Review of Environmental Factors Multi-program - Category B

City Area 30 - Traversable Renewals, Haymarket and Surry Hills

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 City Area 30 Traversable Renewals project. 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:
[redacted]		
Environmental Scientist Sydney Water Date: 26/10/2026	Senior Environment Scientist Sydney Water Date: 26/10/2026	A/Project Manager Sydney Water Date: 27/10/26

Decision Statement

The main potential construction environmental impacts of the proposal include noise and traffic impacts. During operation, no impacts are anticipated from the proposal. 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 Services
Sydney Water
Date: 28 October 2026

SW 232 11/26

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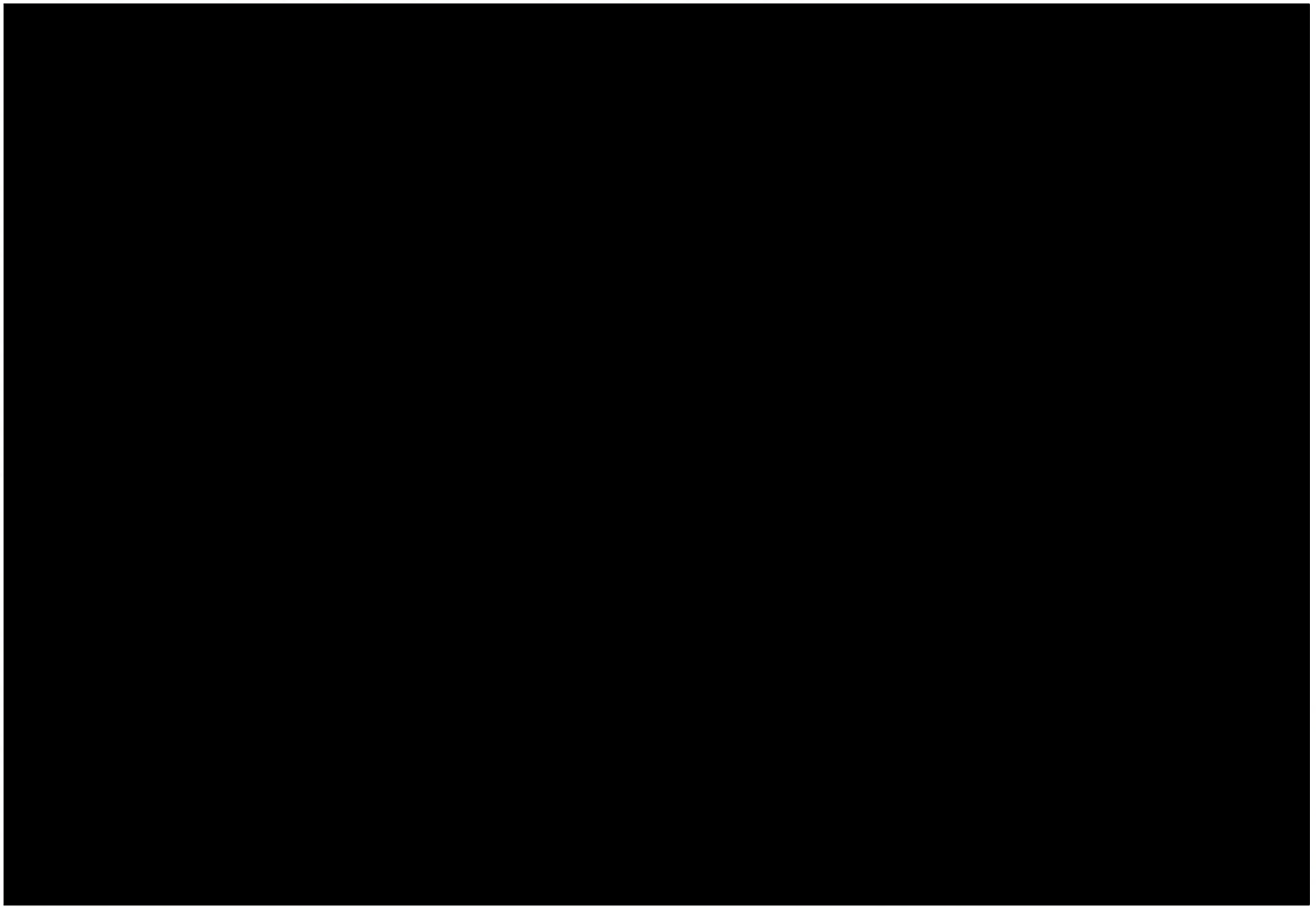
1 Proposal details

