Review of Environmental Factors Multi-program - Category B

T45-S03, King St, Ashbury

1 Determination

This Review of Environmental Factors Multiprogram - Category B (Category B REF) is to be read in conjunction with the Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi-program REF) 2023. Together both documents assess the potential environmental impacts of critical watermain works at King Street Ashbury. These documents were prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

The Sydney Water Project Manager is accountable for ensuring the proposal is carried out as described in this Category B REF and Multi-program REF. Additional environmental impact assessment may be required if the scope of work or work methods described in either the Multi-program REF or this Category B REF change significantly following determination.

Decision Statement

The main potential construction environmental impacts of the proposal include noise and vibration from construction works, and impacts to traffic and access due to partial road closures and night works. There are no major impacts associated with operation. The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

Given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this Category B REF and the Multi-program REF, the proposal is unlikely to have a significant impact on the environment. Therefore, we do not require an Environmental Impact Statement (EIS) and the proposal may proceed.

Certification

I certify that I have reviewed and endorsed this REF and, to the best of my knowledge, it is in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation). The proposal has been considered against matters listed in section 171 (Appendix A) and the guidelines approved under section 170 of the EP&A Regulation. The information it contains is neither false nor misleading.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
[redacted]			
Aeeshah Mohammed REF Author Sydney Water Date: 11/03/2025	John Eames Snr Environmental Scientist Sydney Water Date: 21/05/2025	Melissa Navarro Project Manager Sydney Water Date: 21/05/2025	Murray Johnson Snr Manager Environment and Heritage Sydney Water Date: 16/06/2025

2 Proposal Summary

Table 1 Description of proposal

Aspect	Detailed description
Location	The proposal is located in the roadway between 96 King Street and 52 King Street, Ashbury (asset no. 8984818) within land zoned Low Density Residential (R2). The proposal is located within the City of Canterbury-Bankstown Local Government Area (LGA).
Approved REF	Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi-program REF) (May 2023).
Proposal description	The proposal is part of the critical water main works program as detailed in the Multi-program REF. The scope of work involves a combined methodology which includes exhume and relay and slip lining, this includes the following activities: • geotechnical survey • potholing • site establishment • vegetation clearing • tree trimming • excavation • slip lining • exhume & relay • conventional laying • recommissioning • reinstatement • handover. The following equipment will be used: • concrete saws • jackhammer (hand & excavator operated) • hand tools • excavators, 5 tonne and 7 tonnes • road plates • noise barriers • concrete agitator trucks • concrete pumps

	• tipper trucks • light vehicles – work utes and cars • compactor – hand operated • pipe saw (demo saw) • light tower (if required) • skip bins • concrete pumps • hand tools • generators	• air compressor • confined spaces safety equipment (e.g. gantry/davit) • air compressors • site facilities and amenities • storage containers • submersible pumps (if required for de-water) • street sweepers • jetting machine / grinder (host pipe cleaning).
Proposal timing	The proposal is expected to take 7 months with construction commencing in July 2025 and expected to be completed by January 2026. The works would be occurring at night for the entire duration of the proposal from 8 pm to 5 am, Monday to Friday.	

Figure 1 Overview of proposal location and environmental constraints

Figure 2 Overview of proposed works and environmental constraints

3 Consultation

Community and stakeholder consultation

Our approach to community and stakeholder consultation is guided by Sydney Water's community and stakeholder engagement guidelines.

Stakeholder and community engagement is a planned process of initiating and maintaining relationships with external parties who have an interest in our activities. Community and stakeholder engagement:

- enables us to explain strategy, policy, proposals, proposal or programs
- gives the community and stakeholders the opportunity to share their knowledge, issues and concerns
- enables us to understand community and stakeholder views in our decision-making processes alongside safety, environment, economic, technical and operational factors.

The nature, scale and extent of the proposal's potential impact has been evaluated in this REF. If our work impacts the community in some way, we will consult with affected groups throughout the proposal. This includes engaging the broader community and stakeholders during plan or strategy development or before making key decisions.

Community consultation will be undertaken in advance of the commencement of works to inform nearby residents and businesses of anticipated noise impacts and disruptions to traffic and property access. Where access to private residential properties is required consultation with residents prior to access will be undertaken.

We will also provide local councils with reasonable notice when we would like to commence works. The City of Canterbury-Bankstown Council has been consulted about matters identified in environmental planning instruments. This includes public safety issues, temporary works on council land, and partial road closures of council managed roads.

Consultation required under State Environmental Planning Policies and other legislation

Sydney Water must consult with councils and other authorities for work in sensitive locations or where the work may impact other agencies' infrastructure or land. This requirement is specified in the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). No formal consultation was required under the TISEPP as works are considered minor or inconsequential. The majority of the works will be undertaken on a regional road with only minor, short term and temporary works on three local roads that will be restored to their previous condition. The contractor should notify council of the works and determine any traffic management and restoration requirements. Further detail is provided in Appendix B.

4 Legislative requirements

There are no additional legislative requirements beyond those already assessed in the Multi-program REF.

5 Additional environmental impacts and mitigation measures

The tables below list the additional environmental impacts that could result from the proposal and the additional mitigation measures. All other environmental impacts and mitigation measures identified in the Multi-program REF remain the same and will be incorporated into the Contractor's Construction Environmental Management Plan (CEMP).

Table 3 Environmental impacts table

Aspect	Additional impacts	Additional mitigation measures
Topography, geology and soils	Potential impacts to topography, geology and soils from works are expected to be moderate due to excavation. The works, although localised, will involve excavating up to 2 m in depth and 298 m in length. Potential impacts will be minimised by progressively excavating along the alignment and back filling excavated areas. Excavated material will be temporarily stored adjacent to the proposed works areas. The work site will be restored to original or better condition. Therefore, impacts to topography, geology and soils resulting from works are expected to be short-term and moderate. Furthermore, Stage 1 investigations of the proposal identified Total Recoverable Hydrocarbon (TRH) contamination present in the soil at 92 King Street. (See Waste and hazardous materials section).	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Water and drainage	The main volume is approximately 20,000 L and will require dewatering for connections, slip lining and exhume and relay. Discharge all water in accordance with Sydney Water's Water Quality Management During Operational Activities Policy (D0001667) There are no watercourses within the proposal area. The nearest watercourse, Cooks River, is located more than 500 m southwest of the proposal area. The proposal is not located on flood prone land. Therefore, the proposal's impact to water and drainage is expected to be short term and minor. The nearest groundwater monitoring well to the works is about 340 m north at 165 Milton St, Ashbury. Groundwater is 3.4 m below ground level at this location. As the deepest excavation for this project will	If the potential for intercepting groundwater is identified after the REF is determined, Sydney Water will obtain a groundwater Water Supply Works Approval. The Delivery Contractor is responsible for: • providing expert hydrogeological technical information to obtain the approvals • preparing a Dewatering Management Plan • complying with the conditions of the approvals (such as protecting water quality;

