



Transport for NSW

# Western Harbour Tunnel and Warringah Freeway Upgrade

## Part A

Introduction, overview of consultation and submissions received, refinements and clarifications

September 2020



## A Introduction, overview of consultation and submissions received, refinements and clarifications

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Transport for NSW

# **Western Harbour Tunnel and Warringah Freeway Upgrade**

A1 – Introduction and background

## A1 Introduction and background

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*The Western Harbour Tunnel and Beaches Link program is a major transport infrastructure program that would make it easier, faster and safer to get around Sydney. As Sydney continues to grow, faster and more reliable trips are essential to reducing congestion and providing new levels of access to jobs, recreation, and services such as schools and hospitals. By creating a western bypass of the Sydney CBD, the Western Harbour Tunnel would take pressure off the Sydney Harbour Bridge, Sydney Harbour Tunnel and ANZAC Bridge; while Beaches Link would create an alternative to the Military Road and Warringah Road corridors to relieve traffic pressure on the North Shore.*

*The program has been designed as part of an integrated transport network, with a focus on new public transport connections and improved journey times and reliability for buses. It would also provide improvements to walking and cycling routes, providing more shared transport options.*

## A1.1 Introduction

Transport for NSW is seeking approval under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* to construct and operate the Western Harbour Tunnel and Warringah Freeway Upgrade project (the project).

The project is part of the Western Harbour Tunnel and Beaches Link program of works. The program of works includes:

- The project which comprises a new tolled motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to connect to the Beaches Link and Gore Hill Freeway Connection project
- The Beaches Link and Gore Hill Freeway Connection project which comprises a new tolled motorway tunnel connection across Middle Harbour from the Warringah Freeway and Gore Hill Freeway to Balgowlah and Killarney Heights including the surface upgrade of Wakehurst Parkway from Seaforth to Frenchs Forest and upgrade and integration works to connect to the Gore Hill Freeway at Artarmon.

A combined delivery of the Western Harbour Tunnel and Beaches Link program of works would unlock a range of benefits for freight, public transport and private vehicle users. It would support faster travel times for journeys between the Northern Beaches and south, west and north-west of Sydney Harbour. Delivering the program of works would also improve the resilience of the motorway network, given that each project provides an alternative to heavily congested harbour crossings.

The project and the Beaches Link and Gore Hill Freeway Connection project are subject to separate but coordinated environmental assessment and approval processes.

This project completed an extensive engagement program ahead of the environmental impact statement including proactive consultation with the community and stakeholders. As a result, the project has benefitted from the input of local knowledge, insight, experience, goals and priorities, to identify issues, potential environmental management strategies and opportunities to improve project outcomes, which were presented in the environmental impact statement.

## A1.2 The project

### A1.2.1 Project location

The project would be located within the Inner West, North Sydney and Willoughby local government areas, connecting Rozelle in the south with Naremburn in the north. Key features of the project are shown in Table A2-1 and Figure A1-2.

### A1.2.2 Overview of the project

The Western Harbour Tunnel and Warringah Freeway Upgrade project would comprise two main components:

- A new crossing of Sydney Harbour involving twin tolled motorway tunnels connecting the M4-M5 Link at Rozelle and the existing Warringah Freeway at North Sydney (the Western Harbour Tunnel)
- Upgrade and integration works along the existing Warringah Freeway, including infrastructure required for connections to the Beaches Link and Gore Hill Freeway Connection project (the Warringah Freeway Upgrade).

The project is an integrated transport solution which would address urban congestion on Sydney's road network. It would provide a new western bypass of the Sydney Central Business District (CBD), providing an alternative to the Sydney Harbour Bridge, Western Distributor and ANZAC Bridge. It would reduce pressure and provide faster and more reliable journeys on roads around the Sydney CBD and increase the resilience of the road network to incidents and delays. The project would also provide major benefits to public transport with a free-flowing continuous bus lane southbound on Warringah Freeway – removing weaving between buses and other traffic and improving bus transit times for all buses using Warringah Freeway. The project would also provide direct bus access to North Sydney.

Key features of the Western Harbour Tunnel component of the project are shown in Figure A1-1 and would include:

- Twin mainline tunnels about 6.5 kilometres long and each accommodating three lanes of traffic in each direction, connecting the stub tunnels from the M4-M5 Link at Rozelle to the Warringah Freeway and to the future Beaches Link mainline tunnels at Cammeray. The crossing of Sydney Harbour between Birchgrove and Balls Head, Waverton, would involve a dual, three lane, immersed tube tunnel
- Connections to the stub tunnels at the M4-M5 Link project in Rozelle and to the mainline tunnels at Cammeray (for a future connection to the Beaches Link and Gore Hill Freeway Connection project)
- Surface connections at Rozelle, North Sydney and Cammeray, including direct connections to and from the Warringah Freeway (including integration with the Warringah Freeway Upgrade), an off ramp to Falcon Street and an on ramp from Berry Street at North Sydney
- A ventilation outlet and motorway facilities (fitout and commissioning only) at the Rozelle Interchange
- A ventilation outlet and motorway facilities at the Warringah Freeway in Cammeray
- Operational facilities including a motorway control centre at Waltham Street within the Artarmon industrial area and tunnel support facilities at the Warringah Freeway in Cammeray
- Other operational infrastructure including groundwater and tunnel drainage management and treatment systems, signage, tolling infrastructure, fire and life safety systems, lighting, emergency evacuation and emergency smoke extraction infrastructure, CCTV and other traffic management systems.

Key features of the Warringah Freeway Upgrade component of the project are shown in Figure A1-2 and would include:

- Upgrade and reconfiguration of the Warringah Freeway from immediately north of the Sydney Harbour Bridge through to Willoughby Road at Naremburn
- Upgrades to interchanges at Falcon Street in Cammeray and High Street in North Sydney
- New and upgraded pedestrian and cyclist infrastructure

- New, modified and relocated road and shared user bridges across the Warringah Freeway
- Connection of the Warringah Freeway to the portals for the Western Harbour Tunnel mainline tunnels and the future Beaches Link tunnels via on and off ramps, which would consist of a combination of trough and cut and cover structures
- Upgrades to existing roads around the Warringah Freeway to integrate the project with the surrounding road network
- Upgrades and modifications to bus infrastructure, including relocation of the existing bus layover along the Warringah Freeway
- Other operational infrastructure, including surface drainage and utility infrastructure, signage, tolling, lighting, CCTV and other traffic management systems.

A more detailed description of the project is found in Chapter 5 (Project description) of the environmental impact statement.

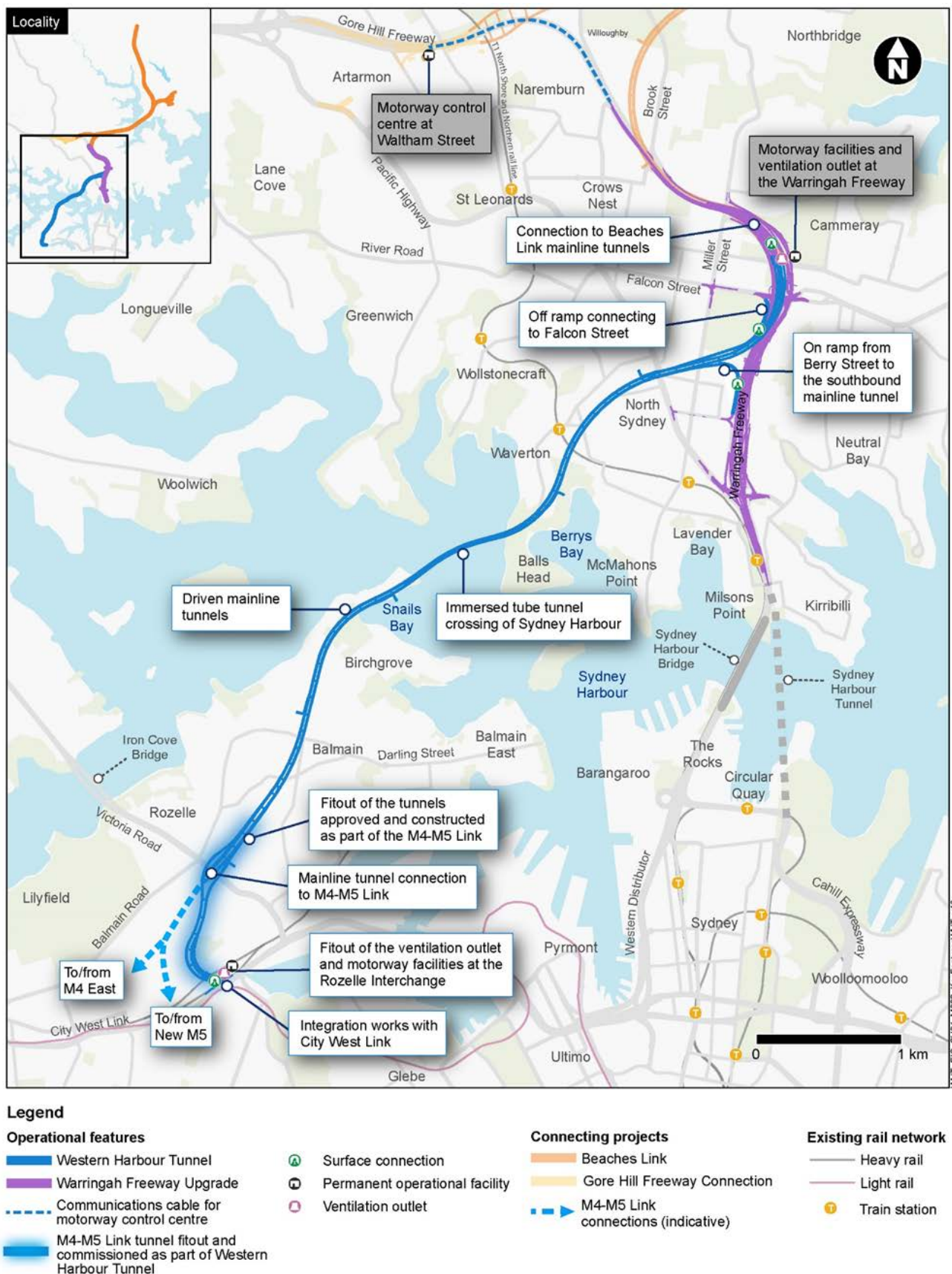
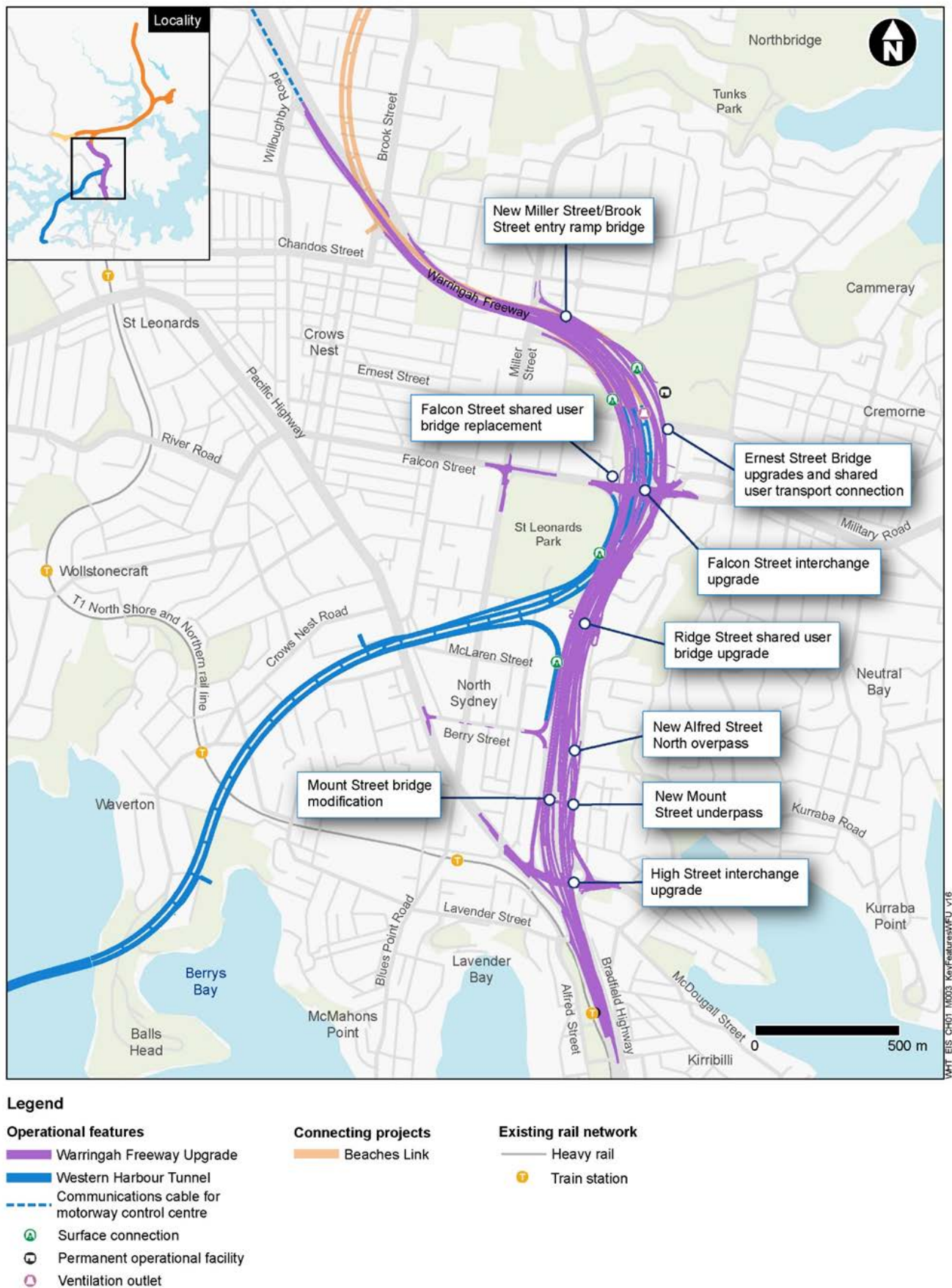


Figure A1-1 Key features of the Western Harbour Tunnel component of the project





**Figure A1-2 Key features of the Warringah Freeway Upgrade component of the project**

### A1.3 Need for the project

The *Greater Sydney Region Plan – A Metropolis of Three Cities* (Greater Sydney Commission, 2018a) proposes a vision of three cities where most residents have convenient and easy access to jobs, education and health facilities and services. In addition to this plan, and to accommodate for Sydney's future growth, the NSW Government is implementing the *Future Transport 2056* strategy (NSW Government, 2018), a plan that sets the 40 year vision, directions and outcomes framework for customer mobility in NSW. The Western Harbour Tunnel and Beaches Link program of works is proposed to provide additional road network capacity across Sydney Harbour and to improve transport connectivity with Sydney's Northern Beaches.

The motorway crossings of Sydney Harbour, including the Sydney Harbour Bridge, Sydney Harbour Tunnel and ANZAC Bridge, are critical links in Sydney's motorway and arterial road network. In addition to the large number of customers who rely on these corridors, the high demand and limited capacity on the Sydney Harbour crossings result in delays and unreliable journey times for a significant number of customers who directly rely on these corridors. Furthermore, the limited number of alternate routes for crossing Sydney Harbour makes these corridors critical to the performance of the broader motorway and arterial road network. Network data demonstrates that incidents on the Sydney Harbour Bridge, Sydney Harbour Tunnel and their approaches can impact transport movements across Sydney.

Further to the large traffic volumes and limited alternative routes, a major contributor to congestion around the Harbour CBD is that many of the most critical road corridors – including Sydney Harbour Bridge, the Sydney Harbour Tunnel, ANZAC Bridge, the Western Distributor, and the Warringah Freeway – perform both bypass and access functions. The dual function of these corridors is reflected in the high proportion of vehicles that use them to travel to destinations other than the Sydney CBD. These conflicting functions, combined with high traffic volumes, result in congestion and poor network performance experienced by freight, public transport and private vehicle users.

The Sydney Harbour Bridge and Warringah Freeway have been identified as some of Australia's most congested road corridors, generating a congestion cost of around \$1.2 million per lane kilometre in 2011 (Infrastructure Australia, 2015). These corridors are integral to the economic growth of Sydney's Eastern Economic Corridor. As Sydney's population and economy continues to grow, so will the pressure on access to this corridor. Demand for this corridor is forecast to increase by 17 per cent by 2037, putting substantial pressure on roads that are already operating at capacity and leading to increases in travel time along these routes. Improvements to transport networks are essential for Sydney to continue to be competitive.

The project would provide vital additional capacity on the busiest road corridor in Sydney, improving liveability and amenity for local communities that would benefit from reduced through traffic and improved connectivity. It would also deliver meaningful productivity benefits for NSW.

This project would leverage off the underground WestConnex network to deliver a new western bypass of the Harbour CBD, significantly increasing the efficiency and capacity of the transport crossings of Sydney Harbour. The additional core motorway capacity delivered by this project would significantly improve journey times and journey time reliability for approximately 2.5 million trips for people who use the Sydney Harbour Bridge and Sydney Harbour Tunnel road crossings every week, as well as users of many arterial roads whose performance is affected by these crossings.

The Warringah Freeway Upgrade component of the project would connect the new tunnel with the existing road corridor and streamline traffic movements to optimise the future use of the three harbour crossings.

This new western bypass of the Sydney CBD would serve through journeys between the south and west of Sydney, including the international gateways of Sydney Airport and Port Botany, and strategic centres north of the harbour including North Sydney, St Leonards, Chatswood and Macquarie Park. Increased road network capacity and connectivity as a result of the project would

also result in travel time savings for freight movements, further serving the growth of Sydney's Eastern Economic Corridor.

The increase in harbour crossing capacity and efficiency delivered by the project would also remove a major bottleneck that constrains the road transport capacity of areas north of the harbour, including the Northern Beaches area. This enables future connections, such as the Beaches Link and Gore Hill Freeway Connection project, which would deliver significant benefits for public transport, freight and other road users over an increased catchment.

The major transport benefits of the project include:

- A third harbour crossing to reduce congestion on the Sydney Harbour Bridge, Sydney Harbour Tunnel and ANZAC Bridge – leading to faster and more reliable journeys to, from and around the Harbour CBD
- Contribute to an integrated multi-modal transport network by enabling direct bus access to North Sydney and an efficient transfer to the new Sydney Metro
- Return local streets to communities by moving traffic underground, freeing up local streets for local traffic, and supporting the sustainability of local town centres
- Make journeys on the Warringah Freeway easier and safer by improving lane configuration and providing clear directions on the best way to cross the harbour and reach your destination
- Enable local businesses to have better and more efficient access to Greater Sydney, making it easier to move goods and provide services, as well as bringing employees and businesses closer together
- Opportunities to enhance the local community by improving shared user connections and providing new public open space.

## A1.4 Statutory context

Clause 94 of the State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) provides that development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without development consent on any land.

Clause 14(1) of the State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP) declares development to be State significant infrastructure if it is permissible without consent under Part 4 of the *Environmental Planning and Assessment Act 1979* and is specified in Schedule 3 of the State and Regional Development SEPP.

Transport for NSW has made a request to the Minister for Planning and Public Spaces for the project to be declared critical State significant infrastructure. Section 5.13 of the *Environmental Planning and Assessment Act 1979* provides for the declaration of critical State significant infrastructure by means of an environmental planning instrument. Clause 16 of the State and Regional Development SEPP declares development listed in Schedule 5 to be critical State significant infrastructure. Transport for NSW's request is that the project be listed in Schedule 5.

Other relevant NSW legislation that would apply to the project includes the:

- *Land acquisition (Just Terms Compensation) Act 1991* (NSW)
- *Contaminated Land Management Act 1997* (NSW)
- *Heritage Act 1977* (Section 146)
- *Crown Land Management Act 2016*
- *Local Government Act 1993*
- *Native Title (New South Wales) Act 1994*

- *Fisheries Management Act 1994* (Section 199)
- *Marine Pollution Act 2012*
- Provisions in the *Marine Safety Act 1998*, *Marine Safety Regulation 2016*, *Ports and Maritime Administration Act 1995* and *Ports and Maritime Administration 2012*
- *Sydney Water Act 1994*
- *Waste Avoidance and Resource Recovery Act 2001*.

Relevant commonwealth legislation that would apply to the project includes the:

- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environment Protection (Sea Dumping) Act 1981*
- *Native Title Act 1993*
- *Airports Act 1996* and *Civil Aviation Act 1986*.

## **A1.5 Western Harbour Tunnel and Warringah Freeway Upgrade environmental impact statement**

An environmental impact statement was prepared for the project in accordance with the relevant provisions under the *Environmental Planning and Assessment Act 1979*. The environmental impact statement addressed the environmental assessment requirements issued by the Secretary of the Department of Planning, Industry and Environment on 15 December 2017 and the relevant provisions of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. A copy of the Secretary's environmental assessment requirements and where they are addressed in the environmental impact statement are provided in Appendix A (Secretary's environmental assessment requirements checklist) of the environmental impact statement.

In accordance with the *Environmental Planning and Assessment Act 1979*, the environmental impact statement presented an assessment of environmental issues identified during the planning and assessment of the project. The assessment considered the areas directly or indirectly affected by construction and operation of the project. Further detailed investigations, planning and surveys would be carried out during subsequent project development stages. All technical road design requirements and road functionality as described in the environmental impact statement and this submissions report would need to be considered and environmental management measures and conditions of approval for the project would need to be satisfied.

The environmental impact statement was placed on public exhibition on 29 January 2020. The public exhibition period for the environmental impact statement was initially scheduled to be 43 days. However, following community feedback, the Department of Planning, Industry and Environment extended the exhibition closing date from 12 March to 30 March 2020 (equating to a total exhibition period of 61 days). Public exhibition of the environmental impact statement provided the community, interested parties and key stakeholders (including government agencies and councils) with an understanding of the project and provided the opportunity to comment on the environmental impact statement.

## **A1.6 Purpose of the document**

During the exhibition of the environmental impact statement, submissions were received by the Department of Planning, Industry and Environment. Copies of all submissions were provided to Transport for NSW. The Secretary of the Department of Planning, Industry and Environment requested Transport for NSW to respond to the issues raised in the submissions in a submissions report.



This submissions report has been provided to the Department of Planning, Industry and Environment for review and assessment. After the Department of Planning, Industry and Environment completes its assessment, a draft environmental assessment report would be prepared for the Secretary of the Department of Planning, Industry and Environment, which may include recommended conditions of approval for the project. The assessment report would then be provided to the Minister for Planning and Public Spaces, to determine the project. The Minister for Planning and Public Spaces determination, including any conditions of approval and the Secretary's report, would be published on the Department of Planning, Industry and Environment website following determination.