Table 1-1: Proposal details

Aspect	Relevance to proposal
Location and land ownership	The proposal is located on Hay Street, Elizabeth Street and Goulburn Street, Haymarket in the City of Sydney local government area (LGA). The proposal will be carried out underground and will pass beneath the following properties: • DP6380 Lot 3 • SP 86852 Lot CP • DP6380 Lot 7 • DP6380 Lot 8 • DP6380 Lot 9 • DP1276435 Lot 10 • SP 61125 Lot CP • DP868663 Lot 1 The proposal area will pass underneath a mix of Sydney Water land, private property, Council and Transport for New South Wales (TfNSW) land.
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 Sewer and Stormwater Rehabilitation program as detailed in the Multi-program REF. The proposal will remediate the existing stormwater sandstone block arch and brick oviform structure. Investigations identified defects that present structural and material risks. As a result, the channel requires remediation. The proposal will include the following works: • daily site mobilisation, establishment and demobilisation at each access maintenance hole. • Flow Isolation and Flow Management (FIFM) • removing vegetation present between bricks • remediation includes via: o crack sealing o concrete section loss repair o void infall o brick mortar repointing o sandstone block repointing. The channel can be accessed via seven existing maintenance holes (asset numbers: 1650441, 11506004, 1650461, 1651037, 1650445, 1650425 and 1651683) which are located on Hay Street, Elizabeth Street and Goulburn Street.

Aspect	Relevance to proposal
	Removable traffic barriers will be installed around the maintenance holes and removed after each shift. A construction compound is not required for this proposal. Materials and tools will be stored inside a mobile tool truck, which would be parked near the maintenance holes at the start of each shift. No ground disturbance or vegetation clearance will be required for the proposal.
Proposal timing	The proposal is expected to require out of hours work due to the location of the site and the need to access it from a main road. The proposal is expected to take approximately 20 weeks from May 2027 to October 2027.
Consultation	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). Consultation is required under section 2.10 of the TISEPP as the proposal involves impacts to vehicular traffic. Sydney Water notified City of Sydney Council of the proposal on 20 October 2025 in compliance with this requirement (refer to Appendix C – Consideration of TISEPP consultation). As of 26 October 2026, Council has not provided a response to the proposal. Prior to construction, the contractor must obtain a Road Occupancy Licence (ROL) for the proposal. Consultation with TfNSW would occur as part of this process. The proposal would also be located near the Sydney Light Rail services (SLR). As such, the contractor must notify and obtain a Work Access Permit from Transdev. Further detail is provided in Appendix C.
Legislative requirements	Additional legislative requirements above those already assessed in the Multi-program REF are detailed below. ***Heritage Act 1977*** Sections of the proposal on Hay Street are located within the Hay Street Stormwater Channel (No.30P1) which is listed on Sydney Water's Heritage and Conservation Register (s.170) for its local heritage significance. A local heritage assessment form has been completed to assess potential impacts of the proposal to this item. ***Roads Act 1993*** The proposal would require access to maintenance holes located on Hay Street, Elizabeth Street and Goulburn Street. This is likely to require partial road closures, diversion and traffic management. As the proposed works would be within 100 m of traffic signals, a ROL must be obtained from TfNSW prior to commencement of works. Consultation with City of Sydney Council is also required under section 138 of the *Roads Act* for obstructing the footpath along the corner of Hay Street and Sussex Street. The footpath along a section of Foy Lane, Reservoir Street, Sussex Street and Campbell Street, may also be obstructed where the tool truck will park during the proposal.

Aspect	Relevance to proposal
	Biodiversity and Conservation SEPP 2021 (BCSEPP) The proposal is within the Sydney Harbour Catchment, a regulated catchment area, under Chapter 6 of the BCSEPP. The controls in Part 6.2 of the BCSEPP apply to activities requiring development consent. However, the proposal does not require development consent under Section 2.137 of the TISEPP. Notwithstanding, Section 171A requires that a determining authority take into account specific matters in Sections 6.7-6.9 of the BCSEPP. Refer to Appendix A for further detail. Potential environmental impacts of the proposal on water quality and quantity, aquatic ecology, flooding, access, cultural heritage, flora and fauna, and scenic quality would also be negligible. While the proposal does not require development consent, it would still be consistent with the requirements of part 6.2 of the BCSEPP.



This information has been redacted to protect sensitive Aboriginal heritage information.

