	-	2	None		None	Noticable
NCA 21	691301	64 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691296	35 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691292	38 GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691287	3A GOODSIR ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	691286	19 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691282	12 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			40	42		0	-	0	0	-	0	None		None	Noticable
NCA 21	691280	149 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	691278	14 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691270	55 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691262	2/1 BRENT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	52		0	-	0	8	-	8	None		None	Noticable
NCA 21	691260	13/36 REYNOLDS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	691254	85 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691244	5 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691240	1 HENRY ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691238	13 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Clearly Audible
NCA 21	691231	31-33 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691229	85 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691226	16 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691223	44 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	691213	16 CARRINGTON ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691212	27 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691206	85 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	691202	6 BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			44	45		0	-	0	4	-	4	None		None	Noticable
NCA 21	691192	22 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	691188	13 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691174	11 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691172	43 ROSEBERRY ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691171	3 MURDOCH ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691169	14 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			40	41		0	-	0	0	-	0	None		None	Noticable
NCA 21	691167	24 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		51	53		0	-	3	11	-	11	None		Noticable	Clearly Audible
NCA 21	691165	UNIT 3 28 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			45	49		0	-	0	5	-	5	None		None	Noticable
NCA 21	691159	6A GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691158	57 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691152	3 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			44	45		0	-	0	4	-	4	None		None	Noticable
NCA 21	691151	132 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	691150	9 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	44		0	-	0	3	-	3	None		None	Noticable
NCA 21	691148	39 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691135	8 RUMSAY ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691133	27-29 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691123	165 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	691122	18 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691120	19 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691108	30 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	691104	42 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691103	STRATA SCHEME 74 EVANS ST, ROZELLE NSW 2	1	RES	53		48	40			45	50		0	-	0	5	-	5	None		None	Noticable
NCA 21	691101	25-27 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		56	61		3	-	8	16	-	16	Noticable		Noticable	Clearly Audible
NCA 21	691092	35 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691090	39 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691087	147 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	691085	17 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	691084	17 CARRINGTON ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	691081	141 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	691080	1/98 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691076	8 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	691067	42 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	691065	2/105 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	691063	2 CROSS ST, ROZELLE NSW 2039	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691062	11 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691055	14 CLAY ST, BALMAIN NSW 2041	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691041	32 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			47	50		0	-	0	7	-	7	None		None	Noticable
NCA 21	691038	35 ROSSER ST, BALMAIN NSW 2041	1	RES	53		48	40			42	46		0	-	0	2	-	2	None		None	Noticable
NCA 21	691036	36 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	691035	35 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			42	45		0	-	0	2	-	2	None		None	Noticable
NCA 21	691022	38 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	691021	3 MOORE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691018	42 HARRIS ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	691014	164 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		48	51		0	-	0	8	-	8	None		None	Noticable
NCA 21	691004	45 NELSON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	691002	4 EWELL ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	690999	17 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	690997	14A BATTY ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	690992	47 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40			41	43		0	-	0	1	-	1	None		None	Noticable
NCA 21	690990	36 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	690988	5 PROSPER ST, ROZELLE NSW 2039	1	RES	53		48	40			49	50		0	-	1	9	-	9	None		None	Noticable
NCA 21	690984	53 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	52		0	-	1	9	-	9	None		None	Noticable
NCA 21	690983	93 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	690982	11 HANOVER ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary											
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	690976	25 MERTON ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	690973	1A NATIONAL ST, ROZELLE NSW 2039	1	RES	53		48	40			43	45		0	-	0	3	-	3	None		None	Noticable
NCA 21	690972	177 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		53	57		0	-	5	13	-	13	None		None	Clearly Audible
NCA 21	690968	37 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		Noticable	Clearly Audible
NCA 21	690966	152 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			44	47		0	-	0	4	-	4	None		None	Noticable
NCA 21	690962	37 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			48	50		0	-	0	8	-	8	None		None	Noticable
NCA 21	690955	21 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	690949	1/6 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	690947	8 HENRY ST, BALMAIN NSW 2041	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	690945	13 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	690943	22 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		47	51		0	-	0	7	-	7	None		None	Noticable
NCA 21	690939	102 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			45	47		0	-	0	5	-	5	None		None	Noticable
NCA 21	690936	3 NAPOLEON ST, ROZELLE NSW 2039	1	RES	53		48	40			43	46		0	-	0	3	-	3	None		None	Noticable
NCA 21	690933	12/53 SMITH ST, BALMAIN NSW 2041	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	690932	1 GEORGE ST, BALMAIN NSW 2041	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	690928	139 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			46	48		0	-	0	6	-	6	None		None	Noticable
NCA 21	690923	19 ROSSER ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		49	51		0	-	1	9	-	9	None		None	Noticable
NCA 21	690920	10 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	51		0	-	2	10	-	10	None		Noticable	Noticable
NCA 21	690911	21 PARSONS ST, ROZELLE NSW 2039	1	RES	53		48	40			48	49		0	-	0	8	-	8	None		None	Noticable
NCA 21	690909	11 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	45		0	-	0	1	-	1	None		None	Noticable
NCA 21	690906	78-80 MANSFIELD ST, ROZELLE NSW 2039	1	RES	53		48	40			45	48		0	-	0	5	-	5	None		None	Noticable
NCA 21	690904	139 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	690900	131 MULLENS ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable
NCA 21	690896	51 EVANS ST, BALMAIN NSW 2041	1	RES	53		48	40			40	44		0	-	0	0	-	0	None		None	Noticable
NCA 21	690894	8 PERRETT ST, ROZELLE NSW 2039	1	RES	53		48	40			42	44		0	-	0	2	-	2	None		None	Noticable
NCA 21	690892	176 BEATTIE ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	690889	7 SLADE ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable
NCA 21	690887	1 JOSEPH ST, ROZELLE NSW 2039	1	RES	53		48	40			44	45		0	-	0	4	-	4	None		None	Noticable
NCA 21	690882	8 COLLINS ST, ROZELLE NSW 2039	1	RES	53		48	40			46	50		0	-	0	6	-	6	None		None	Noticable
NCA 21	690881	21 BRUCE ST, ROZELLE NSW 2039	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	690870	41 MACKENZIE ST, ROZELLE NSW 2039	1	RES	53		48	40			46	49		0	-	0	6	-	6	None		None	Noticable
NCA 21	690868	149 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			47	49		0	-	0	7	-	7	None		None	Noticable
NCA 21	690867	28 SMITH ST, ROZELLE NSW 2039	1	RES	53		48	40	Y		50	52		0	-	2	10	-	10	None		None	Clearly Audible
NCA 21	690865	1 CLARE ST, ROZELLE NSW 2039	1	RES	53		48	40			41	44		0	-	0	1	-	1	None		None	Noticable

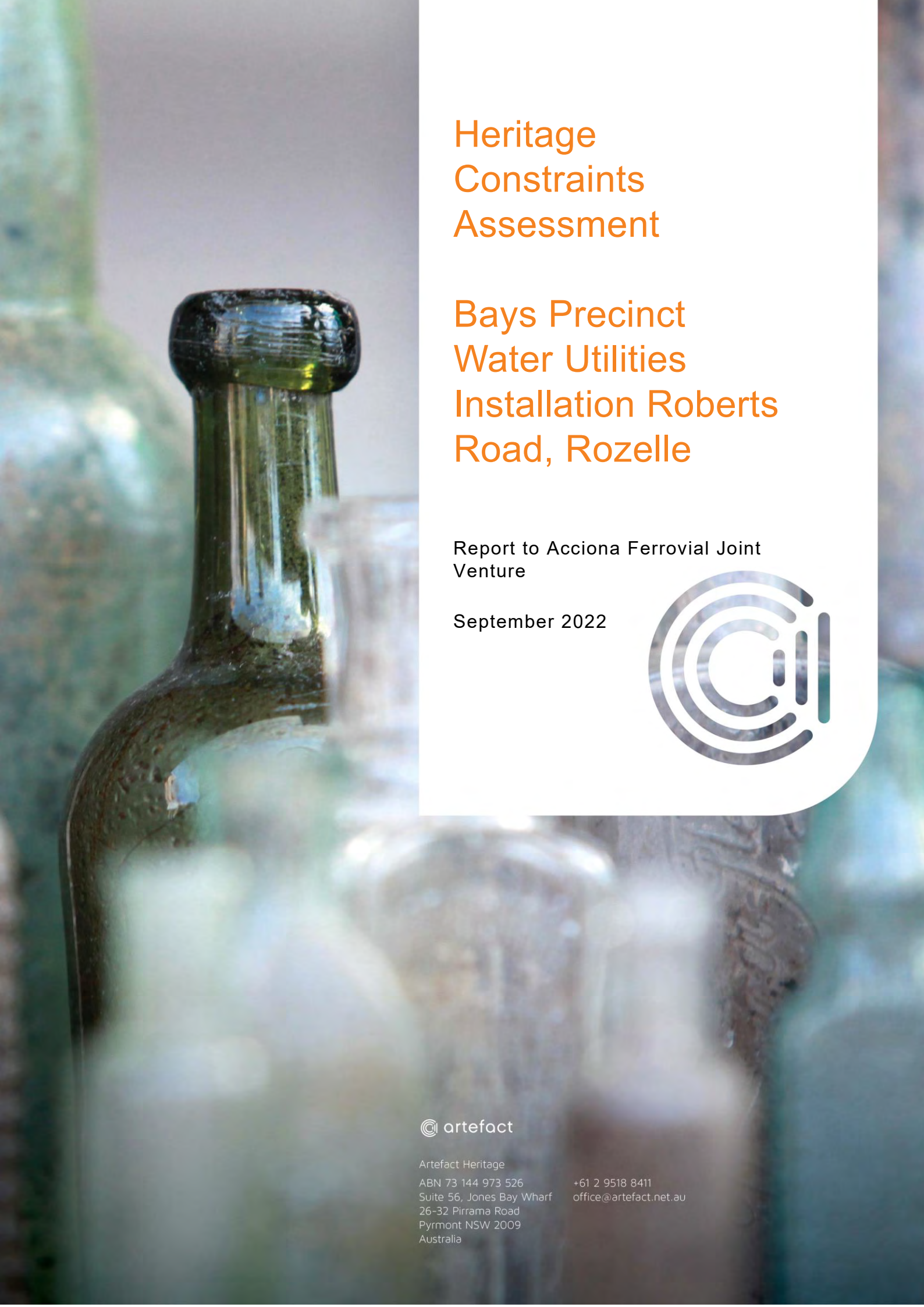
Detailed noise and vibration impact statement