This submissions report has the following structure:

- **Part A** (Introduction and overview of consultation and submissions received)
  - Chapter A1 (Introduction) provides background on the Western Harbour Tunnel and Warringah Freeway Upgrade, reiterates why the project is needed, outlines the assessment and planning approval process and outlines the purpose of this submissions report
  - Chapter A2 (Community and stakeholder involvement) outlines the consultation activities carried out prior to and during the public exhibition of the environmental impact statement as well as ongoing consultation proposed during the pre-construction, construction and commissioning phases
  - Chapter A3 (Submissions received) provides an overview of this submissions received including a summary of the issues raised and refinements made to the project in response to submissions received
  - Chapter A4 (Clarifications) provides clarifications on aspects of the project highlighted during the submissions process
- **Part B** (Response to stakeholder submissions)
  - Chapter B1 to B16 provide responses to stakeholder submissions. This includes setting out the issues raised in key stakeholder submissions on the environmental impact statement and responses to those issues. Key stakeholders include government agencies and local councils
- **Part C** (Response to community submissions)
  - Chapters C1 to C30 provide responses to the issues raised in community submissions associated with planning and statutory requirements, strategic justification and project need, project development and alternatives, project operation, construction works, consultation and the impacts of the project and presents responses to those issues
- **Part D** (Revised environmental management measures)
  - Part D presents the revised environmental management measures for the project developed in response to issues raised during public exhibition of the environmental impact statement or as a result of additional assessment or project refinement. This submissions report refers to both the environmental management measures contained in the environmental impact statement and the revised environmental management measures which represent the commitments to mitigate environmental impacts of the project during construction and operation.



Transport for NSW

# **Western Harbour Tunnel and Warringah Freeway Upgrade**

A2 – Community and stakeholder  
involvement

## A2 Community and stakeholder involvement

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## A2.1 Consultation overview

Transport for NSW recognises a project of this scale and significance does not go without impact. This is why Transport for NSW completed an extensive community engagement program for the project, ahead of the environmental impact statement exhibition. This has included proactive consultation with the community, State and local government agencies, utility service providers, special interest groups and relevant industry stakeholders. The project has benefitted from the input of local knowledge, insight, experience, goals and priorities, which has helped to identify issues, potential environmental management strategies and opportunities to improve project outcomes, presented in the environmental impact statement.

Transport for NSW's engagement program for the Western Harbour Tunnel and Warringah Freeway Upgrade project included the companion project, the Beaches Link and Gore Hill Freeway Connection project. Further consultation on Beaches Link will take place when the Beaches Link and Gore Hill Freeway Connection environmental impact statement is available for public exhibition.

Since the release of the preferred route and concept design for the project in 2017, Transport for NSW has engaged with thousands of people who live and work in and around the project area. The project team has listened to better understand community concerns and have incorporated feedback and suggestions into the design wherever possible.

An overview of the consultation process is provided in Figure A2-1.

Moving forward through the remainder of the planning process and into the construction period, stakeholder and community engagement would continue. During construction there would be a community contact system in place to ensure there are mechanisms for the community to get in touch at any time. Transport for NSW would also work closely with the teams of nearby construction projects to help minimise impacts of construction and consultation fatigue.



# Stakeholder and community engagement

## Key milestones

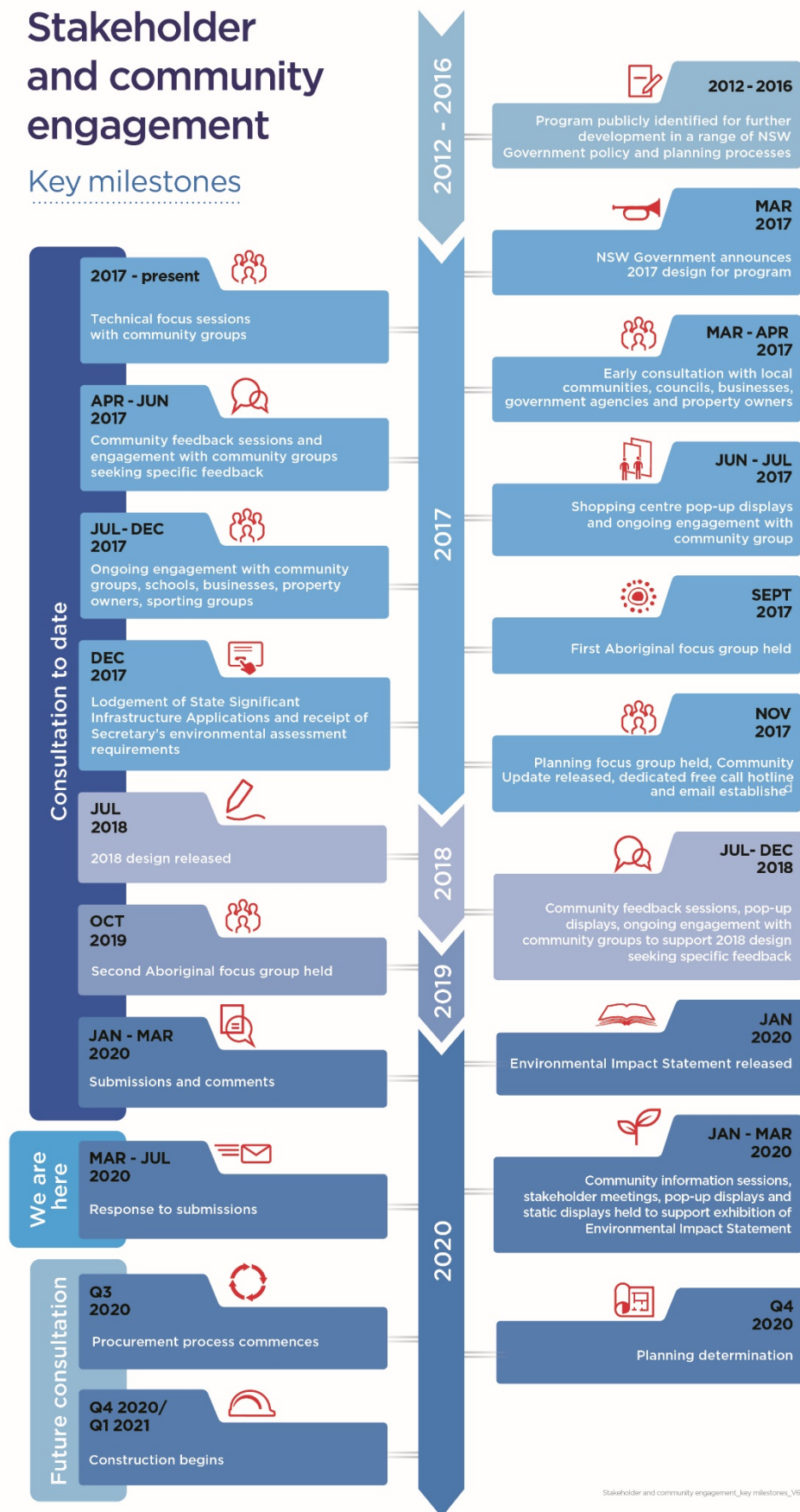


Figure A2-1 Overview of the project consultation process

## **A2.2 Consultation during design and environmental impact statement preparation**

Transport for NSW has carried out an extensive community engagement program to date. This has included a range of consultation and communication activities aimed at providing opportunities for community and stakeholder involvement throughout the project's development. As a result, the project has benefitted from the input of local knowledge, insight, experience, goals and priorities, to identify issues, potential environmental management strategies and opportunities to improve project outcomes, which were presented in the environmental impact statement.

Engagement with key government and other project stakeholders, including the Port Authority of NSW, Sydney Metro, Infrastructure NSW and other divisions of Transport for NSW (including the Transport Coordination Branch and the Northern Beaches B-Line Program) has occurred since early 2016 to develop the design and plan investigations. Engagement with the public and broader stakeholders started in March 2017 and has continued through to the preparation of this submissions report.

Prior to the release of the environmental impact statement, engagement for the project was carried out as part of the Western Harbour Tunnel and Beaches Link program of works. This included two rounds of formal public consultation between:

- April and June 2017 following the announcement of the proposed design
- July and December 2018 following the publishing of further development of the design.

During these periods, community engagement activities included:

- General program information and feedback channels (including the program website, email address, and 1800 number; letterbox drops; online community engagement map; program updates to email subscribers; feedback forms; and ministerial enquiries)
- Hosted events (community feedback sessions and pop up information displays)
- Resident and stakeholder meetings, and door knocks
- Notifications of investigation work
- Newspaper advertisements, media releases, and Facebook posts.

For further information on these activities, refer to Section 7.2.6 of the environmental impact statement. In addition to these formal engagement periods, consultation and engagement with stakeholders has been ongoing, with the project team holding numerous workshops and meetings with councils, community groups and other stakeholders.

The community and stakeholders have also been encouraged to contact the project team at any time to discuss the project via phone, email or post.

The specific outcomes of this engagement and how it has informed the project's development can be found in Section 7.4 of the environmental impact statement.

## **A2.3 Consultation during the environmental impact statement exhibition**

### **A2.3.1 Consultation overview**

The environmental impact statement was exhibited for 61 days from 29 January to 30 March 2020 (see Section A1.6). During this time, a range of consultation activities were carried out to engage with stakeholders and the community on information in the environmental impact statement, to encourage participation in exhibition activities and to provide guidance on the submissions process. Submissions on the project were received by the Department of Planning, Industry and Environment during the exhibition period and were provided to Transport for NSW on close of the exhibition period for consideration.

### **A2.3.2 Consultation activities**

Transport for NSW supported the public exhibition of the environmental impact statement by using a number of different engagement methods as well as carrying out a variety of activities and developing communication materials.

These included:

- Advertisements in local and metropolitan publications
- Static displays of the environmental impact statement including:
  - Electronic displays
  - Physical displays
  - Interactive un-staffed displays
- Written communication including:
  - Notifications to email subscribers
  - The Western Harbour Tunnel and Warringah Freeway Upgrade guide to the environmental impact statement
  - Project fact sheets and brochures
  - Community update postcards
  - Stakeholder briefing packs
- Digital tools including:
  - Website updates
  - Interactive online portal
  - Animations
  - Digital mixed reality model of the Warringah Freeway Upgrade
  - Online meetings to accommodate for COVID-2019
  - Social media
- Face to face and direct engagement including:
  - Meetings and briefings with stakeholders and the community
  - Community information sessions and pop up displays
  - Stakeholder phone calls
  - Responses to enquiries and questions via the 1800 number and project email address
  - Door knocks to residents directly adjacent to the project.

Further detail on these is provided below.

### **A2.3.3 Advertisements in local and metropolitan publications**

Newspaper advertisements were placed to announce the environmental impact statement public exhibition period and to promote the community information sessions for the project. Advertisements placed in local and metropolitan newspapers are outlined in Table A2-1 below.

**Table A2-1 Advertisements for Western Harbour Tunnel and Warringah Freeway Upgrade project environmental impact statement public exhibition**

| Publication           | Date of publication |
|-----------------------|---------------------|
| Sydney Morning Herald | 29 January 2020     |
| Daily Telegraph       | 28 January 2020     |
| Inner West Courier    | 23 January 2020     |
| Mosman Daily          | 28 January 2020     |
| North Shore Times     | 29 January 2020     |
| Manly Daily           | 29 January 2020     |

#### **A2.3.4 Static display of the environmental impact statement**

##### ***Electronic displays***

The environmental impact statement and supporting materials were made available to view and download on the Department of Planning, Industry and Environment website and the project website. Electronic copies of the environmental impact statement were provided at:

- The Department of Planning, Industry and Environment Major Projects website: <https://www.planningportal.nsw.gov.au/major-projects>
- NSW Service centres: [www.service.nsw.gov.au/](http://www.service.nsw.gov.au/)
- The Transport for NSW project website: [nswroads.work/whtbl](http://nswroads.work/whtbl) and dedicated environmental impact statement interactive portal [nswroads.work/whportal](http://nswroads.work/whportal).

##### ***Physical displays***

Hard copies of the environmental impact statement and project materials were made available at the following locations:

- Transport for NSW (20-44 Ennis Road, Milsons Point)
- Department of Planning, Industry and Environment (4 Parramatta Square, 12 Darcy Street, Parramatta)
- Leichhardt Customer Service Centre (7-1 Wetherill Street, Leichhardt)
- Balmain Library (370 Darling Street, Balmain)
- Leichhardt Library (Piazza Level, Italian Form, 23 Norton Street, Leichhardt)
- North Sydney Customer Service Centre (200 Miller Street, North Sydney)
- Stanton Library (234 Miller Street, North Sydney)
- Willoughby Customer Service Centre (Level 4, 31 Victor Street, Chatswood)
- Chatswood Library (Lower Ground, The Concourse, 409 Victoria Avenue, Chatswood)
- Nature Conservation Council (Level 14, 338 Pitt Street, Sydney) (electronically on a USB).

##### ***Interactive un-staffed displays***

Three 55 inch touch screens displaying a 3D model of the project and the interactive portal were installed at shopping centres; Greenwood Plaza, Cammeray Stockland and Birkenhead Point.



These included access to the environmental impact statement. These were collectively visited over 7000 times.

### **COVID-19**

Due to the circumstances around COVID-19 and the restrictions in place, several of the static display locations were required to close prior to the end of the environmental impact statement exhibition period. The environmental impact statement was still available digitally on the interactive portal and via the Department of Planning, Industry and Environments' website during this time.

#### **A2.3.5 Written communication**

##### ***Notifications to email subscribers***

The project team maintains an email distribution list and encourages the community and stakeholders to sign up to receive ongoing project updates. During the environmental impact statement exhibition period, five email notifications were sent to subscribed stakeholders. A summary is provided below in Table A2-2.

**Table A2-2 Email notifications sent during exhibition period**

| <b>Date sent</b>        | <b>Number of stakeholders sent to</b> | <b>Information included</b>   |
|-------------------------|---------------------------------------|---|
| <b>29 January 2020</b>  | 2659                                  | Notification environmental impact statement was on display  |
| <b>19 February 2020</b> | 2793                                  | Notification about the final information sessions for the project   |
| <b>26 February 2020</b> | 2854                                  | Notification of environmental impact statement exhibition period extension  |
| <b>28 February 2020</b> | 2862                                  | Notification about additional information sessions for the environmental impact statement   |
| <b>25 March 2020</b>    | 2904                                  | Notification regarding change of arrangements for the final environmental impact statement engagement session as a result of COVID-19 |

##### ***Community guide to the environmental impact statement***

A community guide to the environmental impact statement was prepared, printed and made available during the public exhibition period. The document included information on the project's design, potential impacts from building and operating the project and the measures Transport for NSW would put in place to manage potential impacts. Details of how to view the full environmental impact statement were also included and readers were encouraged to make a submission to the Department of Planning, Industry and Environment.

##### ***Project fact sheets***

A number of project fact sheets were prepared to support the environmental impact statement exhibition period. These were made available in hard copies at the community information sessions and staffed displays as well as electronically on the project interactive portal. These included:

- How to make a submission
- How we build the project
- How to use the new Warringah Freeway Upgrade

- Rozelle Rail Yards temporary construction site
- Victoria Road temporary construction site
- White Bay temporary construction site
- Temporary cofferdams and harbour crossings
- Berrys Bay temporary construction site
- Cammeray temporary construction site
- Ridge Street North temporary construction site
- Artarmon temporary construction site
- Noise and vibration
- Air quality
- Open space and community
- Warringah Freeway temporary minor construction sites.

### ***Community update postcard***

Between 29 January and 5 February 2020, a community update postcard was distributed to about 80,000 residences via letterbox drop. The postcard announced the environmental impact statement public exhibition, invited local residents to community information sessions and provided contact information for the project.

### ***Project material packs***

Project material packs were delivered to 96 key stakeholders in the project area. These included hard copies of the project fact sheets and the guide to the environmental impact statement. These were provided to further announce the exhibition period, invite interested groups to the community information sessions and provide guidance on how to get further information.

## **A2.3.6 Digital tools and resources**

### ***Project website***

The project website was updated throughout the public exhibition period including links to the project overview, project fact sheets and the environmental impact statement community update. Website links to the full environmental impact statement were also posted on the website and the locations of where the environmental impact statement could be accessed in hard copy were identified. Information was also made available about the timing and location of the community information sessions held.

### ***Interactive online portal***

The interactive online portal went live at the start of the environmental impact statement exhibition period. During this time it was accessed by 22,071 visitors with a total of 43,867 page views. The portal provided the wider community with digital access to the project materials, including provision of links to the environmental impact statement chapters and appendices. Videos of driver views of journeys along Warringah Freeway Upgrade, orbits outlining each major intersection along Warringah Freeway Upgrade and animations of the immersed tube tunnel construction method were provided to help the community visualise the project. The interactive project map allowed users to explore the project in more detail, including potential impacts, proposed environmental management measures and local changes as they related to them or their area.

### ***Animations***

To help the community understand the construction of the immersed tube tunnel, two animations were created showing the cofferdam construction and tunnel installation across Sydney Harbour.

Several videos were also developed from the Warringah Freeway Upgrade digital model to show the future driver journeys along Warringah Freeway Upgrade and the upgraded intersections. These videos were available on the interactive online portal and were played 6514 times during the environmental impact statement exhibition period.

### ***Digital mixed reality model of the Warringah Freeway Upgrade***

A digital 3D model of the Warringah Freeway Upgrade was produced to help the community visualise the completed project and explore new and updated journeys. The model was used to create videos for the online interactive portal and to engage community members at the information sessions. At the information sessions, community members could participate in a mixed reality experience, wearing a digital headset, and explore the Warringah Freeway Upgrade come to life. Screens were also provided which contained a full digital model of the Warringah Freeway Upgrade where users could plan trips, take screenshots and see the upgraded features of the project.

### ***Social media***

Social media, specifically Facebook, was used to advise the public of the exhibition of the environmental impact statement as well as upcoming information sessions, benefits of the Western Harbour Tunnel and Beaches Link program of works and the environmental impact statement public exhibition end date. There were over 479,000 views of the Facebook posts during the environmental impact statement public exhibition.

## **A2.3.7 Face to face and direct engagement with stakeholders and the community**

### ***Meetings and briefings***

During the exhibition period, thirteen meetings and briefings were held to provide stakeholders with an overview of the environmental impact statement and discuss any issues of interest. Meetings were held with key stakeholders, residents and businesses directly next to the project site and with community groups who requested a meeting.

### ***Community information sessions and staffed pop up display***

Eight community information sessions were held during the environmental impact statement public exhibition period. These information sessions were attended by the program team and technical specialists, including engineers, traffic and transport planners, environmental experts and experts in noise, vibration, air quality and human health. The community were notified of the sessions through project advertising, a community update postcard, email notification to registered stakeholders and information on the project website. These events provided opportunities for members of the community to ask questions of the project team and help to further inform the development of formal submissions. In addition to this the project team also attended local markets to provide members of the community an additional opportunity to engage with the team. Please note a number of proposed market attendances were required to be cancelled as the result of COVID-19. The locations, times and number of attendees at each of the sessions are outlined in Table A2-3.

**Table A2-3 Community drop-in sessions during the environmental impact statement exhibition period**

| Location                       | Date             | Time       | Number of attendees |
|--------------------------------|------------------|------------|---------------------|
| Balmain Town Hall, Balmain     | 6 February 2020  | 4pm – 7pm  | 139                 |
|                                | 22 February 2020 | 11am – 2pm | 115                 |
|                                | 12 March 2020    | 4pm – 7pm  | 46                  |
| Fred Hutley Hall, North Sydney | 8 February 2020  | 11am – 2pm | 202                 |
|                                | 13 February 2020 | 4pm – 7pm  | 87                  |

| Location                   | Date             | Time                                   | Number of attendees |
|----------------------------|------------------|--|---------------------|
|                            | 26 March 2020    | Cancelled due to COVID-19 restrictions | -                   |
| Norths, Cammeray           | 15 February 2020 | 11am – 2pm                             | 120                 |
|                            | 20 February 2020 | 4pm – 7pm                              | 187                 |
|                            | 5 March 2020     | 4pm – 7pm                              | 52                  |
| Rozelle Collectors Markets | 23 February 2020 | 9am – 3pm                              | 80                  |
| Balmain Market             | 29 February 2020 | 9am – 3pm                              | 25                  |

### **1800 number and project email**

The project phone number (1800 931 189) and email ([whtbl@transport.nsw.gov.au](mailto:whtbl@transport.nsw.gov.au)) were available prior to and during the environmental impact statement exhibition period as channels for the community and stakeholders to find out more information and ask questions. The project phone number and email address were promoted in the project advertisements, community updates, project overview document, environmental impact statement and the project website.

In addition to this, the project team made a number of phone calls to interested parties and key stakeholders to notify of the environmental impact statements exhibition.

Table A2-4 provides an outline of the contacts during the environmental impact statement public exhibition period.

**Table A2-4 Summary of the number of 1800 calls and project emails during the environmental impact statement exhibition period**

| Activity                                   | Total number |
|--|--------------|
| Emails received to program address         | 255          |
| Emails sent                                | 160          |
| Program 1800 number calls                  | 47           |
| Incoming phone calls to direct phone lines | 32           |
| Outgoing phone calls to key stakeholders   | 165          |

### **Door knocks**

Over 2500 properties around the proposed construction sites were door knocked during the public exhibition. These doorknocks were carried out to notify residents directly adjacent to the project construction sites of the environmental impact statements release, provide further information about how this may impact them and provide guidance on where they could find further information on the project.



## **A2.4 Submissions report consultation**

This submissions report will be made publicly available and further engagement will be carried out with the community and key stakeholders to ensure they are aware of its release, have access to the document and can find responses to their feedback.

## **A2.5 Future consultation**

Consultation on the project would continue throughout the remainder of the planning process and into the construction period, with a view to further minimising project impacts wherever possible. The 1800 number and email address would continue to operate and the website would be updated as the project progresses.

Future engagement would be carried out in line with Appendix E (Community Consultation Framework) of the environmental impact statement, environmental management measures (see Table D2-1 of this submissions report), and as required by any conditions of approval.



Transport for NSW

# **Western Harbour Tunnel and Warringah Freeway Upgrade**

A3 – Submissions received

## A3 Submissions received

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## A3.1 Respondents

Submissions in response to the environmental impact statement were received and accepted by the Department of Planning, Industry and Environment during the public exhibition period.

Submissions were accepted via:

- Electronic submission (online) at [www.planningportal.nsw.gov.au/major-projects](http://www.planningportal.nsw.gov.au/major-projects)
- Hand delivery to 4 Parramatta Square, 12 Darcy Street, Parramatta
- Post addressed to the Director, Transport Assessments, Planning and Assessment, Department of Planning, Industry and Environment, Locked Bag 5022, Parramatta NSW 2124.

A total of 1459 submissions were received. Of that total, 13 were received from NSW Government agencies, five from local councils, and 1441 from other organisations and members of the public.

The 1441 community submissions were made by 1086 different individuals or organisations.

A breakdown of submissions by submitter type is provided in Table A3-1 below.

**Table A3-1 Submissions breakdown by submitter type**

|                  | Total |
|------------------|-------|
| Public authority | 18    |
| Organisation     | 59    |
| Public           | 1382  |
| Total            | 1459  |

Of the 1459 submissions received, 20 submissions registered support of the project, 1333 registered an objection, and 106 submissions registered as a comment.

## A3.2 Overview of submissions and issues raised

### A3.2.1 NSW Government agencies

A total of 13 NSW Government agencies made submissions. These are summarised below, with full responses provided in Part B (Response to key stakeholders). Transport for NSW has considered the issues raised by NSW Government agencies and is committed to managing impacts through the next project stages. Transport for NSW will continue to engage with agencies throughout the project.