	be 2 m deep it is unlikely that groundwater will be encountered or require dewatering.	minimising aquifer extraction volumes, monitoring extraction with flow meters and recording volumes).
Flora and fauna	Impacts to threatened flora and fauna are expected to be minor as works would be occurring within previously disturbed areas within the roadway. Two small patches of planted non-native vegetation will require clearing on First Street and Second Street for upfront installation. Minor tree trimming will also be required on First Street to remove any obstacles from the excavator's path. There were records of Grey-headed Flying Foxes within 84 m of the alignment. As a result, there is potential for noise from construction equipment, vehicles and onsite personnel scaring the nearby fauna. However, considering the works are occurring within a roadway and do not involve native vegetation removal, impacts resulting from construction and operation are anticipated to be minor.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Heritage	The proposal is located within the Ashbury Heritage Conservation Area (HCA) which holds aesthetic significance. The scope of works will include excavation and potholing for existing services only. All potholing and excavation will occur within the roadways and there will be no works occurring outside of existing disturbed ground. Therefore, no impacts to heritage streetscape, which is characteristic of the Ashbury HCA, are expected. The works will also be occurring adjacent to a Local Heritage item (Canterbury Park Racecourse) and a State Heritage item (located more than 200 m away). Given that the works are being limited to the existing disturbed areas within the roadways impacts are not expected. An AHIMS Basic Search yielded no records of Aboriginal sites or places within 200 m and all works are occurring in previously disturbed areas. As a result, no impacts to Aboriginal heritage are expected.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Noise and vibration	A Noise Assessment (Appendix C) was carried out for the proposed works as they require the use of noisy equipment and machinery. The proposed works are located within road corridors on land zoned Low Density Residential (R2). The site compound is located at 57A King Street with land zoned Private Recreation (RE2). The existing noise environment around the proposal area is influenced by	Apply mitigation measures in the overarching multi program REF and the following additional mitigation measures to manage potential impacts: • A construction noise and vibration management plan

road traffic from King Street and nearby roads in addition to nearby residents and recreational parks. The majority of the alignment is surrounded by residential receivers, while a small segment in the south is adjacent to recreational parks. The nearest sensitive receivers are residential properties located adjacent to the proposed alignment on King Street, First Street, Second Street and Roslyn Street. These receivers have Line of Sight (LOS) to the works occurring on site. Residential properties located on other nearby streets have no line of sight (NLOS) of works occurring onsite as they are shielded from sight by properties closer to the alignment.

Noise from excavation works, onsite personnel, construction equipment and vehicle movements may impact nearby sensitive receivers. These noises will generally occur from 8 pm to 5 am, Monday to Friday. Works along the alignment will involve the use of noisy equipment including excavators, vacuum trucks, concrete saws, and jack hammers. The use of concrete saws (noisiest tool) will be limited to 12 am to minimise noise disturbance. Noise generated from works at the site compound will involve vehicles entering and leaving the compound and the use of generators during the day for welding. Noise barriers will be installed around the entire boundary of the site compound to minimise noise impacts and works above entry and exit to compound restricted to daytime where possible.

The likelihood of noise impact from the proposal was reviewed against risk factors (based on Table 2 of the EPA's 2020 Draft Construction Noise Guideline). The review indicated that the construction noise impacts would be of medium-high risk and therefore a quantitative noise impact assessment was undertaken. The Transport for NSW (TfNSW) Construction and Maintenance noise estimator tool (TfNSW, 2022) was used for the assessment. The review indicated that noise impacts resulting from the proposal will be medium - high risk due to the following factors:

- the duration of out of hours work exceeds one month as about 152 night shifts will be required, from 8 pm to 5 am, and in front of low-density residential properties and recreational parks
- the works are proposed to be carried out in a 2-1-2 shift pattern along the alignment, where works occur at one location along the alignment for 2 consecutive days works will move away to a

(CNVMP) should be prepared before work starts

- employ noise containment methods (e.g. noise blankets / walls / barriers)
- notify receivers of potential noise impacts prior to the commencement of works via letter, specific notifications, phone calls.
- offer respite period 2 to ensure all noisy / annoying work will be completed before midnight
- offer duration respite where justifiable and accepted by the community to shorten the project duration by increasing the number of shifts per week
- employ attended monitoring onsite to evaluate construction noise and where appropriate, vibration levels to evaluate whether mitigation measures are adequate or require revision, and to address complaints
- monitor compliance with the recommended vibration levels in DIN 4150-3 1999: Structural Vibration – Part 3; Effects of vibration on structures.

different location for one day and then back to the first location for 2 more days, offering respite to nearby sensitive receivers. The TfNSW noise estimator tool (refer to Appendix C) was run using a worst-case scenario (concrete saw) and this recommended respite period 2 (R2) which includes additional recommendations for respite such as 2 nights on, one week off and high noise generating works being completed by 11pm. However, it is recommended that community consultation is undertaken with affected sensitive receivers to agree a work pattern that allows the works to progress in a timely fashion in a manner that is acceptable to the community

- the works will occur within 50 m of sensitive receivers which primarily consists of residential properties and a few recreational parks
- excavators and tipper trucks will be used for the entire the duration of the proposal
- regular offsite waste disposal will be required for the entire duration of the proposal
- regular deliveries will be made to the site and the site compound for the entire duration of the proposal
- works will involve the use of light, medium and heavy vehicles
- noise barriers will be employed to minimise impacts to sensitive receivers.

The Transport for NSW (TfNSW) Construction and Maintenance noise estimator tool (TfNSW, 2022) was used for the assessment and noisiest plant option was selected to capture the worst-case scenario for the proposed works. Appendix C shows the outputs of the noise estimator tool. It shows that using a concrete saw (assumed to be the noisiest tool used) onsite will be:

- highly impactful to LOS residential receivers that are within 35 m of the site – e.g. residents immediately adjacent to the proposed alignment, Canterbury Park Racecourse and Campbell Athletic Field
- highly intrusive to NLOS residential receivers within 35 m of the alignment – e.g. residents located on other nearby streets, Trinity Grammar

School Tennis Centre, Canterbury Park Racecourse and Campbell Athletic Field

- moderately intrusive to NLOS residential receivers within 105 m of the alignment – e.g. residents located on further away on other nearby streets, Trinity Grammar School Tennis Centre, Canterbury Park Racecourse and Campbell Athletic Field.

Given the outputs of the noise estimator tool, the risk rating of potential noise emissions are Risk Level 3 (medium - high) and therefore do not warrant specialist assessment. Impacts to nearby sensitive receivers are expected to range from moderate – high depending on their LOS and distance from the site. Additional safeguards and mitigation measures have been identified to manage noise and vibration impacts (see additional mitigation measures adjacent and in Table 4.2 and Table 4.3 in Appendix C).

