



Submissions Report

Major civil construction work
between The Bays and Sydney CBD



Sydney Metro West

Submissions Report – **Major civil construction work between The Bays and Sydney CBD**

Executive summary

Overview

Sydney is expanding and the NSW Government is working to deliver an integrated transport system that meets the needs of customers now and in the future. The delivery of Sydney Metro West is critical to keeping Sydney moving and is identified in a number of key strategic planning documents including the *Greater Sydney Region Plan: A Metropolis of Three Cities – connecting people* (Greater Sydney Commission, 2018), *Building Momentum: State Infrastructure Strategy 2018–2038* (Infrastructure NSW, 2018), and the *Future Transport 2056 strategy* (Transport for NSW, 2018).

Sydney Metro is Australia's biggest public transport program. Services on the Metro North West Line between Rouse Hill and Chatswood started in May 2019 on this new stand-alone metro railway system, which is revolutionising the way Sydney travels.

Sydney Metro's program of work includes:

- Sydney Metro North West – Opened in May 2019 with driverless trains running every four minutes in the peak in each direction between Tallawong Station in Rouse Hill and Chatswood
- Sydney Metro City & Southwest – A new 30-kilometre metro line extending the new metro network from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through the Sydney CBD and southwest to Bankstown. It is currently under construction with services to begin in 2024 to run a metro train every two minutes each way under the centre of Sydney
- Sydney Metro West (this project) – A new 24-kilometre metro line that would connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD). This infrastructure project would double the rail capacity between Greater Parramatta and the Sydney CBD with a travel time target between the two centres of about 20 minutes
- Sydney Metro – Western Sydney Airport – A new metro rail line that will service Greater Western Sydney and the new Western Sydney International (Nancy-Bird Walton) Airport forming the transport spine of the Western Parkland City.

The planning approvals and environmental impact assessment for Sydney Metro West has been broken down into a number of stages recognising the size of the project. This includes:

- Sydney Metro West at a Concept level – Approved
- All major civil construction work between Westmead and The Bays including station excavation and tunnelling (Stage 1 of the planning approval process) – Approved
- Major civil construction work between The Bays and Sydney CBD (this proposal) (Stage 2 of the planning approval process)
- Rail infrastructure, stations, precincts and operations (Stage 3 of the planning approval process).

While the content of these stages may be varied, this Submissions Report is relevant to the major civil construction work between The Bays and Sydney CBD only.

Sydney Metro West benefits

Sydney Metro West would deliver the following benefits:

- Double the rail capacity between Greater Parramatta and the Sydney CBD
- Relieve the congested T1 Western Line, T9 Northern Line, and T2 Inner West & Leppington Line
- Significantly boost economic opportunities for Greater Parramatta
- Support new residential and employment zones along the Greater Parramatta to Sydney CBD corridor, including at Sydney Olympic Park and The Bays – Providing improved transport for the additional 420,000 new residents and 300,000 new workers forecast to be located within the corridor over the next 20 years
- Allow customers fast and easy transfers with the T1 Western Line at Westmead, T9 Northern Line at North Strathfield, and the Sydney Trains suburban rail network and Sydney Metro in the Sydney CBD
- Allow for transfers with the future Parramatta Light Rail (Stage 1) at Westmead and Parramatta, as well as the planned Parramatta Light Rail (Stage 2) at Sydney Olympic Park
- Create an anticipated 10,000 direct and 70,000 indirect jobs during construction (based on Sydney Metro analysis).

Consultation on the Environmental Impact Statement

Sydney Metro West Major civil construction work between The Bays and Sydney CBD – Environmental Impact Statement (Sydney Metro, 2021a) (The Environmental Impact Statement) was placed on public exhibition by the Department of Planning and Environment (previously referred to as the Department of Planning, Industry and Environment) for an extended period, from 3 November 2021 to 15 December 2021. This provided the community with additional time to review the information, have their questions answered by Sydney Metro and, if they chose, to prepare and make a submission to the Department of Planning and Environment.

The implementation of COVID-19 public health orders required Sydney Metro to develop new and innovative ways to engage with stakeholders and the community. Sydney Metro incorporated the use of an interactive portal, a virtual information room, and virtual community meetings to provide the community with access to the Environmental Impact Statement and project information.

Consultation activities included virtual community engagement via an interactive portal and virtual community engagement room, stakeholder briefings, phone calls, and emails. Sydney Metro Place Managers engaged with the community, addressing concerns and providing accurate and transparent information to generate the community's understanding of the project and any relevant impacts. A range of tools and materials were developed to engage with stakeholders and support the exhibition of the Environmental Impact Statement including a media release, newspaper advertisements, videos from project experts, phone calls and emails, e-newsletter alerts to the project mailing list, letterbox drops, and virtual meetings.

Key stakeholders (including local government, NSW Government agencies, peak bodies and industry associations) were briefed via emails, phone calls, virtual meetings and presentations throughout the exhibition period to ensure they received the relevant information to make a submission.

Further information on consultation carried out is provided in Chapter 3 (Stakeholder and community engagement) of this Submissions Report.

Purpose of this report

This Submissions Report presents responses to submissions received during the exhibition of the Environmental Impact Statement. In addition, Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report presents clarifications on some of the information presented in the Environmental Impact Statement, the potential environmental impacts of those clarifications, and additional information on some features not previously described in the Environmental Impact Statement.

Overview of submissions

A total of 18 submissions were received by the Department of Planning and Environment in response to the Environmental Impact Statement during the exhibition period. This included submissions from two public authorities and sixteen members of the community, businesses and organisations. In addition, six Government agencies provided advice to the Department during this time.

The most frequently raised issues in agency advice (which generally reflects their areas of responsibility) included:

- Non-Aboriginal heritage impacts, particularly the assessment approach and proposed mitigation, management and monitoring
- Contamination impacts, particularly the assessment approach and proposed mitigation, management and monitoring
- Hydrology and flooding, particularly the assessment approach
- Noise and vibration, particularly the assessment, the categorisation of results and proposed mitigation and management
- Soils and surface water quality, particularly the assessment approach and proposed mitigation, management and monitoring.

The most frequently raised issues in public authority submissions included:

- Construction hours and construction noise
- Contamination impacts
- Waste, resource use and spoil management
- Approach to mitigation, management and monitoring
- Community and stakeholder consultation, including the need for ongoing consultation with councils
- Impacts on trees and other vegetation
- Haul routes and traffic control
- Public transport impacts
- Sustainability.

Support for the project was received from seven community and organisation submissions. Key issues of most concern to the community included:

- Stakeholder and community engagement
- Noise and vibration
- Strategic need and justification.

Further analysis of submissions received is provided in Chapter 4 (Analysis of submissions) of this Submissions Report. Chapter 5 (Community submissions) and Chapter 6 (Public authority submissions and agency advice) of this Submissions Report present the issues raised in the advice and submissions and corresponding responses.

Next steps

The Department of Planning and Environment will review the Environmental Impact Statement, submissions received and this Submissions Report.

Once the Department of Planning and Environment has completed its assessment, a draft Environmental Assessment Report will be prepared for the Secretary of the Department of Planning and Environment, which may include recommended conditions of approval. The Environmental Assessment Report will then be provided to the Minister for Planning.

The Minister for Planning will then decide whether or not to approve the project and identify any conditions of approval that would apply. The Minister's determination, including any conditions of approval and the Environmental Assessment Report, will then be published on the Department of Planning and Environment Major Projects website. If approved, Sydney Metro would continue to consult with community members, government agencies and other stakeholders during construction to minimise potential impacts on the local and regional environment and the community.

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1 Introduction

This chapter provides an overview of the major civil construction work between The Bays and Sydney CBD (this proposal) as part of the broader Sydney Metro West project, including the strategic planning context, and the purpose and structure of this Submissions Report.

1.1 Overview of Sydney Metro

Sydney is expanding and the NSW Government is working hard to deliver an integrated transport system that meets the needs of customers now and in the future.

Sydney Metro is Australia's biggest public transport program. Services on the Metro North West Line between Rouse Hill and Chatswood started in May 2019 on this new stand-alone metro railway system, which is revolutionising the way Greater Sydney travels. Sydney Metro's program of work is shown on Figure 1-1 and includes:

- Sydney Metro North West – Opened in May 2019 with driverless trains running every four minutes in the peak in each direction between Tallawong Station in Rouse Hill and Chatswood
- Sydney Metro City & Southwest – A new 30-kilometre metro line extending the new metro network from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through the Sydney CBD and south-west to Bankstown. It is currently under construction with services to begin in 2024 with capacity to run a metro train every two minutes each way under the centre of Sydney
- Sydney Metro West (this project) – A new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD). This infrastructure investment will double the rail capacity of the Greater Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes
- Sydney Metro - Western Sydney Airport – A new metro rail line that will service Greater Western Sydney and the new Western Sydney International (Nancy-Bird Walton) Airport forming the transport spine of the Western Parkland City.

The delivery of Sydney Metro West is critical to keeping Sydney moving and is identified in a number of key strategic planning documents including the Greater Sydney Region Plan: A Metropolis of Three Cities – connecting people (Greater Sydney Commission, 2018a), Building Momentum: State Infrastructure Strategy 2018-2038 (Infrastructure NSW, 2018) and Future Transport Strategy 2056 (Transport for NSW, 2020).

Sydney Metro West will double rail capacity between Greater Parramatta and the Sydney CBD, transforming Sydney for generations to come.

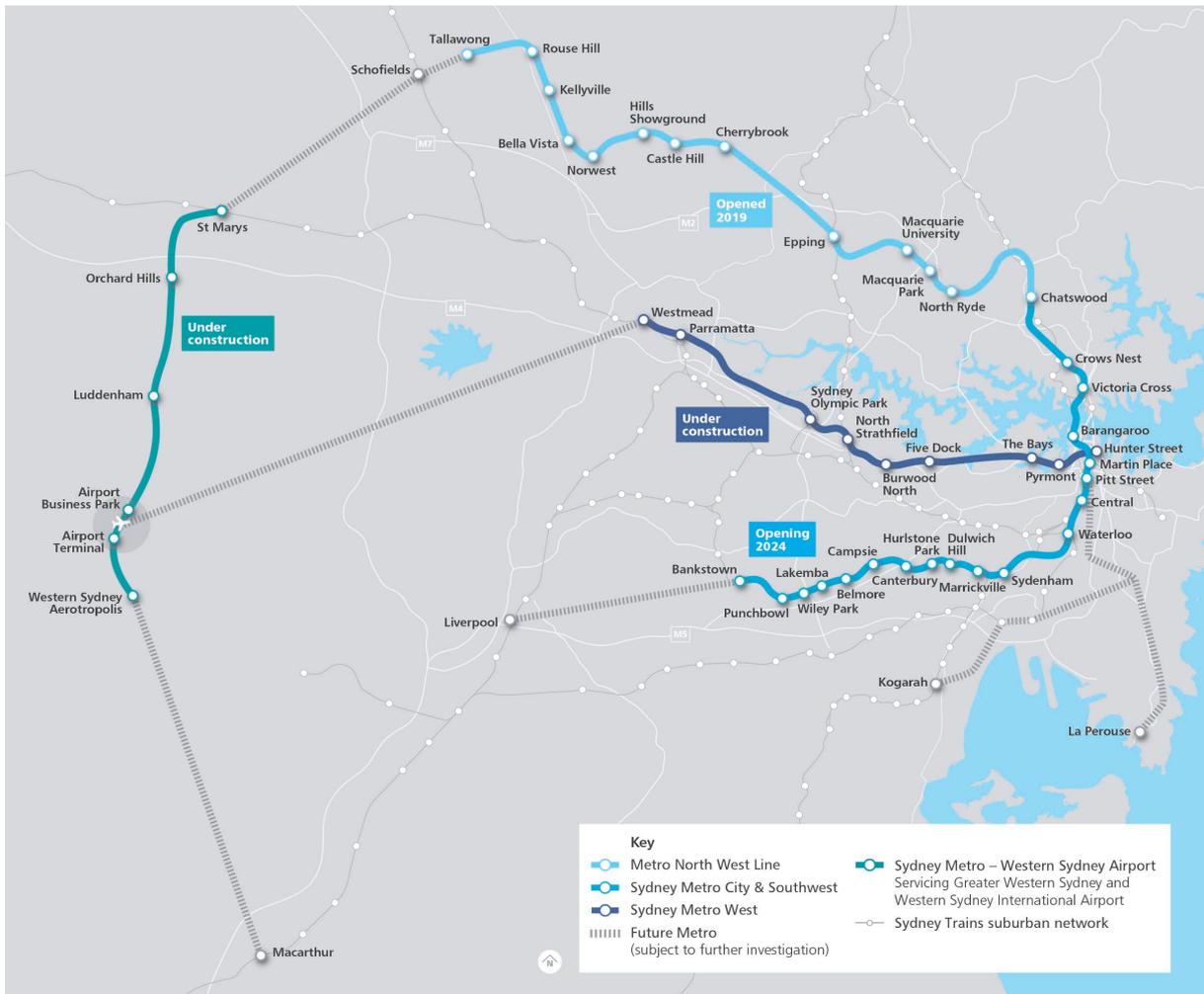


Figure 1-1 Sydney Metro network

Sydney Metro West will also:

- Relieve the congested T1 Western Line, T9 Northern Line, and T2 Inner West & Leppington Line
- Significantly boost economic opportunities for Greater Parramatta
- Support new residential and employment zones along the Greater Parramatta to Sydney CBD corridor, including at Sydney Olympic Park and The Bays – Providing improved transport for the additional 420,000 new residents and 300,000 new workers forecast to be located within the corridor over the next 20 years
- Allow customers fast and easy transfers with the T1 Western Line at Westmead, T9 Northern Line at North Strathfield, and the Sydney Trains suburban rail network and Sydney Metro in the Sydney CBD
- Allow for transfers with the future Parramatta Light Rail (Stage 1) at Westmead and Parramatta, as well as the planned Parramatta Light Rail (Stage 2) at Sydney Olympic Park
- Create an anticipated 10,000 direct and 70,000 indirect jobs during construction (based on Sydney Metro analysis).

The main elements of Sydney Metro West are shown in Figure 1-2.

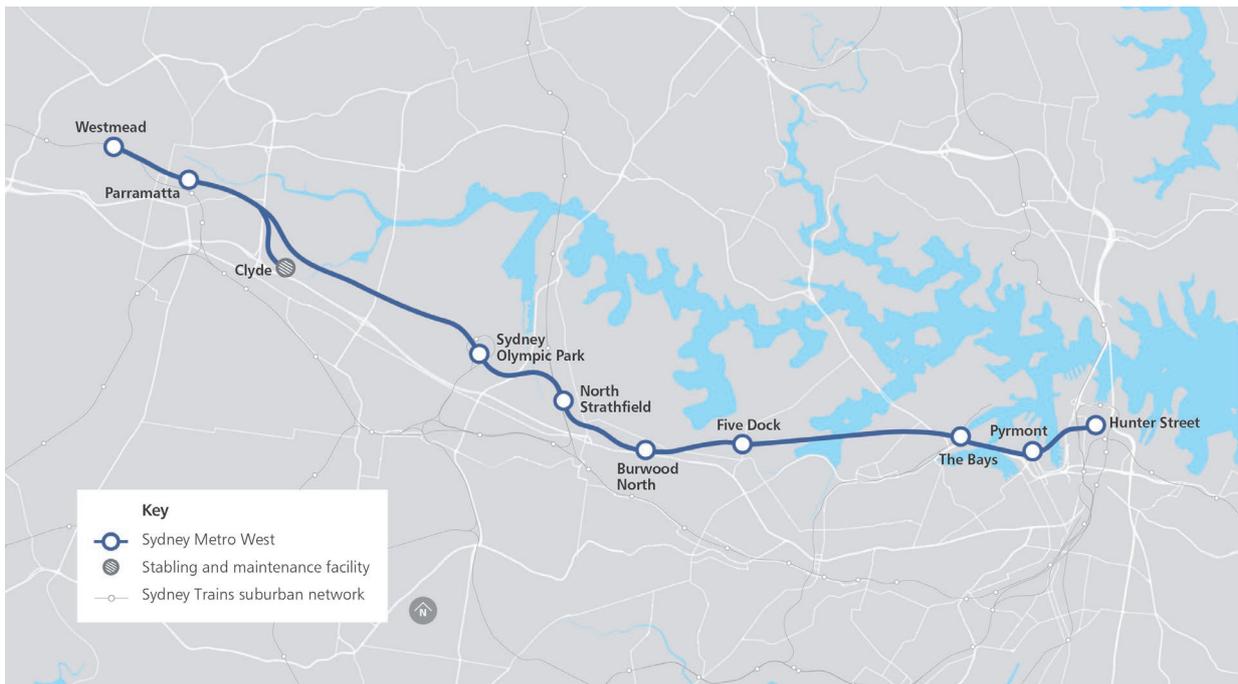


Figure 1-2 Sydney Metro West

1.1.1 Staged planning approval

Sydney Metro West is being assessed as a staged infrastructure application under section 5.20 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (Stage 1 of the planning approval process, application number SSI-10038) was approved by the Minister for Planning on 11 March 2021.

The Sydney Metro West Concept includes:

- Construction and operation of new passenger rail infrastructure between Westmead and the central business district (CBD) of Sydney, including:
 - Tunnels, stations (including surrounding areas) and associated rail facilities
 - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure (including stations and surrounding areas)
- Ancillary development.

The previous Sydney Metro West planning application (Stage 1 of the planning approval process) includes major civil construction work between Westmead and The Bays, including:

- Enabling work, such as demolition, utility supply to construction sites, utility adjustments, and modifications to the existing transport network
- Tunnel excavation including tunnel support activities between Westmead and The Bays
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for service facilities
- Civil work for the stabling and maintenance facility at Clyde.

This work commenced in 2021 and will continue through to the end of 2026.

1.1.2 Key features of this proposal

Stage 2 of the planning approval process (this proposal) includes all major civil construction work including station excavation at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites, and tunnelling between The Bays and Sydney CBD.

The proposed major civil construction work between The Bays and Sydney CBD would include:

- Enabling work such as demolition, utility supply to construction sites, utility adjustments, and modifications to the existing transport network
- Tunnel excavation including tunnel support activities between The Bays and Sydney CBD
- Station excavation for new metro stations at Pyrmont and Hunter Street (Sydney CBD).

This proposal would be located largely underground in twin tunnels. Indicative locations of the proposed alignment and stations are shown in Figure 1-3.

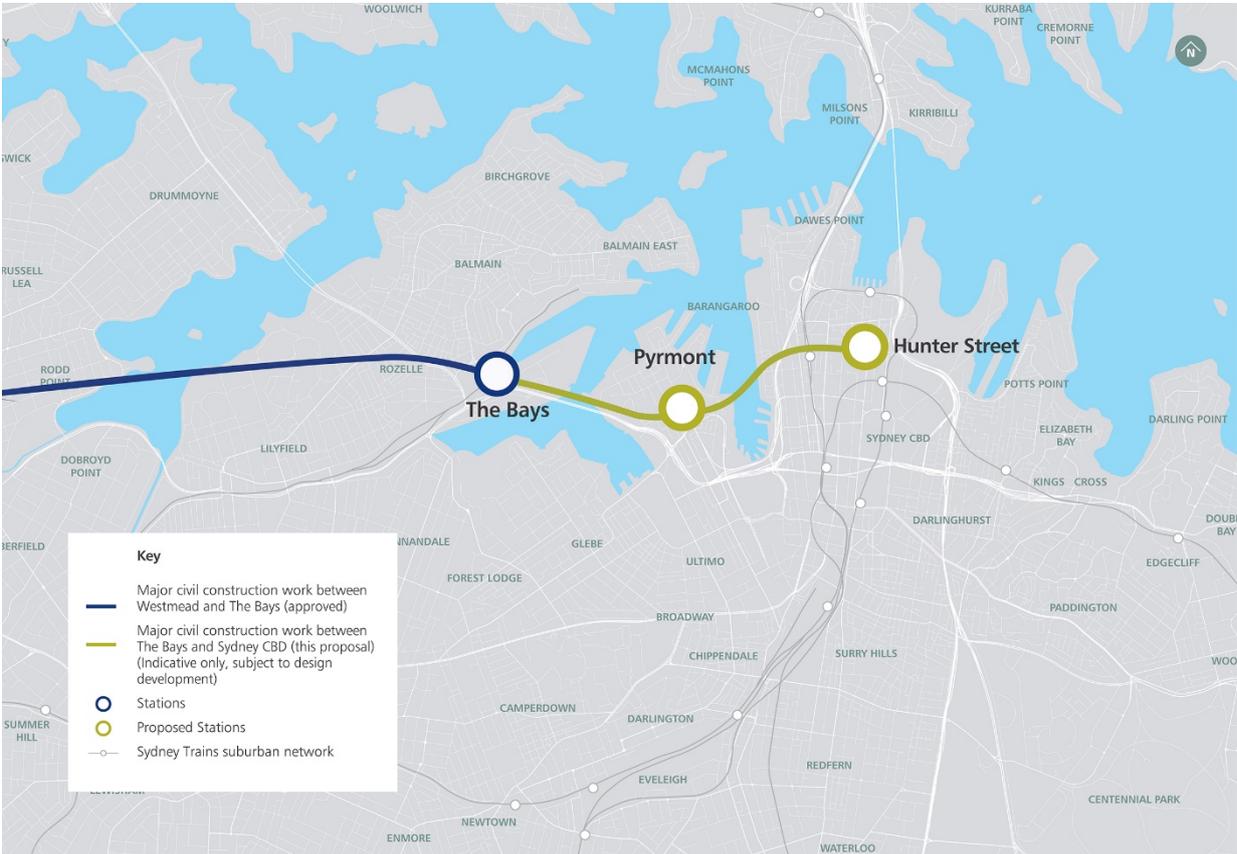


Figure 1-3 Overview of Sydney Metro West between The Bays and Sydney CBD

A more detailed description of this proposal is available in Chapter 5 (Project description) of *Sydney Metro West Major civil construction work between The Bays and Sydney CBD – Environmental Impact Statement* (Sydney Metro, 2021a) (The Environmental Impact Statement).

Components of this proposal are subject to further design and construction planning. Changes may be made during ongoing design development would consider the outcomes of community and stakeholder engagement and environmental field investigations.

1.1.3 Stage 3 of the planning approval process for Sydney Metro West

Stage 3 of the planning approval process includes tunnel fit-out, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line. The associated potential impacts have been assessed in the Environmental Impact Statement for 'Sydney Metro West – Rail infrastructure, stations, precincts and operations' which was placed on exhibition on 23 March 2022.

1.2 Statutory context and approval process

Sydney Metro West was declared as State significant infrastructure and critical State significant infrastructure under section 5.12(4) and 5.13 of the *Environmental Planning & Assessment Act 1979* on 23 September 2020. Schedule 5 of *State Environmental Planning Policy (Planning Systems) 2021* has been amended to include Sydney Metro West as critical State significant infrastructure as a result of this declaration. The Sydney Metro West Concept was approved on 11 March 2021, under Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979* as a staged State significant infrastructure application.

An Environmental Impact Statement was prepared to support Sydney Metro's application for approval from the Minister for Planning for major civil construction work between The Bays and Sydney CBD. The Environmental Impact Statement was placed on exhibition by the Department of Planning and Environment (formerly the Department of Planning, Industry and Environment) for a period of six weeks from 3 November 2021 to 15 December 2021.

During the exhibition period government agencies, key stakeholders and members of the community were able to review project information online via an interactive portal (including an interactive project map and videos from project experts) and virtual community engagement room. Government agencies, key stakeholders and members of the community were also able to interact with the project team via digital consultation and engagement tools and forums, request further information from Sydney Metro regarding this proposal, and make a submission to the Department of Planning and Environment for consideration in assessment of the application.

An overview of the assessment and approval process is shown in Figure 1-4.



Figure 1-4 The assessment and approval process for major civil construction work between The Bays and Sydney CBD

1.3 Purpose and structure of this Submissions Report

During exhibition of the Environmental Impact Statement 18 submissions were received by the Department of Planning and Environment and six Government agencies provided advice to the Department. The Secretary of the Department of Planning and Environment requested Sydney Metro provide a Response to Submissions Report that addresses issues identified in the submissions from members of the public, organisations, public authorities, and in advice from government agencies.

This Submissions Report presents responses to submissions received during the exhibition of the Environmental Impact Statement (refer to Appendix A). In addition, Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report presents clarifications to some of the information presented in the Environmental Impact Statement, potential environmental impacts of those clarifications, and additional information on some features not previously described in the Environmental Impact Statement.

The structure and content of this report is outlined in Table 1-1.

Table 1-1 Structure and content of this report

Chapter	Description
Chapter 1 Introduction (this chapter)	Outlines the key features of Sydney Metro West, the statutory context and approval process, and the purpose and context of this report.
Chapter 2 Environmental Impact Statement clarifications	Provides clarification on information presented in the Environmental Impact Statement.
Chapter 3 Stakeholder and community engagement	Outlines stakeholder and community engagement carried out during the preparation of the Environmental Impact Statement, during exhibition of the Environmental Impact Statement and future engagement activities.
Chapter 4 Analysis of submissions	Provides a summary of the submissions received during public exhibition of the Environmental Impact Statement including the number of submissions, types of submitters, and issues raised.
Chapter 5 Community submissions	Identifies issues raised by the community and provides responses to those submissions.
Chapter 6 Public authority submissions and agency advice	Identifies issues raised by government agencies and public authorities, and provides responses to those submissions.
Chapter 7 Revised environmental mitigation measures	Provides the complete set of revised environmental mitigation measures indicating changes required as a result of the response to submissions.
Chapter 8 Conclusion and next steps	Provides an updated justification and evaluation of the project as a whole and outlines next steps in the approval process following the submissions process.
Chapter 9 References and glossary	Provides a list of references and defines abbreviations and key terms used throughout the report.

2 Environmental Impact Statement clarifications

This chapter provides clarifications to information presented in the Environmental Impact Statement to address issues raised in submissions and stakeholder consultation and resulting from minor corrections to the Environmental Impact Statement.

2.1 Overview

The purpose of this section is to:

- Clarify some of the information presented in the Environmental Impact Statement including information related to the potential impacts of these clarifications
- Provide additional information on some features not detailed in the Environmental Impact Statement.

The key clarifications include:

- Modified boundary at The Bays tunnel launch and support site (refer to Section 2.2)
- Tanking of shafts and caverns (refer to Section 2.3)
- Revised haul route at Pyrmont Station construction sites (refer to Section 2.4)
- Transport and traffic impacts to emergency services (refer to Section 2.5)
- Revised haul route at Hunter Street Station (Sydney CBD) construction sites (refer to Section 2.6).

Other minor clarifications and corrections include:

- Updated Sydney Metro Construction Traffic Management Framework (refer to Section 2.7.1)
- Confirmation of the location and dates of noise monitoring for noise monitoring location B.06 (refer to Section 2.7.2)
- Three minor transport and traffic transcription-related corrections regarding indicative heavy and light vehicle movements and the egress of vehicles at Pyrmont Station construction sites (refer to Section 2.7.3)
- Two minor sustainability and climate change transcription-related corrections regarding estimated greenhouse gas emissions as shown in Table 22-3 of the Environmental Impact Statement (refer to Section 2.7.4)
- Correction of an incorrectly labelled figure in Technical Paper 5 (Landscape and visual impact assessment) (refer to Section 2.7.5)
- One minor air quality transcription-related correction regarding PM2.5 as shown in Table 19-1 of the Environmental Impact Statement (refer to Section 2.7.6).

Additional assessments have been carried out for the modified boundary at The Bays tunnel launch and support site and the revised haul routes and vehicle movements at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites. No additional assessments were required in relation to any of the other clarifications presented in this chapter.

2.2 Modified boundary at The Bays tunnel launch and support site

2.2.1 Clarification description

Figure 5-8 of the Environmental Impact Statement incorrectly shows the spoil storage footprint overlapping a Cement Australia heavy vehicle parking area. This parking area would not be used to store spoil for this proposal.

Since the exhibition of the Environmental Impact Statement, it was proposed that Sydney Metro use a portion of the WestConnex Rozelle Interchange construction site upon completion of WestConnex Rozelle Interchange. This parcel of land would then continue to form part of future stages of Sydney Metro West following the completion of this proposal. This parcel of land would primarily be used for laydown, in addition to other surface construction activities.

Figure 5-8 of the Environmental Impact Statement has since been updated to reflect these changes and is shown below in Figure 2-1.

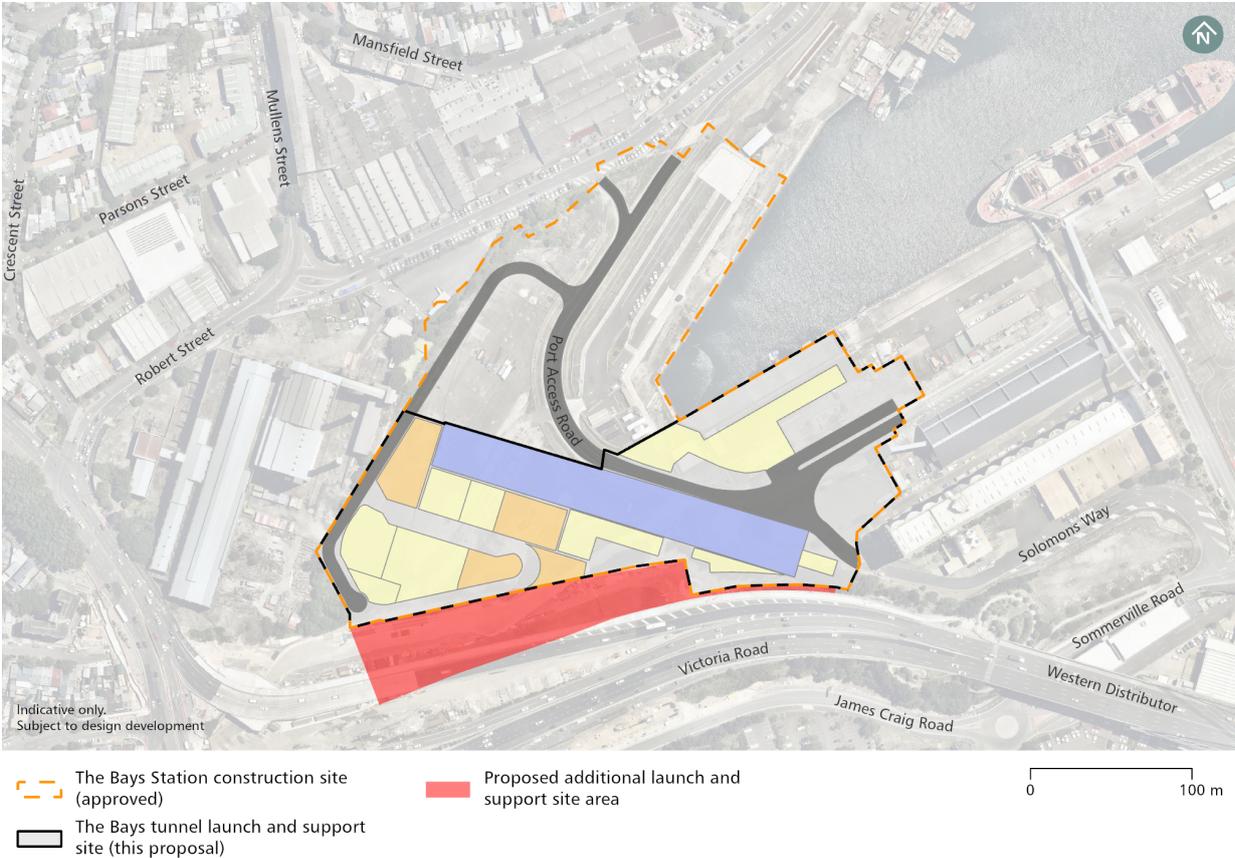


Figure 2-1: Modified boundary at The Bays tunnel launch and support site

2.2.2 Additional assessment

Additional assessment has been carried out considering the additional information provided in Section 2.2.1 for the following:

- Noise and vibration
- Non-Aboriginal heritage
- Hydrology and flooding.

The modified boundary at The Bays tunnel launch and support site would not result in any change to other issues as described and assessed in the Environmental Impact Statement given that the land has previously been disturbed by the construction of WestConnex Rozelle Interchange and that the indicative use of this land would be as a laydown area only.

Noise and vibration

Existing environment

Section 7.7.1 of the Environmental Impact Statement describes the existing environment near The Bays tunnel launch and support site relating to the location of noise sensitive receivers and the existing noise environment.

The additional land proposed to be included in The Bays tunnel launch and support site is located about 180 metres from the nearest residential receivers in noise catchment area No.1 (NCA 1). This area is a similar distance from the nearest receivers as the site boundary shown in the Environmental Impact Statement. There is a degree of screening by elevated road structures between the proposed additional site area and the nearest receivers.

Potential impacts

Given that the proposed additional site area would primarily be used for laydown of plant, materials and equipment, and noting both the high background noise levels and screening by elevated road structures, exceedances of adopted noise management levels are not expected. No high noise generating activities (such as excavation using rockbreakers or piling) are proposed in the additional site area.

The additional site area adjoins The Bays Station construction site that was assessed as part of the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). That assessment found worst case daytime construction activities (without rockbreakers) at The Bays Station construction site would not result in noise management level exceedances at residential receivers on the western side of Victoria Road in Rozelle.

Noise associated with laydown of plant, materials and equipment will be managed through the implementation of standard and additional mitigation measures in accordance with the Sydney Metro Construction Noise and Vibration Standard (Appendix C of the Environmental Impact Statement).

Non-Aboriginal heritage

Existing environment

Section 8.7.1 of the Environmental Impact Statement describes the existing environment near The Bays tunnel launch and support site relating to the location of non-Aboriginal heritage items and archaeological resources.

The additional land proposed to be included in The Bays tunnel launch and support site contains no listed heritage items and is outside the curtilage of the State Heritage Register listed White Bay Power Station. The *WestConnex M4-M5 Link Environmental Impact Statement* (Roads and Maritime Services, 2017) describes this area as having a low potential for archaeological remains, with any surviving remains likely to have been highly disturbed and unlikely to meet the threshold for local significance.

Potential impacts

Noting the low archaeological potential and given that there would be no surface disturbance associated with the use of the additional parcel of land to the south as a laydown area, it is unlikely that the use of The Bays tunnel launch and support site would result in impacts to non-Aboriginal heritage archaeological resources.

The potential impacts to listed heritage items within the construction site study area of The Bays tunnel launch and support site are assessed in the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). No additional impacts are anticipated as a result of the modified boundary at The Bays tunnel launch and support site.

Hydrology and flooding

Existing environment

Section 17.5.2 of the Environmental Impact Statement describes the existing environment near The Bays tunnel launch and support site relating to the existing causes of flooding, levels of inundation and flood hazard.

The additional land proposed to be included in The Bays tunnel launch and support site is affected by flooding, with parts of the area inundated in the 1 per cent annual recurrence interval and probable maximum flood events. Similar areas of inundation and flood depths are predicted with The Bays Station construction site and The Bays tunnel launch and support site in place.

In terms of flood hazard, most of the additional site area is identified as being safe for vehicles, people and buildings in the 1 per cent annual recurrence interval and probable maximum flood events.

Flood inundation and hazard maps are provided in Appendix B (existing flooding) and Appendix C (flooding taking The Bays Station construction site and The Bays tunnel launch and support site into account) of Technical Paper 9 (Hydrology Flooding and Water Quality) of the Environmental Impact Statement.

Potential impacts

Given that the proposed additional site area would only be used for laydown of plant, materials (other than spoil) and equipment, there would not be a substantial change to flood storage or a likely impediment of flow paths. The additional area will be further assessed during detailed construction planning to reduce flooding impacts in accordance with mitigation measure HF1 and HF3 in Chapter 7 (Revised environmental mitigation measures).

2.3 Tanking of shafts and caverns

2.3.1 Clarification description

Table 5-6 and Table 14-5 of the Environmental Impact Statement incorrectly identified all components of both Pyrmont and Hunter Street (Sydney CBD) stations as being tanked (designed to inhibit the inflow of groundwater, typically using concrete lining and waterproofing membrane). However, the access shafts at both Pyrmont Station and Hunter Street Station (Sydney CBD) locations would be untanked.

The differentiated construction design and predicted inflow rates and volumes sourced from Technical Paper 7 (Hydrogeology) are provided in Table 2-1 and Table 2-2. No additional assessment was required in relation to this clarification as there has been no change to the inflow rates and volumes presented in the Environmental Impact Statement.

Table 2-1 Predicted groundwater inflow rates to the excavation (sourced from Technical Paper 7)

Construction sites	Construction design	Inflow 6 months (L/sec)	Inflow Year 1 (L/sec)	Inflow Year 2 (L/sec)
Pyrmont Station cavern	Tanked	0.18	0.15	0.12
Pyrmont Station western shaft	Untanked	0.33	0.24	0.17
Pyrmont Station eastern shaft	Untanked	0.19	0.15	0.13
Totals (Pyrmont)		0.70	0.54	0.43
Hunter Street Station (Sydney CBD) cavern	Tanked	0.21	0.17	0.16
Hunter Street Station (Sydney CBD) western shaft	Untanked	0.32	0.23	0.18
Hunter Street Station (Sydney CBD) eastern shaft	Untanked	0.42	0.32	0.26
Totals (Hunter Street)		0.95	0.72	0.6

Table 2-2 Predicted groundwater inflow volumes to the excavation (sourced from Technical Paper 7)

Construction sites	Construction design	Inflow 6 months (ML)	Inflow Year 1 (ML)	Inflow Year 2 (ML)
Pymont Station	Tanked cavern Untanked shafts	16.2	26	15
Hunter Street (Sydney CBD) Station	Tanked cavern Untanked shafts	22.3	35.3	18.2

2.4 Revised haul route and vehicle movements at Pymont Station construction sites

2.4.1 Clarification description

Figure 2-2 shows the proposed primary haul routes for Pymont Station construction sites as described in the Environmental Impact Statement. Following consultation with Transport for NSW, a revised outbound haul route has been adopted for these construction sites to improve traffic outcomes. The revised haul route is shown in Figure 2-3, and would involve:

- A revised outbound route southbound along Pymont Street then onto the Western Distributor. This would avoid the use of Harris Street and avoid direct impacts to the intersection of Harris Street and Fig Street
- A revised inbound route for the eastern site by turning left from Pymont Bridge Road onto Edward Street and right onto Union Street
- A revised outbound route from Union Street egress, left onto Pymont Bridge Road, returning via the Darling Drive roundabout and Pymont Street
- Retention of the westbound outbound route back onto the Western Distributor/Anzac bridge.

Partial closure of two westbound traffic lanes in Union Street between Pymont Bridge Road and Edward Street is proposed to facilitate right turn construction vehicle access from Union Street into the construction site. Eastbound traffic would continue to use the single through lane on Union Street, while westbound traffic would be restricted.

In addition, Chapter 6 and Technical Paper 1 (Transport and traffic) of the Environmental Impact Statement considered half the construction heavy vehicle movements required for the Pymont Station construction sites. Potential impacts associated with the additional heavy vehicle movements (using the revised haul routes) are discussed in Section 2.4.2.

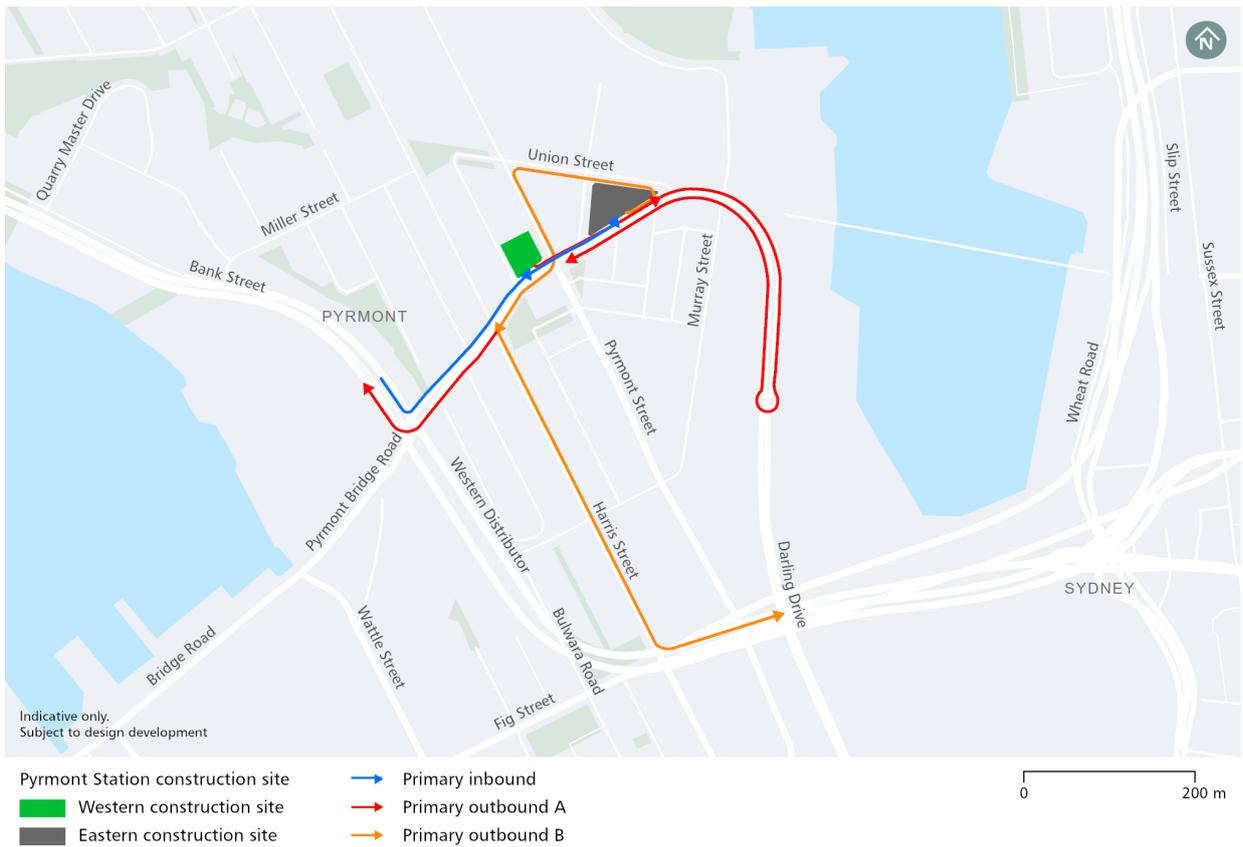


Figure 2-2 Pymont Station construction sites haul route as described in the Environmental Impact Statement



Figure 2-3 Revised haul route at Pymont Station construction sites

2.4.2 Additional assessment

Additional assessment has been carried out considering the additional information provided in Section 2.4.1 for the following:

- Transport and traffic
- Noise and vibration.

The revised haul route at Pymont Station construction sites would not result in any change to other issues as described and assessed in the Environmental Impact Statement.

Transport and traffic

Active transport impacts

The footpath and separate cycleway on the northern side of Union Street would be maintained throughout construction and pedestrian access would be maintained via a detour to the northern footpath. The partial closure of the westbound traffic lanes in Union Street would have no impact to existing cyclists due to the separate cycleway remaining operational and access to the cycling route along Darling Drive would remain available. As a result, impacts to the existing active transport network would be minimal and will be managed in accordance with the Construction Traffic Management Framework presented as Appendix D of the Environment Impact Statement and updated as Appendix C of this Submissions Report.

Public transport impacts

Buses may experience a minor increase in existing travel time due to the additional construction vehicles on the road network. As described in the Environmental Impact Statement, one bus stop on Pymont Bridge Road would be temporarily decommissioned. This stop is not currently used by any public transport bus services. As a result, impacts to buses would be minimal and will be managed in accordance with the Construction Traffic Management Framework presented as Appendix D of the Environment Impact Statement and updated as Appendix C of this Submissions Report.

No impacts to the light rail or ferry networks are anticipated during construction.

Parking and property access impacts

On-street parking spaces and a loading zone would be temporarily removed along both sides of Union Street between Edward Street and Pymont Bridge Road. Parking would be temporarily moved on the south side of Union Street between Edward Street and Pymont Bridge Street with only one way traffic flow eastbound along Union Street. The combined loss of on-street parking spaces would have minor impacts to the existing road network, given the availability of parking on other local roads nearby, and the permanent demolition of properties that currently generate parking demand. Opportunities to mitigate impacts to on-street carparking will be explored in consultation with City of Sydney during construction planning.

There would be no impacts to private property access.

Impacts on road network performance

Modelled intersection performance which considers the revised haul routes and additional construction heavy vehicles is shown in Figure 2-4. Updated modelling results for all intersections are provided in Appendix B of this Submissions Report.

The modelled 2024 ‘with proposal’ Level of Service at most intersections would remain the same (with small changes in average delay per vehicle) as the modelled intersection performance presented in the Environmental Impact Statement. However, the ‘with proposal’ Level of Service results have changed compared to those presented in the Environmental Impact Statement for the following intersections:

- Pyrmont Bridge Road/Harris Street during the evening peak – From Level of Service C to B, with a reduction in average delay of 13 seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Union Street/Edward Street during the evening peak – From Level of Service B to A, with a reduction in average delay of four seconds per vehicle compared to the assessment provided in the Environmental Impact Statement. This intersection would operate at the same level of service with or without this proposal in 2024.

These results show that the proposed construction traffic volumes and haul routes are likely to result in some change to overall Level of Service on the surrounding road network, with improved outcomes (due to the haul route changes) at some intersections.

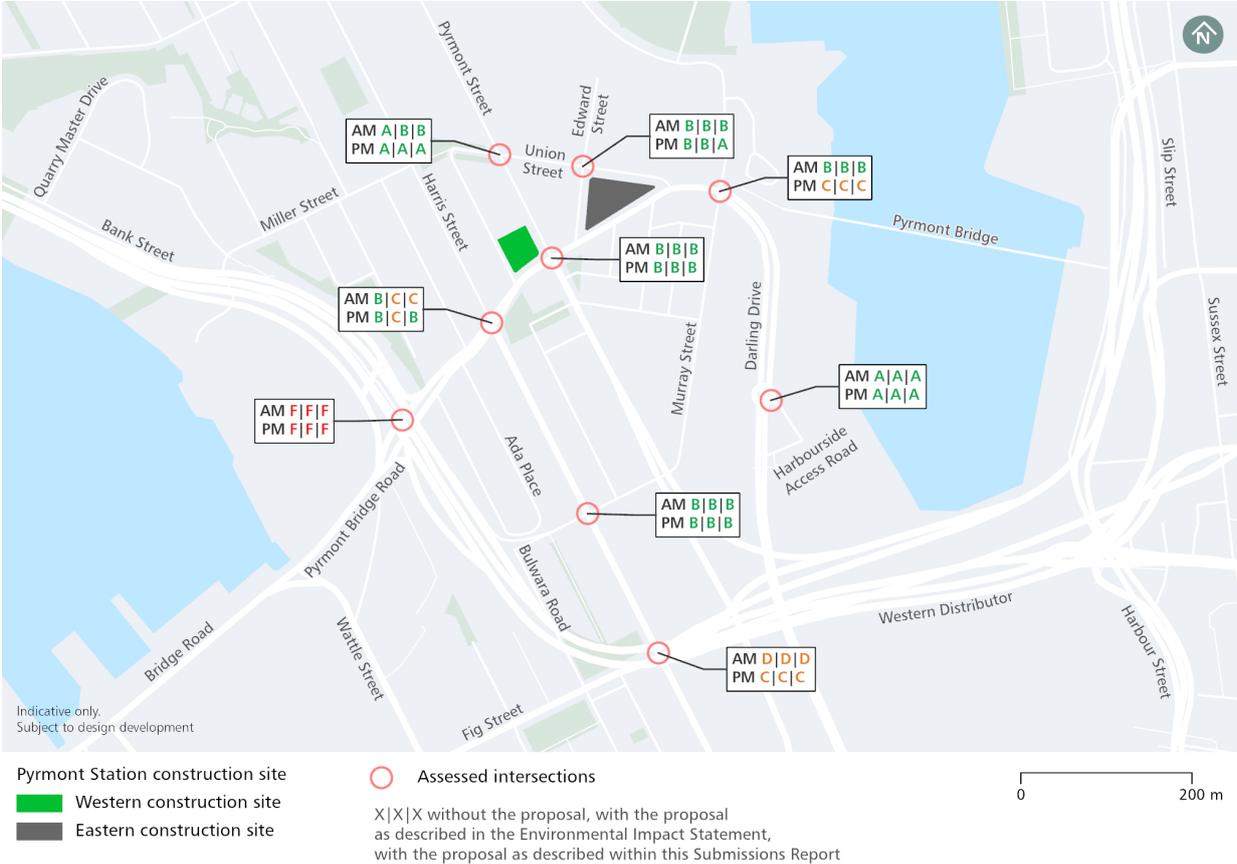


Figure 2-4 Modelled intersection performance at the Pyrmont Station construction sites

Noise and vibration

Construction traffic related noise has the potential to temporarily increase road traffic noise levels at receivers along construction haul routes. While noise predictions based on forecast construction traffic volumes indicate that increases in traffic noise would be less than 2dB, the operation of haul trucks can result in additional unpredicted impacts. These additional impacts can occur as a result of construction heavy vehicles accelerating and decelerating at the entrances/exits of the construction sites, when climbing steep road gradients, or when negotiating curves or traffic calming devices such as speed humps, traffic lights and the like.

These additional noise impacts are generally limited to around 150 metres either side of the construction site access points, with the potential to result in increased annoyance at the

closest receivers. Except in cases where the potentially impacted buildings have been specifically designed for a high noise environment such as in the CBD, then generally the only feasible option is to avoid haulage or deliveries during the sensitive night-time period. The exception would be where deliveries are required to support work required to be carried out 24 hours a day, seven days a week for safety reasons.

Mitigation measure NV12 in Chapter 7 (Revised environmental mitigation measures) notes that further assessment of construction traffic will be completed during detailed design. This will occur when more detailed information regarding the size/type of heavy vehicles, their loaded weight and the local traffic conditions is available.

2.5 Transport and traffic impacts to emergency services

2.5.1 Clarification description

Section 6.7 of the Environmental Impact Statement did not specifically consider transport and traffic impacts to emergency services within Pyrmont.

A search of emergency services near the Pyrmont Station construction sites found that Pyrmont Fire and Rescue is located at 147 Pyrmont Street, within 85 metres of the Pyrmont eastern construction site. In order to ensure that proposal-related impacts to road network performance would not result in impacts to emergency services, an additional mitigation measure, TT17, has been included in Chapter 7 (Revised environmental mitigation measures). A new mitigation measure, TT17, will require emergency services to be consulted about proposed road network changes during construction. The potential for minimising the disruption to emergency services as a result of this proposal will be further investigated during detailed construction planning.

2.6 Revised haul routes and vehicle movements at Hunter Street Station (Sydney CBD) construction sites

2.6.1 Clarification description

Figure 2-5 shows the proposed haul routes for Hunter Street Station (Sydney CBD) as described in the Environmental Impact Statement. Following consultation with Transport for NSW and City of Sydney, a revised inbound haul route has been adopted for The Hunter Street Station (Sydney CBD) western construction site to improve traffic outcomes. The revised haul route is shown in Figure 2-6 and would involve construction traffic travelling to the western construction site via Macquarie Street and Hunter Street.

The primary inbound route to the Hunter Street Station (Sydney CBD) eastern construction site would be via Bent Street and O'Connell Street. An alternative inbound route via Bridge Street, Loftus Street and O'Connell Street (Primary Inbound B) has been retained consistent with the Environmental Impact Statement should it be required, but is not the preferred route. As the use of this alternative route was assessed in the Environmental Impact Statement, no further assessment has been carried out for this Submissions Report.

Following consultation with City of Sydney, the alternative outbound haul route via Margaret Street described in the Environmental Impact Statement is no longer proposed.

In addition, Chapter 6 and Technical Paper 1 (Transport and traffic) of the Environmental Impact Statement considered half the construction heavy vehicle movements required for the Pyrmont Station construction sites. Potential impacts associated with the additional heavy vehicle movements (using the revised haul routes) are discussed in Section 2.6.2.



Figure 2-5 Hunter Street Station construction sites haul route (preferred route) as described in the Environmental Impact Statement

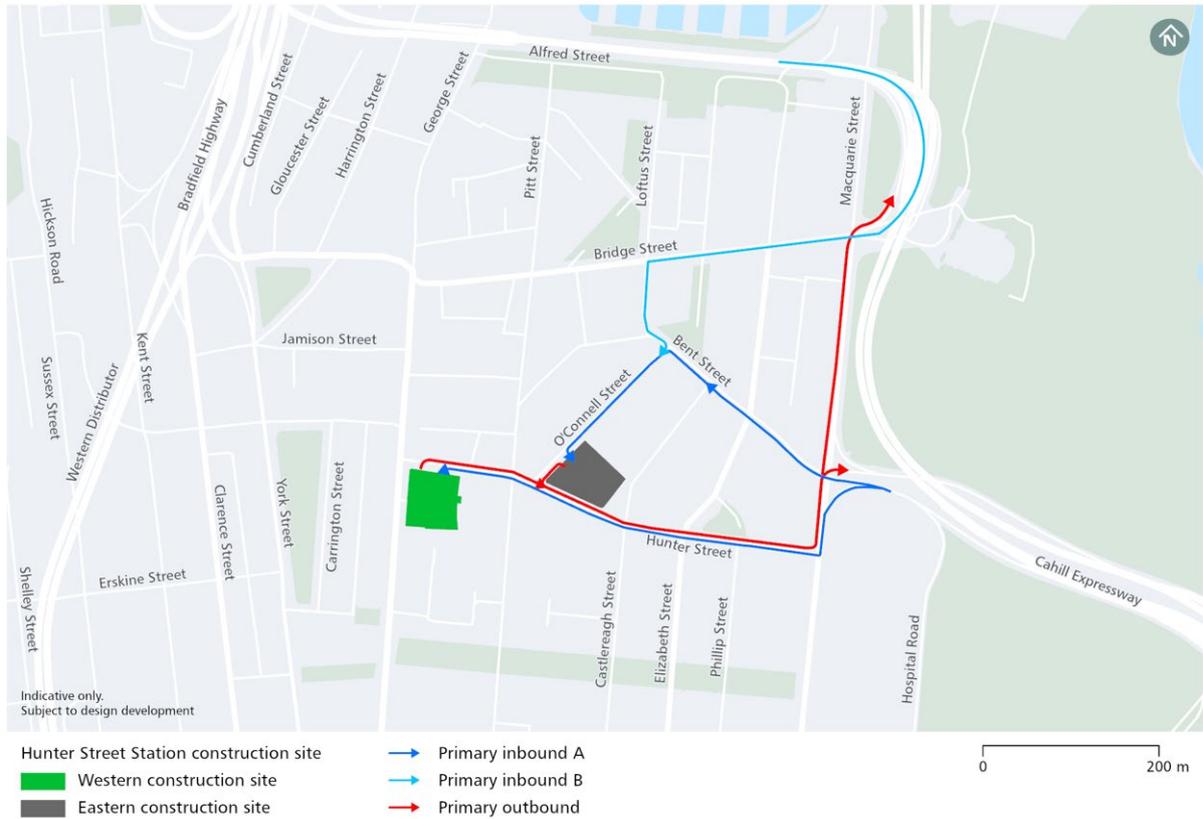


Figure 2-6 Revised haul route at Hunter Street Station construction sites

2.6.2 Additional assessment

Additional assessment has been carried out considering the additional information provided in Section 2.6.1 for the following:

- Transport and traffic
- Noise and vibration.

The revised haul route at the Hunter Street Station (Sydney CBD) construction sites would not result in any change to other issues as described and assessed in the Environmental Impact Statement.

Transport and traffic

Active transport impacts

Impacts to active transport are not anticipated to change from that previously described within the Environmental Impact Statement.

Public transport impacts

Impacts to buses would be limited to a potential minor increase in existing travel time due to the additional construction vehicles on the road network. No impacts are anticipated on the operation of bus stops.

No interface with the light rail network would be required as a result of the updated route.

No impacts to the rail or ferry networks are anticipated during construction.

Parking and property access impacts

Impacts to parking and property access are not anticipated to change from that previously described within the Environmental Impact Statement.

Impacts on road network performance

Modelled intersection performance which considers the revised haul routes and additional construction heavy vehicles is shown in Figure 2-7. Updated modelling results for all intersections are provided in Appendix B of this Submissions Report.

The 2024 'with proposal' Level of Service results have changed compared to those presented in the Environmental Impact Statement for the following intersections:

- Hunter Street/Elizabeth Street during the evening peak period – From Level of Service B to C, with an increase in average delay of seven seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Hunter Street/Castlereagh Street during the morning peak period – From Level of Service B to C, with an increase in average delay of 21 seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Hunter Street/Castlereagh Street during the evening peak period – From Level of Service A to B, with an increase in average delay of seven seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Hunter Street/Pitt Street/O'Connell Street during the morning peak period – From Level of Service B to C, with an increase in average delay of 16 seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Bent Street/Phillip Street during the morning peak period – From Level of Service C to B, with reduction in average delay of three seconds per vehicle compared to the assessment provided in the Environmental Impact Statement

- Margaret Street/Clarence Street in the morning peak hour – While this intersection is not part of the proposed haul route, modelling indicates a change from Level of Service D to Level of Service E, with a forecast increase in average delay of about four seconds per vehicle compared to the assessment provided in the Environmental Impact Statement
- Clarence Street/Jamison Street in the evening peak hour – While this intersection is not part of the proposed haul route, modelling indicates a change from Level of Service A to B, with a forecast increase in average delay of about one second per vehicle compared to the assessment provided in the Environmental Impact Statement.

The forecast volume of heavy vehicle arrivals into the Sydney CBD would not result in queuing or circulation of vehicles on streets on approach to the construction sites. Management of heavy vehicle arrivals and departures will be managed in accordance with the Construction Traffic Management Framework (Appendix D of the Environment Impact Statement and updated as Appendix B of this Submissions Report).

Transport for NSW will lead investigations into the following potential road network changes near the Hunter Street (Sydney CBD) western construction site in collaboration with Sydney Metro and the City of Sydney:

- Partial or full closure of Hunter Street to through traffic to/from George Street and Margaret Street
- Options to reallocate road space on the western part of Hunter Street.

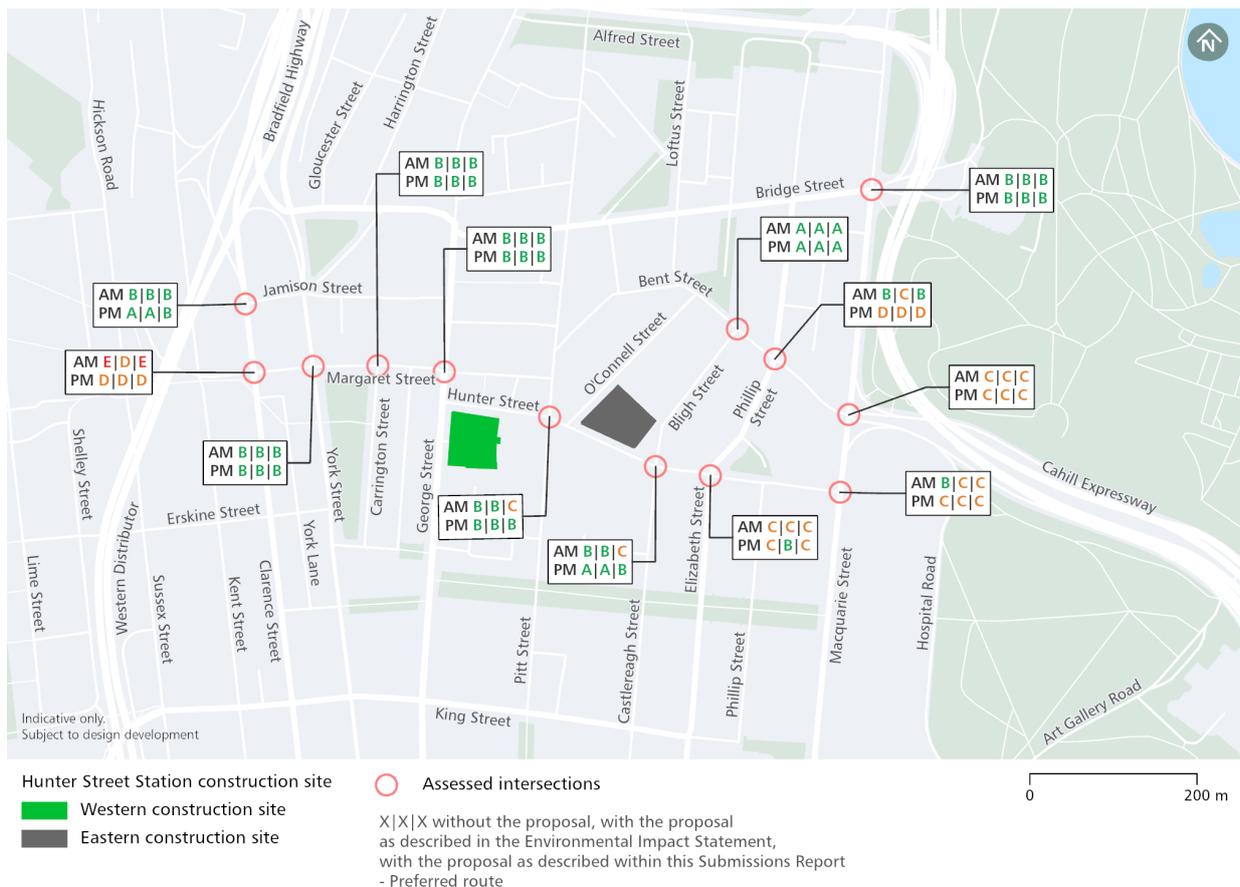


Figure 2-7 Modelled intersection performance at the Hunter Street Station construction sites (preferred route)

Noise impacts

Construction traffic related noise has the potential to temporarily increase road traffic noise levels at receivers along construction haul routes. The forecast construction traffic volumes have been used to determine potentially noticeable increases in road traffic noise (i.e. greater than two dB increases above the existing noise level). Construction traffic is unlikely to result in a noticeable increase in noise levels on most of the proposed revised construction haulage routes. This is due to the high existing volumes of traffic that use these routes compared to the relatively small volume of proposed construction vehicles. O'Connell Street, north of the Hunter Street east construction site, is however predicted to have a potentially noticeable increase in traffic noise during the night-time period due to the relative the low existing volumes on this road.

Buildings in the CBD near O'Connell and Hunter Streets tend to be high rise commercial type buildings with high levels of façade noise transmission loss providing acceptable internal noise amenity levels. These buildings would generally not be affected by changes in traffic noise levels.

Mitigation measure NV12 in Chapter 7 (Revised environmental mitigation measures) notes that further assessment of construction traffic will be completed during detailed design. This will occur when more detailed information regarding the size/type of heavy vehicles, their loaded weight and the local traffic conditions is available.

2.7 Other minor clarifications and corrections

The following minor clarifications and corrections have been identified and do not require any further environmental assessment.

2.7.1 Sydney Metro Construction Traffic Management Framework

Since the time of writing of the Environmental Impact Statement and in consultation with Transport for NSW, Sydney Metro has made minor amendments to the Sydney Metro Construction Traffic Management Framework that was presented as Appendix D of the Environmental Impact Statement. These minor amendments include agency name changes, terminology changes, and an updated Customer Journey Planning flowchart. The updated framework is presented as Appendix C of this Submissions Report.

No additional assessment was required in relation to this clarification.

2.7.2 Noise and vibration clarification

Appendix B of Technical Paper 2 (Noise and vibration) of the Environmental Impact Statement included the location for noise monitoring location B.06 as 1 Hosking Place and the dates of monitoring between 2 May 2019 and 20 May 2019. The graphs that follow this information incorrectly stated the location as 1 Harwood Place and the incorrect dates of monitoring as June 2015.

The correct location for noise monitoring location B.06 is 1 Hoskins Place and the correct dates of monitoring are between 19 June 2015 and 2 July 2015. All other data related to noise monitoring location B.06, including the noise measurements and graphs, is correct. No additional assessment was required in relation to this clarification.

2.7.3 Transport and traffic clarifications

Vehicle movement figures

The graph depicted in Figure 6-2 in the Environmental Impact Statement incorrectly labelled the y-axis as “heavy vehicle movements”. The correct label for the y-axis is “Light vehicle movements”.

Figure 6-3 in the Environmental Impact Statement incorrectly shows the indicative hourly heavy vehicle movements (arrival and departure) at The Bays tunnel launch and support site for the morning peak period, described within Table 6-4 of the Environmental Impact Statement as 7am to 9am at The Bays tunnel launch and support site. Figure 6-3 of the Environmental Impact Statement should show two vehicle movements between 7am and 8am and eight heavy vehicle movements between 10am and 11am. The hourly peak periods shown in Table 6-4 of the Environmental Impact Statement remain correct.

No additional assessment was required in relation to these clarifications.

Heavy vehicle numbers

The *Major civil construction between The Bays and Sydney CBD Environmental Impact Summary* (Sydney Metro, 2021b) describes 140 peak construction movements per day at Pymont Station construction sites, while Figures 6-8 and 6-9 of the Environmental Impact Statement show a total of 146 peak construction movements per day, during Phase 2 (shaft excavation).

Similarly, the *Major civil construction between The Bays and Sydney CBD Environmental Impact Summary* (Sydney Metro, 2021b) describes 162 peak construction movements per day at the Hunter Street Station (Sydney CBD) construction sites, while Figures 6-14 and 6-15 of the Environmental Impact Statement show a total of 100 peak construction movements per day, during Phase 1 (enabling work and demolition).

The numbers shown in the Environmental Impact Statement are correct and were used for assessment. No additional assessment was therefore required in relation to these clarifications.

Pymont Station construction sites indicative layout

Figure 5-10 of the Environmental Impact Statement shows the indicative layout of the Pymont Station construction sites, including egress arrangements. While two outbound haul routes are considered within Chapter 6 (Traffic and transport) of the Environmental Impact Statement, Figure 5-10 only shows the egress arrangements of the primary outbound B egress option. The primary outbound A option shown within Figure 6-10 of the Environmental Impact Statement should also be considered an egress arrangement for the Pymont Station construction sites. Figure 2-3 of this Submissions Report shows the revised access and egress for the Pymont Station construction sites.

As the traffic impact assessment within the Environmental Impact Statement considers both egress options, no additional assessment was required in relation to this clarification.

2.7.4 Sustainability and climate change clarification

Table 22-3 in the Environmental Impact Statement contained the following minor errors:

- The total estimated greenhouse gas emissions associated with shotcrete construction materials for this proposal incorrectly stated 25 t CO₂-e. The correct total emissions associated with shotcrete for this proposal is 253 t CO₂-e
- The fuel consumption of the generators, plant and equipment for this proposal incorrectly stated 42,533 t CO₂-e of estimated Scope 1 greenhouse gas emissions. The correct estimated Scope 1 emissions associated with the generators, plant and equipment is 42,523 t CO₂-e.

These were transcription errors and therefore the clarifications presented in this section are consistent with the total estimated greenhouse gas emissions for the project and do not require additional assessment.

2.7.5 Landscape and visual amenity clarification

The first figure on page 83 of Technical Paper 5 (Landscape and visual impact assessment) is labelled as “Existing acoustic shed, Bligh Street construction site”. However, the photo is of the existing Bligh Street acoustic shed fronting O’Connell Street. No additional assessment was required in relation to this clarification.

2.7.6 Air quality clarification

Table 19-1 in the Environmental Impact Statement incorrectly labels the pollutant in the second row of the table as PM₁₀. The correct label for the second pollutant in this table is PM_{2.5}. No additional assessment was required in relation to this clarification.

3 Stakeholder and community engagement

This section outlines community and stakeholder engagement carried out during exhibition of the Environmental Impact Statement for major civil construction between The Bays and Sydney CBD, and the future consultation proposed for the project.

3.1 Consultation overview

Sydney Metro has been engaging with the community, stakeholders, and industry since 2017. Feedback gathered has helped shape the project, including station locations. Sydney Metro will continue to work with the community and stakeholders as the project progresses. Sydney Metro's approach to consultation and engagement and activities carried out to inform project development is discussed in Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement.

Consultation proactively sought feedback and comments on Sydney Metro West through different forums and channels to inform the development phase and the scope of issues to be assessed as part of the environmental assessment process.

The Environmental Impact Statement was released in early November 2021 during changes to public health orders related to the COVID-19 pandemic in New South Wales. Sydney Metro focused on a digital engagement approach to ensure the community could learn about the project, have their questions answered and understand how to have their say while the Environmental Impact Statement was on exhibition.

This engagement approach included updating the existing Sydney Metro West interactive portal and engaging with communities and businesses through a program of proactive stakeholder outreach. Section 3.2 further outlines the engagement approach and details how the challenges posed were addressed through the innovative use of technology.

3.2 Consultation during exhibition

3.2.1 Public exhibition of the Environmental Impact Statement

The Environmental Impact Statement was placed on public exhibition by the Department of Planning and Environment for an extended period, from 3 November 2021 to 15 December 2021, to provide the community with additional time to review the information, have their questions answered by Sydney Metro and if they chose, to prepare and make a submission to the Department of Planning and Environment.

The Environmental Impact Statement was made publicly available on the Department of Planning and Environment's Major Projects website (<https://www.planningportal.nsw.gov.au/major-projects/project/41851>), and an online interactive portal (sydneymetro.info/metrowest). The Environmental Impact Statement was also publicly displayed at Town Hall House, Sydney, and the City of Sydney Darling Square Library.

3.2.2 Consultation activities

The following consultation activities were carried out to support exhibition of the Environmental Impact Statement:

- Virtual community engagement
- Virtual stakeholder briefings
- Letterbox drops and doorknocking
- Newspaper advertisements
- Translated materials
- Phone calls and emails.

Further information on these methods and activities is provided below. These activities were promoted and supported by the engagement materials described in Section 3.2.8.

3.2.3 Community contact and information points

The community was able to contact Sydney Metro West through a range of platforms during exhibition of the Environmental Impact Statement as outlined in Table 3-1.

Table 3-1 Community contact and information points

Activity	Details
Community information line (toll free)	1800 612 173
Community email address	sydneymetrowest@transport.nsw.gov.au
Sydney Metro website	sydneymetro.info
Sydney Metro West interactive portal	sydneymetrowest.info/metrowest
Postal address	Sydney Metro West, PO Box K659, Haymarket NSW 1240
Direct contact	Sydney Metro West place managers via phone, email or doorknocking
Facebook page	www.facebook.com/sydneymetro

3.2.4 Virtual community engagement

Sydney Metro incorporated the following virtual engagement tools:

- Interactive portal
- Virtual information room
- Virtual community meetings.

Interactive portal

Sydney Metro launched an interactive portal to provide an informative and accessible way for the community to view and access the Environmental Impact Statement and other relevant project information. Community members were able to explore interactive maps and learn what to expect from the project in their area, with a 'search address' function allowing visitors to view the proximity of their property or business to the proposed construction sites and indicative tunnel alignment. The portal displays information from the Environmental Impact Statement helping depict key activities the community would see in their local area during construction. This includes information on potential traffic changes and proposed haul routes, noise mitigation measures and other potential construction impacts.

Using a multimedia platform that could be translated into a number of languages, the approach was intended to be informative, relevant and accessible. The portal has the ability to reach people of all backgrounds including culturally and linguistically diverse communities and people who may normally have difficulty in participating in the engagement of major projects. An image of the interactive portal is provided in Figure 3-1.

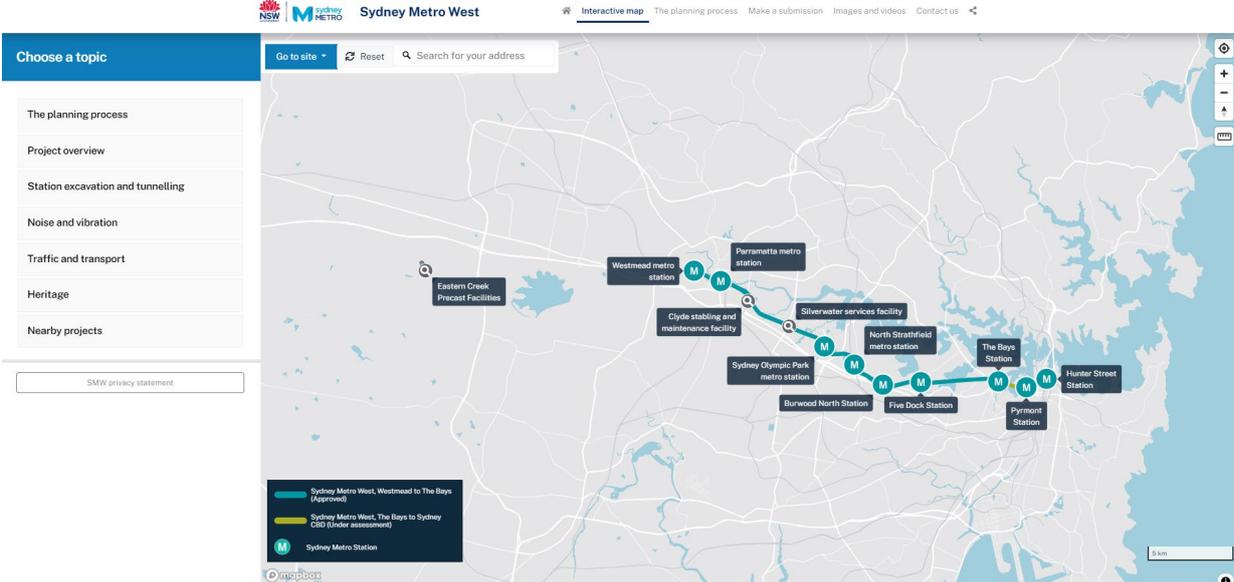


Figure 3-1 Interactive portal

Virtual information room

The interactive portal was also used to host a virtual information room. The virtual information room gave the community and stakeholders the opportunity to virtually ‘walk around’, read information boards and hear from experts, just as they would at a traditional community information session. A key feature of the virtual information room was a series of videos featuring project experts explaining the more complex aspects of the project including tunnelling, planning and placemaking. These videos were viewed about 1900 times during the exhibition period and were used to address many community questions. The virtual information room hosted about 5700 visitors during public exhibition of the Environmental Impact Statement. An image of the virtual information room is provided in Figure 3-2.



Figure 3-2 Virtual information room

3.2.5 Stakeholder briefings

Key stakeholders (including local government, NSW Government agencies, peak bodies and industry associations) were briefed via emails, phone calls, and via virtual meetings throughout the exhibition period. The briefings were designed to ensure stakeholders were appropriately informed about the Environmental Impact Statement and received the relevant information to make a submission.

Table 3-2 lists the key stakeholders who were contacted and/or briefed during the exhibition period for the Environmental Impact Statement.

Table 3-2 Stakeholders briefed/contacted during the exhibition period

Agency group/type	Stakeholders briefed/contacted
NSW Government	<ul style="list-style-type: none"> • Transport for NSW • Schools Infrastructure NSW
State owned corporations	<ul style="list-style-type: none"> • Sydney Water
Public authorities	<ul style="list-style-type: none"> • Inner West Council • City of Sydney
Interest groups	<ul style="list-style-type: none"> • The Royal Botanic Garden Sydney
Major landholders/tenants	<ul style="list-style-type: none"> • Brookfield Properties • Charter Hall

Following the close of the exhibition period, meetings were carried out with the stakeholders in Table 3-3. These meetings were held to:

- Discuss some of the issues raised by the stakeholders
- Provide further information relating to this proposal
- Consult with stakeholders about some of the clarifications described in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

The issues raised during these meetings have been responded to in Chapter 5 (Community submissions) and Chapter 6 (Public authority submissions and agency advice) of this Submissions Report.

Table 3-3 Stakeholders met with following the close of the exhibition period

Agency group/type	Stakeholders briefed/contacted
NSW Government	<ul style="list-style-type: none"> • Transport for NSW • Environment Protection Authority • Heritage NSW • Place Management NSW
Public authorities	<ul style="list-style-type: none"> • Inner West Council • City of Sydney
Major landholders	<ul style="list-style-type: none"> • Mirvac (developer of harbourside)

3.2.6 Phone calls, emails and doorknocks

During the exhibition period, Sydney Metro made a total of 27 phone calls and sent 78 emails to residents, businesses, councils and other key stakeholders in addition to the engagement materials discussed in Section 3.2.8. Place Managers also doorknocked businesses near the proposed Hunter Street Station (Sydney CBD) construction sites. Figure 3-3 includes a summary of the key topics or questions discussed by stakeholders and community members in phone calls or emails with Sydney Metro during the exhibition period.

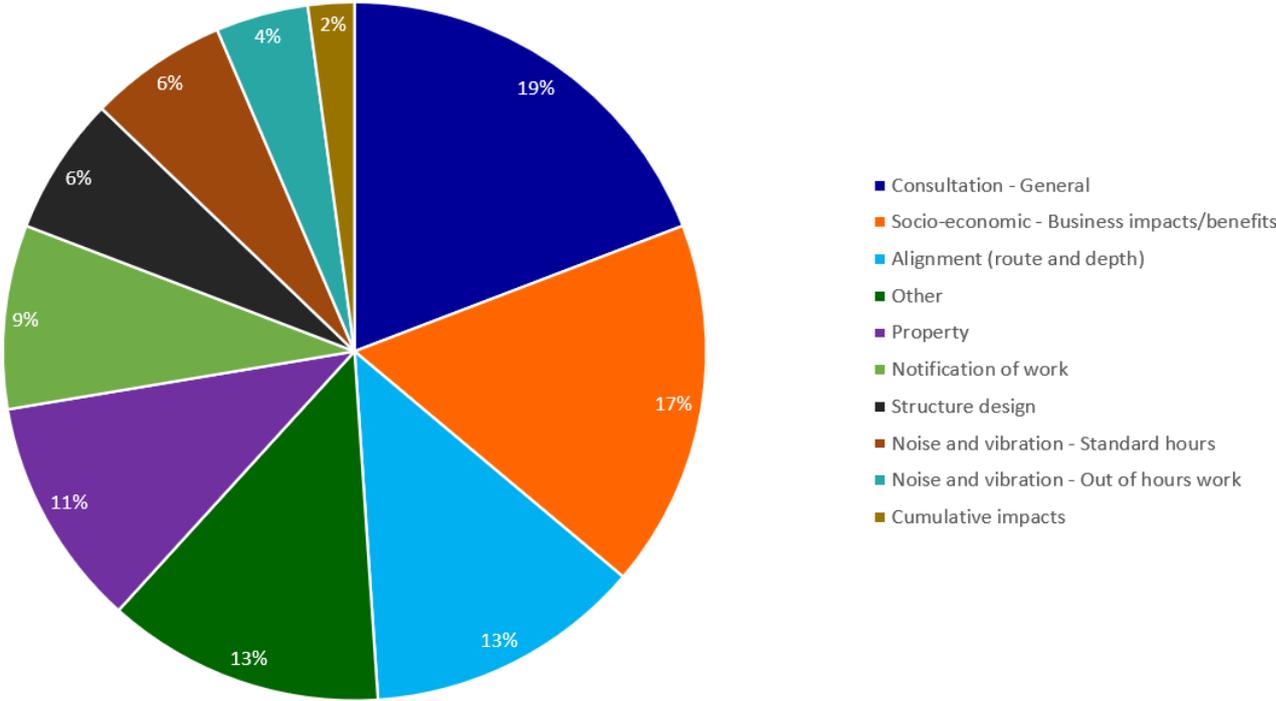


Figure 3-3 Key topics during exhibition

3.2.7 Place managers

Sydney Metro West’s place managers play a vital role in building and maintaining strong relationships with local communities and businesses during the planning and delivery of the project. Their key role is to engage with the community, address concerns and provide accurate and transparent information to ensure the community’s understanding of the project and any potential impacts.

At the start of the Environmental Impact Statement exhibition, place managers reached out to hundreds of community members, businesses, councils, schools, adjoining projects and community groups to inform them of the exhibition, to answer questions and to encourage them to make a submission. Place managers maintained regular contact with community members throughout the exhibition period and where required, organised phone briefings and virtual meetings with subject matter experts to provide further information. Place managers also responded to questions, provided assistance in locating answers in the Environmental Impact Statement chapters and emailed or organised printed sections from the Environmental Impact Statement on request.

Place managers will continue to play a vital role in maintaining close and ongoing contact with local communities and stakeholders during the design and delivery of Sydney Metro West.

Place managers can be contacted via the community information line (1800 612 173) or project email (sydneymetrowest@transport.nsw.gov.au).

3.2.8 Engagement materials

The following tools and materials were developed to engage with stakeholders and support the exhibition of the Environmental Impact Statement including:

- Media release
- Newspaper advertisements
- Phone calls and emails
- E-newsletter alerts to the project mailing list
- Virtual meetings
- Interactive portal
- Sydney Metro website
- Letterbox drops
- Social media
- Environmental Impact Statement summary booklets
- Translated materials
- Planning documents (hard-copy delivered as required)
- Project information magnets
- Printed copies of the Environmental Impact Statement.

Media releases

Rob Stokes, the then Minister for Transport, issued a media release on 3 November 2021 titled: ‘Have your say on Sydney Metro West’ and encouraged the community to provide feedback on the Environmental Impact Statement until 15 December 2021.

Advertising

A number of advertisements were placed in various newspaper outlets to promote the Environmental Impact Statement exhibition period. Table 3-4 outlines the full list of newspaper advertisements.

Table 3-4 Newspaper advertisements

Media outlet	Date	Readership
Australian Chinese Daily	5 November	42,000
Sydney Korean Herald	5 November	31,000
Ruam Thai	17 November	15,000
Chieu Duong	6 November	45,000
City Hub	11 November	75,000

E-newsletters and letterbox drops

On 3 November 2021, an email alert with an e-newsletter titled “Sydney Metro West Project Update” was sent to more than 16,000 community members registered on the Sydney Metro West project database. The email advised of the Environmental Impact Statement exhibition dates and encouraged recipients to visit the project website for more information.

Follow-up emails were also sent out to the community encouraging them to review the project information and to make a submission on the following dates:

- 11 November – Titled “Sydney Metro Project Update” and sent to 33,000 people
- 1 December – Titled “Sydney Metro West Project Update” and sent to 18,000 people.

Letterbox drops to 25,000 properties and businesses near proposed construction sites and the proposed tunnel alignment took place, enclosing newsletters “Major civil construction between The Bays and Sydney CBD – Environmental Impact Statement”. Project information magnets, featuring project contact details were also delivered on a separate occasion to 25,000 properties and businesses. The newsletter provided a snapshot of the key features of the Environmental Impact Statement, including contact details for Sydney Metro West and outlined how the community could have their say on the project by making a submission via the Department of Planning and Environment major projects website.

To cater for the culturally and linguistically diverse community, the newsletter was translated into seven local languages, including Korean, Chinese, Vietnamese, Hindi, Thai, Malay and Japanese. Translated versions of the newsletter were provided on the project website.

Environmental Impact Statement summary booklets

An A3 size full colour summary booklet of the Environmental Impact Statement was created to provide a summary of the information in the Environmental Impact Statement. The booklet was downloaded more than 500 times from the interactive portal and Sydney Metro website. A QR code linking to the book was also made available on project newsletters. All documents, including individual Environmental Impact Statement chapters and Technical Papers, were available to download online via the interactive portal.

A print-on-demand service was made available to community members who did not have online access or preferred to access the information via hard-copy. Hard-copy Environmental Impact Statement chapters and translated newsletters were mailed to community members and documents were also provided on USB sticks on request.

Sydney Metro website

The Sydney Metro website was regularly updated with detailed project information throughout the exhibition period. The website provided a link to the interactive portal and downloadable documents, including the Environmental Impact Statement summary booklet and newsletter.

The Sydney Metro West web page received over 11,000 page views were downloaded throughout the exhibition period.

3.3 Ongoing consultation and engagement

3.3.1 Submissions Report

Sydney Metro will submit this Submissions Report to the Department of Planning and Environment. The report will be made available to the public on the Department of Planning and Environment’s website.

Government agencies, project stakeholders and the community will be able to review the report online. The Department of Planning and Environment will review the Submissions Report as part of their assessment of the Environmental Impact Statement.

Sydney Metro will notify the community about the Submissions Report via the following communication channels:

- Direct emails to community members and stakeholders
- Key stakeholder briefings
- Updates on the Sydney Metro website and interactive portal
- Stakeholder outreach by place managers.

3.3.2 Project approval

If the project is approved, the conditions of approval would be placed on the Department of Planning and Environment’s website.

Communication tools used to assist the community in their understanding of the approval would include:

- Media release
- Direct emails and newsletters distributed to the community
- Sydney Metro website and interactive portal updates
- Stakeholder outreach by place managers
- Social media posts.

3.3.3 Ongoing consultation and engagement activities

Sydney Metro will continue to work with stakeholders and the community to ensure they are informed and have opportunities to provide feedback to the Sydney Metro West team during each stage of the project.

Sydney Metro recognises the diverse engagement and information needs of the community and stakeholders and is committed to robust and transparent engagement processes that are inclusive in nature.

Table 3-5 outlines the planned engagement before and during construction, if approved. Table 3-5 is intended as a guide and would be updated with more detail closer to the start of construction.

Table 3-5 Ongoing and future engagement

Activity	Timing
Awareness and marketing campaign to engage future customers	Ongoing
Community events (pending public health order restrictions)	Ongoing
Community information sessions (in person (pending public health order restrictions) and virtually)	As required
Community Communications Strategy	Prior to construction
Construction complaints management system	Prior to construction
Construction notifications	Seven days prior to construction
Door knocking	As required
Email updates/e-newsletters	Relevant milestones
Enquiries and complaints hotline	Ongoing

Activity	Timing
Fact sheets	As required
Engagement with stakeholders including government, peak bodies and local businesses	As required; relevant milestones
Interactive portal	Ongoing
Media releases	Relevant milestones
Newsletter	Relevant milestones
Newspaper advertising	Relevant milestones
Online webinars, meetings and forums	As required
Place managers	Ongoing
Project briefings (in person (pending public health order restrictions) and virtually)	Relevant milestones
Project overview document	Relevant milestones
Site signage	Prior to construction
Social media updates	As required; relevant milestones
Sydney Metro Connect mobile application push notifications	As required
Virtual information room	Relevant milestones
Website and online forums	Ongoing

Future communications plans will be developed to ensure the community is aware and engaged at subsequent assessment and approval stages of the project.

3.3.4 Consultation and complaints during construction

The Sydney Metro *Overarching Community Communications Strategy* sets the requirements for community and stakeholder engagement to be carried out by delivery partners (provided in Appendix B of the Environmental Impact Statement). Contract specific Community Communication Strategies will be developed by appointed project delivery communication teams to address contract and site-specific needs of the community, stakeholders and businesses, and reflect the requirements of the Sydney Metro *Overarching Community Communications Strategy*. The contract specific Community Communications Strategies will also adhere to any requirements identified in any relevant conditions of the planning approval.

Contractors will be required to adhere to a Construction Complaints Management System which will outline the framework for managing complaints, enquiries and escalation processes throughout the project lifecycle.

4 Analysis of submissions

This chapter provides a summary of the submissions received, including a breakdown of the types of submitters, the number of submissions received, and key issues raised in submissions.

4.1 Submissions received

During the Environmental Impact Statement exhibition period, submissions were invited from the community and other stakeholders. The receipt of submissions was coordinated and managed by the Department of Planning and Environment.

A total of 18 submissions, including community, organisation and public authority submissions, were received by the Department during the exhibition period. In addition to these submissions, the Department also received government agency advice regarding the project from several government agencies (refer to Section 4.1.3 of this Submissions Report). The submissions and government agency advice are available to be viewed on the Department of Planning and Environment website mpweb.planningportal.nsw.gov.au/major-projects/project/41851.

A breakdown of submissions by submitter type is provided in Table 4-1.

Each submission was allocated a unique identification number. Appendix A includes a table which lists each submission by this identification number and provides a cross-reference to the section of this report where the issues that were raised are addressed.

Table 4-1 Breakdown of submissions received

Submitter type	Number of submissions
Community	9
Organisation	7
Public authority	2
Total submissions	18

4.1.1 Community and organisation submissions

Community submissions

A total of nine submissions were received from members of the community, including those from individual community members and residents.

For the nine community submissions, a breakdown of the submitters' location (where provided) is summarised in Table 4-2.

Table 4-2 Submitter locations for community submissions

Location (local government area)	Number of submitters from location
Inner West	1
Sydney	6
Outside of the project area	2

Organisation submissions

A total of seven submissions were received from interest groups and organisations during the exhibition period. Organisation submissions included those from:

- Businesses
- The Royal Botanic Gardens and Domain Trust
- Local community and other interest groups, including:
 - Pyrmont Action Inc
 - Friends of Ultimo
 - Action for Public Transport (NSW) Inc
 - Sydney Olympic Park Business Association Inc.

For the seven organisation submissions, a breakdown of the submitters' location (where provided) is summarised in Table 4-3.

Table 4-3 Submitter locations for organisation submissions

Location (local government area)	Number of submitters from location
Inner West	0
Sydney	4
Outside of the project area	3

4.1.2 Public authority submissions

Two submissions were received from public authorities during exhibition of the Environmental Impact Statement (excluding NSW Government agencies that provided direct advice to the Department of Planning and Environment):

- Inner West Council
- City of Sydney.

4.1.3 Government agency advice

The Department of Planning and Environment received advice regarding the project from the following NSW Government agencies:

- NSW Environment and Heritage Group (previously the Environment, Energy and Science Group) - Biodiversity
- NSW Environment and Heritage Group - Flooding
- Heritage NSW, Department of Premier and Cabinet (Heritage NSW)
- Place Management NSW
- NSW Environment Protection Authority.

4.2 Analysis of submissions

4.2.1 Issue categorisation

The analysis of submissions included reviewing the content in each submission to identify the issues raised and code each issue raised into key issue categories (e.g. noise and vibration) and sub-issues (e.g. assessment methodology). The key issue categories and sub-issues were based on the information and environmental aspects included in the Environmental Impact Statement. This provided an understanding of the frequency of the issues that were raised and the key areas of interest. Several submissions also raised items which aligned with more than one category.

4.2.2 Review of community and organisation submissions

Following the categorisation of each community and organisation submission, the issues raised were summarised and grouped according to the key issue and sub-issue categories. Each issue identified in Chapter 5 (Community submissions) of this Submissions Report is presented as a summary of the issues raised by individual submissions with careful consideration given to the intent of each submission.

Responses to the summarised issues are provided in Chapter 5 (Community submissions) of this Submissions Report according to these categories. Where relevant, input was sought from the technical specialists who assisted with the preparation of the Environmental Impact Statement.

4.2.3 Review of public authority submissions

Following categorisation of each submission received from public authorities (Inner West Council and the City of Sydney), the issues within each submission were summarised. These issues and responses to the issues raised are provided in Chapter 6 (Public authority submissions and agency advice) of this Submissions Report. Where relevant, input was sought from the technical specialists who were involved with the preparation of the Environmental Impact Statement.

4.2.4 Review of Government agency advice

Government agency advice letters are not treated as formal submissions by the Department of Planning and Environment, however, have also been reviewed and responses presented in Chapter 6 (Public authority submissions and agency advice). Issues raised by government agencies are not included in the analysis of key issues raised by the community in Section 4.3 of this Submissions Report.

4.2.5 Support/objection to the project

Submitters from the community, interest groups, organisations and public authorities were asked to indicate whether their submission supported or objected to the project or provided comments via the Department of Planning and Environment major projects portal website as part of the submission registration process. The breakdown of support, objections or comments are as follows:

- Five submissions supported the project
- Four submissions objected to the project
- Nine submissions provided comments.

4.3 Summary of issues raised

4.3.1 Key issues raised in community and organisation submissions

A breakdown of the key issues raised in unique community and organisation submissions is provided in **Table 4-4** by key issue category. Given some submissions raised more than one issue or the same issue more than once, the number of issues identified is greater than the total number of submissions received. Key issues were raised a total of 68 times in the unique community and organisation submissions.

Table 4-4 Key issues raised in community and organisation submissions

Key issue category	Number of times key issue was raised	Percentage (%) of total key issues
Support for the project	7	10
Planning and assessment process	2	3
Strategic need and justification	5	7
Development and alternatives	1	1
Planning and assessment process	2	3
Stakeholder and community engagement	7	10
Project description	1	1
Transport and traffic	4	6
Noise and vibration	6	9
Non-Aboriginal heritage	3	4
Landscape character and visual amenity	1	1
Business impacts	4	6
Social impacts	1	1
Human health and safety	1	1
Biodiversity	2	3
Air quality	1	1
Utilities	1	1
Spoil, waste management and resource use	1	1
Cumulative impacts	2	3
Beyond the scope of the Environmental Impact Statement	18	26

Support for the project was received from seven community and organisation submissions. The top three most frequently raised key issues relating to the project in the community and organisation submissions are:

- Stakeholder and community engagement
- Noise and vibration
- Strategic need and justification.

A breakdown of the sub-issues for stakeholder and community engagement is provided below in Figure 4-1 and includes the following:

- Community consultation – Including recommendations for the Community Communications Strategy, requests for direct consultation with Sydney Metro, concern about community consultation associated with site investigations, and a request for on-site information days for locals
- Stakeholder consultation – Including requests for participation in the stakeholder consultation process, and concern about major planning decisions being made without effective consultation
- Emergency services consultation – Including a request for early discussion with an emergency service provider to ensure access to and from the facility is maintained.

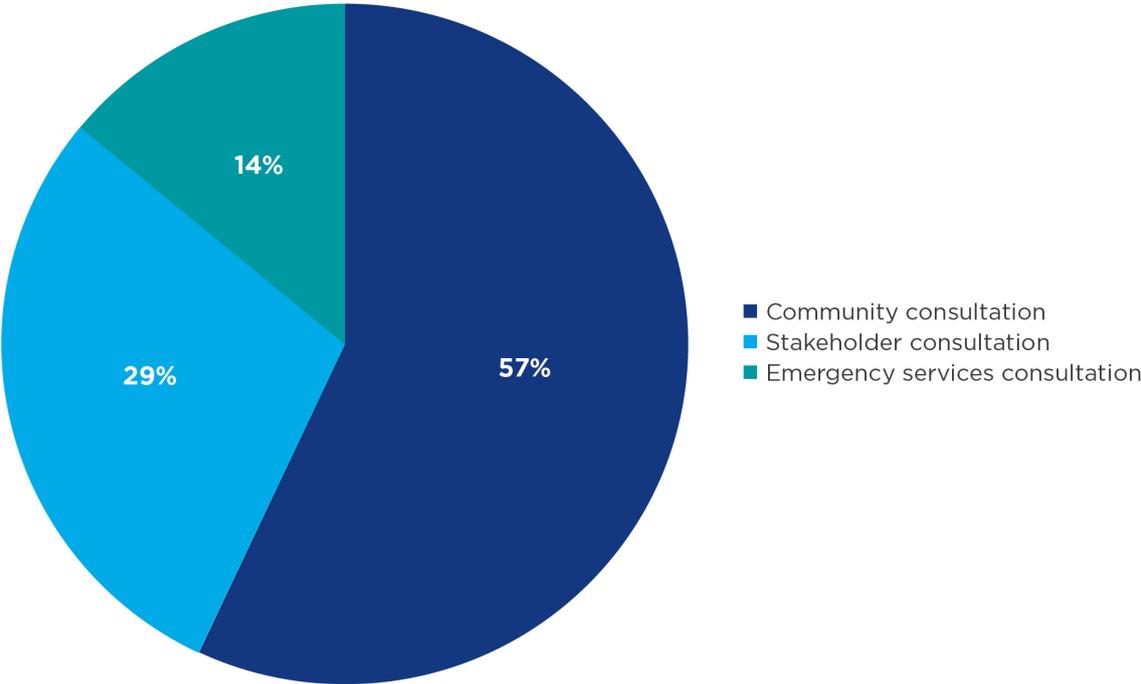


Figure 4-1 Breakdown of sub-issues relating to stakeholder and community consultation

A breakdown of the sub-issues for noise and vibration is provided below in Figure 4-2 and includes the following:

- Mitigation, management and monitoring – Including the provision of temporary alternative accommodation, double glazing and noise absorbing panels, inspections of buildings prior to work commencing, and the installation of permanent noise monitoring equipment
- Construction traffic noise – Including concern about noise and vibration impacts associated with construction traffic and how these will be mitigated.

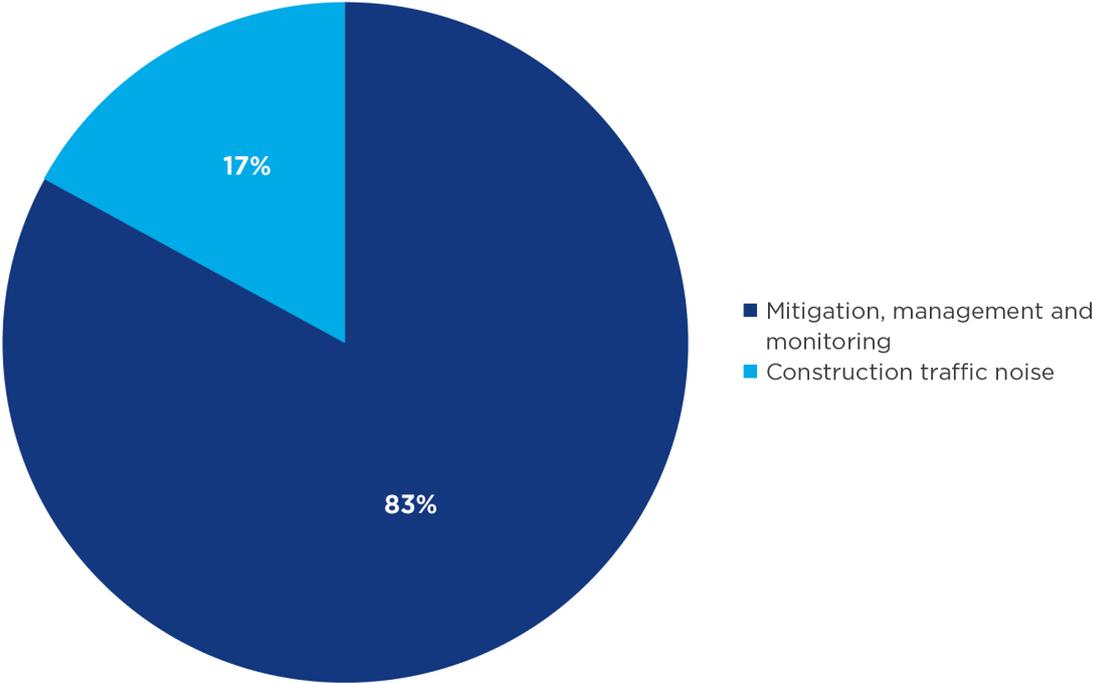


Figure 4-2 Breakdown of sub-issues relating to noise and vibration

A breakdown of the sub-issues for strategic need and justification is provided below in Figure 4-3 and includes the following:

- Strategic need – Including the need for a station at Pyrmont, the need to determine the overall direction for Greater Sydney, and future extensions of Sydney Metro West
- Project cost – Including requests for Pyrmont Station to be financed by the NSW State Budget.

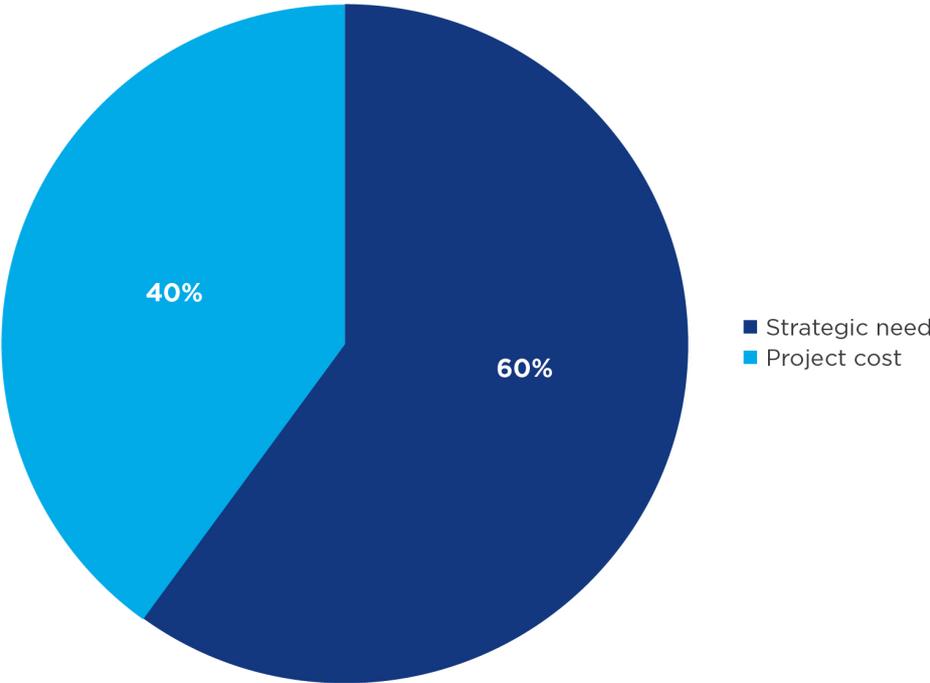


Figure 4-3 Breakdown of sub-issues relating to strategic need and justification

4.3.2 Location based issues summary

A breakdown of issues raised by location is provided in Table 4-5. This table shows a breakdown of the number of issues raised that could be attributed to a specific location or station. Given some issues referred to more than one station location, the total number of issues raised by location is larger than the total number of issues raised. The number of issues raised relating to areas outside of the project and non-location specific issues are also shown. Location specific issues have been grouped according to the suburbs in which the proposed construction work would be located.

Table 4-5 Number of issues raised by location relating to the project

Location	Number of issues raised relevant to location	Percentage (%) of total number of issues raised
Sydney CBD (Hunter Street)	6	9
Pyrmont	28	41
Non-location specific issues	34	50

4.3.3 Key issues raised in public authority submissions and Government agency advice

The most frequently raised issues in public authority submissions (Inner West Council and City of Sydney) included:

- Construction hours and construction noise
- Contamination impacts
- Waste, resource use and spoil management
- Approach to mitigation, management and monitoring
- Community and stakeholder consultation, including the need for ongoing consultation with councils
- Impacts on trees and other vegetation
- Haul routes and traffic control
- Public transport impacts
- Sustainability.

The most frequently raised issues in Government agency advice (which generally reflects their areas of responsibility) included:

- Non-Aboriginal heritage impacts, particularly the assessment approach and proposed mitigation, management and monitoring
- Contamination impacts, particularly the assessment approach and proposed mitigation, management and monitoring
- Hydrology and flooding, particularly the assessment approach
- Noise and vibration, particularly the assessment, the categorisation of results and proposed mitigation and management
- Soils and surface water quality, particularly the assessment approach and proposed mitigation, management and monitoring.

5 Community submissions

This section provides responses to issues raised in submissions from the community, including community members, interest groups and organisations. Appendix A includes a table which lists each submission by its identification number and provides a cross-reference to the section(s) of this report where the issues that were raised are addressed.

5.1 Support for the project

Stakeholder identification numbers

S-31287790, S-32778273, S-32957238, S-33463183, S-33653820, S-33698045

Issue raised

Submitters expressed their support for the project.

Response

Sydney Metro notes the support expressed for the project.

5.2 Planning and assessment process

Stakeholder identification numbers

S-33608991, S-33660015

Issue raised

Submitters raised the following concerns and comments about the assessment process of this proposal:

- Request that environmental standards are elevated for this proposal and for all state significant projects
- Concern that the staged assessment process for Sydney Metro West has resulted in prior stages being determined before the determination of this proposal and future stages.

Response

This proposal has been assessed and prepared according to the Secretary's Environmental Assessment Requirements and all relevant environmental legislation, standards and policies. Changes to environmental standards for all state significant projects is beyond the scope of this proposal and the environmental impact assessment.

The planning applications and environmental impact assessment for Sydney Metro West has been staged in recognition of the size of the project. Staged infrastructure applications can be made under section 5.20 of the *Environmental Planning & Assessment Act 1979*. The staged approach taken is further described in Section 1.1.1 of the Environmental Impact Statement.

Adopting a staged approach and seeking sequential planning approvals for the project has several benefits and would allow:

- Additional time to consult with stakeholders on the Sydney Metro West Concept, tunnelling and station excavation for the project, allowing for feedback to influence design of these project components
- Additional time to consult with stakeholders on the end-state design of stations including urban design, transport integration and placemaking outcomes
- Each staged planning application to be focussed on the critical issues associated with the proposed work at specific locations. This would allow greater opportunity for specific feedback from the community
- Earlier commencement of critical construction activities which would allow Sydney Metro West to be delivered more efficiently, facilitating earlier realisation of the benefits of Sydney Metro West.

Community members, interest groups and organisations will have the opportunity to provide submissions on the future planning application for rail infrastructure, stations, precincts and operations (Stage 3 of the planning approval process) (currently on exhibition).

5.3 Strategic need and justification

5.3.1 Strategic need

Stakeholder identification numbers

S-33013852, S-33660015, S-33660015

Issue raised

Submitters raised the following concerns and comments about strategic need for this proposal:

- Concern that a metro station in Pyrmont may not be required given the impacts of COVID-19 on travel habits since the Sydney Metro West Concept was developed
- Comment that the objective of this proposal should be to take Greater Sydney in a certain direction and only after that direction has been identified can details be determined of what is needed to move there
- Suggestion that Sydney Metro West should keep future metro extensions in mind, and Hunter Street should be designed and built to facilitate early extension to the south-east.

Response

As described in Chapter 25 (Project justification and conclusion) of the Environmental Impact Statement, Sydney Metro West would provide city-shaping benefits. Sydney Metro West would more than double the rail capacity from Parramatta to the Sydney CBD with the delivery of a new high capacity rail connection. At ultimate capacity, Sydney Metro West would be able to move more than 40,000 people an hour in each direction and would complement the suburban and intercity services between Parramatta and the Sydney CBD. Sydney Metro West would result in train crowding relief on parts of the T1 Western Line and T9 Northern Line due to direct interchange with the Sydney Trains suburban network; as well as the T2 Inner West and Leppington Line services.

Analysis carried out by Sydney Metro found that train crowding at Redfern Station in 2036 would be reduced from 117 per cent to 82 per cent on the T1 Western Line, and from 100 per cent to 68 per cent on the T9 Northern Line. Reduced station crowding is expected at Parramatta, Epping, Strathfield and Burwood. Reduced station crowding is also expected within the Sydney CBD at Central, Town Hall and Wynyard stations.

The significant increase in transport connectivity, capacity and amenity in the Greater Parramatta to Sydney CBD corridor would provide city-shaping benefits, boosting the economic productivity of Sydney and unlocking planned land use outcomes in the CBDs, planned precincts and urban renewal areas.

Sydney Metro West would also provide a direct, fast, reliable and frequent connection between Greater Parramatta and the Sydney CBD and would:

- Provide city-shaping links between communities along the way that have previously not been serviced by rail
- Relieve the congested T1 Western Line, T9 Northern Line and T2 Inner West and Leppington Line
- Double the rail capacity between the Parramatta and Sydney CBDs
- Significantly boost economic opportunities for Greater Parramatta
- Support new residential and employment zones along the Greater Parramatta to Sydney CBD corridor – Providing improved transport for the additional 420,000 new residents and 300,000 new workers forecast to be located within the corridor over the next 20 years
- Allow customers fast and easy transfers with the T1 Western Line at Westmead, T9 Northern Line at North Strathfield and the Sydney Trains suburban rail network and Sydney Metro in the Sydney CBD
- Allow for transfers with the future Parramatta Light Rail (Stage 1) at Westmead and Parramatta, as well as the planned Parramatta Light Rail (Stage 2) at Sydney Olympic Park
- Create an anticipated 10,000 direct and 70,000 indirect jobs during construction (based on Sydney Metro analysis).

The Sydney Metro West stations at The Bays, Pyrmont and Hunter Street (Sydney CBD) would provide additional connections between these areas, western Sydney and the Sydney CBD, realising these benefits within surrounding communities.

The delivery of Sydney Metro West is critical to keeping Sydney moving and is identified in a number of key strategic planning documents including the *Greater Sydney Region Plan: A Metropolis of Three Cities – connecting people* (Greater Sydney Commission, 2018).

Sydney Metro West would be future proofed for potential extensions to the east and west. The provision of stub tunnels would allow for minimal disruption of the operating line during the construction of future extensions. Any future extensions would be guided by strategic plans including the *Future Transport 2056* strategy (Transport for NSW, 2018) and would be subject to a separate planning assessment process, including further community and stakeholder engagement.

5.3.2 Project cost

Stakeholder identification numbers

S-33463183, S-33608991

Issue raised

Submitters commented that Pyrmont Station should be funded by the NSW Station budget instead of by the Pyrmont Peninsula Special Infrastructure Contribution.

Response

The funding of the Sydney Metro West project is the responsibility of the NSW Government. The NSW Government has determined that a value share contribution mechanism would be applied to the Pyrmont Peninsula following the completion and operation of the Sydney Metro West project. The Pyrmont Peninsula Special Infrastructure Contribution would require some commercial property owners, other than small businesses, that benefit from increased land values associated with the new station to make an annual contribution to offset the cost of building the station.

The proposed special infrastructure contribution was exhibited for public feedback by the Department of Planning and Environment from 26 November 2021 to Friday 4 February 2022. DPE will review and consider all submissions received before finalising the Pyrmont Peninsula Special Infrastructure Contribution.

5.4 Development and alternatives

Stakeholder identification numbers

S-33660015

Issue raised

Submitters raised concern that Sydney Metro does not have enough stations in comparison to other metro networks.

Response

A number of additional station locations were considered between Westmead and the Sydney CBD as part of the project development. The analysis of station options and the outcome of this assessment is documented in Chapter 2 (Development and alternatives) of the Environmental Impact Statement and Chapter 3 (Sydney Metro West development and alternatives) of the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). Sydney Metro considered a range of factors including stakeholder feedback, alignment with key government priorities and project objectives, technical and construction consideration, affordability, economic evaluation and risk assessment to determine the number of stations required for the project.

A range of factors influence travel time, including the number and location of stations. The challenge of balancing the optimal number and location of stations with travel times has a direct influence over the land use outcomes, economic benefits, expanded customer catchments and increased network connectivity.

As described in Section 3.4 of the *Sydney Metro West Scoping Report – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2019), the number of stations selected was found to achieve a balance between an efficient travel time between Greater Parramatta and the Sydney CBD, and the ability to service a large catchment area and key precincts.

Sydney Metro West would provide a significant increase in transport connectivity, capacity and amenity in the Greater Parramatta to Sydney CBD corridor. Transport connections would be provided between Sydney Metro West and Westmead Station, Parramatta Station, Olympic Park Station and North Strathfield Station. The project would also provide access to connections with bus services at Burwood North and Five Dock, as well as walkable train, bus and light rail connections within the Sydney CBD.

5.5 Consultation

5.5.1 Community consultation

Stakeholder identification numbers

S-32778273, S-32798717, S-33013852, S-33218020

Issue raised

Submitters raised the following concerns and comments about community consultation:

- Suggestion that a mechanism to enable genuine consultation with people impacted by the project should be included in the Sydney Metro Overarching Community Communications Strategy. This could be similar to the Community Consultative Committee formed for the new Sydney Fish Market
- Request for consultation between Sydney Metro and Brookfield Properties, located at Brookfield Place near Hunter Street Station (Sydney CBD)
- Concern about noise impacts and limited community consultation associated with site investigations
- Request for Sydney Metro to host on-site information days to keep the community up to date on the progress of the project.

Response

Site investigations have been conducted surrounding Pyrmont and Hunter Street Station (Sydney CBD) construction sites to obtain further environmental information to inform future detailed design and construction planning. Site investigation work is preceded by a community notification process to advise nearby residents and businesses that the proposed site investigations are to be carried out and when. Site investigations work would be carried out during the day where practicable. Some work, requiring changed traffic conditions, would be required at night to minimise daytime traffic impacts. Sydney Metro will implement mitigation measures to minimise noise during night-time work, potentially including the use of acoustic blankets, the provision of respite periods from noisy work and the provision of alternative temporary accommodation for highly impacted residents.

During the Environmental Impact Statement exhibition period, submissions were invited from all members of the community and other stakeholders. Sydney Metro and its construction contractors will maintain an ongoing dialogue with community members and stakeholders near construction sites, to advise them of work that may result in potential impacts and communicate proposed mitigation and management measures. Dedicated Sydney Metro place managers for these areas will continue to engage with the community, address concerns, and provide accurate and transparent information about the project. Future engagement and consultation will be carried out in accordance with the Sydney Metro Overarching Community Communications Strategy (Appendix B of the Environmental Impact Statement).

Sydney Metro's overarching approach to business engagement is to:

- Identify and document potentially impacted businesses prior to project commencement
- Provide early advice to businesses of upcoming work
- Provide businesses with information about the project and its long terms benefits
- Provide businesses with information about construction progress
- Ensure businesses understand the scope of the work and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the work
- Consult with businesses and take steps to minimise potential impacts
- Ensure the project team understands the operational requirements and sensitivities of businesses around each site.

Sydney Metro ensures a personal approach is maintained when undertaking community engagement by having dedicated community relations specialists called Place Managers. Their role is to act as a single, direct contact between members of the community and the project team. As described in Chapter 3 (Stakeholder and community engagement) of this Submissions Report, Place Managers play a vital role in building and maintaining strong relationships with local communities and businesses during the planning and delivery of the project. Their key role is to engage with the community, address concerns and provide accurate and transparent information. As described in Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement, a Place Manager can be contacted for information specific to an area during the project development phase and during the design and delivery of Sydney Metro West. During construction, community members can contact the project team via a 24 hour project information line or via email.

Site-specific needs of the community, stakeholders and businesses will be addressed through a range of online and/or in person engagement tools including work notifications and newsletters, signage, meetings and doorknocks as outlined in Table 3-5 of Chapter 3 (Community and stakeholder engagement) of this Submissions Report.

Sydney Metro consulted with representatives of Brookfield Properties during the exhibition of this proposal. Sydney Metro will continue engagement with Brookfield when further information is available through future stages of the project.

5.5.2 Stakeholder consultation

Stakeholder identification numbers

S-33041474, S-33660015

Issue raised

Submitters raised the following concerns and comments about stakeholder consultation:

- Request that the Royal Botanic Garden and Domain Trust participate in the stakeholder consultation process where applicable and be notified of all project activities
- That this proposal was not justified following effective consultation.

Response

Sydney Metro West has been engaging with the community, stakeholders and industry since 2017. Feedback gathered has helped shape the project, including station locations. Sydney Metro will continue to work with the community and stakeholders to receive further feedback about the project. Sydney Metro's approach to consultation and engagement and activities carried out to inform project development is discussed in Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement.

During the Environmental Impact Statement exhibition period, submissions were invited from stakeholders and community members. Sydney Metro and its construction contractors will maintain an ongoing dialogue with community members and stakeholders near construction sites, to advise them of work that may result in potential impacts and communicate proposed mitigation and management measures. Dedicated Sydney Metro place managers for these areas will continue to engage with stakeholders, address concerns, and provide accurate and transparent information about the project.

Sydney Metro notes that consultation has been carried out to date with the Royal Botanic Garden and Domain Trust. Dedicated Sydney Metro place managers for these areas will continue to engage with the Trust throughout future stages of the project to address concerns and provide accurate and transparent information about the project.

Future engagement and consultation will be carried out in accordance with the Sydney Metro Overarching Community Communications Strategy (Appendix B of the Environmental Impact Statement) to work with the community, including providing information about mitigation and management measures.

5.5.3 Emergency services consultation

Stakeholder identification numbers

S-32778273

Issue raised

Submitter requested that consultation with Fire Services be carried out to minimise conflicts between construction activity at the Pymont Station western construction site and the ability of fire engines to depart via Pymont Street, which would necessitate travelling against one-way traffic.

Response

As per mitigation measure CI1, coordination and consultation with emergency service providers will occur where required to manage the interface of projects under construction at the same time. Sydney Metro will develop mitigation strategies (in consultation with relevant stakeholders) in order to manage potential impacts, which could include:

- Provision of regular updates to the detailed construction program, construction sites and haul routes
- Identification of potential conflict points with other construction projects
- Developing mitigation strategies in order to manage potential impacts.

Depending on the nature of the impact, this could involve:

- Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects
- Coordination of traffic management arrangements between projects. Emergency services (Police, Fire & Rescue and Ambulance) are invited to participate in the Metro West Traffic and Transport Liaison Group (TTLG) meetings which are held monthly.

An additional mitigation measure, TT17, has been included in Chapter 7 (Revised environmental mitigation measures). In accordance with TT17, emergency services will be consulted about proposed road network changes during construction. The potential for minimising the disruption to emergency services as a result of this proposal will be further investigated during detailed construction planning.

5.6 Traffic and transport impacts

5.6.1 Active transport, access and safety

Stakeholder identification numbers

S-33218020, S-32778273, S-33463183

Issue raised

Submitters raised the following concerns and comments about active transport, access and safety:

- Request that a zebra crossing is installed at the intersection of Edward Street and Pymont Bridge Road to improve safety for pedestrians during construction of this proposal
- Request that directional signage be installed at the corner of Pymont Bridge Road and Union Street to direct all cyclists travelling west to the Union Street cycleway, away from Pymont Bridge Road
- Suggest that a pedestrian tunnel should be provided to link the Western site with Blackwattle Bay, possibly linking with the existing Fish Market Light Rail stop
- Request that more information be given about walking distances between interchanges.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. Any proposal to develop surrounding areas, including the development of active transport connections beyond the construction of this proposal, is beyond the scope of this proposal and the Environmental Impact Statement.

The Sydney Metro Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report) provides the overall strategy and approach for construction traffic management. It establishes traffic management processes and traffic control techniques, including adjustments to traffic signals and establishment of signage and traffic calming measures near construction sites.

In accordance with mitigation measure T4, vehicle access to and from construction sites will be managed to maintain pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence. In accordance with mitigation measure TT5, road safety reviews or audits will be carried out at each construction site.

Figure 5-4 and Figure 5-5 of the Environmental Impact Statement show the guiding place and design principles for the Pymont and Hunter Street (Sydney CBD) stations. These figures include consideration of a 500 metre walking radius, which shows that:

- Four bus stops on Harris Street, one bus stop on Miller Street, and the Pymont Bay, The Star Sydney and the Sydney Fish Market light rail stop would be located within the 500 metre walking radius of Pymont Station
- Multiple bus stops including the Wynyard bus interchange, Castlereagh Street, Elizabeth Street and Pitt Street and rail services including Wynyard Station, the Sydney Metro Martin Place Station and Wynyard and Bridge Street light rail stop would be located within the 500 metre walking radius of Hunter Street Station (Sydney CBD).

Sydney Metro will continue to investigate active transport, access and safety concerns with relevant stakeholders, including Transport for NSW.

5.6.2 Construction traffic and congestion

Stakeholder identification numbers

S-32778273, S-33463183

Issue raised

Submitters raised the following concerns and comments about construction traffic and congestion impacts:

- Concern that peak traffic in Pymont often extends beyond the peak hours stated in the Environmental Impact Statement, including on weekends due to the weekend peak demand of the Sydney Fish Market
- Concern that this proposal would result in traffic impacts on local residents.

Response

Traffic impacts on local roads has been assessed in Chapter 6 (Transport and traffic) of the Environmental Impact Statement. The construction traffic impact assessment for this proposal is based on the analysis of existing traffic movements on the road network near each construction site to determine the current operational performance and model future scenarios with and without this proposal. Modelled peak periods were used to represent a worst-case scenario because during these periods the road network experiences the maximum background traffic demand and the available spare capacity on the road network is at its most limited. A comparison of weekday and weekend traffic volumes indicated that weekdays experience higher volumes. As a result, the peak traffic periods that have been modelled represent a worst-case scenario as during these periods the road network experiences the maximum background traffic demand, and the available spare capacity of the road network is at its most limited. This includes at Pymont, where the worst-case peak traffic was determined to be on weekdays, with weekends experiencing a lower peak.

Potential transport and traffic impacts of this proposal have been avoided and minimised wherever possible, primarily by identifying the most efficient and safe haul route to the arterial road network and minimising movements during existing network peak periods. There may be some potential temporary impacts to traffic performance on the road network due to the temporary addition of construction vehicles and temporary road closures as a result of this proposal. This would result in some deterioration of intersection performance around construction sites. It may also result in a minor increase in delays to road users, including bus services on routes around construction sites.

These potential construction traffic impacts will be managed in accordance with the Sydney Metro Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report) and specific mitigation measures to meet construction transport and traffic proposal outcomes identified in Chapter 6 (Transport and traffic) of the Environmental Impact Statement. Opportunities to minimise congestion impacts will be further determined in consultation with Transport for NSW.

5.7 Noise and vibration impacts

Stakeholder identification numbers

S-32778273, S-33463183, S-33608991

Issue raised

Submitters raised the following concerns and comments about construction noise and vibration impacts:

- Request that Sydney Metro provide temporary alternative accommodation during high impact periods for those whose sleep is disturbed by late night work. Double glazing of impacted residences should be considered
- Request that residents whose sleep is disturbed by night-time work should be offered appropriate respite accommodation, to be paid for by Sydney Metro
- Request that all buildings identified as likely to experience exceedance of human comfort vibration criteria be inspected prior to work commencing, particularly heritage buildings. The cost of inspections and rectifications should be paid for by Sydney Metro or Department of Transport
- Request that consideration should be given to construction noise mitigations, including temporary relocation and double glazing
- Request that permanent noise monitoring equipment be installed
- Request that noise absorbing panels should be installed to mitigate noise impacts to neighbours.

Response

The Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement) identifies respite measures that may be implemented, including alternative accommodation options for residents living in close proximity to construction work that are likely to experience high impacts over an extended period of time. Alternative accommodation would be determined on a case-by-case basis at no cost to the owner. Further, where it has been identified that specific construction activities are likely to exceed the relevant noise or vibration goals, noise or vibration monitoring may be conducted at the affected receiver(s) or a nominated representative location (typically the nearest receiver where more than one receiver have been identified). Monitoring can be in the form of either unattended logging or operator attended surveys. The purpose of monitoring is to inform the relevant personnel when the noise or vibration goal has been exceeded so that additional mitigation and management measures may be implemented.

As per mitigation measure NV09, feasible and reasonable measures will be implemented to minimise ground-borne noise where exceedances are predicted. This may require implementation of less ground-borne noise and less vibration intensive alternative construction methodologies. Mitigation measure NV11 requires preparation of an activity specific Construction Noise and Vibration Impact Statement for rockbreaking in the tunnel and at cross passages, specifically addressing the activity where it is required between 10pm and 7am.

As per mitigation measure NV13, where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure.

In accordance with mitigation measure NV14, condition surveys of buildings and structures near to the tunnel and excavations will be carried out prior to the commencement of excavation at each site, where appropriate. For heritage buildings and structures the surveys would consider the heritage values of the structure in consultation with a heritage specialist. The cost of inspections and rectifications (in the unlikely event that this is required) does occur to a non-Aboriginal heritage item, this would be rectified by the project at no cost to the owner.

Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive work will be investigated and implemented where feasible and reasonable, in accordance with mitigation measure NV02.

Sydney Metro will prepare Detailed Noise and Vibration Impact Statements in accordance with the Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement). In addition, the proposal specific mitigation measures in Chapter 7 (Noise and vibration) of the Environmental Impact Statement will be implemented to address potential noise and vibration impacts.

5.8 Impacts to non-Aboriginal heritage

Stakeholder identification numbers

S-32778273, S-33463183

Issue raised

Submitters raised the following concerns and comments about impacts to non-Aboriginal heritage:

- Request that measures to minimise vibration impacts to heritage items should be taken, including the use of smaller equipment and alternative methodologies
- Concern that the Pymont western construction site is within a heritage conservation area
- Concern that this proposal would result in vibration impacts to heritage buildings.

Response

Potential non-Aboriginal heritage impacts have been avoided and minimised where possible. This has included designing the station cavern excavation work at the Hunter Street Station (Sydney CBD) construction sites to retain and protect the Stage listed heritage item Skinners Family Hotel and avoid direct impacts on the State listed heritage item Tank Stream and Bennelong Stormwater Channel No 29A.

As described within Chapter 8 (Non-Aboriginal heritage) of the Environmental Impact Statement, built heritage impacts within the Pymont Station western construction site would result in moderate indirect impacts to the Pymont Heritage Conservation Area.

Potential impacts to built heritage items will be mitigated through design development and the implementation of mitigation measures, including archival recording and reporting, salvage and adaptive reuse opportunities. Where heritage items, including significant archaeology, are impacted by work associated with this proposal, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages.

Throughout detailed design development, the project team will look for opportunities to further minimise impacts to known heritage items.

Non-Aboriginal heritage impacts will be managed in accordance with the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement),

which includes heritage management objectives to minimise impacts on items or places of heritage value, avoid accidental impacts on heritage items, and maximise workers' awareness of Aboriginal and non-Aboriginal heritage. The Construction Environmental Management Framework also requires archival recordings of all non-Aboriginal heritage items affected by the work prior to commencement of work.

In locations where heritage items are adjacent to demolition, construction or excavation work, an assessment of potential direct impacts through vibration has been carried out as described within Chapter 8 (Non-Aboriginal heritage) of the Environmental Impact Statement. The vibration heritage impacts assessed ranged from neutral to moderate, with no significant vibration impacts anticipated. To minimise vibration impacts on heritage items with a potential vibration impact, further assessment (including a structural assessment) and vibration impact monitoring (if required) will be completed to ensure safe vibration levels for the structure are met.

Mitigation measures have been developed to minimise potential direct impacts such as impacts from vibration, subsidence, architectural noise treatment and demolition of adjoining structures. In accordance with mitigation measure NAH3, a method for the demolition of existing buildings and/or structures at specified construction sites will be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items. In accordance with mitigation measure NAH8, further assessments at later design stages and during detailed construction planning will be carried out where required to check the preliminary findings of the ground movement assessment in relation to listed heritage buildings. As per mitigation measure NV14, condition surveys of buildings and structures near to the tunnel and excavations will be carried out prior to the commencement of excavation at each site, where appropriate. For heritage buildings and structures the surveys will consider the heritage values of the structure in consultation with a heritage specialist.

In the unlikely event that accidental damage does occur to a non-Aboriginal heritage item, this would be rectified by the project at no cost to the owner.

In accordance with mitigation measure NV15, specific mitigation strategies will be developed to manage impacts. Depending on the nature of the impact, this could involve adjustments to construction program, equipment or activities of Sydney Metro West or of other construction projects. Where practicable, these adjustments will be carried out to minimise heritage impacts from vibration.

5.9 Impacts to business

Stakeholder identification numbers

S-32798717, S-33060493

Issue raised

Submitters raised the following concerns and comments about business impacts:

- Request for further information regarding the proposed closure of the Hunter Connection, including period of time, and details in relation to whether work are proposed to be carried out to the Hunter Tunnel itself and its end state, and potential impacts on retail tenants
- Request for a reassessment of the proposed closure of the Hunter Tunnel to consider the ability to maintain access and/or to minimise impacts on retail tenants
- Request that Sydney Metro commit to constructively consider other innovative ways Sydney Metro can assist retail tenants, including signage
- Concern that closure of the Hunter Connection would impact the Caveman Barbers business, which has also been recently impact by COVID-19 public health orders. Compensation is requested.

Response

The underground pedestrian walkway between Wynyard Station and Pitt Street would be closed to facilitate the excavation of the Hunter Street Station (Sydney CBD). The underground pedestrian walkway between Wynyard Station and Pitt Street is anticipated to be closed until the completion of the Sydney Metro West project and operation of the Hunter Street Station (Sydney CBD). Until this time, pedestrians using the tunnel would be diverted to the Wynyard surface entries on George Street and would instead access the surface pedestrian network to travel to their destination.

Impacts to businesses are described in Chapter 12 (Business impacts) of the Environmental Impact Statement. Overall, the nature of the businesses across the local business study areas and the existing environment suggests most of the businesses would be resilient to potential construction impacts. Opportunities for businesses during construction of this proposal include an increase in passing trade and potential redistribution of trade.

Sydney Metro will endeavour to minimise impacts on individual businesses during construction. Potential temporary business impacts associated with this proposal will generally be managed through appropriate mitigation of other aspects, such as noise, traffic, visual and air quality. In addition, a comprehensive range of mitigation measures will be implemented (refer to Chapter 7 (Revised environmental mitigation measures) of this Submissions Report). The mitigation measures include a commitment to small business owner engagement, the scheduling of planned power and utility interruptions outside of typical business hours, and minimising impacts to business visibility and accessibility where practicable. These measures will be implemented in accordance with the Sydney Metro Construction Environmental Management Framework, and the Sydney Metro Construction Noise and Vibration Standard (Appendices C and E of the Environmental Impact Statement).

The Sydney Metro Overarching Community Communications Strategy has been prepared to guide Sydney Metro's approach to stakeholder and community liaison including engagement with communities, stakeholders and businesses. This plan is provided in Appendix B of the Environmental Impact Statement.

In accordance with the Sydney Metro Overarching Community Communications Strategy and mitigation measure BI1, Sydney Metro will work with local businesses within proposal catchments to ensure communication and engagement is tailored to their specific needs.

Sydney Metro's overarching approach to business engagement is to:

- Identify and document potentially impacted businesses prior to project commencement
- Provide early advice to businesses of upcoming projects
- Provide businesses with information about the project and its long terms benefits
- Provide businesses with information about construction progress
- Ensure businesses understand the scope of the work and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the work
- Consult with businesses and take steps to minimise potential impacts
- Ensure the project team understands the operational requirements and sensitivities of businesses around each site.

Sydney Metro has a proven track record of working closely with the neighbouring communities on both Sydney Metro Northwest and Sydney Metro City & Southwest projects.

Sydney Metro carries out a rigorous process when planning construction activities and adheres to strict conditions to ensure construction impacts are minimised and mitigated.

Sydney Metro has proposed a series of mitigation measures to manage construction impacts resulting from this proposal as part of its application for relevant planning approvals and will be required to comply with those measures and any conditions of approvals. Financial compensation is not proposed.

Once construction starts, Sydney Metro will work closely with construction contractors to ensure all appropriate mitigation measures are implemented to reduce impacts on neighbouring businesses including potential opportunities to provide additional signage.

5.10 Social impacts

Stakeholder identification numbers

S-33660015

Issue raised

Submitter raised concerns that the consideration of the impact of the COVID-19 pandemic on travel habits in Technical Paper 6 (Social Impact Assessment) of the Environmental Impact Statement is not relevant to the assessment.

Response

COVID-19 public health orders have been considered throughout the social impact assessment included as Technical Paper 6 of the Environmental Impact Statement, the transport and traffic assessment included as Technical Paper 1 of the Environmental Impact Statement and the business impact assessment included as Chapter 12 (Business impacts) of the Environmental Impact Statement. The Environmental Impact Statement acknowledges that COVID-19 public health orders and flexible and remote working arrangements have resulted in altered travel and tourism patterns and has impacted businesses which are likely to rely on CBD workers as customers. Given that these patterns may continue during the construction of this proposal, they have been taken into account to fully assess the social and business impacts of this proposal.

The NSW Government have announced a range of measures to promote economic recovery including stimulus and support measures. These strategies are expected to assist a strong consumer and business-led recovery, creating jobs and restoring confidence. Future travel patterns during operation of Sydney Metro West have also been considered in the Environmental Impact Statement including potential capacity. For example, once operational Hunter Street Station (Sydney CBD) would have the busiest city-bound platform across the entire Sydney rail network in the morning peak, taking pressure off Wynyard and Town Hall. Sydney Metro West is also anticipated to take pressure off the T1 line, the T9 line and existing stations, including the busiest CBD stations, Strathfield Station and Parramatta Station.

5.11 Health impacts

Stakeholder identification numbers

S-33608991

Issue raised

Submitter raised concerns that late night construction work would result in sleep deprivation, resulting in human health impacts.

Response

Sydney Metro will work closely with the community during construction via Place Managers. Dedicated Sydney Metro place managers for these areas will continue to engage with the community, address concerns, and provide accurate and transparent information about the project. Future engagement and consultation will be carried out in accordance with the Sydney Metro Overarching Community Communications Strategy (Appendix B of the Environmental Impact Statement).

Sydney Metro is committed to minimising construction noise impacts to the greatest extent practicable by implementing the Sydney Metro Construction Noise and Vibration Standard, adopting appropriate work practices and sourcing fit-for-purpose plant and equipment.

Common mitigation measures for noise and vibration can include:

- Providing scheduled respite periods during which high noise or vibration activities are avoided
- Using physical barriers to dampen noise
- Adopting alternative construction methodology where possible.

Sydney Metro and construction contractors will also work together with affected community members to provide other forms of respite for ongoing night work, which may include sleep respite accommodation. The community will be provided with advanced notice of planned construction hours and work.

A sleep disturbance assessment has been carried out for all construction sites. This assessment will be further refined using specific detail of the construction methodology with the preparation of activity-specific or location-specific Construction Noise and Vibration Impact Statements, which will calculate the maximum night-time noise levels for comparison against the sleep disturbance screening criterion to determine the likelihood of potential sleep disturbance. If the screening criterion is exceeded, then feasible and reasonable noise mitigation will be implemented.

Chapter 7 (Noise and Vibration) of the Environmental Impact Statement includes a number of mitigation measures to minimise potential impacts associated with construction noise and vibration impacts on nearby sensitive receivers. As per NV05, air brake silencers will be used on heavy vehicles that access construction sites multiple times per night or over multiple nights. As per mitigation measure NV06, perimeter site hoarding will be designed with consideration of on-site heavy vehicle movements with the aim of minimising sleep disturbance impacts. Appendix E (Sydney Metro Construction Noise and Vibration Standard) of the Environmental Impact Statement identifies a range of standard mitigation measures that will be applied to all metro construction projects. These include behaviour practices which strictly prohibit unnecessary use of horns, shouting and the use of loud stereos or radios.

5.12 Vegetation removal

Stakeholder identification numbers

S-33608991

Issue raised

Submitter raised the following concerns and comments about vegetation removal:

- Street trees should be retained, regardless of whether they are native or not, as they are nesting areas for Currawongs
- Street trees should be relocated and replanted instead of being destroyed
- Local Native Wildlife Toolbox Meetings and forms should be implemented.

Response

This proposal would be located within a highly urbanised area that does not possess large expanses of intact native vegetation with high biodiversity value. Vegetation clearing has been largely avoided through the design of this proposal, with clearing of trees avoided where practicable. Most street trees would be retained along Pymont Street, Paternoster Row, Edward Street and Pymont Bridge Road.

While this proposal has sought to largely avoid or minimise impacts to terrestrial biodiversity, including street trees, it would result in the removal of up to 16 trees (seven planted native trees and nine exotic trees). This includes six trees within the construction sites and ten street trees.

As described in Section 11.9.2 of the Environmental Impact Statement, the Conditions of Approval for the Sydney Metro West Concept include requirements for the Sydney Metro West project to replace trees at a 2:1 ratio which will be implemented across the Sydney Metro West project.

Tree planting would be further considered and carried out during future stages of the project. Where relevant, tree planting would be carried out with reference to the Inner West Council Street Tree Master Plan and the City of Sydney Street Tree Masterplan.

Mitigation measures will be implemented to further minimise or avoid potential biodiversity impacts. This includes pre-clearing surveys which includes checking trees for the presence of nests or hollows and the presence of fauna, removal of vegetation in accordance with relevant guidelines, implementation of weed management and mitigation measures and the implementation of an unexpected finds protocol for threatened flora or fauna. These measures would be communicated in toolbox talks where necessary.

Sydney Metro will engage a suitably qualified project arborist to assess street trees that would be pruned as a result of this proposal or have the potential to be impacted as a result of this proposal. The project arborist will provide advice on measures to minimise damage to ensure the health and stability of trees that would be retained and protected. A commitment to this has been included as new mitigation measure B2 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

5.13 Air quality impacts

Stakeholder identification numbers

S-33463183

Issue raised

Submitter raised concerns that this proposal would result in dust impacts to local residents.

Response

Sheds will be installed at both the western and eastern Pymont Station construction sites. Earthwork activities at the Pymont Station construction sites would be completed within these fully enclosed sheds, which will capture dust generated from construction activities at these sites, limiting the extent of emissions to air at both locations. Additionally, dust filtering systems will be installed on the shed exhaust.

As per mitigation measure AQ1, best-practice dust management measures will be implemented during all construction work, including:

- Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather
- Adjust the intensity of activities based on measured and observed dust levels and weather forecasts
- Minimise the amount of material stockpiled and position stockpiles away from surrounding receivers
- Regularly water haul roads and exposed areas and ensure that all loads are covered
- Regularly inspect and, as necessary, remove any loose materials tracked along haul routes
- Regularly inspect dust emissions and apply additional controls as required
- Implement all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each construction site.

The Construction Environmental Management Framework included as Appendix C of the Environmental Impact Statement requires the preparation of an Air Quality Management Plan which will include further detail regarding measures to monitor and address air quality impact during construction. Coordination and consultation with stakeholders will occur where required to manage the interface of projects under construction at the same time, in accordance with mitigation measure CI1.

5.14 Impacts to utilities

Stakeholder identification numbers

S-32778273

Issue raised

Submitter requested that streetscapes impacted during construction should have their utilities upgraded by the undergrounding of services and removal of poles and wires during construction of this proposal.

Response

Some protection and/or relocation of utilities could be carried out as enabling work for this proposal. Protection and/or relocation of utilities would be solely related to work associated with Sydney Metro West, and no broader adjustments or relocation or utilities underground is proposed.

Utilities would need to be adjusted, relocated and/or protected where there is a possibility they would otherwise be impacted by construction. Utilities which may require protection and/or relocation include water, sewer, stormwater, drainage, recycled water, electricity, gas and communications assets.

Where an existing utility conflicts with the proposed design, it may be necessary to:

- Provide physical protection for the utility where the utility is not directly affected but may be indirectly affected by vibration or accidental impact
- Modify construction methods to avoid impacting a nearby utility
- Wrap and support the utility service to provide mechanical protection
- Relocate the utility outside the construction site
- Abandon the utility.

High voltage power supply would be required at the Pyrmont Station construction sites, and would be transmitted underground from the Pyrmont sub-station as described in Section 5.6.5 of the Environmental Impact Statement.

Sydney Metro will appoint a utilities coordination manager to coordinate the delivery of the utility work. The utilities coordination manager will:

- Establish a Utilities Working Group with nominated representatives from utility service providers that may be impacted
- Review design and construction methodologies to assist with identifying potentially impacted utility assets
- Assist with coordination of design and construction methodology reviews by utility service providers to identify necessary utility work
- Communicate with the working group and Sydney Metro's contractors' delivery teams to understand the proposed program of work to coordinate intercepting, interconnecting and interrelated work and manage priorities as they may arise
- Observe utility work, where relevant
- Manage escalation of utility work-related issues within Sydney Metro and the utility service providers as required.

5.15 Recycling and reuse

Stakeholder identification numbers

S-33608991

Issue raised

Submitter requested more information about the recovery and reuse of building and demolition materials.

Response

Based on the construction performance of Sydney Metro Northwest and Sydney Metro City & Southwest, Sydney Metro West will adopt a construction waste recycling target of 95 per cent.

Section 20.5.3 of the Environmental Impact Statement outlines the likely main construction waste streams for this proposal. Potential waste management issues are manageable through standard mitigation measures. These measures will be developed in accordance with the Sydney Metro West Sustainability Plan (refer to Chapter 22 (Sustainability, climate change and greenhouse gas) of the Environmental Impact Statement) and the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) which requires the Principal Contractor to develop a waste management plan to address the following:

- Classification of waste in accordance with the current guidelines
- Handling of waste including measures to facilitate segregation of waste into stockpiles of concrete, steel, timber, paper and cardboard and vegetation to make it easier to recycle components and prevent cross contamination
- Management of waste
- Waste minimisation and reuse
- Lawful disposal or recycling locations for each type of waste using a hierarchy which prioritises higher value end use
- Contingencies for the above, including managing unexpected waste volumes.

5.16 Cumulative impacts

Stakeholder identification numbers

S-32778273, S-33463183

Issues raised

Submitters raised the following concerns and comments about cumulative impacts:

- Concern that there may be cumulative traffic and noise impacts arising from the construction of Pyrmont Station, The Star Sydney and the Sydney Fish Market
- Concern that the Environmental Impact Statement fails to assess cumulative impacts associated with other major projects
- Request that Sydney Metro work with other construction companies to ensure that cumulative construction impacts are avoided
- Request that a cumulative study should be carried out of the new Sydney Fish Market, the Blackwattle Bay Development and The Star Sydney.

Response

Cumulative impacts were considered throughout the Environmental Impact Statement as part of the assessment of environmental impacts. This included the assessment of cumulative traffic and noise impacts in Chapters 6 (Transport and traffic) and 7 (Noise and vibration) of the Environmental Impact Statement respectively.

Appendix G of the Environmental Impact Statement describes the assessment methodology of the cumulative impact assessment. In summary, projects considered for cumulative impacts include:

- Projects located in the same local government areas as this proposal
- Major transport infrastructure projects, including public transport projects and road projects
- Large-scale urban development projects and other infrastructure projects.

A detailed screening criteria was then applied to determine which projects should be taken forward to the cumulative impact assessment. Projects considered included the new Sydney Fish Market. While there is some publicly available information on other proposals near The Bays tunnel launch and support site and the Pyrmont Station construction sites, these proposals were not included in the cumulative impact assessment as they are not currently approved or the subject of a planning application.

As per mitigation measure CI1, coordination and consultation with the following stakeholders will occur where required to manage the interface of projects under construction at the same time:

- Other parts of Transport for NSW
- Department of Planning and Environment
- Port Authority of NSW
- Local government
- Emergency service providers
- Utility providers
- Construction contractors.

Sydney Metro will develop mitigation strategies in order to manage impacts, which could include:

- Provision of regular updates to the detailed construction program, construction sites and haul routes
- Identification of key potential conflict points with other construction projects
- Developing mitigation strategies in order to manage conflicts.

Depending on the nature of the impact, this could involve:

- Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects
- Co-ordination of traffic management arrangements between projects.

5.17 Beyond the scope of the Environmental Impact Statement

5.17.1 Sydney Metro West Stage 1 and Concept

Stakeholder identification numbers

S-31221915, S-31671441, S-33660015

Issues raised

Submitters raised the following concerns and comments about the Sydney Metro West Stage 1 and Concept:

- Additional stations should be provided at Newington/Silverwater and between Five Dock Station and The Bays Station
- The positioning of metro stations should provide better connections to heavy rail and other network lines. Two stations at Burwood are not required and other locations would be better serviced by stations
- Sydney Metro West does not have enough stations.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. The Sydney Metro West Concept, including the number of stations, and the route between Westmead and The Bays was assessed as part of the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). The development and alternatives of the route west of The Bays is further discussed in Chapter 3 (Sydney Metro West development and alternatives) of that document. As this work has subsequently been approved, it does not form part of this proposal.

5.17.2 Other public transport projects

Stakeholder identification numbers

S-31878504, S-32778273, S-33463183

Issues raised

Submitters raised the following concerns and comments about other public transport projects:

- Suggest a proposal for a significantly altered Sydney transport network
- Suggest that the 389 bus return to its original route.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. The operation of the Sydney transport network outside of this work is beyond the scope of this proposal and the environmental impact assessment.

5.17.3 Station and precinct design and operation

Stakeholder identification numbers

S-32778273, S-33463183, S-33608991

Issues raised

Submitters raised the following concerns and comments about station and precinct design and operation:

- Suggestion that a street-level staffed police station should be provided at the Pymont eastern construction site
- Concern that the construction of a 110 metre tall tower above Pymont Station is not in the public interest
- Concern that the height of the proposed building at Pymont Station would result in loss of direct natural light and views
- Concern that the proposed building at Pymont Station would result in shadowing impacts
- Suggestion that permanent CCTV should be installed to collect data on passages and pathways
- Suggestion that open spaces and trees should be provided to positively impact human health
- Suggestion that the Department of Planning and Environment should implement an e-waste drop-off location near Pymont Station
- Suggestion that buildings should incorporate vertical forests and garden terraces
- Suggestion that buildings should include natural ventilation
- Suggestion that planned streetscapes should include funds devoted to trees and plants
- Suggestion that trees should be considered at stations and public open areas for health and safety reasons
- Suggestion that the Pymont Station buildings should share a Publicly Visible Tree Removal/Planting Register for the Pymont area.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. Any proposal to develop surrounding areas, including the development of streetscapes, green spaces, housing and other community and commercial development, is beyond the scope of this proposal and the Environmental Impact Statement. Similarly, the development of the Pymont Station building, including the planting of trees at Pymont Station, is beyond the scope of this proposal and the Environmental Impact Statement.

These issues will be addressed where required within future stages of the Sydney Metro West Project, Community members, interest groups and organisations will have the opportunity to provide submissions on these issues during the following proposals:

- Rail infrastructure, stations, precincts and operations (Stage 3 of the planning approval process)
- Over station development at Pymont Station.

6 Public authority submissions and agency advice

This section provides responses to issues raised in public authority submissions and NSW Government agency advice. Appendix A includes a table which lists each of the public authority submitters and the agencies which provided advice and provides a cross-reference to the section(s) of this report where the issues raised are addressed.

6.1 Overview

Submissions were received from the following public authorities:

- Inner West Council
- City of Sydney.

The Department of Planning and Environment also received advice regarding this proposal from the following NSW Government agencies:

- NSW Environment and Heritage Group - Biodiversity
- NSW Environment and Heritage Group - Flooding
- Heritage NSW, Department of Premier and Cabinet (Heritage NSW)
- Place Management NSW
- NSW Environment Protection Authority.

The approach to processing and responding to public authority submissions and agency advice is described in Chapter 4 of this Submissions Report. The issues raised in public authority submissions and agency advice are categorised according to key issue categories and responses are provided in the following sections.

The issues listed in each section are a summary of key issues raised in submissions. Full details of the issues raised are provided in the complete submissions, available on the Department of Planning and Environment's major projects website.

6.2 Inner West Council

6.2.1 Project cost

Issues raised

Inner West Council raised the following issues relating to project costs:

- Sydney Metro should not select the successful tenderer or joint venture partner before detailed design development and construction planning is completed to avoid a risk of increased costs
- Council requests a commitment from the State Government to ensure that sufficient additional budget is provided to permit refinement and redesign to be successfully conducted and implemented.

Response

The Sydney Metro West project is fully funded by the NSW Government. The NSW Government is investing \$12 billion over the next four years, including \$2.9 billion in 2021-22, allowing the construction of the Sydney Metro West project to begin.

Sydney Metro has stewardship for delivering a program of work worth more than \$50 billion. Accountability for invested public funds and delivering value-for-money outcomes is a key focus for Sydney Metro, including during the detailed design, construction planning and construction phases of projects.

A business case has been prepared for the Sydney Metro West project and endorsed by the NSW Government. This document includes an assessment of economic benefits. Relevant information from the business case has been incorporated into the Environmental Impact Statement. A summary of the business case is publicly available at:

http://infrastructure.nsw.gov.au/media/2575/final-business-case-evaluation-summary_sydney-metro-west.pdf.

The NSW Government and Sydney Metro have delivered numerous projects on time and within budget including the Metro North West Line which was delivered on time and \$500 million under budget.

The final Sydney Metro West project budget would be confirmed once all major contracts are awarded. This is the same process that has been used for determining budgets for the Metro North West Line and Sydney Metro City & Southwest.

Detailed design and design refinements would continue following the publication of this Submissions Report. Throughout this process, Sydney Metro will continue to consult with public authorities and key stakeholders.

6.2.2 Stakeholder consultation

Issues raised

Inner West Council raised the following issues relating to stakeholder consultation:

- Ongoing discussions should continue with relevant Council officers particularly in relation to construction impacts on traffic, groundwater, flora and fauna, noise and vibration, water and air quality
- Ongoing liaison with appropriate Council officers should be maintained throughout the planning and construction periods regarding flood impacts
- The State Government should include Council's direct involvement in the coordination of construction activity and construction traffic in the vicinity of The Bays Precinct and Rozelle Interchange
- Inner West Council's submission should be satisfactorily addressed prior to commencement of the proposed work and both Council and the community should continue to be consulted.

Response

Inner West Council has been considered a key stakeholder for this proposal and has been consulted with since 2017. Key concerns raised during consultation were considered during the preparation of the Environmental Impact Statement.

A meeting with Inner West Council staff occurred in March 2022 to provide an update on this proposal and discuss Council's submission. Consultation will continue to occur with local government stakeholders during the development and construction of this proposal, including within The Bays, through regular meetings, including Inner West Council officer attendance at monthly Traffic Control Group and Traffic and Transport Liaison Group meetings, briefings and other forms of communication such as phone calls and emails.

The Sydney Metro Overarching Community Communications Strategy has been prepared to guide Sydney Metro's approach to stakeholder and community liaison, including engagement with communities, stakeholders and businesses. This strategy is provided in Appendix B of the Environmental Impact Statement.

6.2.3 Community consultation

Issues raised

Inner West Council supports the overall community consultation objectives outlined in the Environmental Impact Statement, including its proposals for place managers, working groups, specific Aboriginal consultation and preparation of a submissions report based on feedback obtained during exhibition of the Environmental Impact Statement.

Inner West Council notes that a comprehensive community engagement process should be adhered to throughout the planning and construction phase of the project, and this engagement process should be transparent and adaptive in a manner which permits it to rapidly respond to changing circumstances.

Response

Inner West Council's support for the community consultation objectives is noted.

During the Environmental Impact Statement exhibition period, submissions were invited from all members of the community and other stakeholders. Sydney Metro and construction contractors will maintain an ongoing dialogue with key landowners and lease holders near construction sites, to advise them of work that may result in potential impacts and understand their preferences for mitigation and management measures. Dedicated Sydney Metro place managers for these areas will continue to engage with the community and address concerns (see Section 3.3 of this Submissions Report).

The Sydney Metro Overarching Community Communications Strategy has been prepared to guide Sydney Metro's approach to stakeholder and community liaison, including engagement with communities, stakeholders and businesses. This strategy is provided in Appendix B of the Environmental Impact Statement.

6.2.4 Aboriginal stakeholder consultation

Issues raised

Inner West Council requests that comprehensive Aboriginal consultation should always take place when a project is located near any existing, or past, waterway in the Inner West, as these waterways were the "life blood" of Sydney's Indigenous People and are highly likely to include sensitive sites and yield artefacts.

Response

A total of 62 Aboriginal stakeholders registered their interest in Sydney Metro West between Westmead and The Bays and continued their registrations and involvement for this proposal. Consultation with these stakeholders occurred during the preparation of Technical Paper 4 (Aboriginal Cultural Heritage Assessment Report) and this included providing stakeholders with the opportunity to review both the methodology and the draft report. A site inspection was also carried out with a representative of the Metropolitan Local Aboriginal Land Council.

In accordance with mitigation measures AH1 and AH2, Aboriginal stakeholder consultation will continue, and additional consultation with knowledge holders about the project will be carried out where possible. Sydney Metro has developed an Unexpected Heritage Finds Procedure that will be implemented if unexpected Aboriginal objects are identified.

6.2.5 Traffic and transport impacts

Active transport, access and safety

Issues raised

Inner West Council raised the following issues relating to active transport, access and safety:

- Active travel would be significantly altered after the completion of the Rozelle Railyards Linear Park. As work at The Bays tunnel launch and support site is likely to extend beyond this time, a review of activity likely to be generated by the linear park should be carried out
- The future Construction Traffic Management Plans and active transport planning should give specific consideration to:
 - The safety of any temporary footpath closures and diversions that may be required, particularly noting the need to provide a minimum of two weeks advanced notice to users
 - The likelihood that Rozelle Railyards Park and the various active transport links to be built by WestConnex would become operational during the Sydney Metro West construction, resulting in larger numbers of commuting and recreational cyclists
 - The existing use of James Craig Road and Robert Street by road cyclists as a “training circuit”.

Response

As described in Section 4.2.1 of Technical Paper 1 (Transport and traffic), the cycle network identified surrounding The Bays tunnel launch and support site included the use of James Craig Road and Robert Street as cycle routes. Technical Paper 1 acknowledged that the future active transport network near The Bays tunnel launch and support site would be modified to accommodate WestConnex Rozelle Interchange, which is part of the WestConnex program of work. These changes would be implemented by the time construction of this proposal starts.

Consistent with the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report), the consideration of safety and security issues for pedestrians will occur at all construction sites. For those footpath or specific cycle facility areas which will be impacted by construction work, the contractor will undertake a condition assessment to ensure that they remain suitable for use. This will include an assessment of the paving and lighting of the footpath/cycleway to maintain a safe and suitable passage.

Site specific Construction Traffic Management Plans will be prepared by the Principal Contractor for each site and will include the development of pedestrian and cycle movement plans where it is necessary to divert or warn pedestrian and/or cyclists. At The Bays, this will include consideration of existing and new cycleway links and popular on-road circuits.

Construction traffic and congestion

Issues raised

Inner West Council raised the following issues relating to construction traffic and congestion:

- Traffic modelling should also take into consideration the weekend midday peak, which is considered a critical time in the vicinity of The Bays tunnel launch and support site
- All construction access should be via James Craig Road and that the vehicular access out of Robert Street is not pursued due to traffic and safety concerns.

Response

The peak traffic periods that have been modelled represent a worst-case scenario as, during these periods, the road network experiences the maximum background traffic demand, and the available spare capacity of the road network is at its most limited. A review of 2021 traffic volumes at the permanent counter on Anzac Bridge east of Victoria Road confirms that morning and evening weekday peak volumes are higher than those for the peak period on Saturday.

As shown in Figure 6-4 in Chapter 6 (Transport and traffic) of the Environmental Impact Statement, the primary inbound and outbound haul routes at The Bays tunnel launch and support site would be via James Craig Road. Vehicular access to The Bays tunnel launch and support site via Robert Street would only be used in the event of an incident or emergency situation.

Intersection performance

Issues raised

While the modelling provided indicates minimal delays at the Robert Street/Victoria Road intersection, delays exiting the Balmain Peninsula onto Victoria Road remain a key concern. Consequently, Council seeks a detailed response from the proponent indicating measures proposed to minimise these delays and compensate the community for their reduced accessibility to the Balmain Peninsula.

Response

This proposal is not expected to substantially impact the performance of either the Robert Street/Victoria Road or James Craig Drive/City West link intersections, both of which would perform at a similar level of service with or without the project. While traffic modelling shows a minor increase in intersection delay at the Victoria Road/Robert Street intersection, this change would be due primarily to network-wide performance impacts and not directly as a result from this proposal as described in Section 6.6.2 of the Environmental Impact Statement.

Traffic control measures

Issues raised

Inner West Council raised the following issues relating to traffic control measures:

- All heavy vehicle drivers including subcontractors should be required to undertake cycle and pedestrian awareness training as well as supervised route orientation training
- All vehicles must be clearly identified, with such identification indicating:
 - That they are associated with the Metro West project (ideally including which site they are servicing)
 - A vehicle identification number
 - Contact details for the complaints/compliments hotline

- All heavy vehicles should have both high and low-level mirrors to assist in reducing blind spots which may limit visibility of pedestrians and cyclists
- All heavy vehicles should be fitted with active, real-time GPS tracking
- Consideration should be given to the provision of GPS guided routing which specifically uses only the approved haul routes for each site
- As the Iron Cove Link will open during the Sydney Metro West construction period, it is requested that a significant review of construction traffic be carried out, once the link has opened, with a view to adapting construction traffic activity, particularly in relation to the potential impacts of construction traffic on active and public transport.

Response

Driver training and vehicle requirements are outlined in the Sydney Metro Principal Contractor Health and Safety Standard. As described in the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report), heavy vehicle drivers will be made fully aware by the contractor of the construction site traffic management arrangements and site-access requirements, including approach and departure routes and any heavy vehicle noise management measures required. Driver training will consider current best practice and information, including cycle awareness training. The contractor must ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks. Contractors must ensure mandatory completion of the Sydney Metro project-specific heavy vehicle driver introduction training and are required to have systems in place to monitor vehicle locations at all times and report and address any identified non-conformances.

As described in Section 6.3.2 of the Environmental Impact Statement, the future year base traffic models used for the traffic assessment were developed in alignment with the anticipated operational conditions in the year of peak construction activity (2024 for The Bays tunnel launch and support site and Pyrmont Station construction sites and 2025 for the Hunter Street Station (Sydney CBD) construction sites including road network changes as a result of the operation of the WestConnex Rozelle Interchange. The Iron Cove Link, which is part of the WestConnex Rozelle Interchange, has been considered within the traffic modelling for this proposal.

In approving the Sydney Metro West major civil construction between Westmead and The Bays (Stage 1 of the planning approval process), the Department of Planning and Environment included a condition (D95) that requires supplementary analysis and modelling as required by Transport for NSW and/or the Traffic and Transport Liaison Group(s) to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrian, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Any revised traffic management measures must then be incorporated into the site-specific Construction Traffic Management Plans. The Department of Planning and Environment may decide to include a similar condition in any approval granted for the current proposal.

Parking

Issues raised

Inner West Council raised the following issues relating to parking:

- A detailed construction worker parking management scheme should be included as a condition of approval, as a shuttlebus is not considered to be adequate. In developing this scheme particular attention should be given to adjacent residential areas and businesses along Robert Street and Mullens Street
- Specific consideration should be given to opportunities to encourage Sydney Metro West construction workers to use the new ferry service that will be operating between Blackwattle Bay and Barangaroo.

Response

Conditions of approval are a matter for the Department of Planning and Environment to consider during its assessment of this proposal.

As described in Section 6.5.2 of the Environmental Impact Statement, some construction worker parking would be provided at The Bays tunnel launch and support site, although it would not meet the expected full demand based on indicative workforce numbers.

Construction sites will be managed in accordance with mitigation measure TT9 to minimise the number of construction workers parking on surrounding streets by:

- Encouraging workers to use public transport (which will include buses, light rail and the F10 Blackwattle Bay ferry service) or active transport
- Encouraging ride sharing
- Providing alternative parking locations and shuttle bus transfers where feasible and reasonable.

At The Bays tunnel launch and support site, shuttle bus services to transfer construction workers to and from major transport interchange(s) will be considered as a viable mitigation measure. The final arrangements for this service would be confirmed during detailed construction planning of this proposal and may be coordinated with other concurrent transport projects in consultation with Transport for NSW.

The Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement Submissions Report and updated as Appendix C of this Submissions Report) will also be implemented to minimise traffic impacts on local streets.

Public transport

Issues raised

Inner West Council raised the following issues relating to public transport:

- Additional bus priority measures should be installed on Victoria Road, including B-signals
- Any temporary relocation of bus stops should be notified a minimum of two weeks in advance to permit the travelling public to adjust their travel behaviour
- Consideration should be given to either adjusting bus schedules, to recognise the increased delays resulting from likely increased congestion, or introduction of higher frequency, turn-up-and-go services along Victoria Road

- Special consideration should be given to improving the reliability of the 442 bus service, which uses Mullins and Robert Streets, due to the likelihood of increase congestion and queuing at the Robert Street/Victoria Road intersection
- Opportunities should be explored to capitalise on access to the new ferry service provided by Transport for NSW that will be operating between Blackwattle Bay and Barangaroo.

Response

Any changes to the bus network, frequencies and bus priority measures (including B-signals) would be reviewed by Transport for NSW in the wider transport network context. In accordance with mitigation measure TT10 (and having regard to Transport for NSW bus disruption protocols), any temporary closure or relocation of bus stops would be carried out in consultation with Transport for NSW (with a 28 day notice period), the relevant local council and bus operators. Wayfinding and customer information will be provided to notify customers of relocated bus stops.

Minor impacts to bus travel times near The Bays tunnel launch and support site are anticipated as a result of this proposal. Impacts to public transport will be managed through the development of Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report). Access to the F10 ferry service between Blackwattle Bay Wharf (Glebe) and Barangaroo Wharf will be maintained during construction.

Conditions of approval

Issues raised

Inner West Council requests a condition of approval for this proposal to:

- Include the proposed hierarchy of access and the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report), which would be applied to the adjacent road network as well as access to Metro's construction sites
- Maintain safe, reliable, legible routes for public and active transport at all times
- Require a detailed construction worker parking management scheme.

Response

Conditions of approval are a matter for the Department of Planning and Environment to consider during its assessment of this proposal.

Measures to minimise the number of workers parking on surrounding streets will be implemented in accordance with mitigation measure TT9 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

The Construction Traffic Management Framework was included as Appendix D of the Environmental Impact Statement, and an updated version is included as Appendix C of this Submissions Report, so would form part of any planning approval.

As described within the Construction Traffic Management Framework, priority will be given to providing adequate guidance to pedestrians, cyclists, drivers and the community prior to the commencement of any work. Priority will also be given to responding appropriately to issues and events that may arise during this proposal. Directional signage and line marking will be provided, and proposed changes will be advertised as relevant. The following Sydney Metro hierarchy of access, listed from highest to lowest priority, will be implemented:

1. Incidents and emergency services access
2. Events (special and unplanned)
3. Pedestrians

4. Cyclists
5. Other public transport users – buses, ferry coaches and light rail
6. Service vehicles
7. Coaches
8. Taxis
9. Kiss and ride and rideshare
10. Private cars.

6.2.6 Noise impacts

Issues raised

Inner West Council raised the following issues relating to noise impacts:

- The noise and vibration assessment in the Environmental Impact Statement should consider that the COVID-19 public health orders are likely to result in a larger proportion of the population working from home
- As the project represents a significant potential impact on the adjacent community, Sydney Metro should engage comprehensively with Council and the community with a view to substantially reducing the number of out of hours noise exceedances and to minimising all impacts associated with these occurrences
- All out of hours noise and vibration generating activities should be clearly identified and the community should be provided at least two weeks' notice prior to commencement of any activity.

Response

The noise and vibration assessment approach carried out as part of the Environmental Impact Statement is consistent with the Secretary's Environmental Assessment Requirements. The noise assessment considers potential impacts to residential receivers during all time periods where work is proposed. As a result, the impacts to people who may be occupying residential properties during the day, including residents who work from home, have been considered.

Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive work will be investigated and implemented where feasible and reasonable, in accordance with mitigation measure NV02. Sydney Metro will prepare Detailed Noise and Vibration Impact Statements in accordance with the Construction Noise and Vibration Standard that will be implemented for this proposal (Appendix E of the Environmental Impact Statement). In addition, the project specific mitigation measures in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report will be implemented to address potential noise and vibration impacts.

Inner West Council is considered a key stakeholder for this proposal and has been consulted since 2017. Key concerns raised during consultation were considered during the preparation of the Environmental Impact Statement. Consultation will continue to occur with local government stakeholders throughout the development and construction of this proposal through regular meetings, briefings and other forms of communication, such as phone calls and emails. Dedicated Sydney Metro place managers will continue to engage with the community, address concerns, and to understand community preferences for mitigation and management measures as described in Section 3.3 of this Submissions Report.

Consultation regarding out of hours work outside specified hours will occur in accordance with the Sydney Metro West Out of Hours Work Protocol and will include the provision of the following to the surrounding community:

- A progressive schedule for periods no less than three months of likely out of hours work
- A description of the potential work, location and duration of the out of hours work
- The noise characteristics and likely noise levels of the work
- Likely mitigation and management measures which aim to achieve the relevant noise management levels
- Specific notification of out of hours work at least seven days prior to the work commencing along with information regarding expected impacts, mitigation measures and contact details for enquiries or complaints.

Impacts to Non-Aboriginal heritage

Issues raised

Inner West Council requests that Sydney Metro note the significance of heritage structures and ensure that construction does not impact, in any way, on the numerous heritage structures near The Bays tunnel launch and support site. Vibration monitoring stations should be established on or immediately adjacent to any significant heritage structures and regular dilapidation analysis should be carried out during the tunnelling and construction period to ensure that any cracking or disfigurement is detected immediately.

Response

Potential heritage impacts have been avoided and minimised where possible. Where heritage items, including significant archaeology, are impacted by work associated with this proposal, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages. Throughout detailed design development, the project team will look for opportunities to further minimise impacts to heritage items.

Non-Aboriginal heritage impacts will be managed in accordance with the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), which includes heritage management objectives to minimise impacts on heritage items, avoid accidental impacts on heritage items, and maximise workers' awareness of Aboriginal and non-Aboriginal heritage. The Construction Environmental Management Framework also requires archival recordings of all heritage items affected by the work prior to commencement of work.

Mitigation measures have been developed to minimise potential direct impacts such as impacts from vibration, subsidence, architectural noise treatment and demolition of adjoining structures. In accordance with mitigation measure NAH3, a method for the removal of existing buildings and/or structures at specified construction sites will be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items. In accordance with mitigation measure NAH8, further assessments at later design stages and during detailed construction planning will be carried out where required to check the preliminary findings of the ground movement assessment in relation to listed heritage buildings. In the unlikely event that accidental damage does occur to a heritage item, this would be rectified by the project.

In accordance with mitigation measure NV13, where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment will specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.

The Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement) recommends the adoption of conservative cosmetic damage screening limits to minimise potential impacts to buildings from vibration. The cosmetic damage screening criteria adopted for the project are outlined in Table 7-8 of the Environmental Impact Statement. Heritage buildings and structures would be assessed according to the cosmetic damage screening criteria, unless they are found to be structurally unsound, when a more conservative cosmetic damage objective of 2.5 millimetres per second PPV (from DIN 4150) would be adopted.

6.2.7 Impacts to Aboriginal heritage

Issues raised

Inner West Council noted that while documentation on Aboriginal sites and artefacts in the vicinity is limited, advice from the local indigenous community indicates that the area is particularly significant and should be dealt with sensitively and in accordance with all necessary protocols.

Response

The potential for impacts to Aboriginal heritage was a key consideration throughout the design and development process of this proposal. The Aboriginal cultural heritage assessment for this proposal was prepared in accordance with relevant legislation and policies as described in Section 9.2 of the Environmental Impact Statement.

As per mitigation measure AH1, Aboriginal stakeholder consultation will continue, and additional consultation with knowledge holders about the project will be carried out where possible. Sydney Metro has developed an Unexpected Heritage Finds Procedure that will be implemented if unexpected Aboriginal objects are identified.

6.2.8 Street trees

Issues raised

Inner West Council requests that all significant trees on, or adjacent to, The Bays tunnel launch and support site be retained, however if construction activities necessitate their removal there should be a 5:1 tree replacement policy.

Response

As described in Section 18.6 of the Environmental Impact Statement, The Bays Station construction site is being established under the Sydney Metro West Concept and Stage 1 planning approval. As a result, the vegetation located within The Bays construction site has been previously assessed and approved for removal and the removal of vegetation at The Bays tunnel launch and support site does not form part of this assessment.

As described in Section 11.9.2 of the Environmental Impact Statement, the Conditions of Approval for the Sydney Metro West Concept require that trees removed be replaced at a 2:1 ratio and that tree canopy coverage will be increased overall. Tree planting would be further considered and carried out during future stages of the project. Where relevant, tree planting would be carried out with reference to the Inner West Council Street Tree Master Plan.

6.2.9 Impacts to business

Issues raised

Inner West Council requested that special attention be paid to business impacts on the White Bay Cruise Terminal, particularly noting the recent upgrading of its conference/function centre.

Response

The Bays tunnel launch and support site would be located primarily within the construction footprint of The Bays Station construction site, which is being established under the approval for Sydney Metro West major civil construction between Westmead and The Bays (Stage 1 of the planning approval process). As noted in Chapter 12 (Business impacts) of the Environmental Impact Statement, impacts of the current proposal would be consistent with those described in *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a) and would primarily include impacts from construction traffic and amenity impacts (such as noise, air quality and reduced visual amenity). Potential impacts to local businesses, including the White Bay Cruise Terminal, will be minimised through mitigation measures for traffic and amenity related issues (such as noise, traffic, visual and air quality) as well as the specific business impact related measures BI1 to BI3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

The Sydney Metro Overarching Community Communications Strategy has been prepared to guide Sydney Metro's approach to stakeholder and community liaison including engagement with communities, stakeholders and businesses. This strategy is provided in Appendix B of the Environmental Impact Statement.

In accordance with the Sydney Metro Overarching Community Communications Strategy and mitigation measure BI1, Sydney Metro will work with local businesses within project catchments to ensure communication and engagement is tailored to their specific needs.

Sydney Metro's overarching approach to business engagement is to:

- Identify and document potentially impacted businesses prior to project commencement
- Provide early advice to businesses of upcoming projects
- Provide businesses with information about the project and its long terms benefits
- Provide businesses with information about construction progress
- Ensure businesses understand the scope of the work and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the work
- Consult with businesses and take steps to minimise potential impacts
- Ensure the project team understands the operational requirements and sensitivities of businesses around each site.
- Sydney Metro will endeavour to minimise impacts on individual businesses during construction.

6.2.10 Special events

Issues raised

Inner West Council notes that particular attention should be paid to managing activities and events associated with festive periods such as New Year's Eve and Australia Day, as The Bays area is used as a celebration viewing area and for associated special events.

Response

Consultation will occur with organisers of major events, and (as relevant) with Transport for NSW to provide appropriate management of construction vehicle movements to address potential impacts to event patrons, the public and the construction work. Consistent with mitigation measure TT15 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, management for special events may involve:

- Minimising the level of construction activity, and if necessary, ceasing all construction activity
- Maintaining appropriate access to all areas within the event precinct
- Erection of hoardings, site fencing and gates at key locations within the construction site boundary to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles
- Scheduling deliveries to the construction site outside of event periods.

Construction activities on road corridors would require a Road Occupancy Licence to close the road or lane for any period. The granting of a Road Occupancy Licence would generally be subject to network operation restrictions, which preclude road closures during high-activity holidays such as New Year's Eve, or during the set up and pack down times for major events or during major road closures.

6.2.11 Human health impacts

Issues raised

Council requested that a public health analysis be carried out and that this analysis include consideration of both the Sydney Metro West project and the cumulative impact of the many state infrastructure projects currently underway in the Balmain-Rozelle-White Bay area.

Response

Human health considerations are a key contributor in the establishment of appropriate noise and air quality criteria, while the Social Impact Assessment (Technical Paper 6) has included consideration of community cohesion, health and wellbeing, and impacts on active transport.

Public health and safety hazards are also described in Section 21.5 of the Environmental Impact Statement. In summary, potential temporary environmental hazards during construction associated with the on-site storage, use and transport of chemicals, fuels and materials will be managed to acceptable levels through the implementation of mitigation measures, including the storage and management of all hazardous substances in accordance with the *Work Health and Safety Act 2011*, the *Work Health and Safety Regulation 2017*, the *Storage and Handling of Dangerous Goods Code of Practice* (WorkCover NSW, 2005) and *Hazardous and Offensive Development Application Guidelines: Applying SEPP 33* (Department of Planning, 2011).

Chapter 7 (Revised environmental mitigation measures) of this Submissions Report includes a number of mitigation measures to minimise potential impacts associated with construction noise and vibration and air quality impacts on nearby sensitive receivers. Further detail is provided in the Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement).

6.2.12 Contamination impacts

Issues raised

Inner West Council requests that environmental issues associated with White Bay and contamination near White Bay Power Station are carefully managed.

Response

The Bays tunnel launch and support site would be located within a portion of the approved The Bays Station construction site, which is being established under the approved Stage 1 of the planning approval process as described in *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020).

A Soil and Water Management Plan will be prepared to manage potential contamination impacts, consistent with the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement). The Soil and Water Management Plan will include management measures for contaminated material (soils, water and building materials) and a contingency plan in the case of unanticipated discovery of contaminated material.

Potential contamination will also be managed in accordance with the mitigation measures described in Chapter 16 (Contamination) of the Environmental Impact Statement. In particular, mitigation measures C1 to C3 establish a risk-based approach to contamination that ensures that areas with potential contamination will be subject to further desktop data review, detailed site investigations, and appropriately remediated if required. The process identified in mitigation measures C1 to C3 is linked to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) and further contamination investigation and remediation will occur in accordance with the relevant guidelines made or endorsed by the NSW Environment Protection Authority.

6.2.13 Hydrology and flooding

Issues raised

Inner West Council notes that The Bays tunnel launch and support site is within the Sydney Harbour catchment and on the downstream side of White's Creek. The site may be subject to changing drainage patterns, including overland flow, associated with construction of the Rozelle interchange, Rozelle Railyards Park and the naturalisation of White's Creek. These changes may occur both during construction of WestConnex and subsequent to its completion.

Particular attention should be paid to potential changes in drainage and overland flow during the construction period of WestConnex (including the Rozelle Railyards Park). Coordination and management of drainage associated with construction activities should include consideration of Rozelle Interchange, Rozelle Railyards Park, the Western Harbour Tunnel and the Sydney Metro West The Bays Station.

Response

Flood modelling for The Bays tunnel launch and support site was based on the *Leichhardt Floodplain Risk Management Study and Plan* (Cardno, 2017) and the *Leichhardt Flood Study* (Cardno, 2015).

More detailed consideration of flooding and drainage in around construction sites would be carried out when the construction site layouts are confirmed during detailed construction planning and when more recent changes from other hydraulically connected developments can be considered (including the WestConnex Rozelle Interchange). Mitigation measures HF1, HF2 and HF3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report require further consideration of impacts on flood behaviour during detailed construction planning.

6.2.14 Vegetation removal

Issues raised

Inner West Council raised the following issues relating to vegetation removal:

- Cumulative impacts on biodiversity would result in further deterioration and fragmentation of vegetation that is already segmented. This has already been amplified by the clearing of vegetation for other projects
- Specific attention should be paid to the potential for smaller animals to have now relocated to The Bays tunnel launch and support site from vegetated areas that existed when the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020) was prepared but have since been removed
- Consideration should also be given to the possibility that small birds and microbats may be harbouring in existing vegetation and abandoned buildings, undercrofts (and similar) and care should be taken to ensure both maintenance of their habitats and that construction activity does not disturb them
- Southern Myotis microbats (listed as vulnerable in NSW) are found in Sydney Harbour and are known to roost close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage
- Several other threatened species (Powerful Owl, Grey Headed Flying Fox, Large Bent-winged Bat) are also found in the Inner West and may use The Bays tunnel launch and support site for foraging, nesting or roosting
- Any vegetation to be removed should be removed in a phased manner to permit sufficient time for embedded fauna to relocate.

Response

The presence of threatened species at The Bays, including the presence of birds and microbats, was assessed in the *Sydney Metro West Concept and Stage 1 Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). That assessment found that no threatened species, including microbat species or bird species, would be significantly impacted by the major civil construction work covered by the Stage 1 of the planning approval process.

As described in Section 18.6 of the Environmental Impact Statement, The Bays Station construction site is being primarily established under the Sydney Metro West Concept and Stage 1 planning approval (with an additional area now also proposed as described in Section 2.2 of this Submissions Report). The vegetation located within The Bays construction site has been previously assessed and approved for removal, while the additional area proposed for use is already cleared. The area required for this proposal would be cleared before work starts. As a result, there would be no naturally occurring native vegetation present within The Bays tunnel launch and support site or within the additional area proposed for use. As no foraging, roosting or breeding habitat is present, no threatened fauna species, including microbats or birds, are anticipated to be present and would not be impacted by this proposal.

6.2.15 Air quality impacts

Issues raised

Inner West Council requested that a real-time monitoring and rapid response mechanism be put in place to ensure immediate amelioration of resident and business concerns.

Response

An Air Quality Management Plan will be prepared to manage potential air quality impacts, consistent with the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement). The Air Quality Management Plan will detail specific quality and dust monitoring requirements for each construction site.

A range of measures will be implemented to control dust including wetting down of exposed surfaces and adjusting work practices during adverse weather conditions. Where provided, acoustic sheds will also effectively control dust.

As a requirement of the Sydney Metro Overarching Community Communications Strategy (Appendix B of the Environmental Impact Statement), contractors will be required to adhere to a Construction Complaints Management System which would outline the framework for managing complaints, enquiries and escalation processes throughout the project lifecycle. Complaints about dust will be managed through this framework.

6.2.16 Construction fatigue

Issues raised

Inner West Council noted that construction impacts on the communities of Balmain, Rozelle, Annandale and Pyrmont should be kept to an absolute minimum, particularly noting the high level of construction activity already occurring around White Bay and Rozelle Bay.

Response

Construction fatigue was considered in the Environmental Impact Statement throughout relevant chapters. The Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) will require the preparation of a Construction Noise and Vibration Management Plan. The Construction Noise and Vibration Management Plan will consider cumulative construction impacts and the likelihood for construction fatigue from consecutive projects in the areas which have substantial night-time work.

The Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement) also provides a list of standard mitigation measures that will be implemented where feasible and reasonable at all construction sites which includes measures such as prior notifications of the work, monitoring of the impacts and offers of sleep respite accommodation where night-time impacts are expected to be high. As per mitigation measure NV15, the likelihood of cumulative construction noise impacts will be reviewed during detailed design when detailed construction schedules are available. Co-ordination will occur between potentially interacting projects to minimise concurrent or consecutive work in the same areas, where possible. Specific mitigation strategies will be developed to manage impacts. Depending on the nature of the impact, this could involve adjustments to construction program or activities of Sydney Metro West or of other construction projects.

As per mitigation measure CI1, co-ordination and consultation with the following stakeholders will occur where required to manage the interface of projects under construction at the same time:

- Other parts of Transport for NSW
- Department of Planning and Environment
- Port Authority of NSW
- Sydney Motorway Corporation
- Emergency service providers
- Utility providers
- Construction contractors.

Co-ordination and consultation with these stakeholders will include:

- Provision of regular updates to the detailed construction program, construction sites and haul routes
- Identification of key potential conflict points with other construction projects
- Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve:
 - Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects
 - Co-ordination of traffic management arrangements between projects.

6.2.17 Cumulative impacts

Issues raised

Inner West Council notes that, by staging the environmental assessment of the Sydney Metro West project, the overall impacts of the project are not being adequately assessed. A multi-staged cumulative impact assessment should be conducted.

Council requests that the cumulative assessment proposed in the original *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020) not only consider “major projects” (such as the Western Harbour Tunnel) but that it also include consideration of the numerous projects of lesser magnitude (such as individual elements of The Bays Precinct redevelopment, active transport network enhancements and upgrades to individual facilities like the cruise terminal).

Response

The planning applications and environmental impact assessment for Sydney Metro West has been staged in recognition of the size of the project. Staged infrastructure applications can be made under section 5.20 of the *Environmental Planning & Assessment Act 1979*. The staged approach is further described in Section 1.1.1 of the Environmental Impact Statement.

The Sydney Metro West Concept, including metro operations, key features of the alignment, the proposed stations and other ancillary infrastructure were assessed and approved as part of the Sydney Metro West Concept and Stage 1 *Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). The assessment of the Sydney Metro West Concept, when considered together the cumulative impact assessments presented throughout the Environmental Impact Statement for this proposal and the Sydney Metro West Concept and Stage 1 *Environmental Impact Statement – Westmead to The Bays and Sydney*

CBD (Sydney Metro, 2020), the major civil construction impacts of Sydney Metro West project are considered to have been adequately assessed and no further cumulative impact assessment is proposed as part of this proposal. Cumulative impacts associated with the operation of the project would be considered as part of future stages of the planning approval process.

Each stage of Sydney Metro West has assessed the preceding and subsequent stages where relevant. As a result, a multi-staged cumulative impact assessment has been carried out across the Sydney Metro West project and has considered key projects including the WestConnex Rozelle Interchange and Western Harbour Tunnel. The associated potential cumulative impacts of the subsequent stage of this proposal, including cumulative impacts with this proposal and Stage 1 of the planning approval process, have been assessed in the Environmental Impact Statement for 'Sydney Metro West - Rail infrastructure, stations, precincts and operations'.

Mitigation measure CI1 in the Environmental Impact Statement and the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020) requires coordination and consultation with a range of stakeholders to manage the interface with projects potentially under construction at the same time as Sydney Metro West and this will include where relevant elements of The Bays Precinct redevelopment, active transport network enhancements and any upgrades to individual facilities like the White Bay Cruise Terminal.

6.2.18 Beyond the scope of the Environmental Impact Assessment

Issues raised

Inner West Council raised the following issues that are beyond the scope of the environmental impact assessment:

- Recognition should be given to the current master planning process being carried out for The Bays West Precinct and a working group should be established to guide the development of the total area of The Bays
- The project should include provision for an all-weather active transport link between the proposed Bays Station and the Inner West Light Rail
- Attention should be given to the built environment surrounding The Bays Station in terms of ensuring height, density and housing diversity aligns to Council's stated positions on this issue, including the requirement for 30 per cent affordable housing
- Excavation of The Bays tunnel launch and support site should be further addressed
- The State Government should examine opportunities to have Submissions Reports prepared by agencies other than the proponent agency.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. Any proposal to develop surrounding areas, including the development of streetscapes, green spaces, housing and other community and commercial development, is beyond the scope of this proposal and the Environmental Impact Statement.

The Department of Planning and Environment is preparing a draft masterplan for the White Bay Power Station (and Metro) sub-precinct as part of the broader Bays West precinct strategy. The masterplan will inform the rezoning process, which will establish the planning framework for the sub-precinct.

The Bays Station building, including the development of all-weather active transport links, will be addressed in future stages of the planning approval process.

The *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020) assessed the impacts of The Bays Station construction site to carry out the excavation of The Bays Station. This work has subsequently been approved. As a result, further details regarding station excavation at The Bays will be provided in consultation with Council but do not form part of this Environmental Impact Statement.

Changes to the NSW planning system are not the responsibility of Sydney Metro and are outside the scope of this Environmental Impact Statement.

6.3 City of Sydney Council

6.3.1 Community consultation

Issues raised

City of Sydney requests that Sydney Metro consult with residents and businesses on the expected loss of parking and proposed haul routes.

Response

Chapter 6 (Transport and traffic) of the Environmental Impact Statement assessed the number of temporarily removed parking spaces, the availability of comparable alternative parking in nearby locations, and the proposed haul routes for each construction site.

During the Environmental Impact Statement exhibition period, submissions were invited from all members of the community and other stakeholders. Sydney Metro and construction contractors will maintain an ongoing dialogue with key landowners and lease holders near construction sites, to advise them of work that may result in potential impacts and understand their preferences for mitigation and management measures. Dedicated Sydney Metro place managers for these areas will continue to engage with the community, address concerns, and provide accurate and transparent information about the project. Future engagement and consultation will be carried out in accordance with the Overarching Community Communications Strategy (Appendix B of the Environmental Impact Statement).

Sydney Metro's overarching approach to business engagement is to:

- Identify and document potentially impacted businesses prior to project commencement
- Provide early advice to businesses of upcoming projects
- Provide businesses with information about the project and its long terms benefits
- Provide businesses with information about construction progress
- Ensure businesses understand the scope of the work and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the work
- Consult with businesses and take steps to minimise potential impacts
- Ensure the project team understands the operational requirements and sensitivities of businesses around each site.

Sydney Metro will continue to consult with City of Sydney regarding loss of parking and haul routes.

6.3.2 Environmental management

Issues raised

City of Sydney notes that prior to the issue of a Construction Certificate, an Environmental Management Plan (EMP) must be prepared for the site and submitted to Council's Area Planning Coordinator and/or Area Planning Manager for written approval.

Response

Sydney Metro West is State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the *Environmental Planning and Assessment Act 1979*. Approval from the Minister for Planning is required before Sydney Metro can carry out this proposal (as per section 5.14 of the *Environmental Planning and Assessment Act 1979*). Approval from City of Sydney to environmental management documents would only be required if specified in the planning approval.

The Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) was developed and successfully implemented as part of the Sydney Metro Northwest and Sydney Metro City & Southwest projects. This framework has been reviewed and updated to be applicable to Sydney Metro West. The Construction Environmental Management Framework details environmental management systems and processes that will be applied to the major civil construction work between The Bays and Sydney CBD.

Specifically, it details the requirements in relation to the content of the construction environmental management plan, sub-plans and other supporting documentation for each specific environmental aspect.

It is also expected that should planning approval be granted for this proposal, the approval will include specific requirements regarding the Construction Environmental Management Plans, sub plans and their approval by the Planning Secretary.

6.3.3 Placemaking

Issues raised

City of Sydney raised the following issues relating to placemaking:

- The design of site boundary hoardings at Hunter Street Station (Sydney CBD) construction sites should consider street aesthetics, incorporating public arts and graphic heritage interpretations. The hoardings adjacent to Skinners Family Hotel provide an opportunity to reconstruct an imagery reflecting the streetscapes of George Street and Hunter Street as shown in Joseph Fowler's book 'Sydney 1848'. Council notes that the Skinners Family Hotel is a rare surviving building of the 1848 streetscapes
- To ensure that the existing condition of public assets is maintained, Sydney Metro must ensure that all items within development site streetscapes are retained, protected and preserved, as far as possible during site establishment and associated construction work. Any rectification work carried out to the public domain by the proponent must be in accordance with Council's technical specifications and requirements
- The proponent must ensure that if any survey marks are encountered when undertaking demolition and site establishment work, the survey marks are to be retained and protected.

Response

In accordance with mitigation measure LV6 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, construction site hoardings will be designed in accordance with Sydney Metro Brand Design Guidelines and opportunities for public art on hoardings will be considered in high pedestrian locations.

Development site streetscapes will be retained, protected and preserved, as far as possible during site establishment and associated construction work.

Any survey marks that are encountered during work will be managed in accordance with Surveyor-General's Direction No.11 Preservation of Survey Infrastructure (January 2020).

6.3.4 Traffic and transport impacts

Haul routes

Issues raised

City of Sydney raised the following issues relating to impacts to haul routes:

- Pyrmont haul route – The egress route for construction traffic should avoid Union Street given that it is a busy street with a mix of residential and business properties. The egress route for construction traffic should use Pyrmont Street, not Darling Drive
- Hunter Street haul route – Traffic controllers should be used to assist construction traffic with the right turn movements and recommends an alternate inbound route of Macquarie Street, Bent Street, O'Connell Street. The right turn from Macquarie Street to Bent Street is traffic signal controlled and it is a left turn from Bent Street to O'Connell Street
- Hunter Street haul route – The alternate egress route via George and Margaret Street should not be pursued, and all construction vehicles turn right out of the site and use the primary outbound route.

Response

Following consultation with City of Sydney, the alternative outbound haul route via Margaret Street described in the Environmental Impact Statement is no longer proposed.

The primary inbound route to the Hunter Street Station (Sydney CBD) eastern construction site would be via Bent Street and O'Connell Street. An alternative inbound route via Bridge Street, Loftus Street and O'Connell Street (Primary Inbound B) has been retained consistent with the Environmental Impact Statement should it be required, but is not the preferred route. As the use of this alternative route was assessed in the Environmental Impact Statement, no further assessment has been carried out for this Submissions Report.

As described in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report, the primary inbound haul route for the Hunter Street Station (Sydney CBD) western construction site would be via Macquarie Street and Hunter Street rather than Bridge Street, Loftus Street and O'Connell Street. Where required, the use of traffic controllers will be identified in the Construction Traffic Management Plan prepared in accordance with the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report).

The outbound route via Hunter Street and Macquarie Street remains as shown in Figure 6-16 of the Environmental impact Statement.

Traffic control measures

Issues raised

City of Sydney raised the following issues relating to impacts to traffic control measures:

- The speed limit should be reduced to 30 kilometres per hour on those streets which are impacted by an increase in heavy vehicles. Sydney Metro should engage with the Centre for Road Safety, the Transport for NSW Transport Planning Manager - Walking and City of Sydney to understand to which streets this should apply
- Sydney Metro's construction contracts include requirements for a higher heavy vehicle safety standard than the heavy vehicle safety standard. Sydney Metro should engage with the Centre for Road Safety early to determine the exact standards which should be included
- There should be a separate Construction Traffic Management Plan for the construction of the Pyrmont and Hunter Street (Sydney CBD) stations
- All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway.

Response

As described in the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report), temporary and long term speed zone reductions may be required to be covered in a site specific Construction Traffic Management Plan, detailing the anticipated impacts and mitigation strategies. Where required, speed zone reductions will be considered as part of the site specific Construction Traffic Management Plans, noting that Sydney Metro would submit an application for a change to speed zone to Transport for NSW if required.

As described in the Construction Traffic Management Framework (Appendix D of the Environmental Impact Statement and updated as Appendix C of this Submissions Report), heavy vehicle drivers will be made fully aware by the contractor of the construction site traffic management arrangements and site-access requirements, including approach and departure routes and any heavy vehicle noise management measures required. Driver training will address current best practice and information, including cycle awareness training. The contractor must ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks. Contractors must ensure mandatory completion of the Sydney Metro project-specific heavy vehicle driver introduction training, and are required to have systems in place to monitor vehicle locations at all times and report and address any identified non-conformances.

Contractors will prepare site-specific Construction Traffic Management Plans for each site in consultation with relevant stakeholders.

Heavy vehicles would generally load spoil within the acoustic sheds and will be covered at all times when travelling on public roads. Further, as per mitigation measure AQ1, best-practice dust management measures will be implemented during all construction work:

- Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather
- Adjust the intensity of activities based on measured and observed dust levels and weather forecasts
- Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers

- Regularly water haul roads near construction sites and exposed areas and ensure that all loads are covered
- Regularly inspect and, as necessary, remove any loose materials tracked along haul routes
- Regularly inspect dust emissions and apply additional controls as required
- Implement all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each construction site.

6.3.5 Noise impacts

Construction noise impacts

Issues raised

City of Sydney raised the following issues relating to impacts to construction noise impacts:

- Noise from commercial plant and industrial development must not exceed a project amenity/intrusiveness noise level or maximum noise level in accordance with relevant requirements of the *NSW EPA Noise Policy for Industry* (Environment Protection Authority, 2017) unless agreed to by the City's Area Planning Manager
- Commercial plant is limited to heating, ventilation, air conditioning, refrigeration and energy generation equipment
- An LAeq,15 minute (noise level) emitted from the development must not exceed the LA90, 15 minute (background noise level) by more than three dB when assessed inside any habitable room of any affected residence or noise sensitive commercial premises at any time
- The noise level and the background noise level must both be measured with all external doors and windows of the affected residence closed
- Background noise measurements must not include noise from the development but may include noise from necessary ventilation at the affected premise
- Corrections in Fact Sheet C of the Noise Policy for Industry are applicable to relevant noise from the development measured in accordance with this condition, however duration corrections are excluded from commercial noise.

Response

The assessment of construction noise impacts and identification of reasonable/feasible mitigation will be further refined in Detailed Noise and Vibration Impact Statements consistent with the requirements of the Construction Noise and Vibration Standard (and accounting for the varying factors to be considered such as location, type/sensitivity of receiver, amenity objectives for area, extent of exceedance, duration and time periods).

Commercial plant and/or industrial development is not proposed. However, in accordance with mitigation measure NV07 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, long term construction site support equipment and machinery will be low noise emitting and suitable for use in residential areas, where feasible and reasonable.

Construction hours and night-time work

Issues raised

City of Sydney raised the following issues relating to impacts to construction hours and night-time work:

- All work must only be carried out between the hours of 7.30am and 5.30pm on Mondays to Fridays, inclusive, and 7.30am and 3.30pm on Saturdays, with safety inspections being permitted at 7.00am on work days, and no work must be carried out on Sundays or public holidays. Exceptions to this include the use of a crane for special operations and work to avoid the loss of life, damage to property, to prevent environmental harm and to avoid structural building damage. Written approval must be given by the Construction Regulation Team prior to extended working hours
- The operation of high noise emission plant and equipment is restricted to the hours of:
 - 8.30am to 12.00am and 1.00pm to 4.30pm Monday to Friday
 - 9.00am to 12.00am and 1.00pm to 3.00pm Saturday
- All reasonable and feasible steps must be carried out to ensure that the work complies with the City of Sydney *Code of Practice for Construction Hours/Noise 1992* and Australian Standard 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

Response

The proposed construction hours are:

- Enabling and site establishment (including demolition and demobilisation, piling and surface construction work) – 7am to 6pm Monday to Friday, 8am to 6pm Saturdays with no work on Sundays or Public Holidays
- Tunnelling (including associated excavation and tunnelling support work) – 24 hours per day, seven days per week
- Station and crossover cavern excavation and concrete lining – 24 hours per day, seven days per week.

The proposed construction hours are described and justified in Chapter 5 (Project description) of the Environmental Impact Statement. Should this proposal receive planning approval, it is anticipated that the approval will include conditions relating to approved construction hours and the procedures for any variation to approved hours.

Mitigation, management and monitoring

Issues raised

City of Sydney raised the following issues relating to impacts to noise mitigation, management and monitoring:

- Noise and vibration monitoring will be required during construction
- A respite period is recommended for highly intrusive equipment, particularly during rock breaking work
- A site-specific noise management plan must be submitted to the Council for comment and approval prior to issue of any Construction Certificate

- All work conducted on site which form part of this development must be carried out in accordance with the submitted Demolition, Excavation and Construction Management Plan. Where resultant noise and/or vibration levels at any sensitive receiver still exceed Council's applicable criteria and are giving rise to sustained complaints then the contractor must provide regular, appropriate and sustained periods of respite in consultation with Council's Health and Building unit. Approval to vary the authorised noise and vibration levels must be received in writing by the proponent from Council prior to activities being carried out that exceed sanctioned emission levels
- Background noise monitoring must be carried out in accordance with the long term methodology in Fact Sheet B of the Noise Policy for Industry unless otherwise agreed by the City's Area Planning Manager.

Response

Noise and vibration impacts will be managed in accordance with the Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement), which aims to manage all construction noise and vibration impacts from this proposal, including tunnelling and utility work, using a variety of mitigation measures. The Construction Noise and Vibration Standard includes a list of standard mitigation measures that will be implemented where feasible and reasonable, including monitoring of impacts. Where vibration levels are predicted to exceed the screening criteria, vibration monitoring will be carried out to ensure vibration levels remain below appropriate limits for that structure.

The planning approval (should this proposal be approved) would set allowable working hours for this proposal, including permitted hours for highly noise intensive work and the circumstances in which work outside standard hours can occur.

Sydney Metro will also prepare Detailed Noise and Vibration Impact Statements in accordance with the Construction Noise and Vibration Standard. Where work is predicted to significantly exceed noise goals and impact on receivers for a significant period of time, additional noise mitigation measures will be considered to reduce the noise levels and impact on sensitive receivers (refer to Chapter 5 of the Construction Noise and Vibration Standard). This may include offers of respite and alternative accommodation.

In accordance with mitigation measure NV03, appropriate respite will be provided to affected receivers in accordance with the Sydney Metro Construction Noise and Vibration Standard. This will include consideration of impacts from utility and power supply work when determining appropriate respite periods for affected receivers. When determining appropriate respite, the need to efficiently undertake construction will be balanced against the communities' preferred noise and vibration management approach.

In accordance with the Sydney Metro Construction Noise and Vibration Standard (included in Appendix E of the Environmental Impact Statement), background noise monitoring will be carried out at representative noise sensitive receivers to determine the rating background noise levels (RBLs) where suitable RBLs have not been established in previous project stages. Any monitoring will be in accordance with the procedures presented in the *Noise Policy for Industry* (Environment Protection Authority, 2017).

6.3.6 Impacts to Non-Aboriginal heritage

City of Sydney raised the following issues relating to impacts to non-Aboriginal heritage:

- The preparation of a detailed salvage methodology for salvage of significant fabric of Gilbey's Distillery for reuse in the project or elsewhere should form part of mitigation measure NAH4
- An Archaeological Research Design should be prepared to identify the excavation methodology for predicted locally significant non-Aboriginal archaeological resources at the Pyrmont Station construction sites
- Dilapidation reports should be a condition of the project, and should include a photographic survey of affected properties, prepared by an appropriately qualified structural engineer and heritage consultant
- Non-Aboriginal mitigation measures should be made conditions of approval of the SSI
- A copy of archival recording of former Skinners Family Hotel, NSW Club House Building, Former Bank Delfin House, Richard Johnson Square, Gilbey's Distillery (26-32 Pyrmont Bridge Road) and Pangas House (15-17 Hunter Street) should be deposited to City of Sydney archives
- A detailed investigation of the construction and structural condition of Skinners Family Hotel, NSW Sports Club House, Tank Stream and Bennelong Stormwater Channel no 29A should be carried out and detailed methodologies for the protection of these heritage items developed prior to commencement of any demolition and excavation work. The protection methodologies for Skinners Family Hotel must also specify mechanical impact prevention and weather protection of the building and specify measures to mitigate any potential vibration impacts.

Response

While conditions of approval are a matter for the Department of Planning and Environment to consider during its assessment of this proposal, the mitigation measures described throughout the Environmental Impact Statement will be adopted and implemented.

Non-Aboriginal heritage impacts will be managed in accordance with the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), which includes heritage management objectives to minimise impacts on items or places of heritage value, avoid accidental impacts on heritage items, and maximise workers' awareness of Aboriginal and non-Aboriginal heritage. The Construction Environmental Management Framework also requires archival recordings of all heritage items affected by the work prior to commencement of work.

Mitigation measures have been developed to minimise potential direct impacts such as impacts from vibration, subsidence, architectural noise treatment and demolition of adjoining structures. In accordance with mitigation measure NAH3, a method for the removal of existing buildings and/or structures at specified construction sites will be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items. In accordance with mitigation measure NAH8, further assessments at later design stages and during detailed construction planning will be carried out where required to check the preliminary findings of the ground movement assessment in relation to listed heritage buildings. In the unlikely event that accidental damage does occur to a non-Aboriginal heritage item, this would be rectified by the project at no cost to the owner.

In accordance with mitigation measure NAH1, archival recording and reporting of the following heritage items will be carried out in accordance with the NSW Heritage *Office's How to Prepare Archival Records of Heritage Items* (1998), and *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006):

- Former Skinners Family Hotel (SHR item no. 00584)
- NSW Club House Building (SHR item no. 00145)
- Former Bank – Delfin House (SLEP 2012 item no. I1903)
- Richard Johnson Square (SLEP 2012 item no. I1673).

Archival recording will be carried out at the following sites as potential heritage items of local significance prior to the commencement of work for the following items:

- Gilbey's Distillery, 26-32 Pyrmont Bridge Road, Pyrmont (potential archaeological site and local heritage item)
- Pangas House, 15-17 Hunter Street, Sydney (potential local heritage item).

A copy of archival recording will be made available to City of Sydney.

The significance of fabric at the Gilbey's Distillery will be assessed and opportunities for reuse will be considered. Where fabric is identified for salvage, a methodology will be prepared. Mitigation measure NAH 4 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report has been amended to better reflect this commitment.

Archaeological Research Designs are being prepared for the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites in accordance with mitigation measure NAH6.

6.3.7 Street trees

Issues raised

City of Sydney raised the following issues relating to street trees:

- A project arborist should be engaged to assist with tree management advice during the various stages of the design and construction process. An arborist report and design details are required to demonstrate that condition C-B8 will be achieved
- Advice should be sought from the project arborist regarding the likely impacts to the affected trees and how best to manage and minimise these impacts when working within structural root zones or tree protection zones
- Prior to construction work commencing, the project arborist should outline tree protection measures relevant to the specific work and site conditions
- Ongoing site supervision and advice should be provided by the project arborist to ensure that any impacts to tree health and structure are minimised
- Sydney Metro should set out how it will achieve State targets and objectives relating to tree canopy cover and green infrastructure
- No existing street trees should be removed, in particular, trees with a Landscape Rating or Retention Value Rating of Medium or above
- Appropriate measures including design modifications should be adopted to reduce development impacts to existing street trees
- Landscape design should be informed by an Arboricultural Impact Assessment with appropriate design amendments made to retain existing street trees

- Sydney Metro should comply with the City's Street Tree Master Plan
- Should any trees be removed, City of Sydney should be provided with adequate replacement tree planting or monetary compensation to the value of the removed trees as negotiated with City of Sydney during the detailed design stage of this proposal.

Response

This proposal would be located within a highly urbanised area that does not possess large expanses of intact native vegetation with high biodiversity value. While this proposal has sought to largely avoid or minimise impacts to terrestrial biodiversity, including street trees, it would result in the removal of up to 16 trees (seven planted native trees and nine exotic trees) which includes six trees within the construction sites and ten street trees. Trees would be protected and retained where possible, with options for the retention or protection of street trees identified for removal considered during detailed construction planning.

As described in Section 11.9.2 of the Environmental Impact Statement, the Concept Approval conditions for Sydney Metro include requirements for the project to replace trees at a 2:1 ratio. Tree planting would be further considered and carried out during future stages of the project. Where relevant, tree planting would be carried out with reference to the City of Sydney Street Tree Masterplan. Sydney Metro will engage a suitably qualified project arborist to assess street trees that would be pruned as a result of this proposal or have the potential to be impacted as a result of this proposal. The project arborist will provide advice on measures to minimise damage to ensure the health and stability of trees that would be retained and protected. A commitment to this has been included as new mitigation measure B2 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

6.3.8 Soil and surface water impacts

Issues raised

City of Sydney raised the following issues relating to impacts to soil and surface water impacts:

- There is potential for the oxidation of acid sulfate soils and potentially impact groundwater quality, groundwater dependent ecosystems, groundwater users and surface water-groundwater interactions. Further detailed investigations and an Acid Sulfate Management Plan is required for the Pyrmont Station location
- Prior to the commencement of work, suitable measures are to be implemented to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site
- A Soil and Water Management Plan or Erosion and Sediment Control Plan which has been approved by the Principal Certifier must be implemented in full during the construction period. During the construction period:
 - (a) erosion and sediment controls must be regularly inspected, repaired and maintained in working order
 - (b) erosion and sediment control signage must be used
 - (c) building operations and stockpiles must not be located on the public footway or any other locations which could lead to the discharge of materials into the stormwater system
- Where contamination is identified to present a moderate or higher risk to receptors, a Remediation Action Plan or other Environmental Management Plan will be required. Additional groundwater monitoring would be required during construction and validation sampling after remediation work completed.

Response

In accordance with mitigation measure SSWQ1, prior to ground disturbance in areas of potential acid sulfate soil occurrence, testing will be carried out to determine the presence of actual and/or potential acid sulfate soils. If acid sulfate soils are encountered, they will be managed in accordance with the *Acid Sulfate Soil Manual* (ASSMAC, 1998).

Consistent with the requirements of the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), principal contractors will prepare a Soil and Water Management Plan. This plan will include a contingency plan, consistent with the Acid Sulfate Soil Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage.

In accordance with mitigation measure SSWQ3, erosion and sediment measures will be implemented at all construction sites in accordance with the principles and requirements in *Managing Urban Stormwater – Soils and Construction, Volume 1* (Landcom, 2004) and Volume 2D (NSW Department of Environment, Climate Change and Water 2008a), commonly referred to as the 'Blue Book'.

Additionally, any water collected from construction sites will be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts. Temporary sediment basins will be designed in accordance with *Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction* (DECC, 2008a). Consistent with the requirements of the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), principal contractors will prepare a Soil and Water Management Plan and Progressive Erosion and Sediment Control Plans. These plans will detail the locations of sediment basins, their design rainfall event, and testing, treatment and discharge requirements.

Erosion and sediment control signage will be used where required. Building operations and stockpiles would not be located on the public footway or any other locations which could lead to the discharge of materials into the stormwater system, and would be contained to the construction sites described throughout the Environmental Impact Statement.

Potential contamination will be managed in accordance with the mitigation measures described in Chapter 16 (Contamination) of the Environmental Impact Statement. In particular, mitigation measures C1 to C3 establish a risk-based approach to contamination that ensures that areas with potential contamination will be subject to further desktop data review, detailed site investigations, and appropriately remediated if required. The process identified in mitigation measures C1 to C3 is linked to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) and further contamination investigation and remediation will occur in accordance with the relevant guidelines made or endorsed by the NSW Environment Protection Authority.

6.3.9 Contamination impacts

Acid sulfate soils

Issues raised

City of Sydney raised the following issues relating to acid sulfate soils:

- Any new information about acid sulfate soil identification and remediation must be immediately notified to the Council and the Principal Certifying Authority
- Work that is classified as being in an Acid Sulfate Soils Zone Class 1 and Class 2 must be carried out in accordance with the *Acid Sulfate Soils Assessment Guidelines 1998* published by the NSW Acid Sulfate Soils Management Advisory Committee

- A detailed acid sulfate soil assessment must be carried out by a suitably qualified environmental consultant in accordance with the Acid Sulfate Soils Assessment Guidelines
- An Acid Sulfate Soil Management Plan must be prepared by a suitably qualified person in accordance with the Acid Sulfate Soil Assessment Guidelines.

Response

Sydney Metro West is State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the *Environmental Planning and Assessment Act 1979*. Approval from the Minister for Planning is required before Sydney Metro can carry out this proposal (as per section 5.14 of the *Environmental Planning and Assessment Act 1979*). It is expected that requirements regarding the distribution detailed site investigation reports to the Planning Secretary and other parties would be set by the planning approval (should this proposal be approved).

Consultation will continue to occur with local government stakeholders throughout the development of this proposal through regular meetings, briefings and phone calls, including discussion regarding any environmental issues associated with construction at Pymont and in the vicinity of White Bay.

As described in Section 16.2 of the Environmental Impact Statement, the *Acid Sulfate Soil Manual* (ASSMAC, 1998), has been applied to the assessment of this proposal and will continue to be considered during future phases of this proposal. As per mitigation measure SSWQ1, if acid sulfate soils are encountered, they will be managed in accordance with the Acid Sulfate Soil Manual and, the Construction Environmental Management Framework (refer to Appendix C of the Environmental Impact Statement and the Soil and Water Management Plan).

Contamination investigations

Issues raised

City of Sydney raised the following issues relating to contamination investigations:

- Prior to the commencement of work associated with the built form of the development, a Section A Site Audit Statement is to be submitted to the Council's Area Planning Manager
- Where the ongoing land use suitability and release of the Final Site Audit Statement is dependent upon the implementation of an Environmental Management Plan in relation to any residual contamination remaining onsite this must be submitted to and approved by the Site Auditor and the City's Area Planning Manager prior to the issue of the Site Audit Statement
- Any future intrusive ground work carried out that have the potential to conflict with any residual contamination remaining onsite must only be carried out in accordance with the Environmental Management Plan as referenced by the Site Auditor on the final Site Audit Statement and approved by the Council.

Response

Sydney Metro West is State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the *Environmental Planning and Assessment Act 1979*. Approval from the Minister for Planning is required before Sydney Metro can carry out this proposal (as per section 5.14 of the *Environmental Planning and Assessment Act 1979*). It is expected that requirements regarding the distribution detailed site investigation reports to the Planning Secretary and other parties would be set by the planning approval (should this proposal be approved).

The design of this proposal has avoided known contaminated sites present at or nearby the Pyrmont Station or Hunter Street Station (Sydney CBD) construction sites. The potential risks of encountering contamination will be appropriately managed to minimise impacts on human health and ecological receivers.

Potential contamination will be managed in accordance with the mitigation measures described in Chapter 16 (Contamination) of the Environmental Impact Statement. Mitigation measures C1 to C3 establish a risk based approach to managing potential contamination that ensures that areas with potential contamination will be subject to further desktop data review, detailed site investigations, and appropriately remediated if required. The process identified in mitigation measures C1 to C3 is linked to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) and further contamination investigation and remediation would occur in accordance with the relevant guidelines made or endorsed by the NSW will Protection Authority.

Following the preparation of Remediation Action Plans in accordance with mitigation measure C3, sites requiring Site Audit Statements will be identified. In accordance with mitigation measure C4, where contamination is highly complex, an Environment Protection Authority accredited Site Auditor will review and approve the Remediation Action Plan, and will develop a Site Audit Statement and Site Audit Report upon completion of remediation. The sites requiring Site Audit Statements will be confirmed following the preparation of Remediation Action Plans (mitigation measure C3).

Groundwater contamination

Issues raised

City of Sydney raised the following issues relating to groundwater contamination:

- Contaminated groundwater must not be discharged into the City's stormwater drainage system, and that alternative options for the disposal of groundwater include disposal to sewer with prior approval from Sydney Water or off-site disposal by a liquid waste transporter for treatment/disposal to an appropriate waste treatment/processing facility
- Where contamination is identified to present a moderate or higher risk to receptors, a Remediation Action Plan or other Environmental Management Plan will be required. Additional groundwater monitoring would be required during construction and validation sampling after remediation work completed.

Response

Groundwater inflow would be collected and treated during construction via temporary water treatment plants so that discharged water quality is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) guideline values and/or meets the requirements of the relevant environment protection licence for this proposal prior to entering the local stormwater system. Discharges from the wastewater treatment plants would be monitored to ensure compliance with any discharge criteria in an environment protection licence(s) issued for this proposal.

In accordance with mitigation measure C3, where data from additional data review or the Detailed Site Investigation confirms that contamination will have a moderate, high or very high risk and remediation is required to make the site suitable for its proposed use, a Remediation Action Plan will be developed for the relevant area of the construction site/s. Each Remediation Action Plan will detail the remediation or management work required to mitigate risks from contamination in order to make the site suitable for its proposed use. The Remediation Action Plan will be prepared in accordance with relevant NSW EPA guidelines and where applicable, detail remediation methodologies in accordance with Australian Standards and other relevant government guidelines and codes of practice.

Remediation will be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land. The sites requiring Remediation Action Plans will be confirmed following the additional data review (mitigation measure C1) and Detailed Site Investigation (mitigation measure C2).

Monitoring of groundwater levels and quality at the site area will occur before (baseline), during and after construction – refer to measure GW3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report. A surface water monitoring program will be implemented to observe any changes in surface water quality that may be attributable to work carried out as part of Stage 1 of the planning approval process and inform appropriate management responses for this proposal (measure SSWQ6).

Construction site contamination

Issues raised

City of Sydney raised the following issues relating to construction site contamination:

- A Detailed Environmental Site Investigation is to be submitted to the City Area Planning Manager for further review
- Council's Area Planning Manager and the Principal Certifier must be notified of any new information which comes to light during remediation, demolition or construction work which has the potential to alter previous conclusions about site contamination
- The removal of underground petroleum storage tanks must be carried out in accordance with Safework NSW requirements
- The underground petroleum storage system must be investigated for contamination and a site investigation must be submitted to Council's Area Planning Manager within 60 days of completion of either validation that no site remediation is necessary or completion of any necessary remediation work
- A covenant shall be registered on the title of the land binding the owners and future owners to be responsible for ongoing maintenance and any future rehabilitation work required in terms of the encapsulated/remaining contaminated materials.

Response

Potential contamination will also be managed in accordance with the mitigation measures described in Chapter 16 (Contamination) of the Environmental Impact Statement. In particular, mitigation measures C1 to C3 establish a risk based approach to contamination that ensures that areas with potential contamination will be subject to further desktop data review, detailed site investigations, and appropriately remediated if required. The process identified in mitigation measures C1 to C3 is linked to the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) and further contamination investigation and remediation will occur in accordance with the relevant guidelines made or endorsed by the NSW Environment Protection Authority.

Underground petroleum storage tanks would be managed and decommissioned in accordance with SafeWork NSW requirements and the relevant requirements of the *Guidelines for implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019* (Environment Protection Authority, 2020). Any specific approval or referral requirements regarding the investigation of underground petroleum storage tanks would be governed by the planning approval (should this proposal be approved).

The need for registration of a covenant governing any ongoing maintenance and/or future rehabilitation will be determined following consideration of the Site Audit Statement(s), Remedial Action Plan and Validation Report(s).

Sydney Metro will continue to consult with relevant authorities, including City of Sydney and Inner West Council as described in Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement. Consultation will continue to occur with local government stakeholders throughout the development of this proposal through regular meetings, briefings and phone calls, including notification of any new information regarding site contamination.

Asbestos contamination

Issues raised

City of Sydney raised the following issues relating to asbestos contamination:

- Work removing asbestos containing materials must be carried out by a suitably licensed asbestos removalist duly licensed with Safework NSW, in accordance with:
 - The Work Health and Safety Regulation 2017
 - *How to manage and control asbestos in the workplace: Code of Practice* (Safework NSW, 2011)
 - *Managing Asbestos Policy* (City of Sydney, 2013) and associated guidelines
- Safework NSW must be formally notified of the work, and work must be clearly signed. Asbestos must be disposed of at an EPA licenced waste facility, and must not be reused on site.

Response

As described in Section 21.2 of the Environmental Impact Statement, the following legislation and guidelines have been applied to the assessment of this proposal and will continue to be considered through future stages of this proposal:

- *Work Health and Safety Act 2011* (NSW) and *Work Health and Safety Regulation 2017* (NSW)
- *Code of Practice: How to manage and control asbestos in the workplace* (Safework Australia, 2019)
- *Code of Practice: How to Safely Remove Asbestos* (Safework NSW, 2016).

Relevant local government policies will also be applied to future stages of this proposal where relevant.

Groundwater impacts

Issues raised

City of Sydney noted that the proposed excavations may cause groundwater inflows to the excavations, and associated groundwater level drawdown of groundwater, and potential for migration from source sites towards the construction site.

Response

Chapter 14 (Groundwater and ground movement) of the Environmental Impact Statement acknowledges that the groundwater flow regime in the vicinity of each of the construction sites is expected to change due to mined excavations at both Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites. The assessment notes that during construction, the excavation of Pyrmont Station and Hunter Street Station (Sydney CBD) would act as a groundwater sink, causing groundwater to flow towards the excavation, effectively reversing the flow.

Predicted changes will be further evaluated by the detailed geotechnical model required by mitigation measure GW1 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

Contaminated fill

Issues raised

City of Sydney notes that all fill imported onto the site must be validated to ensure the imported fill is suitable for the proposed land use from a contamination perspective. Fill imported on to the site should also be compatible with the existing soil characteristic for site drainage purposes.

Response

Fill imported to construction sites would be classified in accordance with the *Protection of the Environment Operations Act 1997*. Imported material would meet engineering requirements (including drainage requirements) for the placement location.

6.3.10 Hydrology and flooding

Hydrology

Issues raised

City of Sydney raised the following issues relating to hydrology:

- Changes to the conveyance capacity of existing stormwater systems should be minimised
- Prior to discharging any water collected during excavation and construction into the City's stormwater drainage system, the proponent must seek approval from the City's Public Domain Unit. Sydney Metro must submit a dewatering management plan with an Application for Temporary Dewatering unless the applicant can put in place an alternative agreement with Sydney Water, or transport water off-site to an approved waste treatment facility.

Response

In accordance with mitigation measure SSWQ7 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, design development will confirm the local stormwater system capacity to receive construction water treatment plant inflows. In the event there is a stormwater infrastructure capacity issue with existing infrastructure, mitigation measures such as storage detention to control water outflow during wet weather events would be implemented. Any new connections to the stormwater system would be negotiated with the City of Sydney by the contractor.

Flooding

Issues raised

City of Sydney raised the following issues relating to flooding:

- Sydney Metro must implement flood mitigation measures to manage potential flood impacts
- Sydney Metro must adopt, implement and condition the flooding mitigation measures outlined in Chapters 15 (Soils and surface water quality) and 17 (Hydrology and flooding) of the Environmental Impact Statement.

Response

More detailed consideration of flooding in around construction sites is best carried out when the construction site layouts are confirmed during detailed construction planning and when more recent changes from other developments can be considered. Mitigation measures HF1, HF2 and HF3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report require further consideration of impacts on flood behaviour and appropriate mitigation during detailed construction planning.

While conditions of approval are a matter for the Department of Planning and Environment to consider during its assessment of the project, the mitigation measures described throughout the Environmental Impact Statement will be adopted and implemented.

6.3.11 Spoil, waste management and resource use impacts

Generated waste and litter

Issues raised

City of Sydney raised the following issues relating to impacts to generated waste and litter:

- Sydney Metro must demonstrate that there has been adequate consideration of potential impacts on waste servicing and public place cleansing in the vicinity of the construction sites
- Sydney Metro should undertake early consultation with the City of Sydney's Waste and Cleansing team to mitigate waste servicing and public place cleansing impacts
- Waste servicing of construction sites should be conducted in accordance with the Waste Commercial Collection Time Zones in the City of Sydney's Waste Policy - Local Approvals Policy for managing waste in public places
- An operational waste management plan will be required for completed developments.

Response

Section 20.5.3 of the Environmental Impact Statement outlines the likely main construction waste streams for this proposal. Potential waste management issues are manageable through standard mitigation measures. These measures will be developed in accordance with the Sydney Metro West Sustainability Plan (refer to Chapter 22 (Sustainability, climate change and greenhouse gas) of the Environmental Impact Statement) and the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) which requires the Principal Contractor to develop a waste management plan to address the following:

- Classification of waste in accordance with the current guidelines
- Handling of waste including measures to facilitate segregation of waste into stockpiles of concrete, steel, timber, paper and cardboard and vegetation to make it easier to recycle components and prevent cross contamination
- Management of waste
- Waste minimisation and reuse
- Lawful disposal or recycling locations for each type of waste using a hierarchy which prioritises higher value end use
- Contingencies for the above, including managing unexpected waste volumes.

As described in Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement, City of Sydney and Inner West Council are considered key stakeholders for this proposal and have been consulted with since 2017. Consultation, including consultation regarding waste, will continue to occur with local government stakeholders throughout the development of this proposal through regular meetings, briefings and phone calls.

In accordance with the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), the principal contractor will develop and implement a Waste Management Plan which will include as a minimum:

- The waste management mitigation measures as detailed in the environmental approval documentation
- The responsibilities of key project personnel with respect to the implementation of the plan
- Waste management monitoring requirements
- A procedure for the assessment, classification, management and disposal of waste in accordance with Waste Classification Guidelines
- Compliance record generation and management.

This proposal does not include operation of Sydney Metro West. Operational waste management will be assessed as part of future stages of the project.

Recycling and reuse

Issues raised

City of Sydney noted that a Waste and Recycling Management Plan should be prepared, detailing the management of construction and demolition waste from this proposal. The plan should include tunnelling and building demolition and should meet the requirements as outlined in Section F of the City of Sydney's Guidelines for Waste Management in New Developments.

Response

In accordance with the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), the principal contractor will develop and implement a Waste Management Plan which will include as a minimum:

- The waste management mitigation measures as detailed in the environmental approval documentation
- The responsibilities of key project personnel with respect to the implementation of the plan
- Waste management monitoring requirements
- A procedure for the assessment, classification, management and disposal of waste in accordance with Waste Classification Guidelines
- Compliance record generation and management.

Spoil management

Issues raised

City of Sydney raised the following issues relating to impacts to spoil management:

- Prior to the exportation of waste (including fill or soil) from the site, the waste materials must be classified in accordance with the provisions of the *Protection of the Environment Operations Act 1997* and the *Waste Classification Guidelines, Part 1: Classifying Waste* (NSW DECC, 2009)

- Hazardous and/or industrial waste arising from the demolition/operational activities must be removed and/or transported in accordance with the requirements of the NSW Work Cover Authority pursuant to relevant legislation.

Response

Waste generated as a result of this proposal would be classified in accordance with the *Protection of the Environment Operations Act 1997* and the Waste Classification Guidelines (NSW Environment Protection Authority, 2014) as described in Chapter 20 (Spoil, waste management and resource use) of the Environmental Impact Statement.

The likely main construction waste streams for this proposal, along with the likely waste classification under the guidelines are shown in Table 20-8 of the Environmental Impact Statement. The quantities and classification of waste streams would be confirmed following further design and detailed construction planning.

Wastes that contain hazardous, special or otherwise contaminated materials would be treated and disposed of off-site at a licensed facility in accordance with relevant guidelines and legislation.

Stockpiling

Issues raised

City of Sydney raised the following issues relating to impacts to stockpiling:

- No stockpiles of soil or other materials must be placed on footpaths or nature strips unless prior approval has been obtained from the City's Construction Regulation Team
- All stockpiles of soil or other materials must be placed away from drainage lines, gutters or stormwater pits or inlets
- All stockpiles of soil or other materials likely to generate dust or odours must be covered
- All stockpiles of contaminated soil must be stored in a secure area and be covered if remaining more than 24 hours.

Response

No stockpiles of soil or other materials would be placed on footpaths or nature strips. All stockpiles would be placed within construction sites, away from drainage lines, gutters or stormwater pits or inlets.

As described in Section 20.5.1 of the Environmental Impact Statement, spoil generated by other earthwork, such as mined cavern excavation, would be transported from the tunnel face to stockpiles within the construction sites. These stockpiles would be bunded and managed to avoid potential impacts associated with runoff, sedimentation and leachate. Stockpiling of spoil at construction sites would be managed to balance impacts associated with truck movements and impacts associated with dust, runoff and sedimentation.

Stockpiling of waste will be managed through the Sydney Metro West Sustainability Plan (refer to Chapter 22 (Sustainability, climate change and greenhouse gas) of the Environmental Impact Statement) and the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) which require the Principal Contractor to develop a waste management plan. The Construction Environmental Management Framework also requires implementation of an Air Quality Management Plan which will specify the key air quality/dust controls including those relating to stockpiles.

In accordance with mitigation measure AQ3, the extent of opened and disturbed contaminated soil at any given time will be minimised and temporary coverings or odour suppressing agents will be applied to excavated areas where appropriate to minimise odour risks, including odour risks from stockpiled soils or other materials. Regular monitoring will be conducted during excavation to verify that no offensive odours are being detected beyond the site boundary.

6.3.12 Sustainability

Issues raised

City of Sydney raised the following issues relating to impacts to sustainability:

- Sydney Metro should establish a clear contractual commitment prior to construction to ensure that concrete used for the bulk of the tunnel construction work will be demonstrably lower in embodied carbon than standard concrete, given the very significant progress made in the commercial availability of concrete with significantly lower embodied carbon
- Sydney Metro should make use of the existing robust benchmarking methods that are available for assessing the embodied carbon of concrete products, and the environmental performance declarations that exist for a range of commercial product lines
- This major public infrastructure construction project should align with NSW government policy positions relating to the circular economy and Net Zero by 2050, and that the project should be used as a mechanism to influence market behaviour
- Table 22-3 of the Environmental Impact Statement appears to contain an error regarding carbon emissions from shotcrete (the figure in the column headed 'Scope 3' differs from the figure in the final (totals) column).

Response

As discussed in Chapter 22 (Sustainability, climate change and greenhouse gas) of the Environmental Impact Statement, a Sydney Metro West Sustainability Plan will set out the sustainability principles, objectives and initiatives including performance targets and outcomes which will be adopted from planning, procurement, design, construction and operations to end-of-life. This encompasses all three aspects of sustainability – environmental, social and economic. Sydney Metro West would also achieve an equivalent or improved level of sustainability performance compared to previous Sydney Metro projects.

Table 22-3 of the Environmental Impact Statement includes an error regarding greenhouse gas emissions from shotcrete. Both the Scope 3 and total emissions for shotcrete should be 253 tonnes of carbon dioxide equivalent (tCO₂-e). This does not affect the total emissions figure of 109,501 tCO₂-e. Table 22-3 contains a further error regarding greenhouse gas emissions from generators, plant and equipment. The Scope 1 emission for this category should be 42,523 tCO₂-e, instead of 42,533 tCO₂-e. This does not affect the total emissions figure of 109,501 tCO₂-e. These clarifications have been addressed in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

6.3.13 Beyond the scope of the Environmental Impact Statement

Issues raised

City of Sydney noted that operation of this proposal is not to result in the transmission of any perceptible vibration to an occupiable area within a separate premise.

Response

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. The operation of the Sydney Metro West network, and environmental impacts associated with that operation, are beyond the scope of this proposal and the Environmental Impact Statement.

The associated potential operational impacts of the Sydney Metro West project have been assessed in the Environmental Impact Statement for 'Sydney Metro West - Rail infrastructure, stations, precincts and operations'.

6.4 Department of Planning and Environment - Water

6.4.1 Assessment methodology

Issues raised

The Department of Planning and Environment – Water (DPE Water (formerly Department of Planning, Industry and Environment – Water) raised the following issues relating to the methodology of the Environmental Impact Statement:

- The Environmental Impact Statement is based on limited site-specific detail, leaving uncertainty in the accuracy of predicted take. Further work, including assessment of geotechnical stability, groundwater level and quality, sea water interface level, soil and groundwater contamination and geological structures should be progressed leading into the detailed design stage
- The project would benefit from use of a solute transport model for refining the risk likelihood and consequence of seawater ingress into the Pymont construction site assessment
- Prior to commencing construction activities, the proponent should:
 - Conduct further studies, including geotechnical, geological, contamination, salinity and hydrogeological investigations
 - Improve the groundwater monitoring network targeted around and at construction sites
 - Include sufficient groundwater monitoring installations
 - Develop a Dewatering Management Plan
 - Consider the inclusion of a solute transport model to evaluate the likelihood of seawater ingress.

Response

A study of the groundwater environment, including an assessment of surface and groundwater interaction, potential contamination, potential for saline groundwater incursion, groundwater drawdown and impacts on groundwater dependent ecosystems is presented in Technical Paper 7 (Hydrogeology) of the Environmental Impact Statement. The assessment addresses the Secretary's Environmental Assessment Requirements and uses currently available information.

The design development of this proposal has included a focus on avoiding or minimising potential groundwater impacts. This has included:

- Tanking of caverns (but not shafts) at Pymont and Hunter Street (Sydney CBD) stations to minimise ongoing groundwater inflow
- Tanking of tunnels to minimise ongoing groundwater inflow.

Mitigation measure GW1 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report requires development and progressive update of a detailed geotechnical model during design and construction. This model would consider predicted changes to groundwater levels and the implementation appropriate groundwater monitoring program where targeted changes to groundwater levels are likely to be exceeded. The detailed geotechnical model will include a solute transport model to consider the movement of substances dissolved in groundwater, including saline intrusion at the Pymont Station construction site.

The Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement) requires the preparation of a Groundwater Management Plan including the following:

- Groundwater mitigation measures as detailed in the environmental approval documentation
- Requirements of any applicable licence conditions
- Details of proposed extraction, use and disposal of groundwater, and measures to mitigate potential impacts to groundwater sources, incorporating monitoring, impact trigger definition and response actions for all groundwater sources potentially impacted
- Evidence of consultation with relevant government agencies
- Responsibilities of key project personnel with respect to the implementation of the plan
- Procedures for the treatment, testing and discharge of groundwater from the site
- Compliance record generation and management
- Details of groundwater monitoring if required.

6.4.2 Water balance and licencing

Issues raised

DPE Water raised the following issues relating to impacts to water balance and licencing:

- The proponent should provide more information on the expected water take during operational stages, including a consolidated site balance for the operational phase of the project
- Sydney Metro should continue liaising with DPE Water to confirm water licencing requirements
- The Environmental Impact Statement stated that a comparison of the long term average annual extraction limit to the current shares held indicates there is a significant amount of water available. This is incorrect and the water source is over allocated. There are 2,592 unit shares available in the Sydney Basin Central Groundwater Source with 4,029.5 unit shares allocated.

Response

DPE has been considered a key stakeholder for this proposal and has been consulted with since 2017. Key issues raised during consultation were considered during the preparation of the Environmental Impact Statement. A summary of the feedback received from all stakeholders and the response to the issues raised is provided in Chapter 4 (Stakeholder and Community Consultation) of the Environmental Impact Statement. Consultation with relevant government stakeholders is planned to continue throughout design development through regular meetings, briefings and phone calls.

The subject of the Environmental Impact Statement relates to the major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project. Groundwater-related construction impacts were assumed over a period of two years, the point at which sealing of the station caverns would occur. The subsequent operation of the Sydney Metro West network, and environmental impacts associated with that operation, are beyond the scope of this proposal and its environmental impact assessment and is considered as part of the subsequent planning application, the Environmental Impact Statement for 'Sydney Metro West – Rail infrastructure, stations, precincts and operations'.

Advice from the Department of Planning and Environment that the water source is over allocated is noted and Sydney Metro will continue to liaise with Department of Planning and Environment to confirm any water licensing requirements. Technical Paper 7 (Hydrogeology) considers the consistency of this proposal with the minimal harm criteria in the *NSW Aquifer Interference Policy* (NSW Office of Water, 2012) and the rules under the *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011*.

6.4.3 Mitigation and monitoring

Issues raised

DPE Water noted that the proponent should ensure all work on waterfront land, as defined by the *Water Management Act 2000*, are in accordance with the NRAR Guidelines for Controlled Activities on Waterfront Land, including outlet structures into watercourses.

Response

Under Section 5.23 of the *Environmental Planning and Assessment Act 1979*, controlled activity approval requirements under Section 91 of the *Water Management Act 2000* do not apply to State significant infrastructure. However, as per measure SSWQ7 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, the *Guidelines for controlled activities on waterfront land* (Natural Resources Access Regulator, 2018) will be considered prior to proceeding with work on waterfront land.

6.5 NSW Environment and Heritage Group

6.5.1 Biodiversity

Issues raised

The NSW Environment and Heritage Group (previously the Environment, Energy and Science Group) raised the following issues relating to impacts to biodiversity:

- Pre-clearing surveys should apply to all “protected animals” under the *Biodiversity Conservation Act 2016* (BC Act) and not just threatened fauna
- A condition of approval should be implemented that requires pre-clearance inspections to be conducted by a suitably qualified ecologist for all trees/vegetation and other habitat features that have been approved for removal, and requires any fauna captured to be relocated into areas of suitable habitat in proximity to the project site
- If any microbats (threatened and non-threatened microbats) are located during searches of the human-built structures, NSW Environment and Heritage Group should be consulted and a report on the surveys carried out should be provided to NSW Environment and Heritage Group. The report should document methods and equipment used, dates/times, effort expended, weather conditions (including temperature ranges, wind speed and direction, amount, and nature of precipitation) recorded on-site during the surveys and the results of the surveys and must address how the impacts to microbats will be avoided, minimised, and mitigated
- Details should be provided on the number of replacement trees, the replacement planting locations, replacement plant species and pot size
- A mitigation measure should be implemented to ensure that replacement trees and vegetation consist of local native species from the relevant native vegetation communities that once occurred in this locality and preferably local provenance (rather than use non-local native or exotic species).

Response

This proposal would be located within a highly urbanised area avoiding large expanses of intact native vegetation with high biodiversity value. The majority of this proposal would be underground or in pre-existing developed areas so direct impacts to terrestrial biodiversity would largely be avoided and/or minimised.

Pre-clearance surveys will be carried out as required by Section 10.2 of the Sydney Metro Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement).

Biodiversity investigations carried out for the Environmental Impact Statement found that the human-made structures to be removed within the Hunter Street Station (Sydney CBD) construction sites are not expected to offer suitable roosting habitat for threatened microbats. Targeted searches for microbats are therefore not proposed, however a procedure will be developed for the unexpected occurrence of microbats prior to or during demolition work, including notification to the NSW Environment and Heritage Group. Refer to measure B1 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

Conditions of approval are a matter for the Department of Planning and Environment to consider during its assessment of the project. The specific environmental mitigation measures outlined in this proposal will form part of any planning approval.

Details of revegetation and landscaping would be identified during detailed construction planning and detailed design. This would include more specific details on the trees proposed to be removed or replaced. Sydney Metro would prepare a plan to describe landscaping and other urban design features. Further detail would be provided in the future Sydney Metro West planning application – Rail infrastructure, stations, precincts and operations.

As described in Section 11.9.2 of the Environmental Impact Statement, the Concept Approval conditions for Sydney Metro (Condition C-B8) include a requirement for the project to replace trees at a 2:1 ratio. Tree planting would be further considered and carried out during future stages of the project. Where relevant, tree planting would be carried out with reference to the Inner West Council Street Tree Master Plan and the City of Sydney Street Tree Masterplan.

6.5.2 Flooding

Flood mapping

Issues raised

NSW Environment and Heritage Group raised the following issues relating to impacts to flood mapping:

- The mapping of flood impacts (afflux) uses a band of -20 millimetres to +20 millimetres to show no significant change in flood levels. With this scale, impacts less than 20 millimetres cannot be seen. Impacts greater than 10 millimetres should be shown
- The mapping should be revised to show a band of -10 millimetres to +10 millimetres flood level change (afflux), which would be consistent with the Conditions of Approval for Stage 1 of the Sydney Metro West planning approval process
- NSW Environment and Heritage Group requests that future mapping of flood depths be revised so that the depth at a given location can be easily interpreted using the legend.

Response

Updated mapping of flooding impacts has been prepared to show a band of -10 millimetres to +10 millimetres flood level change (afflux) and is included in Appendix D of this Submissions Report. Colours have also been revised to improve legibility.

Flood modelling

Issues raised

NSW Environment and Heritage Group raised the following issues relating to impacts to flood modelling:

- The assessment of flooding conditions has been made by blocking off the construction footprint. This may underestimate the extent of flooding, which is expected in and around the construction sites. In addition, other factors, including temporary facilities, stockpiles, access roads and overlapping construction periods should be considered in the assessment of flooding conditions and the development of flood risk mitigation work at The Bays tunnel launch and support site
- Modelling should be updated and the outputs from the updated model should be used to evaluate flood risks during construction and the development of appropriate flood risk mitigation measures at The Bays, potentially including augmentation of the existing culvert at Robert Street
- Mitigation measures may not be adequate for the assessment of cumulative flooding risks associated with the construction of the WestConnex Rozelle Interchange at The Bays.

Response

More detailed consideration of flooding in around construction sites is best carried out when the construction site layouts are confirmed during detailed construction planning and when more recent changes from other developments can be considered. Mitigation measures HF1, HF2 and HF3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report require further consideration of impacts on flood behaviour during detailed construction planning.

Climate change

Issues raised

NSW Environment and Heritage Group noted that flooding impacts under the climate change scenarios would be applicable during the operational stage of the Sydney Metro West given the asset and service life of the critical transport facilities would be 120 years or longer. The flooding conditions under the projected climate change scenarios in the 2100s should be evaluated for the development of adaptive and long term flood risk mitigation measures.

Response

The Environmental Impact Statement only considers major civil construction between The Bays and Sydney CBD and excludes operation. Flooding risks under the projected climate change scenarios were not considered for this proposal given the timeline for construction would be within five to 10 years. Flooding conditions under the projected climate change scenarios are considered as part of the subsequent planning application – Rail infrastructure, stations, precincts and operations.

6.6 Heritage NSW

6.6.1 Vibration and settlement

Issues raised

Heritage NSW raised the following issues relating to impacts to heritage assessment methodology:

- Clarification should be provided regarding vibration and settlement/ground movement impacts for NAH8 and NAH9
- A structural assessment of heritage items should be carried out at the start of this proposal to confirm the level of vibration screening that is appropriate
- A commitment to a structural assessment and rectification of any damage to heritage items should be included.

Response

In accordance with mitigation measures NAH8 and GW1 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report, a detailed geotechnical model for this proposal will be developed and progressively updated during design and construction. The detailed geotechnical model will include an assessment of the potential for damage to structures and subsurface elements, including heritage items, through settlement or strain.

Where required, further assessments at later design stages and during detailed construction planning would be carried out to check the preliminary findings of the ground movement assessment in relation to listed heritage buildings. Other heritage listed infrastructure would also be subject to such further assessment of ground movement where identified as being required in Technical Paper 3 (Non-Aboriginal heritage). Where building damage risk is rated as moderate or higher, a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage. This may include monitoring as identified in mitigation measure NAH 9 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

As described in Section 7.3.8 of the Environmental Impact Statement, the Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement) states that heritage buildings and structures should be assessed for construction vibration impacts according to cosmetic damage screening criteria and should not be assumed to be more sensitive to vibration unless structurally unsound. Where heritage buildings and/or structures are found to be structurally unsound, a more conservative cosmetic damage screening criterion for construction vibration is adopted.

Based on information available during the preparation of the Environmental Impact Statement, one heritage building or structure, the State listed White Bay Power Station, was identified as requiring application of the more conservative cosmetic damage screening criterion. The assessment found this screening criterion would not be exceeded due to construction of this proposal, with vibration intensive work during crossover cavern excavation located around 300 metres away from the heritage item.

Mitigation measure NV13 requires further assessment and monitoring where construction vibration screening criteria are predicted to be exceeded while mitigation measure NV13 requires condition surveys of buildings and structures near the tunnel and excavations. The Sydney Metro Construction Noise and Vibration Standard (Appendix E of the Environmental Impact Statement) requires that property owners be advised of the inspection scope and methodology and the process for making a property damage claim.

6.6.2 Heritage assessment methodology

Issues raised

Heritage Council of NSW raised the following issues relating to the heritage assessment methodology:

- All items identified as retaining 'Potential heritage significance' should be assessed and the impact assessment amended to reflect this information as part of the response to submissions
- As referenced mapping (Trigonometrical Survey of Sydney) shows that the potential archaeological resource at the Pyrmont Station site may be earlier than predicted 1880s, assessment of potential and significance should be reconsidered.

Response

Gilbey's Distillery (26-32 Pyrmont Bridge Road, Pyrmont) and Pangas House (15-17 Hunter Street, Sydney) were identified in the Environmental Impact Statement as potential heritage items. Technical Paper 3 (Non-Aboriginal Heritage) assesses the heritage significance of both items. The assessments identified the items to be of local heritage significance. The impact assessment in Technical Paper 3 (Non-Aboriginal heritage) identifies the demolition of Gilbey's Distillery as having a major direct impact. Moderate direct impacts (vibration) and negligible indirect impacts (views and vistas) are identified for Pangas House.

While an overlay of the City of Sydney 1854 plan (Figure 9 of Technical Paper 3) does not show any structures in the Pyrmont construction site study area at that time, the Trigonometrical Survey of Sydney does confirm that some structures identified in Technical Paper 3 as constructed in the 1880s were constructed at some point after 1855. Further detailed historical research has been conducted in the preparation of the Archaeological Research Design to determine a clearer date for these structures.

It is noted that the buildings located on the Trigonometrical Survey of Sydney correlate with structures identified on later plans from the 1880s and were assessed as being within areas where basement disturbance has occurred and not predicted to survive intact.

Further details of this area have been provided within the Archaeological Research Design prepared for Hunter Street (Sydney CBD) Station, which is being prepared in accordance with mitigation measure NAH6.

6.6.3 Visual impacts

Issues raised

Heritage Council of NSW requested that the heritage assessment consider the visual impacts to the Pyrmont Bridge and commit to reduction of visual impacts to heritage items from the acoustic sheds.

Response

The Pyrmont Bridge heritage item is located about 160 metres to the east of the closest construction site. This proposal is not anticipated to obstruct or overshadow the viewing of aesthetically significant elements of the heritage item. As a result, it was considered unlikely that this proposal would result in more than a negligible heritage impact to the Pyrmont Bridge and this heritage item has not been further considered.

The Pyrmont Bridge (SHI ID 5053337) is an item of State heritage significance for its aesthetic, historical and cultural values. It is listed on several heritage registers:

- State Heritage Register (I01618)
- Sydney Harbour Foreshore Authority s170 Register
- Register of the National Estate (I1835).

Pyrmont Bridge is closely associated with the economic and social development of Sydney at the end of the 19th century and provided an essential link between the city and the western suburbs at that time. The proposed Pyrmont Station eastern construction site is about 100 metres away from the heritage item's western boundary. This distance ensures that the proposed work will not cause any direct impacts to the heritage item, although indirect (visual) impacts can still be caused to heritage items when work occurs in their vicinity. The Pyrmont Bridge has aesthetic significance as outlined in its State Heritage Register listing. The aesthetic value of the item comes from the bridge itself, meaning its form and materials, however. The surrounding environment, or its setting, is not listed as a significant aspect of this item, while the policies in the Pyrmont Bridge Conservation Management Plan focus on the visual relationship between the bridge and Darling Harbour.

Sightlines do exist between the Pyrmont Bridge and the Pyrmont Station eastern construction site, these are partly obscured and reduced by the buildings that surround the proposed construction site and the bridge. The construction site would not affect the setting of the Pyrmont Bridge, as the area around the item features numerous modern-style high rise buildings. Therefore, from a heritage perspective, the proposed Pyrmont Station construction sites would have a negligible visual impact on the Pyrmont Bridge.

6.6.4 Further heritage investigations

Issues raised

Heritage Council of NSW raised the following issues relating to impacts to further heritage investigations:

- Additional investigation of the location of the Tank Stream and Bennelong Stormwater Channel No 29A is recommended. This should clarify the proximity of these items to the eastern Hunter Street Station (Sydney CBD) construction site, the impacts from excavation and tunnelling, and a commitment to identifying and avoiding these heritage items
- The project should commit to additional, site-specific historical research to guide significance assessment and management requirements, especially concerning state significant historical archaeological relics that would be salvaged. A commitment to detailed site specific research is recommended.

Response

Mitigation measures have been developed to minimise potential impacts of this proposal on the Tank Stream and Bennelong Stormwater Channel No 29A. Initial closed circuit television investigations have been carried out for the Tank Stream and in accordance with mitigation measure NAH2, further investigations will be carried out for both the Tank Stream and Bennelong Stormwater Channel No 29A. The investigations are aimed at confirming and recording the location and depth of these heritage items and determining their current integrity, extent and condition.

Technical Paper 3 of the Environmental Impact Statement includes historical research and an archaeological assessment that was prepared as an overview to identify heritage values of listed and unlisted heritage items and to inform the assessment of archaeological potential and significance for the project sites. This assessment was prepared to inform additional site-specific research and assessment as part of the preparation of an Archaeological Research Design. Archaeological Research Designs for this proposal are being prepared in accordance with mitigation measure NAH6 and will address requirements for archaeological management.

6.6.5 Support for proposed mitigation and management

Issues raised

Heritage NSW supports all the recommendations and proposed mitigation and management measures outlined in relation to Aboriginal cultural heritage for the project.

Response

The support of Heritage NSW for the proposed Aboriginal heritage mitigation and management measures is noted.

6.6.6 Aboriginal heritage mitigation measures

Issues raised

Heritage NSW recommends that all mitigation and management measures, outlined in Chapter 12 of Technical Paper 4 (Aboriginal Cultural Heritage Assessment Report) in relation to Aboriginal cultural heritage be implemented.

Response

The proposal specific environmental mitigation measures included in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report will form part of any planning approval.

6.7 Place Management NSW

6.7.1 Support for this proposal

Issues raised

Place Management NSW is generally supportive of the key directions and recommendations outlined in the Environmental Impact Statement.

Response

The support of Place Management NSW is noted.

6.7.2 Stakeholder consultation

Issues raised

Place Management NSW recommends that Sydney Metro liaise with the developer (Mirvac) of Harbourside to ensure that the project dimensions associated with this renewal site are fully understood (especially around potential noise impacts) and addressed as part of any future detailed design work for the Sydney Metro West project.

Response

It is noted that SSD-7874 Harbourside Shopping Centre Redevelopment – Concept proposal (residential tower, non-residential podium envelope, publicly accessible open space and public domain improvements) and Stage 1 work (including demolition of the existing shopping centre and structures, southern pedestrian link bridge, monorail infrastructure and tree removal) were approved on 25 June 2021. Approvals for other work at the Harbourside site would be considered during detailed design for this proposal and for future stages of Sydney Metro West where relevant. Sydney Metro has started liaising with Mirvac regarding the impacts of this proposal and proposed mitigation and management measures.

6.7.3 Noise and vibration impacts

Issues raised

Place Management NSW noted that the Environmental Impact Statement does not provide any commentary on the impacts of tunnelling and associated vibration on the Pyrmont Bridge, which is located about 100 metres from the proposed tunnel route, or Sydney Aquarium and Wildlife Zoo which is located about 75 metres from the proposed tunnel route and contains two sensitive animal enclosures.

Response

Preliminary settlement contours were developed for this proposal to identify the expected zone of influence and magnitude of settlement that is anticipated to result from construction. Based on these contours, Pyrmont Bridge, Sydney Aquarium and Wildlife Sydney Zoo are anticipated to be outside the extent of any likely settlement impacts from this proposal.

Construction vibration levels resulting from tunnelling are also not anticipated to result in any damage to Pyrmont Bridge, Sydney Aquarium or Wildlife Sydney Zoo and are not predicted to exceed human comfort criteria for vibration at either location.

There are no adopted criteria in NSW for the assessment of ground borne noise and/or vibration impacts on animals in enclosures (including fish and aquatic mammals held in tanks). Potential impacts would depend on a range of factors including distance from the noise source to the enclosure, duration of the exposure, the enclosure construction, and the susceptibility to noise/vibration of the particular species being held (including their hearing sensitivity). Given the distance to the tunnel alignment, the relative short duration of the tunnel boring machine pass by and the location of these facilities in a highly urbanised environment (that has experienced previous major construction work), adverse impacts on animals in enclosures due to metro construction are not expected. Sydney Metro will liaise with the operators of the Sydney Aquarium and Wildlife Sydney Zoo during construction planning to address any concerns about potential impacts on animals.

6.7.4 Impacts to Non-Aboriginal heritage

Issues raised

Place Management NSW recommends that ongoing investigation and monitoring should occur at The Bays Station construction site (near White Bay Power Station) as part of future assessments and during the work phase to ensure that construction work do not adversely impact on the structural integrity of White Bay Power Station.

Response

This proposal is not expected to have direct or indirect impacts on the White Bay Power Station, given its distance from this proposal and the minimal surface disturbance proposed at The Bays tunnel launch and support site.

Preliminary settlement contours were developed to identify the expected zone of influence and magnitude of settlement from construction. Based on these contours, the White Bay Power Station is anticipated to be outside the extent of any likely settlement impacts from this proposal. Construction vibration levels resulting from tunnelling are also not anticipated to result in any damage, with the adopted cosmetic damage screening criterion not predicted to be exceeded for the White Bay Power Station.

6.7.5 Social impacts

Issues raised

Place Management NSW notes that the Harbourside site in Darling Harbour has recently received approval for the demolition of the 1980s-era shopping centre, to be replaced with a new residential, retail, dining and entertainment precinct, and the construction of a 153 metre tower with about 357 apartments. As this major renewal site is in very close proximity to the Pyrmont Station and future metro tunnel, it is recommended that the Environmental Impact Statement consider any impacts associated with the change of use from commercial to mixed-use on this site.

Response

As this proposal and the Harbourside redevelopment could be constructed concurrently, potential cumulative construction interactions would be considered throughout construction. In accordance with mitigation measures TT14, co-ordination of traffic management arrangements between major construction projects will occur in consultation with Transport for NSW to minimise cumulative construction traffic impacts to the development. In accordance with mitigation measure NV15, the likelihood of cumulative construction noise impacts will be reviewed during detailed design when detailed construction schedules are available. Co-ordination will occur between potentially interacting projects to minimise concurrent or consecutive work in the same areas, where possible. Specific mitigation strategies will be developed to manage impacts. Depending on the nature of the impact, this could involve adjustments to construction program or activities of Sydney Metro West or of other construction projects.

Should the change from commercial to mixed use at the Harbourside site be realised during the construction of this proposal, appropriate changes to environmental management measures would be included in environmental management documentation and implemented where required.

6.8 NSW Environment Protection Authority

6.8.1 Soils and surface water quality

Issues raised

The Environment Protection Authority raised the following issues relating to potential soil and water quality impacts:

- Details of the extent of contamination mitigation and management measures to mitigate contamination risks to waters have not been provided
- Practical measures should be considered to avoid and minimise discharges, including capture and discharge to the water treatment plants, reuse for dust suppression and construction activities where safe and practical to do so
- If discharges are still required, a water pollution impact assessment should be conducted commensurate with the residual risks and consistent with the national Water Quality Guidelines to inform licensing considerations consistent with Section 45 of the *Protection of Environment Operations Act 1997*

- Practical and reasonable measures to avoid and minimise discharges should be considered, including, but not limited to, discharge to the water treatment plants and reuse for dust suppression and construction activities where safe and practical to do so
- Details of alternative or additional mitigation measures will likely be required to demonstrate that water pollution risks associated with contamination, acid sulfate soils and saline soils would be appropriately managed. However, this needs to be determined through further detailed investigations. Measures may include at-source controls, enhanced erosion and sediment controls, options to avoid contaminated stormwater discharges and increased sizing of sediment basins
- A condition of approval should set out the discharge criteria consistent with the Environmental Impact Statement.

Response

Wastewater would be tested and treated at construction wastewater treatment plants prior to reuse or discharge. Water volumes generated during the construction of this proposal would vary based on construction work both above and below the ground surface, the amount of groundwater infiltrating into the tunnels and the length of tunnels that have been excavated. Groundwater ingress is expected to be the main contributor to wastewater volumes. The reuse of wastewater would be maximised during construction work (including use for dust suppression and tunnelling activities) and any surplus wastewater would be discharged to the local stormwater system following treatment.

In accordance with mitigation measure SSW05, water treatment plants will be designed to treat wastewater to a level that is compliant with the ANZECC/ARMCANZ (2000), ANZG (2018) and draft ANZG (2020) default guidelines for 95 per cent species protection and 99 per cent species protection for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities. Consistent with the requirements of the Construction Environmental Management Framework (Appendix C of the Environmental Impact Statement), detailed procedures for the treatment, testing, and discharge of groundwater from the site will be included in a Groundwater Management Plan (or equivalent). Consistent with the requirements of the Construction Environmental Management Framework, principal contractors will prepare a Soil and Water Management Plan and Progressive Erosion and Sediment Control Plans. These plans will detail the locations of sediment basins, their design rainfall event, and testing, treatment and discharge requirements.

Discharges from the wastewater treatment plants would be monitored to ensure compliance with any discharge criteria in a planning approval or environment protection licence(s).

In accordance with mitigation measure SSWQ1, further testing to determine the presence of actual and/or potential acid sulfate soils is proposed. If acid sulfate soils are encountered, they will be managed in accordance with the *Acid Sulfate Soil Manual* (ASSMAC, 1998).

In accordance with mitigation measure SSWQ2, prior to ground disturbance in areas with a high probability of salinity, testing will be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or would be managed in accordance with *Book 4 Dryland Salinity: Productive Use of Saline Land and Water* (NSW DECC, 2008b).

Mitigation measures C1, C2 and C6 establish the approach for managing water quality risks associated with excavation within or near contaminated sites. Mitigation measure C6 requires the development and implementation of controls to manage the potential impacts of contamination due to drawdown and resulting migration of contaminated groundwater into the construction footprint.

6.8.2 Contamination

Issues raised

The Environment Protection Authority notes that Environmental Impact Statement did not provide detailed investigations required to appropriately characterise contamination risks prior to construction and did not include details of the proposed mitigation measures to manage potential contamination and acid sulfate soil risks. Details from the detailed site investigation and subsequent remediation action plan for The Bays Station construction site were requested.

The Environment Protection Authority considers that the Environmental Impact Statement and the supporting contamination reports have not satisfactorily addressed the Secretary's Environmental Assessment Requirements for the following reasons:

- No intrusive investigations have been carried out, hence ecological and human health risks posed by contamination have not been properly determined
- Measures to manage potential contamination issues have not been identified.

The Environment Protection Authority recommends that appropriate contaminated site investigations are carried out to assess all relevant media and potential contaminants known or potentially present and measures to manage potential contamination identified. The following were requested:

- Sampling and Analysis Quality Plan
- Detailed Site Investigation
- Details regarding engagement of an Environment Protection Authority accredited site auditor
- Interim audit advice covering the adequacy of Sampling and Analysis Quality Plan, the nature and extent of contamination, and the appropriateness of any Remediation Action Plan.

Response

The contamination assessment carried out in the Environmental Impact Statement addressed the requirements of the Secretary's Environmental Assessment Requirements and is considered appropriate to identify potential contamination risk at the current stage of proposal development. The assessment considered the likelihood of land contamination (low contamination potential, contamination possibly present, known contamination) based on the desktop information reviewed, and assessed the potential for contamination to impact upon construction activities. Where detailed site investigations confirm that contamination would have a moderate to very high risk, a remediation action plan would be required.

A review of the assessment carried out against relevant Secretary's Environmental Assessment Requirements is provided in Section 1.3 of Technical Paper 8 (Contamination). During the preparation of the Environmental Impact Statement site access for intrusive detailed site investigations was not available.

The assessment of contamination for this proposal included a desktop review of available information relevant to historical land uses and contamination site inspections the results of geotechnical and contamination investigations carried out by Sydney Metro and high level contamination risk prioritisation. Detailed site investigations were not carried out during the preparation of the Environmental Impact Statement as suitable access to affected private property was not available. For sites where potential contamination risk is identified as moderate, high or very high, a further review of data, including a detailed site inspection, will be carried out in accordance with mitigation measure C1 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

Prior to work for this proposal commencing, bulk excavation work within the station box footprint at The Bays Station construction site will have been completed under the Stage 1 planning approval. Most solid waste remediation in the permanent work area at The Bays will have been carried out and validated prior to any work under a planning approval for this proposal commencing.

As part of the Stage 1 planning approval, Sydney Metro's tunnelling contractor will be preparing a Sampling and Analysis Quality Plan, a Detailed Site Investigation and a Remediation Action Plan for contamination that requires remediation to render the site suitable for the final intended land use. The Detailed Site Investigation is expected to include intrusive soil and groundwater sampling. Remediation is expected to include removal of solid waste from the future station box, and may involve additional remediation work if contamination risks are identified that require remediation.

A Site Audit Statement will be prepared certifying work have been carried out with the endorsement of the Environment Protection Authority accredited Site Auditor. If there are any areas of the construction site that were not addressed as part of work under the Stage 1 planning approval, a risk-based approach will be adopted, consistent with the mitigation measures C1 to C3 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report.

6.8.3 Noise and vibration

Characterisation of construction noise impacts

Issues raised

The Environment Protection Authority queried the approach to categorising noise impacts and suggested that impacts labelled as "low" and "moderate" are unlikely to align with community expectations, would be very noticeable and potentially lead to complaints. Noise levels described as "low" and "moderate" in the noise and vibration impact assessment would be very noticeable and potentially lead to complaints.

Response

The impact gradings represent a likely subjective response to noise and are aligned with bands of noise management level exceedance. Technical Paper 2 (Noise and vibration) acknowledges that the subjective response would vary and depends on the period in which the impacts occur. The assignment of impact grades will be further refined for reporting of construction impacts and identification of reasonable/feasible mitigation in Detailed Noise and Vibration Impact Statements consistent with the requirements of the Construction Noise and Vibration Standard (and accounting for the varying factors to be considered such as location, type/sensitivity of receiver, amenity objectives for area, extent of exceedance, duration and time periods).

Exceedance noise management levels, rather than the impact gradings used in the Environmental Impact Statement, would be the basis for implementing reasonable and feasible mitigation measures during construction.

Assessment methodology – noise catchment areas

Issues raised

The Environment Protection Authority raised the following issues relating to noise catchment areas:

- The study area used in the noise and vibration impact assessment should be consistent with the study area defined in the Sydney Metro Construction Noise and Vibration Standard (Appendix E of The Environmental Impact Statement)

- The areas covered by the noise catchment areas and their assigned rating background levels should be representative and appropriate for use in the assessment. NCA04 encompasses the whole of Pyrmont north of Bridge Road, and this includes the north-western area of Pyrmont in and around Bowman Street which is closer and potentially more affected by work at The Bays tunnel launch and support site. However, no rating background levels have been defined for this area and it only appears to have been considered as part of the Pyrmont Station assessment
- NCA04 does not appear to have been considered in the airborne noise predictions for activities at The Bays tunnel launch and support site.

Response

The study areas adopted for the noise and vibration assessment are sufficiently large and include all receivers where impacts are predicted, noting that the out of hours airborne noise management levels are the most stringent and are equal to rating background level plus five dB. Ground-borne noise is not assessed against the rating background level and has been assessed to a distance of 150 metres which is larger than the Construction Noise and Vibration Standard (Appendix E of The Environmental Impact Statement) requirement of 100 metres for vibration predictions.

Noise catchment areas have been defined based on the general use of the area and the typical noise environment. Areas of similar type and density of receivers that are generally impacted by similar noise sources have been grouped together. This is consistent with the approach to study area definition of previously approved stages of Sydney Metro. NCA04 has been defined based on Pyrmont being generally urban/suburban residential and commercial receivers that are mostly impacted by road traffic noise from the surrounding road network. The north-western area of Pyrmont is several hundred metres from both Pyrmont Station construction site and The Bays tunnel launch and support site and would not be impacted by either.

Assessment methodology – modelling and assessment

Issues raised

The Environment Protection Authority raised the following other issues relating to modelling and assessment:

- Usage factors should either not be used in calculations, or evidence should be provided establishing usage factors in the assessment are appropriate for the modelled scenarios and that they represent a conservative assessment. Alternatively, conditions could be included in the planning approval to limit activities to the 'on-time' specified in the assessment
- It is not clear which sound power level sources have been used for each item of plant and if they are appropriate. It could be expected that accurate sound power level data for activities is available from measurements of previous Sydney Metro activities rather than relying on data from reference sources
- It is not clear if the sound power levels represent noise from the equipment only (e.g. engine, drive chain, exhaust), or if the total noise from an activity is included in the sound power level (e.g. noise of aggregate sliding on a truck tray and hitting the ground)
- There appear to be inconsistencies with the descriptions of construction activities in Technical Paper 2, Table 14. For example, Appendix C of Technical Paper 2 (Noise and vibration) lists the only ventilation equipment as a "ventilation scrubber," while Table 14 includes references to ventilation systems and tunnel ventilation fans and Table 15 includes references to barges.

Response

The modelling approach and assessed scenarios are considered “realistic worst-case scenarios”, as required by the *Interim Construction Noise Guideline* (Department of Environment, Climate Change and Water, 2009). On-times or usage factors are regularly used in construction assessments to provide a reasonable representation of the potential impacts (e.g. a truck arriving/departing a particular construction site would only typically occur for a maximum of a few minutes).

The on-time values used in the assessment are based on observed equipment use on previous construction projects. They have been used in assessments for many previous major projects, they result in representative noise predictions, and are consistent with the modelling approach for earlier stages of Sydney Metro West. All scenarios assume several items of equipment are being used simultaneously, which is conservative and unlikely to occur regularly. If all items are assumed to be in use for the full 15-minute assessment period, this would likely lead to overprediction of noise levels and impacts.

Sound power levels are provided in Appendix C of Technical Paper 2 (Noise and vibration) for the individual items of equipment and for each overall scenario. The sound power levels used in the assessment are applicable to the worst-case (i.e. noisiest) example of that particular item of equipment, whereas most modern equipment specifications generally result in lower noise emissions than the quoted levels. The noise modelling is conservative, as it assumes several items of equipment are in use in the worst-case location (i.e. closest to a particular receiver), whereas in reality individual plant items would be spread out over a larger area, would likely have localised self-shielding, and would not be used in a continuous manner. The power levels are a realistic worst-case representation and address noise from all activities required for each scenario, when adjusted for reasonable and observed estimations of work cycles.

The possibility of using measured data from previous Sydney Metro projects was investigated, however data in a suitable form could not be sourced for this assessment. Sydney Metro plans to ensure that in the future data is collected in a format that can be shared with the Environment Protection Authority and which will improve the confidence in noise predictions.

The construction scenarios used in the assessment are representative of indicative equipment that could be used to complete the work and are not intended to be an exhaustive list of every item that could be used. They represent one way in which this proposal could be built. The contractor engaged to complete the work would further develop the scenarios and undertake their own impact assessments based on detailed information from their specific construction methodology. This would then inform the requirement for site specific management and mitigation measures to be applied to minimise the impacts.

Assessment methodology – construction traffic noise

Issues raised

The Environment Protection Authority raised the following other issues relating to the assessment methodology for construction traffic noise:

- Construction traffic noise impacts are not quantitatively assessed and provide no indication of the extent of impact or annoyance that might be experienced, particularly by residents in Pyrmont. When this is read alongside the change in noise level maps in Figure 34 of Technical Paper 2 (Noise and vibration), it could be interpreted to mean there is likely to be very minor change (typically less than one dB) in the noise environment. It is not clear what conclusion the community can draw from this assessment
- Technical Paper 2 (Noise and vibration) states that because construction vehicles would generally not access the construction site in Pyrmont during the night, it would “minimise the potential for annoyance.” This claim does not appear to be currently substantiated, as impacts and annoyance can occur at other times other than the night period.

Response

The noise and vibration assessment notes that additional annoyance may occur if construction heavy vehicles are required to accelerate or decelerate on roads with gradients and/or at the entrances/exits of the construction sites. Even with detailed information regarding the size/type of heavy vehicles, their loaded weight and the local traffic conditions, it is difficult to accurately quantify the impacts by way of prediction. It is recognised that additional unpredicted impacts may occur when heavy vehicles negotiate curves or traffic calming devices such as speed humps, traffic lights and the like. Such additional noise impacts are generally limited to around 150 metres either side of the construction site access points, with the potential to result in increased annoyance at the closest receivers.

Except in cases where the potentially impacted buildings have been specifically designed for a high noise environment such as in the CBD, then generally the only feasible option is to avoid haulage or deliveries during the sensitive night-time period. The exception would be where deliveries are required to support work required to be carried out 24 hours a day, seven days a week for safety reasons.

Qualitatively, sensitive areas can be more easily identified, and construction traffic noise impacts management and mitigation measures developed. Notwithstanding, mitigation measure NV12 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report notes that further assessment of construction traffic will be completed during detailed design. Sydney Metro will continue to work with regulators to better predict and manage construction traffic noise impacts.

Noise monitoring

Issues raised

The Environment Protection Authority raised the following issues relating to noise monitoring:

- Noise monitoring location B.06 was noted to have its background noise level affected by nearby mechanical plant. The extent to which this mechanical plant affected the measurements and whether the noise monitoring data at noise monitoring location B.06 is representative of background levels in the noise catchment area should be clarified
- Monitoring equipment at noise monitoring location B.06 was on a balcony and there is potential for it to have been affected by façade reflections. The façade reflection status of all background noise measurements should be reported, and any adjustments made to the measured noise levels should be reported and justified
- Information supplied for noise monitoring location B.06 is not consistent. Appendix B of Technical Paper 2 (Noise and vibration) gives the address as 1 Hosking Place and dates between 2 May 2019 and 20 May 2019, however the graphs that follow have dates in June 2015 and the address as 1 Harwood Place
- Technical Paper 2 notes that unattended ambient monitoring was completed in the study area in 2021. This gives the impression that all monitoring was done in 2021. However, Appendix B of Technical Paper 2 (Noise and vibration) indicates that the monitoring was done in 2021 at only one location and the remainder from up to six years ago. Sufficient justification has not been given that it is appropriate to use historical data including data which is up to six years old
- It is not clear how wind speeds were converted from the height of station to 1.5 metres and also how the wind speed was calculated at the monitoring location on the balcony at noise monitoring location B.06.

Response

Mechanical plant is a typical feature of the Sydney CBD and therefore the measured data is considered representative of the area and no adjustments are needed.

The measured data at noise monitoring location B.06 has been taken from the *Sydney Metro City and Southwest Chatswood to Sydenham Environmental Impact Statement* (Sydney Metro, 2016) for consistency. No facade correction was applied to the data. This is consistent with the guidance in Australian Standard AS 1055-2018.

There is a typographical error regarding the dates on page 40 of Appendix B to Technical Paper 5 and on the title of the graphs for this location. The monitoring dates were 19 June to 2 July 2015 and the correct location name is 1 Hoskins Place. All other data, including the noise measurements and graphs, are correct.

For consistency, unattended monitoring data for The Bays was taken from the noise and vibration assessment conducted for the Stage 1 planning approval. For Pymont, data was measured in 2021 at two locations using unattended and attended surveys. Data for Hunter Street in the CBD was taken from the *Sydney Metro City and Southwest Chatswood to Sydenham Environmental Impact Statement* (Sydney Metro, 2016), which was measured in 2015. The 2015 data was used for the following reasons:

- Due to atypical CBD conditions occurring because of the COVID-19 pandemic it is not possible to collect data during normal CBD operating conditions
- Collection of any noise data at this site is not actually required because the surrounding receivers are commercial which all attract an absolute criterion, established without reference to monitored data.

Conversion of meteorology data was completed using the processes defined in Proceedings of Acoustics 2014 paper *Converting Bureau of Meteorology Wind Speed Data to Local Wind Speeds at 1.5 metres above ground level*.

Hours of work

Issues raised

The Environment Protection Authority queried the justification for the extension of standard working hours from 1pm until 6pm on Saturdays, noting that the difference in project duration has not been quantified and that community preference does not appear to have been considered when balancing an unknown shortening of total project duration against providing regular respite periods on Saturday afternoons for the community during the work in exchange for a longer total project duration.

The Environment Protection Authority noted that environment protection licence for the Sydney Metro City & Southwest project (EPL 20971) did not permit rock hammering between 10pm and 7am in noise sensitive areas where the night-time ground-borne noise exceeded the objectives in the *Interim Construction Noise Guideline* (Department of Environment, Climate Change and Water, 2009).

Response

The current justification of out of hours work is provided in Chapter 5 (Project description) of the Environmental Impact Statement. Standard construction hours outlined within the *Interim Construction Noise Guideline* (NSW Department of Climate Change, 2009) are proposed to be extended from 1pm to 6pm on Saturdays to reduce the overall program of this proposal but also to facilitate the completion of cavern excavation prior to the arrival of the tunnel boring machine. If the cavern is not excavated prior to the arrival of the tunnel boring machine, the overall project duration at Pymont would need to be significantly increased to account for more complex construction sequencing methodology including the need to bring more excavators on site and hence more high impact construction work over a longer period.

Earlier completion of construction would bring considerable benefits to the community and would reduce the duration of construction related disruptions compared with the impacts. In the Sydney CBD the receiver environment in the Sydney CBD is largely commercial with some distant residential receivers screened from view by intervening non-residential buildings, meaning impacts during the extended standard construction hours would likely be low.

Comments about rock hammering between 10pm and 7am in EPL 20971 are noted. Mitigation measure NV10 in Chapter 7 (Revised environmental mitigation measures) of this Submissions Report considers the potential relocation of cross passages to be further away from sensitive receivers to mitigate potential construction impacts, where feasible and reasonable.

Mitigation and monitoring

Issues raised

The Environment Protection Authority notes that the effectiveness of mitigation is not generally described and therefore is difficult to understand what mitigation will be applied at each work site/activity, or whether the mitigation will effectively reduce noise impacts. It is unknown if the Construction Noise and Vibration Standard would be able to address residual impacts.

Conceptual feasible and reasonable mitigation should be identified based on the conceptual design outlined in the Environmental Impact Statement.

Response

The effectiveness of the proposed mitigation measures has been provided where possible (such as for alternative construction methodologies, acoustic sheds or other acoustic measures). Many of the measures are however management related (such as consultation) for which effectiveness is not able to be quantified.

The Construction Noise and Vibration Standard contains detailed feasible and reasonable mitigation measures which will be applied, where appropriate, to manage the potential construction impacts. The Construction Noise and Vibration Standard has been successfully implemented on previous stages of Sydney Metro. Additional project specific measures have been specified where the potential impacts from this proposal are not considered to be appropriately mitigated using the Construction Noise and Vibration Standard alone.

Specific mitigation measures to be applied will be detailed in site-specific Construction Noise and Vibration Impact Statements to be prepared for:

- All work outside standard construction hours likely to exceed the relevant noise management levels
- Activities likely to result in highly noise affected receivers
- Activities likely to generate vibration levels at receivers in excess of the relevant criteria.

7 Revised environmental mitigation measures

This chapter provides a complete set of revised environmental mitigation measures, highlighting how they have changed compared with the mitigation measures in the Environmental Impact Statement.

7.1 Revised environmental mitigation measures

The approach to environmental management is provided in Chapter 23 (Synthesis of the Environmental Impact Statement) of the Environmental Impact Statement. The list of mitigation measures presented in Chapter 23 (Synthesis of the Environmental Impact Statement) of the Environmental Impact Statement has been updated with consideration given to:

- Clarifications to the Environmental Impact Statement and additional assessment work carried out to address these clarifications – As outlined in Chapter 2 (Environmental Impact Statement clarifications)
- Submissions received – As addressed in Chapter 5 (Community submissions) and Chapter 6 (Public authority submissions and agency advice).

The assessment carried out for the clarifications, and the submissions process, has identified the need for some new measures to be added, the wording of some existing measures to be adjusted and the deletion of some measures.

Table 7-1 provides the full set of revised environmental mitigation measures to avoid, mitigate and/or manage the potential impacts of this proposal. This table supersedes the measures presented in the Environmental Impact Statement.

New mitigation measures or additions to mitigation measures included in the Environmental Impact Statement are shown in bold text, with deletions shown with a strikethrough.

Table 7-1 Revised environmental mitigation measures

Reference	Impact/issue	Mitigation measure	Applicable location(s)
Transport and traffic			
TT1	Changes to the network	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison.	All
TT2	Traffic incidents	In the event of a traffic related incident, coordination would be carried out with Transport for NSW.	All
TT3	Emergency vehicles access	Access to properties for emergency vehicles would be provided at all times.	All
TT4	Road safety	Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	All
TT5	Road safety	<p>Additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as:</p> <ul style="list-style-type: none"> • Assessing the suitability of construction haulage routes through sensitive land use areas with respect to road safety • Deployment of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers • Providing community education and awareness about sharing the road safely with heavy vehicles • Specific construction driver training to understand route constraints, safety and environmental considerations such as sharing the road safely with other road users and limiting the use of compression braking • Road safety audits will be carried out in support of Construction Traffic Management Plans Traffic Guidance Schemes on Traffic Control Plans in line with the requirements of the Construction Traffic Management Framework, and identified road safety risks will be removed or reduced so far as is reasonably practicable. • Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour. 	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
TT6	Road safety	All trucks would enter and exit construction sites in a forward direction, where feasible and reasonable.	All
TT7	Congestion	Construction site traffic would be managed to minimise movements during peak periods.	All
TT8	Congestion	Construction site traffic would be managed to minimise vehicle movements through school zones during pick up and drop off times.	All
TT9	Loss of parking	Construction sites would be managed to minimise the number of construction workers parking on surrounding streets by: <ul style="list-style-type: none"> • Encouraging workers to use public or active transport • Encouraging ride sharing • Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable. 	All
TT10	Change of bus stop locations	Any temporary closure or relocation of bus stops would be carried out in consultation with Transport for NSW, the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	All
TT11	Taxi relocation	Any relocation of taxi ranks would be carried out in consultation with Transport for NSW, the relevant local council and taxi operators. Wayfinding and customer information would be provided to notify customers of relocated taxi ranks.	Hunter Street Station (Sydney CBD) construction sites
TT12	Property access	Access to existing properties and buildings not required or demolished by the proposal would be maintained in consultation with property owners.	All
TT13	Construction vehicle impacts	Adjustments to site access arrangements and the local road network would be explored during detailed design to minimise conflicts with heavy vehicle movements.	Pymont Station construction sites Hunter Street Station (Sydney CBD) construction sites
TT14	Cumulative construction traffic impacts	Co-ordination of traffic management arrangements between major construction projects would occur in consultation with Transport for NSW.	The Bays tunnel launch and support site Hunter Street Station (Sydney CBD) construction sites

Reference	Impact/issue	Mitigation measure	Applicable location(s)
TT15	Impacts on special events	<p>During major special events, impacts to the transport and traffic network would be reduced by (as necessary):</p> <ul style="list-style-type: none"> • Minimising the level of construction activity, and if necessary, ceasing all construction activity • Maintaining appropriate access to all areas within the event precinct • Erection of hoardings, site fencing and gates at key locations within the construction site boundary to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles • Scheduling deliveries to the construction site outside of event periods. 	<p>Pyrmont Station construction sites</p> <p>Hunter Street Station (Sydney CBD) construction sites</p>
TT16	Mitigating light rail and bus precinct impacts	In consultation with Transport for NSW and the City of Sydney, options will be considered to mitigate light rail and bus precinct impacts. This would include consideration of road space reallocation on the western part of Hunter Street to manage through traffic into Hunter Street from George Street / Margaret Street.	Hunter Street Station (Sydney CBD) construction sites
TT17	Impacts on emergency services	Emergency services would be consulted about proposed road network changes during construction. The potential for minimising the disruption to emergency services as a result of this proposal would be further investigated during detailed construction planning.	All
Noise and vibration			
NV01	Community preference for noise mitigation and management	<p>Where justified by the application of the Construction Noise and Vibration Standard, further engagement and consultation would be carried out in accordance with the Sydney Metro Overarching Community Communications Strategy with:</p> <ul style="list-style-type: none"> • The affected communities to understand their preferences for mitigation and management measures • 'Other sensitive' receivers such as schools, medical facilities, theatres, or places of worship to understand periods in which they are more sensitive to impacts. <p>Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise the impacts.</p>	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
NV02	Alternative construction methodologies	<p>Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive work would be investigated and implemented where feasible and reasonable. This would include consideration of:</p> <ul style="list-style-type: none"> • The use of hydraulic concrete shears in lieu of hammers/rock breakers • Sequencing work to shield noise sensitive receivers by retaining building wall elements • Locating demolition load out areas away from the nearby noise sensitive receivers • Providing respite periods to minimise impacts from prolonged periods of noise intensive work • Minimising structural-borne noise to adjacent buildings including separating the structural connection prior to demolition through saw-cutting and propping, using hand held splitters and pulverisers or hand demolition • Installing sound barrier screening to scaffolding facing noise sensitive neighbours • Using portable noise barriers around particularly noisy equipment, such as concrete saws • Modifying demolition work sequencing/hours to minimise impacts during peak pedestrian times and/or adjoining neighbour outdoor activity periods. 	All
NV03	Construction noise – respite periods	<p>Appropriate respite would be provided to affected receivers in accordance with the Sydney Metro Construction Noise and Vibration Standard. This would include consideration of impacts from utility and power supply work when determining appropriate respite periods for affected receivers.</p> <p>When determining appropriate respite, the need to efficiently undertake construction would be balanced against the communities' preferred noise and vibration management approach.</p>	All
NV04	Construction noise – out of hours work	The use of noise intensive equipment at construction sites with 'moderate' and 'high' out of hours noise management level exceedances would be scheduled for standard construction hours, where feasible and reasonable. Where this is not feasible and reasonable, the work would be undertaken as early as possible in each work shift.	All
NV05	Night-time noise impacts	Where practicable, air brake silencers would be used on heavy vehicles that access construction sites multiple times per night or over multiple nights.	All
NV06	Night-time noise impacts	Perimeter site hoarding would be designed with consideration of on-site heavy vehicle movements with the aim of minimising sleep disturbance impacts.	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
NV07	Noise emissions from equipment	<p>Long term construction site support equipment and machinery would be low noise emitting and suitable for use in residential areas, where feasible and reasonable. Examples include:</p> <ul style="list-style-type: none"> • Low noise water pumps for use in water treatment facilities • Low noise generators and compressors • Low noise air conditioner units for use of amenities buildings. 	All
NV08	Acoustic sheds	<ul style="list-style-type: none"> • Where acoustic sheds are installed, the internal lining and construction materials would be determined during later design stages to ensure appropriate attenuation is provided. This design of sheds would likely include the following considerations: All significant noise producing equipment that would be used during the night-time would be inside the shed, where feasible and reasonable • Noise generating ventilation systems such as compressors, scrubbers, etc, would also be inside the shed and external air intake/discharge ports would be appropriately acoustically treated • Acoustic shed doors would be kept closed during the night-time period, where feasible and reasonable. Where night-time vehicle access is required, the doors would be designed and constructed to minimise noise breakout. 	All
NV09	Ground-borne noise	Feasible and reasonable measures would be implemented to minimise ground-borne noise where exceedances are predicted. This may require implementation of less ground-borne noise and less vibration intensive alternative construction methodologies.	All
NV10	Ground-borne noise – cross passages	The proximity of cross passages to nearby receivers and the corresponding construction ground-borne noise and vibration impacts during the excavation work would be considered when determining locations. Relocation of cross passages to be further away from sensitive receivers to mitigate potential construction impacts would be considered, where feasible and reasonable.	Metro rail tunnels
NV11	Ground-borne noise – underground rockbreaking	Activity specific Detailed and/or General Noise and Vibration Impact Statement (in accordance with the requirements of the Construction Noise and Vibration Standard) would be developed for rockbreaking in the tunnel and at cross passages, specifically addressing the activity where it is required between 10pm - 7am.	Metro rail tunnels

Reference	Impact/issue	Mitigation measure	Applicable location(s)
NV12	Construction traffic noise	<p>Further assessment of construction traffic would be completed during detailed design, including consideration of the potential for exceedances of the <i>NSW Road Noise Policy</i> base criteria (where greater than two dB increases are predicted). The potential impacts would be managed using the following approaches, where feasible and reasonable:</p> <ul style="list-style-type: none"> • On-site spoil storage capacity would be maximised to reduce the need for truck movements during sensitive times • Vehicle movements would be redirected away from sensitive receiver areas and scheduled during less sensitive times • The speed of vehicles would be limited, and the use of engine compression brakes would be avoided • Heavy vehicles would not be permitted to idle near sensitive receivers. 	All
NV13	Construction vibration	<p>Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure. For heritage items, the more detailed assessment would specifically consider the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.</p>	All
NV14	Building condition surveys – construction vibration	<p>Condition surveys of buildings and structures near to the tunnel and excavations would be undertaken prior to the commencement of excavation at each site, where appropriate. For heritage buildings and structures the surveys would consider the heritage values of the structure in consultation with a heritage specialist.</p>	All
NV15	Cumulative construction noise impacts	<p>The likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available.</p> <p>Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive work in the same areas, where possible.</p> <p>Specific mitigation strategies would be developed to manage impacts. Depending on the nature of the impact, this could involve adjustments to construction program or activities of Sydney Metro West or of other construction projects.</p>	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
Non-Aboriginal heritage			
NAH1	Archival recording	<p>Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office's <i>How to Prepare Archival Records of Heritage Items</i> (1998), and <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (2006):</p> <ul style="list-style-type: none"> • Former Skinners Family Hotel (SHR item no. 00584) • NSW Club House Building (SHR item no. 00145) • Former Bank – Delfin House (SLEP 2012 item no. I1903) • Richard Johnson Square (SLEP 2012 item no. I1673). <p>Archival recording should be carried out at the following sites as potential heritage items of local significance prior to the commencement of work for the following items:</p> <ul style="list-style-type: none"> • Gilbey's Distillery, 26-32 Pyrmont Bridge Road, Pyrmont (potential archaeological site and local heritage item) • Pangas House, 15-17 Hunter Street, Sydney (potential local heritage item). 	<p>Pyrmont Station western construction site</p> <p>Hunter Street Station (Sydney CBD) construction sites</p>
NAH2	Investigations	<p>Investigations would be carried out for the Tank Stream (SHR item no. 00636) and Bennelong Stormwater Channel No. 29A (Sydney Water s170 item no. 4570854) to confirm and record the location, depth, and ascertain the current integrity, extent and condition of the heritage items.</p> <p>Surveys are to be carried out under the supervision of a heritage consultant in consultation with Sydney Water.</p>	Hunter Street Station (Sydney CBD) construction sites
NAH3	Demolition	<p>A method for the demolition of existing buildings and/or structures at specified construction site would be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items.</p> <p>A structural engineering investigation would be carried out to heritage items, prior to demolition of adjacent existing buildings and/or structures to ensure the conservation of the items fabric and significance.</p> <p>A detailed methodology for the protection of the Former Skinners Family Hotel, Tank Stream and Bennelong Stormwater Channel No.29A would be developed by suitably qualified heritage engineers and consultants.</p>	Hunter Street Station (Sydney CBD) construction sites

Reference	Impact/issue	Mitigation measure	Applicable location(s)
NAH4	Salvage	Prior to commencement of demolition of Gilbey's Distillery, significant heritage fabric which has a reuse in the project or elsewhere would be identified and considered for salvage. significance of fabric would be assessed and opportunities for reuse would be considered. Where fabric is identified for salvage, a methodology would be prepared in consultation with Heritage NSW.	Pymont Station western construction site
NAH5	Heritage interpretation	Heritage Interpretation Plans would be prepared in accordance with the line-wide Heritage Interpretation Strategy being prepared for Sydney Metro West.	Pymont Station construction sites Hunter Street Station (Sydney CBD) construction sites
NAH6	Archaeology	An Archaeological Research Design would be prepared to identify the excavation methodology for predicted locally significant non-Aboriginal archaeological resources at the Pymont Station and Hunter Street Station (Sydney CBD) construction sites. Archaeological mitigation measures recommended in the Archaeological Research Design would be carried out in accordance with Heritage NSW guidelines, and where appropriate, supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology.	Pymont Station construction sites Hunter Street Station (Sydney CBD) construction sites
NAH7	Archaeology	An Archaeological Excavation Report would be prepared by the Excavation Director and be provided to the Heritage NSW within 12 months of the completion of archaeological excavations specified in the Archaeological Research Design.	Pymont Station construction sites Hunter Street Station (Sydney CBD) construction sites
NAH8	Ground movement and settlement assessment	Where required, further assessments at later design stages and during detailed construction planning would be carried out to check the preliminary findings of the ground movement assessment in relation to listed heritage buildings. Other listed heritage infrastructure would also be subject to such further assessment of ground movement where identified as being required in Technical Paper 3 (Non-Aboriginal heritage).	Pymont Station construction sites Hunter Street Station (Sydney CBD) construction sites Tunnel alignment

Reference	Impact/issue	Mitigation measure	Applicable location(s)
NAH9	Monitoring	Where required, heritage items identified by NAH8 as requiring further assessment should undergo instrumentation and monitoring as part of further assessments and during the work.	Pyrmont Station construction sites Hunter Street Station (Sydney CBD) construction sites
Aboriginal heritage			
AH1	Consultation	Aboriginal stakeholder consultation for this proposal should continue based on initial consultation originally commenced on major construction work between Westmead and The Bays (Stage 1 of the planning approval process for Sydney Metro West) in accordance with the <i>NSW Office of Environment and Heritage's Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> . Additional consultation with knowledge holders about the project would be undertaken where possible.	All
AH2	Unexpected finds	If suspected human skeletal remains are uncovered at any time during the proposed work, procedures outlined in the Sydney Metro Exhumation Management Plan, the Sydney Metro Unexpected Heritage Finds Procedure and Heritage Management Plan would be implemented.	All
AH3	Unexpected finds	If unexpected Aboriginal objects are identified during construction work, the Sydney Metro Unexpected Finds Procedure would be implemented.	All
AH4	Cultural values	In recognition of potential impacts to the Aboriginal cultural values of the project area, the line-wide Heritage Interpretation Strategy for Sydney Metro West would address Aboriginal cultural values and be prepared in consultation with the local Aboriginal community, knowledge holders and with reference to the Connecting with Country framework.	All
AH5	Intact deposits or Aboriginal objects in Method Area 2	As the Hunter Street Station (Sydney CBD) western construction site has been assessed as having the potential for intact deposits, a stage specific Archaeological Method Statement would be prepared prior to work commencing. The Archaeological Method Statement would adhere to the archaeological management measures for Method Area 2 as outlined in Technical Paper 4 (Aboriginal Cultural Heritage Assessment Report).	Hunter Street Station (Sydney CBD) western construction site

Reference	Impact/issue	Mitigation measure	Applicable location(s)
Property and land use			
LU1	Temporary use	Except where required for subsequent construction activities associated with future stages of the Concept, temporary use areas for construction purposes would be stabilised and appropriately rehabilitated as soon as feasible and reasonable following completion of construction. This would be carried out in consultation with the relevant landowner.	All
Landscape and visual amenity			
LV1	Visual impacts	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example materials and machinery would be stored behind fencing.	All
LV2	Trees	Opportunities for the retention and protection of existing street trees would be identified during detailed construction planning.	All
LV3	Trees	Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties.	All
LV4	Lighting impacts	Lighting of construction sites would be oriented to minimise glare and light spill impacts on adjacent receivers.	All
LV5	Visual impacts	The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape impacts.	All
LV6	Visual impacts	Construction site hoardings would be designed in accordance with Sydney Metro Brand Design Guidelines and opportunities for public art on hoardings would be considered in high pedestrian locations.	All
LV7	Visual impacts	Graffiti would be removed promptly from hoardings and any other aspects of construction sites.	All
LV8	Visual impacts	All structures (including acoustic sheds or other acoustic measures, site offices and workshop sheds) would be finished in a colour which aims to minimise their visual impacts, if visible from areas external to the construction site. This finish is to be applied to all visible fixtures and fittings (including exposed downpipes).	All
LV9	Trees	Trees removed by the major civil construction work between The Bays and Sydney CBD would be replaced to provide a net increase in the number of mature trees at a ratio of 2:1 across the entire Sydney Metro west project (as part of future approval stages of Sydney Metro West).	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
LV10	Visual impacts	Any new temporary structures on the construction site boundary facing Richard Johnson Square would consider urban design or landscape treatment (in consultation with City of Sydney) to minimise visual amenity and landscape impact where feasible and reasonable.	Hunter Street Station (Sydney CBD) eastern construction site
Business impacts			
BI1	General business impacts	Small business owner engagement would be undertaken to assist small business owners adjacent to major construction sites that are adversely impacted by construction.	All
BI2	Power and utility interruptions	Planned power and utility interruptions would be scheduled to occur before or after typical business hours where feasible and reasonable. Prior notice would be provided to all affected business owners of the interruptions. Given several businesses operate on a 24 hour a day, seven days a week basis and outside of normal business hours, these businesses would need to be consulted prior to any disruption. In addition, businesses operating financial market infrastructure would be consulted to ensure sufficient backup arrangement can be put in place to minimise any disruptions to their services.	All
BI3	Business visibility and accessibility	Hoarding and screening impacting the visibility of business would be minimised where feasible and reasonable, without compromising public safety or the effective management of construction airborne noise. Clear pathways and signage would be implemented around construction sites to maximise visibility of retained businesses, including sufficient lighting along pedestrian footpaths during the night, where relevant.	All
Social impacts			
S1	Impacts on social infrastructure	Consultation would be carried out with managers of social infrastructure located near construction sites about the timing and duration of construction work and management of potential impacts, with the aim of minimising potential disruption to the use of the social infrastructure from construction activity.	All
S2	Social impacts	The Sydney Metro West Community Benefit Plan for major civil construction between Westmead and The Bays would be updated to include the proposal area. The plan guides the development of community benefit initiatives (by Principal Contractors) during construction to make a positive contribution to the potentially affected community. The key objectives of the plan would include: <ul style="list-style-type: none"> Identify opportunities to create environmental and community benefits and provide positive social outcomes Respond to community priorities and needs in the locality of each relevant construction site. 	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
S3	Impacts on events or festivals	Consultation would be carried out with festival and event organisers and operational teams within Transport for NSW in proximity to construction sites to mitigate potential impacts on the operation of the festival or event.	Pyrmont Station construction sites Hunter Street Station (Sydney CBD) construction sites
S4	Promote local culture and identity	Consultation would be carried out with stakeholders to identify opportunities for design on construction site hoarding to reflect community values, culture and identity of the local community. Construction site hoarding would be designed in accordance with Sydney Metro Brand Design Guidelines and opportunities for public art on hoardings would be considered in locations of high pedestrian use.	All sites
Groundwater and ground movement			
GW1	Ground movement and settlement	<p>A detailed geotechnical model for the proposal would be developed and progressively updated during design and construction. The detailed geotechnical model would include:</p> <ul style="list-style-type: none"> Assessment of the potential for damage to structures, services, basements and other subsurface elements through settlement or strain Predicted changes to groundwater levels, including at nearby water supply work. <p>Where building damage risk is rated as moderate or higher, a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage.</p> <p>Where a significant exceedance of target changes to groundwater levels are predicted at surrounding land uses and nearby water supply work, an appropriate groundwater monitoring program would be developed and implemented. The program would aim to confirm no adverse impacts on groundwater levels or to appropriately manage any impacts. Monitoring at any specific location would be subject to the status of the water supply work and agreement with the landowner.</p>	Where required
GW2	Ground movement and settlement	Condition surveys of buildings and structures in the vicinity of the tunnel and excavations would be carried out prior to the commencement of excavation at each site.	Where required

Reference	Impact/issue	Mitigation measure	Applicable location(s)
GW3	Baseline monitoring of hydrogeological attributes	Monitoring of groundwater levels and quality at the site area would occur before and during construction. This would also include monitoring of potential contaminants of concern. Groundwater level data would be regularly reviewed during and after construction by a qualified hydrogeologist. Groundwater monitoring data would be provided to the NSW EPA and Department of Planning and Environment and the Natural Resources Access Regulator for information.	All
Soils and surface water quality			
SSWQ1	Acid sulfate soils	Prior to ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the presence of actual and/or potential acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the <i>Acid Sulfate Soil Manual</i> (ASSMAC, 1998).	The Bays tunnel launch and support site Pyrmont Station construction sites
SSWQ2	Soil salinity	Prior to ground disturbance in high probability salinity areas, testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or would be managed in accordance with <i>Book 4 Dryland Salinity: Productive Use of Saline Land and Water</i> (NSW DECC, 2008b). Erosion controls would be implemented in accordance with the 'Blue Book' (Landcom, 2004).	The Bays tunnel launch and support site Pyrmont Station construction sites
SSWQ3	Erosion and sedimentation	Erosion and sediment measures would be implemented at all construction sites in accordance with the principles and requirements in <i>Managing Urban Stormwater – Soils and Construction, Volume 1</i> (Landcom, 2004) and Volume 2D (NSW Department of Environment, Climate Change and Water 2008a), commonly referred to as the 'Blue Book', to ensure water quality is not adversely affected at receiving waters to a minimum set by the 80th percentile five day rainfall event. Additionally, any water collected from construction sites would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts. Temporary sediment basins would be designed in accordance with <i>Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction</i> (DECC, 2008a).	All
SSWQ4	Working in low lying areas	Work in waterbodies and surrounding low lying areas would be carried out in accordance with progressive erosion and sediment control plans.	The Bays tunnel launch and support site
SSWQ5	Wastewater discharge	The water treatment plants would be designed with the aim of treating wastewater to a level as close as practicable to the ANZECC/ARMCANZ (2000), ANZG (2018) and draft ANZG (2020) default guidelines for 95 per cent species protection and 99 per cent species protection for toxicants that bioaccumulate, unless other discharge criteria are agreed with relevant authorities.	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
SSWQ6	Water quality monitoring	A surface water monitoring program would be implemented to observe any changes in surface water quality that may be attributable to construction and inform appropriate management responses. The program would be developed in consultation with the EPA and relevant councils. The program would consider monitoring being carried out as part of other infrastructure projects. Monitoring would occur during pre-construction and during construction at all waterways with the potential to be impacted. Monitoring would include sampling for key indicators of concern.	All
SSWQ7	Local stormwater capacity	Further design development would confirm the local stormwater system capacity to receive construction water treatment plant inflows. In the event there is a stormwater infrastructure capacity issue with existing infrastructure, mitigation measures such as storage detention to control water outflow during wet weather events would be implemented.	All
SSWQ8	Activities on waterfront land	The <i>Guidelines for controlled activities on waterfront land</i> (Natural Resources Access Regulator, 2018) will be considered prior to proceeding with work on waterfront land.	All
Contamination			
C1	Low risk contamination	For sites where potential contamination risk is moderate, high or very high, a further review of data (if available), including a detailed site inspection, would be carried out. Where this Environmental Impact Statement or the additional data review provides sufficient information to confirm that contamination conditions are likely to have a very low or low impact to receivers at a construction site, the site would then be managed as part of construction and in accordance with the relevant subplan in the Construction Environmental Management Framework (the Soil and Water Management Plan). This would typically occur where there is minor, isolated contamination that can be readily remediated through standard construction practices such as excavation and off-site disposal.	All
C2	Unknown risk of contamination	Where data from the additional data review (mitigation measure C1) is insufficient to understand the risk of contamination, a Detailed Site Investigation would be carried out in accordance with the <i>National Environment Protection Measure</i> (2013) and other guidelines made or endorsed by the NSW EPA. The sites requiring a Detailed Site Investigation would be confirmed following the additional data review (mitigation measure C1) however based on the impact assessment, it is anticipated that a Detailed Site Investigation would be required at the applicable location.	Pymont Station eastern construction site

Reference	Impact/issue	Mitigation measure	Applicable location(s)
C3	Moderate, High or Very High risk of contamination	<p>Where data from the additional data review (mitigation measure C1) or the Detailed Site Investigation (mitigation measure C2) confirms that contamination would have a moderate, high or very high risk and remediation is required to make the site suitable for its proposed use, a Remediation Action Plan would be developed for the relevant area of the construction site/s.</p> <p>Each Remediation Action Plan would detail the remediation or management work required to mitigate risks from contamination in order to make the site suitable for its proposed use. The Remediation Action Plan would be prepared in accordance with relevant NSW EPA guidelines and where applicable, detail remediation methodologies in accordance with Australian Standards and other relevant government guidelines and codes of practice.</p> <p>Remediation would be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land.</p> <p>The sites requiring Remediation Action Plans would be confirmed following the additional data review (mitigation measure C1) and Detailed Site Investigation (mitigation measure C2).</p>	As applicable
C4	Impacts to receivers occurring from highly complex contamination	<p>Where contamination is highly complex, such as significant groundwater contamination; contamination associated with vapour; contamination that requires specialised remediation techniques; or contamination that requires ongoing active management during and beyond construction, an accredited Site Auditor would review and approve the Remediation Action Plan, and would develop a Site Audit Statement and Site Audit Report upon completion of remediation.</p> <p>The sites requiring Site Audit Statements would be confirmed following the preparation of Remediation Action Plans (mitigation measure C3).</p>	As applicable
C5	Residual contamination following construction	Ongoing management and monitoring measures would be documented in an appropriate form and implemented for any areas where minor, residual contamination remains following construction.	As applicable

Reference	Impact/issue	Mitigation measure	Applicable location(s)
C6	Migration of contaminated groundwater	<p>Where off-site sources of groundwater contamination have been identified, development and implementation of controls to manage the potential impacts of contamination due to drawdown and resulting migration of contaminated groundwater into the construction footprint would be implemented.</p> <p>A review of available groundwater data would be completed to inform the relevant subplan in the Construction Environmental Management Framework (the Groundwater Management Plan). Where insufficient data is available to understand groundwater conditions and the potential for contamination to migrate as a result of the proposal, further investigation would be carried out if considered necessary and if not already undertaken under mitigation measure C2.</p>	All
Hydrology and flooding			
HF1	Flooding behaviour impacts	<p>Detailed construction planning would consider flood risk at construction sites. This would include:</p> <ul style="list-style-type: none"> • Identification of measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the 1% AEP flood event • Provide flood-proofing to excavations at risk of flooding or coastal inundation during construction, where reasonable and feasible, such as raised entry into shafts and/or pump-out facilities to minimise ingress of floodwaters into shafts and the dive structure • Review of site layout and staging of construction activities to avoid or minimise obstruction of overland flow paths, address loss of flood plain storage and limit the extent of flow diversion required. This includes design of site hoardings to minimise disruption to flow paths (if possible). <p>Not worsen is defined as:</p> <ul style="list-style-type: none"> • A maximum increase in flood levels of 50 millimetres in a 1% AEP flood event • A maximum increase in time of inundation on one hour in a 1% AEP flood event • No increase in potential soil erosion and scouring from any increase inflow velocity in a 1% AEP flood event. 	All
HF2	Flooding behaviour impacts	Drainage at construction sites would be designed, where feasible and reasonable, to mitigate potential alterations to local runoff conditions due to construction sites.	All
HF3	Flooding behaviour impacts	Detailed construction planning for The Bays tunnel launch and support site construction would aim to minimise changes to existing levels in relation to potential impacts on flood behaviour, along the north-western side of site adjacent to low-lying property, to minimise reduction in floodplain storage and blockage to local overland flow path.	The Bays tunnel launch and support site

Reference	Impact/issue	Mitigation measure	Applicable location(s)
HF4	Flooding emergency management	Construction planning regarding flooding matters would be carried out in consultation with the NSW State Emergency Service and the relevant local council.	All
HF5	Impacts to flood mitigation work	Detailed construction planning for The Bays tunnel launch and support site would aim to avoid conflicts with the potential construction of flood mitigation work in Robert Street, in consultation with Inner West Council.	The Bays tunnel launch and support site
HF6	Potential cumulative impacts	To ensure flood protection on the bottom of the adit between Hunter Street Station (Sydney CBD) construction site and the Sydney Metro – City & Southwest Martin Place metro Station site, appropriate flood protection would be implemented.	Hunter Street Station (Sydney CBD) construction sites
Biodiversity			
B1	Unexpected microbat finds procedure	If any threatened microbats (threatened or non-threatened) are identified prior to or during any part of the demolition work then the unexpected microbats finds procedure would be implemented, including notification to the NSW Environment and Heritage Group.	Pyrmont Station construction sites Hunter Street Station (Sydney CBD) construction sites
B2	Street tree impacts	Sydney Metro would engage a suitably qualified project arborist to assess street trees that would be pruned or have the potential to be impacted as a result of this proposal. The project arborist would provide advice on measures to minimise damage to street trees.	All
Air quality			
AQ1	Dust impacts during all construction phases	The following best-practice dust management measures would be implemented during all construction work: <ul style="list-style-type: none"> • Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather • Adjust the intensity of activities based on measured and observed dust levels and weather forecasts • Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers • Regularly water haul roads and exposed areas and ensure that all loads are covered • Regularly inspect and as necessary, remove any loose materials tracked along haulage routes 	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
		<ul style="list-style-type: none"> Regularly inspect dust emissions and apply additional controls as required Implement all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each construction site. <p>At locations where there is an acoustic shed established, dust filtering systems will be installed on the acoustic shed exhaust.</p>	
AQ2	Exhaust emissions from the combustion of fossil fuels during construction	<ul style="list-style-type: none"> Maintaining plant and equipment in a proper and efficient manner Conducting visual inspections of emissions from plant as part of pre-acceptance checks Switching off plant and equipment when not in-use Avoiding diesel or petrol-powered generator use wherever possible with mains electricity or battery powered equipment used wherever practicable 	All
AQ3	Odour emissions during construction	<p>The following best-practice odour management measures would be implemented during relevant construction work:</p> <ul style="list-style-type: none"> The extent of opened and disturbed contaminated soil at any given time would be minimised Temporary coverings or odour suppressing agents would be applied to excavated areas where appropriate Regular monitoring would be conducted during excavation to verify that no offensive odours are being detected beyond the site boundary. 	All
Spoil, waste management and resource use			
WR1	Compliance with legislative and policy requirements	All waste would be assessed, classified, managed, transported and disposed of in accordance with the <i>Waste Classification Guidelines</i> and the Protection of the Environment Operations (Waste) Regulation 2014.	All
WR2	Disposal of hazardous materials	A hazardous material survey would be completed for those buildings and structures suspected of containing hazardous or special waste materials (particularly asbestos) prior to their demolition. If hazardous waste or special waste (e.g. asbestos) is encountered, it would be handled and managed in accordance with relevant legislation, codes of practice and Australian standards.	All
WR3	Waste minimisation	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
WR4	Reuse and recycling	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.	All
WR5	Reuse on Sydney Metro West sites	A materials tracking system would be implemented for material transferred between Sydney Metro West sites and to offsite locations such as licensed waste management facilities.	All
Hazards			
HA1	Impacts on underground utilities	Dial before you dig searches and non-destructive digging would be carried out to identify the presence of underground utilities.	All
HA2	Impacts on underground utilities	Ongoing consultation would be carried out with utility providers for high pressure gas pipelines to identify appropriate construction methodologies to be implemented. Any interaction with high pressure gas pipelines would comply with the relevant standards, including AS 2885 Pipelines – Gas and Liquid Petroleum.	All
Sustainability, climate change and greenhouse gas			
SCC1	Sustainability implementation	Sustainability initiatives would be incorporated into the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives.	All
SCC2	Sustainability implementation	Best practice level of performance would be achieved using market leading sustainability rating tools during design and construction.	All
SCC3	Climate change risks	Climate change risk treatments would be confirmed and incorporated into the detailed design.	All
SCC4	Greenhouse gas emissions	An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a baseline inventory calculated at the detailed design stage.	All
SCC5	Greenhouse gas emissions	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset.	All

Reference	Impact/issue	Mitigation measure	Applicable location(s)
Cumulative impacts			
C11	Occurrence of Cumulative impacts	<p>Coordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time:</p> <ul style="list-style-type: none"> • Other parts of Transport for NSW • Department of Planning, Industry and Environment • Port Authority of NSW • Local government • Emergency service providers • Utility providers • Construction contractors. <p>Co-ordination and consultation with these stakeholders would include:</p> <ul style="list-style-type: none"> • Provision of regular updates to the detailed construction program, construction sites and haul routes • Identification of key potential conflict points with other construction projects • Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: <ul style="list-style-type: none"> – Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects – Co-ordination of traffic management arrangements between projects. 	

8 Conclusion and next steps

This chapter provides a conclusion to the Submissions Report and outlines the next steps in the approvals process.

Sydney Metro West would provide city-shaping benefits as the significant increase in transport connectivity, capacity and amenity in the Greater Parramatta to Sydney CBD corridor would boost the economic productivity of Sydney and unlock planned land use outcomes in the CBDs, planned precincts and urban renewal areas.

This proposal, as Stage 2 of the planning approval process for Sydney Metro West, has been justified in relation to its strategic transport need and its anticipated benefits, taking into account the objectives of the *Environmental Planning and Assessment Act 1979* and matters of ecologically sustainable development. This proposal best meets the network and corridor objectives when compared to all other alternatives considered.

The approved Sydney Metro West Concept included consideration of the justification of the project as a whole in the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020). This proposal is seeking planning approval to enable the Sydney Metro West Concept to be realised by undertaking major civil construction work from The Bays to Sydney CBD, which would link the major civil construction work from Westmead to The Bays (approved under Stage 1 of the planning approval) to the Sydney CBD.

The *Sydney Metro West Environmental Impact Statement – Major civil construction work between The Bays and Sydney CBD* (Sydney Metro, 2021) was placed on exhibition from 3 November 2021 to 15 December 2021. During the Environmental Impact Statement exhibition period, submissions were invited from the community and other stakeholders. The receipt of submissions was coordinated and managed by the Department of Planning and Environment.

A total of 18 community, organisation and public authority submissions were received by the Department of Planning and Environment during the exhibition period. Sixteen submissions were received from community members, interest groups and organisations, and two submissions were received from public authorities. In addition to these, the Department also received government agency advice regarding the project from six government agencies.

This Submissions Report presents responses to issues raised in submissions and government agency advice received during the exhibition of the Environmental Impact Statement.

The Department of Planning and Environment will review the Environmental Impact Statement, the submissions received and this Submissions Report. Once the Department has completed its assessment, a draft Environmental Assessment Report will be prepared for the Secretary of the Department of Planning and Environment, which may include recommended conditions of approval. The Environmental Assessment Report will then be provided to the Minister for Planning and Public Spaces.

The Minister for Planning and Public Spaces will then decide whether or not to approve the project and identify any conditions of approval that would apply. The Minister's determination, including any conditions of approval and the Environmental Assessment Report, would be published on the Department of Planning and Environment Major Projects website. Sydney Metro would continue to consult with community members, government agencies and other stakeholders during the construction to minimise potential impacts on the local and regional environment and the community.

9 References and glossary

9.1 References

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9.2 Glossary of terms and abbreviations

9.2.1 Terms

Term	Definition
Aboriginal object	Any deposit, object or material evidence (not being a handicraft made for sale), including Aboriginal remains, relating to the Aboriginal habitation of NSW.
construction footprint	The total extent of land required for the construction of this proposal, including ancillary facilities and services and land temporarily required for construction (incorporating construction elements such as compounds, access roads and worksites).
drawdown	Reduction in the level of the water table caused by changes in the local environment.
earthworks	Operations involved in loosening, excavating, placing, shaping and compacting soil or rock.
erosion	A natural process where wind or water detaches a soil particle and provides energy to move the particle.
floodplain	Area of land which is inundated by floods up to and including the probable maximum flood event (i.e. flood prone land).
greenhouse gas	Greenhouse gases are those gaseous constituents of the atmosphere that absorb and emit infra-red radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself, and by clouds. This radiation generates heat which warms the atmosphere, and therefore greenhouse gases are a key contributor to the changing climate.
groundwater dependent ecosystem	Refers to communities of plants, animals and other organisms whose extent and life process are dependent on groundwater, such as wetlands and vegetation on coastal sand dunes.
placemaking	Describes an approach to the planning, design and management of public spaces.
Proponent	For this proposal, the proponent is Sydney Metro.
the proposal	Major civil construction work between The Bays and Sydney CBD as part of the broader Sydney Metro West project.
runoff	The amount of rainfall that ends up as streamflow, also known as rainfall excess.

Term	Definition
sensitive receiver	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres, passive recreation areas (including outdoor grounds used for teaching), active recreation areas (including parks and sports grounds), commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, retail spaces and industrial premises).
stockpile	Temporary stored materials such as soil, sand, gravel, spoil/waste.
tunnel alignment	The horizontal and vertical position beneath the ground along which the tunnel progresses.

9.2.2 Abbreviations

Abbreviation	Meaning
AEP	annual exceedance probability
ANZECC	Australian and New Zealand Environment Conservation Council
ANZG	Australian and New Zealand Guidelines
ARMCANZ	Agriculture and Resources Management Council of Australia and New Zealand
AS	Australian Standard
CBD	central business district
CO ₂ -e	carbon dioxide equivalent
COVID-19	Coronavirus disease 2019
dB	Decibel
DECC	(former) NSW Department of Environment and Climate Change (now NSW Environment and Heritage Group)
DPE	Department of Planning and Environment
EPA	NSW Environment Protection Authority
IAQM	Institute of Air Quality Management
L/sec	litres per second
ML	megalitres
NSW	New South Wales
PM ₁₀	particulate matter of up to 10 micrometres
PM _{2.5}	particulate matter of up to 2.5 micrometres
SHR	State Heritage Register

Appendix A

Where to find responses to issues raised in community submissions

Appendix A Where to find responses to issues raised in community submissions

Issues raised by each submission

Group	Name/Submitter ID	Section where issues addressed in Submissions Report
Public authorities	Inner West Council	6.2
	City of Sydney	6.3
Agencies	Department of Planning and Environment: Water	6.4
	NSW Environment and Heritage Group (formerly Department of Planning and Environment: Environment, Energy and Science Group)	6.5
	Heritage Council of NSW	6.6
	Department of Premier and Cabinet (Heritage NSW)	6.7
	Place Management NSW	6.8
	NSW Environment Protection Authority	6.9
	Individuals	S-31221915
S-31287790		5.1
S-31671441		5.18.1
S-31878504		5.18.2
S-32778273		5.1, 5.6.1, 5.6.3, 5.7.1, 5.7.2, 5.8, 5.9, 5.15, 5.17, 5.18.2, 5.18.3
S-32798717		5.6.1, 5.10
S-32957238		5.1
S-33013852		5.3.1, 5.6.1
S-33041474		5.6.2
S-33060493		5.10
S-33218020		5.6.1, 5.7.1
S-33463183		5.1, 5.3.2, 5.7.1, 5.7.2, 5.8, 5.9, 5.14, 5.17, 5.18.2, 5.18.3
S-33608991		5.2, 5.3.2, 5.8, 5.12, 5.13, 5.16, 5.18.3
S-33653820		5.1
S-33660015		5.2, 5.3.1, 5.4, 5.5, 5.6.2, 5.11
S-33698045		5.1