#### ***NSW Environment Protection Authority***

The NSW Environment Protection Authority raised questions and made recommendations about the proposed noise and vibration mitigation measures along with water quality objectives and water treatment plants. Questions were also raised about the modelling of groundwater and ambient air quality impacts including the regulatory worst case scenario and the vehicle emission estimation. Other concerns were about the assessment of land and marine contamination including the need for remediation or treatment activities.

A response to the issues raised by the NSW Environment Protection Authority is provided in Section B1 of this submissions report.

### ***NSW Health***

NSW Health raised questions about traffic related air pollution including fine particulate matter, capacity of ventilation systems to achieve optimal environmental outcomes during higher than expected traffic volumes, filtration of the ventilation outlets, the proximity of ventilation outlets at the Warringah Freeway to each other and community exposure to noise. Recommendations were also made about the management of construction site dust and in-tunnel air quality.

A response to the issues raised by NSW Health is provided in Section B2 of this submissions report.

### ***Office of the Chief Scientist and Engineer (Advisory Committee on Tunnel Air Quality)***

The Advisory Committee on Tunnel Air Quality (ACTAQ) reviewed Chapter 12 (Air quality) of the environmental impact statement and Appendix H (Technical Working Paper: Air Quality) and considered those sections relating to emissions from the ventilation outlets only. ACTAQ concluded these documents constitute a thorough review of high quality and noted that the choices made about data used and methods followed have been logical and reasonable and it is their view that the benefit of exploring alternative approaches would be questionable or marginal. ACTAQ raised questions about the base year chosen for the assessment and the factors for engine degradation. ACTAQ also noted the monitoring data that has become available around the ventilation outlets of the M4 East tunnel.

A response to the issues raised by the Office of the Chief Scientist and Engineer (ACTAQ) is provided in Section B3 of this submissions report.

### ***Sydney Water***

Sydney Water raised questions and made recommendations about the coordination of utility works and impacts to its assets. Sydney Water also commented on the stormwater quality targets, the treatment of water prior to discharge, flooding, groundwater and requested consultation during the detailed design, construction and operational phases.

A response to the issues raised by Sydney Water is provided in Section B4 of this submissions report.

### ***Department of Planning, Industry and Environment – Environment, Energy and Science Group***

The Department of Planning, Industry and Environment (Environment, Energy and Science) provided comments about flooding, biodiversity and landscaping, in addition to recommendations for new and updated environmental management measures.

A response to the issues raised by the Department of Planning, Industry and Environment (Environment, Energy and Science) is provided in Section B5 of this submissions report.

### ***Department of Primary Industries – Fisheries***

The Department of Primary Industries – Fisheries raised questions about White's seahorse, the Black Rockcod, the impacts on seagrass and noise impacts on seahorses.

A response to the issues raised by the Department Primary Industries (Fisheries) is provided in Section B6 of this submissions report.

### ***Fire and Rescue NSW***

Fire and Rescue NSW had no comments about the environmental impact statement, however, noted their expectation that extensive stakeholder consultation will be carried out during various project phases.

A response to the comment raised by Fire and Rescue NSW is provided in Section B7 of this submissions report.



### ***Heritage Council of NSW***

The Heritage Council of NSW raised questions and recommendations about impacts on State heritage and sites with potential archaeological significance.

A response to the issues raised by the Heritage Council of NSW is provided in Section B8 of this submissions report.

### ***Port Authority of NSW***

The Port Authority of NSW raised questions about access to the Glebe Island/White Bay port precinct, ongoing consultation, construction traffic impacts in areas surrounding the Port Authority of NSW land, the management of spoil to be handled at the White Bay, groundwater drawdown, construction air quality, marine traffic impacts and cumulative traffic and noise impacts.

A response to the issues raised by the Port Authority of NSW is provided in Section B9 of this submissions report.

### ***Department of Planning, Industry and Environment (Water) and the Natural Resources Access Regulator***

The Department of Planning, Industry and Environment (Water) and the Natural Resources Access Regulator raised questions about the groundwater model and requested further information about grouting and sealing within the tunnel, saline intrusion, a more comprehensive uncertainty and sensitivity analysis for the south model and further monitoring for saline water intrusion.

A response to the issues raised by the Department of Planning, Industry and Environment (Water) and the Natural Resources Access Regulator is provided in Section B10 of this submissions report.

### ***Sydney Harbour Federation Trust***

Sydney Harbour Federation Trust's primary concern was the potential for the project to impact on access to, and the operation of, Cockatoo Island. The proximity of the former Balmain coal mine site was also noted and the potential of the project to impact Sub Base Platypus.

A response to the issues raised by Sydney Harbour Federation Trust is provided in Section B11 of this submissions report.

### ***Department of Planning, Industry and Environment – Crown Lands***

The Department of Planning, Industry and Environment – Crown Lands had no comments on the environmental impact statement and will not be discussed further in this submissions report.

### ***Department of Primary Industries – Agriculture***

The Department of Primary Industries – Agriculture had no comments on the environmental impact statement and will not be discussed further in this submissions report.

## **A3.2.2 Local councils**

A total of five local councils made submissions on the environmental impact statement during the exhibition period. The local councils which made submissions are outlined below and the submissions are responded to in Part B (Response to key stakeholders). Due to the size of the submissions received from councils the issues raised by each council were categorised according to the key issue raised in line with the chapters of the environmental impact statement. Transport for NSW has considered the issues raised by local councils and is committed to managing impacts through the next project stages. Transport for NSW will continue to engage with local councils throughout the project.

### ***Inner West Council***

Inner West Council raised concerns about potential noise, vibration, dust, odour, property damage, heavy vehicle movements and congestion, safety, and worker parking demand. Specific concerns were raised about the Yurulbin Point construction support site (WHT4) which has heritage

significance. Concerns also included that this area would experience impacts to marine flora/fauna, marine water quality and barge movements. Concerns were also raised about the risks involved in the construction of cofferdams. Inner West Council also oppose the use of the former Balmain Leagues Club as a construction site due to the potential construction impacts and delays in the redevelopment of the site. Council also raised concerns about air quality impacts.

A response to the issues raised by Inner West Council is provided in Section B12 of this submissions report.

### ***City of Sydney Council***

City of Sydney Council expressed objection to the project based on the alignment with NSW Government strategic planning policies, stating that alternatives should be considered. Concerns were raised that the project would result in downstream impacts to the central business district (CBD) road network and result in traffic, air quality and noise and vibration impacts for residents and visitors to the Sydney CBD and surrounding area including at Rozelle.

A response to the issues raised by City of Sydney Council is provided in Section B13 of this submissions report.

### ***North Sydney Council***

North Sydney Council expressed objection to the project. North Sydney Council expressed concern that the local government area would pay disproportionate costs to deliver broader road network benefits. North Sydney Council also expressed concern that the project may impact on North Sydney Council's ability to deliver local strategic planning objectives, in addition to concerns about loss of open space, the impact to the road network, air quality, human health and social amenity.

A response to the issues raised by North Sydney Council is provided in Section B14 of this submissions report.

### ***Willoughby City Council***

Willoughby City Council raised concerns about the cumulative impacts of the project with other approved and in-planning projects. It was noted that public and active transport must be effectively supported. Concern was also raised about operational traffic impacts, communication with Willoughby City Council, noise and vibration and social impacts. Design changes to minimise impact on local communities and environments were suggested.

A response to the issues raised by Willoughby Council is provided in Section B15 of this submissions report.

### ***Mosman Council***

Mosman Council does not oppose the project in principle, however expressed concern that the project excluded improvements to the Spit–Military Road corridor and other local road corridors. Concern was also raised about emissions from the tunnel's ventilation outlets.

A response to the issues raised by Mosman Council is provided in Section B16 of this submissions report.

## **A3.2.3 Community**

A total of 1441 community submissions were received from 1086 individuals and organisations. The issues raised by each submitter varied, largely based on their location and also their particular interests in the project.

Of the 1441 community submissions, 60 were received from 48 separate organisations. These organisations are listed below in Table A3-2.

**Table A3-2 Community, peak and industry organisations that made submissions**

| Organisation type                              | Name   |
|--|--|
| <b>Commercial organisations</b>                | <ul style="list-style-type: none"> <li>• Fifth Facade Pty Ltd (High Mount Consortium)</li> <li>• Planning Lab</li> <li>• Mirvac (two submissions, one superseding the other)</li> <li>• Workfast Market Place</li> </ul>   |
| <b>Peak groups</b>                             | <ul style="list-style-type: none"> <li>• Australian Institute of Landscape Architects</li> <li>• Australian Marine Science Association NSW Branch</li> </ul>   |
| <b>Interest groups</b>                         | <ul style="list-style-type: none"> <li>• Action for Public Transport (NSW) Inc</li> <li>• Bicycle NSW</li> <li>• Bike North</li> <li>• Save Balgowlah</li> <li>• Saving Sydney's trees</li> <li>• WestProtects</li> <li>• Docomomo Australia</li> </ul>  |
| <b>School P&amp;C</b>                          | <ul style="list-style-type: none"> <li>• Anzac Park Public School P&amp;C Association (four submissions)</li> <li>• Cammeray Public School P&amp;C Association</li> <li>• Cammeraygal P&amp;C Association</li> <li>• Rozelle Public School P&amp;C Association</li> <li>• SCECGS Redlands School</li> <li>• Wenona School</li> </ul>   |
| <b>Precinct groups and Owners corporations</b> | <ul style="list-style-type: none"> <li>• ACE Body Corporate Management - Balmain</li> <li>• Artarmon Progress Association</li> <li>• Bay Precinct Committee (four submissions)</li> <li>• Lavender Bay Precinct</li> <li>• Milson Precinct Committee, North Sydney Council</li> <li>• Naremburn Progress Association</li> <li>• Naremburn Action Group (NAG)</li> <li>• Neutral Precinct</li> <li>• Northbridge Progress Association</li> <li>• Owners Corporation, Strata Plan 2436</li> <li>• Owners Strata Plan 19357</li> <li>• Owners Corporation Strata Plan 9090</li> <li>• Owners Corporation SP30686</li> <li>• Registry Precinct (five submissions)</li> <li>• Strata Plan 52098</li> <li>• Union Precinct, North Sydney</li> <li>• Waverton Precinct</li> <li>• White Bay Stratas Committee</li> <li>• Willoughby Environmental Protection Association Inc</li> </ul> |

| Organisation type      | Name   |
|------------------------|--|
|                        | <ul style="list-style-type: none"> <li>Wollstonecraft Precinct</li> </ul>  |
| <b>Sporting groups</b> | <ul style="list-style-type: none"> <li>Balmain Sailing Club</li> <li>Cammeray Croquet Club</li> <li>Greenwich Flying Squadron Inc</li> <li>Hunters Hill Sailing Club</li> <li>North Sydney Junior District Cricket Club</li> </ul> |
| <b>Council groups</b>  | <ul style="list-style-type: none"> <li>Parramatta River Catchment Group</li> <li>North Sydney Council – Parks Precinct Committee</li> <li>Sydney Coastal Councils Group</li> <li>Independent North Sydney Councilors</li> </ul>    |

### ***Common issues***

Each submission was examined in detail to identify and understand the issues raised. The content of each community submission was reviewed and categorised based on key issues which broadly aligned with the environmental impact statement chapters (for example construction traffic and transport) and sub-issues under each of these issue headings (for example traffic changes).

The issues raised in each submission were extracted and collated and have been presented as a summary of the issues raised by individual submissions. This means that while the exact wording of a particular submission may not be presented in the summary of the issue, the intent of each individual issue raised has been addressed and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided.

The community issues raised and the associated response provided forms the basis of Part C (Response to community submissions).

### ***Pro-forma submissions and community guidance***

Around 350 community submissions were either standardised pro-forma letters or had been modified from pro-forma letters. An analysis showed that while issues raised in pro-forma letters and guidance notes were repeated across many submissions, these submissions had been highly modified to reflect individual concerns and comments.

The issues raised in each pro-forma submission have been examined in detail and included in the summary of the specific issues raised by individual submissions.

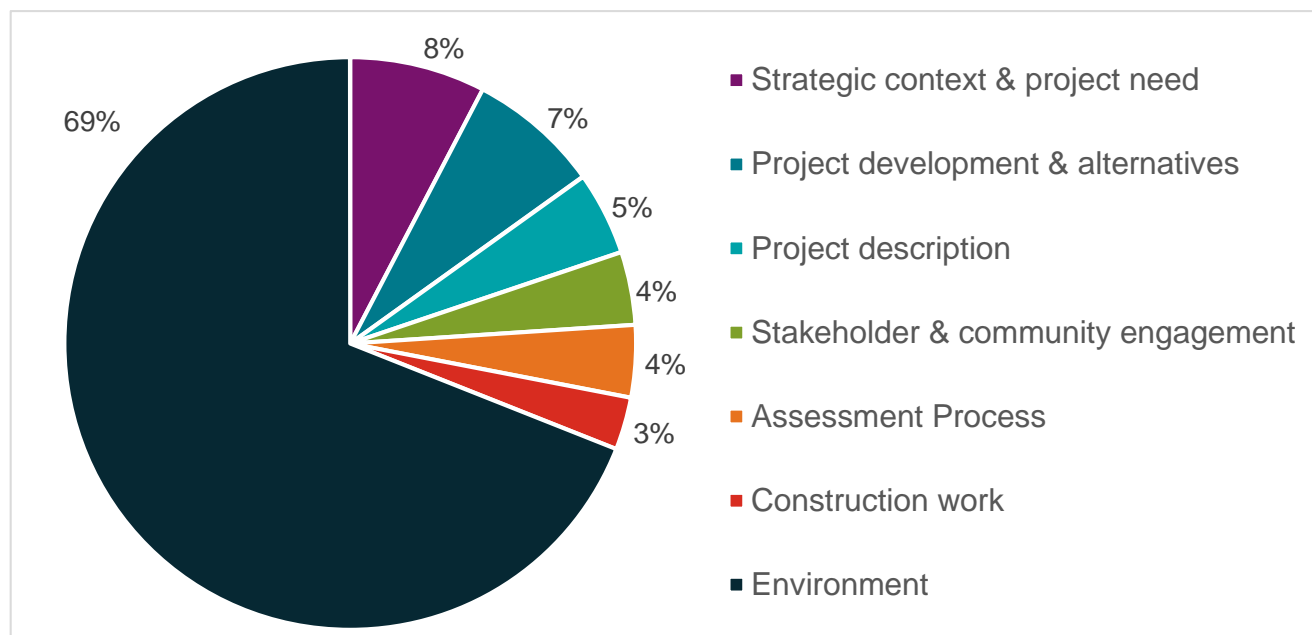
### ***Summary of issues raised***

Consultation and engagement has been carried out with the community and stakeholders during the design development process and environmental assessment to ensure key potential impacts have been identified at an early stage, and where possible, avoided, or appropriate environmental management measures developed. Transport for NSW has considered the issues raised by community members, and is committed to minimising impacts to the community. Transport for NSW will use a range of measures to reduce the impact of construction work when working close to communities.

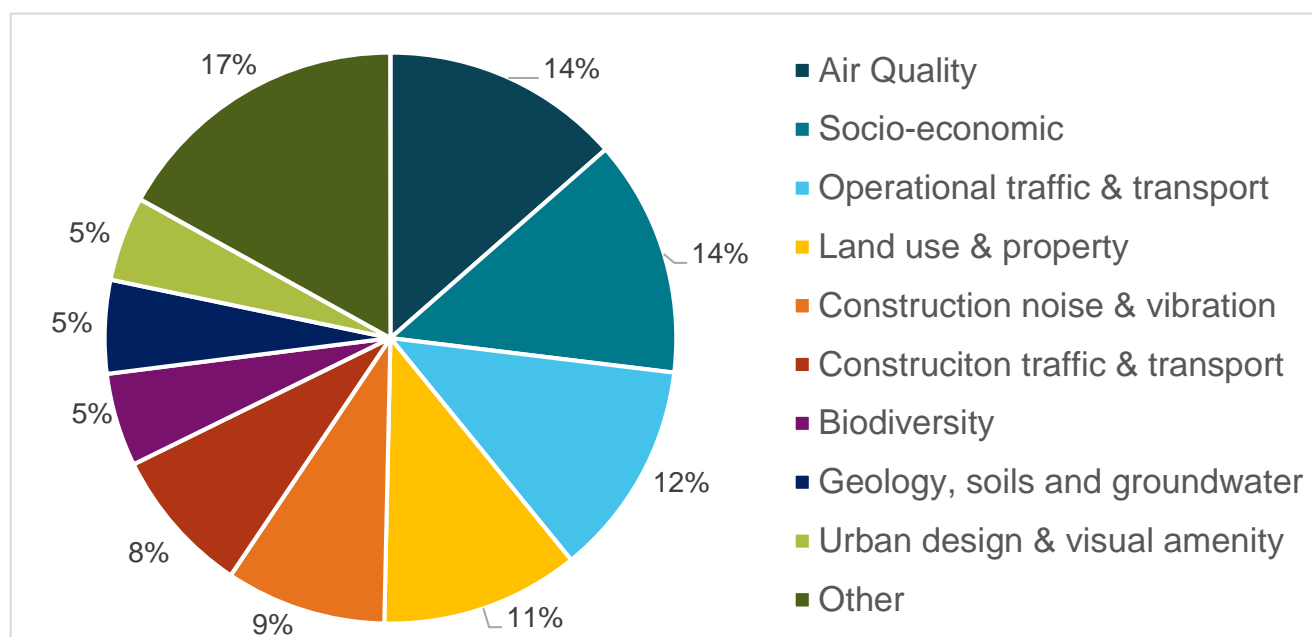
The key community issue categories are shown on Figure A3-1, and a further breakdown of the sub-issues raised for the top issue category (environmental impacts) is shown on Figure A3-2. Table A3-3 lists the key issues raised in the submissions in order of how many submissions raised each issue (note that some submissions raised multiple issues), in addition to where each of these issues are addressed in this submissions report.

Detailed discussion of the issues raised by the community and responses to these issues are located in Part C (Response to community submissions) of this submissions report.

Transport for NSW will continue to engage with the community throughout the project in accordance with Appendix E (Community consultation framework) of the environmental impact statement.



**Figure A3-1 Key issues raised in community submissions**



**Figure A3-2 Key types of environmental impact issues raised in community submissions**



**Table A3-3 Common issues raised in submissions and where responses are located in this submissions report**

| <b>Key issue</b>                            | <b>Location of response</b> |
|---|-----------------------------|
| <b>Air quality</b>                          | Section C12                 |
| <b>Socio-economic</b>                       | Section C21                 |
| <b>Operational traffic and transport</b>    | Section C9                  |
| <b>Land use and property</b>                | Section C20                 |
| <b>Strategic context and project need</b>   | Section C3                  |
| <b>Project development and alternatives</b> | Section C4                  |
| <b>Construction noise and vibration</b>     | Section C10                 |
| <b>Construction traffic and transport</b>   | Section C8                  |
| <b>Project description</b>                  | Section C5                  |
| <b>Stakeholder and community engagement</b> | Section C7                  |
| <b>Assessment process</b>                   | Section C2                  |
| <b>Biodiversity</b>                         | Section C19                 |
| <b>Geology, soils and groundwater</b>       | Section C16                 |
| <b>Urban design and visual amenity</b>      | Section C22                 |
| <b>Construction work</b>                    | Section C6                  |
| <b>Greenhouse gas and climate change</b>    | Section C26                 |
| <b>Hydrodynamics and water quality</b>      | Section C17                 |
| <b>Resource use and waste management</b>    | Section C24                 |
| <b>Operational noise and vibration</b>      | Section C11                 |
| <b>Sustainability</b>                       | Section C25                 |
| <b>Heritage</b>                             | Sections C14 and C15        |
| <b>Flooding</b>                             | Section C18                 |

### A3.3 Project refinements

Based on community feedback and concerns raised in submissions on the environmental impact statement, a number of refinements to the project have been made to further minimise impacts on the community and sensitive receivers.

#### A3.3.1 Birchgrove Ferry Wharf replacement opportunities

Chapter 6 (Construction work) of the environmental impact statement identifies that Birchgrove Ferry Wharf would be temporarily closed during construction and that customers would be notified of alternative travel arrangements in advance of the closure. Chapter 8 (Construction traffic and transport) of the environmental impact statement includes environmental management measure CTT3 which states that opportunities to relocate the Birchgrove Ferry Wharf will be investigated during construction planning.

Submissions received during the display of the environmental impact statement raised concerns with the temporary closure of the Birchgrove Ferry Wharf and temporary impacts to public transport accessibility for the indicative two year period. Some submissions assumed that Transport for NSW would not provide replacement services. Alternative wharf locations were suggested, including a proposal from Inner West Council of a new ferry wharf being provided at the end of Grove Street, Birchgrove, in Miklouho-Maclay Park.

Transport for NSW is committed to providing a replacement service for commuters impacted by the temporary Birchgrove Ferry Wharf closure and ensuring that the temporary closure of the Birchgrove Wharf will not occur until the replacement service is operational. Since the environmental impact statement exhibition period, Transport for NSW has been considering various options for a replacement service and the preferred option will be finalised during construction planning.

Environmental management measure CTT3 has been amended as provided in Table A3-4 and Table D2-1 of this submissions report to reflect this.

**Table A3-4 Revised environmental management measures for construction traffic and transport impacts**

| Ref  | Phase            | Impact                | Environmental management measure  | Location |
|------|------------------|-----------------------|---|----------|
| CTT3 | Pre-construction | Maritime construction | <p><b>A replacement service for commuters impacted by the temporary closure of Birchgrove Ferry Wharf will be determined during construction planning. The temporary closure of the Birchgrove Wharf will not occur until the replacement service is operational.</b></p> <p><del>Opportunities to relocate the Birchgrove Ferry Wharf will be investigated during construction planning.</del></p> | WHT      |

#### A3.3.2 Relocation of the historic vessels *M.V Cape Don and Baragoola*

Chapter 6 (Construction work) of the environmental impact statement identifies that as part enabling works, the historic vessels *M.V Cape Don and Baragoola*, which are currently moored at Balls Head, would require temporary relocation. Chapter 14 (Non-Aboriginal heritage) of the environmental impact statement includes environmental management measure NAH20 which states vessel owners will be given reasonable time and notice to find suitable alternate berthing arrangements and that Transport for NSW will take no action that results in the degradation of the heritage items until relocation occurs.

Since the exhibition of the environmental impact statement and in response to submissions, Transport for NSW has begun investigating opportunities to relocate the historic vessels to an area nearby to their existing moorings for the duration of the construction period.

Environmental management measure NAH20 has been amended as provided in Table A3-5 and Table D2-1 of this submissions report, to reflect the change in approach.

**Table A3-5 Revised environmental measures for non-Aboriginal heritage**

| Ref   | Phase            | Impact                                   | Environmental management measure  | Location |
|-------|------------------|--|---|----------|
| NAH20 | Pre-construction | Maritime non-Aboriginal heritage impacts | <p>Transport for NSW will <del>give reasonable time and notice for the owners of</del> <b>relocate</b> the historic vessels <i>M.V Cape Don</i> and <i>Baragoola</i> to find a suitable alternate berthing <b>nearby</b> within Sydney Harbour before construction commences.</p> <p><b>Relocation of the vessels will be carried out in consultation with the vessel owners and associated community groups, and will be in the general vicinity of the existing berths.</b></p> <p>Transport for NSW will take no action that results in the degradation of the heritage items until relocation occurs.</p> | WHT      |

### A3.3.3 Stormwater harvesting scheme at Cammeray Golf Course

Due to the permanent widening of the Warringah Freeway as part of the project the existing storage dam at Cammeray Golf Course would be directly impacted. Chapter 5 (Project Description) and Chapter 17 (Hydrodynamics and water quality) of the environmental impact statement state that the existing storage dam at Cammeray Golf Course would be relocated as part of the project during construction and reinstated indicatively within the north-western end of the golf course, and the reinstatement of the storage dam would only occur once the Western Harbour Tunnel and Beaches Link program of works at the Warringah Freeway are completed.