Vibration:

The proposal will require the use of some vibratory equipment including jackhammers and excavators. The TfNSW noise estimator tool summarises the minimum working distances and potential vibration impacts from the use of a 12-18 tonne excavator as the following:

- Light-framed structures require a minimum distance of 7 m from the operating excavator. Structures such as electricity poles and street signs would temporarily be within the 7 m working distances of the excavator as the vehicle moves along the alignment. The vehicle will not be operated in one location for an extended period of time. As such, vibration impacts to nearby light-framed structures are expected to be negligible.
- Heritage structures require a minimum distance of 19 m from the excavator. There were no heritage structures within working distance of the excavator, therefore no vibration impacts to heritage structures are expected.
- Human receivers require a minimum distance of 23 m from excavator operation. Nearby receivers may experience vibration impacts. However, impacts are expected to be short-term and temporary considering the vehicle will be

	moving along the alignment and not operating in one location for an extended period of time. Therefore, impacts resulting from vibration are expected to be minor and temporary. Vibration impacts can be adequately managed by applying the additional safeguard outlined in this section.	
Air and energy	There is potential for impacts to air quality from construction and vehicle emissions, dust caused by vehicle movements and ground disturbance (E.g. excavation works, road saw cutting) occurring onsite. Sensitive receivers include nearby residents and pedestrians. These impacts are expected to be temporary and minor.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Waste and hazardous materials	The proposed works have the potential to generate: • general construction waste such as excess concrete, paper, plastic and metal • domestic waste including food scraps, plastic and paper containers generated by site construction personnel • contaminated material. Stage 1 investigations of the proposal identified the presence of TRH contamination in the soil at 92 King Street. Subsequent investigations will include conducting a contaminated land assessment to evaluate the extent of contamination as well as develop controls to mitigate any potential risks that may arise due to the proposed works. The impacts of waste and hazardous materials can be adequately managed by applying the additional safeguards and mitigation measures outlined in this section.	Apply mitigation measures in the overarching multi program REF and the following additional mitigation measures to manage potential impacts: • a construction Contamination Management Plan must be prepared by a suitably qualified person as part of the CEMP and reviewed by Sydney Water's Environmental Representative in consultation with the Contamination and Hazardous Materials Team. The plan must identify the type and location of known/potential contamination, land-owner notification, management requirements (waste minimisation, waste segregation and classification) and reuse, offsite recycling and/or disposal measures. • a post-construction Contaminated Land Management Plan (CLMP) must be prepared by a suitably qualified person prior to completion of the project. The plan must be reviewed by the Contamination and Hazardous Materials Team.

		The plan must identify the type and location of contamination, risk mitigation measures such as location, type and extent of capping layers (if applicable) and the required ongoing management measures. • all excavated trench material to be stockpiled for testing to determine whether it is suitable for reuse or disposal • any waste not able to be reused or recycled will be temporarily stockpiled or taken directly offsite to a facility licenced to accept the waste • prepare a Waste and Resource Recovery Plan (WRRP) to appropriately manage and classify any materials including soils, construction / demolition wastes and associated stockpiles. The plan will be prepared by the Contractor (or nominated environmental consultant) and approved by the Sydney Water Project Manager in consultation with the Environmental Representative and Contamination and Hazardous Materials Team.
Traffic and access	The proposal is located on public roads (King Street, First Street, Second Street and Roslyn Street.) with works only occurring between 8 pm to 5 am Mondays to Fridays. During night works there will be partial road closures (King Street will be single laned), temporary disruption to private driveway and residential property access, rerouting of bus routes, and blocked access to street parking. These disruptions will only occur from 8 pm to 5 am (as per the ROL) and traffic and access will be restored at the end of each shift. Partial road closures and detouring will be managed by a traffic control crew (up to 4 personnel). During partial road	Apply mitigation measures in the overarching multi program REF and the following additional mitigation measures to manage potential impacts: • The contractor must obtain a Road Occupancy Licence (ROL) from Transport for NSW.

	closures, if residents need to drive in or out of their properties they will be assisted by traffic controllers. The proposed works will involve a mix of light, medium and heavy vehicles including utility vehicles, light-rigid truck, b-double truck, flatbed truck and excavators (8 and 14 tonnes). The proposal will also cause traffic to be generated from workers travelling to site daily, regular offsite waste disposal and regular deliveries to the site for the entire duration of the proposal. Private property access will be required for 57A King Street Ashbury which will be used as the site compound. The site compound will be used during the day and night. Given that disruptions to traffic and access will only occur during night works and restored at the end of each shift impacts are expected to be moderate and short term.	
Social and visual	The proposed works have the potential to cause social impacts associated with noise and air quality, which have been assessed above. Visual impacts associated with the proposed works are expected to be low – moderate as: • the works will be within LOS of residential and non-residential receivers • the works will only occur between 8 pm to 5 am Mondays to Fridays • the site will be restored at the end of each shift • there will be no works on weekends or on public holidays. During the proposed works, large machinery and vehicles (e.g. excavators, tip trucks, concrete agitator trucks etc) will be parked in the site compound identified on Figure 1. These vehicles may be visible for a short time to the nearby receivers. Therefore, the social and visual impacts of the works and the laydown are expected to be temporary and minor.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Cumulative and future trends	No other known Sydney Water projects or other developments are occurring in the area and therefore cumulative impacts are not expected.	No measures are considered necessary.

Potential impacts of the proposed works are expected to be minor and localised, and unlikely to contribute to any cumulative environmental impact on a local or regional scale.

Table 4 General environmental mitigation measures

General	
1.1	Should the proposal or methodology change from the EIA, no further environmental assessment is required provided the change: • remains within the assessment/study area for the EIA and has no net additional environmental impact or • is outside the assessment/study area for the EIA but: - reduces impacts to biodiversity, heritage or human amenity or - avoids engineering (for example, geological, topographical) constraints and - after consultation with any potentially affected landowners and relevant agencies. The Contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.
1.2	Assign single person with accountability for coordinating communication and information flow across contractors and consultants and provide the contact details of this person in the Environmental Works Method Statement and/or CEMP.

6 Conclusion

This Category B REF outlines potential environmental impacts associated with noise and vibration, waste and hazardous materials, and traffic and access as part of the Critical Watermain Works for King Street, Ashbury. Any additional environmental impacts are considered to range from minor to high and potential impacts can be mitigated through implementation of the measures outlined in this Category B REF and the Multi-program REF. The proposal is not likely to significantly impact the environment.

Appendix A – Section 171 checklist

Requirements in addition to the Multi-program REF are considered in the table below.

Section 171 checklist	REF finding
Any environmental impact on a community	There may be impacts to the nearby receivers from potential noise, air emissions and dust generation due to vehicle movements, excavation and noisy equipment use at the site. These impacts are expected to range from moderate – high depending on their LOS and distance from the site and can be managed by applying the additional mitigation measures. There will also be disruptions to traffic and access due to partial road closures and excess traffic generated by construction crew vehicles and personnel. Impacts are expected to be moderate and short term and only for the duration of each night shift. There will be environmental improvements by providing a reliable water service to the local community.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	Works will be occurring within the Ashbury HCA curtilage which preserves the aesthetic significance and heritage streetscape. All potholing and excavation will occur within the roadways and there will be no works occurring outside of existing disturbed ground. Therefore, no impacts to heritage are expected.
Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)	There may be minor impacts to nearby fauna resulting from noise generated by construction works, noisy equipment use and vehicle movements at the site at night. However, these impacts are expected to be minor and temporary.

