Review of Environmental Factors Multi-program - Category B

T41-S03 DN600 Forest Road, Penshurst

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) (August 2025). Together both documents assess the potential environmental impacts of the T41-S03 DN600 Forest Road, Penshurst proposal. 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.

Certification

I certify that I have reviewed and endorsed this Category B 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 and endorsed by:	Endorsed by:
Catherine Timbrell Environmental Scientist Sydney Water [redacted] Date: 7 September 2026	John Eames Senior Environmental Scientist Sydney Water [redacted] Date: 9 September 2026	Michael Youssef Project Manager Sydney Water [redacted] Date: 18 September 2026

Decision Statement

The main potential construction environmental impacts of the proposal include impacts to noise and traffic. The proposal will have no operational impacts. 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.

Determined by: [redacted]

Elissa Howie
A/Senior Manager
Environment and Heritage,
Sydney Water
Date: 25 September 2026

1 Proposal details

Table 1-1: Proposal details

Aspect	Relevance to proposal
Location and land ownership	The proposal is located along Forest Road, Penshurst, between Nelson Street and Penshurst Street, within the verge on the northern side of Forest Road (refer Figure 1-1). The proposal is within the Georges River Council Local Government Area (LGA).
Approved REF	Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi-program REF) (August 2025).
Proposal description and methodology	The proposal is part of the pipeline works program as detailed in the Multi-program REF. The scope of works includes the renewal of about 271 m of DN600 steel cement (mortar) lined watermain using an OD560 PE100 pipe, over a construction period of about 3 months. Depending on adopted respite periods, this could extend to up to 6 months. The existing water main will be renewed using slip-lining for about 256 m requiring three launch and retrieval pits located near the middle and at each end of the alignment. The pits will have a width of 7 m and depth of 3 m. Each pit will likely be excavated in 2 shifts. Following completion of the works, the pits will be reinstated. A 15 m section near Inverness Avenue will be constructed using open trenching due to utility constraints. This section will be divided into 5 m segments, with each segment constructed sequentially in about a week and staged to provide respite periods. The works will be located within areas previously disturbed by the construction of the existing water main and other underground utilities. This will reduce the need for excavation in undisturbed areas reducing the likelihood that the proposal will encounter solid rock. It is anticipated that about 0.5 m of widening will be required on either side of the existing trench with potential for minor excavations of loose rock. There will be no vegetation clearing beyond minor grass/ verge disturbance. The general methodology includes: • service locating and potholing • excavation and shoring of three launch/ retrieval pits • localised open trench excavation up to 15 m • potential rock excavation • temporary water supply/ bypass arrangements and shutdown • reconnection of existing offtakes • pressure testing, slip-lining and pipe pulling • chlorination and commissioning • backfilling, reinstatement and surface restoration.

Aspect	Relevance to proposal
Proposal need	Due to the pipe's age (laid in 1934) and its importance as a critical supply main within the Penshurst Elevated Water Supply Zone, it has been identified as a high-priority trunk main asset for renewal. The proposed renewal works aim to enhance network resilience, by reducing disruptions to the water supply and improving service levels to customers.
Indicative equipment	Equipment to facilitate the proposal will generally include: • excavators (including rock breaking capable plant if required) • vacuum truck • crane/ lifting equipment • pipe pulling/ slip lining equipment • shoring systems • generators and compressors • traffic control devices • water carts and dust suppression equipment • service locating and CCTV equipment.
Proposal timing	The proposal is expected to take about 3 months from late 2026. Depending on adopted respite periods, this could extend to up to 6 months. A Road Occupancy Licence (ROL) will be obtained prior to construction. The conditions of the ROL are likely to require works to be undertaken outside standard construction hours.
Consultation	Sydney Water consulted Georges River Council on 24 August 2026 in accordance with the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) section 2.10(1)(e) and 2.10(1)(f) as works will impact council related infrastructure and services. No response has been received from Council to date. Any future response about the proposal will be managed in line with the Community and Stakeholder Engagement Plan. Community notification will be required in accordance with the mitigation measures outlined in the Construction Noise and Vibration Memo prepared as part of this Category B REF. Notifications will also be provided to landowners adjacent to the works if private driveways are required to be temporarily obstructed. There are no additional consultation requirements beyond those already described in the Multi-program REF.
Legislative requirements	There are no additional legislative requirements beyond those already assessed in the Multi-program REF.