In response to further community and stakeholder engagement (including with North Sydney Council and the golf course operators), and subject to timely agreement regarding the alternate location, Transport for NSW has committed to implementing a permanent solution to replace the storage dam prior to removal of the existing dam so that no impact to water reuse by North Sydney Council will occur during the construction period or operational period. The replacement facility would aim to maintain the operational functionality of the current harvesting scheme to ensure similar adequate supply for North Sydney Council's water use needs, including its connection to the Green Park stormwater drain and its role in providing for the irrigation of the golf course and other parks in the North Sydney local government area. The solution would also include replacement of the associated harvesting scheme infrastructure eg gross pollutant trap, water treatment plant and pump out facility.

Several options for the alternate location are currently being investigated by the project in consultation with Cammeray Golf Course operators and North Sydney Council. However, if a suitable alternate location cannot be agreed prior to the commencement of construction, Transport for NSW will come to an interim arrangement with the Cammeray Golf Club and North Sydney Council concerning compensation for additional water usage until the replacement dam is operational.

Environmental management measure WQ8 has been amended as provided in Table A3-6 and Table D2-1 of this submissions report, to reflect the change in approach.

**Table A3-6 Revised environmental management measures for hydrodynamics and water quality impacts**

| Ref | Phase                        | Impact  | Environmental management measure   | Location |
|-----|------------------------------|---|--|----------|
| WQ8 | Design and post construction | North Sydney Council stormwater harvesting scheme | <p><b>Subject to reaching a timely agreement with Cammeray Golf Club and North Sydney Council regarding a suitable alternate location, Transport for NSW will install a new permanent replacement stormwater storage dam (and associated infrastructure) within the golf course prior to decommissioning the existing dam, in order to maintain ongoing operational functionality of the water harvesting scheme.</b></p> <p><b>If a suitable location cannot be agreed prior to the commencement of construction, Transport for NSW will come to an interim arrangement with Cammeray Golf Club and North Sydney Council concerning compensation for additional water usage until the replacement dam is operational.</b></p> <p><del>Reasonable and feasible opportunities to provide an interim or permanent solution for the relocation of the existing storage dam at Cammeray Golf Course earlier in program will be identified in consultation with North Sydney Council during detailed construction planning. During periods when the storage dam is no longer operational, Transport for NSW will come to an arrangement with North Sydney Council concerning the period in which the storage dam is no longer operational for the increased demand on other water sources</del></p> | WHT      |

#### **A3.3.4 Wastewater treatment plant discharges**

The environmental impact statement proposes to discharge wastewater generated by the project in accordance with site-specific trigger values developed to represent background concentrations of a suitable reference site or the ANZG (2018) guidelines.

However, in the absence of suitable reference site data to develop site-specific trigger values, it is proposed to treat the construction wastewater at wastewater treatment plants (WWTP) located along the project alignment to a quality that meets the updated criteria shown in Table A3-7 below. Updates to the proposed discharge criteria for the operational water treatment plant at Rozelle are also provided in Table A3-7. Further detail regarding the change in approach to wastewater treatment plant discharges is provided in the Transport for NSW response to the NSW Environment Protection Authority's submission, included in Section B1.2.1 of this submissions report.

Environmental management measures WQ3 and WQ9 have been amended, to reflect the change in approach as per Table A3-7 below and Table D2-1 of this submissions report.

**Table A3-7 Revised environmental management measures for hydrodynamics and water quality impacts**

| Ref | Phase        | Impact               | Environmental management measure   | Location |
|-----|--------------|----------------------|--|----------|
| WQ3 | Construction | Wastewater discharge | <p><del>Construction wastewater treatment plants will be designed to treat wastewater generated from tunnel groundwater ingress, rainfall runoff in tunnel portals, heat and dust suppression water and washdown runoff generated during construction.</del></p> <p><b>Discharge from wastewater treatment plants during the construction phase will be required to meet the following discharge criteria:</b></p> <ul style="list-style-type: none"> <li><b>The relevant physical and chemical stressors set out in of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000)</b></li> <li><b>The ANZG (2018) 90 per cent species protection levels for toxicants generally, with the exception of those toxicants known to bioaccumulate, which will be treated to meet the ANZG (2018) 95 per cent species protection levels, and</b></li> <li><b>The draft ANZG default guideline values for iron (in fresh and marine water) and zinc (in marine water) which are likely to be finalised in October 2020.</b></li> </ul> <p><del>Site-specific trigger values will be developed during construction planning to set the wastewater treatment plant discharge criteria ensuring wastewater will be treated to a level that is representative of background concentrations of a suitable reference site or the ANZECC/ARMCANZ (2018) guidelines.</del></p> | WHT/WFU  |
| WQ9 | Operation    | Wastewater discharge | <p>The permanent wastewater treatment plant at Rozelle will be designed to treat wastewater generated from tunnel groundwater ingress and rainfall runoff in tunnel portals and achieve the following discharge criteria:</p> <ul style="list-style-type: none"> <li><b>The relevant physical and chemical stressors set out in of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000), and</b></li> <li><b>The ANZG (2018) 95 per cent species protection levels for toxicants generally, with the exception of those toxicants known to bioaccumulate, which would be treated to meet the ANZG (2018) 99 per cent species protection levels, and</b></li> <li><b>The draft ANZG default guideline values for iron (in fresh and marine water) and</b></li> </ul>   | WHT      |



| Ref | Phase | Impact | Environmental management measure  | Location |
|-----|-------|--------|---|----------|
|     |       |        | <p><b>zinc (in marine water) which are likely to be finalised in October 2020.</b></p> <p>The level of treatment provided will consider the characteristics of the receiving environment (Rozelle Bay). Discharge from WWTP during the operation of the project will be required to meet specific discharge criteria as per ANZG (2018) 95% species protection levels; ANZG (2018) 99% protection levels for contaminants that bioaccumulate and the NHMRC (2008b) recreational guidelines water quality criteria for iron.</p> <p>These criteria will be defined during the construction planning phase to assist in determining wastewater treatment plant discharge criteria and ensure neutral or beneficial impacts to water quality of Rozelle Bay.</p> <p>Should any of the criteria be exceeded, a management response will be triggered. The management response will be documented within the Water Quality Monitoring Program.</p> |          |

### A3.3.5 Loss of parking on Alfred Street North

The environmental impact statement states that 73 long stay parking spaces would be lost along Alfred Street North due to the project. Opportunities to reduce or offset the permanent loss of long stay parking spaces along Alfred Street North due to the project will be investigated during further design development. Accordingly, a new environmental management measure (OT3) has been developed and is included in Table A3-8 and Table D2-1 of this submissions report.

**Table A3-8 Revised environmental management measures for operational traffic and transport impacts**

| Ref | Phase  | Impact  | Environmental management measure   | Location |
|-----|--------|---------|--|----------|
| OT3 | Design | Parking | <b>Opportunities to reduce or offset the permanent loss of long stay parking spaces along Alfred Street North due to the project will be investigated during further design development.</b> | WHT      |

### A3.3.6 Project staging

Chapter 5 (Project Description) of the environmental impact statement describes the scope of the Western Harbour Tunnel and Warringah Freeway Upgrade project and notes the project may be staged, depending on future project decisions on the delivery of the project. Submissions received during the display of the environmental impact statement raised concerns regarding construction fatigue and the importance of minimising cumulative impacts. In response to this feedback and as a result of further planning, the project has elected to stage the project to limit concurrent activities where possible and contribute to an earlier completion date for the overall project.

The project stages are anticipated to be as follows:

- Stage 1 - Early and enabling works:
  - Critical utility installation, relocation and protection

- Cammeray Golf Course reconfiguration adjustment works
- Cammeray dam water harvesting scheme
- Relocation of the historic vessels *M.V Cape Don and Baragoola*
- Stage 2 - Warringah Freeway Upgrade project:
- Stage 3 - Western Harbour Tunnel project.

The Stage 1 early and enabling works would commence prior to construction of the main works (Stage 2 and Stage 3) to minimise cumulative impacts of concurrent activities during construction, mitigate safety risks, maintain ongoing operational functionality of the Cammeray Golf Course, including the water harvesting scheme, and ensure safe relocation of the historic vessels, the *M.V Cape Don and Baragoola*, to their temporary mooring location.



Transport for NSW

# **Western Harbour Tunnel and Warringah Freeway Upgrade**

A4 - Clarifications

## A4 Clarifications

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## A4.1 General clarifications

This section identifies general clarifications identified in the environmental impact statement. Where relevant, the text provided can be considered to replace the text from the environmental impact statement. None of these clarifications result in any significant change to the environmental impacts described in the environmental impact statement.

Other minor errors and discrepancies are included in Section A4.2.

### A4.1.1 Construction work

#### ***Rozelle Rail Yards construction support site (WHT1)***

Rozelle Rail Yards construction support site (WHT1) is described within Chapter 6 (Construction work) of the environmental impact statement to support mechanical and electrical fitout of the mainline tunnels. The site also supports construction and fitout of the ventilation outlet and motorway facilities, as well as surface roads connecting the ramp tunnels to the City West Link. The key activities described for Rozelle Rail Yards construction support site (WHT1) are required for the construction of the Western Harbour Tunnel component of the project.

It is noted that the M4-M5 Link project is proposing to develop the former Rozelle Rail Yards into a new open green space for the benefit of the community. The proposed new open green space would potentially overlap with the area described for the Rozelle Rail Yards construction support site (WHT1) in the environmental impact statement.

Notwithstanding discussions within agency and community responses (Parts B and C of this submissions report), to facilitate the earlier provision of this new open green space to the community, Transport for NSW is investigating alternative layouts or potential alternative locations for the proposed Rozelle Rail Yard construction support site (WHT1). This would be finalised during further design development and detailed construction planning to minimise any potential conflicts with the new open green space.

Should further design development and detailed construction planning require the need for a potential alternative location, the criteria described in Section 4.5.4 (Construction support site location alternatives) of the environmental impact statement would be applied, including:

- Locating the construction support site as close as possible to project construction areas
- Avoiding sensitive environmental and community locations where possible
- Avoiding material impacts on heritage sites or items
- Maximising opportunities for direct access to motorways and arterial roads or water transport opportunities for construction traffic, and avoiding the need to use local residential streets if possible
- Minimising direct and indirect property impacts and acquisition requirements, particularly in residential areas.

Community consultation would also be carried out should a potential alternative location be identified. Issues raised by the community would be considered in any final decision to relocate and/or operate the construction support site.

The above approach is consistent with discussions in Chapter 28 (Synthesis) of the environmental impact statement, where the final location and layout of construction support sites would continue to be investigated during detailed construction planning to reduce impacts on the community during construction. In addition, any potential alternative location for Rozelle Rail Yards construction support site (WHT1) would also be reviewed for consistency with the assessment contained in the environmental impact statement including relevant environmental management measures, environmental performance outcomes and any future conditions of approval.



The final location, layout and management of all construction support sites for the Western Harbour Tunnel and Warringah Freeway Upgrade project would be detailed in a construction support site management plan (or similar), refer to Section D1.4 of this submissions report, prior to the commencement of construction. The construction support site management plan would include further consultation with the relevant council(s) and government agencies.

### ***Construction worker car parking***

The provision of sufficient construction worker car parking has been queried. The approach the project has taken regarding the provision of construction worker car parking is detailed below.

Locating construction support sites to support large scale infrastructure projects in urban environments is a complex issue, and requires consideration of a variety of factors, including:

- Minimising property acquisitions, especially private residential dwellings
- Connectivity of the site with arterial roads to minimise haulage through local streets
- Ensuring the sites are of a size to accommodate all of the work requirements, including worker parking.

In urban environments, it is difficult to achieve all of these requirements. The project has sized construction support sites balancing the different constraints in each location, with a particular emphasis on minimising property acquisitions. As a result of this, not all workforce parking is able to be accommodated within the construction support sites.

Where possible, the Western Harbour Tunnel construction support sites for the project have been located to accommodate worker parking, with all sites having provision for worker parking, with the exception of the following:

- Rozelle Rails Yards construction support site (WHT1) – this is only a site of around 1000 square metres. Worker parking for this site would be provided at White Bay, with personnel shuttled between White Bay and Rozelle Rail Yards. Note that Transport for NSW is investigating alternate locations for the Rozelle Rail Yards construction support site (WHT1), as discussed above
- Victoria Road construction support site (WHT2) – to minimise property acquisitions, particularly of private dwellings, the site at Victoria Road is not able to accommodate worker parking on the site
- Yurulbin Point construction support site (WHT4) – Louisa Road is not suitable for landside access, and as such, this site would be supported from White Bay, with access and egress to the site by water.

It is noted that the majority of on-street parking in proximity of construction support sites is time and/or user restricted (eg 4P ticketed, resident permit holders excepted). Further, in North Sydney, it would be expected that private car parking stations would be used for parking not accommodated by construction support sites.

Transport for NSW would, as far as reasonably practical, minimise parking in local streets. As outlined in environmental management measure CTT9 (refer to Table D2-1 of this submissions report), where provision of construction on-site parking cannot accommodate the full construction workforce, feasible and reasonable management measures that minimise impacts on parking on local roads will be identified and implemented. Depending on the location, management measures may include workforce shuttle buses and use of public transport.

Transport for NSW has investigated options to minimise worker parking in streets surrounding the Victoria Road construction support site (WHT2) to discourage private vehicle usage. These measures would be further investigated once a contractor is engaged. Transport for NSW would also continue to work with the Department of Planning, Industry and the Environment to better understand construction worker parking habits. These solutions would be tailored to suit the requirements and geographical spread of the workforce to ensure maximum take up.

### A4.1.2 Construction traffic and transport

#### **Construction traffic - Rozelle**

Further clarification is provided below to describe how The Crescent west of Victoria Road would operate during construction of the project. When reading Section 8.4.1, subheading 'Road network impacts', of the environmental impact statement, the below summary of Rozelle construction impacts from Appendix F (Technical working paper: Traffic and transport) should be considered.

Assessment of the performance of key locations in the road network affected by construction activities indicates that the road network in the Rozelle and surrounds study area would perform marginally worse under construction, with no noticeable impact when compared to traffic conditions without the project. City West Link/The Crescent intersection and The Crescent/James Craig Road intersection would continue to operate at a comparable level of service during both peak periods. These intersections are already operating above capacity during peak periods and this would not substantially change with the addition of the forecast construction traffic. Midblock volumes on City West Link, The Crescent and Victoria Road would continue to perform at a relatively poor level of service during construction with or without the project.

#### **Cruise ship movements**

Section 4.5 of Appendix F (Technical working paper: Traffic and transport) describes the existing maritime activities within Sydney Harbour and provides data for cruise ship movements in 2018 and 2019. Table A4-1 provides further information to Table 4-23 of Appendix F (Technical working paper: Traffic and transport) including available data for cruise ship movements for additional years within the construction period. However as the Port Authority only accepts bookings three years in advance, the full construction timeframe could not be provided. It should also be noted that data used to project cruise ship movements would have been generated prior to COVID-19, and therefore includes an element of uncertainty for the post COVID-19 period.

**Table A4-1 Historical and projected cruise ship movements (2018-2023)**

| Terminal                    | 2018 | 2019 | 2020* | 2021 | 2022 | 2023    |
|-----------------------------|------|------|-------|------|------|---------|
| Overseas Passenger Terminal | 234  | 245  | 117   | 233  | 143  | 33      |
| White Bay Cruise Terminal   | 123  | 126  | 43    | 92   | 64** | No data |

Source: Cruise Schedule (Port Authority of NSW, 2020)

\*From May/June 2020

\*\* Until June 2022

### A4.1.3 Operational traffic and transport

#### **North Sydney Integrated Transport Program**

The North Sydney Integrated Transport Program (NSITP or North Sydney Program) is described in Section 9.1.1 of the environmental impact statement. The North Sydney Program is a multi-agency collaboration between Transport for NSW, North Sydney Council, Greater Sydney Commission and the Government Architect of NSW, to guide future integrated transport planning and investment in the North Sydney CBD and interconnected areas. Led by Transport for NSW since 2018, it aims to deliver a shared place-based vision for the North Sydney CBD.

The North Sydney Program considers strategic public transport connections to the North Sydney CBD, land use and public domain objectives, improved pedestrian amenity and safety, road network changes, improved access for cyclists to and through the CBD, convenient interchanges between bus and rail services, management of kerbside access to support business activity across the day, and place outcomes within the CBD. As such, a key focus of the North Sydney Program is to ensure major projects, such as the Western Harbour Tunnel and Beaches Link program, integrate

with the North Sydney CBD in a manner that supports the globally connected 'Harbour CBD' and enables delivery of befitting place-based outcomes.

Development of the North Sydney Program is ongoing, with validation of the vision for North Sydney currently underway with a number of scenarios being considered to support the place-based outcomes. As part of the collaboration, the multi-agency group will ensure the future integrated transport network and place-based vision for North Sydney is supported through projects such as the Western Harbour Tunnel and Warringah Freeway Upgrade project. Further refinements to movement and place outcomes within the North Sydney CBD may occur as part of the North Sydney Program.

Any changes to the project as a result of the North Sydney Program process would be considered during further design development. Further investigations and assessments may be carried out as part of this process, including additional traffic and transport modelling.

As described in Chapter 28 (Synthesis of the environmental impact statement) of the environmental impact statement, any refinements to the approved project during detailed design would be reviewed for consistency with the approval. Where design refinements are not consistent with the approval issued by the Minister for Planning and Public Spaces, approval would be sought from the Minister in accordance with the requirements of Division 5.2 of the *Environmental Planning and Assessment Act 1979*.

For any future design refinements, a screening assessment review would be carried out to consider whether the refinement would:

- Result in any inconsistency with the conditions of approval
- Result in any inconsistency with the objectives and operation of the project as described in the environmental impact statement
- Result in a change to the approved project that may require a modification of the approval
- Result in any potential environmental or social impacts of a greater scale or impact on previously unaffected receivers than that considered by the environmental impact statement or the submissions report.

Transport for NSW will continue to work closely with North Sydney Council and key stakeholders through agreed governance structures to investigate options to improve movement and place outcomes within North Sydney, further leveraging the strategic benefits of the program of works. Community consultation would also be carried out. Issues raised by the community would be considered in any final decision to refine the project.

### **Active transport**

Table 5-13 of the environmental impact statement outlines active transport that would be provided as part of the Warringah Freeway Upgrade component of the project. The Warringah Freeway Upgrade component of the project would provide a positive contribution to the North Sydney area by providing new and upgraded active transport infrastructure that would improve connectivity across the Warringah Freeway including connections to and from the North Sydney commercial centre. This would include the replacement of the Ridge Street shared user bridge, a new shared user path along the southern side of the High Street bridge at North Sydney, an active transport link north of Ernest Street, and an improved dedicated cycleway between Ernest Street and Miller Street.

For active transport initiatives that do not form part of the scope of this project, councils can apply for funding for cycleways under the NSW Government's Walking and Cycling Program. In line with the NSW Government's Future Transport 2056 strategy, this program focuses on improving the convenience of walking and cycling for short trips to key destinations and within centres, and making walking and cycling safe and reliable by prioritising infrastructure that supports pedestrian and cycling movement. Further information is available at [transport.nsw.gov.au](https://transport.nsw.gov.au).

#### **A4.1.4 Construction noise and vibration**

##### ***Highly noise affected properties***

Chapter 5 of Appendix G (Technical working paper: Noise and vibration) shows the number of residential receiver buildings that are predicted to be exposed to noise levels that exceed 75 dB(A) (see Table 5-29, Table 5-65, Table 5-81, Table 5-97, Table 5-116, Table 5-136, Table 5-144, Table 5-152, Table 5-170, Table 5-187, Table 5-197 and Table 5-206). These highly noise affected receivers are located nearest to construction support sites and the Warringah Freeway Upgrade construction works.

In response to submissions received and agency feedback received during the environmental impact exhibition period, further information on receiver buildings predicted to be highly noise affected is presented in Appendix F.1 and Appendix F.2 of this submissions report.

Appendix F.1 of this submissions report provides a summary of worst case noise impacts associated with the construction support sites for the Western Harbour Tunnel component of the project. This includes discussion on the likely frequency and duration of assessed activities within the indicative construction program timeframes for the major construction stages and identification of the number of highly noise affected receiver buildings where relevant. The indicative program duration of major construction stages presented in Appendix F.1 is based on the construction methodology developed for the environmental impact statement and includes results of worst case noise scenarios as presented in Appendix G (Technical working paper: Noise and vibration).

The results presented Appendix F.1 are conservative and are based on a reasonable worst case noise set of plant and equipment operating simultaneously during the assessment period. These assessed scenarios are conservative and unlikely to typically occur. Construction noise levels during actual construction works at nearby receivers are likely to be lower than those predicted, considering factors such as the specific locations of plant and equipment relative to nearby receivers, and the length of time and intensity with which the plant and equipment are working. Actual frequency and duration of noise generating activities for major construction stages will be confirmed during further design development and once the construction contractor is selected and the construction methodology is confirmed. This will also enable a better understanding of the construction plant and equipment required for specific works, the locations they will likely operate, and the potential for concurrent activities.

Appendix F.2 of this submissions report shows the highly noise affected residential receiver buildings based on worst case noise predictions associated with the Warringah Freeway Upgrade minor construction support sites as well as for the Warringah Freeway Upgrade surface road works construction activities. It should be noted that the duration and frequency of receivers exposed to noise levels above 75 dB(A) from the surface road works activities cannot be determined at this stage but will be confirmed during further design development and once the construction contractor is selected and the construction methodology is confirmed.

The results presented in Appendix F.2 for highly noise affected receivers are conservative and based on a reasonable worst case noise scenario, with all plant and equipment operating at the same time in a similar location and the loudest plant items (eg rock hammers) being used. The predictions are also based on when the construction works are at the closest location to each receiver. The potential for the worst case noise scenario to occur during construction is unlikely to typically occur. The construction noise levels at that receiver would reduce when construction activities move further away, if less plant are operating, or where the loudest plant items are not in use. The construction contractor, once appointed, would refine the proposed construction methodology, providing a better understanding of the construction plant and equipment required for specific works, the locations they would likely operate and the potential for concurrent activities.

As noted in Section 6.3 of Appendix G (Technical working paper: Noise and vibration), where feasible and reasonable, high noise impact activities would be carried out during standard construction hours to limit the number of highly noise affected receivers outside of standard construction hours. During standard construction hours respite periods would be adopted, such that:

- High noise impact activities would only be carried out between 7.00am and 6.00pm Monday to Friday, and 8.00am and 1.00pm Saturday (at times when the community is less sensitive to noise)
- High noise impact activities would be carried out in continuous blocks of up to three hours. Respite from high noise impact activities would be provided between each block for at least one hour. No high noise impact activities would be carried out during this one hour respite period
- High noise impact activities and respite periods would take into consideration times when the community are most sensitive to noise, where possible.