Assessment: TBM Water Supply					NML, LAeq, 15 minute				Sleep, LAmax		Predicted noise level, dBA		Exceedance summary										
														Exceed NML by (dB):				Exceed sleep disturbance by (dB):		Impact classification			
NCA	Rec	Address	Flr	Land use	Day	O/day	Eve	Night	Screen	Awake	Cumulative LAeq, 15 minute	LMax	Highly Affected?	Day	O/day	Eve	Night	Screen	Awake	Day	O/day	Eve	Night
NCA 21	690857	96 MULLENS ST, BALMAIN NSW 2041	1	RES	53		48	40			44	48		0	-	0	4	-	4	None		None	Noticable
NCA 21	690847	70 EVANS ST, ROZELLE NSW 2039	1	RES	53		48	40			43	47		0	-	0	3	-	3	None		None	Noticable

C.2 Vibration

NCA	Receiver	Address	Land use	Vibration Impact
NCA 21	692381	20-28 ROBERT ST, ROZELLE NSW 2039	IND	Human Comfort
NCA 21	691620	22 ROBERT ST, ROZELLE NSW 2039	IND	Human Comfort

Appendix C Heritage Assessment – TBM Water Supply



Heritage Constraints Assessment

Bays Precinct Water Utilities Installation Roberts Road, Rozelle

Report to Acciona Ferrovial Joint Venture

September 2022

artefact

Artefact Heritage
ABN 73 144 973 526
Suite 56, Jones Bay Wharf
26-32 Pirrama Road
Pyrmont NSW 2009
Australia

+61 2 9518 8411
office@artefact.net.au

EXECUTIVE SUMMARY

Sydney Metro is Australia's biggest public transport program. Sydney Metro West (the project) is a new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD). This infrastructure investment will double the rail capacity of the Greater Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes.

The Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process, application number SSI-10038), was approved by the Minister for Planning and Public Places on 11 March 2021.

The proposed works which are the subject of this report are located along Robert Street, Rozelle, and within the Bays Precinct. The Bays construction site is located at the western end of White Bay in the suburb of Rozelle, NSW. The construction site located in the Inner West Local Government Area (LGA). The site is bounded by Roberts Street in the north, the White Bay Power Station in the west, sandstone cuttings to the north of Victoria Road in the south and by White Bay to the east.

The works consist of trenching (both under-boring and open trenching) to install a new water main starting in Roberts Street and into the Bays Precinct. Non-destructive digging (NDD) potholing will be undertaken to inform about the location of services at locations along the route of the watermain.

Overview of findings

- There are three heritage items located in the vicinity of the works, Beattie Street Stormwater Channel (local significance), White Bay Power Station Inlet Canal (also known as the Cooling Tunnel but referred to in this report as the Inlet Canal) (State significance) and White Bay Power Station itself, (State significance and listed on the NSW State Heritage Register).
- Beattie Street Stormwater Channel is still a working heritage asset, and both the Beattie Street Stormwater Channel and the Inlet Canal and are listed on the s.170 Heritage and Conservation Registers for Sydney Water and the NSW Port Authority, respectively.
- It is noted that the wider SSI project approval allows for minor to moderate impact to both Beattie Street Stormwater Channel and the Inlet Canal across the SSI project site, however the works which are the subject of this report are outside the approved SSI project area.
- The works involve the trenching for the water main installation from Robert Street into the Bays Precinct site. The first thirds of the water main will be open trenching, the second third will be under-bored underneath Beattie Stormwater Channel, before becoming open trenching within the Bays Precinct. Potholing will also be undertaken as part of the works along the Inlet Canal and within the WBPS site.
  - The water main trench will under-bore the Beattie Street Stormwater Channel where the water main crosses into the footprint of the stormwater canal underneath Roberts Street. The depth of the under-bore will be approximately 5m from the base of the Stormwater Canal. This depth is considered appropriate and will ensure that there are no impacts from the works to this locally significant item.

- The proposed water main footprint will enter the curtilage of the White Bay Power Station Site but will not impact any significant fabric or heritage values related to that site's inclusion on the State Heritage Register.
- The works for the water main will then become open trenching after it moves into the Bays Precinct where will be run above the Inlet Canal. Unfortunately, the depth and exact footprint of the Inlet Canal is not confirmed in this location and impacts to it from the proposed work cannot be quantified without further information.
- As such it is recommended that NDD potholing be focused on this location to confirm as many details of the Inlet Canals location and footprint as is possible.

Recommendations

a. In line with the Artefact Heritage Archaeological Research Design and Excavation Methodology (ARDEM) for the project, all NDD works should be monitored by an archaeologist where they cross into the footprints of the Beattie Street Stormwater Channel and the Inlet Canal.

b. An Archaeological Method Statement should be prepared for any portion of the works that falls within the scope of the existing SSI project boundaries and the existing ARDEM.

c. At each NDD location within the footprint of the heritage items, an accurate survey of the canal system must be conducted along with complete archaeological recording of the exposed structural features of the item in accordance with the revised archaeological research design for the Bays.

d. In relation to the location of the Inlet Canal:

   i. If the NDD works in the area of the canal confirm that the open trench for the proposed water main will be excavated at a depth which is 2m removed from the fabric of the Inlet Canal, works can proceed as planned.

   ii. If the NDD works confirm that the proposed water main trenching is within 2m of the canal, or will impact the fabric of Inlet Canal directly, it should be established what percentage of the canal will be impacted\ and options to avoid impact must be considered.

   iii. The wider SSI approval allows minor to moderate impact to the Inlet Canal. If the works will impact the Canal, the Excavation Director for the wider project will need to determine in consultation with the project team what impact (if any) to the state significant Inlet Canal would be considered minor, whether the proposed works meet that threshold, and therefore if the impact to this heritage item is acceptable.

      - Any identified impacts should be kept to a minimum by controlled removal of only what is necessary to allow construction to proceed. In general, an avoidance strategy would be the most appropriate mitigation measure.

   iv. If the works are considered minor and the impact acceptable, the works can go ahead with archaeological monitoring and archival recording.

   v. If the heritage impacts to the Inlet Canal are considered moderate or above, the proposed trenching route must be shifted so that it does not impact the Inlet Canal.

Document history and status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
1	27/07/22	Katrina Stankowski	Katrina Stankowski	27/07/22	Draft for comment
2	09/08/22	Anita Yousif	Katrina Stankowski	10/08/2022	Final for comment
3	01/09/2022	Katrina Stankowski	Katrina Stankowski	01/09/2022	Final

Project name:	Bays Precinct
Author:	Katrina Stankowski
Project manager:	Sandra Wallace
Project number:	21199
Name of organisation:	Artefact Heritage Services (Artefact)
Document version:	Version 3

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

1.1 Project Background

Sydney is expanding and the NSW Government is working hard to deliver an integrated transport system that meets the needs of customers now and in the future.

Sydney Metro is Australia's biggest public transport program. Sydney Metro West (the project) is a new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD). This infrastructure investment will double the rail capacity of the Greater Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes.

The delivery of Sydney Metro West is critical to keeping Sydney moving and is identified in a number of key strategic planning documents including the Greater Sydney Region Plan: A Metropolis of Three Cities – connecting people (Greater Sydney Commission, 2018a), Building Momentum: State Infrastructure Strategy 2018-2038 (Infrastructure NSW, 2018) and Future Transport Strategy 2056 (Transport for NSW, 2018).

Sydney Metro West was assessed as a staged infrastructure application under section 5.20 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

The Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process, application number SSI-10038), was approved by the Minister for Planning and Public Places on 11 March 2021.

The main elements of Sydney Metro West are shown in Figure 1.

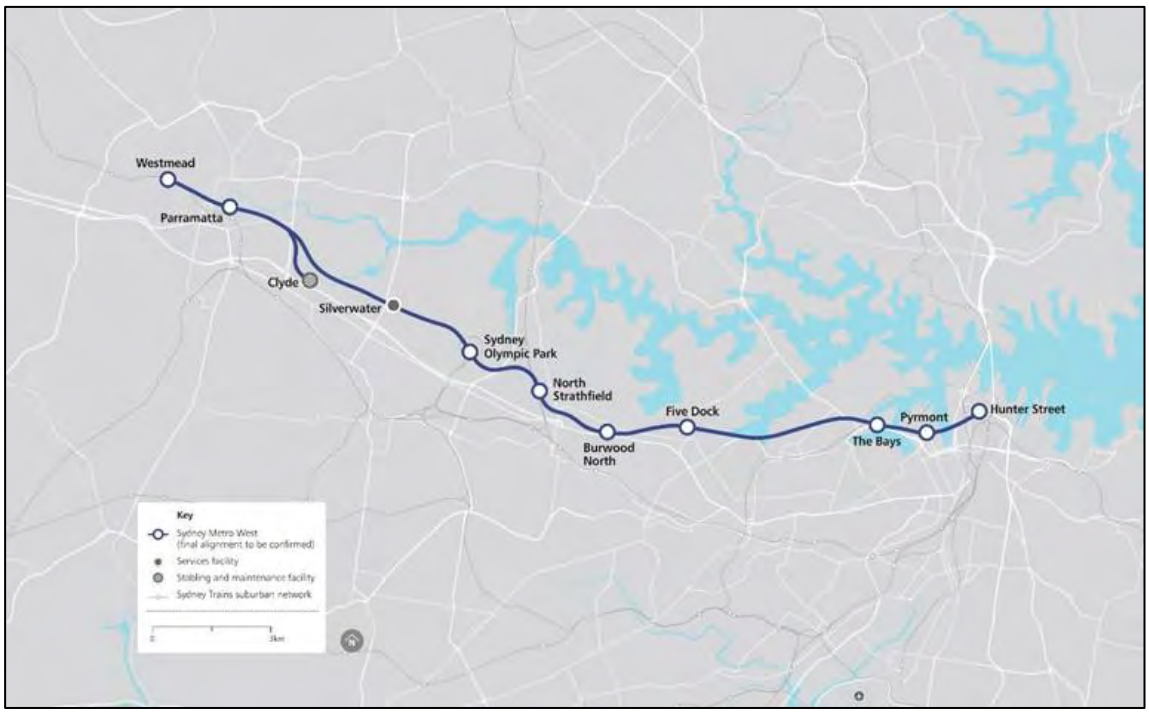


Figure 1: Sydney Metro West

As part of these project works, trenching for utility installation along Robert Street and into the White Bay Power Station (WBPS), along with potholing along the Inlet Canal and within the WBPS site is required.

1.1.1 Study Area

The Bays construction site is located at the western end of White Bay in the suburb of Rozelle, NSW, which is within the Inner West Local Government Area (LGA). The site is bounded by Roberts Street in the north, the White Bay Power Station in the west, sandstone cuttings to the north of Victoria Road in the south and by White Bay to the east. The location of the construction site is shown in Figure 2.

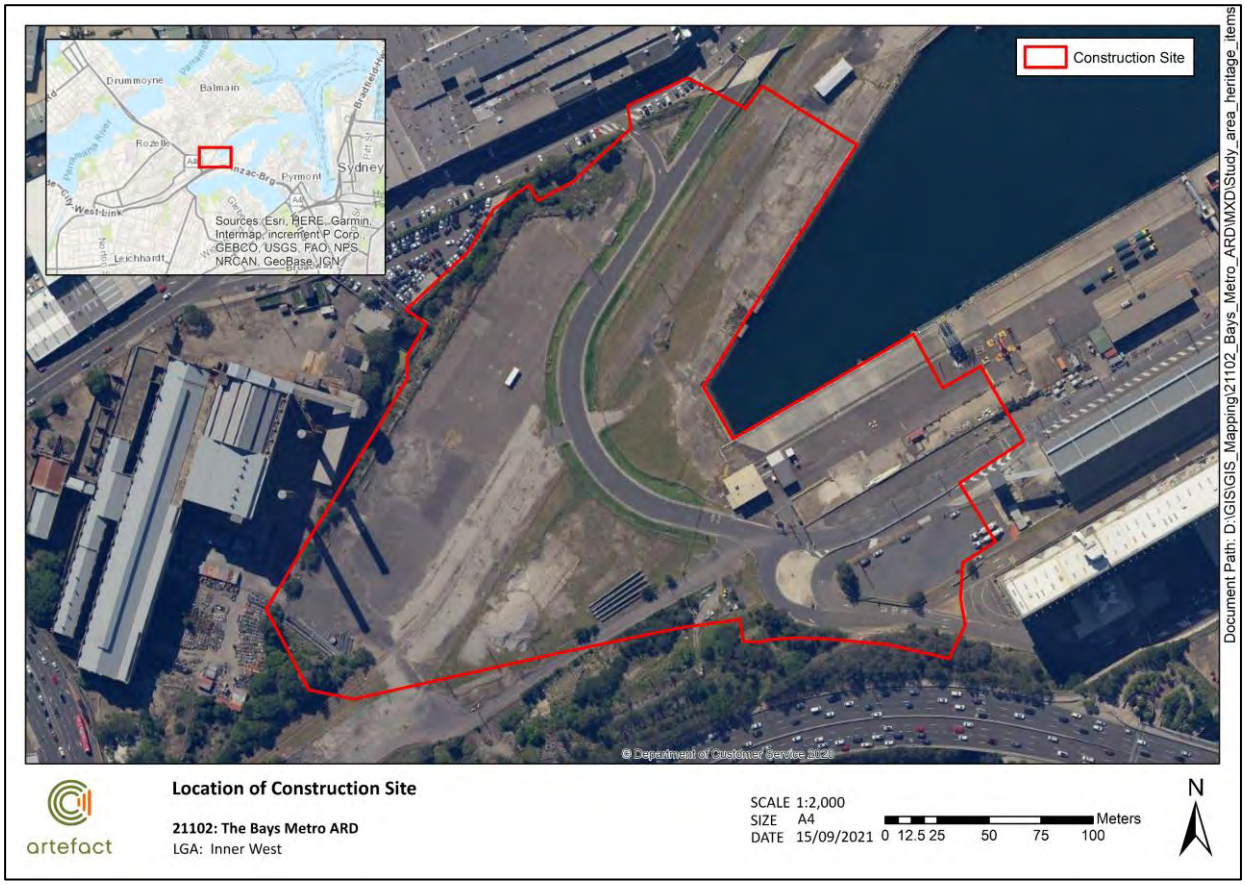


Figure 2: Location of The Bays construction site

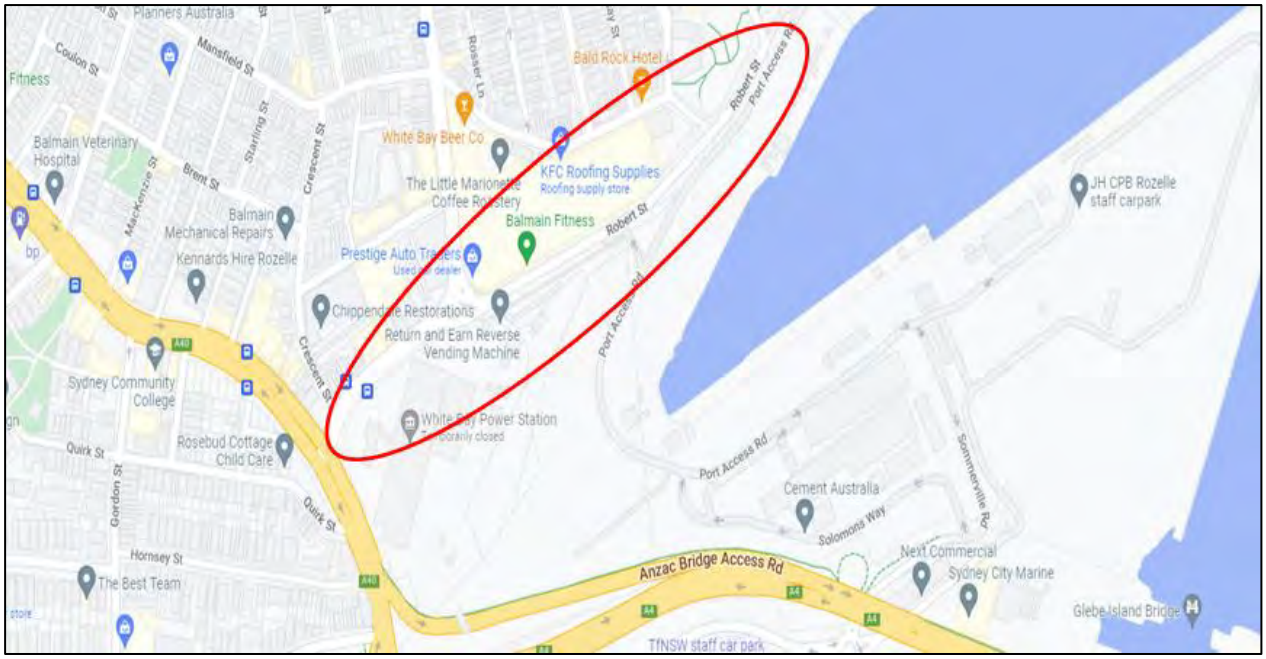


Figure 3: Location of Robert Street, Rozelle: Source Google Maps.