Figure 1-1 Location of proposal and key environmental constraints



Figure 1-2 Location of proposal and key constraints

2 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 2-1: Review of environmental aspects

Aspect	Additional impacts	Additional mitigation measures
Water and drainage	During construction, mortar mix and other chemicals may be brought to the work site, which may impact waterways if not stored and managed properly. However, all materials and chemicals will be removed from the work site after each shift and the FIFM will be in place to prevent flows into and from the work site. As such, the risk to waterways is considered to be low. The City of Sydney Darling Harbour Catchment Floodplain Risk Management Plan (WMA Water, 2016) shows that the proposal area is located within the modelled 1% annual exceedance probability (AEP) peak flood depth. During construction, flooding risks can be adequately addressed through implementation of mitigation measures from the Multi-program REF (August 2025). This includes the requirement to stop work during heavy rainfall. As the proposal would involve remediating the existing culvert only, operational changes to flooding patterns or areas are not anticipated. Impacts to water and drainage are not anticipated during construction or operation.	Apply mitigation measures from the Multi-program REF (August 2025) in addition to: • All materials and chemicals will be removed from the proposal area after each shift. • Monitor and manage FIFM measures throughout the works to ensure correct procedures are implemented and to prevent pollution events.
Heritage	<u>Non-Aboriginal heritage</u> Sections of the Hay Street Stormwater Channel (No.30P1) are included on Sydney Water's Heritage and Conservation Register (s.170), for its local heritage significance. The culvert is an arched structure comprised of sandstone blocks and is part of the original group of combined sewers built in Sydney during the 1860s. Part of the proposal is located within the heritage curtilage of this item. A local heritage assessment was completed by Sydney Water's Principal Heritage Advisor to determine the potential impacts of this proposal on the Hay Street	Apply mitigation measures from the Multi-program REF (August 2025) and the following additional measures as outlined in Appendix D: • All project team members, including contractors, should be informed about the heritage significance of the site as part of the general site induction package. The induction should identify why the Hay Street Stormwater Channel is significant, the

Aspect	Additional impacts	Additional mitigation measures
This information has been redacted to protect sensitive Aboriginal heritage information.	Stormwater Channel (Appendix D). The heritage significance of the Hay Street Stormwater Channel rests in its ongoing operation, development and expansion. The proposal will ensure the ongoing operation and functioning of the heritage asset, whilst also increasing its serviceable life. With implementation of the mitigation measures outlined below, the proposal is anticipated to have a positive impact on the Hay Street Stormwater Channel. In addition, the maintenance hole access locations along Hay Street, Goulburn Street and Elizabeth Street are adjacent to a number of State and local heritage items. However, access through the heritage curtilages is not required (Figure 1) and the use of vibration intensive equipment is not required. As a result, no impacts to these heritage items are expected. **Aboriginal heritage** A basic search of the Aboriginal Heritage Information Management System (AHIMS) register carried out on 11 June 2026 (#1141432) [redacted] Additionally, there is an existing AHIP incorporating this site however the proposal does not require works within the AHIP area. The proposal is within a previously disturbed area and impacts to Aboriginal cultural heritage during construction and operation are not anticipated.	contractors' statutory obligations relating to heritage and any protection methods to be used during works to prevent accidental damage to the Hay Street Stormwater Channel. • The final mortar and primer system must: - be based on an understanding of the nature of the existing historical mortars within the s.170 listed portion of the Hay Street Stormwater Channel. This should be developed through a sampling strategy (across a range of locations) to facilitate and undertake laboratory testing and analysis. - consider appropriateness of the mortar to achieve operational requirements including longevity and asset protection. - be developed in consultation with, and to the satisfaction of, an appropriately qualified heritage professional and the Sydney Water Heritage Team. • Removal of tree roots should be undertaken in a manner that arrests further damage to the heritage item and minimises the impact on the fabric of the Hay Street Stormwater Channel. • Works to the heritage fabric of the Hay Street Stormwater Channel should utilise hand tools. Where mechanised equipment is proposed to be used this must be undertaken in a manner that arrests further damage to the heritage item and minimises the impact on the fabric of the Hay Street Stormwater Channel.

Aspect	Additional impacts	Additional mitigation measures
Noise and vibration	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 impact would be low risk and therefore a qualitative noise impact assessment was undertaken. Receivers surrounding the proposal include Paddy's Markets, several bars and restaurants, commercial buildings, hotels and residential apartment buildings. Hotels and apartment buildings extend beyond the ground floor. Potential construction noise sources include: • site mobilisation and demobilisation • use of hand tools for demolition and concrete scrabbling • material mixing. Access to the maintenance holes at Hay Street, Elizabeth Street and Goulburn Street would be required for construction. Due to the high volumes of vehicle traffic in these areas, the proposal will be undertaken outside standard working hours during the evening/ night as dictated by the ROL. Most construction activities would be undertaken underground, which would minimise the noise audible at surrounding receivers above ground. Noise generating works, including demolition/concrete scrabbling and material mixing, would also occur underground. Generators and ventilation fans would be on standby. There is potential for noise impacts from above ground activities such as site mobilisation and demobilisation at the maintenance hole locations each night. As the works would be undertaken out of standard hours, many of the nearby non-residential receivers would not experience noise impacts as this would fall outside their standard operating hours. Whilst some residential receivers located along Hay Street and Elizabeth Strete may be exposed to noise from above-ground activities, these would be intermittent, of short duration and generally limited to mobilisation and demobilisation periods. The majority of higher noise construction works will occur underground. Whilst the project is anticipated to take about 20 weeks, construction activities will move progressively along the alignment. As such, noise impacts any sensitive	Apply mitigation measures from the Multi-program REF (August 2025).