Appendix B – Consideration of TISEPP consultation

TISEPP section	Yes	No
Section 2.10, council related infrastructure or services – consultation with council		
Will the work:		
Potentially have a substantial impact on stormwater management services provided by council?		✓
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		✓
Connect to, and have a substantial impact on, the capacity of a council owned sewerage system?		✓
Connect to, and use a substantial volume of water from a council owned water supply system?		✓
Require temporary structures on, or enclose, a public space under council's control that will disrupt pedestrian or vehicular traffic that is not minor or inconsequential?		✓
Excavate a road, or a footpath adjacent to a road, for which the council is the roads authority, that is not minor or inconsequential?		✓
Section 2.11, local heritage – consultation with council		
Is the work likely to affect the heritage significance of a local heritage item, or of a heritage conservation area (not also a State heritage item) more than a minor or inconsequential amount?		✓
Section 2.12, flood liable land – consultation with council		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and will works alter flood patterns other than to a minor extent?		✓
Section 2.13, flood liable land – consultation with State Emergency Services		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and undertaken under a relevant provision*, but not the carrying out of minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance? * (e) Div.14 (Public admin buildings), (g) Div.16 (Research/ monitoring stations), (i) Div.20 (Stormwater systems)?		✓
Section 2.14, development with impacts on certain land within the coastal zone– council consultation		
Is the work on land mapped as coastal vulnerability area and inconsistent with a certified coastal management program?		✓
Section 2.15, consultation with public authorities other than councils		
Will the proposal be on land adjacent to land reserved under the *National Parks and Wildlife Act 1974* or land acquired under Part 11 of that Act*? If so, consult with DPE (NPWS).*		✓
Will the proposal be on land in Zone C1 National Parks and Nature Reserves or on a land use zone that is equivalent to that zone? *If so, consult with DPE (NPWS).*		✓
Will the proposal include a fixed or floating structure in or over navigable waters? *If so, consult TfNSW.*		✓
Will the proposal be on land in a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017*? *If so, consult with Subsidence Advisory NSW.*		✓
Will the proposal be on land in a Western City operational area specified in *the Western Parkland City Authority Act 2018,* Schedule 2 and have a capital investment value of $30 million or more? *If so, consult the Western Parkland City Authority*.		✓
Will the proposal clear native vegetation on land that is not subject land (ie non-certified land)? *If so, notify DPE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021).*		✓

Appendix C – Noise Assessment Memo

Proposal details

1.1 Proposed scope of works

The scope of work is to renew about 298 m of a critical watermain (CWM) along King Street, First Street, Second Street and Roslyn Street Ashbury. The proposal involves exhume and relay of the 298 m alignment to renew the CWM.

1.2 Duration and timing of works

Construction of the proposal is expected to start in June 2025 and finish in December 2026. The duration of works is expected to take about 152 nights to complete.

The standard construction work hours are as follows:

- Monday to Friday: 7am – 6pm
- Saturday: 8am – 1pm
- Sunday and public holidays: no work.

Out of hours work are defined as:

- Out of hours day: Saturday 7am to 8am and 1pm to 6pm, Sunday and public holidays 8am to 6pm
- Out of hours evening: daily 6pm to 10pm
- Out of hours night: all other times.

To minimise disruption to traffic and potential safety risks to construction personnel and road users, all works would be conducted outside of standard construction hours in accordance with the Road Occupancy Licence (ROL).

Proposed out of hours works would be as follows (subject to ROL):

- Days: 8 pm to 5 am Monday to Fridays
- No work on weekends or public holidays

It is anticipated that work would be conducted for a maximum of 152 night shifts for the whole project.

1.3 Proposed activities/ equipment (noisiest plant details)

The proposed activities involve the following:

- geotechnical survey
- potholing
- site establishment
- excavation
- slip lining
- exhume & relay
- conventional laying
- recommissioning
- reinstatement
- handover

The equipment required during construction includes:

- concrete saws
- jackhammer (hand & excavator operated)
- hand tools
- excavators, 5 tonne and 7 tonnes
- tipper trucks
- light vehicles – work utes and cars
- compactor – hand operated
- pipe saw (demo saw)
- light tower (if required)
- skip bins
- concrete pumps
- hand tools
- generators
- road plates
- noise barriers
- concrete agitator trucks
- concrete pumps
- air compressor
- confined spaces safety equipment (e.g. gantry/davit)
- air compressors
- site facilities and amenities
- storage containers
- submersible pumps (if required for de-water)
- street sweepers
- jetting machine / grinder (host pipe cleaning)

Based on the above details, the noisiest activity would be road cutting using concrete saws, within 8 pm to 5 am. It should be noted that the Out of Hours Night work for the following would all be completed before 12am:

- use of ‘beeper’ style reversing or movement alarms, particularly at night-time
- use of power saws for cutting road pavement, concrete or pipes
- jackhammering

1.4 Community consultation

Consultation with nearby residents and businesses is required and will be undertaken at least a month in advance of the proposed works. Community consultation will involve discussion regarding anticipated noise impacts and disruptions to normal traffic and property access. Consultation with City of Canterbury-Bankstown council will be undertaken.

2 Methodology

Transport for NSW (TfNSW) Construction and Maintenance noise estimator tool (TfNSW, 2022) can be used to perform a basic noise assessment to capture predicted noise impacts at different distances for different types of receivers. Section 2 of this memo details the inputs required for the assessment. Section 3 of this memo details the output of the assessment.

2.1 Noise sensitive receivers and distance to receivers

- Line of Sight (LOS) residential receivers situated immediately adjacent to King Street, First Street, Second Street and Roslyn Street - located within 30 m of the alignment
- No Line of Sight (NLOS) residential receivers located on other nearby streets - within 50 m of the alignment.
- Trinity Grammar School Tennis Centre – approximately 50 m southeast of the alignment.
- Canterbury Park Racecourse – approximately 50 m southwest of the alignment.
- Campbell Athletic Field – approximately 50 m east of the alignment.

See Figure 1.