1.1.2 Authorship

This report has been authored by Katrina Stankowski, Principal, Artefact Heritage.

1.1.3 Limitations

This assessment is limited to a desk top study. No site visits were undertaken to inform or confirm the information provided in this document.

2.0 LEGISLATIVE CONTEXT

2.1 Overview

This section discusses the heritage management framework, notably legislative and policy context, applicable to the proposed development and study area.

The planning process for Sydney Metro West is being managed as a staged infrastructure application under section 5.20 of the EP&A Act.

The Sydney Metro West Concept and major civil construction for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process for Sydney Metro West), application number SSI-10038, was approved on 11 March 2021.

While the State Significant Infrastructure (SSI) provisions of the EP&A Act 'turns off' the requirement to obtain approvals for works to sites covered by NSW heritage legislation and other planning instruments, the site's general status under this other legislation is discussed below.

2.2 Summary of Legislation

There are several items of legislation that are relevant to the current study area. These are detailed below.

2.2.1 New South Wales Heritage Act 1977

The *Heritage Act 1977* (NSW) (the Heritage Act) is the primary State legislation affording protection to items of environmental heritage (natural and cultural) in NSW. Under the Heritage Act, items of environmental heritage include places, buildings, works, relics, landscapes, items of natural heritage, Aboriginal heritage, moveable objects, and precincts identified as state significant based on their historical, scientific, cultural, social, archaeological, architectural, natural, or aesthetic values.

The Heritage Act also provides protection historical archaeological 'relics' which are not located within State Heritage Listed sites across NSW, which includes archaeological material or deposits. To meet the definition of a 'relic' and be protected under the Relics provisions of the Heritage Act (Sections 139-146), the potential archaeology must be assessed as meeting the threshold of local or state significance.

2.2.1.1 State Heritage Register

The State Heritage Register (SHR) was established under Section 22 of the Heritage Act and is a statutory list of places and objects of particular significance to the people of NSW, including archaeological sites.

The SHR is administered by Heritage NSW, and includes a diverse range of over 2000 items, in both private and public ownership. To be listed, an item must be deemed to be of state heritage significance (of significance to the whole of NSW). Items assessed as being of state significance are listed on the SHR and cannot be demolished, altered, moved, or damaged, or their significance altered without approval from the Heritage Council of NSW.

The study site of Roberts Street is adjacent to the White Bay Power Station, gazetted on the State Heritage Register as No. 01015.

Figure 4: State Heritage Register curtilage for listing of White Bay Power Station, showing Robert Street running to the northwest above the power station, outside the SHR curtilage.

2.2.1.2 Heritage & Conservation (Section 170) Register

All government agencies are required to identify, conserve, and manage heritage items in their ownership or control. Section 170 of the Heritage Act (s170) requires all NSW government agencies to maintain a Heritage and Conservation Register that lists all their local or state significant heritage assets (including an assessment of the significance for each asset). They must also ensure that all

items inscribed on its list are maintained with due diligence in accordance with State Owned Heritage Management Principles approved by the Government on advice of the NSW Heritage Council. These principles serve to protect and conserve the heritage significance of items and are based on NSW heritage legislation and guidelines.

The White Bay Power Station (inlet) Canal runs along Robert Street and is listed on the Ports Authority s.170 register (item No. 4560062) as state significant.

The proposed works are in close proximity to the locally significant Beattie Street Stormwater Channel, a working Sydney Water asset identified on their s.170 Register (item 4570329).

2.2.1.3 Environmental Planning & Assessment Act 1979 (NSW)

The EP&A Act establishes the framework for cultural heritage values to be formally assessed in the land use planning, development consent and environmental impact assessment processes. The EP&A Act requires that environmental impacts are considered prior to land development; this includes impacts on cultural heritage items and places as well as archaeological sites and deposits.

The EP&A Act also requires that local governments prepare planning instruments (such as Local Environmental Plans [LEPs] and Development Control Plans [DCPs]) in accordance with the EP&A Act to provide guidance on the level of environmental assessment required. The study area falls within the boundaries of the Inner West local government area (LGA) and is located on the boundary of the Valley Heritage Conservation Area identified in the Inner West LEP as significant.

2.3 Identification of Heritage Items

There are several heritage-listed items located within the construction site at the Bays. Heritage listed items at the construction site have also been assessed for their archaeological values in this report. These items are shown in Table 1 and their locations illustrated in Figure 5.

Table 1: Heritage listed items located within The Bays construction site

Item	Significance	Listings	Assessment
White Bay Power Station	State	• State Heritage Register (SHR) no. 01015 • Urban Growth NSW Development Corporation s170 heritage inventory register, SHI no. 4500460 • Sydney Regional Environmental Plan (SREP) No. 26 City West Part 3 No. 11	Physical fabric located outside of construction footprint (excluding water circulating system discussed for outlet/inlet canals below).
White Bay Power Station (inlet) Canal	State	Port Authority of NSW s170 heritage inventory SHI no. 4560062	Heritage values of the canal are discussed in this report.
Beattie Street Stormwater Channel No. 15	Local	Sydney Water s170 heritage inventory SHI no. 4570329	Heritage values of the canal are discussed in this report.

Figure 5: Heritage listed items within The Bays construction site

2.4 Beattie Street Stormwater Channel

Item History	
Year of construction:	Originally constructed in 1893, portions of the canal within the construction site were extended during the construction of White Bay Power Station in the early 1910s.
Modifications (with years):	The stormwater canal was modified to its termination point by the 1930s with the modification to the outlets occurring up until the 1950s
Function:	Stormwater drainage canal
Construction materials:	Concrete canal
Demolished/removed (year):	Intact and covered over.

Summary of Archaeological Potential and Significance

High – Local significance

Description of Item

The canal consists of a concrete outlet of approximate 5 m in width located directly to the south of Roberts Street. The canal along Roberts Street has been enclosed and is currently located below concrete hardstand.

Assessment of Significance

The item is listed as locally significant on the Sydney Water s170 heritage conservation register. The canal was constructed to assist with the land reclamation efforts that occurred around White Bay during the 1890s and played a role in the physical development of the area despite only reportedly being constructed towards the completion of the reclamation processes.

Archaeological Site Plan

Figure 6: Archaeological site plan for Beattie Street Stormwater Channel

Figure 7: Image of Beattie Street Stormwater Channel with White Bay Power Station in background.

2.5 Circulating Water Conduit (Inlet and Outlet Canals)

Item History	
Year of construction:	1912 on the Rozelle Bay portion and 1913 for White Bay.
Alternative names:	Cooling channels, circulation conduits
Modifications (with years):	By 1951 a new deviation was provided for the White Bay portion of the conduits, running in a more southerly direction, perpendicular with Wharf No. 1. The redundant outlet for the conduit was filled in by 1965.
Function:	Water provision to operate the White Bay Power Station steam turbines.
Construction materials:	Brick-lined ditch with concrete and steel water channels. Steel penstocks.
Demolished/removed (year):	Intact.

Summary of Archaeological Potential and Significance

High – State Significant

Description of Item

Despite modification over time (including re-routing the water canal in the 1950s) the significant fabric of the conduit canals is a known item and portions of it are independently heritage listed.

Assessment of Significance

The item is listed as locally significant on the Port Authority of NSW s170 heritage register.

Both listed and unlisted portions of the canals are considered an element of moderate to high value to the State heritage significance of the White Bay Power Station even though they are located outside of the SHR curtilage of the item. During their operation, they enabled the operation of the Power Station's steam turbines and facilitated in providing electricity to power Sydney's lighting, transport and other services, making them an increasingly valuable asset as the 20th century progressed.

Archaeological Site Plan

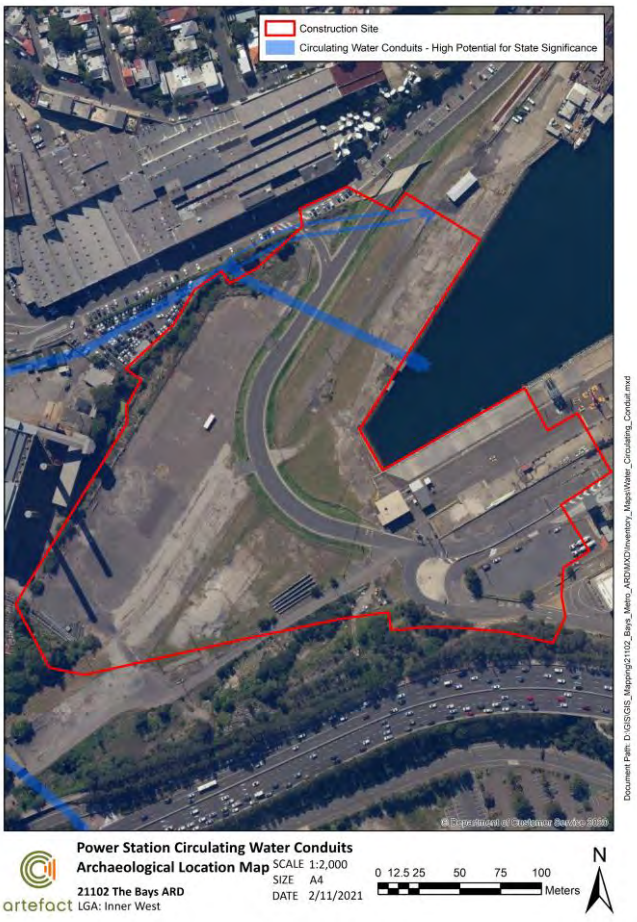


Figure 8: Archaeological site plan for White Bay Power Station showing Inlet and Outlet Canals (Circulating Water Conduits).

Key Images and Historical Overlays

Figure 9: Construction of Cooling Tunnel at White Bay Power Station

3.0 HISTORICAL BACKGROUND

3.1 Historical Context

A summary of the historical use of the study area discussed in this section of the report is provided in Table 2 below.

Table 2: Overview of historical land use phases around Robert Street.

Phase	Date	Use of site
Phase 1	1800 – 1910	William Balmain Estate, land clearing, subdivision, construction of the Glebe Island causeway and Abattoir, successive reclamation fill events within White Bay, construction, and use of First White Bay Hotel on edge of site
Phase 2	1910 – 1950	Construction of White Bay Power Station, establishment of grain island terminal and permanent wharf facilities, development of locomotive facilities and railhead, reduction of Glebe Island topography, use of White Bay of wartime storage and wharfage
Phase 3	1950 – 1970	Development of coal shipping and handling, expansion of White Bay Power Station, use of site for handling and loading of bulk goods
Phase 4	1970 – Present	Decommissioning of power station and decrease in the sue of the site for bulk goods wharfage.

3.1.1 Robert Street

The WBPS construction site on the southwestern end of White Bay is located partly within the area of a grant of 550 acres made to William Balmain in 1800, largely encompassing the eastern portion of the Balmain peninsula as well as much of the suburb that is today known as Rozelle.[1] The study area also includes land known as Glebe Island.

The early land grants were subdivided throughout the late 1820s, with wealthy and prominent members of Sydney society buying up property along the Johnston's Bay foreshore. These subdivisions, and the utilisation of the waterfront, led to the establishment of various industries within the bay during the 1830s with abattoirs constructed at Glebe Island during the 1850s.

During the 1860s, Glebe Island, the future site of White Bay Power station was subdivided for housing with dwellings remaining in place until the power station development during the early twentieth century. The connection between Glebe Island and Balmain was also formalised by a causeway. The close of the nineteenth century saw extensive land reclamation programs at Glebe Island which significantly altered the natural landscape and included the formalisation of a number of new streets around the future Power Station site, including Robert Street.

The White Bay shoreline originally extended much further southwest, nearly joining with Rozelle Bay to make Glebe Island almost an island.[2] However, reclamation of the headwaters from the late

[1] Wendy Thorp, "Thematic History White Bay, Glebe Island, Central Railway to Eveleigh Heritage Study. Draft Report Prepared for the Department of Planning," May 1990, 9.
[2] Glebe Island seems to be linked to Balmain via mudflats and rocks which was built up as a causeway in the 1840s

nineteenth century altered the landscape considerably. The approaches to the Anzac Bridge are laid on the built-up causeway to Glebe Island which now separates White Bay and Rozelle Bay, while much of the wharfage around the bay is located on reclaimed land.[3] The geographical relationship between White Bay, its long water frontage, and its close proximity to Sydney CBD was paramount in its development. Road transport to Sydney was often uncertain, expensive and time consuming, while watercraft offered quick, reliable and relatively cheap transportation to carry both passengers and merchandise to and from the area.[4]

Figure 10: Detail of Parish of Petersham map, date unknown, showing the approximate location subject site outlined in red, within the area of William Balmain's 1800 grant of 550 acres. Source: NSW LRS, HLRV[5]

[3] Graham Spindler, 2011. 'historical Notes and Background'. Accessed 4 April 2019, http://www.walkingcoastalsydney.com.au/brochures/documents/HC2011Day4HistoricalNotesApril2011.pdf
[4] Wendy Thorp, 1990. *Thematic History: White Bay, Glebe Island Heritage Study.* Department of Planning, Sydney, p. 9.
[5] Land Registry Services, date unknown. 'Parish of Petersham Map'. Accessed online: http://hlrv.nswlrs.com.au/pixel.htm#

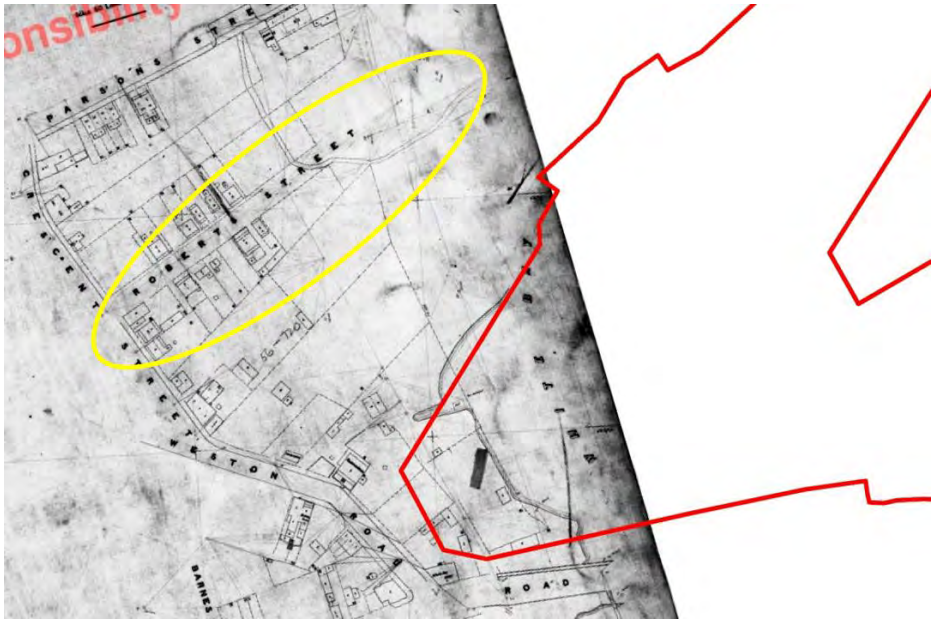


Figure 11: 1888 Sydney Water Plan Overlay showing location, The Bays project boundary (red outline) and location of initial part of Robert Street with housing on either side (circled yellow).

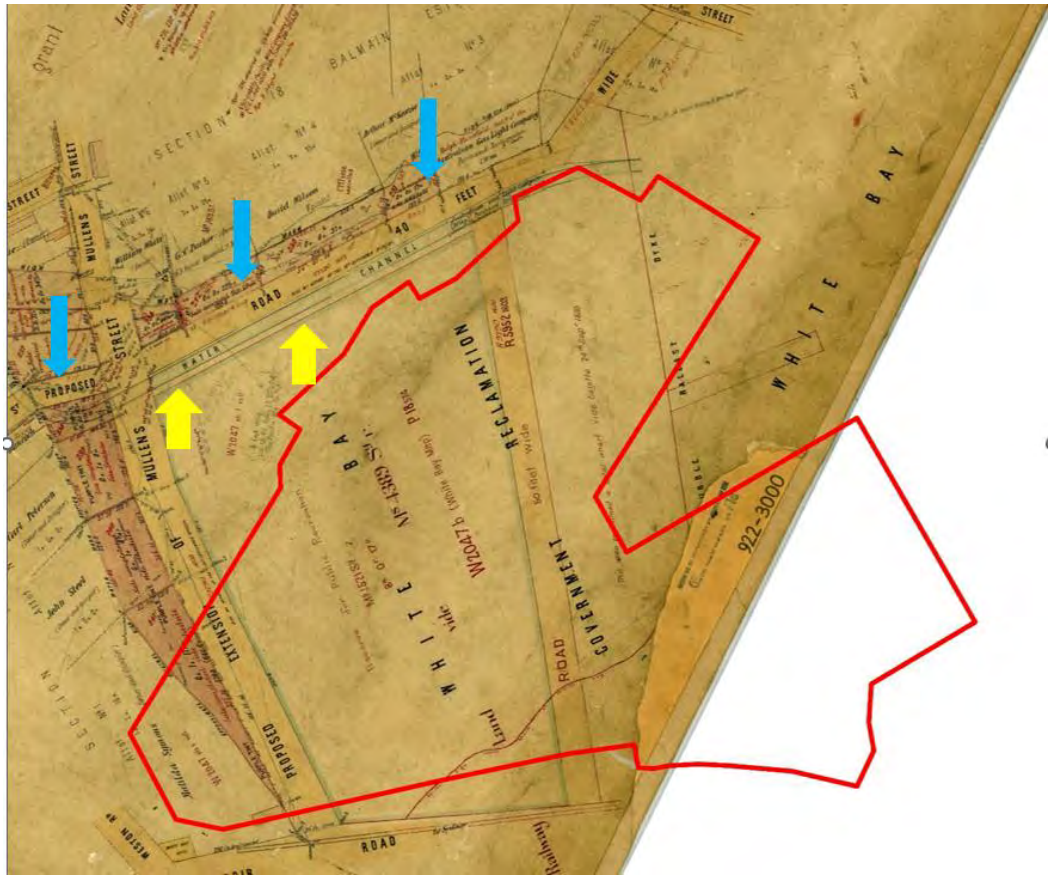


Figure 12: 1890 Land Reclamation Area Overlay showing future location, The Bays project boundary (red outline) and the proposed extension to the existing Robert Street indicated by blue arrows, along with the Beattie Street Stormwater Channel No. 15 below it, marked 'water channel' indicated by yellow arrows.

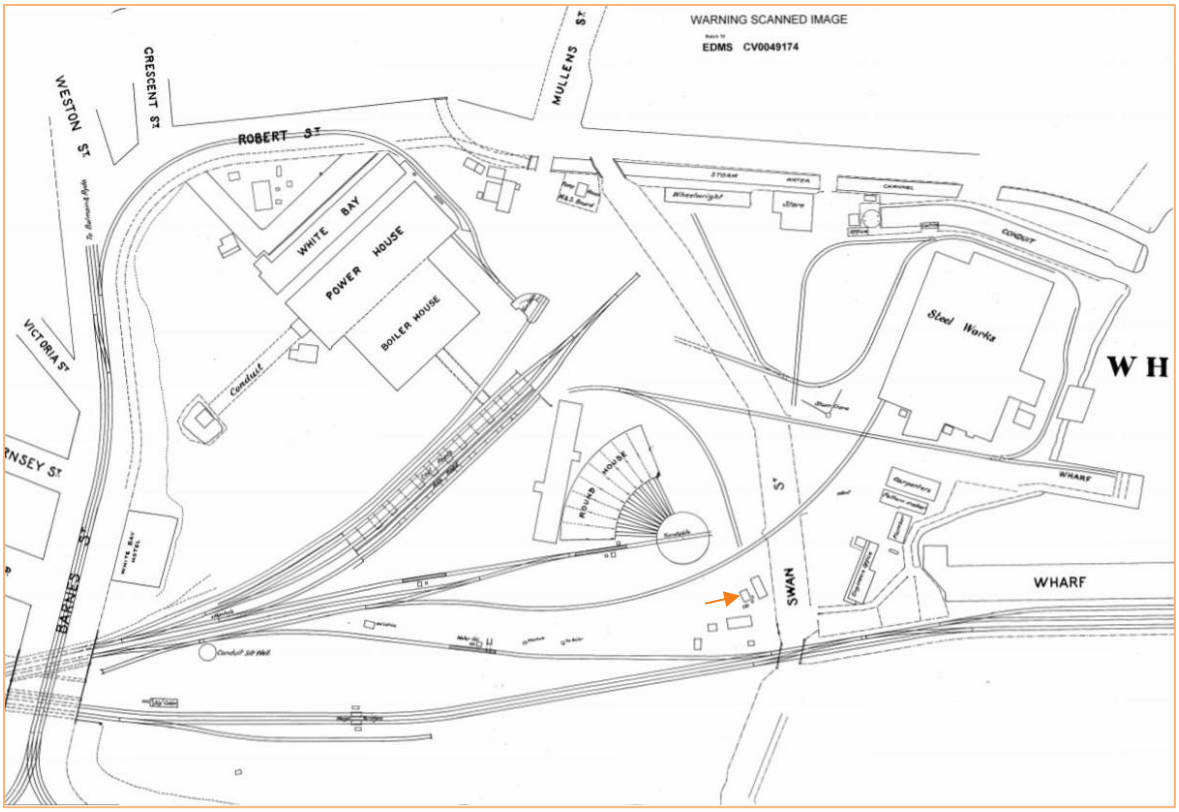


Figure 13: Detail from 'N.S.W.R. - White Bay – Site Plan of Round House', dated June 1919. Showing Robert Road along the boundary of White Bay Power Station. Source: Transport for NSW Plan Room, 0049174

4.0 ARCHAEOLOGICAL POTENTIAL & SIGNIFICANCE ASSESSMENT

4.1 Assessment of Historical Archaeological Potential

The assessment of historical archaeological potential discusses the study area's potential to contain historical archaeological resources. This assessment is based on consideration of historical land use, current ground conditions, analysis of the historical development of the study area, and considering whether subsequent actions (either natural or human) may have impacted on archaeological evidence for these former land uses.

'Archaeological potential' refers to the likelihood that an area contains physical remains associated with an earlier phase of occupation, activity or development of that area. This is distinct from 'archaeological significance' and 'archaeological research potential'. 'Archaeological significance' refers to the cultural value of the known items within an area, whilst 'archaeological research potential' refers to the cultural value of the potential archaeological remains in an area.

Knowledge of previous archaeological investigations, and an understanding of the potential archaeological remains have been assessed with due consideration of the historical land use and previous ground disturbance that may have impacted any subsurface archaeological remains. This is presented using the grades of archaeological potential provided in Table 3.

Table 3. Grades of archaeological potential

Grading	Justification
Nil	No evidence of historical development or use, or where previous impacts such as deep basement structures would have removed all archaeological potential.
Low	Little or low intensity historical development, or where there have been substantial previous impacts, disturbance and truncation in locations where some archaeological remains such as deep subsurface features (privies, cesspits or wells) may survive.
Moderate	Known historical development and some previous impacts, but it is likely that archaeological remains survive with some localised truncation and disturbance.
High	Evidence of multiple phases of historical development and structures with minimal or localised later development impacts, and it is likely the archaeological resource would be largely intact.

The archaeological potential of the site was assessed in the Artefact Archaeological Research and Excavation Methodology for the Metro West Bays Precinct [6], as outlined in the table below.

[6] Artefact Heritage 2021. Metro West – The Bays Revised Archaeological Research Design and Excavation Methodology.

Table 4: Archaeological potential and significance of the Bays Precinct.

Historical Phase	Archaeological Item	Archaeological Potential	Archaeological Significance
Phase 1 (1800 – 1910)	Reclamation Fills	• Bulk fill materials – High Potential • Undocumented industrial and maritime rubbish or equipment – Low Potential	• Bulk fill materials – Local Significance • Undocumented industrial and maritime rubbish or equipment – Local to State Significance depending on the nature of the individual items
	First White Bay Hotel and associated structures	Low	Local
	Timber Yard	Low	Not Significant
	Rubble Ballast Dyke	Moderate	Local
Phase 2 (1910 – 1950)	Roundhouse, turntable and locomotive siding	Moderate	Local
	Railway Infrastructure	High	Not Significant
	White Bay Steel Works	Low	Local
	Coal Loading and Ash Handling Facilities of the White Bay Power Station	Low	Local / State if in good state of intactness
	No. 9 Shed	Low	Local
	US Army Warehouses and RAAF Mess Hall	Low	Local
	Circulating Water Conduit	High	State
	Beattie Street Stormwater Channel	High	Local
Phase 3 (1950 – 1970)	Balmain Coal Loader	Moderate	Not Significant

Based on the location of the works and the current archaeological programme already underway at the Bays Precinct, the only items identified on the above table which are in the vicinity of the proposed works are the Beattie Street Stormwater Channel and the Circulating Water Conduit (Inlet Canal).