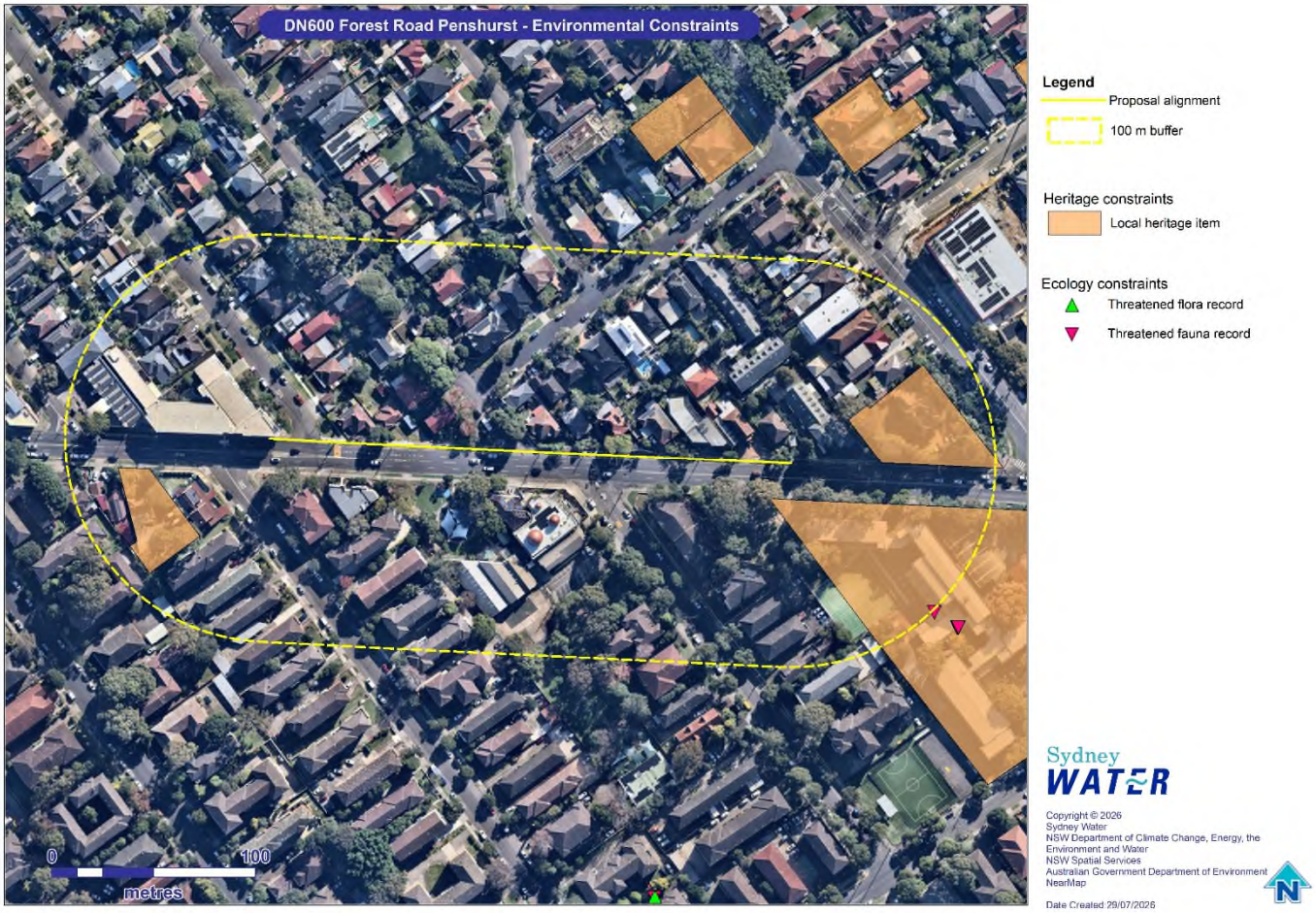


Figure 1-1 Location of proposal and key environmental constraints

2 Additional environmental impacts and mitigation measures

The proposal is located on Forest Road, a classified State road. The proposal is situated within a mixed low-medium density residential and commercial area. On the northern side of Forest Road, land uses along the alignment (from east to west) include a religious facility, low-density residential properties, and a medium-to high-density residential building. On the southern side of Forest Road, surrounding land uses include a school at the eastern end, followed by medium- to high-density residential properties, a community centre, and low-density residential properties. A three-storey commercial building is located at the western end of the alignment.