During out of hours of work periods, appropriate respite and additional environmental management measures would be adopted for highly affected receivers in accordance with the *Construction Noise and Vibration Guideline* (Roads and Maritime, 2016). These would be documented in the construction noise and vibration management plan as per environmental management measure CNV1 (refer to Table D2-1 of this submissions report).

In addition to the respite periods described above and the construction noise and vibration management plan, a number of other controls and management measures would also be implemented for the project to further minimise potential noise impacts. These include:

- A construction noise and vibration management plan to establish the required process for mitigating and managing noise and vibration impacts across the project
- Construction noise and vibration impact statements as part of the construction noise and vibration management plan, which will document all feasible and reasonable environmental management measures to minimise noise impacts on nearby receivers
- A noise insulation program to enable the proactive implementation of noise treatment at eligible properties around the Warringah Freeway corridor to be delivered as early as possible in the construction program
- A construction noise management framework which describes the approach the project would take to mitigating and managing construction noise impacts for out of hours work and developed in consultation with the Department of Planning, Industry and Environment and the NSW Environment Protection Authority.

Further detail on the above additional controls and management measures is provided in Appendix F.2.

### ***Construction road traffic noise management on local roads***

As part of submissions, further information was requested on the management measures to reduce road traffic noise in residential areas where construction traffic is required to use local roads and night time background noise levels are low.

Construction support sites, where feasible, have been selected to minimise haulage on local roads by selecting sites that provide access and egress via major arterial roads or provide maritime transport opportunities. Only low numbers of heavy construction vehicles would access or depart construction support sites during the night time period. This would typically consist of one heavy vehicle movement per hour in the night time period with a maximum of typically four to five construction vehicles per night. Vehicle numbers have been distributed onto the local road network based on the proposed access roads. Where a vehicle accesses the site by one road and leaves by another, one vehicle movement is counted along each road once. Where a vehicle accesses and leaves the site by the same road, two vehicle movements are counted on that road. Further, the majority of the construction support sites supporting the Warringah Freeway Upgrade component of the project would be used for occasional works, generating low construction traffic volumes.

Construction-related road traffic noise assessments were carried out using conservative assumptions, where predictions were based on the loudest vehicle, with corrections applied to account for varied road gradient considering sustained engine load. However, these noise levels



may not occur depending upon actual heavy vehicle noise levels, driving methods, and a range of site specific factors (ie. no engine load when travelling downhill, and reduced load when travelling empty up hill on departure).

To minimise noise impacts from construction vehicles on surrounding streets, the environmental management measures (refer to Table D2-1 of this submissions report) will be considered during further design development during the development of the project construction noise and vibration management plan (CNV1) and site specific construction noise and vibration impact statements (CNV2), include, but are not limited to:

- Investigate delivery vehicle noise levels, where construction vehicle routes are required along sensitive local roads outside of standard construction hours, especially considering site-specific parameters (ie road gradients and load state when operating along that road) in order to:
  - Determine potential noise levels from actual vehicle types to be used and the impacts on receivers adjacent to the construction vehicle routes on sensitive local roads
  - Determine driving techniques considering site-specific parameters that would minimise noise emissions, that would inform driver inductions for the specific site
  - Determine if there are any additional feasible and reasonable management measures could be implemented where practicable, noting the number of delivery vehicles would likely only be three to four concrete deliveries per night
  - Implement a site specific drivers' protocol, based on the outcomes of this investigation
- Require delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible
- Limit the use of engine compression brakes at night and in residential areas
- Vehicles should be fitted with a silencer that complies with the National Transport Commission's 'In-service test procedure' and standard
- Investigate the use of larger concrete agitators to reduce the number of required heavy vehicle movements.

Elsewhere, where feasible and reasonable, construction vehicle movements will not occur on local roads beyond those required for direct access to construction sites unless compliance with the relevant traffic noise criteria can be achieved, or alternative arrangements have been agreed with affected receivers (environmental management measure CNV5 in Table D2-1 of this submissions report).

### **Noise receiver types**

The noise and vibration assessment of educational facilities within the environmental impact statement was queried.

#### Other sensitive receivers

The use of the 'other sensitive receiver' category within Appendix G (Technical working paper: Noise and vibration) includes several land uses such as educational facilities and places of worship as per Section 2.2 of Appendix G (Technical working paper: Noise and vibration). This method of classification was used to simplify figures and remove excessive detail.

#### Little Zak's Academy

Since the completion of the land use survey for the project, a child care centre has been established at 6-8 Waterloo Street, Rozelle. To reflect this change in land use, the noise and vibration assessment for the environmental impact assessment has been updated. An updated assessment of predicted noise impacts for this property is included as Appendix G of this submissions report.

When developing the Construction Noise Vibration Impact Statements as required by environmental management measure CNV2 (refer to Table D2-1 of this submissions report), the contractor would



refine the noise management level for this childcare centre and determine appropriate environmental management measures tailored to this receiver.

### **Noise management framework**

The impact of construction noise from the project has been assessed as part of the project environmental impact statement. Whilst the overall project would endeavour to maximise surface works during standard hours, some works would be required to be completed outside of these hours.

Surface works for the Warringah Freeway upgrade is one example where works would need to be carried out outside standard hours. Surface works on the Warringah Freeway would generally need to be minimised during standard working hours so as to maintain peak hour traffic capacity, to provide safety for road users and construction workers, and minimise impact to journey times.

As there is a high population density along the Warringah Freeway, including many apartment buildings, there are a large number of potentially affected receivers resulting from carrying out works outside of normal hours. Transport for NSW is currently preparing a Construction Noise Management Framework document in consultation with both the Department of Planning, Industry and the Environment and the NSW Environmental Protection Authority. The Construction Noise Management Framework describes the approach the project would take to mitigating and managing construction noise impacts for works outside standard construction hours. The Noise Management Framework, which would be publicly available during construction, outlines the process for the implementation of additional measures to ensure that there is a consistent approach to the management of noise impacts along this corridor and so this is clear for the community. The construction noise management framework would describe details around the approach to respite periods and alternate accommodation.

### **Noise mitigation measures**

As detailed in Section 4.2.2.3 of Appendix G (Technical working paper: Noise and vibration), feasible and reasonable environmental management measures have been incorporated into the indicative designs of the construction support sites.

Temporary barriers have been identified where appropriate, but all construction support sites would be reviewed during further design development with all environmental management measures updated as required. These would be detailed in site-specific construction noise and vibration impact statements. Across the minor construction support sites this will include developing the site layout with consideration of noise, including the positioning of the site offices and fixed structures in between noise generating activities and nearby receiver buildings to assist in mitigating construction noise impacts, as detailed in Section 5.9.2.2.3 of Appendix G (Technical working paper: Noise and vibration). This would be beneficial for nearby multistorey residential receiver buildings.

Worst-case noise event scenarios for construction are presented in the environmental impact statement and any changes carried out during further design development would seek to further reduce noise impacts.

If during further design development the predicted noise impacts for construction support sites are reduced through site layout, changes in construction activities and other environmental management measures, the indicative location of temporary noise barriers show in the environmental impact statement may change, or no longer be required.

## **A4.1.5 Operational noise and vibration**

### **Amherst Street noise wall**

The noise impact assessment (Appendix G (Technical working paper: Noise and vibration)) identified the need for construction of a new noise barrier at Amherst Street in Cammeray to mitigate traffic noise impacts at this location due to existing traffic noise levels (as modelled for the 'Do minimum' (without project)) and noise impacts associated with the project (for the 'Do Something' (with the project) scenario). As such, Appendix G (Technical working paper: Noise and

vibration) refers to a new noise barrier at Amherst Street, including a combination of existing and modified noise barriers, identified as noise barrier WFNB\_008. Construction of a new part of the noise barrier along Amherst Street is proposed to be carried out as part of the Transport for NSW Noise Abatement Program, which aims to provide noise mitigation treatment works for noise-sensitive land users that are currently exposed to high-level traffic noise from State and Australian Government roads. The noise barrier would provide noise mitigation for residents located on Jenkins Street, Cammeray, who currently experience high-level traffic noise originating from the Warringah Freeway and the Amherst Street off ramp, in respect of both existing noise impacts (ie without the project) and noise impacts as a result of the project.

The location and size of the proposed noise barrier has been developed through consultation with the affected community and North Sydney Council and is the subject of a separate assessment under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979*. The Review of Environmental Factors for the proposed works is available here: [nswroads.work/amherst](https://nswroads.work/amherst). It is proposed that this noise barrier, constructed as part of the Noise Abatement Program, would be used to also mitigate noise impacts from the project.

It is anticipated that construction of the noise barrier would commence in late 2020 and take about four months to complete (subject to approval). The noise barrier proposed to be constructed under the Noise Abatement Program is generally consistent with the project as depicted in the project environmental impact statement and is proposed to deliver the mitigation benefits described in the environmental impact statement. It is expected that construction of the noise barrier through the Noise Abatement Program would be completed prior to commencement of construction of the project, thereby delivering benefits to the residents at this location by mitigating construction noise impacts from the project. The project will liaise with the Transport for NSW Noise Abatement Program team to ensure that the Amherst Street noise wall is designed to integrate with the treatment measures identified for the project in this location (ie modifications to existing barriers and provision of new barriers as part of WFNB\_008).

As required by environmental management measure ONV1 (refer to Table D2-1 of this submissions report), an assessment of operational noise performance will be reviewed during detailed design of the project to confirm operational noise mitigation requirements, taking into consideration the final form and location of the Amherst Street noise wall delivered through the Noise Abatement Program, to confirm that operational noise mitigation will be delivered in accordance with relevant policies and guidelines.

### **Low noise pavement**

For the environmental impact statement operational noise modelling, a specific low noise pavement profile has been assumed for carriageways within the Warringah Freeway (from High Street and Willoughby Road (northbound) and Brook Street to High Street (southbound), and associated on and off ramps. This pavement type is also proposed along Alfred Street North (from Kurraba Road to High Street).

As stated in Section 7.2.1 of Appendix G (Technical working paper: Noise and vibration), the use of quieter pavements would be further investigated during further design development. The final road pavement surfaces used for the project would be subject to various requirements aside from acoustic benefits, including structural integrity, skid resistance, water dispersion, maintenance and design life. Well designed pavements that consider these requirements are subject to less rutting and cracking, and these typical defects can deteriorate the operational noise environment. Pavements would ultimately be selected by balancing performance, design life, durability, serviceability and noise emissions.

### **A4.1.6 Non-Aboriginal heritage**

#### ***Former Balls Head Coal Loader – nomination for State Heritage Register listing***

Appendix J (Technical working paper: Non-Aboriginal heritage) identifies the former Balls Head Coal Loader as being of local heritage significance as per its current listing under the North Sydney Local

Environment Plan 2013. However, the Balls Head Coal Loader as a complex has been nominated and is currently under consideration for listing on the NSW State Heritage Register. Section B8.2 of this submissions report provides an updated assessment with regard to how the project has considered the nomination for State Heritage listing.

#### ***Yurulbin Park – nomination for State Heritage Register listing***

This submissions report has considered the State Heritage values at Yurulbin Park in case a future decision is made to progress a State Heritage Register listing. Section B8.2 of this submissions report provides an updated assessment with regard to how the project has considered State Heritage values for Yurulbin Park.

#### ***Yurulbin Park – Research design and methodology***

Updates to the Research Design and Methodology for Yurulbin Park (refer to Appendix C of Appendix J (Technical working paper: Non-Aboriginal Heritage) were made in response to the Heritage Council of NSW submission. The updated wording is provided in Section B8.3 of this submissions report.

#### ***BP site – excavation methodology***

Updates to the excavation methodology for the BP Site, Berrys Bay were made in response to the Heritage Council of NSW submission. The updated wording is provided in Section B8.3 of this submissions report and replaces Section B.2.2.1 of Appendix J (Technical working paper – Non-Aboriginal heritage).

### **A4.1.7 Aboriginal heritage**

#### ***Environmental management measure AH1***

Since the preparation of the environmental impact statement, inspections have been carried out in accordance with environmental management measure AH1 at four Aboriginal heritage sites which were unable to be previously surveyed due to private property access constraints.

A targeted site inspection of the four sites located on private properties within Birchgrove was carried out on 19 and 20 February 2020. The inspection and impact assessment are documented in an archaeological site inspection memo prepared by Jacobs and included in Appendix B of this submissions report. Following the site inspection, only one of the four sites, Shed Cave (AHIMS 45-6-2672), was determined to be within 50 metres of project construction works. Shed Cave is identified as being of high significance as the site has an intact midden deposit. The assessment determined that there would be no direct impact to this site as a result of the project, however it may be subject to potential indirect impacts associated with vibration and settlement. An additional environmental management measure AH10 is included in Table D2-1 of this submissions report, which states that Transport for NSW will consult with the landowners of the private property where the Shed Cave (45-6-2672) AHIMS site is located. Subject to private landowner consent and access, vibration management measures AH2, AH3 and AH4 will apply to the site (refer to Table D2-1 of this submissions report). No further changes to environmental management measures (refer to Table D2-1 of this submissions report) would be necessary to protect these four sites.

The Metropolitan Local Aboriginal Land Council (MLALC), as the applicable local Aboriginal land council in the study area, was consulted on the findings of the archaeological site inspection memo included in Appendix B of this submissions report. Environmental management measure AH1 has therefore now been satisfied by the project following completion of the inspections and consultation with the MLALC.

Accordingly, AH1 has now been removed from the environmental management measures applicable to the project (refer to Table D2-1 of this submissions report).

#### **A4.1.8 Land use and property**

##### ***Operational impacts and opportunities for open space***

An assessment of the project's impacts on land use and property, including impacts to open space during construction and operation, is provided in Chapter 20 (Land use and property) of the environmental impact statement. While the project would result in both permanent loss and opportunities to increase public open space, the environmental impact statement presented a conservative view by only reporting the largest loss in open space (at Cammeray Golf Course). The environmental impact statement did not quantify the opportunities to increase areas of open space.

As outlined in Table 20-3 of the environmental impact statement, part of Cammeray Golf Course would be temporarily required for use as a construction support site (WHT10 and WFU 8). Part of the golf course would also be permanently acquired for permanent operational facilities for the Western Harbour Tunnel and Warringah Freeway Upgrade project and the Beaches Link and Gore Hill Freeway Connection project. The acquisition of open space at Cammeray Golf Course was conservatively presented as 25,000 square meters in the environmental impact statement (in addition to being a conservative estimate, this also included loss due to the Beaches Link and Gore Hill Freeway Connection project). Refined analysis shows that the permanent loss of open space at Cammeray Golf Course associated with the Western Harbour Tunnel and Warringah Freeway Upgrade project is about 15,000 square meters.

Public open space opportunities currently considered in the design includes the provision of new public open space at Berrys Bay (about 15,800 square metres). As discussed in Chapter 20 (Land use and property) of the environmental impact statement, Transport for NSW acknowledges the importance of the Berrys Bay area and is committed to working with the community and key stakeholders to understand their views on the future use of the Berrys Bay site. As part of this process, Transport for NSW and the Department of Planning, Industry and Environment would jointly establish a reference group, to include representation of key stakeholders, the community and independent experts, to support the development of the final layout.

The project also includes the provision of the new Ernest Street shared user bridge (about 1800 square metres), which would link Cammeray Golf Course with ANZAC Park. This new shared user bridge would provide accessible and usable community public open space along the bridge and improved pedestrian and cyclist amenity, including shade tree planting and seating opportunities. Details on other active transport infrastructure that would be provided as part of the project is provided in Table 5-13 of the environmental impact statement.

Further opportunities to increase public open space would be investigated during further design development.

The project would also result in other improvements to existing open space, including at Yurulbin Park. Yurulbin Park would be used as a construction support site during construction of the project. The design of the project works at Yurulbin Park have been developed in consultation with Bruce MacKenzie AM, the original designer of the park. This has resulted in a design that minimises impacts to significant features and changes to the permanent landform at Yurulbin Park. Reinstatement works following the completion of construction would be designed in consultation with Bruce MacKenzie. The new design would seek to retain and enhance the existing character and the original design intent as much as possible. These works would also improve the quality and long-term viability of landscaping and useability of the park.

##### ***Victoria Road construction support site (WHT2) final form***

Figure 6-27 in Chapter 6 (Construction work) of the environmental impact statement shows the indicative layout of the Victoria Road construction support site (WHT2), including where the site abuts Darling Street. Establishment works for this site would involve demolition of existing structures and earthworks to level the site in preparation for site work and installation of site facilities. During further design development and detailed construction planning, Transport for NSW would investigate opportunities to retain the building façade fronting Darling Street. It would be Transport

for NSW's preference to retain the building façade if feasible and provided that retention does not constrain use of the site. Once construction is complete the site would be stabilised, including the façade (if retained), and the remainder of the site rehabilitated to ground level and fenced off for future development.

Demobilisation activities would occur across the project once construction works are completed, including for residual land, as identified in Section 6.6 of the environmental impact statement. As further detailed in Section 20.4.1 of the environmental impact statement, residual land would be rehabilitated to the existing ground level or as otherwise agreed with the landowner at the completion of construction. Where feasible and reasonable, this land would be reinstated, rehabilitated and returned to an equivalent state and the same use as existing, prior to construction of the project. Where land is leased for construction of the project, reinstatement and rehabilitation of the site would be carried out in consultation with the relevant landowner.

In the case of the Victoria Road construction support site (WHT2), 138-172 Victoria Road in Rozelle (the site of the former Balmain Leagues Club) currently has private owners. As identified in Chapter 20 of the environmental impact statement (Table 20-3) the site may be acquired by Transport for NSW or leased, depending on ongoing property negotiations. If the property is leased, the site would be rehabilitated and returned to the landowner at the completion of construction.

Table 20-4 of the environmental impact statement also notes that the temporary occupation of this land should not affect the existing land use zoning or development controls that are applicable to the site. If the site is leased, it would be returned to the landowners upon completion of construction, for development in accordance with land use zoning and planning controls. Any proposed redevelopment of the remaining land would be subject to development assessment and approval from the relevant planning authority.

The privately owned residential property on Victoria Road to the north of the former Balmain League's club site would be acquired for use as part of the construction support site for the duration of construction. The land acquired for the project should not impact on the long term viability of the site to continue to be used for private residential purposes.

As such, for the Victoria Road construction support site (WHT2), it is assumed that the site would be rehabilitated to the ground level, stabilised and fenced off for future development (as stated in Appendix V (Technical working paper: Urban design, landscape character and visual impact)). The final state has not yet been determined, and any development of this site would be subject to separate approvals.

#### **A4.1.9 Socio-economics**

##### ***Sensitive receivers considered***

Appendix G (Technical working paper: Noise and vibration) identifies four childcare centres in the vicinity of the Victoria Road construction support site (WHT2) in Table 5-30. This is inconsistent with Appendix U (Technical working paper: Socio-economic assessment) which only identifies one in the area, St Thomas Child Care Centre.

The four child care centres referred to in Table 5-30 of Appendix G (Technical working paper: Noise and vibration), and the associated noise catchment area in which they are located, include the following:

- Lilyfield Early Learning Centre at 4 Justin Street, Lilyfield (NCA 5.2)
- St Thomas' Rozelle Child Care Centre at Darling Street, Rozelle (NCA 6.2)
- Rozelle out-of-school-hours care, within the grounds of the Rozelle Public School (NCA 6.3)
- Rozelle Child Care Centre, within the grounds of the former Rozelle Hospital, at Balmain Road, Lilyfield (NCA 7.1).



These childcare centres are presented in Figure A4-1 below which provides an expanded area to Figure 21-4 of the environmental impact statement and Figure 4-10b of Appendix U (Technical working paper: Socio-economic assessment).

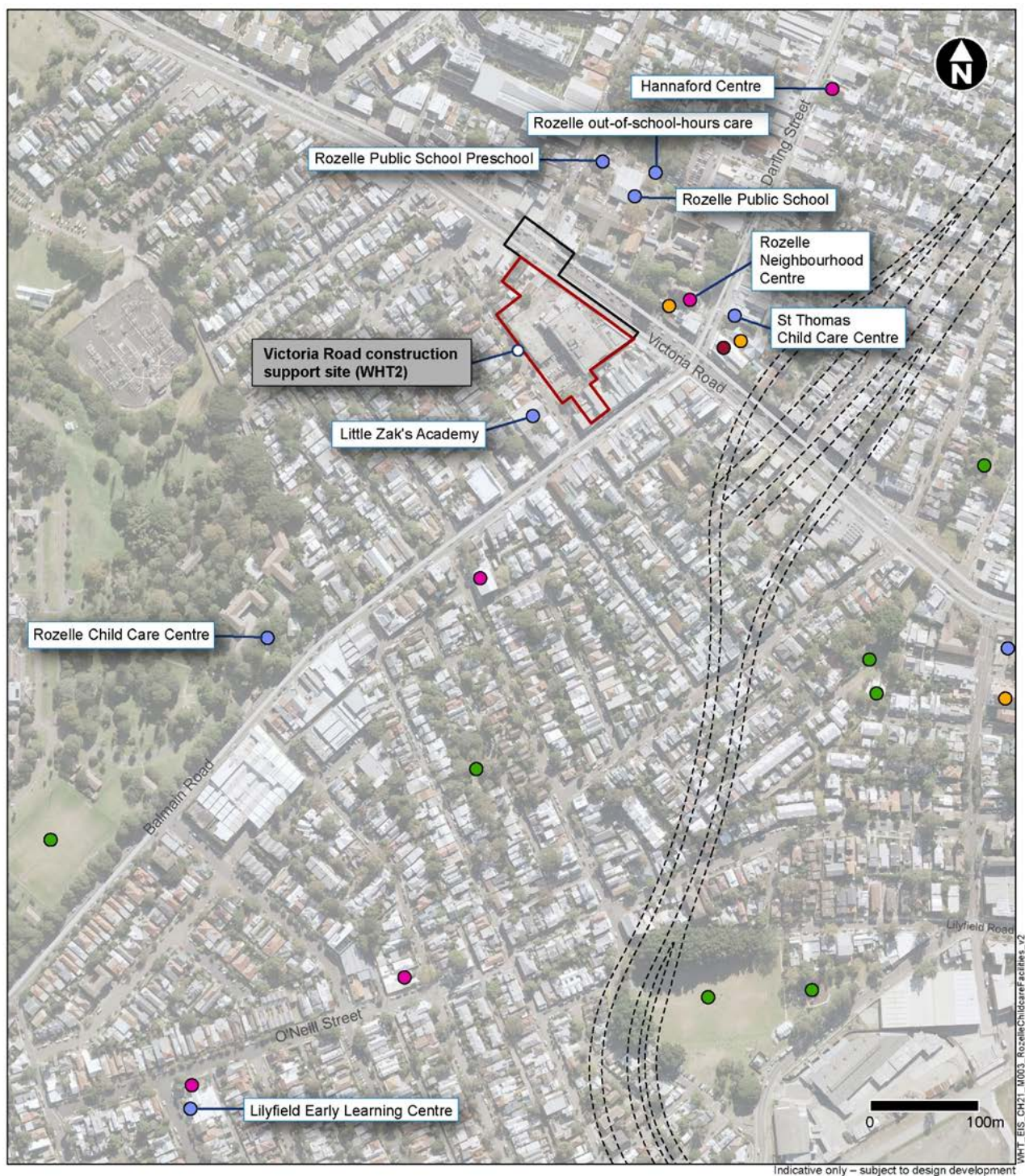
Rozelle out-of-school-hours care (NCA 6.3) is within the grounds of the Rozelle Public School and is considered within the socio-economic assessment and referenced under education facilities in Table 4-10 in Appendix U (Technical working paper: Socio-economic assessment).

The Rozelle Child Care Centre and Lilyfield Child Care Centre are located about 345 metres and 735 metres respectively from the Victoria Road construction support site (WHT2). These child care centres were not considered within the socio-economic assessment however as indicated in Table 5-30 of Appendix G (Technical working paper: Noise and vibration), construction noise impacts on these facilities are not expected. These child care centres are located away from construction haulage routes and are not expected to be impacted by construction traffic for the project. As such, construction activities for the project are not expected to impact on the use and functioning of these facilities.

Since the release of the environmental impact statement, an additional child care centre, Little Zak's Academy, has been established at Waterloo Street near the Victoria Road construction support site (WHT2). Refer to Section A4.1.4 and Appendix G of this submissions report for discussion about potential noise impacts. Construction activities at the Victoria Road construction support site (WHT2) have the potential to impact on amenity of users of the child care centre, particularly during the site establishment phase. This may temporarily disrupt the use of outdoor areas. Individuals' perceptions about potential health impacts of construction dust for children who may be more sensitive to changes in air quality may also influence their use of the centre.

The implementation of environmental management measures (refer to Table D2-1 of this submissions report) such as noise barriers and dust suppression strategies would help to minimise potential impacts.





#### Legend

##### Construction features

- Tunnel section
- Construction footprint
- Construction support site

##### Social infrastructure

- Community centre
- Education and child care
- Health, medical and emergency services
- Places of worship
- Sport, recreation and leisure facilities

**Figure A4-1 Child care centres in the vicinity of Victoria Rd, Rozelle (update to Figure 21-4 of the environmental impact statement and Figure 4-10b of Appendix U (Technical working paper: Socio-economic assessment))**



### ***Victoria Road construction support site (WHT2)***

A 35 space temporary car park was established on privately owned property at Waterloo Street, Rozelle around May or June 2018, and is operated by Inner West Council. The carpark is situated on the site where the Victoria Road construction support site (WHT2) would be located. This car park was not considered in the environmental impact statement as it was not present at the time of the original survey and assessment carried out for the environmental impact statement.

A review of historic aerial photography (Nearmap) since the opening of the car park identifies that the car park is over 50 per cent occupied in the majority of the images.

As identified in the survey of businesses carried out for the business impact assessment (Appendix A of Appendix U (Technical working paper: Socio-economic assessment)) there is a high dependency on convenient customer parking and on-street parking and a lack of available parking in the area. Therefore, the sensitivity of businesses to the loss of 35 car parking spaces would be moderate. It is considered that the removal of the car park spaces within the carpark would represent a moderate magnitude of change. Based on these sensitivity and magnitude levels, the significance of impacts would be moderate. However, as the car park has only been in operation for a relatively short time and is temporary, it is considered that local businesses would generally retain an ability to adapt to the change given that reversion to the pre-2018 parking supply would occur.

#### **A4.1.10 Urban design and visual amenity**

##### ***High Street bridge***

Two additional figures are provided below (Figure A4-2 and Figure A4-3) to supplement the visualisations provided in Appendix V (Technical working paper: Urban design, landscape character and visual impact assessment). These figures provide a representation of the High Street bridge and shared user path upgrade operational infrastructure. These figures are aligned with viewpoint 3, shown on Figure 4.13 of Appendix V (Technical working paper: Urban design, landscape character and visual impact assessment).

The maximum additional width of the bridge widening works would be up to around 15 metres, including the shared user path which would be about three metres wide.



**Figure A4-2 View of approach to the upgraded High Street bridge facing towards North Sydney**



**Figure A4-3 View of upgraded High Street bridge facing towards North Sydney**

#### **A4.1.11 Residual impact assessment**

Further information as to how residual impacts would be managed or offset and the approach and effectiveness of these measures has been provided by Transport for NSW as an update to Appendix C (Environmental risk analysis) of the environmental impact statement and is provided in Appendix A of this submissions report.

Where 'medium' level residual environmental risks are considered to still be likely after further design development, additional refined environmental management measures would be developed where appropriate to ensure those risks are suitably mitigated. The management of residual environmental risks will continue to be considered during the construction and operation of the project as appropriate.

### **A4.2 Minor errors and discrepancies**

This section identifies minor errors and discrepancies identified in the environmental impact statement. These errors and discrepancies (refer to Table A4-2) have been identified through the submissions received, or identified by Transport for NSW.

Where relevant, the text provided can be considered to replace the text from the environmental impact statement. None of these clarifications result in a significant change to the environmental impacts assessed in the environmental impact statement.

**Table A4-1 Clarifications on the environmental impact statement**

| Chapter/Appendix reference  | Error/discrepancy   | Clarification  |
|---|---|--|
| <b>Chapter 3 (Strategic context and project need), Chapter 9 (Operational traffic and transport) and Appendix F (Technical working paper: Traffic and transport), Section 8.5.5</b> | Submissions indicated that there was a discrepancy in how impacts to bus travel times were described.   | Chapter 9 (Operational traffic and transport) of the environmental impact statement and Section 8.5.5 of Appendix F (Technical working paper: Traffic and transport) state Military Road bus travel times would remain largely unchanged due to the project under the 'Do Something Cumulative' scenario. Whereas Chapter 3 (Strategic context and project need) states that users of bus services would benefit along the route. To clarify, the traffic assessment does not assess bus travel times on Military Road itself only between Warringah Freeway and Military road. The benefits stated in Chapter 3 (Strategic context and need) are due to the Western Harbour Tunnel and Beaches Link Tunnel program of works as a whole. Bus travel times along the Warringah Freeway would generally improve as a result of the program of works and this may benefit users of bus routes that utilise Military Road, as the Warringah Freeway links Military Road bus routes with the CBD. |
| <b>Chapter 4 (Project development and alternatives), Figure 4-5, Figure 4-7 and Figure 4-9, and Chapter 0 (Executive summary) of the environmental impact statement</b>             | Inconsistency between the shortlisted main corridor alternatives for the project presented in Figure 4-5, Figure 4-7 and Figure 4-9, and Chapter 0 (Executive summary) of the environmental impact statement. | Figure A4-4 below presents the shortlisted main corridor alternatives for the project. This figure replaces Figure 4-5 and Figure E9 in the environmental impact statement.  |
| <b>Chapter 4 (Project development and alternatives), Figure 4-13</b>  | <p>Submitters requested the inclusion of both a horizontal and vertical scale bar on Figure 4-13.</p> <p>Incorrect spelling of the word 'surface' within the figure.</p>                                      | <p>Figure 4-13 of the environmental impact statement is a representation of the project. The depth of the tunnel and location of features is indicative only. Further detail on the horizontal and vertical alignment of the tunnel can be found in Section 5.2.2 of the environmental impact statement</p> <p>Should read 'Ramps connect to City West Link surface level 3m above harbour'.</p>   |
| <b>Chapter 4 (Project development and alternatives), Figure 4-16</b>  | Submissions raised queries about the location of streets within Figure 4-16 of the environmental impact statement.  | The depth of the tunnel beneath certain streets is provided in Figure 5-7 of the environmental impact statement.   |
| <b>Chapter 5 (Project description): Table 5-3,</b>  | Mentions in Chapter 5 (Project description) regarding turning   | There are no turn restrictions proposed as part of the project at the intersection of Miller Street and Amherst Street; this is an error in Chapter 5 (Project description) of the   |

| Chapter/Appendix reference                                       | Error/discrepancy  | Clarification  |                         |              |              |                            |   |  |                              |  |   |                               |  |   |
|--|--|--|-------------------------|--------------|--------------|----------------------------|---|--|------------------------------|--|---|-------------------------------|--|---|
| <b>Table 5-12 and Figure 5-32</b>                                | restrictions at the intersection of Miller Street and Amherst street are incorrect   | <p>environmental impact statement. Refer to Table 7-26 of Appendix F (Technical working paper: Traffic and transport) for a summary of local road and intersection changes.</p> <p>As such, the following should be considered when reading Chapter 5 (Project description) of the environmental impact statement:</p> <table> <tr> <th>Location in subs report</th><th>Current text</th><th>Changed text</th></tr> <tr> <td><b>Table 5-3, page 5-6</b></td><td>Provision of a new signalised intersection and changes to turning movements at the intersection of Miller Street and Amherst Street in Cammeray</td><td>This text should be deleted from Table 5-3 of the environmental impact statement</td></tr> <tr> <td><b>Table 5-12, page 5-58</b></td><td>Right turn movements from Amherst Street westbound into Miller Street northbound, and from Amherst Street eastbound into Miller Street southbound, would be prohibited during AM and PM peak periods</td><td>This text should be deleted from Table 5-12 of the environmental impact statement</td></tr> <tr> <td><b>Figure 5-32, page 5-61</b></td><td>During AM and PM peak periods, right hand movements from Amherst Street westbound into Miller Street northbound and Amherst Street eastbound into Miller Street southbound would be prohibited</td><td>This label should be deleted from Figure 5-32 of the environmental impact statement</td></tr> </table> | Location in subs report | Current text | Changed text | <b>Table 5-3, page 5-6</b> | Provision of a new signalised intersection and changes to turning movements at the intersection of Miller Street and Amherst Street in Cammeray | This text should be deleted from Table 5-3 of the environmental impact statement | <b>Table 5-12, page 5-58</b> | Right turn movements from Amherst Street westbound into Miller Street northbound, and from Amherst Street eastbound into Miller Street southbound, would be prohibited during AM and PM peak periods | This text should be deleted from Table 5-12 of the environmental impact statement | <b>Figure 5-32, page 5-61</b> | During AM and PM peak periods, right hand movements from Amherst Street westbound into Miller Street northbound and Amherst Street eastbound into Miller Street southbound would be prohibited | This label should be deleted from Figure 5-32 of the environmental impact statement |
| Location in subs report  | Current text   | Changed text   |                         |              |              |                            |   |  |                              |  |   |                               |  |   |
| <b>Table 5-3, page 5-6</b>                                       | Provision of a new signalised intersection and changes to turning movements at the intersection of Miller Street and Amherst Street in Cammeray  | This text should be deleted from Table 5-3 of the environmental impact statement   |                         |              |              |                            |   |  |                              |  |   |                               |  |   |
| <b>Table 5-12, page 5-58</b>                                     | Right turn movements from Amherst Street westbound into Miller Street northbound, and from Amherst Street eastbound into Miller Street southbound, would be prohibited during AM and PM peak periods | This text should be deleted from Table 5-12 of the environmental impact statement  |                         |              |              |                            |   |  |                              |  |   |                               |  |   |
| <b>Figure 5-32, page 5-61</b>                                    | During AM and PM peak periods, right hand movements from Amherst Street westbound into Miller Street northbound and Amherst Street eastbound into Miller Street southbound would be prohibited       | This label should be deleted from Figure 5-32 of the environmental impact statement  |                         |              |              |                            |   |  |                              |  |   |                               |  |   |
| <b>Chapter 5 (Project description), Section 5.3.2, page 5-35</b> | Submissions queried the removal of 'tidal flow' infrastructure.  | The term 'tidal flow' relates to the removal of traffic management infrastructure not stormwater management. Tidal flow arrangements allow traffic lanes to be used to travel in either direction depending on traffic conditions, for example what is currently in place on the Warringah Freeway.  |                         |              |              |                            |   |  |                              |  |   |                               |  |   |

| Chapter/Appendix reference   | Error/discrepancy  | Clarification  |
|--|--|--|
| <b>Chapter 5 (Project description), Table 5-9 and Appendix F (Technical working paper: Traffic and transport), Table 5-26, Table 6-22, Table 6-23, Table 7-23, Table 7-24, Table 8-22 and Table 8-23</b> | Inconsistent description of the ramps from the Warringah Freeway to Ernest Street within the environmental impact statement.   | Access between the Sydney Harbour Bridge and Ernest Street would be removed due to the project. However, access between Sydney Harbour Tunnel and Ernest Street would be maintained for both northbound and southbound users, two ramps would be provided.<br><br>References to 'Ernest Street/Warringah Freeway off ramp (off ramp in PM, on ramp AM)' within Appendix F (Technical working paper: Traffic and transport) refer to a tidal flow arrangement for the Ernest Street off ramp (off ramp in PM, on ramp AM). There would be no tidal flow arrangement on the north bound off-ramp as part of the project. |
| <b>Chapter 6 (Construction work) page 6-18 and Figure 6-30</b>   | Submissions indicated that the environmental impact statement provides two different dimensions for the cofferdams within Figure 6-30 of the environmental impact statement. | The larger area identified in Figure 6-30 and Table 6-17 of the environmental impact statement encompasses the construction area required for the cofferdam and supporting construction activities. The dimensions of the cofferdams which would require piling are to be about 50 metres wide and 25 metres long.   |
| <b>Chapter 6 (Construction work), Table 6-15 and Appendix G (Technical working paper: Noise and vibration), Section 5.5.3</b>  | Inconsistency in descriptions of access arrangements to Yurulbin Point construction support site (WHT4).   | Table 6-15 of the environmental impact statement indicates that access to Yurulbin Point construction support site (WHT4) would be via Sydney Harbour only, and an access route to Louisa Road has been provided for emergency use only.<br><br>While it is acknowledged that Section 6.8.2 of the environmental impact statement states there may be a requirement for access to the Yurulbin Point construction support site (WHT4) via Louisa Road during early works and site establishment, there would be no heavy vehicle road access to Yurulbin Point during construction.                                    |
| <b>Chapter 7 (Stakeholder and community engagement)</b>  | The names of the members of the Bays West Communications Group have changed since preparation of the environmental impact statement.   | The Bays West Communications, also known as the Bays Precinct Working Group, consist of the following members: <ul style="list-style-type: none"> <li>• Infrastructure NSW</li> <li>• Transport for NSW's WestConnex Rozelle Interchange Project Team</li> <li>• Transport for NSW's Western Harbour Tunnel and Beaches Link Program Team</li> <li>• Sydney Metro West Project Team</li> <li>• Port Authority of NSW.</li> </ul>   |



| Chapter/Appendix reference  | Error/discrepancy   | Clarification   |
|---|---|---|
| <b>Appendix E (Community consultation framework), Table 6-1</b>   | Some relevant stakeholders have not been included.  | <p>Table 6-1 of Appendix E (Community consultation framework) will be updated to include the following additional key stakeholders:</p> <ul style="list-style-type: none"> <li>• Sydney North – NSW Business Chamber</li> <li>• North Sydney Chamber of Commerce</li> <li>• Neutral Bay Chamber of Commerce</li> <li>• Balmain Rozelle Chamber of Commerce</li> <li>• Fire and Rescue NSW</li> <li>• Bike North</li> <li>• Bicycle Working Group and Bike User Group – Inner West (council).</li> </ul> <p>It is noted that the stakeholder list will continue to be updated as the project progresses.</p>   |
| <b>Chapter 8 (Construction traffic and transport), Section 8.4.2, page 8-39</b>   | Incorrect number of car spaces.   | Parking at Yurulbin Park contains five to six parking spaces, not 10 parking spaces.  |
| <b>Appendix F (Technical working paper: Traffic and transport), Section 4.2.4 (page 52)</b>   | Typographical error.  | <p>The wording should read:</p> <p>"In the evening peak, the primary constraint for westbound traffic is the through movement from ANZAC Bridge to The Crescent and City West Link, which frequently queues across the ANZAC Bridge and onto the Western Distributor."</p>  |
| <b>Appendix F (Technical working paper: Traffic and transport), Table 5-7 and Table 5-8; and Chapter 8 (Construction traffic and transport)</b> | The intersection and midblock performance assessment presented in Table 5-7 and Table 5-8 of Appendix F (Technical working paper: Traffic and transport) assumed all traffic from Rozelle Rail Yards (WHT1) and Victoria Road (WHT2) construction support sites would be left-in, left-out. | <p>The intersection and midblock performance assessment presented in Table 5-7 and Table 5-8 of Appendix F (Technical working paper: Traffic and transport) assumed all traffic from Rozelle Rail Yards (WHT1) and Victoria Road (WHT2) construction support sites would be left-in, left-out, which is different to the site egress shown in Figure 5-7 and Figure 5-8 of Appendix F (Technical working paper: Traffic and transport).</p> <p>It is confirmed that the correct assumption is that traffic from these sites would be left-in, left-out and also right-out as depicted in Figure 5-7 and Figure 5-8.</p> <p>For Rozelle Rail Yards (WHT1), the right-out arrangement is unlikely to result in a material increase on modelled average delays, degree of saturation or queue lengths. Construction vehicles using the right-out arrangement are unlikely to substantially change the predicted future City West Link and The Crescent intersection performance which was forecasted to operate over capacity in the morning peak (LOS F) but satisfactorily in the evening peak (LOS B). They are also unlikely to materially change the predicted midblock performance</p> |

| Chapter/Appendix reference   | Error/discrepancy   | Clarification  |
|--|---|--|
|  |   | <p>levels of service at City West Link, west of The Crescent which was forecasted to be F during the AM and PM peak periods.</p> <p>For Victoria Road (WHT2), the right-out arrangement is not expected to materially change the performance of the Victoria Road / Wellington Street / WHT2 construction support site access intersection as the right-out from the construction support site would occur in the same phase as the Wellington Street approach movements and no new signal phases would be required. A slight increase in delay is expected due to new conflicts with the north-south pedestrian movement. However, the intersection performance is likely to remain satisfactory at LOS A or B during the AM and PM peak periods.</p> <p>The cumulative construction traffic assessments have used the correct assumptions regarding site access and egress at the Rozelle Rail Yards (WHT1) and Victoria Road (WHT2) construction support sites.</p> |
| <b>Chapter 10 (Construction noise and vibration), Section 10.6.4 and Appendix G (Technical working paper: Noise and vibration), Table 5-30</b> | Perceived inconsistency.  | The text in Section 10.6.4 of the environmental impact statement has been amended to "The two childcare receivers located in NCA 6.2 and 6.3 are predicted to experience noise levels above the noise management level by up to 11 dB(A) and 7 dB(A) respectively, during various project stages".   |
| <b>Chapter 10 (Construction noise and vibration), Section 10.6.4 and Appendix G (Technical working paper: Noise and vibration), Table 5-31</b> | Section 10.6.4 of the environmental impact statement states up to eight commercial receivers are predicted to experience noise levels of up to 9 dB(A). However there are 16 listed in Table 5-31 of Appendix G (Technical working paper: Noise and vibration). | Table 5-31 of Appendix G (Technical working paper: Noise and vibration) presents numbers of non-residential receivers where noise levels exceed the noise management levels for each assessment stage scenario. Therefore, the same receiver building may be reported as noise affected more than once in the table across the different assessment scenarios.   |
| <b>Chapter 10 (Construction noise and vibration), Table 10-15 and Appendix G (Technical working</b>  | Incorrect number of heritage items referenced in Table 10-15.   | Table 10-15 of the environmental impact statement should identify three heritage properties.   |

| Chapter/Appendix reference   | Error/discrepancy  | Clarification   |
|--|--|---|
| <b>paper: Noise and vibration), Table 5-71</b>   |  |   |
| <b>Chapter 10 (Construction noise and vibration), Table 10-20 and Appendix G (Technical working paper: Noise and vibration), Table 5-116</b> | Inconsistency between the data presented in Table 10-20 of the environmental impact statement and Table 5-116 of Appendix G (Technical working paper: Noise and vibration) | The numbers provided in Table 10-20 of the environmental impact statement should read as per Table 5-116 of Appendix G (Technical working paper: Noise and vibration).  |
| <b>Appendix G (Technical working paper: Noise and vibration), Table 5-105 and Section 5.7.5.1</b>  | There is an inconsistency between Section 5.7.5.1 of Appendix G (Technical working paper: Noise and vibration) and Table 5-105.  | Table 5-105 is correct and Section 5.7.5.1 of Appendix G (Technical working paper: Noise and vibration) should read "Thirteen buildings in NCA 14.1 have been identified within the minimum working distances for cosmetic damage, as presented in Table 5-105."  |
| <b>Appendix G (Technical working paper: Noise and vibration), Table 5-116 and Section 5.8.2.4</b>  | There is an inconsistency between Section 5.8.2.4 (page 246) of Appendix G (Technical working paper: Noise and vibration) and Table 5-116.                                 | The text in Section 5.8.2.4 (page 246) of Appendix G (Technical working paper: Noise and vibration) should read "Up to 32 receiver buildings are predicted to potentially be exposed..." as per Table 5-116.  |
| <b>Chapter 11 (Operational noise and vibration), Table 11-8</b>  | Incorrect footnote.  | The footnote under Table 11-8 in Chapter 11 (Operational noise and vibration) of the environmental impact statement should read as "Note 2: Noise catchment area is an area where noise and vibration sensitive receivers have similar acoustic environment. Refer to Figures 10-2 to 10-9 in Chapter 10 (Construction noise and vibration) for location of noise catchment areas." |
| <b>Appendix G (Technical working paper: Noise and vibration), Figure 5-3 and Figure 5-5</b>  | Adjustments to figure legends.   | 'Property acquisition' as per the legend are not shown in either figure and should not be considered.   |
| <b>Appendix G (Technical working paper: Noise and vibration), Table 5-30 and Table 5-31</b>  | The 'places of worship' column in Table 5-31 does not match the information provided in Table 5-30.  | Table 5-31 is correct as shown in Appendix G (Technical working paper: Noise and vibration). A transcription error for Table 5-30 has been identified, for the OSRs 'Other sensitive receivers', 'Recreational' and 'Place of worship' for assessment scenarios VIC_04 to VIC_09.   |

| Chapter/Appendix reference  | Error/discrepancy  | Clarification  |
|---|--|--|
| <b>Appendix G (Technical working paper: Noise and vibration), Section 5.5.2.6</b>                 | Typographical error.   | The first sentence of Section 5.5.2.6 of Appendix G (Technical working paper: Noise and vibration) should read as "Sensitive receiver buildings are expected to be impacted by noise from this site above the NMLs".   |
| <b>Chapter 12 (Air Quality), Figure 12-4 and Figure 12-17</b>                                     | The figure legends are obscuring some data.  | Figure 12-14 has been updated as Figure A4-5 and Figure 12-17 has been updated as Figure A4-6 of this submissions report.  |
| <b>Appendix H (Technical working paper: Air quality), Section 8.2.4, Figure 8-7 and Table 8-8</b> | There is a discrepancy between the graph bars show in Figure 8-7 and the values shown in Table 8-8.  | The values shown in Table 8-8 are correct. The correct figures are shown in Figure A4-7 of this submissions report.  |
| <b>Appendix H (Technical working paper: Air quality), Section 8.2.4, model selection</b>          | There is an incorrect reference to the M4-M5 link on pages 81 and 82.  | <p>The reference in the following two paragraphs should be to the Western Harbour Tunnel.</p> <p>Second paragraph from the bottom of page 81: "The model includes cold-start emissions. These are not likely to be relevant to motorway tunnels such as the M4-M5 Link, but they do need to be considered for roads with a larger proportion of vehicles operating in cold-start mode."</p> <p>Fourth paragraph from the top of page 82: "COPERT Australia covers all the main vehicle classes and driving conditions in Australia, and is based on a database of emission tests that is similar to that used in the NSW inventory model. However, the model was not evaluated in detail as part of the M4-M5 Link assessment, because a detailed model was already available from NSW EPA (and reflected the traffic, fuel and fleet conditions in NSW)."</p> |
| <b>Chapter 14 (Non-Aboriginal heritage), Figure 14-5</b>  | Submitters indicated that the heritage listing for the former coal loader was incorrectly labelled on Figure 14-5.                               | The label for the former coal loader listing in Figure 14-5 of the environmental impact statement points generally to the heritage listing for the item and not specifically to the location of the actual former coal loader.   |
| <b>Chapter 14 (Non-Aboriginal heritage) and Executive Summary of Appendix J (Technical</b>        | The number of heritage items in the study area differs in Executive Summary of Appendix J (Technical working paper: Non-Aboriginal heritage) and | The Executive Summary of Appendix J (Technical working paper: Non-Aboriginal heritage) should read "There are 246 heritage items and two potential heritage items identified within the study area, totalling 248." Chapter 14 (Non-Aboriginal heritage) references 247 as one potential heritage item did not meet thresholds for heritage significance.  |