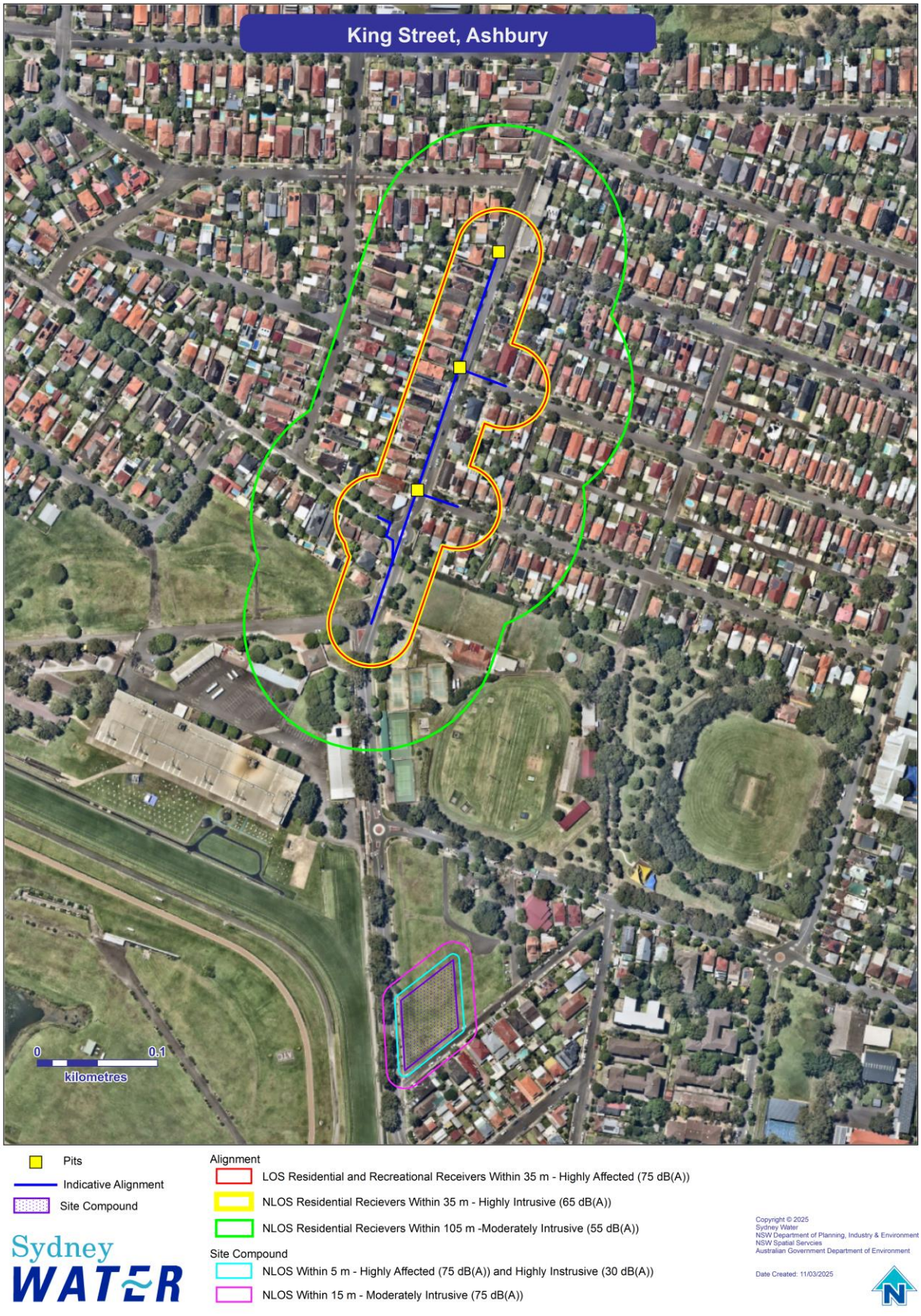

Figure 1 Noise assessment and nearby sensitive receivers

2.2 Noise area category

The noise area category is chosen from the noise estimator tool to define an approximate background noise level for the environment surrounding the proposal. The noise area category is chosen based on a number of factors, including:

- surrounding land use and receiver types (refer Section 2.1 above)
- traffic volumes on nearby roads
- other transport infrastructure eg trains, airports/flight paths.

Background noise level R2 was selected as the noise area category as the background noise is influenced by local road traffic noise, nearby residences and recreational parks.

2.3 Background noise levels and noise management levels

Table 1 provides the assumed background noise levels and noise management levels. These noise management levels have been taken from the noise area category identified in Section 2.2 above.

Where the assessment identifies noise impacts above the noise management level (refer Section 3 of the memo), reasonable and feasible mitigation measures (refer Section 4 of the memo) should be applied.

Table 1 Background noise levels and noise management levels

Noise area category		R2
RBL or L_{A90}[1] Background level (dB(A))	**Day**	45
	Evening	40
	Night	35
$L_{Aeq(15minute)}$ Noise Management Level[2] (dB(A))	**Day**	55
	Day (OOHW)	50
	Evening	45
	Night	40

Notes: [1]L_{A90} = Background noise level

[2]*Noise Management Level for works during standard hours = Background level plus 10dB(A)*

Noise Management Level (NML) for out of hours works = Background level plus 5dB(A).

2.4 Type of noise assessment

The next step requiring input to the noise estimator is to select either noisiest plant or scenario. This will calculate the predicted worst-case construction noise levels. These construction noise levels will be assessed against the noise management levels identified above. Based on the plant and equipment proposed to be used, there may be different worst-case construction noise levels at different times of the day or night.

Based on Section 1.3 of this memo, noisiest plant was chosen. Noisiest plant was chosen as the scenarios in the noise estimator tool did not exactly match the proposed works and equipment.

2.5 Line of sight to receivers

A receiver may have line of sight, or no line of sight, to the proposal.

Line of sight is the straight line between the noise source and the receiver. Receivers with line of sight would typically include those in front of the work, who do not have their view blocked by barriers such as terrain (e.g. a large hill), permanent noise walls or other buildings.

Receivers with no line of sight (all other factors being equal, such as distance to the work and type of equipment) will experience less noise than receivers with line of sight. Typically, these include the receivers who have their view blocked from the works by barriers including those listed above.

LOS receivers:

- All residential receivers situated immediately adjacent to King Street, First Street, Second Street and Roslyn Street.
- Trinity Grammar School Tennis Centre
- Canterbury Park Racecourse

NLOS residential

- Residential receivers located on other nearby streets.

The nearest line of sight receivers is located within 30 m of the proposed alignment.

The nearest receivers with no line of sight are located within 50 m of the proposed alignment.

As a result, the noise estimator will run based on the following activity:

- Concrete saw operation: OOHW evening, OOHW night – (line of sight, no line of sight – substantial solid barrier)

3 Assessment of impacts

3.1 Activity 1

Concrete saw operation for cutting road surface along the alignment has been identified as the worst-case scenario activity and was chosen as representative of the noisiest works. R2 was chosen as representative of the baseline noise environment at night. As such, during OOHW night shift construction hours, the assumed background noise baseline is 35 dB(A), and the noise management level is 45 dB(A).

LOS residential receivers and recreational receivers within 35 m of the proposed works are predicted to be highly affected as noise levels are expected to be around 75 dB(A) or more. There are highly intrusive noise impacts (up to 65 dB(A)) for NLOS residential receivers within 35 m of the proposed works and moderately intrusive noise impacts (up to 55 dB(A)) predicted for NLOS residential receivers within 105 m of the proposed works.

Table 2 Affected distance (metres) for non-residential receivers with LOS during Activity 1 (OOHW night shift hours)

Land use	$L_{Aeq(15minute)}$ noise level above NML	
	10-20dB(A)	Highly affected – 75dB(A) or above
Active/passive recreation	Not Applicable (N/A)	35
Recommended additional mitigation measures (refer Section 4.2 for further details)	NA	N (Notification) PC (Phone Call) RO (Respite Offer)

Table 3 Affected distance (metres) for residential receivers with LOS during Activity 1 (OOHW night shift hours)

Activities	$L_{Aeq(15minute)}$ noise level above background (L_{A90})		$L_{Aeq(15minute)}$ 75dB or greater
	20 to 30 dB(A)	> 30 dB(A)	
	Moderately intrusive	Highly intrusive	Highly affected
Concrete saw operation	240	105	35
Recommended additional mitigation measures (refer Section 4.2 of this memo for further details)	N/A as there are no LOS receivers within this distance	N/A as there are no LOS receivers within this distance	N, PC, RO

Table 4 Affected distance (metres) for residential receivers during *Activity 1 (out of hours night)*

Activities	$L_{Aeq(15minute)}$ noise level above background (L_{A90})				
	5 to 10 dB(A)	10 to 20 dB(A)	20 to 30 dB(A)	> 30 dB(A)	$L_{Aeq(15minute)}$ 75dB or greater
	Noticeable	Clearly audible	Moderately intrusive	Highly intrusive	Highly affected
Concrete saw operation	*360*	*240*	*105*	*35*	*15*
Recommended additional mitigation measures (refer Section 4.2 for further details)	N	N Respite Period 2 (R2) Duration Respite (DR)	N, PC, Specific Notification (SN), R2, DR	Alternative Accommodation (AA), N, PC, SN, R2, DR	N/A as there are no NLOS receivers within this distance

3.2 Compound

The site compound is situated approximately 300 m south of the proposed works at 57A King Street. The site compound will be used during the day and night. Noisy works at the site compound will involve vehicles entering and leaving the compound and the use of generators during the day for welding. There will be noise barriers installed around the entire boundary of the site compound and works above vehicle entry and exit to compound restricted to daytime where possible. Additionally, mitigation measures below will be implemented to minimise any potential impacts resulting from the increased noise emissions from additional traffic movements to and from the compound.