The following non-residential receivers are within the vicinity of the proposal and are identified in the Construction noise and vibration assessment memo (Appendix D).

- Educational institutions:
  - Georges River College Penshurst Campus: 2 Austral Street
  - St Declan's Catholic Primary School: 94 Penshurst Street
  - Penshurst Public School: 1 Arcadia Street
  - Bosnian Ethnic School: 447 Forest Road
  - 3Bridges College: 23 St Georges Road
- Places of worship:
  - Convent of St Joseph Penshurst: 55 Penshurst Street
  - St Declan's Catholic Church: 92 Penshurst Street
  - Penshurst Mosque: 447 Forest Road
- Recreation:
  Pole Depot Park: 453 Forest Road.

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 2-1: Review of environmental aspects

Aspect	Additional impacts	Additional mitigation measures
Noise and vibration	A construction noise and vibration assessment memo has been prepared to support this Category B REF (Appendix D). The potential noise impacts of the proposal are considered moderate after the implementation of mitigation measures contained in the memo.	• If works start more than 12 months from the completion of the noise technical memo, the Delivery Contractor is to review the proposal details, including methodology, timing and duration, and existing environment. Should

Aspect	Additional impacts	Additional mitigation measures
	Under the worst-case construction scenario involving night-time excavation and rock breaking, the noisiest construction activities are predicted to exceed relevant noise management levels at residents located up to 170 m from the works during daytime periods and up to 590 m during night-time periods. Without rock breaking, this reduces to up to 55 m during the daytime periods and up to 220 m during night-time periods. Impacts will be highly intrusive but short term in nature, with each pit likely be excavated in 2 shifts (6 total shifts), and the 15 m trench likely to be excavated in about 1 week. This means the noisiest activities assessed in the memo will occur for about 2 weeks of the 3-month construction period. There is potential for minor excavations of loose rock. The proposal is unlikely to encounter solid rock as the subsurface is highly disturbed from the work associated with the existing underground utilities. While construction activities will be distributed along the length of the alignment, residents near Inverness Avenue are expected to experience more localised noise impacts. This is because the location will require a launch/retrieval pit in addition to about 15 m of open trenching. Additionally, there are several non-residential receivers within the vicinity of the proposal, including educational institutions, places of worship, and a recreational area, some of which will be highly affected and will require notifications, phone calls and respite periods. The proposal will require the use of some vibratory equipment including handheld tools such as jackhammers as well as excavators with hammers, and there is potential for minor excavations of loose rock. The proposal is unlikely to encounter solid rock as the subsurface is highly disturbed from the work associated with the existing underground utilities. Based on a review of aerials, there are no light-framed structures within 7 m of the works, and there are no heritage or sensitive structures within 19 m of the works. There is housing 7 m from the works (refer Figure 5-6 of Appendix D)	there be any changes, the Delivery Contractor is to re-assess the noise impacts. • Conduct letterbox drops, doorknocking, phone calls and provide respite (eg Out of Hours Respite period R2 or duration respite where justifiable and accepted by the community to shorten the project duration by increasing the number of shifts per week) to affected stakeholders in accordance with the recommended distances of the TfNSW Construction and Maintenance noise estimator tool and 'Reasonable and Feasible' measures (see Appendix D). • Multiple work fronts to be established where practicable to reduce construction duration. This is if there is sufficient distance between working crews to ensure that a given receiver is impacted by only one work front at any one time (for night works this is only acceptable for works that do not require rock breaking and if a distance of over 220m is possible). • Conduct a dilapidation survey / asset condition assessment prior to works which have potential to damage existing structures. • Use less vibration intensive methodologies where practicable, such as using a smaller excavator near sensitive structures, and use only the necessary sized and powered equipment. • Monitor compliance with the recommended vibration levels in DIN 4150-3 1999: Structural Vibration – Part 3; Effects of vibration on structures.