4.2 Statement of Significance

4.2.1 State Heritage Register (White Bay Power Station)

White Bay Power Station was the longest serving Sydney power station and is the only one to retain a representative set of machinery and items associated with the generation of electricity in the early and mid-twentieth century. It retains within its fabric, and in the body of associated pictorial, written archives and reports and oral history recordings, evidence for the development of technology and work practices for the generation of electrical power from coal and water. This development of power generation at White Bay contributed to the expansion of the economy of Sydney and New South Wales.

As a result of its remarkably intact survival, it retains the unique ability to demonstrate, by its location, massing, design, machinery and associated archives, the influence and dominance that early power-generating technology exerted on the lives and urban fabric of inner cities in the first half of the 20th century. The extant items within the surviving operational systems are of an impressive scale and exhibit a high degree of creative and technical achievement in their design and configuration. They encompass all aspects of the generation of electrical power and represent all phases from the inter-war period through to the more sophisticated technologies of the mid-20th century. They are of exceptional technical significance with research potential to yield information not available from any other source.

Aesthetically, White Bay Power Station contains internal and external spaces of exceptional significance. These spaces include raw industrial spaces of a scale, quality and configuration which is becoming increasingly rare, and which inspire visitors and users alike. Externally, it is a widely recognised and highly visible landmark, marking the head of White Bay and the southern entry to the Balmain Peninsula and its industrial waterfront. It retains a powerful physical presence and industrial aesthetic and is the most important surviving industrial building in the area.

White Bay Power Station has strong and special associations and meanings for the local community, for former power station workers and for others who have used the site and is of high social significance. It is a potent symbol of the area's industrial origins and working traditions, aspects of community identity that are strongly valued today by both older and new residents. It is one of the few surviving features in the area that provide this symbolic connection.

It is the only coal based industrial structure, dependent on a waterside location to survive adjacent to the harbour in the Sydney Region. It also forms part of a closely related group of large-scale industrial structures and spaces (White Bay Container Terminal, Glebe Island Silos, Container Terminal and Anzac Bridge) which along with the White Bay Hotel, define a major entry point to the city from the west.

It is of exceptional significance to the State of New South Wales.

4.2.2 Beattie Street Stormwater Channel - Sydney Water s.170 Listing

Beattie Street SWC is one of a group of the first nine purpose-built stormwater drains to be constructed in Sydney in the 1890's. Prior to this period the watercourses which served to carry stormwater were entirely in their natural state and were receptacles of sewage from the large population which had settled in the suburbs. In 1890 the then Secretary (Minister) for Public Works, the Hon. Bruce Smith, MLA., appalled at the extremely unhealthy conditions prevailing at the time, proposed a separate system of stormwater drains be built to help alleviate the problem. By 1897 nine had been built, including Beattie Street, which was completed in 1893. Beattie Street SWC is of heritage significance because it is a good example of one of the earliest stormwater channels and

additionally it helped improve public health in the 1900's. The operational curtilage of Beattie Street SWC includes the channel bed, walls and coping. The visual curtilage of the channel will vary along the channel length depending on surrounding landuses. The visual curtilage is limited by the fact that the stormwater channel is located predominantly below ground. A small section of the channel is open between Roberts Road and Parson Street. The open section of the channel can only be observed from the roadway and is flanked by industrial properties.

4.2.3 White Bay Power Station Inlet & Outlet Canal (Cooling Tunnel) – State Heritage Inventory

The significance of the canal is derived from the significance of the White Bay Power Station complex. The canal is an integral part of the White Bay Power Station and its cooling system. The canal now also forms part of the ecosystem of the White Bay and Black Wattle Bay.

4.3 Significance of Heritage Items along water main route

Item	Significance	Curtilage
White Bay Power Station (inlet) Canal	State	No curtilage listed
Beattie Street Stormwater Channel No. 15	Local	The curtilage includes the stormwater channel bed, walls and coping as shown on the curtilage plan. The visual curtilage is limited as the channel is predominantly underground but includes a small section of the channel which is open between Roberts Road and Parson Street.

5.0 IMPACT ASSESSMENT

5.1 Proposed Works

The proposed works relate to the installation of water utilities services along Roberts Street Rozelle and into the White Bay Precinct.

The water main will be open trenched along the left side of Robert Street until it reaches outside of no. 18 Roberts Street where it will be under-bored and then cross over to the right side at the intersection between Roberts Street and Mullins Street and into the Bays Precinct site. It will then become surface trenching within the Bays Precinct. It is planned for the under-bore retrieval pit to be located 2m away from the cooling tunnel. This distance was determined a safe level to adhere to conservative vibration limits.

The works also include potholing along the Inlet Canal and within the WBPS site.

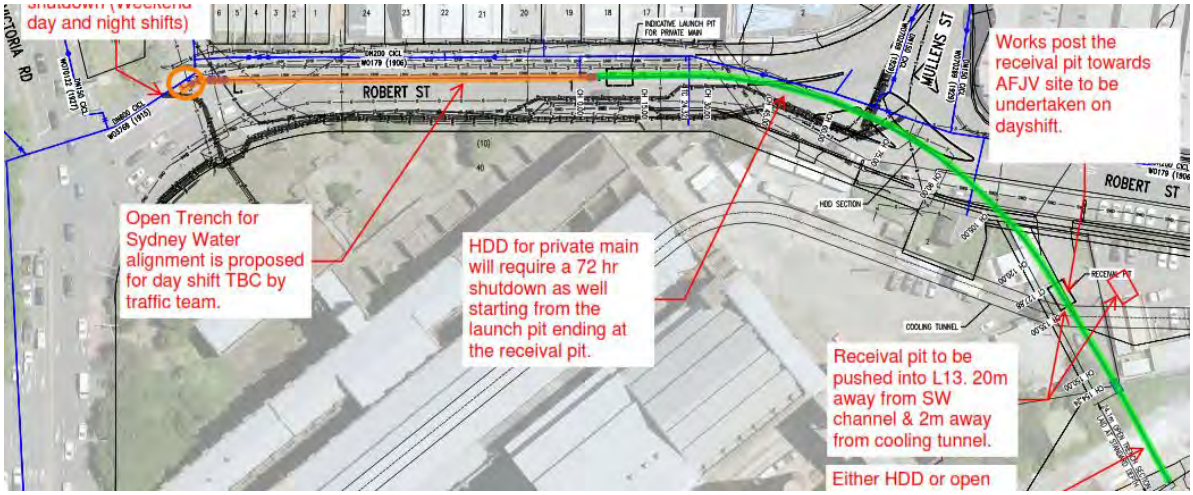


Figure 14: Route of proposed water main into Bays precinct via Roberts Street.

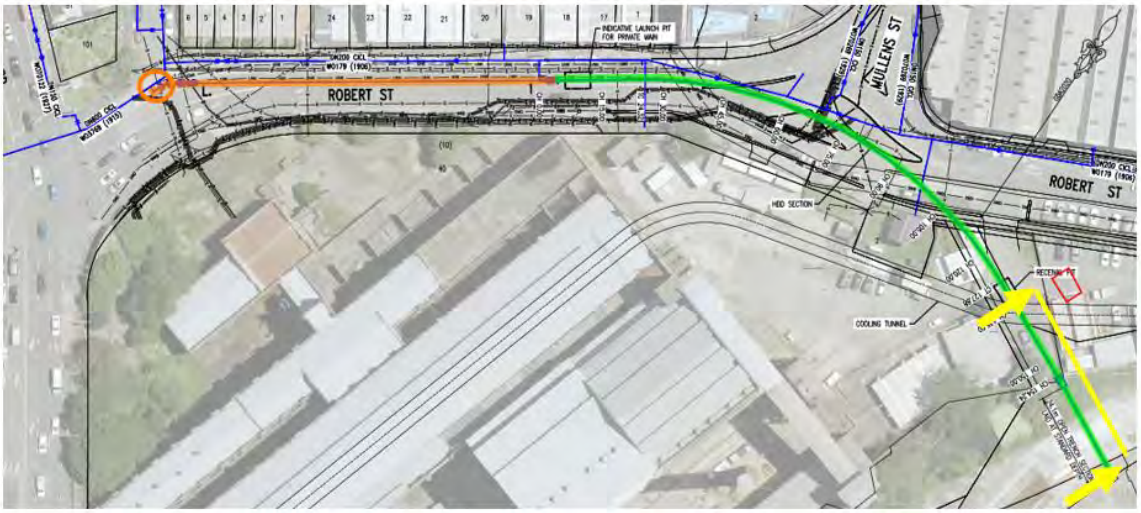


Figure 15: Proposed water main route showing where above ground trenching begins (indicated by yellow arrow) at the amended location of the Receival Pit (red box) just before it crosses the Inlet Canal and continues to end of water main indicated by yellow line and yellow arrow.

5.2 Potential Heritage Impacts

The proposed works will enter into the SHR listed White Bay Power Station Complex to north east of the intersection between Robert and Mullins Street. At the point they enter the site, the works are underground and wont rise to the surface until just west of the Inlet Canal. There are no extant or archaeological structures related to the White Bay Power Station in the path of the utilities canal until it reaches the Inlet Canal. As such, the proposed works will not have any impact on the significant heritage structures, or state heritage values of White Bay Power Station.

As outlined in Figure 14 and Figure 16 below, the proposed works intersect with the Beattie Street Channel and the Inlet Canal. Figure 14 provides more detail, showing that the plan is to under bore the Beattie Street Channel by a depth of approximately 5m from the bottom of the channel, after which the water main rises to the surface and to an open trench to the end of its alignment, over the Inlet Canal (noted as the 'Cooling Tunnel' on Figure 16).

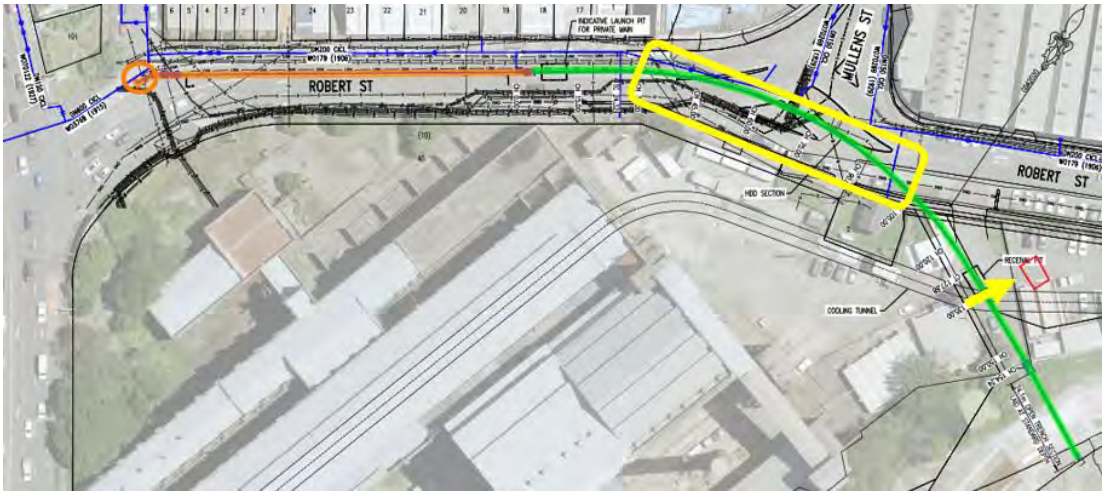


Figure 16: Route of proposed water main showing where it intersects under the Beattie Street Channel (yellow polygon) and the new location of the Receiving Pit 2m away from the Inlet Canal (yellow circle).

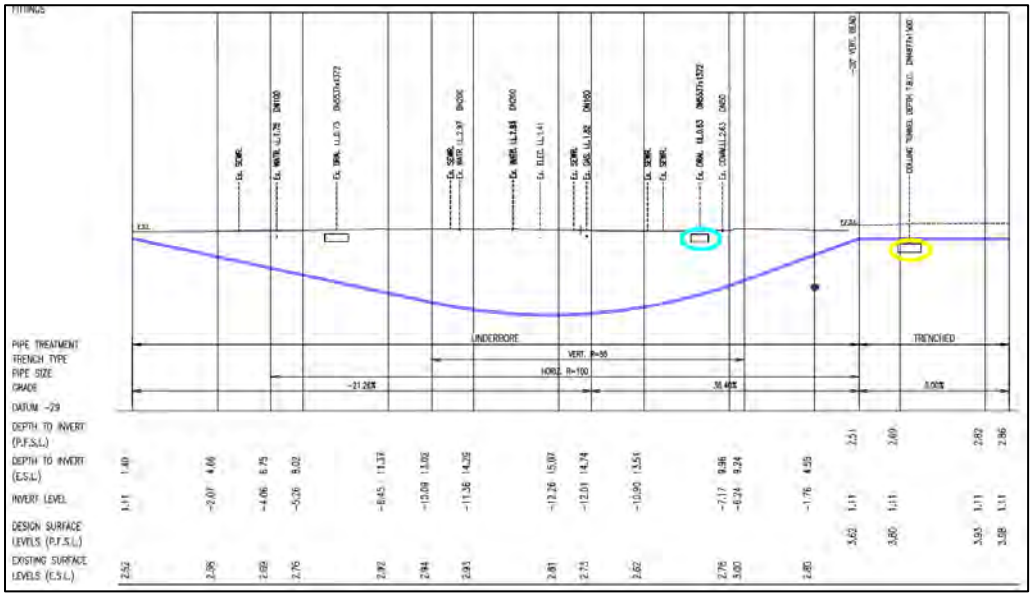


Figure 17: RL depths of proposed water main showing where it runs under Beattie Street Channel (blue circle) and over the Inlet Canal (yellow circle).

- Given the depth at which the water main will be under-bored under the Beattie Street Stormwater Channel, the impacts will be nil.
- However, given that the depth and exact footprint of the Inlet Canal is not confirmed in this location, impacts to it from the proposed work cannot be quantified without further information. The images of the canal's construction show a very wide and deep channel and therefore non-destructive digging (NDD) will be undertaken to inform the design and construction methodology, which may need to be amended as required to ensure impact to the footprint of the canal is consistent with the current project.

6.0 RECOMMENDED MANAGEMENT

There are three heritage items located in the vicinity of the works, Beattie Street Stormwater Channel (local significance), White Bay Power Station Inlet Canal (also known as the Cooling Tunnel but referred to in this report as the Inlet Canal) (State significance) and White Bay Power Station itself, (State significance and listed on the NSW SHR).

It is noted that the wider SSI project approval allows for minor to moderate impact to both Beattie Street Stormwater Channel and the Inlet Canal across the SSI project site, however the works which are the subject of this report sit outside the approved SSI project area.

The works involve both open trenching and under-boring for the water main installation from Robert Street into the Bays Precinct site. The first third will be open trenched, the second third is under-bored before returning open trenching within the Bays Precinct. Potholing will also be used along the Inlet Canal and within the WBPS site is required.

The water main trench will under-bore the Beattie Street Stormwater Channel where it crosses into the footprint of the stormwater canal underneath Roberts Street. The depth of the under-bore will be approximately 5m from the base of the Stormwater Canal. This depth is considered appropriate and will ensure that there are no impacts from the works to this locally significant item.

The proposed water main footprint will enter the curtilage of the White Bay Power Station Site but will not impact any significant fabric, archaeology or values related to that site's inclusion on the SHR.

The works for the water main will then become open trenching after it moves into the Bays Precinct where will be run above Inlet Canal. Given that the depth and exact footprint of the inlet canal is not confirmed in this location, further information will be required to assess potential impacts and appropriate mitigation measures. The NDD potholing should be focused on this location to confirm as many details of the Inlet Canals location and footprint as is possible.

Recommendations

a. In line with the Artefact Heritage Archaeological Research Design and Excavation methodology (ARDEM) for the project, all NDD works should be monitored by an archaeologist where they cross into the footprints of the Beattie Street Stormwater Channel and the Inlet Canal.

b. An Archaeological Method Statement should be prepared for any portion of the works that falls within the scope of the existing SSI project boundaries and the existing ARDEM.

c. At each NDD location within the footprint of the heritage items, accurate survey of the canal system must be conducted along with complete archaeological recording of the exposed structural features of the item in accordance with the revised archaeological research design for the Bays.

d. In relation to the location of the Inlet Canal:

   i. If the NDD works in the area of the canal confirm that the open trench for the proposed water main will be excavated at a depth which is 2m removed from the fabric of the Inlet Canal, works can proceed as planned.

   ii. If the NDD works confirm that the proposed water main trenching is within 2m of the canal, or will impact the fabric of Inlet Canal directly, it should be established what percentage of the canal will be impacted and options to avoid impact must be considered.

iii. The wider SSI approval allows minor to moderate impact to the Inlet Canal. If the works will impact the Canal, the Excavation Director for the wider project will need to determine in consultation with the project team what impact (if any) to the state significant Inlet Canal would be considered minor, whether the proposed works meet that threshold, and therefore if the impact to this heritage item is acceptable.

- Any identified impacts should be kept to a minimum by controlled removal of only what is necessary to allow construction to proceed. In general, an avoidance strategy would be the most appropriate mitigation measure.

iv. If the works are considered minor and the impact acceptable, the works can go ahead with archaeological monitoring and archival recording. Adequate protection of the surrounding fabric of the Inlet Canal must be fully protected during all construction works, to ensure that no accidental damage is caused by the works.

v. If the heritage impacts to the Inlet Canal are considered moderate or above, the proposed trenching route must be shifted so that it does not impact the Inlet Canal.

artefact

Artefact Heritage

ABN 73 144 973 526
Suite 56, Jones Bay Wharf
26-32 Pirrama Road
Pyrmont NSW 2009 Australia

+61 2 9518 8411
office@artefact.net.au
www.artefact.net.au