Transport for NSW

Memo

To	Senior Environment and Sustainability Manager
From	Environmental Advisor, Western Distributor Smart Motorway
Priority	ROUTINE
Date	09/08/2024
Subject	Addendum assessment and decision No.9 for proposed modifications to M1 Western Distributor Smart Motorway Project

Proposed modification

Modification to the M1 Western Distributor Smart Motorway Review of Environment Factors (REF).

Background

In 2021, Transport for NSW proposed to introduce intelligent technology, known as a smart motorway system, to the M1 corridor between Milsons Point and Allen Street in Pyrmont. This proposal is located in the North Sydney, and City of Sydney local government areas (LGAs).

A review of environmental factors (REF) prepared for the Western Distributor Smart Motorway proposal (referred to as the approved project REF) was determined in May 2021.

A further eight (8) addendum REFs and two (2) consistency reports have been prepared and determined as listed in ***Appendix A - Determined minor works REFs, determined addenda, and consistency reports***.

Purpose

The purpose of this memo is to:

- Describe the proposed modification.
- Document and assess the likely impacts of the proposed modification on the environment.
- Detail protective measures to be implemented.
- Document the recommendation of the Transport Senior Manager Environment and Sustainability and the decision by Transport's delegated representative as to whether to, or not to determine the modification to the project.

This memo is an addendum to, and is to be read in conjunction with, the previous project REF, addendum REFs and consistency reviews determined for the project.

Description of proposed modification

Transport for NSW proposes to modify the M1 Western Distributor Smart Motorway project to introduce intelligent technology, known as a smart motorway system, to the Sydney Harbour Bridge transport corridor. An additional scope of work within the approved corridor would be required for the modification. Construction activities involved with the proposed modification include:

Installation of new fibre cables and cableway (conduit pipes/cable trays) on existing Sydney Harbour Bridge structures and asset lands.

- Trenching to connect conduits to the Lavender Street node. Conduits will connect to existing pits and cabinets.
- Extension of existing cable tray (approximately 50 metres) under the western side of the Cahill Expressway on-ramp to Sydney Harbour Bridge above Transport for NSW Ennis Road car park.
- Sydney Harbour Bridge northern abutment; cable conduit installation into existing channels.

Installation of smart motorway system devices on nine (9) existing Sydney Harbour Bridge gantry structures (SHB gantries).

- SHB gantries have a recognized numbering convention, and the proposal includes installation of devices on the following:
    - Gantry 0
    - Gantry 1
    - Gantry 2
    - Gantry 3
    - Gantry 4
    - Gantry 6
    - Gantry 7
    - Gantry 8
    - Gantry 9
- Devices include:
    - Automated incident detection (AID) cameras
    - Vehicle detection system (VDS) cameras
    - Electrical and communication junction cabinets

The proposed modification and associated construction activities have been assessed as minor works necessary to preserve and maintain the road traffic function of the Sydney Harbour Bridge.

Construction methodology and relevant drawings are included in Appendix C.

Need for the proposed modification

The approved WDSM project includes the installation of smart motorway technology to the M1 Western Distributor road corridor. The objective of this proposal is to increase network capacity and resilience and enhance road user experience. The addition of smart motorway operator control to the Sydney Harbour Bridge will extend the corridor network, connecting it to the existing lane control technology on the Sydney Harbour Bridge and the technology currently being added to Warringah Freeway and further optimise transport asset utility as well as presenting consistency of operations for customers.

The proposed modification, is consistent with the policies and planning documents outlined in Chapter 2 of the determined project REF and its addenda as listed below:

- Future Transport Strategy (Transport for NSW 2022)
- Movement and Place Framework (a cross-government framework for planning, designing, and managing our transport networks)
- Future Transport Technology Roadmap (Transport for NSW 2021-2024)
- Greater Sydney Region Plan (Greater Sydney Commission 2018)
- Eastern City District Plan (Greater Sydney Commission 2018)
- Road Safety Plan (NSW Government 2021)
- Connected and Automated Vehicles Plan (Transport for NSW for NSW 2022)
- State Infrastructure Strategy (Infrastructure NSW 2018-2038)
- Sydney City Centre Access Strategy (NSW Government 2013)
- Sydney's Bus Future (NSW Government 2013)
- NSW Freight and Ports Strategy (Transport for NSW for NSW 2013)
- NSW Freight and Ports Plan (Transport for NSW 2013)

Options considered

During development of the project, strategic alternatives and accompaniments were considered. Following this process, two options were identified for further investigation:

- Option 1 'Do not modify project'- The project would proceed without the modifications proposed in this memo.
- Option 2 'Modify project' – Construct the project with the modifications proposed in this memo.

These options were assessed against the proposal objectives and development criteria outlined in Chapter 2 of the determined REF. 'Option 1' was discounted as the potential impacts of the proposed modification are less than that of the approved project.

The proposed modification's construction activities, which comprise 'Option 2' would have short term traffic, noise, and lighting impacts on the local community from night-time construction operations but have no enduring impacts. Modification of the approved project are necessary to further optimise transport asset utility as well as presenting consistency of operations for Transport for NSW's customers that use Sydney Harbour Bridge.

As such, 'Option 2' is the preferred option.

Consultation

The modification does not require formal widespread community or stakeholder consultation due to its limited nature. Upon determination the project team would notify, and engage with potentially affected residents and businesses adjacent to or having an interest in the specific work areas at which this modification impacts including:

- Responsible Asset Manager for Sydney Harbour Bridge
- Senior Heritage Specialist of Transport for New South Wales
- Senior Environment and Sustainability Officer of Transport for New South Wales

During the consultation process no unacceptable impact or concern was raised regarding this modification. Transport for NSW and Sydney Harbour Bridge management have established a protocol for communications.

Impact assessment

Soil

No additional soil or water quality impacts are anticipated. No *additional* safeguards are required.

Waterways and water quality

No additional impacts to waterways and water quality are anticipated. No *additional* safeguards are required.

Noise and vibration

No additional noise and vibration impacts are anticipated. No *additional* safeguards are required.

Air quality

No additional air quality impacts are anticipated. No *additional* safeguards are required.

Aboriginal heritage

The modification involves work in areas previously assessed and is consistent with the current use by DBNSW under licence to Transport. No Aboriginal sites or places were recorded in or near the location of the WDSM project boundary.

No *additional* safeguards are required.

Non-Aboriginal heritage

The proposal would not adversely affect the heritage values of the Sydney Harbour Bridge and it would retain its historical, aesthetic, technical, social, and associational values. The proposed works within the statutory curtilage of Sydney Harbour Bridge (which includes its approaches and pylons) involve the addition of new traffic management devices, located at various locations on the bridge and approaches. Although this introduction of new fabric to the bridge would be clearly visible, because the gantries already exist in these locations and the proposed devices are not substantially larger than the existing, the impact of these works has been assessed as minor.

An exemption from *Heritage Act NSW 1977* approval has been granted to grant permission to proceed with the proposed minor works. Specifically, a Sydney Harbour Bridge site-specific exemption (SSE) relating to minor works. The proposed modification is consistent with SSE.3; *Minor works necessary to preserve or maintain the functioning of the Bridge, for example drainage modifications to road, rail, navigational, traffic management and toll collection and other infrastructure.*

No *additional* safeguards are required.

Biodiversity

No additional biodiversity impacts are anticipated. No *additional* safeguards are required.

Traffic and transport

No additional traffic and transport impacts are anticipated. No *additional* safeguards are required.

Socio-economic issues

No additional socio-economic impacts are anticipated. No *additional* safeguards are required.

Landscape character and visual impacts

No additional landscape character and visual impacts are anticipated. No *additional* safeguards are required.

Waste

The proposed modification would not generate any additional waste as part of the determined project. No *additional* safeguards are required.

Cumulative impacts

The proposed modification would result in minor and short-term cumulative impacts in terms of traffic, noise, and lighting.

No *additional* safeguards are required.

Appendix B addresses the environmental factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

Summary of additional or revised safeguards

A summary of additional or revised safeguards to be included as part of this modification are listed in the table below. A complete list of project safeguards as amended is provided in **Table 1**.

Table 1 - Summary of additional or revised safeguards

Safeguards	
Soil	No *additional* safeguards are required.
Waterways and water quality	No *additional* safeguards are required.
Noise and vibration	No *additional* safeguards are required.
Air quality	No *additional* safeguards are required.
Non-Aboriginal heritage	No *additional* safeguards are required.
Aboriginal heritage	No *additional* safeguards are required.
Biodiversity	No *additional* safeguards are required.
Trees	No *additional* safeguards are required.
Traffic and transport	No *additional* safeguards are required.
Socio-economic	No *additional* safeguards are required.
Landscape character and visual amenity	No *additional* safeguards are required.
Waste	No *additional* safeguards are required.
Cumulative impacts	No *additional* safeguards are required.

Licences, permits or approvals

All relevant licenses, permits, notifications and approvals needed for the Western Distributor Smart Motorway (WDSM) and when they need to be obtained are listed in the determined Western Distributor Review of Environmental Factors (REF) May 2021 and the seven addenda (as determined). These have been included in the approved project Construction Environmental Management Plan (CEMP).

There are no changes to the licencing, permits or existing approvals required as part of this proposed modification.

Conclusion

All relevant safeguards identified in the Western Distributor Smart Motorway (WDSM) Review of Environmental Factors (REF) and the eight addenda, all as determined would be applied to this modification and included work. There are no additional proposed work activities or impacts requiring major revisions to existing approved project safeguards.

Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to the proposed modification. The proposed modification has been reviewed in the context of the Western Distributor Smart Motorways Review of Environmental Factors and seven addenda as determined which have been considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposed modification this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in this memo, and associated information. This assessment is considered to be in accordance with the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

The M1 Western Distributor Smart Motorway Project including the proposed modification described in this memo has manageable environmental impacts which would be satisfactorily mitigated against. Having regard to the safeguards and management measures proposed, it is considered that the expected environmental impacts are unlikely to be significant and a further or revised environmental impact statement is not required under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on the biodiversity values listed under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*. The M1 Western Distributor Smart Motorway Project including the proposed modification described in this memo would not significantly affect biodiversity values listed under the *Biodiversity Conservation Act 2016*. Therefore, the concurrence of the Coordinator General of the Environment and Heritage Group of Department of Planning and Environment and a species impact statement or a Biodiversity Development Assessment Report (BDAR) is not required.

In addition to the above, the assessment considered the effect of the activity on:

- Conservation agreements under the *National Parks and Wildlife Act 1974*.
- Plans of management under the *National Parks and Wildlife Act 1974*.
- Biodiversity stewardship sites under the *Biodiversity Conservation Act 2016*.
- Wilderness areas under the *Wilderness Act 1987*.

The assessment has also addressed the potential impacts of the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there would be no significant impacts. Therefore, there is no need for a referral to be made to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Australian Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for application of the EPBC Act strategic assessment for Transport activities assessed under Part 5 of the EPBC Act.

This memo is of adequate quality and meets all relevant requirements.

The proposed modification has been characterised in the context of the M1 Western Distributor Smart Motorway Project and is consistent with that project's objectives and key features. While the proposed modification would increase the overall environmental impacts of the determined project, it is substantially the same as the activity described and assessed in the determined REF and does not constitute an entirely new activity.

Certification

This memo provides a true and fair description of the scope and potential impacts of the proposal to modify the Western Distributor Smart Motorway for the purposes of enabling safe construction and delivery.

Prepared by:

Environmental Advisor– WDSM

Reviewed by:

Senior Environment and Sustainability Officer, Transport for NSW

Date: 9□□□□□□□0□□□

Noted by:

A/ Interface Manager, Transport for NSW

Date: 1□□□□□□□□0□□□

Recommendation

It is recommended that the proposal to modify the Western Distributor Smart Motorway (WDSM) as described in this memo proceed subject to the implementation of all safeguards and management measures identified in in this memo and in the Western Distributor Smart Motorway Review of Environmental Factors and addenda, along with compliance with all other relevant statutory approvals, licences, permits and authorisations. Consideration of this proposed modification has examined and taken into account, to the fullest extent possible, all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment. The memo has concluded that there would be no significant impacts on matters of national environmental significance or the environment of Commonwealth land.

Recommended by:

Senior Environment and Sustainability Manager (Sydney Assets and Operations)

Date: 1[redacted]0[redacted]

Endorsed by:

Director Smart Motorways

Date: 1[redacted]0[redacted]

Determination

Determined by:

Director Place – Eastern and CBD

Date: 1[redacted]0[redacted]

Director Place – North

Date: 19[redacted]0[redacted]

Appendices

Appendix A – Section 171 EP&A Regulation

checklist Appendix B - Complete list of safeguards

Appendix C – Indicative construction methodology

Appendix D – WDSM Project Tree Register

Please return this paperwork to:

Appendix A: Determined minor works refs, determined addenda, and consistency reports

A review of environmental factors (REF) was prepared for the Western Distributor Smart Motorway proposal (referred to as the approved project REF) which was determined in May 2021.

A further seven (7) addendum REFs and two (2) consistency reports have been prepared and determined as described below:

- Addendum assessment and decision No. 1 for proposed modification for the use of auxiliary compound sites at White Bay for the M1 Western Distributor Smart Motorway, December 2022.
- Addendum assessment and decision No. 2 for changes to project boundaries to include five new gantries, minor landscaping, removal of existing traffic signage and additional ITS works for the M1 Western Distributor Smart Motorway, January 2022.
- Addendum assessment and decision No. 3 for the use of an additional construction compound site at Colebee for the M1 Western Distributor Smart Motorway, February 2023.
- Addendum assessment and decision No. 4 for use of an auxiliary compound site at the Glebe Island Bridge eastern approach for the M1 Western Distributor Smart Motorway, April 2023.
- Addendum assessment and decision No. 5 for additional vegetation clearing, modification of the project boundary, works associated with RSC#30 on the western abutment of Anzac Bridge for the M1 Western Distributor Smart Motorway, October 2023.
- Addendum assessment and decision No. 6 for revised position of RSC#16 and RSC#17 for the M1 Western Distributor Smart Motorway, December 2023
- Addendum assessment and decision No. 7 for unrestricted access and hours of use of Glebe Island Bridge eastern approach for the M1 Western Distributor Smart Motorway, April 2024
- Addendum assessment and decision No.8 for the use of an additional construction compound site at Bank Street, Pyrmont for the M1 Western Distributor Smart Motorway, April 2024.
- M1 Western Distributor Smart Motorway – Review of Environmental Factors consistency review No.01, September 2023 – modifications to project boundaries, variation to works including new gantry structures and ITS connections.
- M1 Western Distributor Smart Motorway – Review of Environmental Factors consistency review No.02, February 2024 - revised position of RSC#25 and modification of the project boundary to accommodate the point of electricity supply for RSC#25.

Appendix B: Environmental Planning and Assessment Regulation 2021 checklist

The following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

Environmental factor		Impact
(a)	Any environmental impact on a community? Nil additional impact. All temporary disruptions to the community during construction would be communicated at least 5 business days in advance of the works. Any closures or diversions would be clearly signposted.	Short term only
(b)	Any transformation of a locality? The proposed work would not transform the locality, as works would generally be contained within the existing public roadway.	Nil
(c)	Any environmental impact on the ecosystems of a locality? No potential impact of the local ecosystems would arise from the works. All potential impacts would be managed using the existing project safeguards.	Nil
(d)	Any reduction of the aesthetic, recreational, scientific, or other environmental quality or value of a locality? The proposal would not reduce the aesthetic, recreational, scientific, or other environmental quality or value of the locality. Works are within the existing project boundary or within the minor extension contained within the existing road formation. Stakeholders impacted by the proposal would be adequately consulted with	Nil
(e)	Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific, or social significance or other special value for present or future generations? The proposal would not impact on a locality, place or building having any listed value above or other special value for present or future generations. All potential impacts would be mitigated against using existing project safeguards.	Nil
(f)	Any impact on habitat of any protected animals (within the meaning of the Biodiversity Conservation Act 2016)? The proposal would not have any impact on the habitat of protected animals with appropriate safeguards being implemented to mitigate potential risks	Nil
(g)	Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The proposal would not endanger any species of animal, plant, or other form of life, whether living on land, in water or in the air and appropriate safeguards would be implemented prior to mitigate risks	Nil
(h)	Any long-term effects on the environment? The proposal would have positive long-term effects on the environment due to improved customer journey experience including road safety. There are no anticipated negative long-term effects on the environment from any maintenance arising.	Nil

(i)	Any degradation of the quality of the environment? The proposal would have minimal adverse impact on the quality of the environment. Potential impacts would be mitigated against through implementation of the safeguards.	Nil
(j)	Any risk to the safety of the environment? No unacceptable risks posed to the safety of the environment potentially arising from the works. The potential impacts would be mitigated against through the implementation of the safeguards.	Nil
(k)	Any reduction in the range of beneficial uses of the environment? During construction the use of the land and permitted work areas would be limited because of construction activities and safety considerations. The proposed modification would have no long-term impact on any beneficial uses of the environment.	Nil
(l)	Any pollution of the environment? The proposed works would not result in pollution of the environment. Potential risks would be mitigated via the implementation of the safeguards.	Nil
(m)	Any environmental problems associated with the disposal of waste? The proposed works would not generate extensive wastes different to those already managed on the project. Any waste generated during the works would be managed and disposed to approved and licenced recycling or landfill facilities. Potential risks would be managed via the implementation of the safeguards.	Nil
(n)	Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply? The modification is a minor extension of works similar in nature to the approved project works and no further impact would arise. Potential risks would be managed via the implementation of the safeguards.	Nil
(o)	Any cumulative environmental effect with other existing or likely future activities? The proposed modification is minor in nature and would not pose risk to cumulative project or environmental impacts. The potential impacts on the environment would be minimised by risk mitigation through implementation of the safeguards.	Nil
(p)	Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? Nil additional impacts on coastal processes and coastal hazards, including those under projected climate change conditions.	Nil
(q)	Any impact on applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1? The proposed works are similar in nature to those previously determined as part of the project approval. No new works are being introduced. There is no impact to applicable planning legislation or regional plans. For further information on the applicable plans refer to Regional and district plans (nsw.gov.au) website.	Nil
(r)	Any impact on other relevant environmental factors? Nil additional impact to other environmental factors has been identified through the preparation of this modification and during development of the proposed activities.	Nil

Appendix C: Indicative Construction Methodology

1. Installation of New Fibre Cables and Cableway (Conduit Pipes & Cable Trays)

Description of works

Install new Fibre Cable & Cableway (Conduit/Cable Tray) from SHB Traffic Office to Lavender Street Node. See Figure 5 and Figure 7 for representative construction outcomes.

a) Lavender Street Node

Conduit trenching between the *Lavender Street Node* and existing subterranean conduit pit.

b) Transport for NSW Ennis Road Office Carpark

It is proposed to utilise existing conduits. Site investigations indicate that there is the necessary unused capacity in the conduits. However, if during installation this is found to not be the case new cable tray would be attached to existing Sydney Harbour Bridge structure between the existing cable tray along the underside of the wing of the Bridge as shown in Figure 3**,** Figure 5 and Figure 6**.**

c) SHB Northern Abutment

It is proposed to utilise existing conduits that run beneath the bridge. Site investigations indicate that there is the necessary spare capacity in the conduits. However, if during installation this is found to not be the case 50mm black flexible conduit would be attached using cable ties to the existing cable tray in the abutment channels as shown in Figure 7**.**

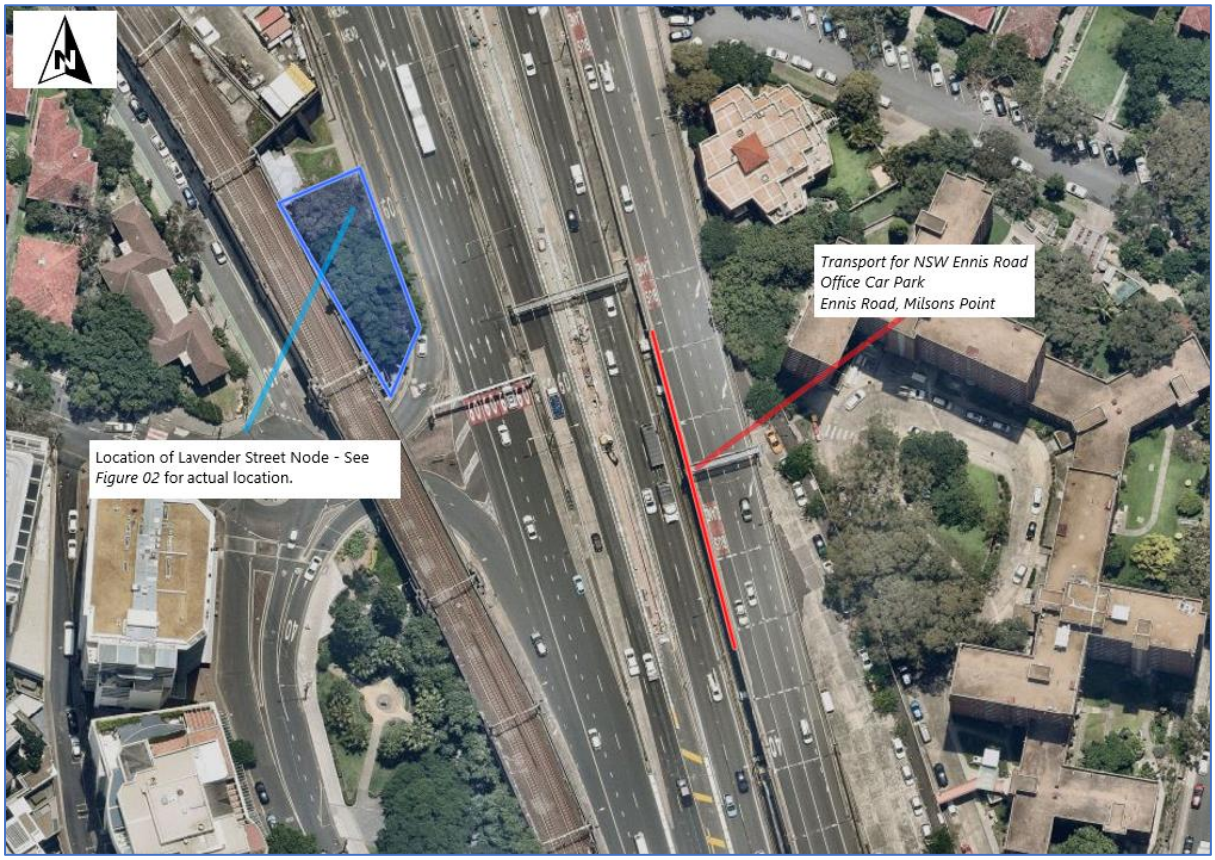

Figure 1 - North Sydney; General location of proposed conduit installation

Figure 2 - Lavender Street Node, North Sydney

Figure 3 - Cable tray route to Transport for NSW Ennis Road Office Car Park; Ennis Road, Milsons Point

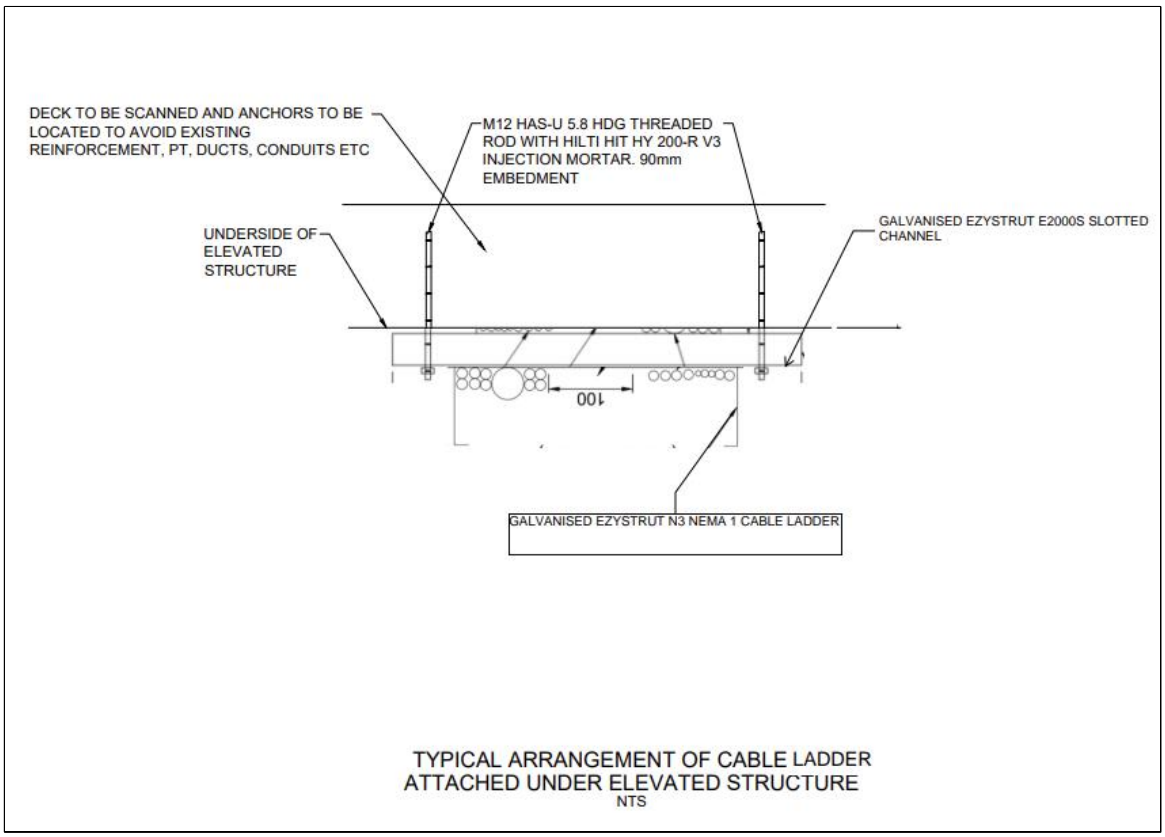

Figure 4 - Technical drawing of cable tray connection detail

Figure 5 - Proposed extension of existing cable tray (installed by others) to Transport for NSW Ennis Road Office Car Park; Ennis Road, Milsons Point

Figure 6 - Cable tray install terminus; Transport for NSW Ennis Road Office Car Park, Ennis Road, Milsons Point

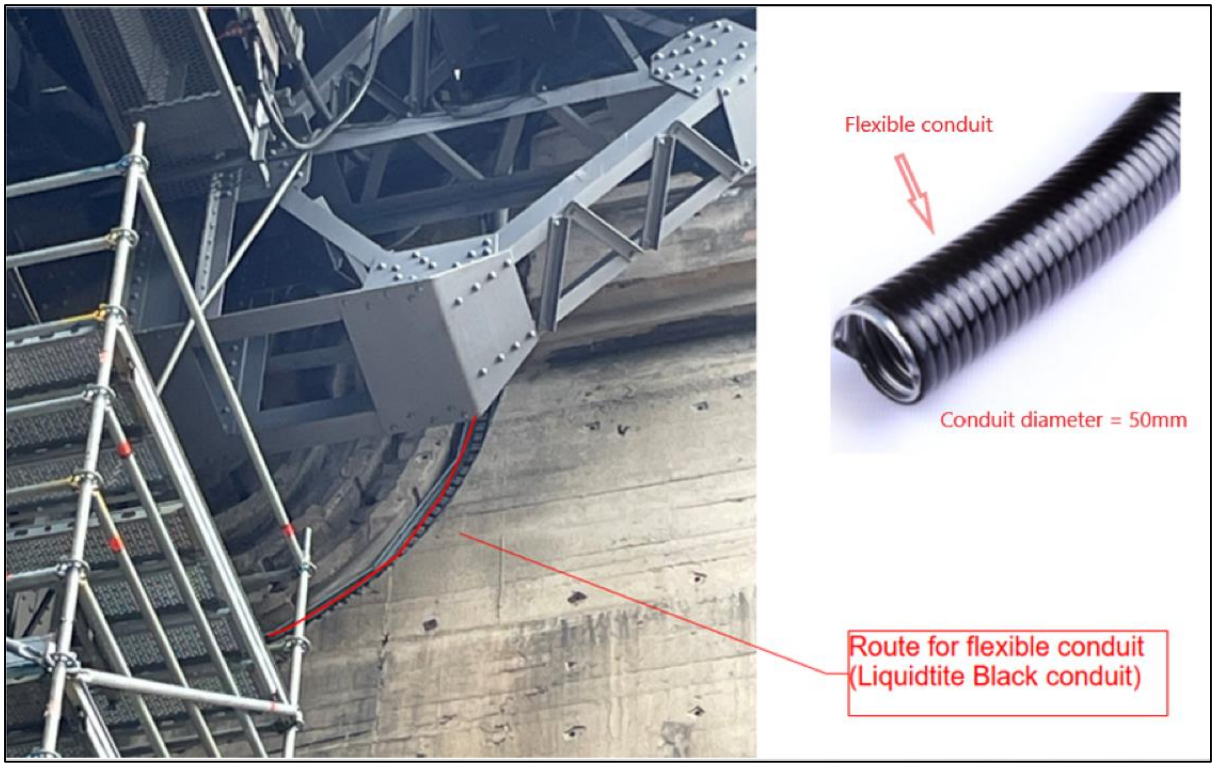

Figure 7 - Conduit installation route in existing channels of the Sydney Harbour Bridge

2. Installation of Traffic Management Devices on Sydney Harbour Bridge Gantries

Description of works

Install new AID and VDS (see Figure 9 and Figure 10 for camera technology) and associated cabinets on the following existing Sydney Harbour Bridge gantries :

- Gantry 0
- Gantry 1
- Gantry 2
- Gantry 3
- Gantry 4
- Gantry 6
- Gantry 7
- Gantry 8
- Gantry 9

- AID and VDS will be mounted on new vertical members (to be installed by WDSM) to the top of the gantries. The structural mounts and brackets to be painted in SHB grey (excluding the devices and cabinets). See Figure 8.
- Existing fibre (already located at top of gantries) to be connected to new WDSM cabinets.
- For Gantry 1, additional open trenching (in front of the SHB traffic office) is required to obtain power from existing pit. 1x 50mm flexible conduit to be installed along the gantry structure and connected from the exiting pit to new WDSM cabinet for power supply purposes.
- For Gantry 2-Gantry 3 and Gantry 7-Gantry 9, 1x 50mm flexible conduit to be installed along the gantry structure and connected from the Distribution Box from bottom of gantry to new WDSM cabinet for power supply purposes (refer to image below).
- For Gantry 4 & Gantry 6, new cable is going to be run from the distribution box located in the South and North pylon respectively. 1x 50mm flexible conduit to be installed along the gantry structure and connected from the Distribution Box to new WDSM cabinet for power supply purposes.

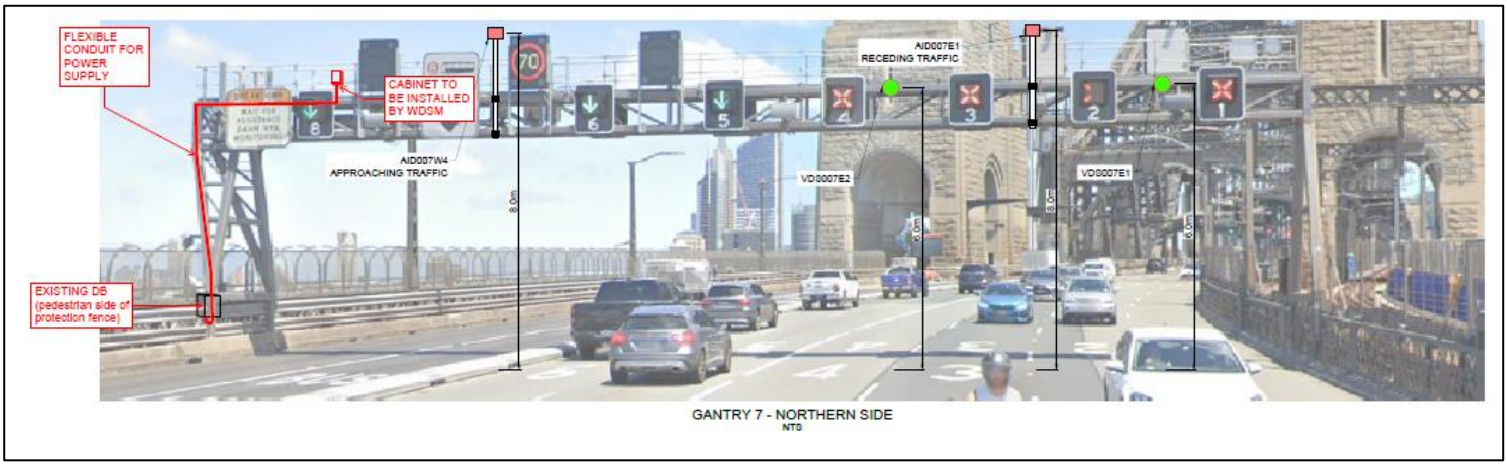

Figure 8 - Indicative markup of traffic management device installation on existing Sydney Harbour Bridge gantries

AID	Automatic Incident Detection	

Figure 9 - Typical AID traffic management device (pictured on a non-Sydney Harbour Bridge gantry)

Asset Type	Asset Description	Photos/Images
VDS	Vehicle detection System	

Figure 10 - Typical VDS traffic management device

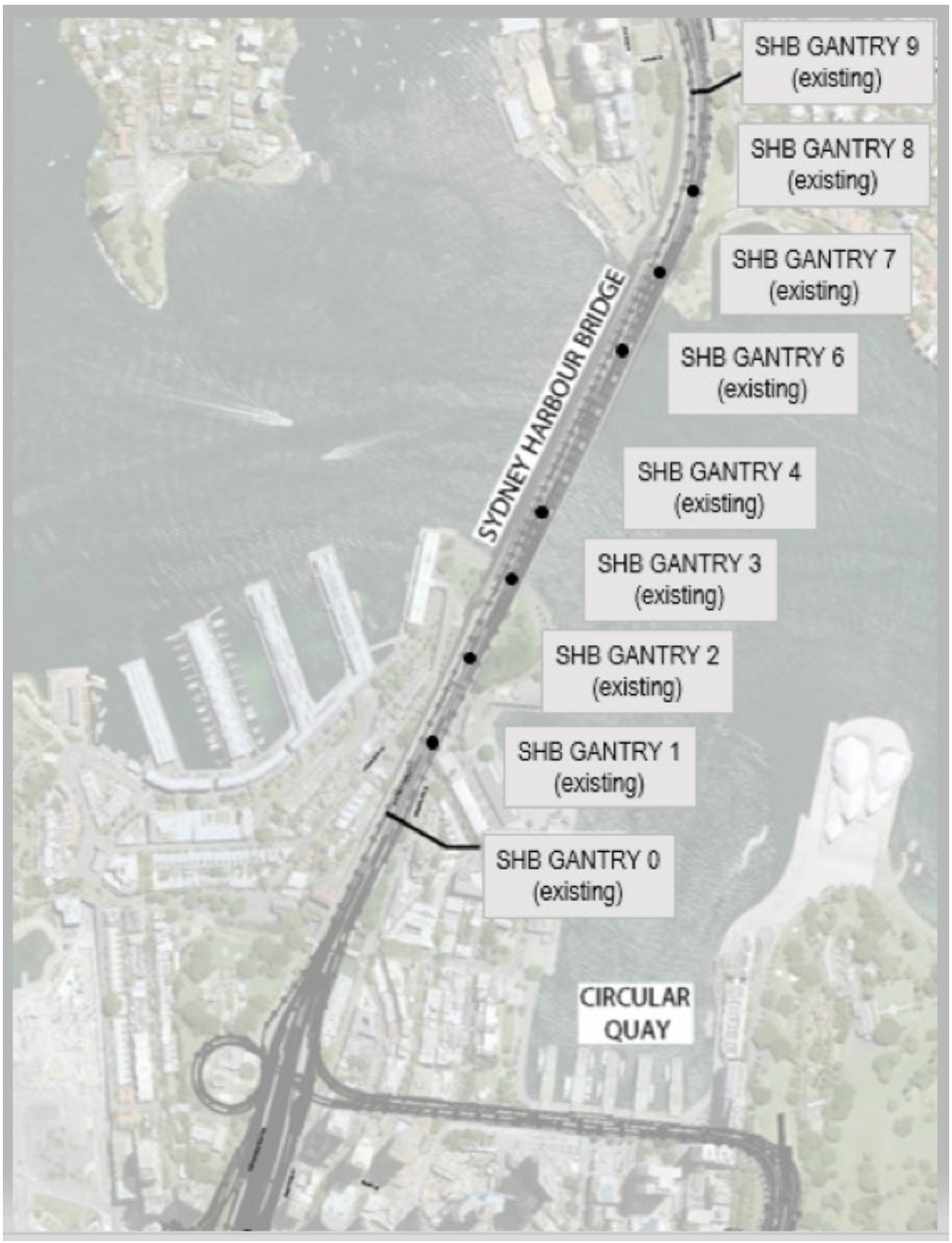

Figure 11 - Sydney Harbour Bridge Gantry Map