Aspect	Additional impacts	Additional mitigation measures
	and human comfort may be temporarily impacted up to 23 m from the works. Project-specific mitigation measures will be implemented to mitigate noise and vibration impacts during construction. This would include community engagement in accordance with Sydney Water's community and stakeholder engagement guidelines.	
Traffic	The proposal is located along Forest Road, Penshurst, between Nelson Street and Penshurst Street, within the footpath and grass verge on the northern side of Forest Road. A ROL will be obtained prior to construction. ***Existing network*** Forest Road is a classified State road with two lanes in each direction. The speed limit is 60 km/hr with sections of school zones near Penshurst Public School and Georges River College Penshurst. A bus stop is located on Forest Road opposite Georges River College Penshurst and is serviced by two eastbound bus routes travelling towards Hurstville. The closest available TfNSW traffic counter is located on Stoney Creek Road, 20 m west of Illawarra Parade (Station ID 41154). This counter is 2 km from the proposal area. The most recent data available from this traffic counter is from 2024 and records an average daily traffic volume of 20,637 vehicles, comprising 9,834 eastbound movements and 10,803 westbound movements. A clearway exists along sections of Forest Road adjacent to the proposal between 6 am to 10 am and 3 pm to 7 pm, Monday to Friday. The remaining sections adjacent to the proposal are 'no stopping zones'. ***Construction impacts*** Temporary traffic management will be required during pipeline construction activities, including excavation, pipe installation, and reinstatement works. This may include temporary lane restrictions, and short-term road closure of Inverness Avenue at its intersection with Forest Road. Diversions will be in place to direct traffic	Potential impacts can be adequately managed by the application of mitigation measures from the Multi-program REF.

Aspect	Additional impacts	Additional mitigation measures
	of which entry to and exit from Inverness Avenue will be provided by George Street to the north. The conditions of the ROL are likely to require works to be undertaken outside standard construction hours to reduce traffic impacts. There may be temporary obstructions to pedestrian footpath, private driveways, and on street parking along Forest Road. Appropriate notification and consultation will be provided to residents and businesses adjacent to the proposal. No bus stops will be obstructed by the works. Construction activities are expected to generate up to 10 light vehicles on site during periods of low activity and up to 25 light vehicles on site during peak construction periods (worst-case scenario). Heavy vehicles and plant, including excavators, delivery trucks and vacuum trucks, will also be required throughout the construction period. Vehicle access and construction traffic movements will be managed in accordance with a Traffic Management Plan to minimise impacts on road users, public transport services, and surrounding residences, as outlined in the Multi-program REF. Given the existing traffic volumes on Forest Road, the temporary increase in construction traffic is expected to result in minor and short-term impacts. Traffic disruptions associated with lane restrictions or temporary road closures would be managed through traffic control measures and notification to road users.	
Heritage	The following local heritage structures listed under the Georges River Local Environmental Plan 2021 are located along Forest Road in proximity to the works: • Georges River College – Penshurst Girls Campus (I188) • Former St Joseph's Convent (I289) • Victorian bungalow "Torino" and setting (I274). None of these heritage structures are within the 19 m minimum working distance for potential vibration impacts (refer Appendix D).	Potential impacts can be adequately managed by the application of mitigation measures from the Multi-program REF.

Aspect	Additional impacts	Additional mitigation measures
	There are no Aboriginal heritage sites within 1 km of the works. The works are outside high-risk areas and in previously disturbed land so the presence of Aboriginal heritage sites is unlikely. With the implementation of mitigation measures from the Multi-program REF, potential heritage impacts can be managed and are not anticipated.	
Flora and fauna	There are several BioNet records of Grey-headed flying-fox (*Pteropus poliocephalus*) within proximity to the proposal area. The nearest record is 90 m to the works as shown in Figure 1-1. There will be no vegetation clearing beyond minor grass/ verge disturbance.	Direct artificial light away from sensitive receivers where possible (ie residents, fauna or roadways). Potential impacts can be adequately managed by the application of mitigation measures from the Multi-program REF.

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Appendix A – Section 171 and 171A checklist

There are no findings in addition to those considered in the Multi-program REF.

Appendix B – Consideration of Ecologically Sustainable Development

There are no ESD considerations in addition to those covered in the Multi-program REF.

Appendix C – 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?		X
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		X
Connect to, and have a substantial impact on, the capacity of a council owned sewerage system?		X
Connect to, and use a substantial volume of water from a council owned water supply system?		X
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?	X	
Excavate a road, or a footpath adjacent to a road, for which the council is the roads authority, that is not minor or inconsequential?	X	
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?		X
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?		X
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)?		X
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		X

TISEPP section	Yes	No
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).*		X
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).*		X
Will the proposal include a fixed or floating structure in or over navigable waters? *If so, consult TfNSW.*		X
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.*		X
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.*		X
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).*		X

Appendix D – Construction noise and vibration assessment memo