Aspect	Additional impacts	Additional mitigation measures
	receivers temporary and localised, with affected receivers only exposed for shorter durations and not throughout the entire construction program. Accordingly, noise impacts to nearby residential receivers are expected to be minor.	
Traffic and access	Access to the culvert will be via seven existing maintenance holes (Figure 1 and Figure 2): • Goulburn Street near the Australian Federal Police building • corner of Elizabeth Street and Hay Street • corner of Elizabeth Street and Campbell Street • corner of Elizabeth Street and Foy Lane • corner of Reservoir Street (In front of Home Backpackers Hostel) and Elizabeth Street • corner of Sussex Street and Hay Street • corner of Darling Drive and Hay Street. Traffic management measures and partial road closures, including temporary traffic diversions, will be required for access to all maintenance holes. Temporary barriers will be installed around open maintenance holes, and works will be undertaken during out-of-hours periods to minimise impacts on traffic flow and property access. As all maintenance holes are located within 100 m of traffic signals, a Road Occupancy Licence (ROL) will be required prior to the commencement of construction works. The footpaths adjacent to the maintenance hole at the corner of Sussex Street and Hay Street and the corner of Darling Drive and Hay Street will be temporarily obstructed during construction. Additional temporary footpath obstructions and occupancy of on-street parking will occur along a section of Foy Lane, Reservoir Street, Sussex Street and Campbell Street where construction vehicles are parked. About 5 vehicles are anticipated to be required for each shift. Impacts to pedestrian access and on-street parking are expected to be short term and limited to the duration of each night shift. The proposal will be located near the SLR route however, the proposal will not impact SLR operations. A Work Access Permit from Transdev would be obtained prior to works commencing. Impacts to traffic and access are expected to be minor as the works would be short term, temporary and	Apply mitigation measures from the Multi-program REF (August 2025) and the following: • Prior to construction, the contractor must obtain a Road Occupancy Licence (ROL). • Prior to construction, the contractor must obtain a Work Access Permit from Transdev for works near the Sydney Light Rail.

Aspect	Additional impacts	Additional mitigation measures
	carried out at night. In addition, the work would comply with future ROL conditions. Impacts to traffic and access during operation are not anticipated.	
Social and visual	Social impacts relating to noise, vibration, traffic and parking are assessed above. Minor visual impacts may be experienced by patrons of the surrounding restaurants and people using Hay Street, Elizabeth Street and Goulburn Street. However, the majority of works would be underground with only construction vehicles, small portable light towers and a barrier around the maintenance holes visible above ground. This would all be brought to site at the start of each shift and removed from site at the end of each shift. As such, the impacts would be minimal and temporary. Social and visual impacts during operation are not anticipated.	Apply mitigation measures from the Multi-program REF (August 2025).

Appendix A – Section 171 and 171A checklist

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

Section 171 checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community from partial closure of a local and regional road intersection. These works will occur at night to reduce the potential impacts to the community. There will be environmental improvements by providing a reliable stormwater service to the local community.
Any transformation of a locality	The proposal involves the renewal of existing stormwater infrastructure and will not result in the transformation of a locality.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality. The proposal will lead to environmental improvements by ensuring a reliable stormwater service to collect, minimising any impacts on the ecosystem.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal will not reduce these factors.
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	The proposal will not have any effect upon these factors. A heritage assessment (Appendix D) completed for this proposal concluded that rehabilitation of the S170 listed Hay Street Stormwater Channel would support its ongoing operation and extend its serviceable life.
Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)	The proposal will not have any impact on the habitat of protected animals.
Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air	The proposal will not endanger any species.
Any long-term effects on the environment	The proposal will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable stormwater service for the area.
Any degradation of the quality of the environment	The proposal will maintain the quality of the environment.