| Chapter/Appendix reference   | Error/discrepancy  | Clarification   |
|--|--|---|
| <b>working paper: Non-Aboriginal heritage)</b>   | Chapter 14 (Non-Aboriginal heritage); 238 and 247 respectively.  |   |
| <b>Chapter 14 (Non-Aboriginal heritage), Section 14.5 and Appendix K (Technical working paper: Maritime heritage), Section 9.2.</b>        | There is an error in environmental management NAH18 in Chapter 14 (Non-Aboriginal heritage) and Mitigation Measure F of Appendix K (Technical working paper: Maritime heritage). | Environmental management measure NAH18 has been updated to refer to 'all maritime infrastructure associated with the former Balls Head Coal Loader' as per Table D2-1 of this submissions report.<br><br>Mitigation Measure E in Appendix K (Technical working paper: Maritime heritage) is intended to refer to 'all maritime infrastructure associated with the former Balls head Coal Loader'.   |
| <b>Chapter 14 (Non-Aboriginal heritage), Section 14.5 and Appendix K (Technical working paper: Maritime heritage), Section 9.2.</b>        | There was a transfer error from Mitigation Measure F of Appendix K (Technical working paper: Maritime heritage), which was not included in Chapter 14 (Non-Aboriginal heritage). | Mitigation Measure F was not included in the EMMs presented in Section 14.5 of the environmental impact statement.<br><br>Environmental management measure NAH23 has been created as per Table D2-1 of this submissions report to address this transfer error.  |
| <b>Appendix J (Technical working paper: Non-Aboriginal heritage), Section 5.4.10.2 and Chapter 20 (Land use and property), Figure 20-7</b> | Inconsistency in the presentation of operation impacts to St Leonards Park.  | The permanent acquisition of small portions of the north-east and north-west corners of St Leonards Park as part of operational configuration of the project were assessed as construction impacts with potential to physically alter the park along the very edges, footpaths, plantings, etc within Appendix J (Technical working paper: Non-Aboriginal heritage). No additional impact would be created that has not already occurred with the construction of the upgrades during operation. Further, the areas required for permanent acquisition do not appear to overlap with the State Heritage Register boundary of St Leonards Park (which is different to the green Public Recreation Reserve showing on Figure 20-7 of the environmental impact statement), and therefore is not relevant to the operational impact discussion presented in Appendix J (Technical working paper: Non-Aboriginal heritage) as it is not part of the heritage item. |
| <b>Appendix J (Technical working paper: Non-Aboriginal heritage), Table 5-7 and Table 5-30</b>   | Item 19 is listed a local and national heritage in Table 5-7 this is inconsistent with Table 5-30.   | Item 19 in Table 5-7 should read 'State, Local' in the Heritage Significance column.  |
| <b>Appendix J (Technical working paper: Non-</b>   | Inconsistency in the number of buildings to be demolished that   | Two of the three buildings to be demolished in the Cammeray Conservation Area are contributory buildings (two houses). The third building is a late 20th century block of units   |

| Chapter/Appendix reference   | Error/discrepancy   | Clarification  |
|--|---|--|
| <b>Aboriginal heritage), Section 5.4.15.3 and Table 5-26</b>                           | are contributory to Cammeray Conservation Area.   | which does not contribute to the significance of the conservation area. While Appendix J (Technical working paper: Non-Aboriginal heritage) refers to only one contributory building being demolished, the impact assessment presented still applies, in that the impact of the project is localised on the periphery of the conservation area. One of the buildings is isolated on its own, previously at the end of a row demolished for the previous Warringah Freeway construction. The other building is also at the end of a row of similar places. As such, the direct impact on the heritage conservation as a whole is considered to be minor.  |
| <b>Appendix J (Technical working paper: Non-Aboriginal heritage), Section 5.4.18.3</b> | Discussion of the demolition of one building within the Holtermann Estate A Conservation Area is incorrect. | <p>There would be no buildings or houses demolished within the construction footprint next to the Holtermann Estate A Conservation Area.</p> <p>The following paragraph from Section 5.4.18.3 of Appendix J (Technical working paper: Non-Aboriginal heritage) should not be considered in the assessment of impacts.</p> <p>“Demolition is proposed for one building within the Heritage Conservation Area, and is therefore not demolition of the whole heritage item. The building to be demolished is situated on the margins of the Heritage Conservation Area, is of no contributory significance, and the building to be demolished would equate to less than one per cent of the entire stock of contributory buildings within the Heritage Conservation Area. As such, comparative analysis to determine rarity of the demolished buildings has not been prepared in this instance.”</p> <p>Similarly in Table 5-29 of Appendix J (Technical working paper: Non-Aboriginal heritage) the following two paragraphs should be omitted.</p> <p>“Demolition is proposed for one building within the Heritage Conservation Area which would be permanent and irreversible.</p> <p>An archival photographic recording of the heritage item would be carried out, in accordance with the guidelines Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Council of NSW, 2006)”</p> <p>The assessment of impacts would remain as negligible.</p> |
| <b>Appendix K (Technical working paper: Maritime heritage), Table 13</b>               | The significance of the Railway Electricity Tunnel under both Criteria F and G is not identified.           | The Railway Electricity Tunnel is of State significance under both Criteria F and G.   |



| Chapter/Appendix reference  | Error/discrepancy  | Clarification   |
|---|--|---|
| <b>Appendix K (Technical working paper: Maritime heritage), Table 14</b>                      | The significance of the Former Quarantine Depot under Criteria G is not identified.  | The Former Quarantine Depot is of local significance under Criteria G. The existing question mark should have been removed.   |
| <b>Appendix K (Technical working paper: Maritime heritage), page 107</b>                      | Page 107 of Appendix K (Technical working paper: Maritime heritage), the paragraph immediately below Table 20 notes there are "no state significant sites within the study area...". Whereas Table 13 and Table 15 both note known maritime heritage items to be items of State significance in Areas A and C. | The sentence on page 107 of Appendix K (Technical working paper: Maritime heritage) is incomplete. It should read "There are no State significant sites within the study area which undergo complete loss of heritage values and therefore such a category is not used in this study."                  |
| <b>Appendix K (Technical working paper: Maritime heritage), Figure 12-4</b>                   | Figure 124 of Appendix K (Technical working paper: Maritime heritage) notes the extent of side scan sonar survey for "Zones C and D".  | This is an error; Zones C and D are meant to be Areas A and B.  |
| <b>Appendix L (Technical working paper: Cultural heritage assessment report), Figure 4-2</b>  | Updated due to additional sites inspections which have been carried out since exhibition of the environmental impact statement.  | Figure 4-2 of Appendix L (Technical working paper: Aboriginal cultural heritage assessment) has been updated as Figure 1.1 of Appendix B of this submissions report to reflect the now confirmed locations of the four sites inspected in February 2020.  |
| <b>Appendix L (Technical working paper: Cultural heritage assessment report), Section 4.9</b> | Submissions identified that the term 'Guringai' is no longer considered appropriate to be used in the North Sydney region.   | Clan names should be Gadigal south of the harbour (Rozelle, Birchgrove) and Cammeraygal north of the harbour. The language group / nation would have been Eora as per <i>Filling a Void – A review of the historical context for the use of the word 'Guringai'</i> (Aboriginal Heritage Office, 2015). |
| <b>Appendix L (Technical working paper: Cultural heritage assessment)</b>                     | The summary of findings in Section 8.3 of Appendix L (Technical working paper: Cultural heritage assessment)   | Upon review indirect vibration impacts for Waverton Park have a 'moderate' significance of potential impact. This is shown in Table 8-3. This significance is due to Waverton Park Cave being an unsound structure located directly above the tunnel alignment.   |

| Chapter/Appendix reference  | Error/discrepancy  | Clarification  |
|---|--|--|
| <b>report), Table 8-3 and Section 8.3</b>                                       | report) and Table 8-3 are inconsistent.  | The fourth paragraph of Section 8.3 should subsequently read that "It has been determined that the project may result in potential indirect impacts on these nine sites due to vibration or settlement. However, the significance of these potential indirect impacts would be negligible at all sites, apart from at Waverton Park Cave where the significance of the potential impact would be moderate".  |
| <b>Chapter 16 (Soils and geology), Section 16.4.2, page 16-30</b>               | Clarification on damage categories.  | Chapter 16 (Soils and geology) of the environmental impact statement states that no buildings were found to be in the 'slight' to 'very severe' damage categories.<br><br>As a point of clarification, this statement does not apply to heritage structures. For heritage structures, a conservative approach to settlement is commonly taken and the damage category is upgraded. For example, any heritage building assessed as 'very slight damage' would be upgraded to 'slight impact' if it was a heritage item. Heritage item impacts with regards to settlement are assessed in Chapter 14 (Non-Aboriginal heritage) and Chapter 15 (Aboriginal cultural heritage) of the environmental impact statement.                |
| <b>Appendix M (Technical working paper: Contamination)</b>                      | Additional data used within Appendix M (Technical working paper: Contamination)      | Appendix M (Technical working paper: Contamination) considered the Contamination Factual Report – Marine Investigations (Revision B) (Douglas Partners and Golder Associates (DPGA), 2017) plus additional data from sampling carried out at Berrys Bay and the Spit. This data was then included as Table A8 in the Contamination Factual Report – Marine Investigations (Revision C) (Douglas Partners and Golder Associates (DPGA), 2018). Revision C has been released to the public.  |
| <b>Chapter 17 (Hydrodynamics and water quality), Table 17-10</b>                | Two different references for Key Fish Habitat, DPI 2007 and DPI 2013 are included.   | The following should be considered as a footnote to Table 17-10, "Key Fish Habitat (KFH) was mapped by (then) Department of Primary Industries in 2007 using liberal application and interpretation of sensitivity and habitat suitability criteria. Current (2013) policy on KFH allows more discretion and subjective judgment to be applied in designation and assessment of KFH based on aquatic features exhibited by a waterway or water body, and its sensitivity/habitat suitability as assessed by a suitably qualified specialist."  |
| <b>Chapter 17 (Hydrodynamics and water quality), Section 17.4.2, page 17-25</b> | Text amendment suggested to improve understanding of dredge plume modelling results. | The following amendment to the second last paragraph should be considered.<br><br>"The results of the dredge plume modelling has been processed to calculate the spatial percentile exceedance maps over the duration of the dredging. The percentile plots do not show an actual dredge plume at any point in time, they are duration-based plots which show statistical summaries of the dredge plume over the selected dredge period. The percentile plots show the value for which suspended sediment concentrations throughout the dredging duration is less than a given percentage of the time. Figure 17-2 of the environmental impact statement depicts the 95 <sup>th</sup> percentile for the entire project dredging |

| Chapter/Appendix reference   | Error/discrepancy   | Clarification  |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
|--|---|--|-----------------|--|---|-------------------------|------|------|---|------|------|--------------------------------------|------|------|--------------------------|------|------|--------------|------|------|
|  |   | period (over the 51 weeks). The 95 <sup>th</sup> percentile is the value that is predicted to be exceeded for five per cent of the time, or 8.4 hours in a week.”  |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Chapter 19 (Biodiversity), Figure 19-2 and Figure 3.3 and Appendix S (Technical working paper: Biodiversity development assessment report), Section 3.4.1.1</b> | Figure 19-2 of the environmental impact statement and Figure 3.3 of Appendix S (Technical working paper: Biodiversity development assessment report) identify Yurulbin Park as containing both Urban Exotic/Native and Native Plantings vegetation types. However, Section 3.4.1.1 of Appendix S (Technical working paper: Biodiversity development assessment report) describes the vegetation in Yurulbin Park as native plantings. | <p>The vegetation mapping has been amended to correct this inconsistency, and to reflect the prevalence of native plantings in this area (Figure A4-8). The amendment to the mapping has resulted in amended total areas of clearing for two vegetation types.</p> <p><b>Table A4-2: Amended areas of vegetation clearing for the project</b></p> <table> <tr> <th>Vegetation type</th><th>Area of clearing identified in Appendix S (ha)</th><th>Amended area of clearing following mapping updates (ha)</th></tr> <tr> <td><b>Native plantings</b></td><td>2.99</td><td>3.23</td></tr> <tr> <td><b>Native plantings within the vegetated medians of Warringah Freeway</b></td><td>2.84</td><td>2.84</td></tr> <tr> <td><b>Urban exotic/native plantings</b></td><td>1.11</td><td>0.87</td></tr> <tr> <td><b>Weeds and exotics</b></td><td>0.35</td><td>0.35</td></tr> <tr> <td><b>Total</b></td><td>7.29</td><td>7.29</td></tr> </table> | Vegetation type | Area of clearing identified in Appendix S (ha) | Amended area of clearing following mapping updates (ha) | <b>Native plantings</b> | 2.99 | 3.23 | <b>Native plantings within the vegetated medians of Warringah Freeway</b> | 2.84 | 2.84 | <b>Urban exotic/native plantings</b> | 1.11 | 0.87 | <b>Weeds and exotics</b> | 0.35 | 0.35 | <b>Total</b> | 7.29 | 7.29 |
| Vegetation type  | Area of clearing identified in Appendix S (ha)  | Amended area of clearing following mapping updates (ha)  |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Native plantings</b>  | 2.99  | 3.23   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Native plantings within the vegetated medians of Warringah Freeway</b>  | 2.84  | 2.84   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Urban exotic/native plantings</b>   | 1.11  | 0.87   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Weeds and exotics</b>   | 0.35  | 0.35   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Total</b>   | 7.29  | 7.29   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Chapter 19 (Biodiversity) and Appendix S (Technical working paper: Biodiversity development assessment report)</b>  | Inconsistency in tunnel depth beneath the coal loader tunnel (Berrys Bay) referenced.   | The top of the tunnel excavation would be approximately 27 or 28 metres below the floor of the coal loader tunnel (Berrys Bay), not 10 metres as stated in Chapter 19 (Biodiversity) of the environmental impact statement.  |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |
| <b>Chapter 19 (Biodiversity) and Appendix S (Technical working paper: Biodiversity)</b>  | Taxonomic revision since environmental impact statement preparation.  | The Eastern Bent-winged Bat ( <i>Miniopterus schreibersii oceanensis</i> ) referred to in the environmental impact statement and Appendix S (Technical working paper: Biodiversity development assessment report) has been renamed to the Large Bent-winged Bat ( <i>Miniopterus orianae oceanensis</i> ). This change has been adopted in this submissions report and the updated environmental management measures presented in Table D2-1 of this submissions report.   |                 |  |   |                         |      |      |   |      |      |                                      |      |      |                          |      |      |              |      |      |

| Chapter/Appendix reference   | Error/discrepancy  | Clarification   |
|--|--|---|
| <b>development assessment report)</b>                                |  |   |
| <b>Appendix R (Technical working paper: Flooding)</b>                | Appendix R (Technical working paper: Flooding) incorrectly states the depths of ponding at the southern Warringah Freeway sag for the scenarios where the intensity of a 1% AEP storm event are increased by 10 per cent and 30 per cent, respectively." | The values quoted in Appendix R (Technical Working Paper: Flooding) are the impact that the project would have on flood behaviour for the 0.5% and 0.2% AEP storm events and relate to the information shown on Figures B.5 (Sheet 2) and B.6 (Sheet 2), respectively. The values which should have been quoted in the report are 35 millimetres and 78 millimetres for the case where 1% AEP rainfall intensities are increased by 10 per cent and 30 per cent, respectively (ie based on the information shown on Figures B.7 (Sheet 2) and B.8 (Sheet 2), respectively).   |
| <b>Appendix R (Technical working paper: Flooding), Table 1.1</b>     | Secretary's environmental assessment requirement 1b (flood planning areas) in Table 1.1 only references the Leichhardt Local Environmental Plan 2013.  | Under the "Where addressed in this technical working paper" heading in Table 1.1 for the Secretary's environmental assessment requirement 1b, the text should include reference to the Willoughby Local Environmental Plan 2012 in addition to the Leichhardt Local Environmental Plan 2013 with respect to flood planning areas.   |
| <b>Chapter 20 (Land use and property), page 23</b>                   | Incorrect zoning.  | The environmental impact statement identifies the current land use zoning of 138-172 Victoria Road as 'Deferred Matter'. As the site is considered 'Deferred Matter' in the Leichhardt Local Environmental Plan 2013, the zoning of the site under the Leichhardt Local Environmental Plan 2000 is applicable and the site should be considered to be zoned as 'Business'.  |
| <b>Chapter 20 (Land use and property), Table 20-3 and Table 20-4</b> | Text amendment.  | <p>The text in Table 20-3 of the environmental impact statement referring to 'Rozelle, Private - residential' has been updated to read as "A private residential property on Victoria Road would be permanently acquired for use as a construction support site (WHT2). The land acquired for the project should not impact on the long term viability of the site to continue to be used for private residential purposes".</p> <p>Similarly, the second paragraph in Table 20-4 of the environmental impact statement "Victoria Road construction support site (WHT2)" has been updated to "The Victoria Road construction support site (WHT2) would also include a privately owned residential property on Victoria Road to the north of the Former Balmain Leagues Club site. The site would be acquired and temporarily converted to a construction support site for the duration of</p> |

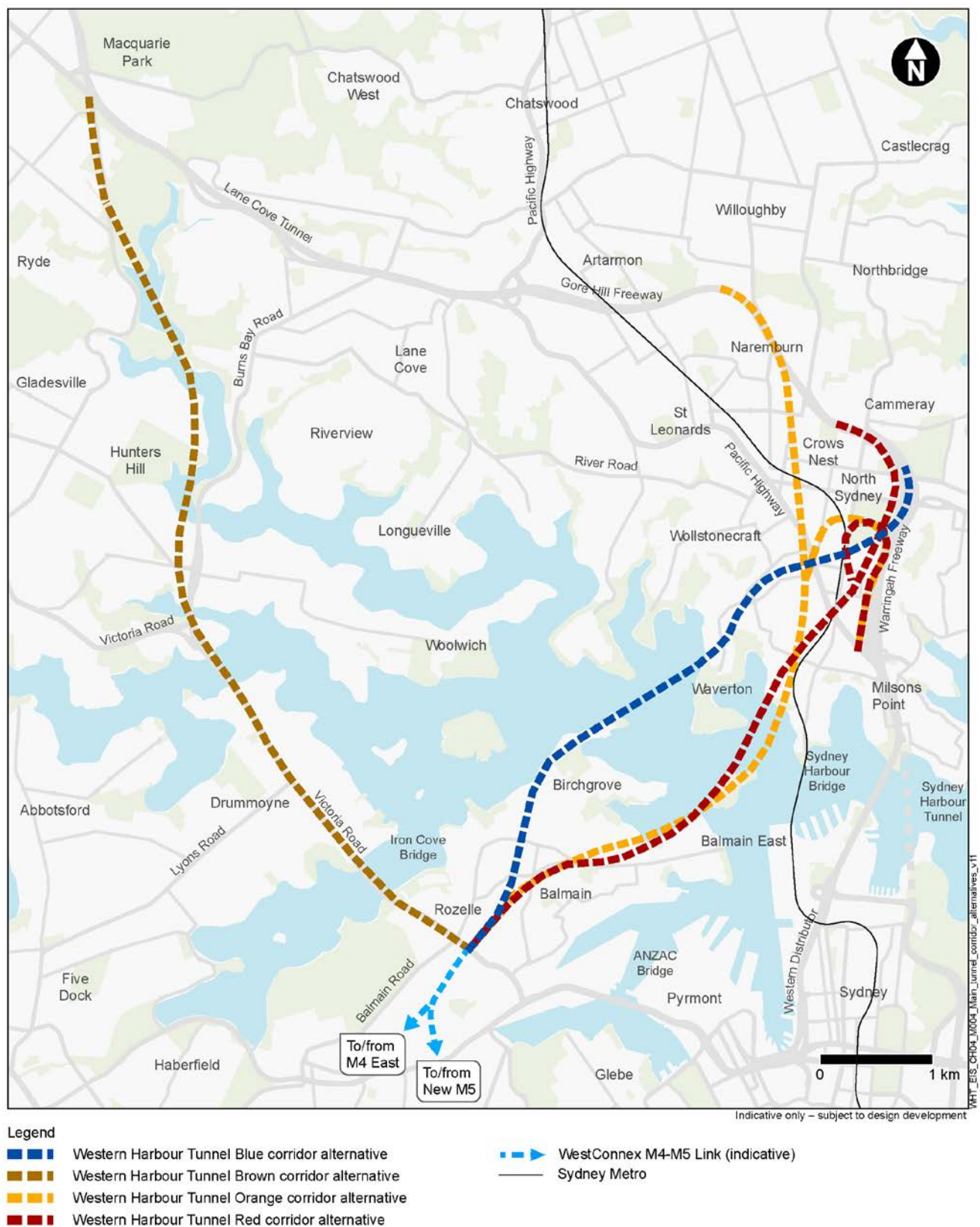
| Chapter/Appendix reference   | Error/discrepancy  | Clarification  |
|--|--|--|
|  |  | construction. The temporary occupation of this land should not affect the existing land use zoning or development controls that are applicable to the site".   |
| <b>Chapter 20 (Land use and property), Table 20-3 Residual land created by the project</b>   | Table 20-3 of the environmental impact statement incorrectly states that Transport for NSW would establish a reference group to support the development of the final layout (regarding the Government-owned waterfront land at Berrys Bay in Waverton)   | <p>Once the project is completed, Transport for NSW would return the Berrys Bay area as public open space. Table 20-3 of the environmental impact statement states "As part of this process Transport for NSW would establish a reference group, to include representation of key stakeholders, the community and independent experts, to support the development of the final layout."</p> <p>This sentence is incorrect, and should instead read "As part of this process Transport for NSW and the Department of Planning, Industry and Environment would jointly establish a reference group, to include representation of key stakeholders, the community and independent experts, to support the development of the final layout."</p> |
| <b>Appendix V (Technical working paper: Urban design, landscape character and visual impact) and Chapter 6 (Construction work), Figure 6-1</b>   | Appendix V (Technical working paper: Urban design, landscape character and visual impact) identifies that ANZAC Park would be used as a construction support site with the need for vegetation removal. ANZAC Park is not identified as a construction support site in Figure 6-1 of the environmental impact statement. | Construction at ANZAC Park would be required for drainage works to reduce flooding risk in this area. The section of the land that would be used comprises less than 10 per cent of the total area of ANZAC Park. The removal of vegetation at ANZAC Park would be in order to facilitate these works. The temporary lease of this area during construction would not impact on the long term viability of the site, which would continue to be used for public recreation and open space. Any mentions of ANZAC Park as a construction support site in the environmental impact statement are errors.   |
| <b>Appendix V (Technical working paper: Urban design, landscape character and visual impact) and Chapter 5 (Project description) and the flyover video on the project website portal</b> | St Leonards Park tunnel portal inconsistency.  | <p>The location of the tunnel interface on the project website portal flyover video was incorrect. The location of the portal, and where driven tunnel changes to surface road, is shown in Figure 5-4 of the environmental impact statement and Figure 4-8 of Appendix V (Technical working paper: Urban design, landscape character and visual impact).</p> <p>The project website portal flyover has since been updated and corrected.</p>  |
| <b>Appendix V (Technical working paper: Urban</b>  | Appendix V (Technical working paper: Urban design, landscape   | It is expected that the bus lane underpass would be lit. Lighting would be designed in accordance with Australian Standards, including AS/NZS 1158 Lighting for roads and  |

| Chapter/Appendix reference   | Error/discrepancy  | Clarification  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
|--|--|--|--------------|--------------------|--|--|--|---------|---------|---------|-------|-------------|--|--|--|--|-------------------------|---|------|-----|------|-------------|------|---|------|-----|--|---|---|------|------|--------------|-------------|-------------|--------------|-------------|-------------|--|--|--|--|-------------------------|---|------|-----|------|-------------|------|---|------|-----|
| design, landscape character and visual impact), page 91                  | character and visual impact) identifies that Alfred Street Bridge may be lit, but does not provide details as to whether the bus lane underpass would be lit.                          | public spaces, in addition to the relevant guidelines published by Austroads and Transport for NSW.  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Chapter 24 (Resource use and waste),Table 24-8                           | Table 24-8 of the environmental impact assessment indicates that 142,500 cubic metres of material would be dredged from White Bay (WHT3) construction support site. This is incorrect. | It is anticipated that 142,500 cubic metres of material would be dredged from the footprint of the immersed tube tunnel at the harbour crossing, and would be transported to White Bay construction support site (WHT3) for treatment prior to disposal to an appropriately licensed facility. There would be no dredging carried out in the White Bay area itself for the project.  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Chapter 26 (Climate change risk and greenhouse gas), Table 26-6          | Incorrect data presented.  | <p>The totals in the rows presented in Table 26-6 of the environmental impact statement for Scope 2 and 3 emissions in 2027 and 2037 are incorrect and should reflect the totals of the emissions presented in the rows above them. The totals in the last column are correct.</p> <p><b>Table A4-3: Amended Table 26-6 from the environmental impact statement</b></p> <table><tr><th rowspan="2">Source</th><th colspan="4">Emissions (ktCO2e)</th></tr><tr><th>Scope 1</th><th>Scope 2</th><th>Scope 3</th><th>Total</th></tr><tr><td colspan="5"><b>2027</b></td></tr><tr><td>Operational electricity</td><td>-</td><td>32.3</td><td>4.7</td><td>36.9</td></tr><tr><td>Maintenance</td><td>0.53</td><td>-</td><td>0.47</td><td>1.0</td></tr><tr><td>Traffic (difference between existing levels and levels with the project)</td><td>-</td><td>-</td><td>20.6</td><td>20.6</td></tr><tr><td><b>Total</b></td><td><b>0.53</b></td><td><b>32.3</b></td><td><b>25.77</b></td><td><b>58.5</b></td></tr><tr><td colspan="5"><b>2037</b></td></tr><tr><td>Operational electricity</td><td>-</td><td>34.4</td><td>5.0</td><td>39.4</td></tr><tr><td>Maintenance</td><td>0.53</td><td>-</td><td>0.47</td><td>1.0</td></tr></table> | Source       | Emissions (ktCO2e) |  |  |  | Scope 1 | Scope 2 | Scope 3 | Total | <b>2027</b> |  |  |  |  | Operational electricity | - | 32.3 | 4.7 | 36.9 | Maintenance | 0.53 | - | 0.47 | 1.0 | Traffic (difference between existing levels and levels with the project) | - | - | 20.6 | 20.6 | <b>Total</b> | <b>0.53</b> | <b>32.3</b> | <b>25.77</b> | <b>58.5</b> | <b>2037</b> |  |  |  |  | Operational electricity | - | 34.4 | 5.0 | 39.4 | Maintenance | 0.53 | - | 0.47 | 1.0 |
| Source   | Emissions (ktCO2e)   |  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
|  | Scope 1  | Scope 2  | Scope 3      | Total              |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| <b>2027</b>  |  |  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Operational electricity  | -  | 32.3   | 4.7          | 36.9               |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Maintenance  | 0.53   | -  | 0.47         | 1.0                |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Traffic (difference between existing levels and levels with the project) | -  | -  | 20.6         | 20.6               |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| <b>Total</b>   | <b>0.53</b>  | <b>32.3</b>  | <b>25.77</b> | <b>58.5</b>        |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| <b>2037</b>  |  |  |              |                    |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Operational electricity  | -  | 34.4   | 5.0          | 39.4               |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |
| Maintenance  | 0.53   | -  | 0.47         | 1.0                |  |  |  |         |         |         |       |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |  |   |   |      |      |              |             |             |              |             |             |  |  |  |  |                         |   |      |     |      |             |      |   |      |     |

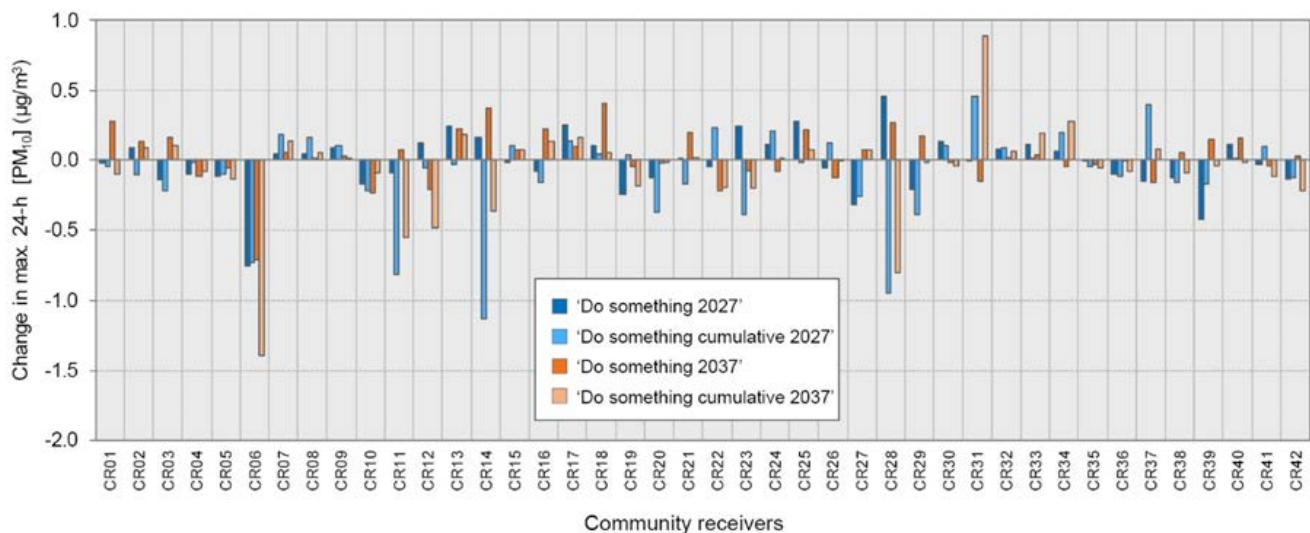


| Chapter/Appendix reference   | Error/discrepancy  | Clarification  |             |             |              |             |
|--|--|--|-------------|-------------|--------------|-------------|
|  |  | Traffic (difference between existing levels and levels with the project)   | -           | -           | 31.7         | 31.7        |
|  |  | <b>Total</b>   | <b>0.53</b> | <b>34.4</b> | <b>37.27</b> | <b>72.1</b> |
| <b>Chapter 26 (Climate change risk and greenhouse gas), Table 26-7</b> | Incorrect numbering of environmental management measures.  | The environmental management measures within Chapter 26 (Climate change risk and greenhouse gas) are incorrectly referenced, the reference numbers within Appendix Y (Compilation of environmental management measures) and Table D2-1 of this submissions report are correct and should be used.  |             |             |              |             |
| <b>Chapter 28 (Project synthesis), Table 28-3</b>                      | Within Table 28-3 of the environmental impact statement under the heading 'Human health and air quality' there is only a discussion of underwater noise impacts. | The words 'and air quality' should be deleted from this heading.   |             |             |              |             |
| <b>Appendix Y (Environmental management measures)</b>                  | The name of the Sydney coordination office has been updated  | The Sydney Coordination Office has been updated to Transport Coordination within Transport for NSW in Table D2-1 (environmental management measures CTT4, CTT13 and CI1) of this submissions report.   |             |             |              |             |
| <b>Appendix Y (Environmental management measures)</b>                  | Maritime Heritage Management Plan to be prepared in consultation with maritime archaeologist   | <p>Appendix K (Technical working paper: Maritime heritage) states that the Heritage Management Plan should be prepared by a qualified and experienced maritime archaeologist. This has been included in Chapter 14 (Non-Aboriginal heritage). However, due to the complexities of construction at the Harbour crossing, the contractor will prepare this plan in consultation with a qualified and experienced maritime archaeologist. The contractor's construction methodology, proposed construction activities, impacts and management processes will be included in the plan. NAH16 has been updated as shown below (refer to Table D2-1 of this submissions report):</p> <p>A Maritime Heritage Management Plan that details the objectives and methodologies to conserve maritime heritage and mitigate impacts will be prepared <b>in consultation with</b> by a qualified and experienced maritime archaeologist.</p> |             |             |              |             |
| <b>Appendix Y (Environmental management measures)</b>                  | Environmental management measure WQ7 refined to clarify scour protection would be adopted during design of new   | Environmental management measure WQ7 has been refined to better reflect the intention of this environmental management measure. The revised wording will minimise scour by adopting appropriate design.  |             |             |              |             |

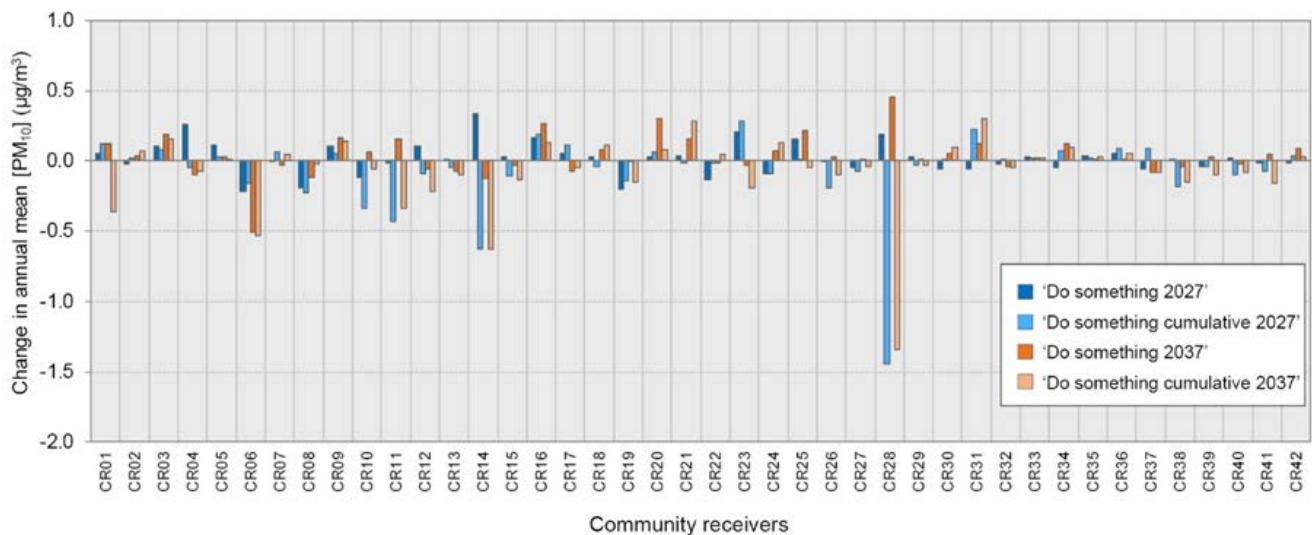
| Chapter/Appendix reference                            | Error/discrepancy  | Clarification   |
|---|--|---|
|   | and augmented discharge outlets  | <p>The updated wording of environmental management measure WQ7 is as follows (refer to Table D2-1 of this submissions report):</p> <p><del>Construction drainage and discharge outlet infrastructure will direct flows downstream to minimise alterations and erosion of watercourse bed and banks. Energy dissipation and erosion scour protection will be implemented as appropriate.</del></p> <p><b>The potential for scour and erosion of watercourse bed and banks will be considered during the design of new and augmented discharge outlets.</b></p> <p>Construction work activities within or next to the watercourses and drainage lines will be minimised as much as <b>reasonably practicable</b> <del>feasibly possible</del> to minimise disturbance of sediments in or near the waterway.</p>   |
| <b>Appendix Y (Environmental management measures)</b> | Environmental management measure F5 updated to correct typographical error | <p>Environmental management measure F5 has been updated to correct a typographical error, to reflect the intention of this environmental management measure. The revised environmental management measure has corrected reference of the AEP flood extent from 1% AEP to 10% AEP flood extent. This is consistent with the impact assessment provided in Section 18.5.1 of the environmental impact statement and Section 5.1.2 of Appendix R (Technical working paper: Flooding).</p> <p>The updated wording of environmental management measure F5 is as follows (refer to Table D2-1 of this submissions report):</p> <p>Spoil stockpiles will be located in areas which are not subject to frequent inundation by floodwater, ideally outside the <b>10%</b> AEP flood extent. The exact level of flood risk accepted at stockpile sites will depend on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which that would impact flooding conditions in adjacent development.</p> |
| <b>Appendix Y (Environmental management measures)</b> | Environmental management measure SG19 updated                              | <p>Environmental management measure SG19 has been amended to more accurately reflect the baseline monitoring commitments. Construction and operation monitoring is covered by SG20 (refer to Table D2-1 of this submissions report). SG19 has been updated as follows:</p> <p><b>Additional baseline monitoring will be carried out during the pre-construction period and will be considered in the development of the groundwater quality monitoring program described in management measure SG20.</b></p> <p><del>The existing groundwater monitoring program will be continued through construction and onto the operational phase.</del></p>   |



**Figure A4-4 Main corridor alternatives (update to Figure 4-5 and E9 of the environmental impact statement)**



**Figure A4-5 Change in maximum 24-hour mean  $PM_{10}$  concentration at community receivers (update to Figure 12-14 of the environmental impact statement)**



**Figure A4-6 Change in annual mean  $PM_{10}$  concentration at community receivers (update to Figure 12-17 of the environmental impact statement)**

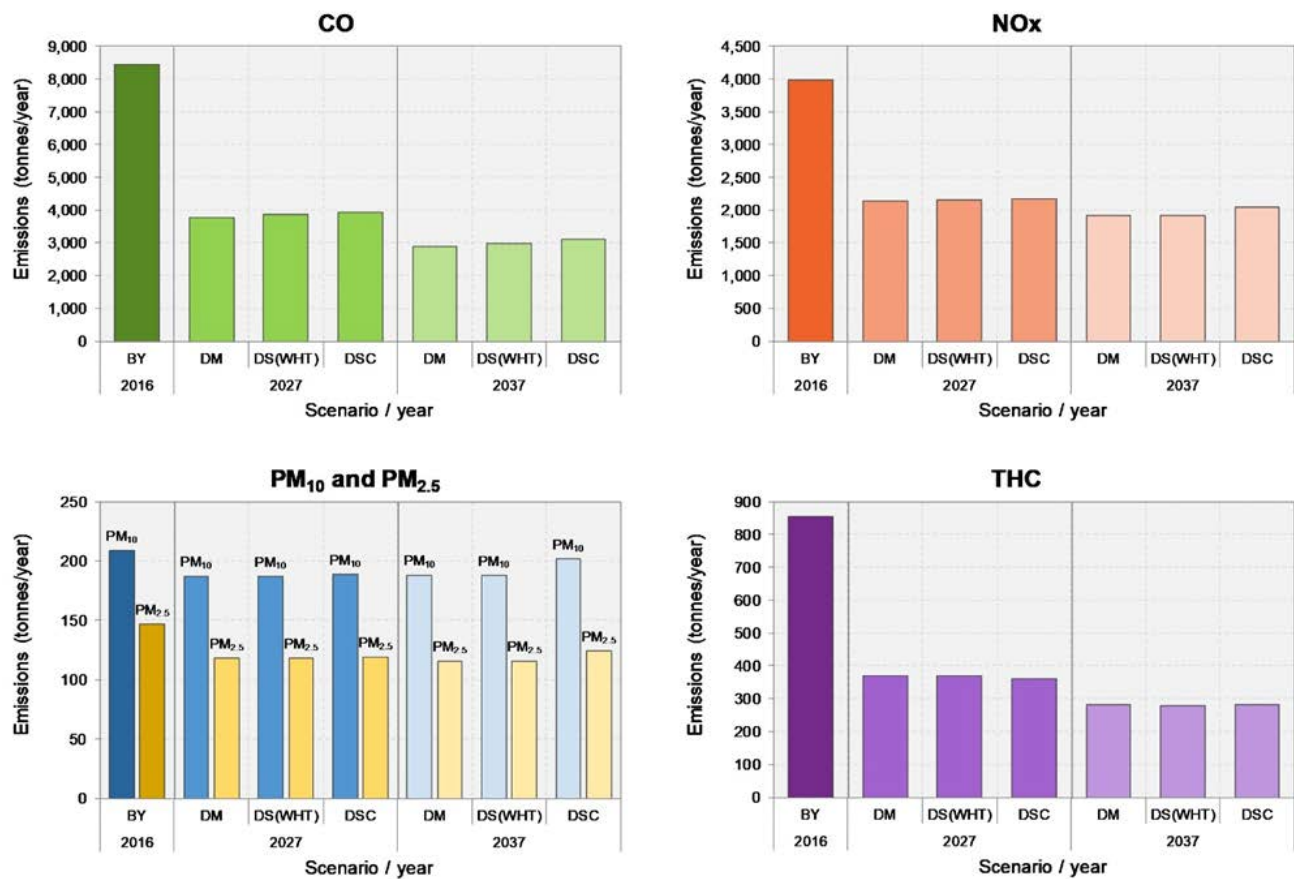
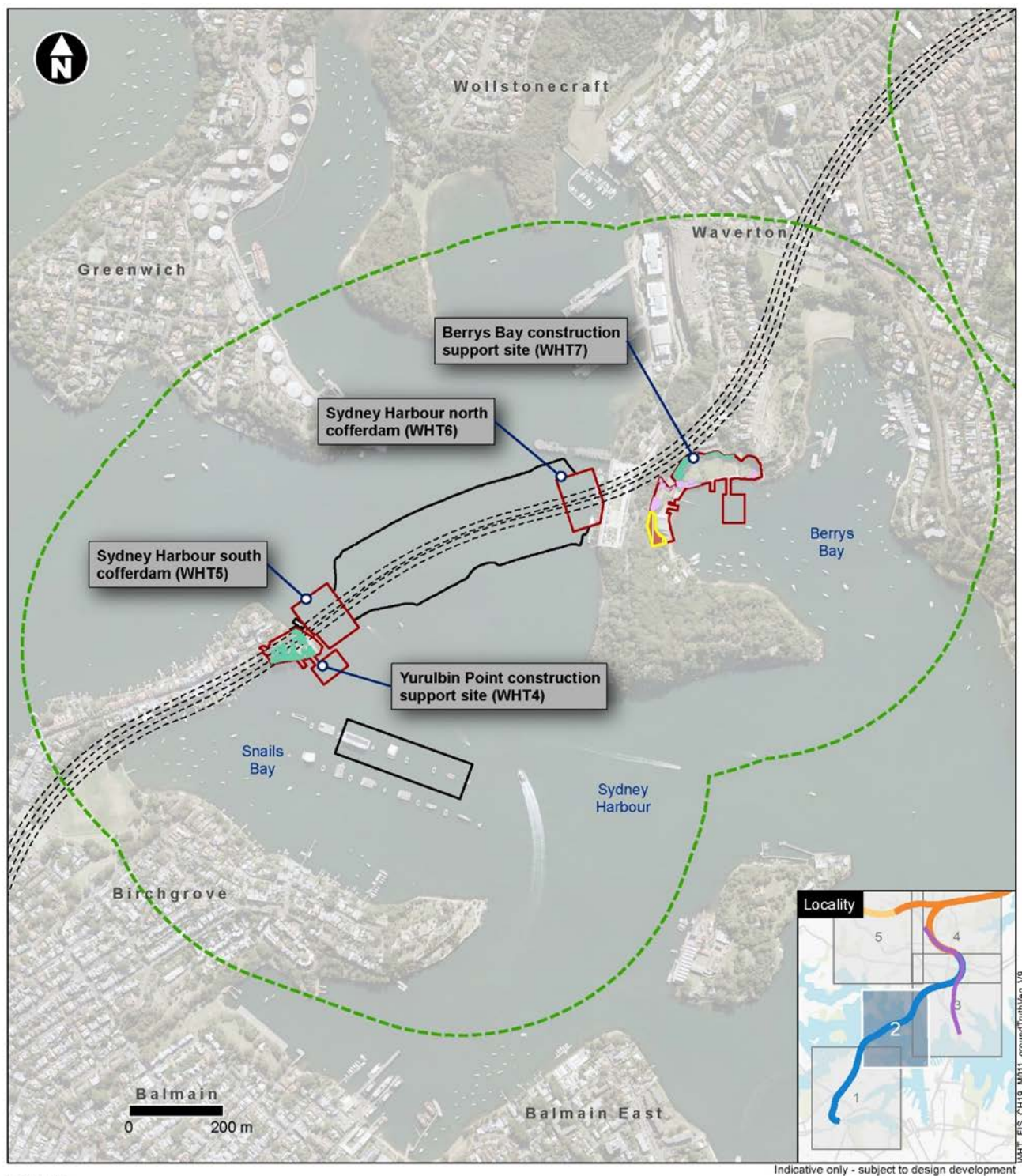


Figure A4-7 Total traffic emissions in the GRAL domain (update to Figure 8-7 of Appendix H (Technical working paper: Air quality))





**Figure A4-8 Distribution of plant community types and other vegetation (map 2) (update to Figure 19-2 of the environmental impact statement)**






 [nswroads.work/whtbl](https://nswroads.work/whtbl)

 [whtbl@transport.nsw.gov.au](mailto:whtbl@transport.nsw.gov.au)

 1800 931 189

 Customer feedback  
Transport for NSW, Locked Bag 928  
North Sydney NSW 2059



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