3.3 Sleep disturbance

During concrete saw operation there is potential for sleep disturbance impacts to LOS residential receivers within 185 m of the proposal and NLOS residential receivers within 75 m of the proposal. Recommended mitigation measures in Section 4 of this memo should mitigate sleep disturbance impact.

3.4 Vibration

The proposal will require the use of some vibratory equipment including handheld tools such as jackhammers and excavators. The TfNSW noise estimator tool categorises medium hydraulic hammers as 900 kg (12-18 tonne excavator). Under a worst-case scenario where a medium hydraulic hammer is required on site, minimum working distances and vibration impacts are summarised below.

Table 5 Vibration minimum distances and potential impacts

Aspect	Minimum working distance	Will receivers be within the minimum working distance?	Vibration impacts
Light-framed structure	7 m	Yes, the nearest light-framed structures are electricity poles, street signs on the road along the alignment.	Light-framed structures would temporarily be within the 7 m working distances of the medium hydraulic hammer as the vehicle moves along the alignment and not one in one location for an extended period of time. As such, vibration from the construction of the proposal is unlikely to impact nearby light-framed structures.
Heritage and other sensitive structures	19 m	No	Vibration from the proposed works would not impact heritage or other sensitive structures.
Human response/comfort	23 m	Yes - temporarily	Vibration from the proposed works may impact nearby residential receivers. However, impacts are expected to be short-term and temporary considering the vehicle will be moving along the alignment and not one in one location for an extended period.

4 Mitigation measures

4.1 Standard mitigation measures

Standard techniques for controlling noise impacts during construction are presented in the ICNG. A construction noise and vibration management plan (CNVMP) should be prepared before work starts, incorporating the measures summarised below in Table 6 and Table 7.

Table 6 Standard mitigation measures

Standard measures
Works must comply with the EPA Construction Noise Guideline (Draft, 2021), including scheduling work and deliveries during standard daytime working hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. No work to be scheduled on Sunday nights or public holidays. Any proposed work outside of these hours must be justified. The Proposal will also be carried out in accordance with: • Sydney Water's Noise Management Procedure SWEMS0056 • Noise Policy for Industry (EPA, 2017) All reasonable and feasible noise mitigation measures should be justified, documented and implemented on-site to mitigate noise impacts.
Incorporate **standard daytime hours noise management safeguards** into the CEMP, including but not limited to: • Identify and consult with the potentially affected residents prior to commencement of works. This should: ▪ describe the nature of works, the expected noise impacts, approved hours of work, duration, complaints handling and contact details ▪ determine need for, and appropriate timing of respite periods (eg times identified by the community that are less sensitive to noise such as mid-morning or mid-afternoon for works near residences). • Implement a noise complaints handling procedure. • Do not warm-up plant or machinery near residential dwellings before the nominated working hours. • Select appropriate plant for each task, to minimise the noise impact (eg all stationary and mobile plant will be fitted with residential type silencers). • Do not use engine brakes when entering or leaving the work site(s) or within work areas. • Regularly inspect and maintain equipment in good working order. • Arrange work sites where possible to minimise noise (eg generators away from sensitive receivers, site set up to minimise use of vehicle reversing alarms, site amenities and/ or entrances away from noise sensitive receivers). • Use natural landforms/ mounds or site sheds as noise barriers. • Schedule noisy activities around times of surrounding high background noise (local road traffic or when other noise sources are active).
If **night works are needed (beyond those identified in the REF),** the Delivery Contractor would: • justify the need for night works • consider potential noise impacts and implement the relevant standard daytime and out of hours safeguards and document consideration of all reasonable and feasible management measures • identify community notification requirements (ie for scheduled night work (not emergency works)) • notify all potentially impacted residents and sensitive noise receivers not less than one week prior to commencing night work • seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.
If works on **Sundays or public holidays are required**, the Delivery Contractor would: • justify why all other times are not feasible • consider potential noise impacts and implement relevant standard daytime, out of hours and night-time safeguards and other reasonable and feasible management measures • identify community notification requirements • seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

Standard measures
Conduct a dilapidation survey / asset condition assessment prior to works which have potential to damage existing structures.
Monitor compliance with the recommended vibration levels in DIN 4150-3 1999: Structural Vibration – Part 3; Effects of vibration on structures.
Consider less vibration intensive methodologies where practicable and use only the necessary sized and powered equipment.

4.2 Additional mitigation measures

Table 7 provides a list of the recommended mitigation measures from TfNSW noise estimator tool in relation to the assessment outcome (refer section 3.2 of this document). Not all mitigation measures are recommended at all locations (refer commentary for further detail). Community consultation will determine the number of nights/week if works are to extend beyond two nights/week. Table 7 also includes further information on why some of these mitigation measures will or will not be implemented.

Table 7 Additional mitigation measures

Abbreviation	Additional mitigation measure and description	Commentary
N	Notification (letterbox drop or equivalent) Advance warning of works and potential disruptions can assist in reducing the impact on the community. The notification may consist of using variable message sign, letterbox drop (or equivalent), web site / social media or a combination to distribute information detailing work activities, time periods over which these will occur, impacts and mitigation measures. Notification should be a minimum of five working days prior to the start of works. The approval conditions for projects may also specify requirements for notification to the community about works that may impact on them.	Will be done (all locations) – refer Table 7 – letterbox drops at least one week out from starting.
SN	Specific notifications Specific notifications are letterbox dropped (or equivalent) to identified stakeholders no later than five working days ahead of construction activities that are likely to exceed the noise objectives. The specific notification provides additional information when relevant and informative to more highly affected receivers than covered in general letterbox drops. This form of communication is used to support periodic notifications, or to advertise unscheduled works.	Will be done – refer Table 7 (targeted engagement and doorknocks closer to construction).
PC	Phone calls Phone calls detailing relevant information made to identified/affected stakeholders, who have provided their contact details, within seven calendar days of construction start. Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposal and specific needs. Where the resident cannot be telephoned then an alternative form of engagement should be used.	Will be done – refer Table 7 – phone calls will be performed with highly impacted receivers where appropriate.
IB	Individual briefings	Not recommended by the noise estimator tool.

Abbreviation	Additional mitigation measure and description	Commentary
	Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Project representatives 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. Where the resident cannot be met with individually then an alternative form of engagement should be used.	
RO	Respite offer Respite Offers should be considered where there are high noise and vibration generating activities near receivers. As a guide work should be carried out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of and amenity at nearby receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact. This measure is evaluated on a project-by-project basis, and may not be applicable to all projects, or when duration respite has been agreed (see below)	This was not considered appropriate to this project as duration respite will be offered. In addition, noisiest work will be completed before 12 midnight and works will progress along the alignment ensuring no single receiver is highly impacted for an extended period. This offer can be considered by the communication team (for receivers mapped within the distance identified as being eligible for this mitigation measure).
R1	Respite Period 1 Out of hours construction noise in out of hours period 1 shall be limited to no more than three consecutive evenings per week except where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and no more than 6 evenings per month	As for Respite Offer – not recommended – Respite Period 2 will be applied
R2	Respite Period 2 Night time construction noise in out of hours period 2 shall be limited to two consecutive nights except for where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and 6 nights per month. Where possible, high noise generating works shall be completed before 11pm.	Will be done – refer Table 7 – respite offers will ensure all noisy/annoying work will be completed before midnight and a work pattern will be agreed with nearby sensitive receivers.
DR	Duration respite Respite offers and respite periods 1 and 2 may be counterproductive in reducing the impact on the community for longer duration projects. In this instance and where it can be strongly justified it may be beneficial to increase the work duration, number of evenings or nights worked through Duration Respite so that the project can be completed more quickly.	As for Respite Offer – not recommended – Respite Period 2 will be applied.

Abbreviation	Additional mitigation measure and description	Commentary
	RDC staff should engage with the community where noise levels are expected to exceed the NML to demonstrate support for Duration Respite.	
AA	Alternative accommodation Alternative accommodation options may be offered (as a last resort) to residents living in close proximity to construction works (within the distance nominated by the noise estimator) that are likely to experience highly intrusive noise levels.	The specifics of the offer will be identified on a project-by-project basis, however an AA offer is unlikely to be made for maintenance works. Additional aspects for consideration shall include whether the highly intrusive activities occur throughout the night or before midnight.
V	Verification Verification may be required for building or asset condition where works are likely to cause vibration impact or for noise levels following reasonable complaints.	Not specifically recommended by the noise estimator tool. However, this can be a useful activity to check noise levels during construction. An example would be where there has been a noise complaint, attended monitoring may be performed to help investigate the complaint.

4.3 Reasonable and Feasible assessment

A Reasonable and Feasible Assessment has been completed to determine the appropriate additional mitigation measures. Additional measures recognised in this assessment has been included in Table 8 below.

The adopted mitigation measures from the Reasonable and Feasible Assessment should form part of the CEMP and/or NVMP, and any changes to the mitigation option from the assessment would be documented with sufficient justification as to why changes are required.

Table 8 Reasonable and feasible table

Mitigation option	Feasible mitigation test (can it be done)	Reasonable mitigation test (should it be done)	Adopted/ Partially Adopted/ Not Adopted	Justification or comment
Planning the work				
Consideration of alternatives / options	*Yes*	*No*	***Not Adopted***	The residents in the area require access to safe and reliable drinking water and a new watermain needs to be installed to replace an existing main. There are no alternative options available, other than not completing the work. This is not feasible as the main has historical breaks and therefore requires renewal to avoid any further adverse impact to the community and environment.
Do nothing	*No*	*No*	***Not Adopted***	Do nothing is not a feasible option. The existing condition of the main is likely to result in further failure and could result in collapse with subsequent environmental damage, consequent clean-up costs, potential fines and liabilities. The proposed upgrade would remove the likelihood of future breaks and maintain a safe and reliable water supply to customers.
Conduct the works during standard daytime hours	*Yes*	*No*	***Not Adopted***	The ROL for lane closures of King Street limits work being done during the day. ROL day hours are not permitted/ are a lot shorter than out of hours ROLs. ROL restrictions during standard day hours will extend the construction schedule, increasing delivery cost and inconvenience to residents and road users.
Conduct the works during the evening and night	*Yes*	*Yes*	***Adopted***	Construction and connection work will be completed at night in line with ROL limitations and crew safety from low flow requirements for connection work.

Mitigation option	Feasible mitigation test (can it be done)	Reasonable mitigation test (should it be done)	Adopted/ Partially Adopted/ Not Adopted	Justification or comment
				Night work hours are proposed from 8 pm to 5 am. Community consultation in advance of work starting will determine the number of nights, if work is to extend beyond two nights per week. The linear alignment will ensure individual property impact (work directly outside the property) will be typically limited to about two nights.
Consultation/ notifications/ complaints management				
Community consultation prior to works	*Yes*	*Yes*	***Adopted***	Community engagement will be undertaken around 1 month in advance of the works commencing, with notifications to impacted residents within the zone of influence. Residents and businesses within the direct zone of influence will be consulted prior to the commencement of works. This will include face to face engagement and door knocks. Consultation will include number of night shifts per week and mitigation measures to be adopted. Community preference will determine if shifts can extend to more than two night shifts per week and the appropriate respite periods.
Consultation with residents during works	*Yes*	*Yes*	***Adopted***	Ongoing engagement will continue on an ad-hoc basis. For sensitive receivers / highly impacted residents, regular follow-up will be done (i.e. one-on-one meetings, emails, texts, phone discussions). Engagement during construction will be ongoing and include proactive management of issues to minimise complaints. Where complaints and enquiries arise, action will be taken to address these with appropriate mitigation adopted.
Project updates	*Yes*	*Yes*	***Adopted***	Regular project update newsletters will be sent to surrounding community and emailed to key stakeholders including City of Canterbury-Bankstown council. A request will be made to City of Canterbury-Bankstown council to share information on the project through their social network.

Mitigation option	Feasible mitigation test (can it be done)	Reasonable mitigation test (should it be done)	Adopted/ Partially Adopted/ Not Adopted	Justification or comment
				Correspondence will include an option for residents and businesses to sign up to a weekly update email.
Notification to residents prior to out of hours work	*Yes*	*Yes*	***Adopted***	Residents will be notified of night work at least seven days in advance of work starting. An Out of Hours Work Plan (OHWP) will be completed in advance of work starting.
Ongoing community complaints management	*Yes*	*Yes*	***Adopted***	A Community Engagement Advisor will be assigned to the project. All consultation with community and stakeholders will be recorded on Sydney Water's Consultation Manager database.
Daily register of planned activities on site	*Yes*	*Yes*	***Adopted***	Register incorporated as part of site diary entry and pre-start meetings to discuss and record potential community and environmental issues and impacts. Mitigation measures to be adopted will be discussed, based on planned construction activities, weather and site conditions. Mitigation measures will be put in place in advance to address potential issues**.**
Selection of construction methodology / plant and equipment				
Underbore the total alignment	*No*	*Yes*	***Not adopted***	Underboring the total alignment is not feasible and open trenching is the preferred methodology. For under boring, the construction of launch and a receival pits within the road corridor is challenging and would extend the construction schedule due to set-up of the boring machine.
Two work fronts	*No*	*No*	***Not adopted***	The alignment is considered too short in distance to accommodate two works fronts. This approach would also significantly increase the cumulative noise impacts to nearby receivers.
Smaller excavator	*Yes*	*No*	***Not adopted***	A smaller excavator is not able to reach the trench invert level. Additional plant will be required which will create further impacts to nearby receivers.
Noise and vibration verification / monitoring				
Attended noise and vibration monitoring	*Yes*	*Yes*	***Adopted***	Attended monitoring will be in place to evaluate construction noise and where appropriate, vibration levels. Recordings will be measured to

Mitigation option	Feasible mitigation test (can it be done)	Reasonable mitigation test (should it be done)	Adopted/ Partially Adopted/ Not Adopted	Justification or comment
				evaluate whether mitigation measures are adequate or require revision, and to address complaints.
Unattended continuous noise monitoring	*Yes*	*No*	***Not Adopted***	Verification of predicted noise levels during construction will be obtained via attended noise monitoring. Continuous monitoring will be considered if complaints are received.
HSEQ Site Presence	*Yes*	*Yes*	***Adopted***	Increase of site presence and inspections occurring to ensure proactive management of site issues. A Project Environmental Mentoring session will be held in advance of work starting to induct all site crew members on the requirements of the REF and CEMP**.**
Noise attenuation at source/ site				
Noise barriers at work front	*Yes*	*Yes*	***Adopted***	Noise barriers will be installed between the work area and nearby residences on King Street. Noise barriers will also be installed along the boundary of the site compound. This is feasible because the properties are largely single storey. Generators will be used on an ad-hoc basis along the work alignment and during the day at the site compound. Noise mitigation, such as noise barriers, will be used around the generators which will be located as far from sensitive receivers as practicable.
Noise barriers along alignment	*No*	*No*	***Not Adopted***	As the worksite will be set up and closed down each shift to open the road, installation of noise barriers along the entire alignment is not practicable, socially and visually unfitting, and could pose as a hazard for the road users.
Purpose built noise wall	*No*	*No*	***Not Adopted***	As the work is temporary and fast-moving, building a permanent noise wall along the alignment is not practicable.
Respite periods				
Duration respite periods	*Yes*	*Yes*	***Adopted***	Community preference will determine if shifts can extend to more than two night shifts per week and the appropriate respite periods.

Mitigation option	Feasible mitigation test (can it be done)	Reasonable mitigation test (should it be done)	Adopted/ Partially Adopted/ Not Adopted	Justification or comment
Respite periods – Noisy works completed prior to midnight	*Yes*	*Yes*	***Adopted***	All noisy/annoying work (per section 1.3 of the memo) will be completed before midnight. Noise and community mitigation measures will be implemented.
Respite periods for high impact noise works – other options (such as three hour blocks with a one hour respite period)	*No*	*No*	***Not Adopted***	Noisy/annoying work (per section 1.3 of the memo) will only happen between 9 pm to 12 am.
Respite – Alternate Accommodation	*Yes*	*No*	***Not Adopted***	As construction will progress along the alignment each shift, is linear in nature and fast-moving, actual direct impact (working outside the property) is minimal, with alternate accommodation not required.
Consultation for high impact noise works	*Yes*	*Yes*	***Not Adopted***	For high impact noise affected residents, identified during community engagement consultation, the following provisions may apply: • earplugs for night work • vouchers/gift cards to allow respite away from the property
Architectural treatments at properties – ie double glazing, soundproofing, door/window sealing	*No*	*No*	***Not Adopted***	Architectural treatments have not been offered due to the temporary and fast-moving nature of the work.

5 Conclusion

An assessment was completed to review the potential for noise impacts during the proposed works at King Street, Ashbury to be undertaken outside of standard construction hours. The assessment identified that the construction of the proposal will have the potential to generate noise and vibration noticeable to nearby sensitive receivers.

The TfNSW Construction and Maintenance noise estimator tool has been used to predicted noise levels and maps for each relevant time period. It should be noted that these noise levels are for the worst-case scenario with noisiest work completed before 12 am midnight. Works will advance along the alignment, limiting the noise exposure of individual receivers with noise levels increasing as the work approaches a receiver and then decreasing as they move past them.

Standard and additional measures are recommended to mitigate and manage noise during construction. If works are to extend beyond two nights/week, consultation and agreement with the community will be carried out to determine the number of nights per week works can be undertaken.

Prepared by:	Reviewed by:
	
Alison Barclay Noise Memo Co-author Sydney Water Date: 04/06/2025	Samantha Prior A/Environmental Assessment Team Manager Sydney Water Date: 13/06/2025

6 Appendix

Figure 2 Project Overview

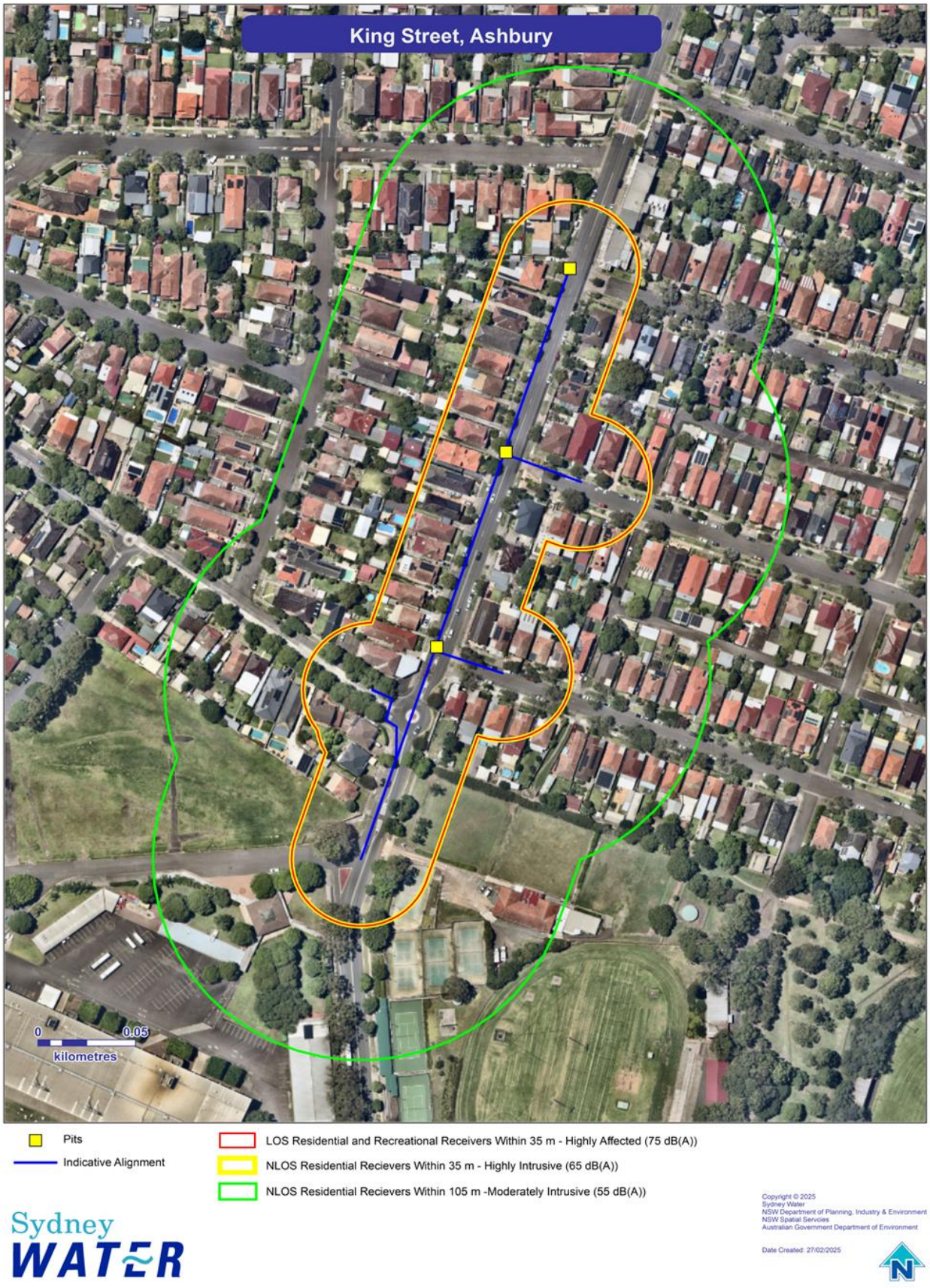

Figure 3 Noise assessment of proposed works along alignment

Figure 4 Noise assessment of proposed works at site compound