Section 171 checklist	REF finding
Any risk to the safety of the environment	The proposal will ensure the safety of the environment.
Any reduction in the range of beneficial uses of the environment	The proposal will maintain the range of beneficial uses of the environment by providing a reliable stormwater service.
Any pollution of the environment	Environmental mitigation measures will reduce the potential for the proposal to pollute the environment. FIFM would be in place and no pollution of the environment is expected.
Any environmental problems associated with the disposal of waste	Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not affect demand on resources.
Any cumulative environmental effect with other existing or likely future activities	The proposal will not have any cumulative environmental effect with other existing or likely future activities.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal will not have any impact on these factors.
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	There are no applicable strategic planning statements or plans, as the proposal forms part of a maintenance program.
Any other relevant environmental factors.	The proposal has been assessed against the factors listed above, and there are no other relevant environmental factors to consider.

Section 171A of the EP&A Regulation requires a determining authority to take into account the matters a consent authority must consider under Part 6.2 of the BCSEPP for a proposal within a 'regulated catchment'. Sydney Water has considered the requirements of Section 171A as the proposal is within Sydney Harbour Catchment. Impacts to water quality and quantity, aquatic ecology, works on flood liable land and recreation and public access would be negligible.

Appendix B – Consideration of Ecologically Sustainable Development

There are no additional ESD considerations beyond those assessed 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 coastal management program?		X
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

TISEPP section	Yes	No
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 – s170 Local Heritage Assessment Form

s170 Heritage Assessment Form

For works to Sydney Water s170 local heritage items

s170 HAF Date	07/08/2026
Heritage Team Folder Ref	HP0141
s170 HAF Document Ref	2627_s170_0007
SWIM Location	[redacted]

This s170 Heritage Assessment Form (HAF) is to be completed by a qualified Sydney Water heritage advisor, when works are proposed to or within the curtilage of, a Sydney Water Section 170 Heritage & Conservation Register (s170) item of local significance. Note: if the item is also on the SHR, an approval under the Heritage Act is needed instead of this s170 HAF

This s170 HAF does not assess impacts to Aboriginal Objects or Aboriginal Cultural Heritage values (refer SWEMS0031). This s170 HAF is an internal assessment document only – not for public release or inclusion in REF or EIS assessment documents.

The relevant project details for this s170 HAF are included in the following table.

Table 1 Project Summary

Project Name	**P0001364 City Area 30 Traversable Repairs**
Address	Hay Street Sydney NSW 2000
Estimated Cost of Works	[redacted]
Estimated Timing	**Start Date:** May 2027 for c.20 weeks **End Date:** October 2027 (est)
Sydney Water Representatives	**SW Project Manager:** Hussein Hamadi, Project Manager, [redacted] **SW Environment Rep:** Finnian Lloyd, Environmental Scientist, [redacted]

1. Heritage significance review

When works/activities are proposed to or within the curtilage of a Sydney Water s170 local heritage item, an assessment must be undertaken to understand the potential impact on the heritage significance of that item.

The proposed works relate to the following Sydney Water s170 local heritage item/s (and equivalent Environmental Planning Instrument listing where applicable) in the table below:

Table 2 Applicable Heritage Listings

Heritage List	Details
State Agency Section 170 Heritage & Conservation Register	**Register:** Sydney Water Section 170 Heritage & Conservation Register **Item Name:** Hay Street Stormwater Channel **Item Number:** 4574216 **Level of Significance:** Local **Statement of Significance:**[1] *The Hay Street stormwater system is highly significant as it was one of the first five original combined sewers constructed in Sydney around the 1860 period. The other four sewers were; Blackwattle Bay (SHI 4570535), Woolloomooloo (SHI 4570813), Tank Stream (SHI 4573709) and Bennelong (SHI4570854). These five sewers were responsible for greatly improving public health by diverting stormwater and sewage off the streets and discharging it out into the city's Harbour. The five sewers are the first examples of sewerage and drainage services to be built in Sydney, and potentially Australia.* *The subsequent construction of the BOOS (Bondi Ocean Outfall Sewer) in 1889 and the connection of the Hay Street system in 1901 diverted sewer flow from the harbour and into the ocean. Eventually the drain was used predominantly for stormwater, this further improved public health, hygiene and living standards for the city's residents.* *The channel is of technological significance as it provides an excellent example of the engineering and construction techniques of the late 1800's and of the city's early infrastructure. The numerous extensions and modifications made throughout the years provide and an archaeological record of the advancements made in drainage construction techniques.* *The operational curtilage for Hay Street SWC includes all original fabric and archaeological evidence including, but not limited to the channel bed, walls and coping. There is no Local visual curtilage associated with this structure as it is located predominantly underground. To formulate a specific curtilage statement that includes details of surrounding landuse and encroachment of various developments would require further investigations and is beyond the scope of this study.*

An extract of Sydney Water's GIS Spatial system is included below, showing the s170 heritage item location and curtilage.

[1] NSW State Heritage Inventory record for the s170 heritage item



Figure 1 Extract of heritage map showing the Hay Street Stormwater Channel (red outline) along side the rest of the stormwater network in the area. Source: Sydney Water's Spatial Hub, accessed 23/07/2026.

2. Project description

2.1 Scope of works

It is proposed to undertake repair works to the Hay Street Stormwater Channel (the Channel). The overall channel is a below ground stormwater and sewage channel, first constructed c.1864 as a sandstone block arch and brick oviform structure. Overtime the overall channel has been upgraded or strengthened in several locations, now comprising of steel lined, GRP lined and box-culvert sections additional to the original oviform and arch. The channel services stormwater and sewage flows from the upstream at Surry Hills, to downstream sections at Elizabeth Bay and Pyrmont.

Scope & Methodology

A number of methodologies are proposed to address a range of issues identified and mapped (see Figure 2 and Appendix 1). Not all methodologies are relevant to the s.170 listed Hay Street Stormwater Channel.

Crack Sealing

- Crack Sealing as well as two methods to allow cracks' movement to be regularly monitored, as follows.

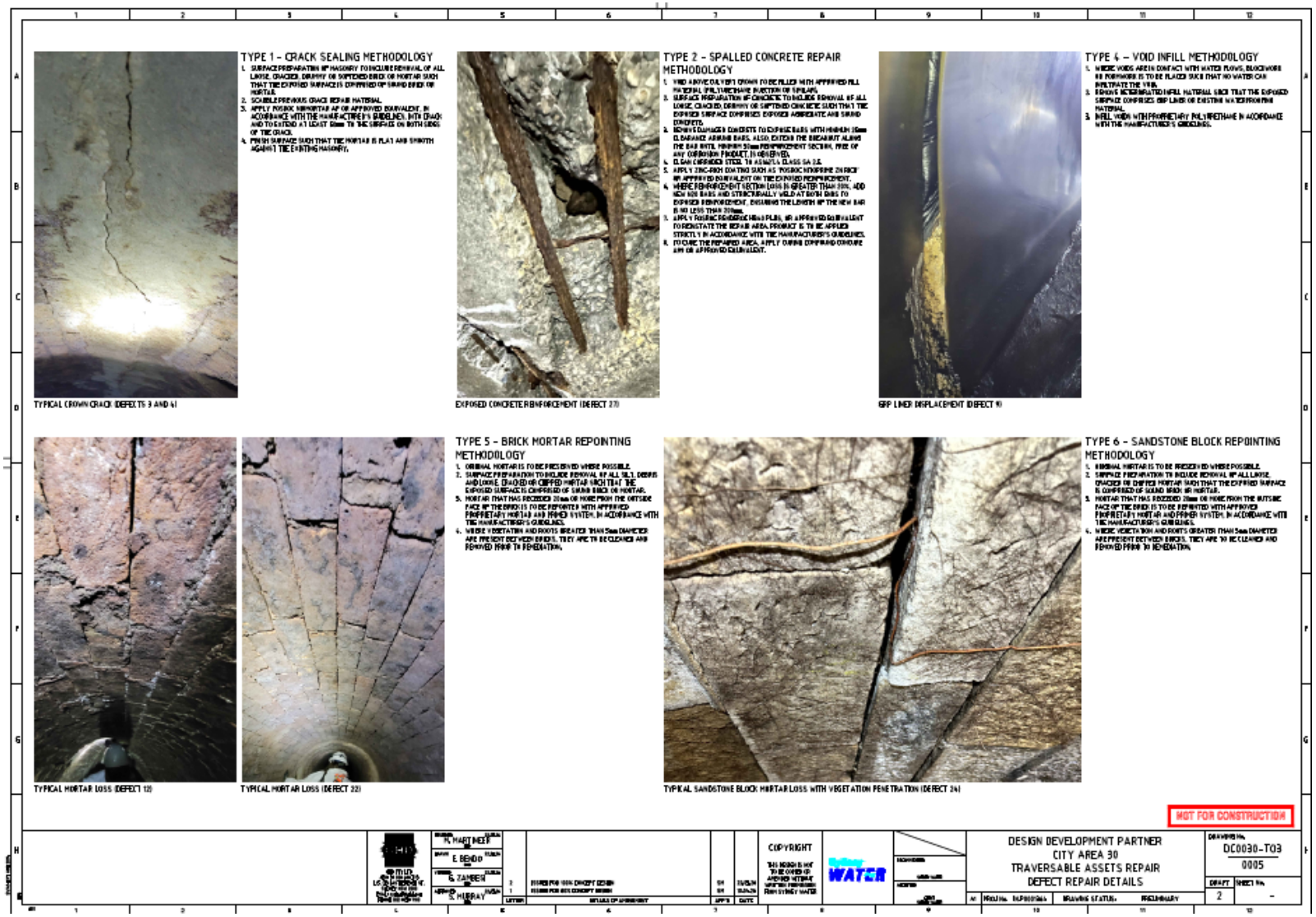


Figure 2 Methodologies proposed for along the Hay Street Stormwater Channel. Source: Sydney Water Project Team, May 2026.

- Crack sealing methodology is outlined below:

  1. Surface preparation of masonry to include removal of all loose, cracked, drummy or softened brick, mortar or previous repair material such that the exposed surface is comprised of sound brick or mortar.
  2. Scabble previous crack repair material.
  3. Apply Fosroc Niomortar AP or approved equivalent, in accordance with the manufacturer's guidelines, into crack and to extend at least 50mm to the surface on both sides of the crack.
  4. Finish surface such that the mortar is flat and smooth against the existing masonry.

- Crack Monitoring Tools – VWSG and others

  Crack widths may be monitored through the installation of devices like vibrating wire strain gauge (VWSG) or Demec demountable mechanical strain gauge. These tools offer a cost-effective approach to monitoring crack movement over time with minimal maintenance required throughout their operation.

Concrete Section Loss Repair

- Concrete and reinforcement section loss was noted within the pre-cast reinforced box culvert section and described in Defect 27. The impacted section has exposed reinforcing bars with signs of corrosion and section loss. The section appears to have been impacted to its full depth in some locations

- Concrete section loss repair methodology is outlined below:

  1. Void above culvert crown to be filled with approved fill material (polyurethane injection or similar).
  2. Surface preparation of concrete to include removal of all loose, cracked, drummy or softened concrete such that the exposed surface comprises exposed aggregate and sound concrete.
  3. Remove damaged concrete to expose bars with minimum 25mm clearance around bars. Also, extend the breakout along the bar until minimum 50mm reo section, free of any corrosion product, is observed.
  4. Clean corroded steel to AS1627.4 Class SA 2.5.
  5. Apply zinc-rich coating such as 'Fosroc Nitoprime Zn Rich' or approved equivalent on the exposed reinforcement.
  6. Where reinforcement section loss is greater than 20%, add new N20 bars and structurally weld at both ends to exposed reinforcement, ensuring the length of the new bar is no less than 200mm.
  7. Apply Fosroc Renderoc HB40 plus, or approved equivalent to reinstate the repair area. Product is to be applied strictly in accordance with the manufacturer's guidelines.
  8. To cure the repaired area, apply curing compound Concure A99 or approved equivalent.

Void infill repair

- A portion of Area 30 channel located approximately beneath buildings between Wentworth Avenue and Foy Lane was replaced by a reinforced concrete encasement and GRP liner. The new liner units were placed with a flexible infill material between the GRP liner and reinforced concrete section. Since its construction, some liner units have been displaced from the outer encasement, causing them to impact the channel clear section and exposing the encasement to water flows.

- Void infill repair methodology is outlined below:

  1. Where voids are in contact with water flows, blockwork or formwork is to be placed such that no water can infiltrate the void.
  2. Remove deteriorated infill material such that the exposed surface is comprised of GRP liner or existing waterproofing material.
  3. Infill voids with proprietary polyurethane in accordance with the manufacturer's guidelines.

Brick mortar repointing methodology is outlined below:

1. Original mortar is to be preserved where possible.
2. Surface preparation to include removal of all silt, debris and loose, cracked or chipped mortar such that the exposed surface is comprised of sound brick or mortar.
    - Loose mortar will be raked out to a depth of approximately 20–30 mm. The joint will then be cleaned using a soft-bristled brush to remove any remaining loose material. The area will be lightly dampened with a spray bottle prior to repointing.
    - Repointing will be carried out using a bricklayer's trowel and a pointing iron (also known as a bucket handle), selected according to the required mortar joint profile.
    - The removal works involve handheld drilling, hammering, and cleaning.
3. Mortar that has receded 20mm or more from the outside face of the brick is to be repointed with approved proprietary mortar and primer system, in accordance with the manufacturer's guidelines.
4. Where vegetation and roots greater than 5mm diameter are present between bricks, they are to be cleaned and removed prior to remediation.

Sandstone block repointing methodology is outlined below:

1. Original mortar is to be preserved where possible.
2. Surface preparation to include removal of all silt, debris and loose, cracked or chipped mortar such that the exposed surface is comprised of sound brick or mortar.
    - The process is largely the same as for brickwork.
    - For sandstone, the mortar joints are allowed to nearly dry before a very stiff or even a wire brush is used to brush the joints, creating a scarified surface. The joint is then swept clean with a soft-bristled brush.
3. Mortar that has receded 20mm or more from the outside face of the brick is to be repointed with approved proprietary mortar and primer system, in accordance with the manufacturer's guidelines.
4. Where vegetation and roots greater than 5mm diameter are present between bricks, they are to be cleaned and removed prior to remediation.

Equipment: A range of equipment is proposed to be utilised for the overarching project works:

Hand tools
Jackhammers
Grinders
Welder
Forced action mixer
Trowels
PU injection pump
Jackers
Joint rakers
Pointing tools
Ventilation
Needle gun/Concrete scabblers
Dust extraction system
Repair material injection system
Water pumping systems/flow diversion
Access equipment
Mechanical ventilation
Gas monitoring equipment
Confined space entry equipment (tripod, winch, harnesses)
High-pressure water jet
Air compressor
Concrete saw
Rebar locator
Vibration monitoring equipment
Survey equipment
Crack monitoring gauges
Safety kits
Temporary barriers/exclusion fencing
Temporary lighting
Portable generators and power distribution
Water supply and wash-down equipment
Waste collection bins/skips

3. Heritage impact assessment

3.1 Site inspection

Were any inspections undertaken? Yes: ☐ No: ☒

Table 3 Site inspections

Date of inspection	Attendees (name & organisation)	Purpose of inspection	Findings

3.2 Sydney Water Heritage Advisor Assessment

The heritage significance of the Hay Street Stormwater Channel rests in its operation and ability to demonstrate the continued evolution (development and expansion), including original fabric, across the latter half of the 19th century, the 20th century and into the 21st century. The s.170 portion of the channel (and the subject of this assessment) is an outstanding example of the engineering and construction techniques of the late 1800's and of the city's early infrastructure. These works will ensure the ongoing operation and functioning of the heritage asset, as well as increasing its serviceable life.

Recommendations to manage heritage values associated with the Hay Street Stormwater Channel are provided in Section 4 of this document. These include:

- Toolbox training around the significance of the heritage item
- The development of an appropriate mortar and primer system, based on testing and analysis, to the satisfaction of appropriately qualified heritage professional and the Sydney Water heritage Team.
- Mechanisms to ensure the works do not further impact the heritage asset.

With these recommendations in place, the impacts are considered positive as a key part of the heritage value lies in the functioning of the asset which will be addressed through undertaking the proposal (repairs).

The proposed works will have a positive impact on the heritage values of the Hay Street Stormwater Channel.

4. Conclusion & Recommendations

An assessment of the proposal has been undertaken by a qualified Sydney Water heritage advisor. Overall, the impacts of the proposal, combined with the recommendation below, are considered to have **no more than a minor or inconsequential impact** on the heritage significance of the local heritage item.

Adopt the following heritage recommendations:

1. All project team members, including contractors, should be informed about the heritage significance of the site as part of the general site induction package. The induction should identify why the Hay Street Stormwater Channel is significant, the contractors' statutory obligations relating to heritage and any

protection methods to be used during works to prevent accidental damage to the Hay Street Stormwater Channel.

2. The final mortar and primer system must:
   a) be based on an understanding of the nature of the existing historical mortars within the s.170 listed portion of the Hay Street Stormwater Channel. This should be developed through a sampling strategy (across a range of locations) to facilitate and undertake laboratory testing and analysis.
   b) consider appropriateness of the mortar to achieve operational requirements including longevity and asset protection.
   c) be developed in consultation with, and to the satisfaction of, an appropriately qualified heritage professional and the Sydney Water Heritage Team.
3. Removal of tree roots should be undertaken in a manner that arrests further damage to the heritage item and minimises the impact on the fabric of the Hay Street Stormwater Channel.
4. Works to the heritage fabric of the Hay Street Stormwater Channel should utilise hand tools. Where mechanised equipment is proposed to be used this must be undertaken in a manner that arrests further damage to the heritage item and minimises the impact on the fabric of the Hay Street Stormwater Channel.

A copy of this s170 HAF must be retained on file for record keeping purposes and as evidence that a heritage assessment has been prepared for the works. This s170 HAF assesses the proposal from a heritage perspective only. This s170 HAF does not constitute a statutory heritage approval. Additional environmental assessment may be required, including statutory planning approval.

Should the proposed physical scope of works change from the scope as assessed herein, a new or modified s170 HAF may be required.

This s170 HAF has been prepared by the following qualified Sydney Water heritage advisor:

[redacted]

Kylie Seretis
Principal Heritage Advisor

07/08/2026

Related Documents

Parent document number	Parent document title
SWEMS0031	Heritage Compliance Procedure

Appendix 1: