

Sydney Metro West Westmead to The Bays and Sydney CBD

Submissions Report
Concept and Stage 1
2020



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 Stage 1 of the network 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:

- **The Metro North West Line** – 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 due to open 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 would connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. The location of the Sydney CBD station will be determined following further investigations and community and stakeholder engagement, and an optional station at Pyrmont is also under investigation. 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 staged in recognition of the size of the project. The proposed staging of planning approvals has been revised since exhibition of the Environmental Impact Statement based on ongoing refinement of the project's delivery strategy. This includes the Sydney Metro West Concept and the following stages:

- **Stage 1** – All major civil construction works including station excavation and tunnelling between Westmead and The Bays
- **Stage 2** – All major civil construction works including station excavation and tunnelling between The Bays to Sydney CBD
- **Stage 3** – Tunnel fit-out, station building and operation of the line between Westmead to Sydney CBD.

While the content of these stages may be varied, this Submissions Report is relevant to the Concept and Stage 1 comprising all major civil construction works including station excavation and tunnelling between Westmead and The Bays.

Sydney Metro West benefits

Sydney Metro West would deliver the following benefits:

- Reduce travel time between the Parramatta and Sydney CBDs with a travel time target of around 20 minutes
- Reduce crowding on trains and on station platforms at key existing stations on the Sydney Trains suburban rail network
- Substantially improve accessibility via the public transport network to key economic centres along the Greater Parramatta to Sydney CBD corridor
- Increase the reach and use of Sydney's public transport network by providing new stations at Burwood North, Five Dock and The Bays

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- Improve travel times for customers in the Greater Parramatta to Sydney CBD corridor
- Provide a new stand-alone rail line, reducing the impacts of scheduled maintenance and major unavoidable incidents on the existing suburban rail network
- Provide an opportunity for mode shift from car to public transport, which could result in road user travel time savings.

Consultation on the Environmental Impact Statement

The Concept and Stage 1 Environmental Impact Statement was placed on public exhibition by the Department of Planning, Industry and Environment for an extended period from 30 April 2020 to 26 June 2020. During the exhibition period submissions were invited from the community and stakeholders. The receipt of submissions was coordinated and managed by the Department of Planning, Industry and Environment.

The implementation of restrictions in response to the COVID-19 pandemic during April 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, an interactive project map, 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 undertaken is provided in Chapter 4 (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.

A separate Amendment Report has also been prepared for the Environmental Impact Statement. The *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* outlines the proposed amendments since the exhibition of the Environmental Impact Statement and the associated environmental assessment. Where relevant, clarifications to the Environmental Impact Statement and responses to submissions have reflected those proposed amendments.

The following projects are related to Sydney Metro West and subject to separate planning approvals:

- The Bays road relocation works
- Sydney Metro West Eastern Creek Precast Facilities
- Sydney International Speedway.

A description of these related projects and a summary of their potential impacts is provided in Chapter 3 (Related development) of this Submissions Report.

Overview of submissions

A total of 188 submissions were received by the Department of Planning, Industry and Environment in response to the Environmental Impact Statement during the exhibition period. Of these submissions, 34 were from NSW Government departments/agencies, local councils, and other key stakeholders. The most frequently raised issues by government agencies and key stakeholders included:

- Development and alternatives
- Need for ongoing community and stakeholder engagement
- Construction noise and vibration.

A total of 154 submissions were received from community members/residents, businesses, social infrastructure, community and interest groups, and Members of Parliament. These submissions were grouped together as community submissions.

Key issues of most concern to the community included:

- Development and alternatives
- Need for ongoing community and stakeholder engagement
- Placemaking strategies and principles
- Transport and traffic, noise and vibration, Aboriginal heritage, non-Aboriginal heritage, visual, surface water, groundwater, contamination, flooding, air quality and biodiversity impacts
- Sustainability
- Cumulative impacts.

Further analysis of submissions received is provided in Chapter 5 (Analysis of submissions) of this Submissions Report. Chapter 6 (Community submissions) and Chapter 7 (Government and key stakeholder submissions) of this Submissions Report present the issues raised in submissions and corresponding responses.

Next steps

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

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

The Minister for Planning and Public Spaces would 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 then be published on the Department of Planning, Industry and Environment Major Projects website. 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 Sydney Metro West, the statutory context and planning approval process, and the purpose and structure of this Submissions Report.

1.1 Sydney Metro 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 Stage 1 of the network 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 is shown in Figure 1-1 and includes:

- **The Metro North West Line** – 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 due to open 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 would connect Greater Parramatta with the Sydney CBD. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. The location of the Sydney CBD station will be determined following further investigations and community and stakeholder engagement, and an optional station at Pyrmont is also under investigation. 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.

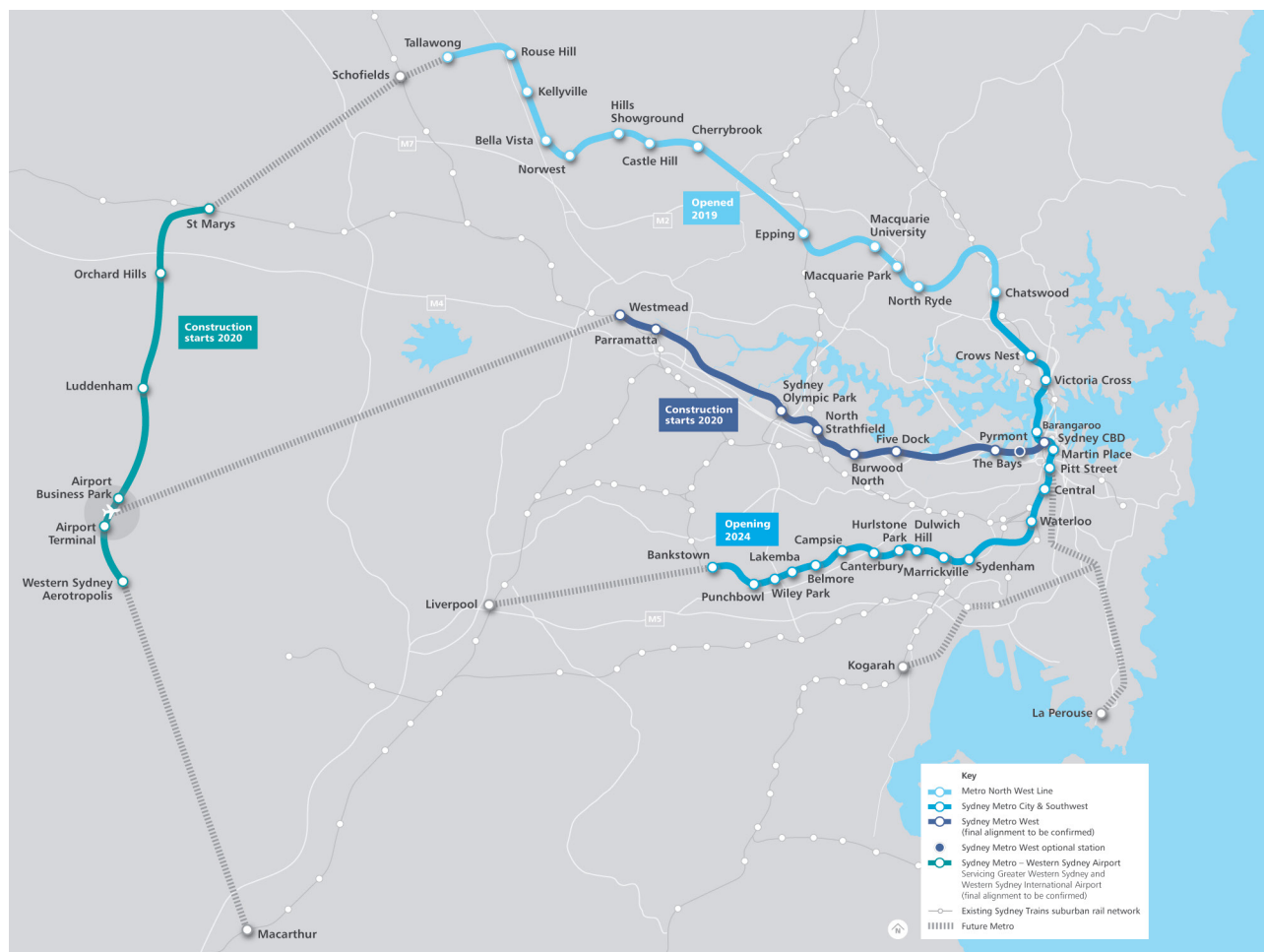


Figure 1-1: The Sydney Metro network

1.2 Sydney Metro West

The planning approvals and environmental impact assessment for Sydney Metro West has been staged in recognition of the size of the project. The proposed staging of planning approvals has been revised since exhibition of the Environmental Impact Statement based on ongoing refinement of the project's delivery strategy. This includes the Sydney Metro West Concept and the following stages:

- **Stage 1** – All major civil construction works including station excavation and tunnelling between Westmead and The Bays
- **Stage 2** – All major civil construction works including station excavation and tunnelling between The Bays to Sydney CBD
- **Stage 3** – Tunnel fit-out, station building and operation of the line between Westmead to Sydney CBD.

The *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a) includes the Sydney Metro West Concept and Stage 1 (referred to as the Environmental Impact Statement throughout this Submissions Report).

The exhibited Environmental Impact Statement did not reflect the decision made by the NSW Government in April 2020 to no longer consider Rydalmere as a strategic station location option. The NSW Government determined that the optional station in Rydalmere would not proceed due to the distance from the proposed metro alignment and the additional time it would add to the journey between Parramatta and the Sydney CBD. This is now reflected in Figure 1-2 and discussed further in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

1.2.1 Key features of the Concept

Sydney Metro West (the Concept) involves the construction and operation of about 24 kilometres of underground metro rail between Westmead and the Sydney CBD.

Key components of the Concept would include:

- About 24 kilometres of twin tunnels between Westmead and the Sydney CBD
- New metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. The NSW Government is continuing to assess an optional station at Pyrmont and further planning is underway to determine the location of a new metro station within the Sydney CBD.
- A turn-up-and-go metro service operating from early morning to late at night, between Westmead and the Sydney CBD
- Pedestrian links and connections to other modes of transport (such as the existing suburban rail network and other parts of the metro network) and surrounding land uses
- Modification to existing suburban stations and associated rail infrastructure (including overhead wiring, signalling, access tracks/paths and rail corridor fencing) at Westmead and North Strathfield
- Services within each of the metro stations, including mechanical and fresh air ventilation equipment and electrical power substations to supply power for operation
- A stabling and maintenance facility at Clyde, and associated aboveground and belowground tracks to connect to the mainline tunnels and other operational ancillary infrastructure
- Services facilities at Rosehill (within the Clyde stabling and maintenance facility construction site), Silverwater and between Five Dock and The Bays for fresh air ventilation and emergency evacuation
- Alterations to pedestrian and traffic arrangements, and cycling and public transport (e.g. bus) infrastructure around the metro stations
- Subdivision of station sites to support integrated station and precinct developments, and ancillary facilities
- Ancillary facilities to support construction.

The location of the Concept is shown on Figure 1-2.



Figure 1-2: Sydney Metro West

A more detailed description of the Concept is available in Chapter 6 of the Environmental Impact Statement.

1.2.2 Key features of Stage 1

Stage 1 would involve major civil construction work between Westmead and The Bays including:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments, and modifications to the existing transport network
- Tunnel excavation including tunnel support activities
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for services facilities at Rosehill (within the Clyde stabling and maintenance facility construction site), Silverwater and at a location between Five Dock and The Bays (to be determined)
- Civil works for the stabling and maintenance facility at Clyde including earthworks and structures for crossings at A'Becketts Creek and Duck Creek
- A concrete segment facility for use during construction located at the Clyde stabling and maintenance facility construction site
- Excavation of a tunnel dive structure and associated tunnels at Rosehill to support a connection between the Clyde stabling and maintenance facility and the mainline metro tunnels.

The location of Stage 1, including the underground tunnel and construction sites for the stations and services facilities, are shown on Figure 1-3.

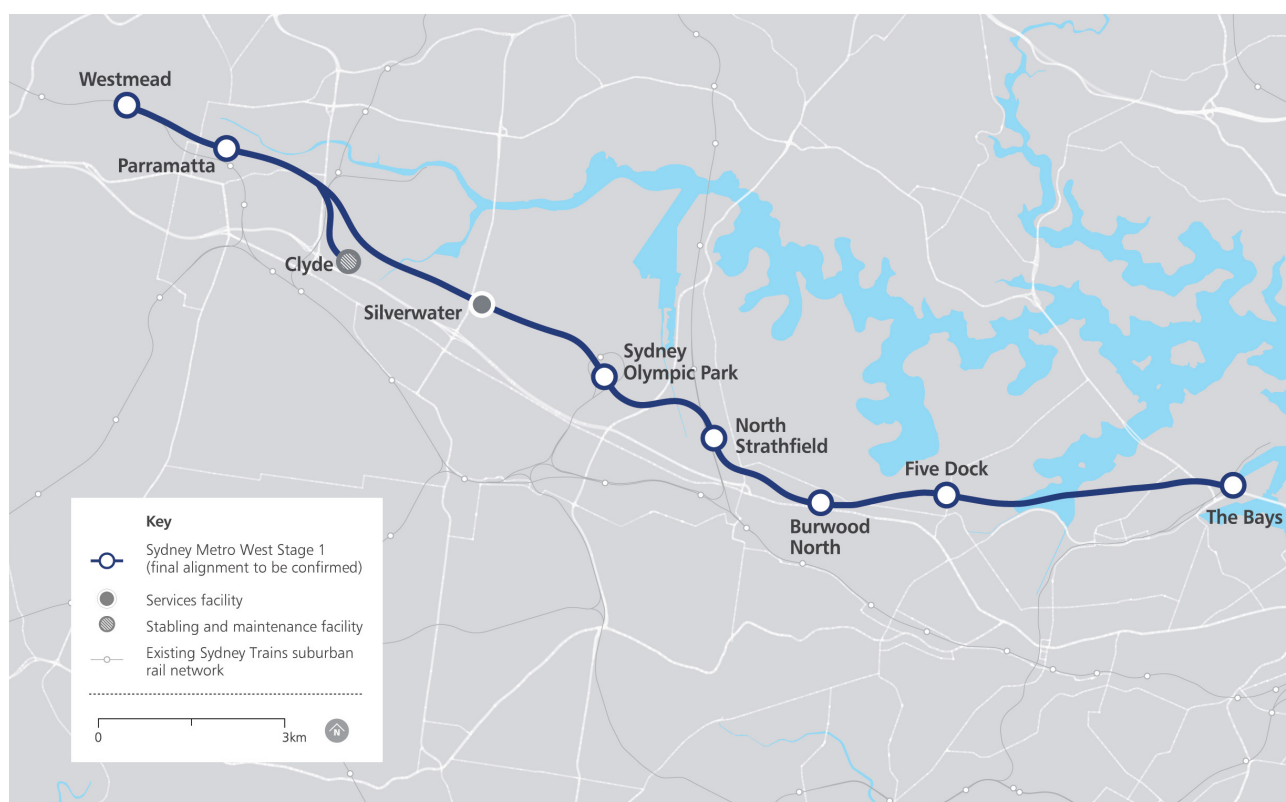


Figure 1-3: Location of Stage 1

A more detailed description of Stage 1 is available in Chapter 9 of the Environmental Impact Statement.

1.3 Statutory context and approval process

Sections 5.12 and 5.13 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) provide for the declaration of State significant infrastructure and critical State significant infrastructure. Sydney Metro West was declared as State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the EP&A Act respectively on 23 September 2020. Schedule 5 of State Environmental Planning Policy (State and Regional Development) 2011 has been amended to include Sydney Metro West as critical State significant infrastructure as a result of this declaration.

An Environmental Impact Statement was prepared to support Sydney Metro's application for approval as State significant infrastructure to the Minister for Planning and Public Spaces under section 5.15 of the EP&A Act. The Environmental Impact Statement was placed on exhibition by the Department of Planning, Industry and Environment, for a period of more than eight weeks from 30 April 2020 to 26 June 2020.

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 or interact with the project team via digital consultation and engagement tools and forums, request further information from Sydney Metro and make a submission to the Department of Planning, Industry and Environment for consideration in assessment of the applications.

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

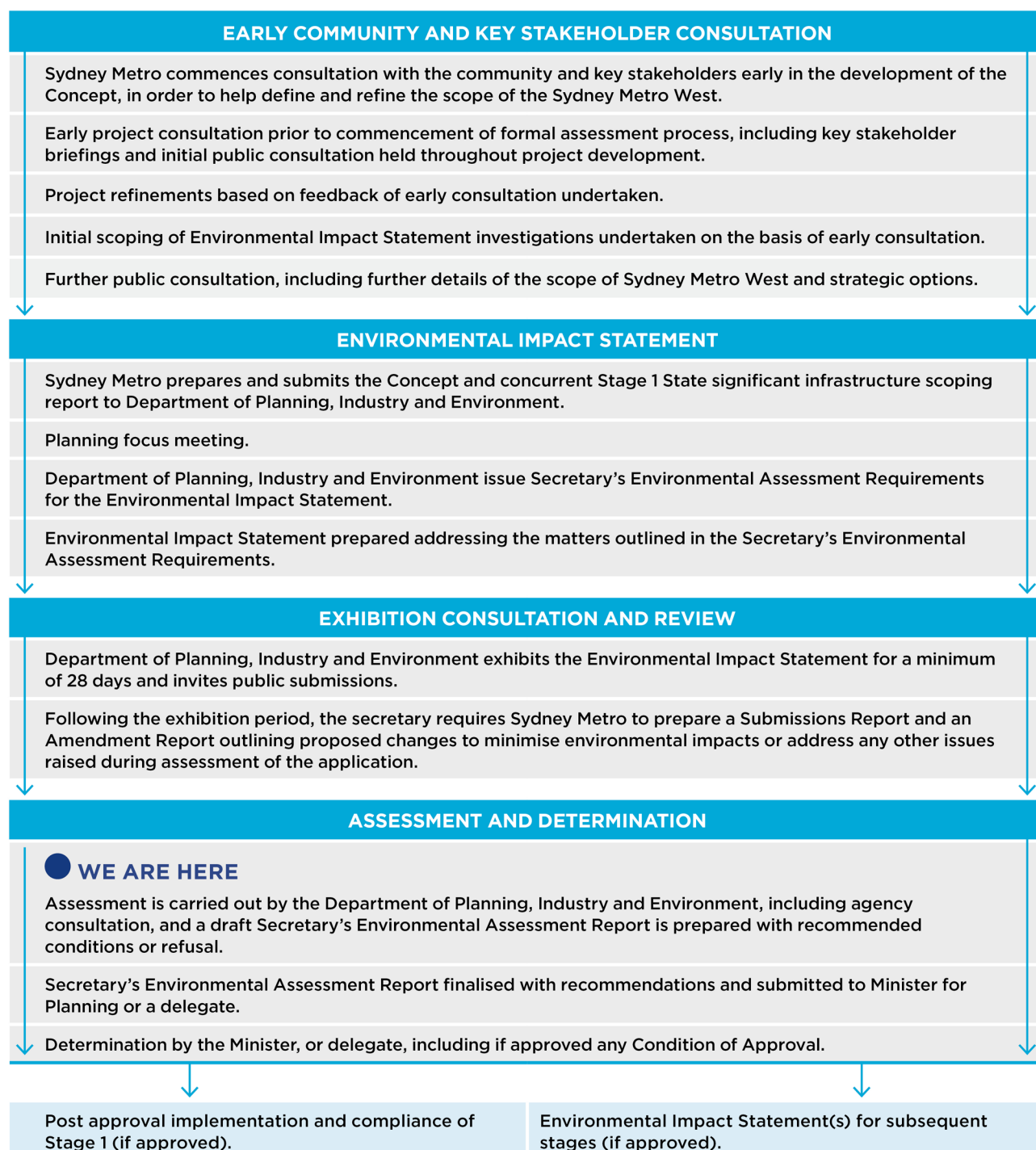


Figure 1-4: The assessment and approval process for State significant infrastructure

1.4 Purpose and structure of this Submissions Report

During exhibition of the Environmental Impact Statement, 188 submissions were received by the Department of Planning, Industry and Environment. The Secretary of the Department of Planning, Industry and Environment requested Sydney Metro to provide a Response to Submissions report that addresses the issues identified in the submissions from members of the public, interest groups and government agencies.

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 to 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.

In April 2020, the Department of Planning, Industry and Environment proposed an amendment to the State Environmental Planning Policy (Infrastructure) 2007 to create a short-term 'protective' underground corridor related to the proposed alignment of the future Sydney Metro West between Westmead and The Bays. The proposed corridor protection amendment was on exhibition concurrently with the Environmental Impact Statement from 30 April 2020 until 26 June 2020 and some submissions relating more specifically to Sydney Metro West were received in response to this exhibition. Issues raised in these submissions have been considered in Chapter 6 (Community submissions) of this Submissions Report however, they have not been counted and included in the total of 188 submissions received during exhibition of 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 outlines the purpose and content of this report.
Chapter 2 Environmental Impact Statement clarifications	Provides clarification on information presented in the Environmental Impact Statement.
Chapter 3 Related development	Identifies projects that are subject to separate planning approvals being undertaken to support the construction of Sydney Metro West, and provides a summary of those projects and their associated environmental impacts.
Chapter 4 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 5 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 6 Community submissions	Identifies issues raised by the community and provides responses to those submissions.
Chapter 7 Government and key stakeholder submissions	Identifies issues raised by government agencies, local councils and key stakeholders, and provides responses to those submissions.
Chapter 8 Revised environmental mitigation measures	Provides the complete set of revised environmental mitigation measures indicating changes required as a result of the response to submissions, or as a result of the <i>Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report</i> .
Chapter 9 Conclusion and next steps	Provides a conclusion to the Submissions Report and outlines next steps in the approval process following the submissions process.

1.5 Amendment Report

Following exhibition of the Environmental Impact Statement, a number of amendments to the design or construction of Sydney Metro West have been proposed to provide more optimised solutions and minimise environmental impacts wherever possible, or in response to submissions received on the Environmental Impact Statement. A separate Amendment Report has been prepared (*Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b) which outlines the proposed amendments since the exhibition of the Environmental Impact Statement and assesses the potential environmental impacts of the proposed changes.

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2 Environmental Impact Statement clarifications

This chapter provides clarification to information presented in the *Sydney Metro West – Westmead to The Bays and Sydney CBD Environmental Impact Statement*.

2.1 Overview

The purpose of this section is to:

- Clarify some of the information presented in the *Sydney Metro West Westmead to The Bays and Sydney CBD – Environmental Impact Statement* (Sydney Metro, 2020a), including information related to the potential impacts of these clarifications
- Provide additional information on some features not detailed in the Environmental Impact Statement.

The following clarification is related to the Concept:

- Rydalmere as a strategic station option (Section 2.2).

The following clarifications are related to Stage 1:

- Five Dock Station construction site – revision to one noise receiver type (Section 2.3)
- The Bays Station construction site – potential use of barges to transport spoil (Section 2.4)
- Other minor clarifications and corrections (Section 2.5).

2.2 Rydalmere as a strategic station option

2.2.1 Clarification description

The Environmental Impact Statement identified Rydalmere as a strategic station option under investigation.

Sydney Metro undertook a comprehensive review of the feasibility and affordability of a potential station at Rydalmere. This review considered a range of factors including stakeholder and community feedback, alignment with key government priorities and project objectives, affordability, economic evaluation and risk assessment.

It was determined that a potential station at Rydalmere would not proceed, given its distance from the proposed alignment and the additional time it would add to the journey between Parramatta and the Sydney CBD. A Rydalmere station also posed considerable construction challenges.

The area's planned growth is supported by the NSW Government's investment in the Parramatta Light Rail project which will connect Rydalmere to the Parramatta CBD. Rydalmere is not precluded from consideration as part of future transport links as identified in the *Future Transport 2056* strategy (Transport for NSW, 2018).

As a result, after finalisation of the Environmental Impact Statement, the NSW Government, in April 2020, decided not to include Rydalmere as a station. This is now reflected in Figure 1-2 of this Submissions Report.

2.3 Five Dock Station construction site – noise receiver type

2.3.1 Clarification description

Figure 11-28 of the Environmental Impact Statement shows the St Alban's Church as a place of worship near the Five Dock Station construction site as part of Noise Catchment Area 14 (NCA14). Section 11.3 of the Environmental Impact Statement describes the noise impacts predicted for NCA14 from the Five Dock Station construction site.

Since exhibition of the Environmental Impact Statement this receiver has been identified as a mixed-use receiver, comprising a parish centre at the western end and a residential clergy house that serves as the residence for the minister at the eastern end, as shown in Figure 2-1.

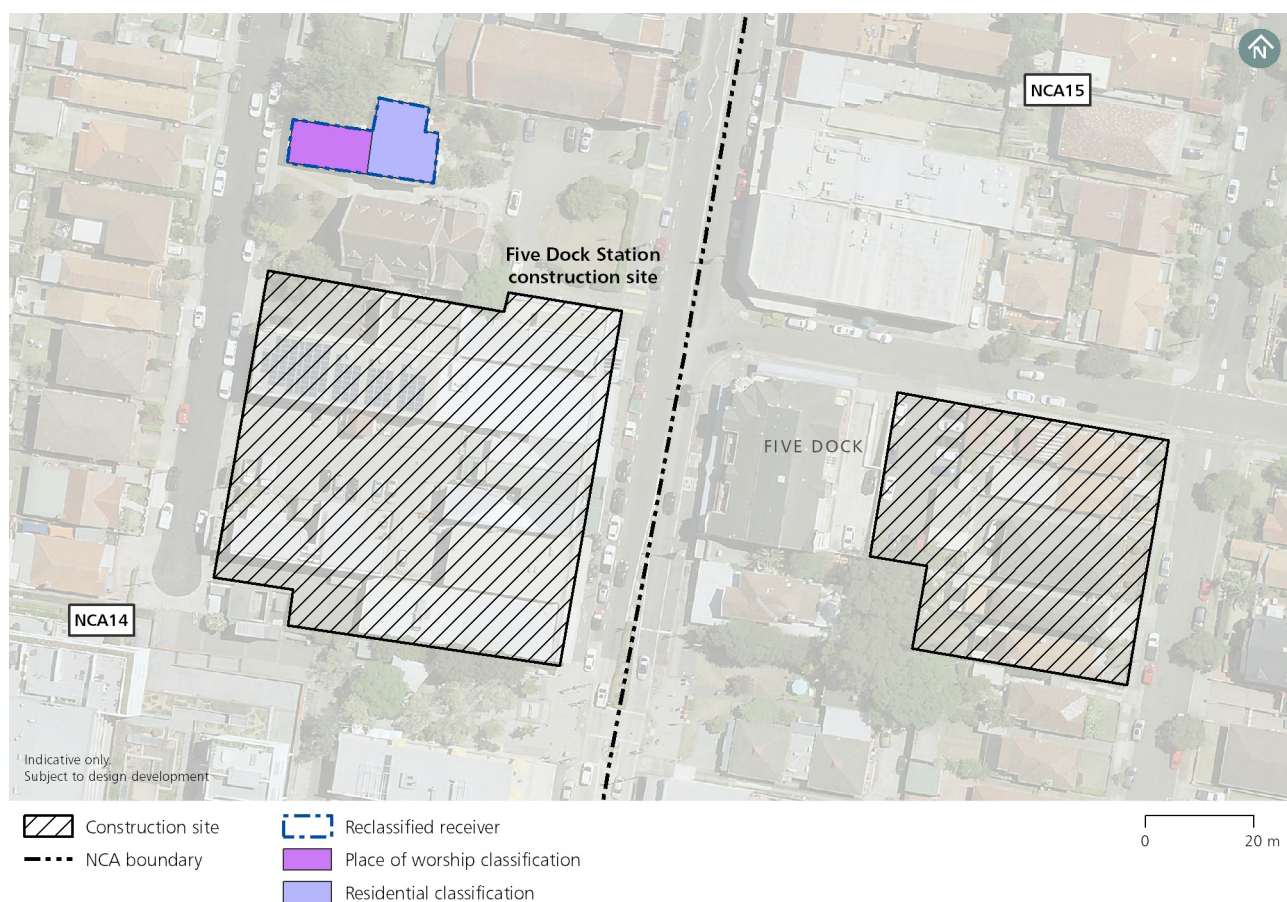


Figure 2-1: Location of receiver that has been reclassified

2.3.2 Additional assessment

This clarification has been reviewed with respect to the noise and vibration assessment. This assessment has separated this building into a 'place of worship' occupancy at the western end and 'residential' at the eastern end.

The degree of potential noise and vibration impact on the receiver has changed reflecting the change in receiver type (as a place of worship and residential receivers have different noise management levels). An assessment of the noise impacts of this reclassification has been undertaken and is discussed below.

Place of worship assessment

The western side of the building containing the place of worship occupancy is the most exposed part of the building and is not shielded from construction site noise emissions by the main church building. As the occupancy classification for the western end of the building has not changed, and this part of the building is most exposed to construction site noise, the predicted noise impacts presented in the Environmental Impact Statement remain unchanged for this receiver.

Residential assessment

The potential construction noise and vibration impacts to the reclassified residential receiver would be managed in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (exhibited with the Environmental Impact Statement and revised in Appendix D of this report), which aims to manage noise and vibration levels through feasible and reasonable measures. The Standard provides a process for the development of site or activity specific Construction Noise and Vibration Impact Statements, standard mitigation measures and additional mitigation measures to be implemented based on noise and vibration trigger levels.

The eastern side of the mixed-use receiver building with residential occupancy is shielded from construction site noise emissions by the St Alban's Church main church building.

Changes to the assessment due to receiver reclassification as residential are:

- Construction works are predicted to result in 'high' temporary worst-case airborne noise impacts at this receiver during the scenario 'Enabling works – demolition using a rockbreaker' during standard construction hours
- Construction works are predicted to result in 'high' temporary airborne noise impacts at this receiver during the scenario 'Excavation with shed – through rock using rockbreaker (doors open)' and 'moderate' to 'low' during other night-time scenarios
- Construction works are predicted to result in 'moderate' temporary sleep disturbance impacts during night-time works during all scenarios. These impacts are expected to result from heavy vehicles accessing the site and movements in the outdoor areas of the site.
- The reclassified receiver is predicted to be temporarily highly noise affected during the 'Enabling works – demolition using a rockbreaker' and 'Initial excavation – through rock using a rockbreaker' scenarios. These are the noisiest daytime only works and include excavation of soil and rock to a depth suitable to allow the construction of an acoustic shed or the placement of other acoustic measures.
- Shaft excavation works within the acoustic shed are predicted to result in 'minor' temporary ground-borne noise impacts during the evening and night-time periods
- Tunnelling using tunnel boring machines is predicted to result in 'minor' temporary ground-borne noise impacts during the night-time period
- Vibration intensive enabling works using a rockbreaker during the daytime are predicted to result in temporary exceedances of the human comfort vibration criteria
- There are no predicted exceedances of the cosmetic damage vibration screening criteria (unaffected by occupancy reclassification).

Sydney Metro will continue to work with this stakeholder to ensure they are informed about Sydney Metro West and have opportunities to provide feedback.

2.3.3 Changes to or additional mitigation measures

Potential impacts to the reclassified receiver would be managed through the management approach and mitigation measures documented in the Environmental Impact Statement. The reclassification of this receiver would not require any changes or additions to the noise and vibration mitigation measures provided in the Environmental Impact Statement.

2.4 The Bays Station construction site – potential use of barges to transport spoil

2.4.1 Clarification description

Chapter 9 (Stage 1 description) of the Environmental Impact Statement identifies the opportunity to transport spoil from project tunnelling and the construction of The Bays Station construction site by using barges as an alternative, or in addition to, truck transport from this construction site.

The use of water transport for movement of spoil was raised in the Inner West Council submission while community submissions identified concerns and comments regarding heavy vehicle movements and queuing near The Bays Station construction site. In response, the transport of tunnel spoil by barges has been further considered. While the transport of spoil via trucks as described in the Environmental Impact Statement remains the primary method of spoil transport, this section provides additional information regarding the barging option, for spoil generated from The Bays Station construction site.

Figure 9-30 in the Environmental Impact Statement shows the location of a potential conveyor to a barge and is shown in Figure 2-2. Figure 2-2 also shows an amended construction site layout as described in the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b) (the Amendment Report).

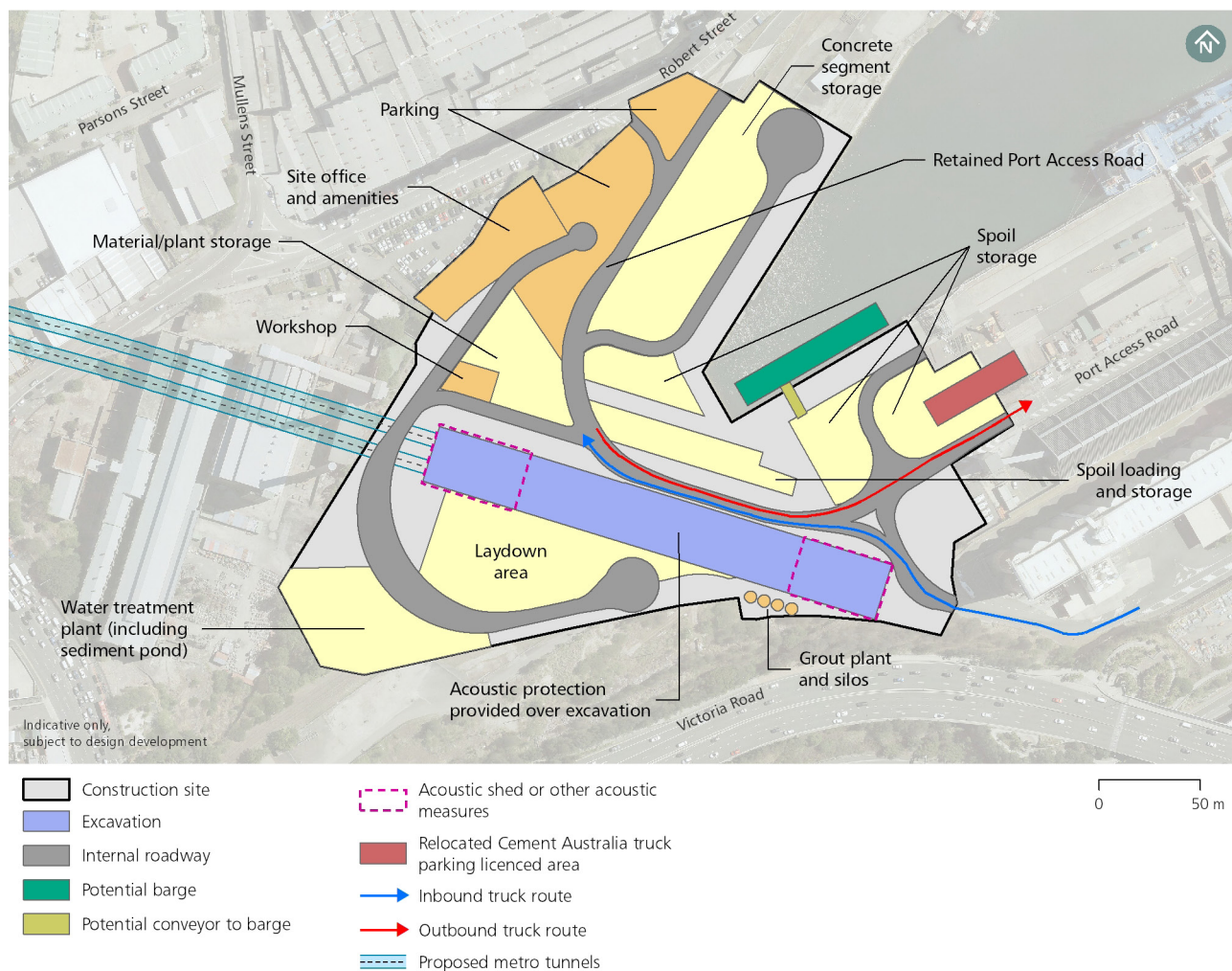


Figure 2-2: Amended The Bays Station construction site layout

Ongoing construction planning has provided the following additional information on potential barging activities:

- Barge size and frequency would vary depending on the chosen destination and the rate of spoil production. Frequency of barges would generally be three to four barges per 24 hours (at peak spoil production rate), with an expected maximum of eight barges per 24 hours and would depend on both the rate of spoil production and the chosen barge size and destination
- Barges would be loaded up to 24 hours per day and seven days per week
- Barging operations could need to be suspended in high wind conditions and in those conditions, trucking of spoil would be required; this could be six to eight days a month on average
- Spoil would most likely be loaded by a conveyor, that is expected to be about 15 metres high when loading the barge
- No water side construction is expected to be required
- Potential destinations for the barging of spoil could include:
 - Inshore destinations such as Camellia, through the reuse of the facility previously used for Sydney Metro City & Southwest
 - Offshore destinations such as Central Coast, Newcastle or Port Kembla.

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
- Landscape character and visual amenity.

Barging activities would not result in any change to other issues as described and assessed in the Environmental Impact Statement given that the activities are consistent with the current industrial use of the site.

Transport and traffic

Existing environment

Section 10.14.1 of the Environmental Impact Statement describes the existing environment near The Bays Station construction site relating to the road network, traffic volumes, intersection performance active transport and public transport. Information regarding maritime activities is provided below.

Maritime activities

The broad maritime footprint adopted for the assessment of maritime activities includes the following zones (as shown on Figure 2-3):

- **Inner Sydney Harbour:** a high traffic area between the Outer Sydney Harbour, and Yurulbin Point, Birchgrove and Manns Point, Greenwich. It includes Circular Quay and Darling Harbour. Barges from The Bays Station construction site would operate through the Inner Sydney Harbour for either onshore or offshore destinations
- **Parramatta River:** a river that extends upstream of Yurulbin Point, Birchgrove. This is relevant for barging to onshore destinations
- **Outer Sydney Harbour:** a wide waterway between the Opera House at Bennelong Point and Admiralty House at Kirribilli Point and the Sydney Heads. This is relevant for barging to offshore destinations.

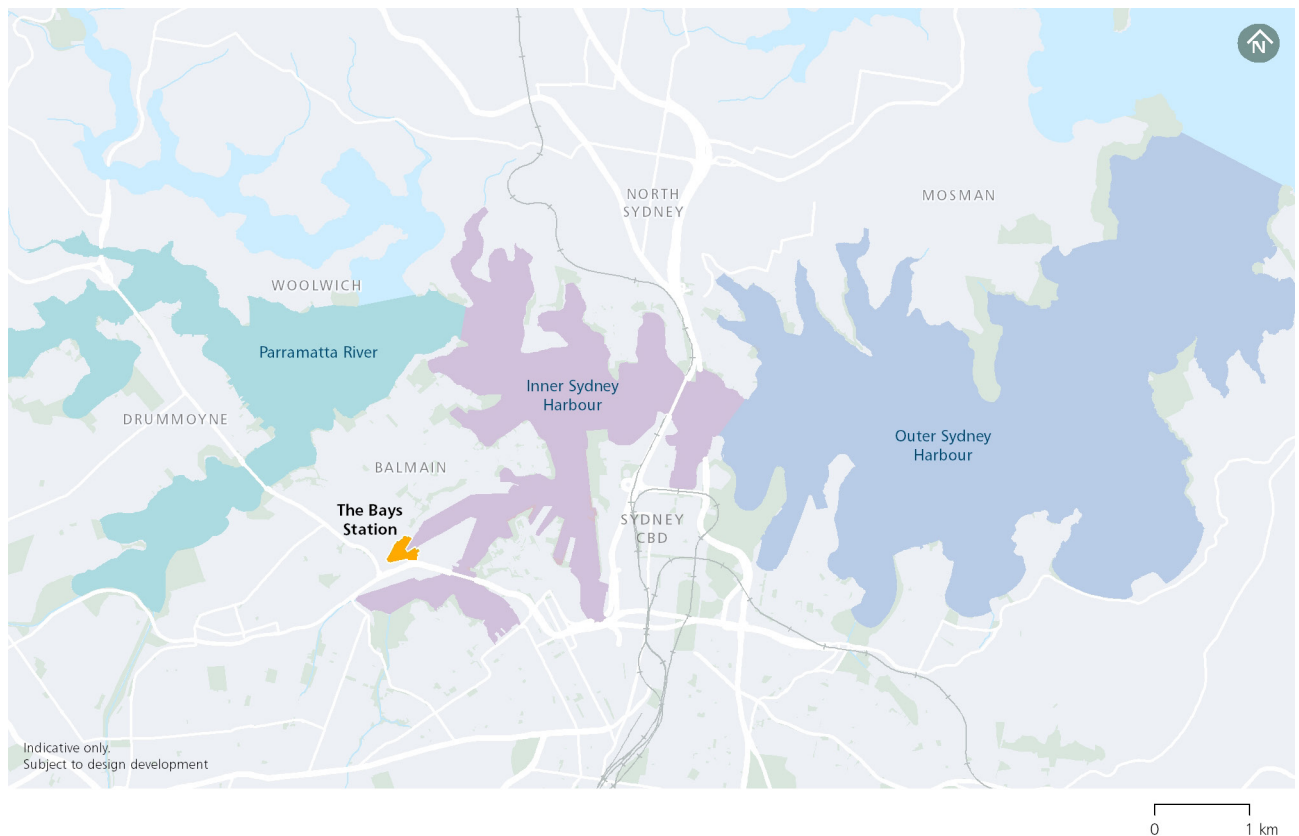


Figure 2-3: Maritime footprint adopted for the assessment of maritime activities

These zones contain various maritime facilities and are used for a range of different maritime activities as follows:

- Ferries, including commuter ferry services operating seven days per week for up to 20 hours per day. In the vicinity of The Bays, ferry services run between the White Bay Cruise Terminal and Barangaroo on days when cruise ships are docked at the White Bay Cruise Terminal
- Commercial operations, including charter companies, commercial fishing, commercial tankers and bulk carriers, and international cruise ships. The Bays Precinct plays an important role in supporting Sydney Harbour as a working harbour and accommodates these commercial operations
- Government organisations, including the Royal Australian Navy, the NSW Department of Planning, Industry and Environment, the Water Police and Transport for NSW's maritime division
- Recreational activities, including rowing, sailing, dragon boating, kayaking, swimming and diving by individuals and community groups
- Maritime facilities such as moorings, dry dock storage facilities, marinas and boat ramps
- Special events, including Sydney New Year's Eve, Australia Day, and maritime racing events.

Potential construction impacts

Maritime activities

If progressed, barging movements would be managed under a Marine Traffic Management Plan to be developed by the construction contractor, which would outline the general operational plan for the movement and management of barging vessels.

For offshore locations, the tugging of barges while inside Sydney Harbour would mean barges may travel at a slower speed than ferries. Therefore, ferries may be required to change course to avoid or pass slow-moving barges. Barging vessel movements would not interfere with port operations or the navigation of seagoing ships and ferries within Sydney Harbour, unless prior approval has been obtained from the Harbour Master. In addition, vessels of 30 metres length overall and greater, travelling east of Dobroyd Head are required to participate in Port Authority of NSW's Vessel Traffic Service, which provides continuous monitoring of marine vessels within Sydney Harbour.

Operators of cruise liners, cargo ships and bulk carriers that berth at White Bay and Glebe Island precinct would be informed of the scheduled barging and use of White Bay for transport of spoil for Stage 1 works. The construction contractor would manage barge movements so that the impacts on inbound and outbound marine traffic are minimised. Details of all barging vessel movements would be included in the Marine Traffic Management Plan.

Community groups, including paddle craft, rowing, dragon boating, fishing, sailing, scout and guide clubs may be affected by the proposed barging movements. Sydney Metro would consult with these groups prior to the start of barging activities and would continue to work with these groups to coordinate activities in the harbour, as waterway users may need to alter their courses to minimise conflict with barging vessel movements. Marine Rescue NSW would not be directly impacted by the barging vessel movements given it is located at The Spit and Birkenhead Point, which are located away from main navigation channels.

Events held in Sydney Harbour such as paddling events in February and yacht races including the Rolex Sydney Hobart Yacht Race in December generally occur in the Outer Sydney Harbour. Barging vessel movements in the Outer Sydney Harbour would be avoided at times where there is high recreational traffic if feasible and reasonable, and managed by the construction contractor in consultation with Transport for NSW. A key issue for navigation would be during events such as Sydney New Year's Eve on Sydney Harbour. Navigation restrictions have historically applied, which limit navigation to the edge of the waterway. Barging vessel movements would not be undertaken when navigation restrictions are in place.

There would be minimal impacts on all other users, such as commercial fishing vessels, water taxis, charter companies and government organisations given the low number of barging movements.

Road network performance

Spoil would be handled via a conveyor from the spoil storage area to the barge. As a result, there would be no increase in heavy vehicle movements from the use of barges to transport spoil. The removal of tunnel spoil by truck remains as the primary spoil transport method and therefore does not result in a change to impacts to those described in the Environmental Impact Statement. If spoil transport via barging was to occur, this could potentially reduce heavy vehicle truck movements associated with The Bays Station construction site.

Parking and property access

The proposed use of barges to transport spoil would not result in any changes to parking and property access impacts from those described in the Environmental Impact Statement.

Public transport

Potential impacts to ferries are discussed above. The proposed use of barges to transport spoil would not result in any other changes to public transport impacts from those described in the Environmental Impact Statement.

Active transport

The proposed use of barges to transport spoil would not result in any changes to active transport impacts from those described in the Environmental Impact Statement.

Noise and vibration

If progressed, the potential temporary construction noise and vibration associated with barging would be managed in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (exhibited with the Environmental Impact Statement and revised in Appendix D of this report), which aims to manage noise and vibration levels through feasible and reasonable measures. The Standard provides a process for the development of site or activity specific Construction Noise and Vibration Impact Statements, standard mitigation measures and additional mitigation measures to be implemented based on noise and vibration trigger levels.

The primary noise generating works from the use of barges to transport spoil at The Bays Station construction site would be the loading of spoil from storage areas, the use of a conveyor to move spoil onto a barge, and the idling of a barge while it is docked.

The predicted temporary airborne noise impacts from barge spoil removal works, representative of the highest noise levels that would likely be experienced at the surrounding receivers, are presented in the following sections.

Number of noise management level exceedances

The barge spoil removal works are predicted to be compliant with noise management levels during standard construction hours. Temporary moderate worst-case impacts are predicted at six of the nearest receivers during the night-time, minor impacts are predicted at 280 receivers during the night time, and minor sleep disturbance impacts are predicted at six of the nearest residential receivers. No residential receivers are predicted to be highly noise affected as a result of barge spoil removal works.

Most of the receivers predicted to be impacted were also predicted to be impacted by various construction scenarios assessed in the Environmental Impact Statement. However, an additional 30 receivers not predicted to be impacted in the Environmental Impact Statement would be impacted during temporary night time works. These additional receivers are limited to 'minor' temporary impacts.

Concurrent temporary construction noise impacts could occur where barging works and other works are occurring near a particular receiver at the same time. The combination of barging and other construction works could theoretically increase the worst-case noise levels by around three decibels where the two types of works affect a particular receiver at the same time.

The likelihood of similar worst-case noise levels being generated by barging and another construction scenario at the same time is, however, considered low. Rather than potentially increased temporary construction noise levels, the impact of multiple scenarios would generally be expected to be an increase in the duration and potential annoyance of noise impacts at the nearest receivers.

In practice, temporary construction noise levels in any one location would vary and would be frequently much lower than worst-case due to construction phasing moving the works around the construction site. In many cases only a few items of equipment would be used at any one time.

Impacts during standard construction hours

No receivers are predicted to be subject to noise levels which exceed the noise management levels in The Bays Station noise study area during barge works in standard construction hours.

Impacts during the night-time

Barges may potentially be loaded 24 hours per day. The worst-case night-time impacts from barge spoil removal works in The Bays Station noise study area are shown in Figure 2-4.

Barge works are predicted to result in moderate worst-case impacts at six residential receivers to the north of the site, with minor impacts for the more distant receivers. In comparison to the Environmental Impact Statement assessment, the barge works would temporarily impact a greater number of receivers on the eastern edge of NCA21. This is due to the locality of the barge loading and its line of sight to these receivers.

Sleep disturbance

Minor sleep disturbance impacts are predicted at six residential receivers to the north during barge spoil removal works. These temporary impacts would be due to noise from spoil loading activities. These minor sleep disturbance impacts would be influenced by the number and frequency of barges loaded during the night-time period.

Highly noise affected residential receivers

No receivers are predicted to be highly noise affected in The Bays Station noise study area by the proposed barge works.

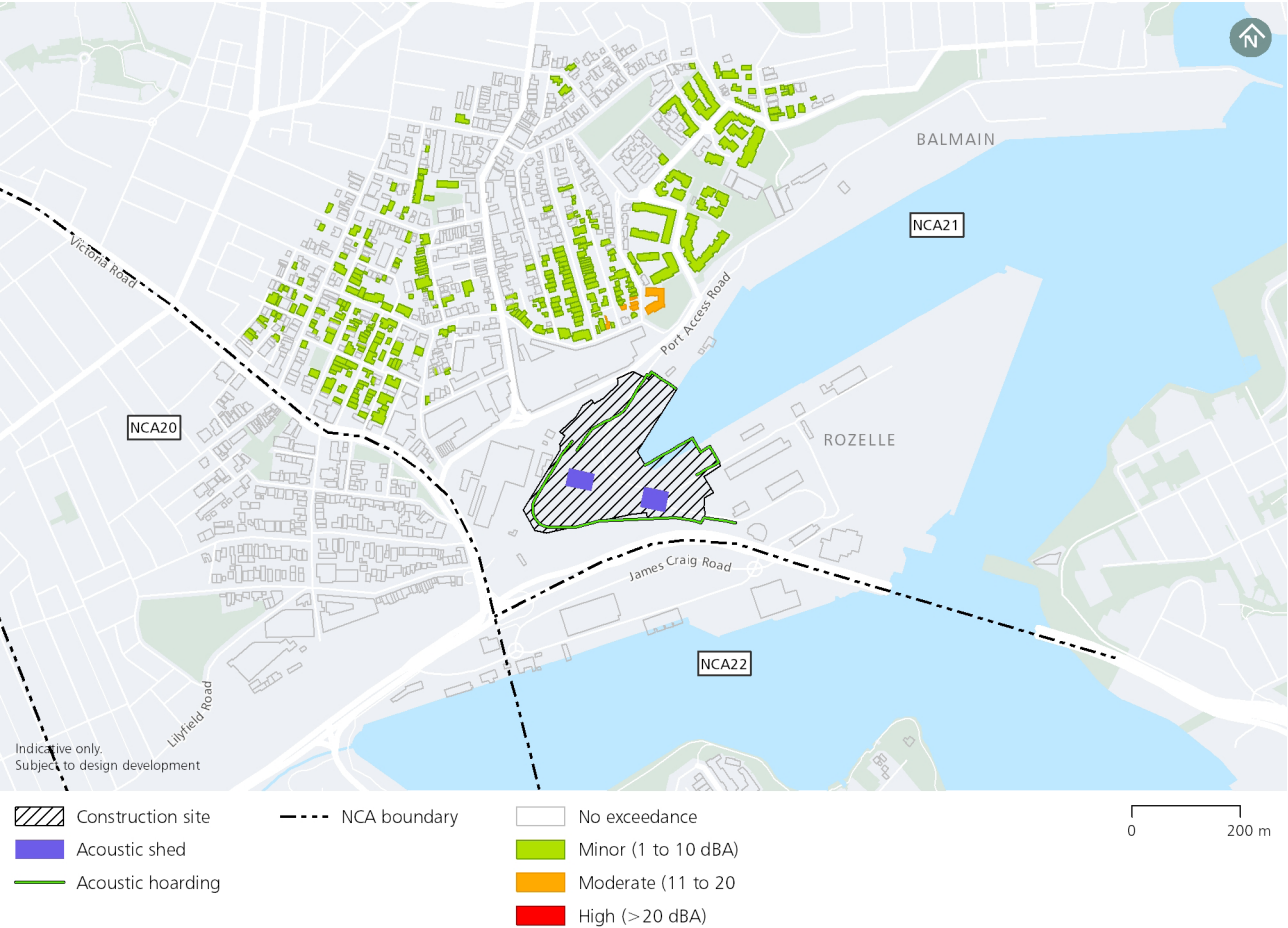


Figure 2-4: Worst-case night-time airborne noise impacts (barge spoil removal)

Landscape character and visual impact

If progressed, potential landscape and visual impacts associated with barging would be consistent with the potential impact ratings identified in the Environmental Impact Statement and would be managed through the mitigation measures identified in the Environmental Impact Statement.

The Environmental Impact Statement assessed landscape character and visual impact at The Bays Station construction site, including assessment of viewpoints.

As a result of the proposed use of barges to transport spoil, there would be active barges visible on the water, however the bay is predominantly a working port and this activity would not displace recreational activity in this area of the harbour.

While Stage 1 works would use areas of the harbour for transport, this would be largely absorbed into the existing industrial setting and result in no perceived change in the landscape quality of the site and Glebe Island portside industrial and commercial areas. This is a landscape of neighbourhood sensitivity and there would be a negligible landscape impact. This impact level is unchanged from the Environmental Impact Statement.

Five representative viewpoints at The Bays Station construction site were assessed in the Environmental Impact Statement. Four of these viewpoints are re-assessed for potential impacts from barging and should be considered in conjunction with other changes to the viewpoints described in the Amendment Report.

Viewpoint 1: View south from Mansfield Street open space, Rozelle



Figure 2-5: Viewpoint 1 – View south from Mansfield Street open space, Rozelle, existing view

Figure 2-5 presents the existing view at Viewpoint 1. As a result of the barging of spoil, the loading of barges would be seen in the bay from Viewpoint 1. These barges would be seen intermittently being towed to and from the site across the bay from this location. The proposed barging would not result in a change to the **minor adverse visual impact** described in the Environmental Impact Statement.

When considered alongside other changes to this viewpoint described in the Amendment Report there would still be an overall noticeable reduction in the amenity of this view and as this is a view of local sensitivity, this would result in a **minor adverse visual impact**.

Viewpoint 2: View south-west from Peacock Point Reserve, Balmain East



Figure 2-6: Viewpoint 2 – View south-west from Peacock Point Reserve, Balmain East, existing view

Figure 2-6 presents the existing view at Viewpoint 2. As a result of the barging of spoil, barges being drawn by tugs would be seen within the harbour, crossing the view intermittently throughout the day. The proposed barging would not result in a change to the **negligible visual impact** described in the Environmental Impact Statement.

When considered alongside other changes to this viewpoint described in the Amendment Report, there would be no overall perceived change in the amenity of this view. This is a view of local sensitivity and there would be a **negligible visual impact** from this location.

Viewpoint 3: View south-west from Barangaroo Reserve, Barangaroo

Figure 2-7: Viewpoint 3 – View south-west from Barangaroo Reserve, Barangaroo, existing view

Figure 2-7 presents the existing view at Viewpoint 3. As a result of the barging of spoil, barges drawn by tugs would be seen within the harbour, crossing the view intermittently throughout the day. The barging activities would be intermittent and would be absorbed into this view of the busy channel which includes a range of vessels including cruise ships, private vessels and ferries. The proposed barging would not result in a change to the **negligible visual impact** described in the Environmental Impact Statement.

When considered alongside other changes to this viewpoint described in the Amendment Report, there would be no overall perceived change in the amenity of this view. This is a view of regional sensitivity and there would be a **negligible visual impact** from this location.

Viewpoint 5: View east from Victoria Road, Rozelle



Figure 2-8: Viewpoint 5 – View east from Victoria Road, Rozelle, existing view

Figure 2-8 presents the existing view at Viewpoint 5. As a result of the barging of spoil, barges would be seen on the harbour and loading, seen in the centre, middle ground of this view. The proposed barging would not result in a change to the **negligible visual impact** described in the Environmental Impact Statement.

When considered alongside other changes to this viewpoint described in the Amendment Report, there would be an overall noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

2.4.3 Changes to or additional mitigation measures

The additional or revised mitigation measures proposed to manage any potential impacts as a result of the potential use of barges to transport spoil from The Bays Station construction site are provided in Table 2-1.

Table 2-1: Additional or revised mitigation measures at The Bays Station construction site

Reference	Impact/issue	Mitigation measure	Revised or additional mitigation measure	Application location(s) ¹
Transport and traffic				
TT25	Impacts on maritime traffic and waterway users	Additional measure	If barging of spoil is progressed, a Marine Traffic Management Plan would be developed to outline the general operational plan for the movement and management of barging vessels in accordance with TT27, TT28 and TT29. The Plan would also outline the process for consultation in accordance with TT26.	TBS
TT26	Impacts on maritime traffic and waterway users	Additional measure	If barging of spoil is progressed, Sydney Metro would consult with clubs which operate watercraft about potential barging and potential changes to courses for watercraft such as yachts prior to the beginning of barging operations, and would continue to work with water users throughout the duration of the use of barges.	TBS
TT27	Impacts on maritime traffic and waterway users	Additional measure	If barging of spoil is progressed, barging vessel movements would be scheduled to avoid times and locations of high recreational marine traffic where feasible and reasonable in consultation with Transport for NSW.	TBS
TT28	Impacts on maritime traffic and waterway users	Additional measure	If barging of spoil is progressed, barging vessel movements would be managed to not interfere with port operations or the navigation of seagoing ships and ferries, unless prior approval has been obtained from the Harbour Master.	TBS
TT29	Impacts on maritime traffic and waterway users	Additional measure	If barging of spoil is progressed, barging vessel movements would not be undertaken during special events when navigation restrictions are in place.	TBS

¹ WMS: Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (e.g. tunnel boring machine works); PSR: Power supply routes.

2.5 Minor clarifications and corrections

This section describes minor clarifications and corrections to the exhibited Environmental Impact Statement that have been raised within submissions or during responses to submissions. Any amendments to the project are presented in Amendment Report.

A number of minor changes were also made to environmental mitigation measures to provide further clarification or to update references to guidelines, regulations or government agencies. These revised mitigation measures are presented in Chapter 8 of this Submissions Report.

2.5.1 Transport and Traffic

Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement and Technical Paper 1 (Transport and Traffic) incorrectly described parking spaces on the eastern side of Great North Road at Five Dock as not time-restricted. These parking spaces are restricted to 30 minute parking. This does not change the outcome of the parking assessment at Five Dock.

Figure 9-24 in Chapter 9 (Stage 1 description) of the Environmental Impact Statement appears to show that construction vehicles would travel along Queen Street Five Dock past Shipley Avenue. This is not proposed and the haulage routes remain as shown in Figure 10-30 in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement.

A submission by City of Parramatta Council identified that Figure 10-7 of Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement did not fully show two cycle routes, the existing cycle route on Horwood Place between George Street and Macquarie Street, and the proposed (under construction) Escarpment Boardwalk cycleway between Macarthur Street and Parramatta River Weir. While not shown in this figure, these cycle routes were considered in the transport and traffic assessment and there are no potential impacts to these cycle routes that have not been considered in the Environmental Impact Statement.

A submission by City of Parramatta Council also identified that Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement identified high pedestrian activity areas near the Parramatta metro station construction site. These signposted areas of high pedestrian activity have now been extended to additional areas around Parramatta including Marsden, Church, Smith, Macquarie, Hunter and Argyle streets. This does not change the outcome of the pedestrian assessment at Parramatta.

In addition to the mitigation measures described in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement, five additional mitigation measures (TT25 to TT29) have been added as described in Chapter 8 (Revised environmental mitigation measures). These mitigation measures have been added manage the impacts to maritime traffic and waterway users as a result of the potential use of barges to transport soil at The Bays Station construction site described in Section 2.4. An additional mitigation measure, TT30, has also been added as described in Chapter 8. In summary, the design of the temporary traffic arrangements at Westmead metro station construction site would consider construction traffic, alternate bus routes and bus stops, local vehicular traffic and pedestrian safety. The design of the temporary traffic arrangements would be undertaken in consultation with Transport for NSW, Schools Infrastructure NSW, Heath Infrastructure NSW, relevant local councils and bus operators.

2.5.2 Noise and Vibration

A submission by City of Parramatta Council identified that Figure 11-7 in Chapter 11 (Noise and vibration – Stage 1) of the Environmental Impact Statement showed 126 Church Street, Parramatta, as a residential receiver. This location is the site of Parramatta Council's administrative offices and should have been shown as a commercial receiver. Regardless of classification, no exceedances of noise management levels are predicted for this location.

An updated *Construction Noise and Vibration Standard* has been prepared to replace Appendix E of the Environmental Impact Statement. The *Construction Noise and Vibration Standard* was updated to include the following and is presented in Appendix D:

- Changes to the additional mitigation measures matrix to relate to noise management levels for the project rather than rating background noise levels
- Clarification of different levels of noise and vibration impact statements (based on the scope of construction works) and clarification of other noise and vibration-related documents
- Removal of limitations on the use of plant and equipment if their use is justified
- Change to the assessment approach to sleep disturbance in accordance with a submission made by the Environment Protection Authority
- Minor text changes and factual corrections.

2.5.3 Non-Aboriginal heritage

Chapter 12 (Non-Aboriginal heritage – Stage 1) of the Environmental Impact Statement (mitigation measure NAH6) identified that an Archaeological Research Design would be prepared to manage impacts to potential non-Aboriginal archaeological resources. A *Non-Aboriginal Archaeological Research Design* has now been prepared and is included as Appendix F. NAH6 has been appropriately revised to require implementation of the *Archaeological Research Design* (which is included in Appendix F).

In response to the submission from the City of Canada Bay Council, an assessment of significance would be prepared for potential unlisted heritage items. If the assessment of significance confirms this item has local heritage value, an archival recording would be undertaken. This is reflected in a new mitigation measure NAH10.

Table 12-22 in Chapter 12 (Non-Aboriginal heritage – Stage 1) identifies the potential for a direct impact on White Bay Power Station (inlet) canal due to accidental damage during construction. The discussion of this impact was incorrectly included in the section of the table addressing impacts on the White Bay Power Station (outlet) Canal.

2.5.4 Aboriginal heritage

An updated *Aboriginal Cultural Heritage Assessment Report* has been prepared to replace Technical Paper 4 of the Environmental Impact Statement. This report has been updated to include outcomes of consultation with Registered Aboriginal Parties that was undertaken concurrently with the exhibition of the Environmental Impact Statement, and is presented as Appendix E.

2.5.5 Groundwater and ground movement

In response to a submission by the Environment Protection Authority, mitigation measure GW4 has been revised to state that groundwater monitoring data would be provided to NSW Environment Protection Authority and Department of Planning, Industry and Environment's Water and the Natural Resources Access Regulator for information prior to commencement of construction. A minor change to mitigation measure GW5 has also been made to respond to comments from Department of Planning, Industry and Environment's Water and the Natural Resources Access Regulator regarding the hydrogeological model for Stage 1 works. Refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

2.5.6 Landscape character and visual amenity

Chapter 15 (Landscape character and visual amenity – Stage 1) of the Environmental Impact Statement included mitigation measure LV6 related to the provision of public art on construction site hoardings. Mitigation measure LV6 has now been refined to state that the design of hoarding design would be consistent with *Sydney Metro Brand Design Guidelines* and opportunities for public art considered in high pedestrian locations. The revised mitigation measure is included in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. Duplication of content from LV3 has also been removed.

2.5.7 Social impacts

In addition to the mitigation measures described in Chapter 17 (Social impacts – Stage 1) of the Environmental Impact Statement, an additional mitigation measure, S7, has been added as described in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. In summary, ongoing engagement would be undertaken with Schools Infrastructure NSW to investigate feasible and reasonable mitigation measures related to construction traffic, pedestrian safety, construction noise and vibration, and air quality in the vicinity of Westmead metro station, Parramatta metro station, Burwood North Station and Five Dock Station construction sites.

2.5.8 Soils and surface water quality

Mitigation measure SSWQ5 has been revised to clarify that water treatment plants would be designed so that wastewater is treated 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. This mitigation measure has been revised in response to a submission from the Environment Protection Authority that raised guideline values for water treatment as described in Chapter 7 (Government and key stakeholder submissions). Refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

2.5.9 Biodiversity

In response to a submission by the Department of Planning, Industry and Environment (Environment, Energy and Science Group), mitigation measure B3 has been revised to include reference to Parramatta metro station. This is consistent with Technical Paper 10 (Biodiversity development assessment report) and recognises that some groundwater drawdown is predicted at the location of Forest Red Gum – Rough barked Apple grassy woodland on alluvial flats of the Cumberland Plain, along the Parramatta River to the north-west of the station. Refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

2.5.10 Construction Environmental Management Framework

An updated *Construction Environmental Management Framework* has been prepared to replace Appendix D of the Environmental Impact Statement. The *Construction Environmental Management Framework* was updated to remove references to example mitigation measures, which are instead presented in Chapter 27 of the Environmental Impact Statement and Chapter 8 of this document, and to implement minor text changes and factual corrections. The updated *Construction Environmental Management Framework* is provided in Appendix C.

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3 Related development

This chapter identifies related developments that are subject to separate planning approvals and would support the construction of Sydney Metro West. The chapter provides a summary of those projects and assesses the potential environmental impact associated with carrying out those projects.

3.1 Overview

The following projects are related to Sydney Metro West and subject to separate planning approvals:

- The Bays road relocation works
- Sydney Metro West Eastern Creek Precast Facilities
- Sydney International Speedway.

3.2 The Bays road relocation works

3.2.1 Background

Sydney Metro has approved road relocation works to support long-term urban renewal initiatives for the Bays West area and various future developments within the locality. The project directly supports the updated vision for the Bays West area by supporting construction (including Sydney Metro West) while providing for ongoing access to the White Bay Cruise Terminal and other port operations at Glebe Island and White Bay. The project also provides the opportunity to improve road safety by reducing conflicting traffic movements in the internal port road network.

The Bays road relocation works Review of Environmental Factors (Sydney Metro, 2020c) was placed on public exhibition by Sydney Metro from 30 April 2020 to 29 May 2020. A total of three submissions were received (from Inner West Council, Infrastructure NSW and a community member).

The key issues raised in submissions were:

- Construction noise and vibration impacts, potentially impacting an increased number of people working from home
- Potential impacts to the State heritage-listed White Bay Power Station
- Construction traffic impacts including construction vehicle queuing, parking and cumulative traffic impacts with nearby projects
- Cumulative biodiversity impacts.

After considering the issues raised in submissions and making some amendments to the project, Sydney Metro determined the project may be carried out on 18 August 2020. *The Bays road relocation works Review of Environmental Factors Determination Report* (Sydney Metro, 2020d), which includes a copy of the Review of Environmental Factors is available at www.sydneymetro.info/metrowest.

The project, as amended, would include (refer also to Figure 3-1):

- Adjustment of the intersection of Solomons Way / Sommersville Road / Port Access Road
- Tie-in works to the Port Access Road to the west of the adjusted intersection
- Converting Solomons Way / Sommersville Road into a one way circuit
- Relocation of the Cement Australia Truck Parking Licenced Area to the north-east
- Minor road verge widening works on Solomons Way.

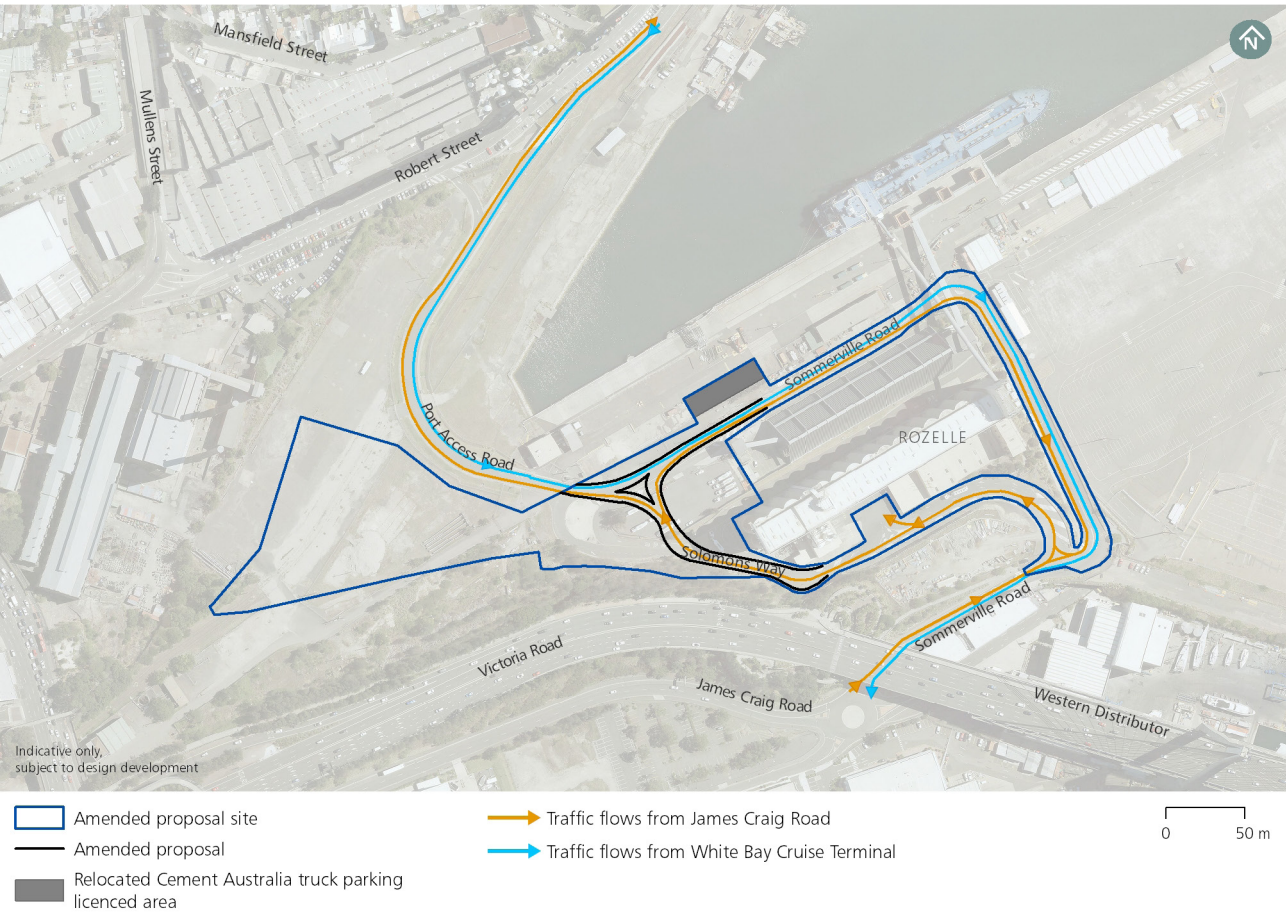


Figure 3-1: The Bays Road relocation works (as amended)

3.2.2 Summary of potential impacts

Table 3-1 provides a summary of the potential environmental impacts associated with The Bays road relocation works. A detailed description of the environmental impacts is provided in Section 7 of *The Bays road relocation works Review of Environmental Factors*. Section 8 (Environmental management) of the Review of Environmental Factors outlines the approach to environmental management for the proposal. Conditions of Approval were also included in Section 9 of *The Bays road relocation works Review of Environmental Factors Determination Report* (Sydney Metro, 2020d). The *Sydney Metro Construction Environmental Management Framework* (Appendix C) would also be used to manage the construction of the proposal.

Table 3-1: Summary of potential environmental impacts – The Bays road relocation works

Environmental issue	Summary of potential impacts
Construction noise and vibration	Potential temporary construction noise impacts are predicted to be compliant or ‘minor’ for most of the works. However, ‘moderate’ impacts are predicted at some receivers for a short duration during site clearing works. These works would be carried out during standard construction hours. Vibration from the use of a rockbreaker is predicted to exceed the relevant human comfort goals and cosmetic damage screening criteria at the Glebe Island Silos. These exceedances would be adequately managed through the mitigation measures identified in the Determination Report. The project would be below the cosmetic damage vibration screening criteria at the closest building at the White Bay Power Station site and the White Bay Power Station (Inlet) Canal, or at the Glebe Island Dyke Exposure.
Operational noise and vibration	Operational road traffic noise is expected to have a negligible impact on nearby receivers. This is primarily due to the distance to residential receivers and the nearby Victoria Road and Western Distributor/Anzac Bridge road network, which dominate the local noise environment.

Environmental issue	Summary of potential impacts
Construction traffic and transport	Potential temporary construction traffic impacts to port operations are anticipated to be minor or negligible with a limited construction workforce (with a peak construction workforce of 20). Intersections that would be used by construction vehicles would continue to perform at the same level of service with or without construction vehicles. Tie-in works along the Port Access Road would require temporary short term road and/or lane closures outside network peak periods or peak periods for the White Bay Cruise Terminal.
Operational traffic and transport	Potential changes to operational traffic due to the project are considered negligible. The new one-way circuit would improve road safety by reducing the number of conflicting movements at the intersection of Port Access Road / Solomons Way / Sommersville Road, while verge widening on Solomons Way would improve safety by allowing additional space for vehicle movements.
Non-Aboriginal heritage	The project would not have an impact on the State Heritage Register listed White Bay Power Station. There would be no works within the curtilage of this item and impacts to this item associated with vibration from construction works are not expected. The presentation of this item would not be affected and therefore potential indirect impacts (visual) were assessed as neutral. Similarly, no impacts are expected on the White Bay Power Station (Inlet) Canal or the Glebe Island Dyke Exposures, which are items of local significance listed on the Port Authority of NSW <i>Heritage Act 1977</i> section 170 register. There is potential for vibration impacts on the Port Authority of NSW listed Glebe Island Silos, with cosmetic damage screening criteria expected to be exceeded. Potential vibration impacts would be managed through the mitigation measures identified in the Determination Report including additional assessments, condition surveys and vibration monitoring (refer to mitigation measures NV2 and NV3).
Aboriginal heritage	Earthworks would be limited to the area of road modifications and no ground modifying works would occur within identified areas of Aboriginal archaeological sensitivity. Impacts on Aboriginal objects are not expected.
Soils and contamination	Potential temporary impacts could be associated with accidental spills, runoff from stockpiles and disturbance of contaminated land. Potential existing contamination at the site includes heavy metals, hydrocarbons (TRH, BTEX, PAH), asbestos and per and poly-fluoroalkyl substances (PFAS). Potential impacts would be managed through the implementation of mitigation measures identified in the Determination Report, in particular mitigation measures C1, C2 and C4.
Water quality, hydrology and drainage	Construction activities would be managed to avoid contaminated runoff being discharged into nearby stormwater drains and White Bay (which could occur without the implementation of mitigation measures). This would be addressed through progressive erosion and sediment control plans, that would be updated as needed to reflect site conditions, and the implementation of mitigation measure C3 identified in the Determination Report.
Biodiversity	The project would involve removal of degraded vegetation along the southern portion of the proposal site. Vegetation to be removed at the proposal site is a mix of planted native vegetation and weed species. As the vegetation to be removed is highly degraded, the presence of fauna habitat is unlikely and impacts to fauna limited. There are not expected to be any impacts on threatened species or ecological communities, or their habitats. Potential biodiversity impacts would be managed in accordance with Sydney Metro's <i>Construction Environmental Management Framework</i>, which includes requirements for pre-clearing inspections by a qualified ecologist, and to develop procedures for the relocation of encountered fauna.
Landscape and visual	The project is consistent with the existing port and industrial landscape character of the site and surrounding area. During construction, there would be temporary direct impacts on the landscape of the proposal site including to small patches of highly degraded vegetation along the southern portion of the site. Construction would generally be visible in the mid ground catchment of surrounding views, with the construction compound above ground level. Recognising the existing industrial setting of the proposal site, construction would result in mostly negligible visual impacts at the viewpoints assessed, with minor adverse impacts from some viewpoints due to construction fencing. During operation, visual impacts would be negligible.

Environmental issue	Summary of potential impacts
Socio-economic, land use and property	The project would not change existing land use at the site. Potential temporary construction related amenity impacts (noise, visual amenity and air quality) can be appropriately addressed through the mitigation measures identified in the Determination Report. Operation of the project would provide social and economic benefits by maintaining safe and reliable road access between the White Bay Cruise Terminal and other port operations in the Glebe Island and White Bay destinations during future construction works.
Air quality	Given the buffer distance and low density of sensitive receivers around the project site, the potential for temporary dust impacts is considered low. Air quality impacts are not anticipated during operation.
Waste and resource management	The volumes of resources required for construction would be relatively minor and materials used during operation would be limited to those required for ongoing maintenance activities. Waste volumes are anticipated to be minor. The waste management hierarchy principles established under the <i>Waste Avoidance and Resource Recovery Act 2001</i> of avoid/reduce/reuse/recycle/dispose would be applied during construction, in accordance with mitigation measure WR1 identified in the Determination Report.
Climate change and greenhouse gases	The project would generate only minor greenhouse gas emissions from sources such as construction traffic and equipment during construction. The project is not expected to change emissions during operation as it would not increase vehicular traffic at the proposal site.
Sustainability	The proposal would be delivered under the <i>Sydney Metro Construction Environmental Management Framework</i> and <i>Sydney Metro West Sustainability Plan</i> reflecting the scope and impacts as appropriate.

3.3 Sydney Metro West Eastern Creek Precast Facilities

3.3.1 Background

Sydney Metro has assessed the proposed construction and operation of two adjacent precast facilities to be located at Eastern Creek to support the construction of the proposed Sydney Metro West. Each facility would manufacture precast concrete segments for the purpose of lining the Sydney Metro West tunnels and would be able to be operated independently of each other by separate tunnelling contractors.

It has been identified through detailed construction planning that additional precast facilities would be required to enable the efficient delivery of Sydney Metro West (including the section from The Bays to the Sydney CBD). Due to the scale of Sydney Metro West, the tunnelling and station excavation works have been separated into geographically specific contract packages between Westmead and the Sydney CBD. Based on the delivery strategy for Sydney Metro West, multiple tunnelling packages would be in delivery at the same time and separate precast facilities would be required for each tunnelling contractor.

The precast facility at the Clyde stabling and maintenance facility construction site proposed as part of Stage 1 of Sydney Metro West would not provide sufficient space or be able to meet the productivity requirements to support the Sydney Metro West delivery strategy. Furthermore, while tunnelling works are still underway, the precast facility at Clyde would need to be decommissioned for the land to support future construction activities, including fit out of the tunnels.

Additional precast capacity would provide the ability to align the production of precast segments with the delivery strategy, while supporting multiple tunnelling contractors concurrently. Precast facilities separate from the Clyde site would also be able to be used over the entire duration of Sydney Metro West tunnelling works, as they would not be required to be decommissioned to allow future construction activities to commence.

The potential environmental impacts are assessed in the *Sydney Metro West Eastern Creek Precast Facilities Review of Environmental Factors* (Sydney Metro, 2020e) which has been placed on public exhibition by Sydney Metro from 16 November 2020 to 4 December 2020. The Review of Environmental Factors is available online at sydneymetro.info and submissions have been invited. Following the completion of the public exhibition period Sydney Metro will consider submissions before making a decision in relation to the proposal.

The proposal is shown in Figure 3-2 and would comprise the following key features and activities:

- Site establishment at the proposal site at Eastern Creek including vegetation clearing, remediation, and earthworks
- The establishment of two separate adjacent precast facilities, the northern and southern precast facilities, on the proposal site. Each precast facility would include:
 - A precast yard including a shed for construction of precast concrete segments and storage laydown areas
 - Boiler, aggregate bins and consumables
 - Office facilities
 - On-site parking for up to 60 light vehicles.
- Internal roads with entrances to each facility from the Western Access Road located between the northern and southern precast facilities (external roads would be subject to separate approvals by other parts of Transport for NSW)
- Ancillary supporting infrastructure, including utilities installation (power, water, sewerage, gas and communications), lighting, signage and landscaping.

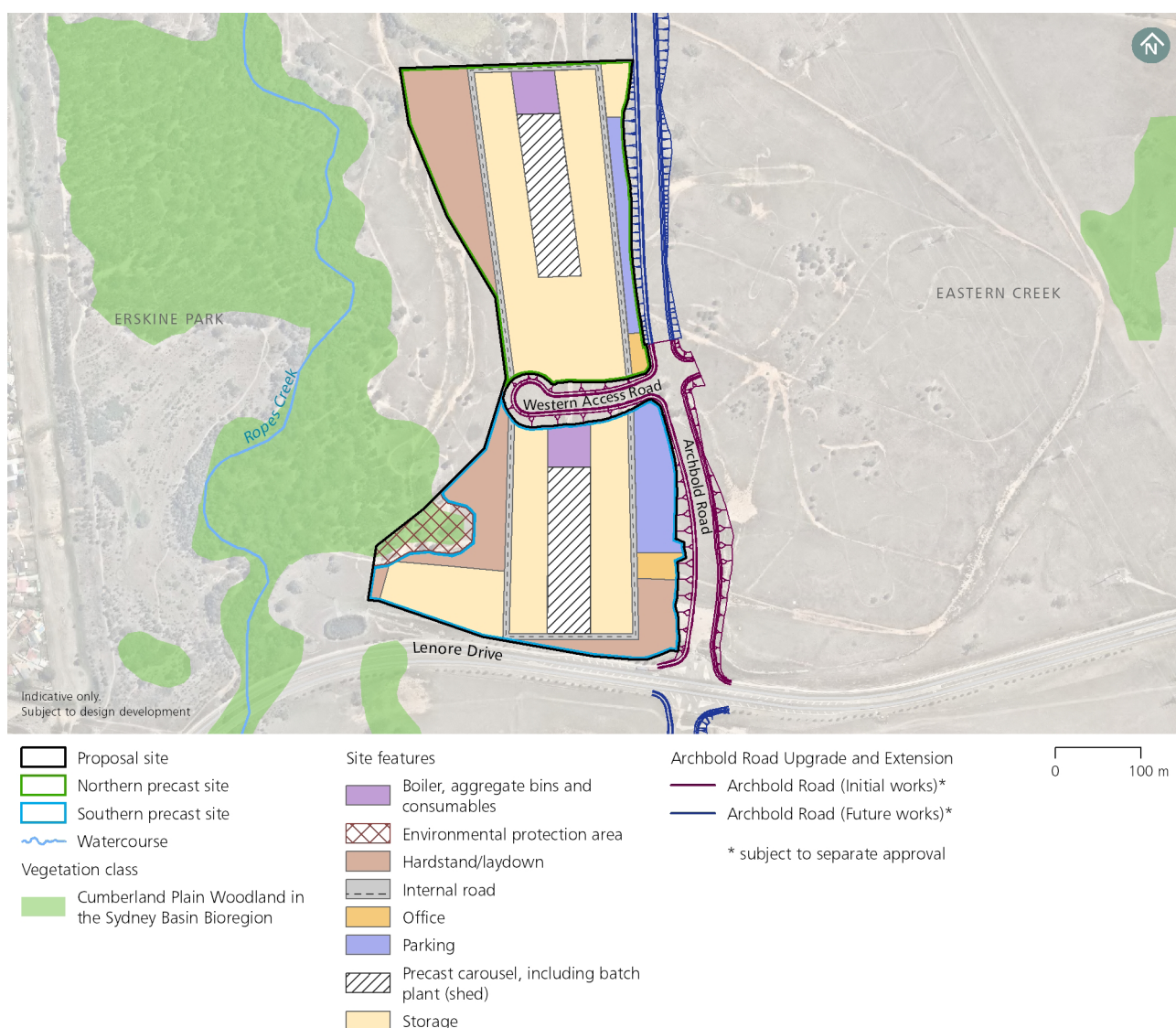


Figure 3-2: Indicative layout of precast facilities

The precast facilities would operate concurrently, 24 hours a day, 7 days a week for the majority of the lifespan of the project.

The proposal site would be subdivided to create two separate lots, one for each precast facility.

The proposal would be temporary, operating for an approximate timeframe of four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

3.3.2 Summary of potential impacts

Table 3-2 provides a summary of the potential environmental impacts associated with the Sydney Metro West Eastern Creek Precast Facilities. A detailed description of the potential environmental impacts is provided in the *Sydney Metro West Eastern Creek Precast Facilities Review of Environmental Factors*.

Management and mitigation measures have been developed as part of the assessment of potential environmental impacts associated with the proposal, and included in Chapter 8 (Environmental management) of the Review of Environmental Factors. The *Sydney Metro Construction Environmental Management Framework* (Appendix C of this Submissions Report) would also be used to manage the construction of the proposal.

Table 3-2: Summary of potential environmental impacts – Sydney Metro West Eastern Creek Precast Facilities

Environmental issue	Summary of potential impacts
Noise and vibration	Potential temporary construction noise impacts associated with the proposal are predicted to generally comply with noise management levels. Temporary minor exceedances are predicted for a short duration during 'site establishment' works. These works would affect a small number of residential receivers (those closest to the site) for a short period of time during daytime when earthworks are occurring at the proposal site boundary. Potential operation noise impacts associated with the proposal are predicted to comply with relevant criteria during neutral and adverse weather conditions.
Traffic transport and access	Construction traffic is anticipated to have a negligible impact on the operation of the surrounding road network, with no predicted changes to the intersection level of service at intersections within the vicinity of the proposal site. There would be no impacts on parking or property access during construction. During operation, most intersections would continue to perform at the same level of service. The Old Wallgrove Road / Lenore Drive / Telopea Place intersection would experience a decrease in level of service in the morning peak hour from C to D, however this is associated with only a two second increase in average delay, which is considered negligible. There would be no impacts on parking or private property access during operation.
Non-Aboriginal heritage	There are no listed heritage items or potential heritage items within the proposal site and immediate surrounds. There would also be no non-Aboriginal archaeological impacts as a result of the proposal.
Aboriginal heritage	Earthworks undertaken during construction activities would result in partial to total removal of Aboriginal sites identified within the proposal site. One of these Aboriginal sites, AIF-06 (AHIMS ID 45-5-4599), is located within the boundary of both the proposal site and the Archbold Road upgrade and extension boundary. It is assumed the Aboriginal site would be directly impacted by the planned Archbold Road upgrade and extension. The overall archaeological significance of these sites has been assessed as low for most of the sites, with one site (AHIMS ID 45-5-5355) having moderate overall significance and two sites (AHIMS ID 45-5-3159 and AHIMS ID 45-5-0559) having high overall significance. The preparation of an Aboriginal Cultural Heritage Assessment Report, supported by test excavation and comprehensive Aboriginal stakeholder consultation, would be completed to manage potential impacts. An Aboriginal Heritage Impact Permit is required for the proposal.

Environmental issue	Summary of potential impacts
Flooding	Modelling has predicted there would be negligible impacts in the Probable Maximum Flood (PMF) due to the minor encroachment in the south-western corner of the proposal site obstructing the shallow flow depths (up to 0.1 metres). There would be no flooding impacts in other portions of the proposal site as these are above the PMF level and any filled embankments would be outside of the flood extent. Similarly, no flood impacts in the one per cent Annual Exceedance Probability (AEP) event have been predicted as the entire site is above the one per cent AEP flood level. The proposal may impact on peak flows rates and volumes into Ropes Creek as a result of increased impervious areas on the proposal site from its currently undeveloped state. The increase would be minimal compared to existing flow rates, however the potential cumulative impacts of the proposal combined with other external developments (without mitigation) may increase downstream flooding. This would be addressed through design, coordination and the proposed mitigation measures.
Soils and surface water	With the implementation of erosion and sediment control and other mitigation measures, the risks to degradation of surface water quality during construction would be low. Excavation and earthworks during construction of the proposal could cause potential salinity impacts where there is disturbance of saline soils. Mitigation measure SW1 (in the <i>Sydney Metro West Eastern Creek Precast Facilities Review of Environmental Factors</i>) has been proposed to address this issue, including managing excavated soils in accordance with <i>Book 4 Dryland Salinity: Productive Use of Saline Land and Water</i> (NSW Department of Environment and Climate Change, 2008). Erosion controls would also be implemented in accordance mitigation measures SW1 and SW2, and the 'Blue Book' (Landcom, 2004). During operation, surface water would be captured on-site and managed so that any runoff leaving the site would not pollute nearby land or waterways and nominated water quality objectives would be met. With the implementation of mitigation measures, the risks to degradation of surface water quality during operation of the proposal would be low.
Groundwater	The proposal is unlikely to intercept the water table or result in any changes to groundwater levels. While there could be some change to groundwater recharge as a result of hardstand and filled areas during construction and operation, the potential impact would be negligible considering the relative size of the proposal site. Potential groundwater quality impacts could include migration to groundwater of any accidental leaks or spills of fuels, oils and other hazardous materials used or stored at the proposal site. These risks are considered low and would be addressed through the <i>Sydney Metro Construction Environmental Management Framework</i> and appropriate measures during site operation.
Contamination	Although there is a moderate potential contamination risk in certain areas across the proposal site during construction, through further investigation and appropriate management of these potential contamination risks, the overall risk is considered low.

Environmental issue	Summary of potential impacts
Biodiversity	The proposal would retain an area of Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest for the purposes of an environmental protection area. Construction of the proposal would require clearing of up to about 1.92 hectares of native vegetation, a subset of which includes: • 1.74 hectares of Cumberland Plain Woodland in the Sydney Basin Bioregion (<i>Biodiversity Conservation Act</i> (BC Act): listed as critically endangered) • 0.07 hectares of River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (BC Act: listed as endangered) • <0.001 hectares of Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (<i>Environment Protection and Biodiversity Conservation Act</i> (EPBC Act): listed as critically endangered); a subset of the 1.74 ha of the associated BC Act listed Cumberland Plain Woodland community • About 0.06 hectares of potential habitat for the Juniper-leaved Grevillea (<i>Grevillea juniperina</i> subsp. <i>Juniperina</i>), however no individual plants of this species would be directly impacted by the proposal (BC Act: listed as endangered). There is also potential for direct impacts to the habitat or potential habitat of a range of Commonwealth and NSW listed threatened fauna species. Impact on threatened species and ecological communities were assessed in accordance with EPBC Act and BC Act requirements and were found not to be significant. No separate approval is required under the EPBC Act.
Landscape and visual character	Potential landscape and visual amenity impacts would be managed in accordance with Sydney Metro's <i>Construction Environmental Management Framework</i> and the proposed mitigation measures in the Review of Environmental Factors. The proposal would have a negligible landscape character impact during construction and operation being consistent with the industrial landscape character of the surrounding area. Temporary construction visual impacts associated with the proposal are predicted to be negligible at three viewpoints and minor adverse at three viewpoints during the daytime. At night-time, the construction of the proposal would result in negligible visual impact. The operation of the proposal is predicted to have a negligible impact at three viewpoints during daytime. A minor adverse visual impact is predicted at two viewpoints during daytime and during the night-time (due to site lighting).
Land use, property and socio-economic	The proposal would have positive socio-economic effects by stimulating the local economy through the creation of employment. Potential social and economic impacts to surrounding social infrastructure are not expected due to substantial offset distances. The proposal would be consistent with the objectives of the general industrial land use zoning that applies to the proposal site.

Environmental issue	Summary of potential impacts
Air quality	Mitigation measures have been proposed in the Review of Environmental Factors to address potential air quality impacts during both construction and operation. Average daily air quality index values for the two monitored stations near the proposal site between 2016 and 2020 were “fair”, indicating that air quality around these stations is generally of an acceptable quality. Given the background air quality and relatively low occurrence of winds blowing in the direction of the nearest receivers at Erskine Park, potential temporary dust-related impacts during construction would be unlikely. Should they occur, the potential magnitude of potential temporary dust emissions would be ‘moderate’ without mitigation. With mitigation measures, the risk rating of impacts would be low. Potential impacts associated with airborne hazardous materials from the excavation of contaminated and/or hazardous materials during construction would be very unlikely due to the distance of the nearest receivers and the prevailing meteorological conditions. Should they occur, the magnitude these potential temporary impacts would be ‘major’ as they could result in medium-term impacts to receivers if not adequately managed. With mitigation measures, the risk rating of impacts would be low. Exhaust emissions generated during construction would be temporary and would not significantly contribute to emissions in the local area. During operation, key dust generating processes such as concrete batching would be fully enclosed within the facility, while internal roads and most of the proposal site would be sealed. Dust may still be generated from bulk materials stored on hardstand areas and tracked materials along sealed areas. The risk rating of potential dust-related impacts or exhaust-related pollutants during operation would be low.
Resource use and waste management	The type and quantities of resources and materials needed to construct the proposal are relatively minor and readily available within the Greater Sydney region. The waste management hierarchy principles established under the <i>Waste Avoidance and Resource Recovery Act 2001</i> of avoid, reduce, reuse, recycle and dispose would be applied during construction. Wastes that contain hazardous, special or otherwise contaminated materials would be managed consistently with relevant guidelines. During operation of the proposal aggregate, sand, cement, water and other production materials would be needed. The amount of input materials required would vary based on demand and resultant concrete production rates. The volumes of waste generated during operation, maintenance and repairs are anticipated to be minimal and would be readily managed through the implementation of standard mitigation measures.
Bushfire	The north-western portion of the proposal site (about 1,157 square metres) is located within the 100 metre Category 1 vegetation buffer identified as bushfire prone land by Blacktown City Council and Penrith City Council. To manage the bushfire risk of the proposal site, minimum asset protection zones (fuel-reduced, physical separation between buildings and bushfire hazards) would be established to prevent the spread of a fire towards the proposal site.
Sustainability, climate change and greenhouse gases	The proposal would be carried out to be consistent with the targets and initiatives in the <i>Sydney Metro West Sustainability Plan</i>. The volume of greenhouse gas emissions generated during construction of the proposal would be relatively minor and would include emissions associated with the operation of plant, emissions from producing construction materials, upstream and downstream lifecycle emissions (e.g. fuel extraction, processing, production, transport, disposal) and emissions from decomposition of cleared vegetation. Operational greenhouse gas emissions would include those from vehicular movements, electrical consumption to power equipment and machinery, and embodied energy in materials. The types of potential climate change risks during construction and operation of the proposal would be associated with severe weather events, such as the increased frequency and severity of rainfall events placing increased pressure on erosion and sediment control measures and/or resulting in the flooding of the proposal site and surrounds. Potential climate change risks would be appropriately managed through the implementation of mitigation measures.

Environmental issue	Summary of potential impacts
Cumulative impacts	There could be potential for cumulative environmental impacts between the proposal and various other projects, particularly in relation to traffic, noise and biodiversity impacts. The planned Archbold Road upgrade and extension would be under construction at the same time as the proposal, which could lead to cumulative noise and traffic impacts. The likelihood of worst-case noise levels being generated by two different projects at the same time is, however, considered low and rather than increasing construction noise levels, the expected impact of concurrent works in this area would generally be an increase in the duration and potential annoyance of noise impacts at the nearest receivers. Potential construction traffic impacts on the surrounding road network for both the proposal and the planned Archbold Road upgrade and extension are anticipated to be minimal. As such, cumulative construction traffic impacts are expected to be minor. Mitigation measures, which include consultation and coordination with developers and other stakeholders (mitigation measure C11 in the <i>Precast Facilities Review of Environmental Factors</i>), have been proposed to manage potential cumulative impacts.

3.4 Sydney International Speedway

3.4.1 Background

The NSW Government has committed to relocating speedway racing to Western Sydney Parklands, creating a true motorplex for the NSW motorsport racing community.

The project would be located within Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports, which sits within the Blacktown Local Government Area (LGA) in the Central River City subregion of Greater Sydney, about six kilometres southwest of Blacktown City Centre, and 32 kilometres west of the Sydney Central Business District. The new speedway would be located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north.

The current speedway site, located on Government-owned land at Clyde, is required for a future stabling and maintenance facility for the Sydney Metro West project. The project is planned to be constructed and operational prior to the start of the speedway racing season in 2021.

The project site is located on land owned and managed by Western Sydney Parklands Trust. Sydney Metro has applied for the State significant infrastructure approval and is proposing to build the project on behalf of and pursuant to arrangements with Western Sydney Parklands Trust. The potential environmental impacts are assessed in the *Sydney International Speedway Environmental Impact Statement* (Sydney Metro, 2020f) which was placed on public exhibition by Sydney Metro from 19 August 2020 to 16 September 2020.

The relocated speedway (as presented in the *Sydney International Speedway Environmental Impact Statement*) is shown in Figure 3-3.

Once complete, the project would include world class racing infrastructure in the form of a clay-based racetracks benchmarked to national and international best practice for both speedway vehicles and motorcycles. To facilitate the use of the speedway racetracks, the following ancillary racing infrastructure would be constructed:

- New vehicle access to the raceway area, including a gated access via an intersection off Ferrers Road
- A racing competitor's pit area, comprising around 150 parking bays for race vehicles and their tenders, including 20 bays for heavy vehicles transporting racing vehicles to and from the speedway and viewing platforms for pit crews
- Workshops/garages and track-side operational support areas to be used by pit crews.

High quality event support infrastructure provided to maximise the spectator experience at speedway events would comprise:

- A grandstand with the capacity to seat around 3,750 spectators
- Ticketing and entryway structures
- Spectator facilities, including terraced seating for up to a total of around 7,000 spectators, public amenities, corporate boxes, provision for food and beverage operators together with merchandise outlets
- Dedicated parking provided for spectators, visitors and users of the Sydney International Speedway, available for use by other motorsport operators by agreement
- Dedicated parking for Sydney Dragway to replace the existing spectator parking areas which would form part of the Sydney International Speedway project site. The new Sydney Dragway parking would be available for use by other motorsport operators by agreement. Operational support infrastructure would be provided to enable the operation of the Sydney International Speedway. Such infrastructure would include:
 - Public safety including fencing and fire safety systems
 - Communications including a fibre optic network (to suit internet broadcasting bandwidth and PA/AV provisions), signage and large broadcasting screens
 - Services including the provision of stormwater, drainage and flooding, utilities and lighting.

Construction of the project is expected to occur over a period of 13 months, commencing in late 2020, subject to the environmental assessment and determination process.

Operation of the new Sydney International Speedway is anticipated to commence in September 2021 with some finishing works occurring concurrently with the commencement of operations.

The following construction activities would be carried out:

- Clearing, earthworks and levelling
- Landforming works
- Establishment of carparks
- Construction of racing and event support infrastructure
- Utilities connections, landscaping and finishing works.

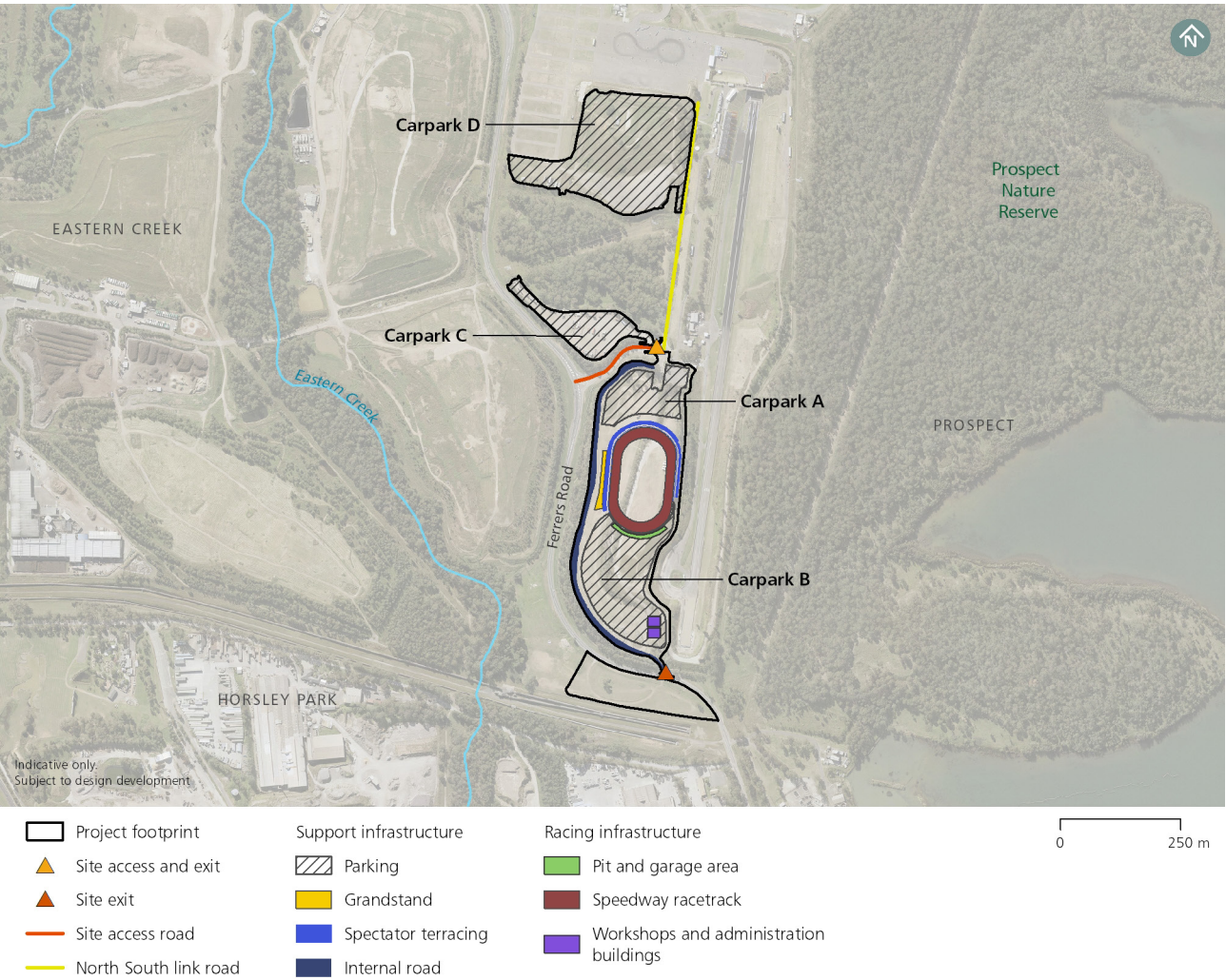


Figure 3-3: Overview of Sydney International Speedway

3.4.2 Summary of potential impacts

Table 3-3 provides a summary of the potential environmental impacts associated with the Sydney International Speedway. A detailed description of the potential environmental impacts is provided in the *Sydney International Speedway Environmental Impact Statement*.

Management and mitigation measures have been developed as part of the assessment of potential environmental impacts associated with the proposal, and included in Section 25.6 (Proposed measures to avoid or minimise impacts) of the *Sydney International Speedway Environmental Impact Statement*. The *Sydney Metro Construction Environmental Management Framework* (Appendix C of this Submissions Report) would also be used to manage the construction of the proposal.

Table 3-3: Summary of potential environmental impacts – Sydney International Speedway

Environmental issue	Summary of potential impacts
Noise and vibration	As the Sydney International Speedway is well separated from surrounding receivers, no exceedances of the noise management levels are predicted at any receiver during daytime construction. Night time construction works are predicted to result in minor exceedances of the noise management levels of up to 1dB at noise sensitive receivers to the south and west of the Sydney International Speedway site, however these impacts are considered to be manageable through mitigation. During operation, noise levels are generally expected to be comparable to, or lower than, noise levels from existing motorsport events in the precinct. At-property treatment would be provided to a small number of residential receivers located to the south to minimise potential exceedances of the operational noise criteria. No vibration impacts are expected from the construction and operation of the Sydney International Speedway and there is not expected to be any impact to items of heritage significance or the Warragamba Pipelines.
Traffic, transport and parking	Based on the location of the Sydney International Speedway and the relatively low number of construction vehicles, potential temporary transport and traffic impacts are expected to be minor. The performance of modelled intersections would not change during peak construction, except for the Great Western Highway/Doonside Road/Brabham Drive intersection which would have an estimated increase in average intersection delay of one second. Temporary offset parking for Sydney Dragway would be established prior to commencement of construction. Although concurrent major events may occur with agreement, these would be infrequent and would be managed through operational traffic management measures. The Sydney International Speedway includes two areas of new dedicated parking, providing about 2,220 car parking spaces for the Sydney Dragway and about 600 new dedicated parking spaces for the Sydney International Speedway. Event coordination and exclusive use arrangements would provide sufficient car parking for major events at both the Sydney Dragway and the Sydney International Speedway. During a major Sydney International Speedway event on a Saturday evening, all intersections would operate at the same level of service as they would under the 'without project' scenario, except for the Ferrers Road/The Horsley Drive intersection which would be temporarily impacted during pre-event and post-event peak periods with a minor increase in average delay of around five to ten seconds. During concurrent minor events at the Sydney International Speedway and Sydney Dragway on a Friday evening, the majority of modelled intersections would perform at the same Level of Service compared to the 'without project' scenario. Some intersections would experience a minor temporary reduction in performance for short periods prior to events however, all would continue to have spare capacity and the level of service would still be acceptable.
Non-Aboriginal heritage	There would be no direct impacts to non-Aboriginal heritage items. Potential indirect visual impacts to the nearby State heritage listed 'Prospect Reservoir and surrounding area' would be negligible due to screening from existing landform and vegetation. Additionally, the Sydney International Speedway site does not contain potential for significant archaeological remains and the proposed works are not considered to result in archaeological impact.
Aboriginal heritage	Development of the Sydney International Speedway has avoided direct impacts to known Aboriginal sites. Two areas of Potential Archaeological Deposit were identified within the study area but outside of the Sydney International Speedway site. Exclusion zones would be established around these sites to avoid potential impacts during construction. The Sydney International Speedway site consists of heavily modified artificial landforms and has low potential for Aboriginal heritage.

Environmental issue	Summary of potential impacts
Soils and surface water quality	Construction activities such as the removal of vegetation and earthworks have the potential to cause salinity impacts and/or expose soil to surrounding waterways. Standard construction management measures would be implemented to manage potential soil erosion and risks to downstream water quality. During operation, the potential impacts on soils are limited, as there would be no ongoing ground disturbance and all surfaces exposed during construction would then be sealed or landscaped as required. The Sydney International Speedway would include permanent water quality controls which would aim to capture stormwater runoff from the Sydney International Speedway site and treat water to an appropriate standard prior to discharge so that there is no impact to downstream water quality. The Sydney International Speedway is predicted to have a beneficial impact on the water quality of Prospect Reservoir as existing flows east towards the Reservoir would be directed west towards Eastern Creek.
Contamination	The potential risks associated with encountering existing contamination would be appropriately managed by well established mitigation processes and measures. The Sydney International Speedway site has been identified as having a moderate to high potential contamination risk associated with historic bulk earthworks and filling activities carried out on-site to form the current landform profile. Earthworks during construction of the Sydney International Speedway could intersect areas of potential contamination. Management measures adopted during construction would remove potential for contamination impacts from existing contamination to occur during operation of the Sydney International Speedway. The risk of contamination from operational activities, such as spills and leaks, associated with the Sydney International Speedway would be manageable through the implementation of appropriate mitigation measures.
Groundwater and geology	Excavation works are not expected to intercept substantial groundwater. Potential groundwater recharge impacts are expected to be negligible and would be limited to reduced recharge from modifications to ground conditions and groundwater recharge in fill areas during bulk earthworks. Operation would not include any further earthworks or changes to finished levels across the Sydney International Speedway site, and is not likely to cause groundwater level drawdown. Increased areas of hardstand associated with the Sydney International Speedway may reduce groundwater recharge, however the estimated net reduction in regional groundwater recharge is expected to be negligible and groundwater baseflow to creeks is not expected to change appreciably.
Flooding and hydrology	The Sydney International Speedway site is located above the probable maximum flood levels of Eastern Creek and the Hawkesbury–Nepean River, and would continue to be above these levels during construction and operation of the Sydney International Speedway. Construction of the Sydney International Speedway would not result in any impacts to flooding downstream of the Sydney International Speedway site, including no loss of flood conveyance or floodplain storage. The Sydney International Speedway site is therefore also considered to be compatible with the existing flood hazard of the land during construction. During operation, the Sydney International Speedway would incorporate stormwater and flooding infrastructure, including on-site detention tanks which would result in no changes to peak flows to culverts downstream of the Sydney International Speedway. The Sydney International Speedway site is at sufficiently high elevation that future sea level rise would not impact on flooding conditions at the site.

Environmental issue	Summary of potential impacts
Biodiversity	The Sydney International Speedway site is located within a highly modified landscape, and vegetation present consists mostly of poor condition young regrowth, isolated and (likely planted) trees and vegetation. Residual biodiversity impacts would be offset in accordance with the requirements of the BC Act and relevant guidelines. There would be no direct impacts to Commonwealth EPBC Act listed Threatened Ecological Communities. Construction of the Sydney International Speedway would result in the clearance of about 0.38 hectares of Cumberland Plain Woodland in the Sydney Basin Bioregion, identified as a threatened ecological community under the BC Act. No threatened fauna species are likely to be significantly impacted by the Sydney International Speedway. One threatened fauna species, the Southern Myotis (listed as vulnerable under the BC Act) is considered likely to occur based on the presence of suitable foraging habitat. Other threatened species are expected to occur in nearby bushland. These areas would not be impacted by the Sydney International Speedway.
Landscape character and visual amenity	The Sydney International Speedway has been designed to retain vegetation within and along the perimeter of the Sydney International Speedway site. In addition, the landscape design would include the planting of substantially more canopy trees than would be removed during construction. During construction, there would be minor adverse impacts on landscape character and negligible to minor temporary impacts on visual amenity. Most ground level activity would be screened by existing vegetation and landform along the perimeter of the Sydney International Speedway site, with only glimpses of construction machinery and works experienced. During operation, there would be negligible landscape character and visual impacts as a result of the Sydney International Speedway. The Sydney International Speedway would result in no perceived change in the landscape character of this area, which is of regional landscape sensitivity. Features that would be visible would be consistent in character with the current land use and therefore be absorbed into the current view.
Socio-economic	Construction of the Sydney International Speedway is expected to generate up to 150 full time jobs for residents and construction workers across the wider Sydney region. A number of indirect jobs are also likely to be generated. The Sydney International Speedway would also potentially provide additional benefits for local businesses servicing the construction industry. Sydney Metro has been consulting with Sydney Dragway as the leaseholder to minimise potential temporary impacts during construction. Motorsport car clubs hold occasional off road and dirt driver training events in the southern portion of the Sydney International Speedway site. This site would be required from the start of construction and would no longer be available for such uses. The masterplanning process for the motorsport precinct would aim to provide an appropriate venue for all existing motorsport users in the precinct. Operation of the Sydney International Speedway would generate five permanent full time employment positions to be based at the Sydney International Speedway site and additional employment associated with events. An increase in the number of events and spectators has potential to benefit local businesses. The new Sydney International Speedway would provide the community and racing supporters with quality motorsports facilities and create recreational and community facilities, which would help to increase community participation and engagement in motorsport racing activities in the Parklands. The development and design of the Sydney International Speedway has incorporated measures to control dust deposition to the Sydney Dragway, and dust trigger levels would also be established based on a dust monitoring program. The Speedway operator would be required to manage dust emissions within these agreed levels. Other amenity related impacts would be manageable with the mitigation measures proposed as part of the air quality and noise and vibration impact assessments.

Environmental issue	Summary of potential impacts
Property and land use	The Sydney International Speedway site is entirely located on land owned and managed by the Western Sydney Parklands Trust. No property acquisition would be required. Regular consultation has been carried out with Sydney Dragway to understand potential impacts and develop appropriate mitigation measures during construction and operation of the Sydney International Speedway to ensure ongoing safe operation of the Sydney Dragway. Potential amenity related impacts, such as noise and dust, on other receivers from operation of the Sydney International Speedway would be manageable with the implementation of the proposed mitigation and management measures.
Air quality	Dust control and mitigation measures have been developed as part of the racetrack design, layout and operational procedures to minimise dust generation. Dust mitigation and controls protocols would be implemented at both the Sydney Dragway and the Sydney International Speedway, including the determination of baseline dust levels, the setting of dust trigger levels and the implementation of an air quality management plan to identify specific dust control measures. At other receivers, construction and operation of the Sydney International Speedway would not result in any unacceptable changes to local air quality. There would be no additional days where the Environment Protection Authority's daily PM₁₀ and PM_{2.5} impact assessment criterion would be exceeded during construction or operation. The Environment Protection Authority's annually averaged impact assessment criteria for particulate matter and deposited dust would not be exceeded during construction and operation. Best practice management measures would be implemented during all construction works to adequately manage potential dust impacts.
Hazards	The implementation of mitigation measures would keep the likelihood of hazards and risks occurring low. Hazardous materials that may be stored on the Sydney International Speedway site during construction and operation would be stored, handled and used in accordance with relevant regulations and criteria. The Sydney International Speedway site is considered to be bushfire prone land, however it is largely cleared of vegetation thereby reducing its risk. The potential bushfire threat to the Sydney International Speedway site from vegetation on the land adjacent to the Sydney International Speedway would be adequately managed through the continued bushfire management of the adjoining land owned by Western Sydney Parkland Trust.
Waste management and resource use	During construction, potential waste management issues would be manageable with the implementation of standard mitigation measures. No off-site spoil is anticipated as part of the project and all usable spoil would be reused on the project site or at nearby construction sites if feasible. The resources needed to construct the project would be satisfied by the market and would be unlikely to result in any resource becoming scarce or in short supply. During operation, potential waste management issues during operation would be manageable with the implementation of standard mitigation measures. Resource use would be similar to that of the existing speedway or a comparable venue. Some of the on-site detention tanks would function as rainwater harvesting tanks for non-potable use. The electrical supply for the lighting of all external areas including carparks would be solar, supported by backup batteries.
Greenhouse gas and energy	Greenhouse gas and energy impacts from the Sydney International Speedway would be minor and would generally result from the consumption of electricity and gas to power the support infrastructure required for the raceway and its events, vehicle emissions generated as part of motorsports events held at the Sydney International Speedway as well as embodied emissions in construction materials during construction. The inclusion of solar lighting for car park areas as part of the operational design of the Sydney International Speedway has resulted in an emissions savings. Design development would consider further opportunities to minimise electricity demand where possible.

Environmental issue	Summary of potential impacts
Climate change adaptation	During construction, potential climate change impacts are expected to be minimal. Standard risk controls for current average climatic conditions would be implemented. The implementation of climate change adaptation measures would reduce potential risks related to peaks in electrical network demand from increased ambient temperatures and breaches in water quality controls from increased or lower average rainfall, so that no high (undesirable) or very high (unacceptable) risks remained.
Cumulative impacts	There could be potential for cumulative environmental impacts between the Sydney International Speedway and other projects, including Sydney Metro West. These impacts would potentially include construction traffic, dust and noise. Minor temporary cumulative traffic, transport and parking impacts are anticipated during construction. Cumulative construction traffic is not expected to significantly impact the wider road network as major roads have capacity to absorb the incremental increase. Potential cumulative impacts also include the permanent loss of biodiversity as a result of vegetation clearing on the Cumberland Plain. When the impacts of the Sydney International Speedway are considered together with the impacts of other projects, including Sydney Metro West, the contribution of the Sydney International Speedway to cumulative biodiversity impacts in the Cumberland Plain region is relatively low. During operation, the potential cumulative impacts relate to the impacts of event traffic on the performance of the existing road network alongside impacts from the operation of other future projects. The project would operate within a Major Event Operations Plan to minimise the impacts of event traffic on the performance of the surrounding road network. The Sydney International Speedway is located in an area that is well served by arterial road infrastructure which reduces the likelihood of cumulative impacts on the performance of the road network. Cumulative operational noise and vibration impacts may result from the concurrent operation of the Sydney International Speedway with other racing venues in the Western Sydney Parklands. Due to distance between the Sydney International Speedway site and other projects, and the location of sensitive receivers being closer to other projects, no cumulative operational noise impacts are expected from the operation of the Sydney International Speedway. Potentially affected noise sensitive receivers would be most affected by the dominant noise source, being Sydney International Speedway or other projects, but unlikely by a combination of both noise levels. However, Sydney International Speedway may potentially increase the frequency and duration of noise impacts at affected receivers.

3.5 Potential combined impacts with Stage 1

The Eastern Creek precast facilities and the Sydney International Speedway related developments may have potential combined impacts with Stage 1 works associated with Aboriginal heritage and biodiversity, when considering bioregion or regional geographic scales.

3.5.1 Aboriginal heritage

Stage 1 works for Sydney Metro West may have potential impacts to Aboriginal heritage at Parramatta metro station construction site (moderate-high significance), a part of the Clyde stabling and maintenance facility construction site (moderate significance), and The Bays Station construction site (moderate significance). When these impacts are considered with the Eastern Creek precast facilities site, these two projects would result in a potential increased loss of Aboriginal heritage value. Test excavation and further assessment would be undertaken for both projects to understand potential Aboriginal heritage impacts and to identify appropriate management approaches including salvage of identified items.

Design development of the Sydney International Speedway has avoided direct impacts to known Aboriginal sites. Two areas of Potential Archaeological Deposit were identified within the study area but outside of the Sydney International Speedway site.

3.5.2 Biodiversity

Stage 1 of the works for Sydney Metro West are mainly in built up areas and has substantially avoided direct biodiversity impacts. The limited amount of native vegetation to be disturbed is of poor to moderate quality and threatened species habitats are limited. As Stage 1 of the works for Sydney Metro West is generally located in cleared areas, biodiversity impacts would be limited to the direct removal of 0.18 hectares of native vegetation including:

- 0.15 hectares of Mangrove Forests at the Clyde stabling and maintenance facility construction site
- 0.03 hectares of poor condition Grey Box-Forest Red Gum grassy woodland at the Westmead metro station construction site which corresponds to the Cumberland Plain Woodland in the Sydney Basin Bioregion (BC Act listed as critically endangered).

When these impacts are considered with the Eastern Creek precast facilities and the Sydney International Speedway this would result in a direct impact to around 2.2 hectares of BC Act listed Cumberland Plain Woodland. This combined impact from Stage 1 of the works for Sydney Metro West with the precast facilities and the Sydney International Speedway is anticipated to be limited and adequately managed through the implementation of mitigation measures. The overall contribution to biodiversity impacts in the Cumberland Plain region is relatively low.

The Sydney International Speedway and Stage 1 of the works for Sydney Metro West would both have potential impacts on the Southern Myotis (listed as vulnerable under the BC Act) with Stage 1 of the works for Sydney Metro West requiring one species credit, and the Sydney International Speedway project requiring one species credit. Foraging habitat is present for both projects, but no potential roosting or breeding habitat is present. On this basis, combined impacts to the Southern Myotis would be minor.

4 Stakeholder and community engagement

This section outlines the community and stakeholder engagement undertaken during the exhibition of the Concept and Stage 1 Environmental Impact Statement, and the future consultation proposed for the project

4.1 Consultation overview

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 undertaken to inform project development is discussed in Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement.

The *Sydney Metro West Westmead to The Bays and Sydney CBD – Environmental Impact Statement* (Sydney Metro, 2020a) was released in April 2020 shortly after the implementation of restrictions in response to the COVID-19 pandemic in New South Wales. With face-to-face engagement unable to be carried out, Sydney Metro adapted to the changing circumstances by modifying its engagement approach so 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.

The modified engagement approach included building an interactive portal and engaging with communities and businesses through a program of proactive stakeholder outreach. Section 4.2 further outlines the engagement approach and details how the challenges posed were addressed through the innovative use of technology.

4.2 Consultation during exhibition

4.2.1 Public Exhibition of the Environmental Impact Statement

The Concept and Stage 1 Environmental Impact Statement was placed on public exhibition by the Department of Planning, Industry and Environment for an extended period, from 30 April 2020 to 26 June 2020, 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, Industry and Environment.

The Environmental Impact Statement was made publicly available on the Department of Planning, Industry and Environment's Major Projects website (<https://www.planningportal.nsw.gov.au/major-projects/project/25631>), and an online interactive portal sydneymetro.info/metrowest.

4.2.2 Consultation activities

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

- Virtual community engagement
- Virtual stakeholder briefings
- 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 4.2.8.

4.2.3 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 4-1.

Table 4-1: 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 or email

4.2.4 Virtual community engagement

The COVID-19 public health order restrictions required Sydney Metro to develop new and innovative ways to engage with stakeholders and the community. Sydney Metro incorporated the following virtual engagement tools:

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

Sydney Metro engaged with more than 15,000 people over the eight week exhibition period.

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 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 construction sites and proposed tunnel alignment. The portal displayed key information from the Environmental Impact Statement and helped depict the key activities the community would see in their local area during construction. This included information on potential traffic changes and proposed haulage 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, with 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 4-1.

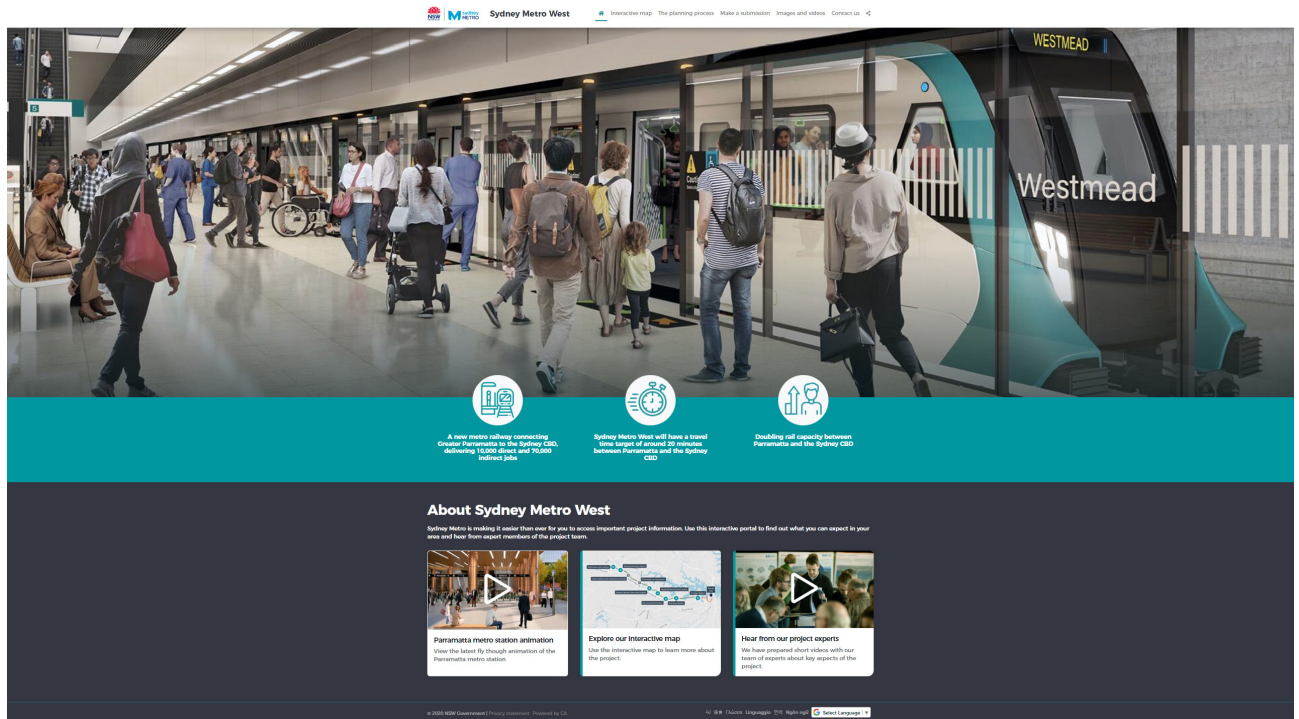


Figure 4-1: Interactive portal

Virtual information room

The interactive portal was also used to host Sydney Metro's first virtual information room, which was launched approximately half way through the exhibition period. The virtual information room gave the community and stakeholders the opportunity to '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 were a series of videos featuring project experts explaining the more complex aspects of the project including tunnelling, planning and placemaking. These videos were viewed almost 6,000 times during the exhibition period and were used to address many community questions. The virtual information room hosted 4,727 visitors over a period of four weeks during the second half of the public exhibition. An image of the virtual information room is provided in Figure 4-2.



Figure 4-2: Virtual information room

Virtual community meetings

At the request of community members with specific concerns, Sydney Metro organised virtual meetings via video conference technology. These meetings were attended by Sydney Metro subject matter experts and Place Managers, providing the community the opportunity to participate in a more traditional community information session approach. Sydney Metro ensured these virtual meetings were held at flexible times to suit the availability of residents.

A series of video meetings were also held with key stakeholders including local councils, peak bodies and industry associations and nearby projects.

4.2.5 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 which included project presentations, 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 4-2 lists the key stakeholders who were contacted and/or briefed during the exhibition period for the Environmental Impact Statement.

Table 4-2: Stakeholders briefed/contacted during the exhibition period

Agency group/type	Stakeholders briefed/contacted
NSW Government	• Transport for NSW • Greater Sydney Division • Customer Strategy & Technology Division • Parramatta Light Rail • Rozelle Interchange • Western Harbour Tunnel • Sydney Trains • Port Authority NSW • Schools Infrastructure NSW • NSW Ambulance • NSW Police • NSW Fire and Rescue
Local government	• Cumberland Council • City of Parramatta Council • City of Canada Bay Council • Strathfield Council • Burwood Council • Inner West Council • City of Sydney Council
Local stakeholders	• Parramatta Chamber of Commerce – Economic Planning Committee • Urban Taskforce • Western Sydney Regional Organisation of Councils • Western Sydney Business Chamber • Lucas Gardens Public School • Arthur Philip High School • Parramatta Public School • Five Dock Public School • Rosehill Public School • Newington Public School • Westmead Public School
Major landholders/tenants	• Sydney Olympic Park Business Association • Australian Turf Club

4.2.6 Phone calls and emails

During the exhibition period, Sydney Metro made a total of 391 phone calls and sent 886 emails to residents, businesses, councils and other key stakeholders. Figure 4-3 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.

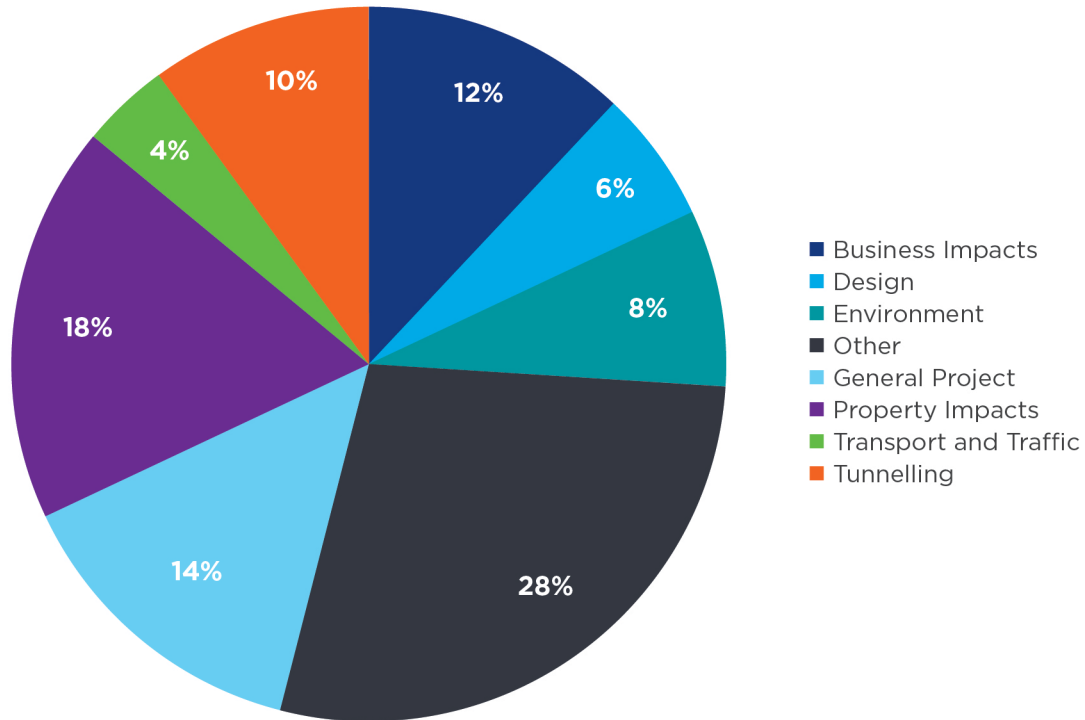


Figure 4-3: Key topics during exhibition

** Data based on event data collected by Sydney Metro for enquiries received. Topics under 'other' include land use, parking, acquisition, integrated station and precinct development, and other.*

4.2.7 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 would 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).

4.2.8 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
- Outreach packs for organisations.

Media releases

A Transport for NSW media release for the Environmental Impact Statement was issued on 30 April 2020 titled: 'More jobs and less crowding thanks to Metro West' and encouraged the community to provide feedback until 26 June 2020.

Advertising

A number of advertisements were placed in various newspaper outlets to promote the Environmental Impact Statement exhibition period. Many local suburban newspapers ceased printing shortly before the exhibition period. Table 4-3 outlines the full list of newspaper advertisements.

Table 4-3: Newspaper advertisements

Media outlet	Date	Circulation/ readership
Sydney Morning Herald	Saturday, 2 May	487,000 readership
Australian Chinese Daily	Thursday, 30 April	20,000 circulation
Daily Telegraph	Saturday, 2 May	265,711 circulation
Sydney Korean Herald	Friday, 1 May	20,000 circulation
La Fiamma (Italian)	Monday, 4 May	18,000 circulation
Indian Link	Friday, 8 May	28,000 circulation
An Nahar (Arabic)	Tuesday, 5 May	20,000 NSW circulation

E-newsletters and letterbox drops

On 30 April 2020, an email alert with an e-newsletter titled "Have your say on Sydney Metro West" was sent to more than 50,000 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:

- 14 May – titled "Now is the time to have your say"
- 29 May – titled "Sydney Metro's first virtual information session is now on display"
- 22 June – titled "Have your say on the Sydney Metro West Environmental Impact Statement".

Letterbox drops to 34,000 properties and businesses near proposed construction sites and the proposed tunnel alignment took place, enclosing newsletters “Westmead to The Bays and Sydney CBD – Environmental Impact Statement”. Project information magnets, featuring project contact details were also delivered. 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, Industry and Environment major projects website.

To cater for the culturally and linguistically diverse community, the newsletter was translated into five local languages, including Korean, Chinese, Arabic, Italian and Hindi. 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 2,200 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 20,109 page views and 1,962 documents were downloaded throughout the exhibition period.

4.3 Ongoing consultation and engagement

4.3.1 Submissions Report

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

Government agencies, project stakeholders and the community will be able to review the report online. Department of Planning, Industry and Environment will review the Submissions Report as part of their assessment of the Concept and Stage 1 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.

4.3.2 Project approval

If the project is approved, the conditions of approval would be placed on the Department of Planning, Industry 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.

4.3.3 Ongoing consultation and engagement activities

Sydney Metro would 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 4-4 outlines the planned engagement before and during construction, if approved. Table 4-4 is intended as a guide and would be updated with more detail closer to the start of construction.

Table 4-4: 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 starting
Door knocking	As required
Email updates/e-newsletters	Relevant milestones
Enquiries and complaints hotline	Ongoing
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 and presentations (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
Virtual information room	Relevant milestones
Website and online forums	Ongoing

The environmental assessment process for Sydney Metro West would be staged in recognition of the size of the project. Future communications plans will be developed to ensure the community is aware and engaged at subsequent assessment and approval stages of the project.

4.3.4 Consultation and complaints during construction

The Sydney Metro *Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (provided in Appendix B). Contract specific Community Communications Strategies would 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 Sydney Metro's *Overarching Community Communications Strategy*. The contract specific Community Communications Strategies would also adhere to any requirements identified in any relevant conditions of the planning approval.

Contractors would 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.

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5 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 the key issues raised in submissions.

5.1 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, Industry and Environment.

A total of 188 submissions were received by the Department of Planning, Industry and Environment in response to the Environmental Impact Statement during the exhibition period. The submissions are available to be viewed on the Department of Planning, Industry and Environment website <https://www.planningportal.nsw.gov.au/major-projects/project/25631>.

In April 2020, the Department of Planning, Industry and Environment proposed an amendment to the State Environmental Planning Policy (Infrastructure) 2007 to create a short-term 'protective' underground corridor related to the proposed alignment of the future Sydney Metro West between Westmead and The Bays. The proposed amendment was on exhibition concurrently with the Environmental Impact Statement from 30 April 2020 until 26 June 2020 and some submissions relating more specifically to Sydney Metro West were received in response to the exhibition of the amendment. The issues raised in these submissions have been considered in Chapter 6 (Community submissions) of this Submissions Report, however they have not been counted and included in the total of 188 submissions received during exhibition of the Environmental Impact Statement.

A breakdown of submissions by submitter type is provided in Table 5-1.

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 5-1: Breakdown of submissions received

Submitter type	Number of submissions	
Community submissions		
Community members	127	
Businesses	9	
Social infrastructure	5	
Community and interest groups	11	
Members of Parliament	2	
	Subtotal	154
Government agencies and key stakeholders		
NSW Government departments/agencies	13	
Councils	7	
Other key stakeholders	14	
	Subtotal	34
Total submissions	188	

5.1.1 Community submissions

A total of 154 submissions were received from members of the community. As shown in Table 5-1, community submissions included those from:

- Individual community members/residents
- Businesses
- Managers of social infrastructure
- Local community and other interest groups, including:
 - Kings Bay Estate
 - North Strathfield Community Group
 - Callan Street Rozelle Residents
 - Save North Strathfield Residents Action Group
 - Parramatta River Catchment Group
 - The Owners Corporation SP72939
 - Five Dock Square BMC DPI062325
 - Action for Public Transport NSW
 - WestProtects
 - Friends of Callan Park
 - Walk Sydney
- Members of Parliament.

In May 2020, the Federal Member for Parramatta wrote to residents of Parramatta inviting them to sign a petition to the Hon Andrew Constance MP, asking him to reconsider the construction of stations at Rydalmere and Camellia. As of 26 June 2020, more than 845 people had signed this petition.

For the 154 community submissions, a breakdown of the submitters' location (where provided) is summarised in Table 5-2.

Table 5-2: Submitter locations for community submissions

Location (local government area)	Number of submitters from that location
Cumberland	10
Parramatta	39
Canada Bay	42
Strathfield	1
Burwood	2
Inner West	26
Sydney	8
Outside of the project area	26

5.1.2 Government agency and key stakeholder submissions

A total of 34 submissions were received from government agencies (including local councils) and other key stakeholders during exhibition of the Environmental Impact Statement. Submissions raised a range of issues relevant to their respective areas of interest and responsibility. Submissions were received from the following agencies:

- NSW Government departments/agencies:
 - Ausgrid
 - Sydney Water
 - Crown Lands
 - Department of Primary Industries – Agriculture
 - Department of Primary Industries – Fisheries

- NSW Environment Protection Authority
- Department of Planning, Industry and Environment – Environment, Energy & Science Group/Biodiversity Conservation Division
- Department of Planning, Industry and Environment – Natural Resources Access Regulator and Water
- NSW Health
- Sydney Olympic Park Authority (now part of Department of Planning, Industry and Environment)
- Heritage NSW
- Heritage NSW – Aboriginal Cultural Heritage (now part of the Department of Premier and Cabinet)
- Infrastructure NSW
- Councils:
 - Cumberland Council
 - City of Parramatta Council
 - City of Canada Bay Council
 - Strathfield Council
 - Burwood Council
 - Inner West Council
 - City of Sydney
- Other key stakeholders:
 - Royal Agricultural Society of NSW
 - Property Council of Australia (NSW) (joint submission with Urban Development Institute of Australia, Western Sydney Business Chamber, Urban Taskforce)
 - Five Dock Chamber of Commerce
 - Parramatta Chamber of Commerce
 - National Trust of Australia (NSW)
 - University of Sydney
 - Urban Taskforce Australia
 - GPT Group
 - Sydney Business Chamber
 - Australian Turf Club
 - Sydney Olympic Park Business Association
 - Business NSW
 - Western Sydney Business Chamber
 - Urban Development Institute of Australia (NSW).

5.2 Analysis of submissions

5.2.1 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.

5.2.2 Review of community submissions

Following the categorisation of each community submission, the issues raised were summarised and grouped according to the key issue and sub-issue categories. Each issue identified in Chapter 6 (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 6 (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.

5.2.3 Review of Government agency and key stakeholder submissions

Following categorisation of each submission received from government agencies or key stakeholders, the issues within each submission were summarised. These issues and responses to the issues raised are provided in Chapter 7 (Government and key stakeholder submissions) of this Submissions Report. Where relevant, input was sought from the technical specialists who assisted with the preparation of the Environmental Impact Statement.

5.2.4 Support/objection to the project

Submitters were asked to indicate their position on the project via the Department of Planning, Industry and Environment website as part of the submission registration process. The breakdown of support/objections received are as follows:

- 45 submissions supported Sydney Metro West
- 34 submissions objected to Sydney Metro West
- 109 submissions did not offer a position and were categorised as providing comments.

Some submitters made multiple submissions and these are included in the total number of submissions in the above breakdown. Three submitters each made two submissions objecting. Three submitters each made two submissions providing comment. One submitter made four submissions providing comment.

5.3 Summary of issues raised

5.3.1 Key issues raised in community submissions

A breakdown of the key issues raised in unique community submissions is provided in Table 5-3 by key issue category. Given most 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 634 times in the unique community submissions.

Table 5-3: Key issues raised in community submissions

Key issue category	Number of times key issue was raised	Percentage (%) of total key issues
Support for the project	22	3
Strategic need and justification	26	4
Development and alternatives	108	17
Planning and assessment process	1	Less than 1
Stakeholder and community engagement	25	4
Concept description	46	7
Placemaking	24	4
Concept environmental assessment	20	3
Stage 1 description	19	3
Transport and traffic	109	17
Noise and vibration	52	8
Non-Aboriginal heritage	8	1
Aboriginal heritage	1	Less than 1
Property and land use	20	3

Key issue category	Number of times key issue was raised	Percentage (%) of total key issues
Landscape character and visual amenity	6	1
Business impacts	6	1
Social impacts	5	1
Groundwater and ground movement	22	3
Soils and surface water quality	8	1
Contamination	5	1
Hydrology and flooding	2	Less than 1
Biodiversity	6	1
Air quality	18	3
Spoil, waste management and resource use	4	1
Human health and safety	10	2
Cumulative impacts	34	5
General	3	Less than 1
Beyond the scope of the Environmental Impact Statement	24	4

The top three most frequently raised key issues relating to the project in the community submissions are:

- Development and alternatives
- Transport and traffic
- Noise and vibration.

A breakdown of the sub-issues raised within each of the three key issues is shown in Figure 5-1 to Figure 5-3.

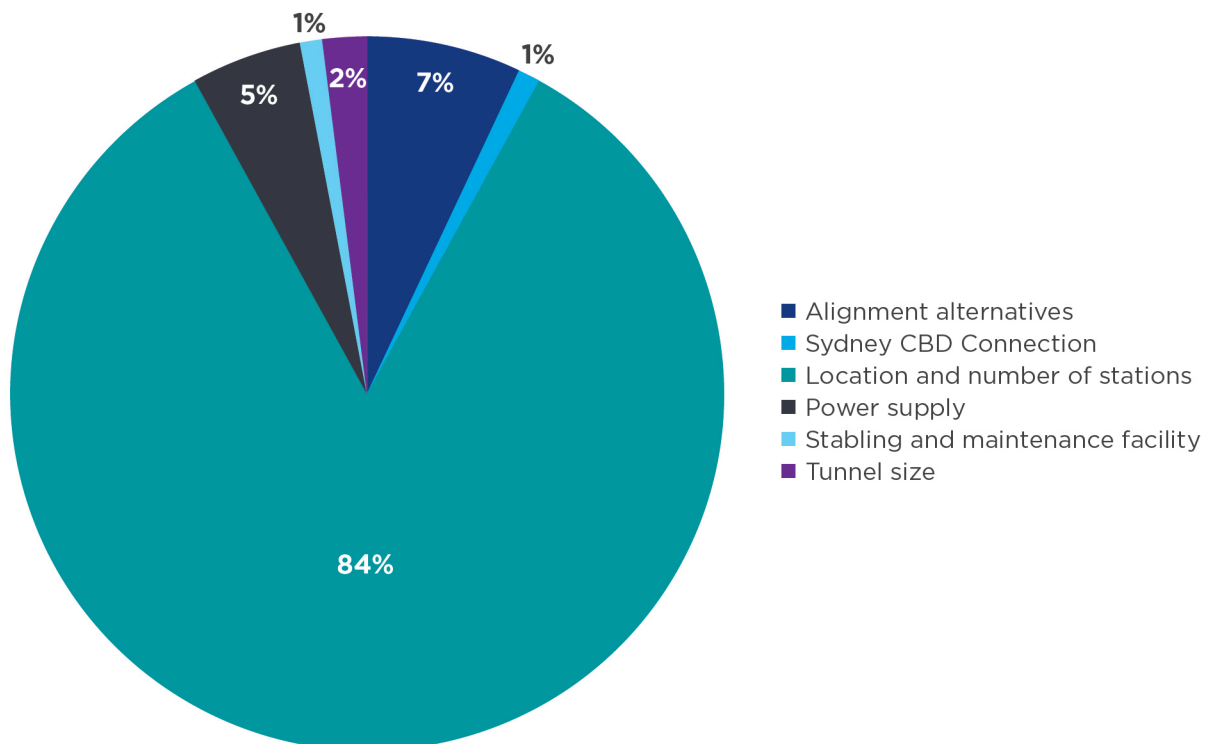


Figure 5-1: Breakdown of sub-issues relating to development and alternatives key issue

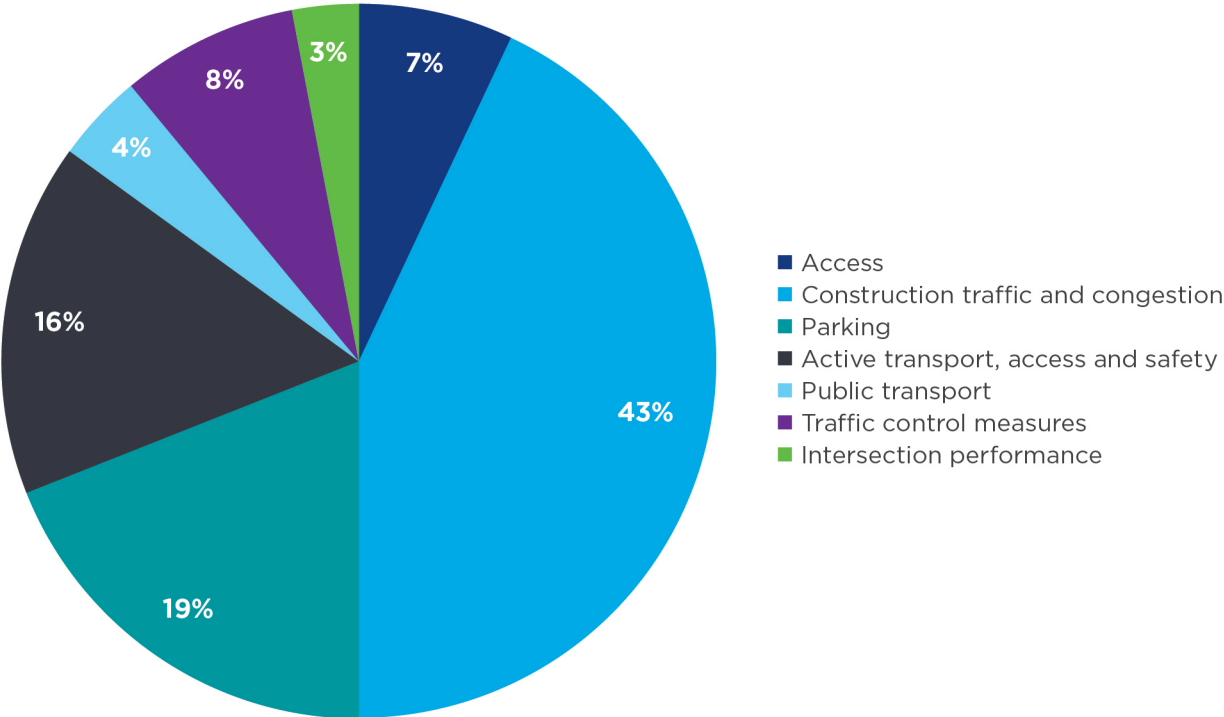


Figure 5-2: Breakdown of sub-issues relating to transport and traffic key issue

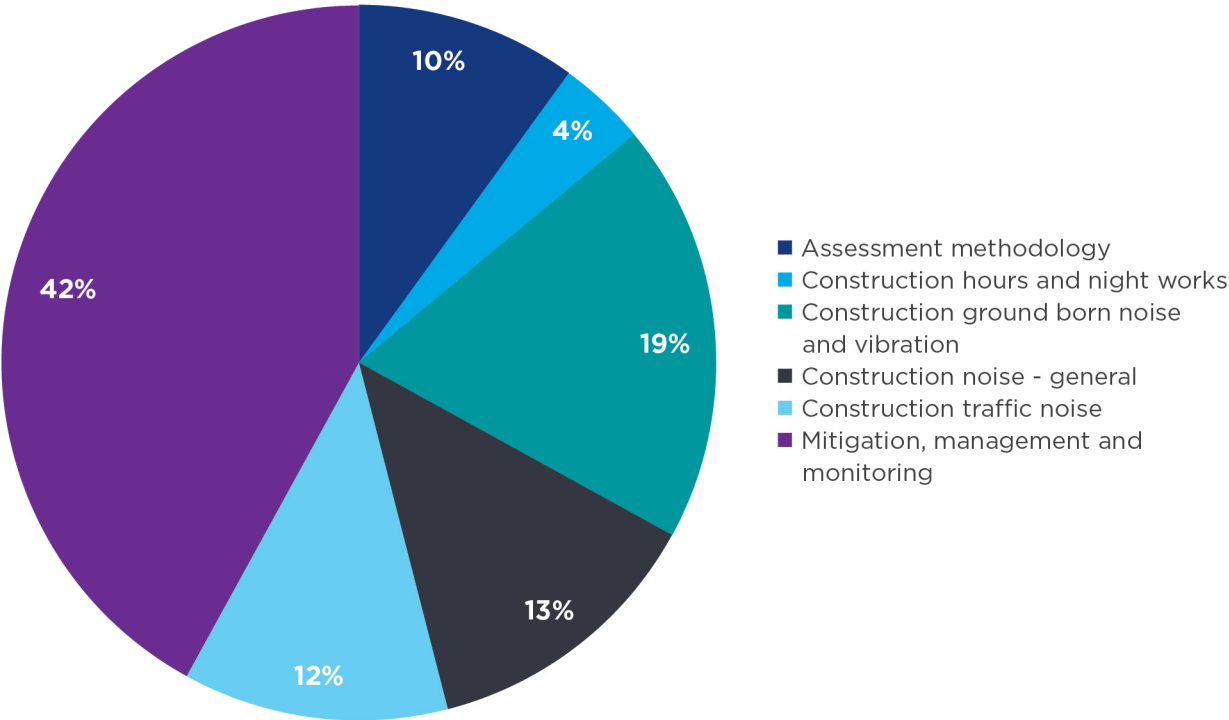


Figure 5-3: Breakdown of sub-issues relating to noise and vibration key issue

5.3.2 Location based issues summary

A breakdown of issues raised by location is provided in Table 5-4. 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 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. The location specific issues have been grouped according to the suburbs in which the proposed station upgrades and other works would be located.

The number of submissions received by community members for each location is provided in Table 5-4.

Table 5-4: 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 (to the nearest whole number)
Westmead	72	4
Parramatta	103	6
Camellia	51	3
Rydalmere	21	1
Clyde	74	5
Silverwater	19	1
Sydney Olympic Park	89	5
North Strathfield	120	7
Burwood North	122	7
Five Dock	301	18
Services facility between Five Dock and The Bays	10	1
The Bays	166	10
Pymont	28	2
Sydney CBD	12	1
Other specific locations outside the project area	41	3
Non-location specific issues	411	25

5.3.3 Key issues raised in agency and key stakeholder submissions

The most frequently raised issues by government agencies and key stakeholders (which generally reflects their areas of responsibility) included:

- Development and alternatives considered for the project
- The need for ongoing community and stakeholder engagement
- Construction noise and vibration including impacts to sensitive receptors within the community
- Transport and traffic impacts
- Potential Aboriginal and non-Aboriginal heritage impacts
- Groundwater impacts, particularly regarding groundwater monitoring
- Placemaking strategies and principles
- The management of contamination
- Property and land use impacts
- Construction air quality impacts due to dust and exhaust fumes

- Landscape character, visual impacts and amenity
- Impacts to businesses within the community
- Hydrology and flooding, particularly regarding assessment methodology
- Biodiversity impacts
- Sustainability impacts
- Cumulative impacts with other large infrastructure and urban development projects.

6 Community submissions

This section provides responses to issues raised in submissions from the community including community members, local businesses community/interest groups and Members of Parliament. 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.

6.1 Support for the project

6.1.1 Support for the project

Stakeholder identification numbers

SE-125800, SE-125802, SE-125824, SE-125826, SE-125835, SE-125848, SE-125977, SE-125981, SE-126291, SE-127237, SE-127426, SE-127427, SE-127459, SE-127728, JAE-008, SE-127504, SE-127812, SE-127364, SE-127686, SE-126752, SE-127764, SE-127773, SE-127792, SE-127793

Issue raised

Submitters expressed their support for the project.

Response

Sydney Metro notes the support expressed for the project.

6.2 Strategic need and justification

6.2.1 Capacity and congestion

Stakeholder identification numbers

SE-125998

Issue raised

Submitter raised the following queries and comment about capacity and congestion relevant to the project:

- Query about how congestion would be reduced between Parramatta and Leppington if customers have to use the existing rail network to access metro
- Comment about crowding and congestion at Redfern
- Query about whether there would still be overcrowding at Ashfield, Burwood, Central, Strathfield, Parramatta, Olympic Park and Lidcombe stations as customers would be using these stations to access the Sydney Metro West.

Response

Section 2.4 of the Environmental Impact Statement outlines that 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. Train crowding relief is not anticipated on the T5 Cumberland Line (which provides direct services between Parramatta and Leppington).

Analysis undertaken 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.

Figure 2-7 and Figure 2-8 of the Environmental Impact Statement show forecast changes to passenger movements (i.e. the redistribution of passengers due to differing trip choices), and the potential changes to station crowding at existing stations with and without Sydney Metro West in the years of 2036 and 2056. 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 extent of reduced crowding would be confirmed once the location of the Sydney CBD Station is determined.

Sydney Metro West would increase rail services and overall rail capacity at Sydney Olympic Park by providing an additional rail service and station for both day to day use and during special events.

There would be increased customer volumes at the existing Westmead and North Strathfield Stations due to interchange with the Sydney Metro West at these locations. However, stations would be designed to cater for anticipated patronage numbers in accordance with the performance measures detailed in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. This includes that sufficient customer capacity in stations and station plazas is provided to limit crowding or queuing in accordance with Fruin's Level of Service C (for 2056 demand).

Ashfield and Lidcombe stations are located on the T2 Inner West and Leppington Line and these stations would not have a direct connection to Sydney Metro West. It is unlikely these stations would be used to access Sydney Metro West. Customers on the T7 Olympic Park Line are currently required to transfer at Lidcombe to travel to or from the Parramatta or Sydney CBDs. Sydney Metro West would provide a more direct connection to Sydney Olympic Park, which may alleviate congestion at Lidcombe, especially during special events.

6.2.2 Consistency with plans

Stakeholder identification numbers

SE-127734, SE-127862

Issue raised

Submitters raised the following comments about consistency with plans:

- Comment that the NSW Government should adopt a long-term transport plan for NSW, and that current transport projects that are not within this plan should be cancelled or postponed
- Comment from one submitter that Sydney Metro should study their privately produced transport plan for NSW included with their submission
- Comment that Transport for NSW should follow through on the 'initiative for investigation' discussed in the *Future Transport 2056* strategy.

Response

Chapter 2 of the Environmental Impact Statement provides an outline of the project's consistency with the NSW strategic planning and transport policy framework, including *The Greater Sydney Region Plan: A Metropolis of Three Cities* (Greater Sydney Commission, 2018) and the *Future Transport 2056* strategy (Transport for NSW, 2018). The *Future Transport 2056* strategy sets out the NSW Government's vision for the next 40 years of transport system and identifies investment priorities for Greater Sydney guided by the vision of a metropolis of three cities.

The *Future Transport 2056* strategy identifies Sydney Metro West as a 'committed initiative' with a zero to ten-year implementation timeframe. 'Initiatives for investigation' as identified in the strategy are currently being investigated by Transport for NSW. There are currently over 300 initiatives from the strategy being delivered across Greater Sydney and Regional NSW. Details of these initiatives and a summary of their status is provided at the following website:

<https://future.transport.nsw.gov.au/delivering-future-transport-2056#greater-sydney>.

6.2.3 Project cost

Stakeholder identification numbers

SE-127377, SE-127726

Issue raised

Submitters raised the following concern and comments about project cost:

- Concern that the project has not been fully funded at the time of writing of the Environmental Impact Statement
- Comment that there has been no cost analysis or business study for the project issued to the public
- Comment that NSW has not previously delivered projects on time and on budget.

Response

The project is fully-funded by the NSW Government. In the 2019–20 State Budget, the project was allocated \$6.4 billion over four years.

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.

6.2.4 Demand**Stakeholder identification numbers**

SE-127807

Issue raised

Submitter expressed concern that Sydney Metro West cannot meet likely future demand requirements and that it would be more cost efficient to upgrade the T1 Western Line to increase capacity.

Response

Section 2.2 of the Environmental Impact Statement describes the *Greater Sydney Region Plan: A Metropolis of Three Cities*, which sets the 40-year vision to 2056 and 20-year implementation plan for Greater Sydney. The plan identifies that over the next 20 years the population of Sydney is forecast to grow, and additional daily trips will increase accordingly.

Rail network alternatives were considered in Section 3.34 of the Environmental Impact Statement and determined not to be sufficient alone to meet future transport demand.

The NSW Government is currently investing in improvements to the Sydney Trains suburban rail network, through the More Trains, More Services Program which includes extra rail services, new trains on the suburban network and upgraded rail infrastructure. As part of the program, in late 2017, an extra four express services were provided between Parramatta and Sydney CBD in both the morning and afternoon peaks, increasing the service to 20 trains per hour. While the More Trains, More Services Program is important to accommodate customer growth and continually increasing demand across the existing Sydney Trains suburban rail network, an additional solution is required to meet demand for rail services between the Parramatta and Sydney CBDs in the long term. Modelling carried out by Sydney Metro shows that the T1 Western Line is forecast to reach capacity in 2024 and the T9 Northern Line is expected to reach capacity in 2027. So that joint objectives are achieved, the More Trains, More Services program would need to be integrated with Sydney Metro West.

Sydney Metro West would more than double the rail capacity from Parramatta to the Sydney CBD, reducing congestion on the T1 Western Line, T2 Inner West and Leppington Line and T9 Northern Line, and providing more efficient access to the Central and Eastern Cities.

6.2.5 Economic impacts**Stakeholder identification numbers**

SE-126408

Issue raised

Submitter expressed concern that proceeding with Sydney Metro West will disrupt market valuations.

Response

Sydney Metro has made every effort to avoid the need to acquire private property. However, in some cases there is no alternative but to purchase property to allow construction of this major project. All property acquisitions are managed concurrently with the statutory planning for the project and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms implemented by the NSW Government. Sydney Metro has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process and these resources continue to be available to affected property owners during statutory planning for the project.

It would also be necessary to acquire stratum for the tunnels below the surface of properties under the *Transport Administration Act 1988*. In most cases, subsurface acquisition does not affect the continued existing or intended future uses of residential property at the surface.

Construction activities could result in potential temporary amenity related impacts to adjacent land uses. These impacts have been assessed in the relevant chapters of this Environmental Impact Statement. Potential property and land use impacts during construction would be appropriately managed in accordance with the mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.2.6 Future development

Stakeholder identification numbers

SE-126291, SE-127368

Issue raised

Submitter commented that the NSW Government should consider selling the space above stations to suitable private developers for housing, office and retail tenant as a potential revenue stream.

Response

Section 6.5.2 of the Environmental Impact Statement discusses future integrated station and precinct development. Provision for integrated station and precinct developments would be made at Westmead, Parramatta, Sydney Olympic Park, Burwood North, Five Dock, The Bays and Sydney CBD. The metro stations would be designed to take into account, and make physical provision for, any design or other requirements associated with future integrated station and precinct development. In general, relevant metro stations would include:

- Structural elements (steel and/or concrete), building grids, column loadings and building infrastructure to enable to construction of the future integrated station and precinct development
- Space for future lift cores, access, parking and building services for the future integrated station and precinct development
- Subdivision of the station sites to support integrated station and precinct development and ancillary facilities.

Design integration would ensure future developments can be built efficiently and effectively. Integrated station and precinct developments do not form part of the State significant infrastructure application and would be subject to separate environmental assessments and planning approvals processes.

Value capture and revenue streams generated by the sale of over station development are not part of the planning approval process. A business case has been prepared for the Sydney Metro West project and endorsed by the NSW Government. This document includes information on revenue streams and value capture. 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.

6.2.7 Justification

Stakeholder identification numbers

SE-127377, SE-127722

Issue raised

Submitters raised the following comments about the justification for the project:

- Comment that while Sydney Metro West would create more affordable housing in the form of apartments, apartments are not more affordable in terms of cost per square metre
- General comments that the project is not wanted or needed.

Response

Chapter 2 (Strategic need and justification) of the Environmental Impact Statement provides strategic justification for the Sydney Metro West project, including:

- Effectively doubling the rail capacity from Parramatta to the Sydney CBD with the delivery of a new high capacity rail connection
- Substantially improving accessibility via the public transport network to key economic centres across the Greater Parramatta to Sydney CBD corridor
- Increasing the reach and use of Sydney's public transport network by providing new station locations at Burwood North, Five Dock and The Bays
- Improving travel times for customers.

Sydney Metro West would support planned improvements in land use and a broader range of housing opportunities, which can offer improved and more affordable housing with better access to services and employment, and improved liveability.

Section 2.4.2 of the Environmental Impact Statement describes that by improving the connections between key economic centres, Sydney Metro West would facilitate the growth in jobs, homes and residents that is currently planned for the Greater Parramatta to Sydney CBD corridor. This planned growth in the corridor may not otherwise be achieved without Sydney Metro West as current transport accessibility and amenity would potentially restrict planned growth from being realised by businesses, workers and residents.

Section 2.6.1 of the Environmental Impact Statement describes how the *Future Transport 2056* strategy (Transport for NSW, 2018) sets a vision for the future city-shaping transport network, which includes a city-shaping corridor between Greater Parramatta and the Sydney CBD, connected via Sydney Olympic Park and The Bays. The *Future Transport 2056* strategy identifies Sydney Metro West as a committed project connecting the Central River City to the Eastern Harbour City and is needed the help fulfil the vision of the corridor between Greater Parramatta and the Sydney CBD.

6.2.8 Project objectives

Stakeholder identification numbers

SE-127801

Issue raised

Submitter commented that the objectives of Sydney Metro West should be to:

- Replace existing car traffic
- Integrate in a well-defined urban rail hierarchy:
 - a. Trams
 - b. Light rail
 - c. Metro
 - d. Heavy rail local
 - e. Heavy rail express
- Allow hybrid solutions when necessary to reduce costs or adapt to local conditions
- Decentralise urban development to subcentres
- Create transport links which heavy rail does not provide.

Response

Section 2.7 of the Environmental Impact Statement describes the following Sydney Metro West network objectives:

- Ensure transport services are meeting the needs of customers
- Deliver outcomes that align with and support key strategic land use and transport frameworks including the *Smart Cities Plan*, *Greater Sydney Region Plan*, the *Future Transport 2056* strategy and the relevant District Plans
- Boost Sydney's international competitiveness, productivity and employment growth by supporting new and existing strategic centres
- Support future housing needs by increasing housing supply, choice and affordability
- Improve liveability and provide a catalyst for positive change by unlocking urban renewal opportunities, enhancing housing supply and supporting productivity of centres
- Improve access to and resilience of the transport network through integrated land use and transport planning, including integration of Sydney Metro West with other transport modes
- Ensure value for money and a sustainable and deliverable solution.

The Sydney Metro West corridor objectives are:

- Contribute towards the vision for a three cities metropolis established by the Greater Sydney Commission including the '30-minute city' concept
- Support additional housing supply and employment growth opportunities and support urban renewal initiatives within the Greater Parramatta to Sydney CBD corridor including key government precincts such as the Greater Parramatta and Olympic Peninsula and The Bays
- Achieve customer outcomes including relieving congestion on the busy T1 Western Line and T2 Inner West and Leppington Line, increased rail patronage and mode shift, reduced travel times between key destinations, providing new access to mass transit rail and relieving bus and road congestion in the western corridor.

These objectives are established based on achieving the need set out in Chapter 2 of the Environmental Impact Statement, and are consistent with relevant plans and policies considered appropriate for the project.

The additional specific objectives proposed by submitters are considered inherent in the broader Sydney Metro West objectives listed above. As set out in the objectives, Sydney Metro West would be integrated with land use and other transport modes. A modal access hierarchy would be applied in the design of Sydney Metro West stations and their integration with other transport modes to give the highest priority to the most efficient and sustainable access modes (further discussed in Section 7.4 of the Environmental Impact Statement). Sydney Metro West would also contribute to decentralisation through boosting productivity and employment growth by supporting new and existing strategic centres.

6.2.9 Project priorities

Stakeholder identification numbers

SE-125830, SE-127734

Issue raised

Submitters raised the following comments about project priorities:

- Comment that the project should be rejected in favour of other projects identified in *Future Transport* that better align with government policy and meet the identified need
- Comment that Sydney Metro West is not the highest priority project.

Response

The *Future Transport 2056* strategy sets out the NSW Government's vision for the next 40 years of transport system, and identifies investment priorities for Greater Sydney guided by the vision of a metropolis of three cities. Sydney Metro West is identified in the *Future Transport 2056* strategy as a high priority and considered a 'committed initiative' with a zero to 10-year timeframe. As described in Section 2.2 of the Environmental Impact Statement, The *Greater Sydney Region Plan: A Metropolis of Three Cities*, identifies that over the next 20 years the population of Sydney will grow, and additional daily trips will increase accordingly. The *Greater Sydney Region Plan* identifies that Sydney Metro West would significantly enhance intercity links between the Central River City of Greater Parramatta and the Eastern Harbour City of the Sydney CBD – a corridor in which significant planned growth will occur.

Despite planned upgrades and the provision of more services, modelling carried out by Sydney Metro shows that the T1 Western Line is forecast to reach capacity in 2024 and the T9 Northern Line is expected to reach capacity in 2027. Sydney Metro West would more than double rail capacity from Parramatta to the Sydney CBD, reducing T1 Western Line, T2 Inner West and Leppington Line, and T9 Northern Line congestion and providing improved access to the Central and Eastern Cities.

Other initiatives in the *Future Transport 2056* strategy are outside of the scope of this project and are subject to further investigation and detailed planning by Transport for NSW.

6.2.10 Strategic need

Stakeholder identification numbers

SE-127408, SE127470, SE-127647, SE-127801, SE-127807, SE-127377, SE-127419

Issue raised

Submitters raised the following comments about the strategic need for the project:

- Comment that investment should focus on creating local jobs and not increasing commuting capacity between the Central City and Eastern City
- Comment that Sydney should decentralise commercial areas so that people can live closer to work rather than commuting to central business districts
- Comment that the projected population increase of Sydney may not occur, and Sydney Metro West may not be required
- Comment that projected patronage should be reviewed in light of COVID-19. Changing behaviours due to the pandemic may result in more people working from home and not commuting to work
- Comment that Sydney Metro West is unnecessary, as WestConnex provides a connection to The Bays and the T1 Western Line provides a public transport connection to Sydney CBD
- Comment that the strategic need for Sydney Metro West is to provide relief from congestion to the T1 Western Line. The design should have a broader vision to reflect the likelihood of it being extended, at one or both ends and serve the urban development likely to occur around its stations over the next century.
- Comment that the Environmental Impact Statement overplays the carrying capacity of metro and the benefits of metro. The Environmental Impact Statement downplays:
 - The potential carrying capacity of main line (with improvements)
 - The reduced comfort associated with metro meaning that less people will choose to use it
 - The alternative improvements to existing CBD stations that could generate significant extra capacity.

Response

Job creation and decentralisation of commercial areas

Section 2.4.2 of the Environmental Impact Statement describes how Sydney Metro West would foster significant growth in jobs by improving the connections between key economic centres. Sydney Metro West would directly support the creation of new jobs within the corridor, particularly at key precincts including Westmead, Parramatta, Sydney Olympic Park and The Bays. Sydney Metro West would help implement the vision for 30-minute cities as outlined in the *Greater Sydney Region Plan* (refer to Section 2.5.2 of the Environmental Impact Statement), by providing customers an easy connection to key destinations including cities, health and education precincts, diverse employment centres and residential areas. The catchment of Sydney Metro West would be expanded by interchanges with the suburban rail, light rail and bus networks, allowing a greater number of people to reach key destinations within 30 minutes. This would assist in supporting the decentralisation of existing commercial areas.

Sydney Metro West would facilitate the growth in jobs, homes and residents that is currently planned for the Greater Parramatta to Sydney CBD corridor. This planned growth in the corridor may not otherwise be achieved without Sydney Metro West, as current transport accessibility and amenity would potentially restrict planned growth from being realised by businesses, workers and residents.

Projected population growth and patronage

Population growth projections for Sydney are based on strategic modelling undertaken by NSW Department of Planning, Industry and Environment and strategic plans developed by the Greater Sydney Commission. Sydney Metro West would help implement the vision for 30-minute cities as outlined in the *Greater Sydney Region Plan*, by providing customers an easy connection to key destinations including cities, health and education precincts, diverse employment centres and residential areas.

Sydney Metro West forms the east-west spine of Sydney's future network and as such needs to be built to provide for changes in demand, the creation of new interchanges with current and future mass transit, and to cater to customers in the peak as well as outside of the traditional commuter service patterns. Population forecasts indicate growth in Sydney is still expected to increase resulting in higher rail demand with the T1 Western Line expected to reach capacity in 2024. By providing additional rail services, Sydney Metro West would double the rail capacity between the Parramatta and Sydney CBDs and significantly reduce train crowding on the T1 Western Line and the T9 Northern Line and at key stations. This would help improve the reliability of Sydney Trains services and improve customer comfort.

Need for Sydney Metro West

Section 2.4.3 of the Environmental Impact Statement identifies that beyond providing a new connection between Parramatta and Sydney CBDs, Sydney Metro West would also provide substantial city shaping benefits. Sydney Metro West would provide a significant increase in transport connectivity, capacity and amenity in the Greater Parramatta to Sydney CBD corridor, which would boost the economic productivity of Sydney and facilitate planned land use outcomes in the CBDs, planned precincts and urban renewal areas.

The ability to extend Sydney Metro West, including beyond Westmead to Greater Parramatta, would be future-proofed. Section 6.6.2 of the Environmental Impact Statement identifies future-proofing measures, including the provision of stub tunnels to allow for minimal disruption of the operating line during the construction of future extensions.

Section 3.3 of the Environmental Impact Statement outlines that further investment in road, bus and light rail as a strategic alternative to Sydney Metro West has been considered, including new motorways, suburban rail connections, bus rapid transit services, and increased ferry services. The NSW Government is currently investing in improvements to the Sydney Trains suburban rail network, through the More Trains, More Services Program which includes extra rail services, new trains on the suburban network and upgraded rail infrastructure. While the More Trains, More Services Program is important to accommodate customer growth and continually increasing demand across the existing Sydney Trains suburban rail network, an additional solution is required to meet demand for rail services between the Parramatta and Sydney CBDs in the long term. So that joint objectives are achieved, the More Trains, More Services program would need to be integrated with Sydney Metro West. WestConnex would allow for bus services to The Bays however buses are considered complementary to mass transit options as they would not address Sydney's transport bottlenecks in the Greater Parramatta to Sydney CBD corridor.

Carrying capacity of Sydney Metro West

The ultimate carrying capacity of Sydney Metro West would be more than 40,000 customers per hour in each direction. Comfort is a key design characteristic of Sydney Metro West. Metro trains would be air-conditioned with large windows, warm lighting and open walkways, and seating and standing room designed to maximise personal space. Platform screen doors would be provided at stations to keep people and objects away from the edge of the platform, improving customer safety and allowing trains to get in and out of stations much faster.

As described in Section 2.6.1 of the Environmental Impact Statement, the *Future Transport 2056* strategy (Transport for NSW, 2018) includes a city-shaping corridor between Greater Parramatta and the Sydney CBD, connected via Sydney Olympic Park and The Bays. The strategy identifies Sydney Metro West as a committed project connecting the Central River City to the Eastern Harbour City and is needed the help fulfil the vision of the corridor between Greater Parramatta and the Sydney CBD.

6.3 Sydney Metro West development and alternatives

6.3.1 Alignment alternatives

Stakeholder identification numbers

SE-125812, SE-125998, SE-126185, SE-127241, SE-127366, SE-127801, SE-127807, JAE-009

Issue raised

Submitters raised the following comments and concern about alignment alternatives for the project:

- Comment that alternatives alignment should be considered, including
 - An alternative alignment located under Victoria Road
 - Use of the existing train line between Camellia and Clyde
 - An alternative alignment north of the Parramatta River
 - Use of existing tunnels located under the Sydney CBD
- Concern regarding the tunnels being located under residences.

Response

A guiding principle for Sydney Metro West is to offer a faster trip than would be possible on the existing T1 Western Line between Parramatta and the Sydney CBD. Travel time between the two cities is important to support both the '30-minute city' concept and to improve customer, transport and land use outcomes. This principle has influenced further development of the Sydney Metro West alignment. Other environmental factors that have been considered in developing the alignment include avoiding known built form constraints including existing buildings, basements, utilities, infrastructure (including other rail and road infrastructure), and minimising potential impacts on environmental and social features. An alternative alignment under Victoria Road and the use of the existing line between Camellia and Clyde would increase overall travel times and would not be consistent with the NSW Government goal of supporting the '30-minute city'.

Section 3.5.1 of the Environmental Impact Statement identifies that an 11 to 12 station alignment option was considered north of Parramatta River ('Metro Local North'). This alignment would be unable to service key precincts including Sydney Olympic Park so was not considered further.

The preferred location for a Sydney CBD station and tunnel alignment is currently being investigated by Sydney Metro and would be assessed as part of a separate Environmental Impact Statement for a future stage. This would include an options assessment of potential tunnel alignments beneath Sydney CBD.

Just as a railway line on the surface follows a preserved and approved corridor, the tunnels will run through a reserved underground rail corridor – also known as a substratum corridor. Where possible, the underground corridor runs beneath major roads, open space or public buildings. However, this is not always feasible and in some cases the underground corridor runs beneath private property. While it is not possible to avoid tunnelling under some residential properties, the assessment and previous experience demonstrate that the impacts of tunnelling are manageable.

The following measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report would be put in place to mitigate any potential impacts to the property from noise, vibration or ground movement including:

- **Mitigation measure NV16:** 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.
- **Mitigation measure NV17:** 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.

- **Mitigation measure GW5:** A detailed geotechnical and hydrogeological model for Stage 1 would be developed and progressively updated during design and construction. The detailed geotechnical and hydrogeological model would include an assessment of the potential for damage to structures, services, basements and other sub-surface elements through settlement or strain. Where building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage.
- **Mitigation measure GW6:** 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.

6.3.2 Sydney CBD connection

Stakeholder identification numbers

SE-127792

Issue raised

Submitter raised the following comments about alternative connections to the Sydney CBD for the project:

- Comment that Sydney Metro West should interchange with Sydney Metro City and Southwest and Sydney Metro North West at Pitt Street Station
- Comment that Sydney Metro West should continue from the Sydney CBD connection towards George Street and Broadway.

Response

Further planning is underway to determine the location of a new metro station within the Sydney CBD. The metro station would enable interchange with existing public transport networks, including Sydney Metro City & Southwest, the existing Sydney Trains suburban rail network, the light rail and bus networks. The station strategy and key features for the Sydney CBD would be developed once the location is determined.

6.3.3 Location and number of stations

Stakeholder identification numbers

SE-127792, SE-125800, SE-125813, SE-125826, SE-125835, SE-125839, SE-125840, SE-125920, SE-125934, SE-125961, SE-125998, SE-126145, SE-126291, SE-126548, SE-126554, SE-126580, SE-126585, SE-126603, SE-126627, SE-126630, SE-126650, SE-126666, SE-126690, SE-126715, SE-126727, SE-126892, SE-127241, SE-127242, SE-127248, SE-127250, SE-127251, SE-127252, SE-127356, SE-127360, SE-127366, SE-127373, SE-127388, SE-127410, SE-127450, SE-127482, SE-127494, SE-127665, SE-127678, SE-127726, SE-127759, SE-127801, SE-127814, SE-127856, SE-127862, SE-127865, SE-128241, SE-127588, JAE-010, SE-127739, SE-127744, SE-127788, SE-127792, SE-127811, SE-127419, SE-127588, SE-126564

Issue raised

Submitters raised the following comments about the location and number of stations proposed for the project:

- Comment that additional stations should be added, including at Greater Parramatta, Camellia, Rosehill, Rydalmere, Silverwater, Newington, Lilyfield, Leichhardt, Leichhardt North and Wentworth Point, Strathfield, North Parramatta, Rozelle, Pyrmont and within the Sydney CBD
- Comment that stations should be located at one to two kilometre intervals to better serve local populations
- Comment that proposed travel times from Westmead and Parramatta to the Sydney CBD should be maintained
- Comment that the proposed Westmead metro station should be located to the north of the existing train station
- Comment that the existing station at Sydney Olympic Park should be used as a metro station
- Comment that metro stations at locations that are close to existing train stations, including North Strathfield and Burwood North, are unnecessary as they are already serviced by rail
- Comment that Five Dock Station is not necessary, as the Environmental Impact Statement does not identify it as a core station and the existing light rail provides an alternate transport option
- Comment that location of The Bays Station is not suitable due to existing noise and air pollution

- Comment that the proposed interchange at North Strathfield should be replaced by an interchange at Strathfield
- Comment that the North Strathfield metro station will not service residents of Homebush
- Comment that Burwood North Station would be better positioned closer to Queen Street to support people who don't have access to public transport
- Comment that the proposed metro stations at North Strathfield, Burwood North and Five Dock are too close to each other and will lead to over-development in Canada Bay.

Response

Additional stations

A number of additional station locations were considered between Westmead and Sydney CBD as part of the project development. The analysis of station options and the outcome of this assessment is documented in Section 3.6 of the Environmental Impact Statement.

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia/Rosehill as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019. The assessment 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. A station at Camellia/Rosehill was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would have also been required which would have impacted construction timing. The NSW Government is progressing public transport improvements for Camellia through Parramatta Light Rail.

Rydalmere would result in a longer alignment, an associated greater cost and increased travel times for some metro customers (refer also to Chapter 2 of this Submissions Report).

The strategic opportunities of a station at Pyrmont are acknowledged and identified in the Environmental Impact Statement. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option.

Further planning is underway to determine the location of a new metro station in the Sydney CBD. A new metro station as part of Sydney Metro West in the Sydney CBD would enable interchange with existing public transport networks, including Sydney Metro City & Southwest, the existing Sydney Trains suburban rail network, the light rail and bus networks.

Distance between metro stations

A guiding principle for Sydney Metro West is to offer a faster trip than would be possible on the existing T1 Western Line between Parramatta and the Sydney CBD. 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.

Selected location of Westmead and Sydney Olympic Park metro stations

The location of the metro station at Westmead on the southern side of the existing Westmead Station was chosen to minimise the impacts to sensitive medical receivers, avoid impacting on Parramatta Light Rail (Stage 1) and to reduce work and associated impacts within the existing rail corridor.

A new metro station would provide enhanced transport connectivity in the precinct which would not be achieved by utilising existing Sydney Olympic Park Station alone. The use of the existing station would likely result in some constructability challenges due to the need for construction works to occur near the T7 Olympic Park Line.

Metro stations near railway stations

Provision of new metro stations near to existing railway stations would provide commuters with opportunities to interchange. The new metro station at North Strathfield would allow commuters to access railway stations along the T9 Northern Line. The new metro station at Burwood North would not be located near any existing railway station, with Burwood Station being located around one kilometre south.

Justification for metro station locations

A metro station at Five Dock would provide customers with a more frequent, reliable and fast service to an area that is currently not serviced by mass transit. Five Dock is recognised as a location for bus interchange and active transport connectivity. A metro station in this locality would offer a relatively efficient corridor alignment that delivers significant travel time savings for people living around Five Dock, Drummoyne, Haberfield and Concord towards Parramatta and Sydney CBDs. Core stations identified for Stage 1 are limited to Parramatta, Sydney Olympic Park and The Bays. The exclusion of Five Dock from being a core station does not limit the strategic importance of the Five Dock as a metro station location. The closest light rail stop to the Five Dock Station is around 2.5 kilometres south-east.

The Bays is set to be Sydney's new world-class destination and employment hub where 95 hectares of land is being regenerated. Sydney Metro West would enable The Bays to be developed to its full potential, with a focus on improved international competitiveness and knowledge based jobs. The existing background noise and air pollution levels at The Bays are identified in Chapter 11 (Noise and vibration – Stage 1) and Chapter 23 (Air quality – Stage 1) of the Environmental Impact Statement and are not considered to be substantially different to other metro station locations. Existing noise and air quality at The Bays would not preclude the provision of a metro station at this location.

A North Strathfield station location would support urban renewal within the Homebush precinct redevelopment area. The station would reach a significant walking catchment and offer a more efficient alignment (and therefore improved travel times for customers travelling between Parramatta and the Sydney CBD).

The site of Burwood North Station is within the *Parramatta Road Corridor Urban Transformation Strategy* area and characterised by a mix of uses along Parramatta Road and along Burwood Road towards the Burwood strategic centre. A station at Burwood North would support employment growth and intensification of existing land uses in the surrounding catchment, with opportunities for residential growth. It would open a new rail catchment to provide customer benefits with a more frequent, reliable and fast mass transit service, and would provide an opportunity to integrate with the existing bus network. A station in this locality would offer a corridor alignment that supports efficient travel times between the Parramatta and Sydney CBDs.

The Burwood North and Five Dock station location options were specifically considered as they present an opportunity to function as a pair of stations, with the delivery of both stations servicing a greater catchment over this length of the corridor. The provision of new metro stations at North Strathfield, Burwood North and Five Dock would support urban renewal in strategic growth areas such as the Homebush precinct redevelopment area, *Parramatta Road Corridor Urban Transformation Strategy*, and Burwood strategic centre.

6.3.4 Power supply

Stakeholder identification numbers

SE-127269, SE-127285, SE-127678, SE-127814, SE-127865

Issue raised

Submitters raised the following comment and concern about the power supply proposed for the project:

- Objection to the proposed power supply works at Callan Street, and comment that an alternative power route should be chosen
- Comment that the project should provide permanent high voltage power to The Bays area.

Response

Sydney Metro currently expects to require power supply to The Bays Station construction site of about 35 mega volt amperes to meet the anticipated power demands. Advice from Ausgrid indicated the only available option for this power supply in the locality was from the Rozelle sub-transmission substation.

Sydney Metro investigated a number of options for this power supply route as alternatives to the use of Callan Street. This included:

- **Toelle Street:** Toelle Street currently has a large number of underground services which would need to be relocated (most likely to Callan Street) to cater for the power supply route resulting in additional works and impacts for additional receivers. This would also have resulted in the power supply route continuing along Victoria Road resulting in increased night-time works and traffic impacts.

- **Manning Street to Springside Street:** Similar to Toelle Street, Manning Street has a large number of underground services which would need to be relocated (most likely to Callan Street) to cater for the power supply route resulting in additional works and impacts for additional receivers.
- **Callan Park:** This option presented some technical challenges with the height difference from the Ausgrid switch yard to the park. The need to under bore into the live substation would also have resulted in major safety risks and potential impacts to the electricity network. This option may also impact the State heritage listed Callan Park.

Callan Street is currently relatively free from underground services and offers the only feasible option for this section of the power supply route.

Since the development of the Environmental Impact Statement, further planning has been occurring between Sydney Metro, Transport for NSW (for the Western Harbour Tunnel project, if approved), Ausgrid and Port Authority of NSW regarding future power needs connecting to the Rozelle sub-transmission substation. It has been identified that all these projects would require power connections from this location. If these works were progressed separately this would result in trenching occurring through local streets multiple times over the next few years with the associated impacts to the local community such as traffic and noise. Additionally, if the design and construction of these works are not coordinated it may, due to the need to separation distances between power cables and other existing underground utilities, preclude some or all of these power connections from occurring in the future. This would limit to ability to undertake future infrastructure projects and to provide power to The Bays precinct and the locality.

Based on the above and feedback received from residents in Callan Street, the NSW Government is proposing to coordinate these works with Sydney Metro undertaking additional trenching and under bore works to provide empty conduits for use by Transport for NSW (Western Harbour Tunnel), Ausgrid and Port Authority of NSW in the future. Although this would result in an increase in impacts to those described in the Environmental Impact Statement, there would be a substantial reduction in potential cumulative impacts compared to these works being undertaken separately. Further information is provided in the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b).

The proposed Sydney Metro power supply would also provide sufficient power supply for the operational phase of the project, further reducing potential cumulative impacts in this location.

6.3.5 Stabling and maintenance facility

Stakeholder identification numbers

SE-125998

Issue raised

Query about whether an alternative site for a stabling facility had been investigated.

Response

Section 3.7.3 of the Environmental Impact Statement describes the initial assessment which included consideration of a long list of location options for a stabling and maintenance facility. These options were not taken forward for further investigation as they would either impact the viability of the remaining land use and businesses, were located too far away from the Sydney Metro West line, or due to the potential impacts of flooding and contamination.

Following initial assessment, the former Shell refinery site (now the Viva Energy property) in the Camellia/Rosehill area and Clyde were shortlisted as the potential locations for the stabling and maintenance facility. On balance, the Clyde site was found to be the least constrained of all options assessed (when considering construction, program, cost and worker health and safety) and would provide for the efficient operation of the line. Further consideration and assessment of the potential impacts to existing properties and land uses associated with the Clyde site is provided in Chapter 14 (Property and land use – Stage 1), Chapter 16 (Business impacts – Stage 1) and Chapter 17 (Social impacts – Stage 1) of the Environmental Impact Statement.

6.3.6 Tunnel size

Stakeholder identification numbers

SE-125934

Issue raised

Suggestion that quad tunnels with four tracks should be constructed to allow express services to overtake 'all stopping' services.

Response

A key product feature of Sydney Metro West is the consistency in service patterns which means that there would not be an express service. All services would stop at all stations.

6.4 Planning and assessment process

6.4.1 Concept and staged assessment process

Stakeholder identification numbers

SE-127419

Issue raised

The submitter commented that the public has not been provided sufficient information to assess Sydney Metro West as a whole, specifically:

- Comment that the exhibition of the Environmental Impact Statement seeks public comment on the tunnels and station box component of the project without providing any details on the trains or station
- Comment that no information has been provided on The Bays to Sydney CBD component of the project.

Response

Due to the size of the project, the planning approvals and environmental impact assessment for Sydney Metro West has been staged. Staged infrastructure applications can be made under section 5.20 of the *Environmental Planning & Assessment Act 1979*. A staged infrastructure application sets out the concept for the proposed infrastructure and can also set out details of Stage 1. This process is described in Section 1.1.1 and Section 4.2 of the Environmental Impact Statement.

Chapter 6 (Concept description) provides an overview of the entire Sydney Metro West project, including providing information on the key features of the proposed stations (Section 6.7) and Sydney Metro West operations (Section 6.4) such as the hours of operation and train types. Chapter 7 (Placemaking) outlines the place and design principles that would be adopted for metro stations and ancillary facilities during design development for the future stages and how the metro station would integrate with local strategic plans. Chapter 8 (Concept environmental assessment) considers how potential impacts associated with the Concept have been avoided or minimised through strategic design, and where impacts have not been avoided, the types of impacts that could be expected during operation and construction of the Concept. Performance outcomes for the construction and operation of the Concept have also been developed and are described in Chapter 8 (Concept environmental assessment) and Chapter 27 (Synthesis of the Environmental Impact Statement) of the Environmental Impact Statement. Chapter 8 (Concept environmental assessment) also identifies matters to be addressed in future stage applications.

Section 6.7.8 of the Environmental Impact Statement identifies that the preferred location for a Sydney CBD Station is being investigated. The metro station would enable interchange with existing public transport networks, including Sydney Metro City & Southwest, the existing Sydney Trains suburban rail network, the light rail and bus networks. The station strategy and key features for the Sydney CBD would be developed once the location is determined.

Adopting a staged approach and seeking concurrent planning approval for the project concept and Stage 1 between Westmead and The Bays has a number of benefits and would allow:

- Additional time to consult with the stakeholders on the end-state design of stations including urban design, transport integration and placemaking outcomes
- Additional time to solve certain design elements including the station location and tunnel alignment through the complex Sydney CBD environment
- Each planning approval stage to be focussed on the critical issues associated with the particular works and the particular locations. This would allow greater opportunity for specific feedback from the community.
- Earlier commencement of critical construction activities which would allow Sydney Metro West as a whole to be delivered quicker and more efficiently, facilitating earlier realisation of the benefits of Sydney Metro West.

The community and key stakeholders, including councils, will have the opportunity to assess and provide feedback on future staged assessments, in line with Sydney Metro's community and stakeholder engagement program.

6.5 Stakeholder and community engagement

6.5.1 Environmental impact statement exhibition

Stakeholder identification numbers

SE-125998, SE-127366

Issue raised

Submitters raised the following requests regarding the Environmental Impact Statement exhibition:

- Request for an extension of the exhibition period in light of the recent COVID-19 pandemic
- Request for a copy of the Environmental Impact Statement in PDF.

Response

Schedule 1 of the *Environmental Planning and Assessment Act 1979* requires Environmental Impact Statements for State significant infrastructure to be placed on public exhibition for a minimum of 28 days. The Sydney Metro West Environmental Impact Statement was placed on exhibition for a total of 57 days, from 30 April 2020 to 26 June 2020, double the required statutory timeframe to allow additional time for community feedback.

The range of consultation activities that occurred during the extended period are described in Chapter 4 (Stakeholder and community engagement). From the 30 April 2020 when the exhibition commenced, the Environmental Impact Statement has been available as a PDF at <https://www.planningportal.nsw.gov.au/major-projects/project/25631>, under the 'Attachments & Resources' heading. The Environmental Impact Statement was also available as a PDF on the Sydney Metro website at <https://www.sydneymetro.info/west/project-overview>.

6.5.2 Complaints

Stakeholder identification numbers

SE-127802, SE127819, SE-127805, SE-127780, SE-127795

Issue raised

Submitters raised the following request and concern about community complaints:

- Request that a complaints hotline is established for the project
- Concern that community complaints regarding noise and vibration impacts may not be addressed.

Response

A toll-free community information line (1800 612 173) has been in place since the announcement of Sydney Metro West in 2016. This community information line provides an opportunity for the community to contact the Sydney Metro West project team, ask questions and seek further information.

All complaints handling would be conducted in accordance with the Sydney Metro Construction Complaints Management System.

As a requirement of the *Sydney Metro Overarching Community Communications Strategy* (refer to Appendix B), contractors would 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.

6.5.3 Community consultation

Stakeholder identification numbers

SE-127366, SE-127377, SE-127647, SE-127740, SE-127806

Issue raised

Submitters raised the following comments, queries and requests about community consultation:

- Query about what community consultation had been carried out regarding the tunnel alignment, particularly in Five Dock
- Comment that consultation with the community to ascertain their needs for respite is critical given the construction duration
- Query whether in-person community consultation regarding the tunnel alignment will be undertaken in Five Dock
- Request for further information regarding the Five Dock Station eastern construction site
- Request for further information regarding impacts on active transport
- Comment that the community needs to be involved in the development of urban design and landscape treatments.

Response

Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement describes that two rounds of community consultation were undertaken during the development phase of the project to increase awareness, help define and refine the scope, and collect community feedback. During round one in 2017, consultation was completed along a broad study area between Greater Parramatta and the Sydney CBD (refer to Figure 5-1 of the Environmental Impact Statement). Round two of community consultation activities occurred in 2018 over a refined area which is shown in Figure 5-2 of the Environmental Impact Statement. The communities of Five Dock and The Bays Precinct were included in both rounds of community consultation.

In addition, in 2019 in conjunction with lodgement of the *Sydney Metro West Scoping Report – Westmead to The Bays and Sydney CBD*, communities and key stakeholders surrounding confirmed station locations were provided with project information, newsletters, doorknocks and briefings as appropriate.

A detailed description of public consultation undertaken in the development of Sydney Metro West is provided in Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement.

During exhibition of the Environmental Impact Statement, Sydney Metro used all feasible channels to reach as many people as possible to inform them about exhibition of the Environmental Impact Statement and to call for submissions and feedback – refer to Chapter 4 (Stakeholder and community engagement) of this Submissions Report. Sydney Metro engaged with stakeholders and the community through virtual means. This included:

- Stakeholder briefings
- Community meetings
- Phone calls and emails.

Sydney Metro engaged with more than 15,000 people over the eight-week exhibition period.

Consultation with Five Dock residents involved the following:

- Three virtual Microsoft Teams meetings with Five Dock residents
 - Five residents from 110 Great North Road
 - Three residents from Waterview Street
 - Three residents and strata manager from 4-12 Garfield Street
- 120 emails (in and out)
- 75 phone calls (in and out)
- Five Dock Place Managers proactively reached out to engaged stakeholders in the community when the Environmental Impact Statement first launched. Residents living near the future Five Dock Station construction sites and on/near the proposed tunnel alignment were actively engaged with the exhibition.

- Various residents in Five Dock asked technical questions regarding noise and vibration impacts, tunnelling and potential of property damage resulting in the project team offering online meetings with subject matter experts to give a more technical overview of the project.

If the project is approved, further engagement and consultation would be carried out with communities in proximity to construction sites to understand their preferences for mitigation and management measures. Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise the impacts. Future engagement and consultation would be undertaken in accordance with the *Overarching Community Communications Strategy* (Appendix B of this Submissions Report). Appropriate respite would be provided to affected receivers in accordance with the updated *Sydney Metro Construction Noise and Vibration Standard* (Appendix C of this Submissions Report).

A description of the Five Dock Station eastern construction site is provided in Section 9.5.8 of the Environmental Impact Statement. The Five Dock Station eastern construction site would cover about 2,150 square metres and would occupy the Second Avenue council car park and a number of residential properties located on Waterview Street.

The potential impacts of the project on active transport networks are discussed in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement. Establishment of the construction site would require temporary changes to some pedestrian footpaths and cyclists using First Avenue would be subject to temporary minor increases in additional heavy vehicles (four heavy vehicle movements per hour during peak periods).

Identified performance outcomes in relation to landscape character and visual amenity for operation and construction of the Concept are identified in Section 8.9.6 of the Environmental Impact Statement, including:

- The design reflects the Sydney Metro Design Objectives and the place and design principles
- The Sydney Metro Design Quality Framework is implemented
- Metro stations contribute positively to the surrounding urban environment and provide a sense of place.

Further engagement and consultation would be carried out in accordance with the *Overarching Community Communications Strategy* (Appendix B of this Submissions Report) to understand community preferences for mitigation and management measures.

6.5.4 Stakeholder consultation

Stakeholder identification numbers

SE-125998, JAE-004, SE-127504, SE-127686, SE-127764, SE-127773, SE-127793, SE-127795

Issue raised

Submitters raised the following comments and queries about stakeholder consultation:

- Query about whether Disability Council of NSW has been consulted
- Comment that an ongoing dialogue should be maintained between Sydney Metro, construction contractors and key landowners and lease holders near the Sydney Olympic Park metro station construction site to ensure that rights afforded to businesses are maintained
- Comment that The McDonald College should be consulted as a stakeholder
- Comment that St Alban's Anglican Church requests ongoing consultation
- Comment that St Luke's Anglican Church requests ongoing consultation
- Comment that The Owners Corporation of Pendium Apartments requests ongoing consultation
- Comment that Stay Upright requests ongoing consultation
- Comment that constructive communication between Sydney Metro and Five Dock Public School Parents and Citizens Association is needed from now until completion of the project. This should include establishing lines of communication and regular updates.
- Comment that Five Dock Square requests ongoing consultation and a direct line of contact.

Response

During the Environmental Impact Statement exhibition period, submissions were invited from all members of the community and other stakeholders.

Station design would be guided by an 'access for all' philosophy using 'priority of access' principles. Sydney Metro West stations would be fully accessible for people with a disability, prams and children, including level access between platforms and trains.

Design of Sydney Metro West would be in accordance with relevant accessibility guidelines and standards (including the *Disability Discrimination Act 1992* and *Disability Standards for Access to Public Transport*), which outline provisions for good access for people with disabilities, the elderly and passengers with prams or luggage.

Sydney Metro and construction contractors would maintain an ongoing dialogue with key landowners and lease holders near the Sydney Olympic Park metro station construction site.

If the Stage 1 is approved, further engagement and consultation would be carried out with stakeholders near construction sites, including The McDonald College, St Alban's Anglican Church, St Luke's Anglican Church, The Owners Corporation of Pendium Apartments, Stay Upright, Five Dock Public School Parents and Citizens Association and Five Dock Square, to advise them of works 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 would be undertaken in accordance with the *Overarching Community Communications Strategy* (Appendix B of this Submissions Report).

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 works and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the works
- 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.

6.6 Concept description

6.6.1 Station access

Stakeholder identification numbers

SE-126563, SE-127726, SE-127740, SE-127759, SE-125847, SE-127783, SE-127588

Issue raised

Submitters raised the following comments and queries about station access:

- Comment that Parramatta metro station should take into consideration the proposed Civic Link Tunnel
- Comment that the proposed entry to the North Strathfield metro station will be via Queen Street and that access should also be provided from Bakehouse Quarter area on George Street
- Query whether the council owned property adjacent to the Post Office reserve at Five Dock is going to be demolished to provide access from Waterview Street through to the metro station
- Comment that all metro stations should have two station entrances at each end of the platform to minimise walk time within and around the station
- Comment that an additional station access is required at Parramatta metro station
- Comment that an additional station access is required at The Bays
- Query whether the station access at Sydney Olympic Park will be suitable for large crowds on event days. Comment that multiple station entrances should be considered.

Response

Section 6.7.2 of the Environmental Impact Statement outlines the features of Parramatta metro station. The design of Parramatta metro station has taken into consideration the proposed Civic Link with the station entries providing access to the future Civic Link. Sydney Metro would continue to work with City of Parramatta Council to ensure the project is fully integrated with the Civic Link and to address potential design and construction issues associated with the Civic Link Tunnel proposal.

Potential for additional station entrances at metro station would be considered in consultation with local councils and during the next phase of design of the stations. Future Environmental Impact Statement(s) would include further information about the proposed station and precinct design.

The small open area adjacent to the Five Dock Post Office is not within the Five Dock Station eastern construction site and would not be directly affected by Stage 1.

Day to day metro station access at Sydney Olympic Park would be via two proposed station entries. The main station entry would be between Herb Elliot Avenue and Figtree Drive, and the second entry would be off Dawn Fraser Avenue. The design of Sydney Olympic Park metro station would include strategies to separate event and non-event customer flows, to enable operational efficiency to be achieved during major events. This would include separate event mode entries to separate customer flows, space for crowd marshalling, and potentially extended dwell times at the station. These strategies are described in detail in Chapter 7 of the Environmental Impact Statement.

6.6.2 Rolling stock

Stakeholder identification numbers

SE-127450, SE-127862, SE-127807

Issue raised

Submitters had the following comments regarding rolling stock:

- Comment that metro rolling stock should include a designated storage area for bicycles
- Comment that the rolling stock used should be double deck or provide more passenger comfort and seating capacity than the existing rolling stock
- Comment that Sydney Metro has not demonstrated that metro trains are safe at crowding levels greater than for the Sydney Trains fleet.

Response

Customer experience underpins how Sydney Metro is being planned and designed to incorporate all aspects of travel associated with the transport network, including easy and accessible transfers from active transport use to Sydney Metro stations. The key metro characteristics are outlined in Table 6-2 of the Environmental Impact Statement and includes designing for bicycles on trains.

Customer comfort is a key design characteristic of Sydney Metro West. Trains would be air-conditioned with large windows, warm lighting and open walkways, and seating and standing room designed to maximise personal space. Single deck trains would allow for more efficient boarding and alighting, supporting shorter dwell times (the time a train needs to stop at a station for customers to board and alight). Longer dwell times can challenge on-time running of services, leading to fewer services operating in a given time period.

An existing Sydney Trains double deck train carries about 1,200 passengers. With the Sydney Trains suburban rail network generally being limited to 24 trains per line per hour this equates to a reliable capacity of around 24,000 passengers per line per hour. In contrast, a Sydney Metro single deck train would have a capacity of around 1,500 passengers. At the ultimate capacity of 30 trains per hour, this equates to around 45,000 passengers per hour.

6.6.3 Interchange

Stakeholder identification numbers

SE-125848, SE-127759, SE-127792, SE-127419, SE-127588

Issue raised

Submitters raised the following comments regarding interchange between Sydney Metro and other public transport networks:

- Comment that at Sydney Metro West stations there should be convenient interchanges between the Sydney Metro West and the light rail and heavy rail system, other metro lines, and major bus routes
- Comment that it is not clear whether customers would need to tap-off and tap-on when interchanging at Westmead and North Strathfield metro stations
- Comment that minimising walking distances and providing across-the-platform interchanging should be prioritised
- Comment that covered or underground pedestrian links should be provided between metro stations and train stations
- Comment that for the interchange at North Strathfield to provide good value for commuters, there will need to be minimal time spent interchanging between services. The interchange should include the following design features:
 - Minimise on-foot transfer time to within 2-3 minutes, for example using express escalators and lifts
 - Avoid the requirement to exit the heavy rail station, or having to tap-off and tap-on through the transfer point
 - Ensure that the transfer point is fully under-cover so that commuters are protected from adverse weather.
- Comment that all stations should be well integrated to the local footpath and bike path networks, be accessible to those with physical disability, and ensure easy transfers to bus and light rail transit
- Comment that quick interchange is essential at Westmead Station and suggest an underground link between Westmead Station and Westmead metro station.

Response

Sydney Metro agrees that an efficient interchange at Sydney Metro West stations, including North Strathfield and Westmead, is extremely important.

Section 7.4 of the Environmental Impact Statement describes the transport integration and connectivity approach to Sydney Metro West. This includes application of a modal access hierarchy to ensure design of stations, and their integration with other transport modes, gives the highest priority to the most efficient and sustainable access modes. Sydney Metro would work with relevant stakeholders to provide transport services which meet the needs of customers and integrate with the broader transport network.

All escalators, platforms, passageways, mezzanines and concourses would be designed to accommodate peak customer flows and ensure stations are easy to navigate. Stations would be designed in accordance with the operations and system requirements, including maintaining customer flows at an acceptable and safe level of service standard. Stations would also be designed to protect customers from weather (covered access paths, waiting shelters, etc.) at stations and at interchange areas.

Interchanges at Westmead and North Strathfield metro stations are subject to further design development which would be subject to future planning approvals. The ability for customers to seamlessly tap-off and tap-on at these locations, will be considered in this design development.

The provision of across-the-platform interchanging between Sydney Metro West and the existing rail network would require the closure of existing railway stations for substantial periods of time which would have a significant impact on the operation of the public transport network and may also require a substantial increase to property acquisition.

Safe and convenient connections to and from Sydney Metro West stations are an important part of the customer journey and experience of the station precinct. Connectivity between different transport modes, including walking, cycling, rail, light rail, buses, taxis and kiss-and-ride, would be legible and easy, acknowledging that Sydney Metro is part of an integrated transport system. Specific details relating to the types of pedestrian connections between metro stations and other modes of transport and whether those connections are covered or underground would be determined as part of a future stage of Sydney Metro West.

Westmead metro station would be located immediately south of the existing Westmead Station and the interchange would be designed to provide seamless and efficient interchange between Sydney Metro and Sydney Trains services.

The issues raised would be relevant to the detailed design for stations and precincts and would be included in a future stage Environmental Impact Statement.

6.6.4 Platforms

Stakeholder identification numbers

SE-127759, SE-125845, SE-125847, SE-127792, SE-127419

Issue raised

Submitters raised the following comment and query regarding station platforms:

- Comment that Sydney Olympic Park metro station should include double sided platforms to improve boarding and disembarking during events
- Query whether the island platform arrangement at Sydney Olympic Park will be suitable for large crowds. Comment that one platform for disembarking and one platform for boarding may be better.

Response

Sydney Olympic Park metro station would be designed with flexibility to accommodate major events and periodic large crowds. The metro would work with the existing T7 Olympic Park line on the suburban rail network to cater for events. The design of Sydney Olympic Park metro station would include strategies to separate event and non-event customer flows, to enable efficient movement of customers during major events. This would include separate event mode entries to separate customer flows, space for crowd marshalling, and potentially extended dwell times at the station. These strategies are described further in Section 7.10.3 of the Environmental Impact Statement and further details would be included in the Environmental Impact Statement for future stages.

6.6.5 Station accessibility

Stakeholder identification numbers

SE-125998

Issue raised

Submitter commented that metro stations must be compliant with the *Disability Discrimination Act* and *Disability Transport Standard*. Submitter also queried whether stations will include tactile tiles and have audio announcements of station.

Response

All Sydney Metro West stations would be compliant with relevant accessibility guidelines and standards such as the *Disability Discrimination Act 1992* and *Disability Standards for Access to Public Transport*, which provide good access for people with disabilities, the elderly and passengers with prams or luggage. The stations would have tactile tiles and appropriate audio announcements.

6.6.6 Wayfinding

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queried whether there would be wayfinding between railway stations and metro stations at Parramatta, Olympic Park, North Strathfield and Sydney CBD.

Response

Section 7.4 of the Environmental Impact Statement identifies that an easy, intuitive and consistent wayfinding system would be developed that facilitates efficient customer movements to, from and through all metro stations. Furthermore, Sydney Metro would work with relevant stakeholders to minimise, where possible, the impact on customers transferring between services at interchanges, for example by providing legible wayfinding between nodes. Clear wayfinding with legible station entries and appropriately scaled spaces around the station and along key pedestrian routes would be further refined during detailed design of the stations.

6.6.7 Active transport and pedestrian access

Stakeholder identification numbers

SE-127366, SE-127426, SE-127427, SE-127644, SE-127647, SE-127661, SE-127862

Issue raised

Submitters had the following comments and concerns regarding active transport:

- Support for provision of direct active transport connections between the proposed stations and surrounding streets, including access for disabled customers
- Comments that the proposed station should be accessible to pedestrians, including pedestrian connections where relevant
- Support for the provision of end of trip facilities at the proposed stations, including bicycle hubs
- Support for the provision of an extended active transport route to surrounding suburbs and connection to existing active transport routes
- Concern about existing active transport routes being replaced with underground active transport routes
- Comments that pedestrian access on roads surrounding the proposed stations should be maintained following construction.

Response

A modal access hierarchy would be applied in the design of Sydney Metro West stations, as described in Section 7.4 of the Environmental Impact Statement. The hierarchy prioritises active transport (walking and cycling) connections to provide for the safety and wellbeing of customers and users of the station precinct.

Section 6.5 of the Environmental Impact Statement describes how the proposed stations would be designed to facilitate efficient transfer between Sydney Metro West and active transport, including walking and cycling. Station design would be guided by an 'access for all' philosophy using 'priority of access' principles, with pedestrians and cyclists prioritised. The design of metro stations would include storage areas for bicycles and opportunities to integrate with existing and planned walking and cycling networks would be an important consideration in design, in consultation with local councils. Further details relating to bicycle storage at metro stations would be included in the Environmental Impact Statement(s) for future stages.

Sydney Metro West would also be designed to be an accessible system, as described in Section 6.2 of the Environmental Impact Statement. Sydney Metro stations are fully accessible for people with reduced mobility, people with prams, and children. This includes level access between platforms and trains and lifts at all stations.

While it is not clear what location is being referred to, future stages of detailed design would consider existing active transport paths and how to integrate these with the station precincts. Future stage Environmental Impact Statements would provide further information on the integration of active transport corridors.

Following construction, high quality pedestrian access surrounding the stations would be provided in accordance with the principles identified in Section 7.4 of the Environmental Impact Statement.

6.6.8 Parking

Stakeholder identification numbers

SE-127740, SE-127856

Issue raised

Submitters had the following comment and concern regarding parking:

- Comment that underground car parking spaces should be created between the ground and tunnel levels at the proposed stations
- Concern that people commuting on the metro will park in local, narrow streets.

Response

A modal access hierarchy, shown on Figure 7-2 of the Environmental Impact Statement, would be applied in the design of Sydney Metro West stations. The objective of the hierarchy is to ensure that the design of stations, and their integration with other transport modes, gives the highest priority to the most efficient and sustainable access modes. This influences the design of stations and interchanges, highlighting the need to balance transport integration with 'place' elements. The metro stations would focus on providing safe and convenient connections between different transport modes, including walking, cycling, rail, light rail, buses, taxis and kiss-and-ride.

Potential impacts on traffic and parking have been assessed in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. The Concept does not include the provision of any new commuter parking spaces beyond what is already provided near the proposed metro stations.

6.6.9 Public transport integration

Stakeholder identification numbers

SE-126661, SE-126773, SE-127792, SE-127862, SE-127862, SE-127792

Issue raised

Submitters had the following comments regarding public transport integration:

- Comments that the proposed stations should connect and integrate with the rest of Sydney's public transport network, including:
 - Bus services
 - Light rail services
 - Transfers to Western Sydney International (Nancy-Bird Walton) Airport
 - Comment that an alternative public transport and vehicle interchange should be provided away from Burwood Road and Parramatta Road to reduce congestion and provide active and public transport opportunities.

Response

Section 7.4 of the Environmental Impact Statement identifies how the Concept aims to provide transport services which meet the needs of customers and integrates with the broader transport network. The Concept would improve access to and resilience of the transport network through integrated land use and transport planning, including integration of Sydney Metro West with other transport modes.

Sydney Metro would work with relevant stakeholders (such as Transport for NSW, other transport operators and local councils) to deliver the following principles:

- Provide direct, legible, safe and accessible pedestrian routes to and from stations
- Provide cycling access that is consistent with local government plans for cycling routes
- Maximise connectivity with metro, Sydney Trains suburban rail network, light rail and intercity rail networks to provide shorter journey times, better connectivity and congestion relief
- Where beneficial to customers, work with Transport for NSW to reorient bus and networks to connect with Sydney Metro West stations, providing feeder service functionality and extending the catchment from which customers can access stations
- Work with Transport for NSW to review bus routes and their need once Sydney Metro West is operational
- Work with Transport for NSW to realign services to major centres in line with customer travel patterns, aiming to minimise the need to transfer between services
- Minimise, where possible, the impact on customers of transferring between services at interchanges, for example by minimising the distance between transport nodes and providing legible wayfinding between nodes
- Provide for short-term private vehicle access, rather than long-term access, at stations through kiss-and-ride, taxi and rideshare spaces.

Planning is currently underway for a new metro line to the Western Sydney International Airport with an Environmental Impact Statement released in October 2020. Sydney Metro West would include the provision of stub tunnels from the twin tunnels near Westmead metro station to safeguard a potential future extension of the metro network.

The specific interchange arrangements for metro stations including Burwood North Station would be outlined in the Environmental Impact Statement(s) for future stages.

6.6.10 Stub tunnels

Stakeholder identification numbers

SE-125840

Issue raised

Submitter suggested stub tunnels be constructed to safeguard a potential extension of the metro to the south-east to Waterloo-Zetland.

Response

As identified in Section 6.7.8 of the Environmental Impact Statement, the preferred location for a Sydney CBD station is being investigated. The Sydney CBD metro station would enable interchange with existing public transport networks, including Sydney Metro City & Southwest, the existing Sydney Trains suburban rail network, the light rail and bus networks, enabling connections to the south-east via public transport. The station strategy and key features for the Sydney CBD including the provision of any stub tunnels for future extensions would be developed once the location is determined. The *South East Sydney Transport Strategy* (Transport for NSW, 2020) was released in August 2020 and identifies an extension of Sydney Metro West to the south-east via Zetland and Randwick.

6.6.11 Construction program

Stakeholder identification numbers

SE-127366, SE-127726

Issue raised

Submitters queried the estimated construction program for later stages of the project and what the noise and vibration impacts might be.

Response

The construction program for future stages of Sydney Metro West would be provided as part of the relevant Environmental Impact Statement.

Potential noise and vibration impacts associated with both operation and construction of the Concept are identified in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. Chapter 8 also identifies performance outcomes for the Concept to be implemented during future stages.

Further noise and vibration impact assessments would be carried out at future stage(s) to determine potential impacts during both construction and operation. The scope of each assessment may vary depending on scope of the construction or operational works proposed for that stage and would be undertaken in accordance with any scoping report(s) or Secretary's Environmental Assessment Requirements issued for that staged assessment.

6.7 Placemaking

6.7.1 Integration with site

Stakeholder identification numbers

SE-125934, SE-127686, SE-127783, SE-127793

Issue raised

Submitters raised the following comments regarding the integration of the project with the site:

- Comment that it is difficult to assess how The Bays Station will interact with the surrounding neighbourhoods, as no solid plans have been released by the State Government as to how The Bays Precinct will evolve

- Comment that entry and exit points at the Sydney Olympic Park metro station should be configured to deliver an improved journey experience for passengers by minimising underground tunnels and integrating access points with the broader Sydney Olympic Park Central Precinct masterplan
- Comment that St Alban's Anglican Church (Five Dock) requests further engagement with the placemaking team to ensure successful urban design outcomes and integration of the Five Dock Station with the heritage church
- Comment that St Luke's Anglican Church in Burwood North is open to exploring opportunities to enhance and integrate its site, the Land and Housing Corporation site and the place making goals of the proposed Burwood North Station.

Response

Section 6.5 of the Environmental Impact Statement identifies a number of station design considerations which include principles for placemaking and activation to ensure stations would provide a new public domain as well as integrating with the existing public realm.

Precinct-specific considerations which are guiding the design and placemaking for the Concept are detailed in Section 7.10 of the Environmental Impact Statement. This includes integration with land use planning, and setting preliminary place and design principles. The preliminary place and design principles for The Bays Station are:

- Support the establishment of The Bays Precinct by facilitating well-designed high quality station, public domain and development
- Ensure station and precinct designs are coordinated with wider precinct planning frameworks
- Facilitate intuitive and accessible interchange between Sydney Metro and other modes
- Enhance legibility and accessibility through The Bays Precinct by facilitating connections to White Bay Power Station, Anzac Bridge and White Bay
- Promote active street frontages in development around the station to support a vibrant public domain and public amenity in this important harbourside precinct
- Ensure key view corridors frame the new precinct.

The preliminary place and design principles for Sydney Olympic Park metro station are outlined in Section 7.10.3 of the Environmental Impact Statement. This would include supporting the creation of a new town centre and reinforce Sydney Olympic Park as a premier destination for major events in line with the principles outlined in the Sydney Olympic Park 2030 masterplan. Placemaking at the Sydney Olympic Park metro station would aim to enhance permeability with new pedestrian links and connections to places within the wider station precinct supported by active street frontages, and new open spaces. Placemaking would also ensure the station provides easy, safe and intuitive interchange with other modes of transport, during day to day operation and events.

Section 7.10.6 of the Environmental Impact Statement outlines the preliminary place and design principles for Five Dock Station and includes a commitment to respect and contribute to the local character and amenity of the Five Dock Town Centre. Sydney Metro would continue to consult with St Alban's Anglican Church regarding urban design and placemaking plans associated with future stages of the Sydney Metro West.

Section 7.10.5 identifies that one of the preliminary place and design principles for Burwood North Station is to facilitate transit-oriented development with public spaces and local services that support the station as a focal point for activity. Sydney Metro would continue to consult with St Luke's Anglican Church and explore opportunities to integrate Burwood North Station with the surrounding area.

Future station and precinct design stages would show how stations would interact with their surrounding areas. This information would be included in future stage Environmental Impact Statement(s) and include further assessment and community and stakeholder input.

6.7.2 Public art

Stakeholder identification numbers

SE-127818

Issue raised

Submitter commented that local artists and schools should be commissioned to supply artwork in keeping with the place and local character.

Response

Future station and precinct design would include the development of a public art strategy for Sydney Metro West. This strategy would be prepared in future project stages with more information made available in future Environmental Impact Statements.

In accordance with mitigation measure LV6 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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.

6.7.3 Water sensitive urban design

Stakeholder identification numbers

SE-127757

Issue raised

Submitter commented that a greater nexus should be established between the place and design principles and positive design outcomes. The submitter recommends the following place and design principle be included for all metro stations:

Maximise pervious surface area and deep soil vegetation on site to improve stormwater runoff outcomes and reduce the urban heat island effect, which will contribute positively to green grid and water sensitive urban design outcomes.

Response

Section 7.9 identifies that Sydney Metro has committed to incorporating water sensitive urban design strategies into the design of Sydney Metro West, where feasible.

A Sydney Metro West Sustainability Plan is being developed to set out the sustainability principles, objectives and initiatives including performance targets and outcomes which would be adopted for all project lifecycle phases, including design. Initial principles to govern sustainability outcomes are provided in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement and includes a commitment to provide and promote green infrastructure by integrating water sensitive design solutions into the planning, design, construction and operation of the project.

6.7.4 Public safety

Stakeholder identification numbers

SE-127862

Issue raised

Submitter commented that Metro West needs to serve all people's needs, especially those who are likely to be vulnerable such as the elderly, parents or carers with young children, and women travelling alone.

Response

Sydney Metro West stations would be fully accessible for people with a disability, prams and children, including level access between platforms and trains. As provided in Section 6.4 of the Environmental Impact Statement, metro trains would provide customer amenities such as accessible priority seating for mobility impaired, the elderly and people with a disability or using a wheelchair or mobility device. Metro trains would also include spaces for prams or strollers for parents travelling with young children. Design of Sydney Metro West would be in accordance with relevant accessibility guidelines and standards (including the *Disability Discrimination Act 1992* and *Disability Standards for Access to Public Transport*), which outline provisions for good access for people with disabilities, the elderly and passengers with prams or luggage.

Section 6.5.1 of the Environmental Impact Statement includes preliminary design considerations for metro stations which identifies station safety and security as an important aspect where the safety of customers, staff and areas surrounding the station would be considered in design of the stations and incorporate crime prevention through environmental design principles. This would involve incorporating, as a minimum, the three main crime prevention through environmental design strategies:

- **Natural access control** – public spaces would be designed to attract people to use them, and access would be restricted to areas where customers or the public are not permitted to enter
- **Natural surveillance** – design would enable visibility from surrounding areas, providing for passive surveillance of customers and the community using the station precinct
- **Territorial reinforcement** – clear demarcation would be provided between public and private spaces, encouraging people to use public spaces with a sense of care and ownership.

The station designs would be developed with consideration given to these principles, to provide safe and secure places for customers and the wider community.

6.7.5 Station design and interchange

Stakeholder identification numbers

SE-126291, SE-126752, SE-126810, SE-127678, SE-127751, SE-127370, SE-127504, SE-127812, SE-127364, SE-126161

Issue raised

Submitters raised the following comments regarding metro station design and interchange:

- Comment that The Bays station should include extended pedestrian tunnels to provide access from Robert Street, Maritime Circuit and Glebe Island Bridge
- Comment that an integrated transport interchange should be constructed in Westmead which combines the metro station and Westmead Station
- Comment that the project should encourage placemaking opportunities including a high-quality public domain and good pedestrian connections
- Comment that North Strathfield should be the subject of placemaking as part of Sydney Metro West
- Comment that the proposed overhead connection between the North Strathfield metro station and the existing North Strathfield Station does not provide all-weather access between the two stations
- Comment that a subterranean connection between the North Strathfield metro station and the existing North Strathfield Station would deliver a significantly improved interchange capability
- Comment that North Strathfield metro station is proposed to have a single access point, where all other stations appear to have multiple access points
- Request for further information and consultation regarding placemaking strategies for Sydney Olympic Park metro station.

Response

Section 6.5 of the Environmental Impact Statement provides information on preliminary design considerations for metro stations. Section 6.7 of the Environmental Impact Statement includes a section on each metro station which describes the intended key features including proposed station entry, station function, transport interchange and whether provision would be made for future integrated station and precinct development (which would be subject to future planning approvals). The approach to design and placemaking for the Sydney Metro West Concept, as well as site-specific place and design principles for each metro station and facility, are also provided in Chapter 7 (Placemaking) of the Environmental Impact Statement. Specific placemaking principles for North Strathfield metro station are outlined in Section 7.10.4 of the Environmental Impact Statement and would include:

- Facilitating direct interchange between Sydney Metro and Sydney Trains services on the T9 Northern Line and easy connections with other modes
- Ensuring legible, safe and intuitive station access to the east and west of the existing rail corridor
- Supporting an active public domain area focused on Queen Street
- Enabling an easy connection across the existing rail corridor and to key destinations including the Bakehouse Quarter and the Powells Creek open space corridor.

Future detailed design of stations and precincts would further develop the design and proposed plans for stations including entries and interchanges. These designs would be subject to future environmental assessment and planning approvals and would also include community and stakeholder engagement.

6.8 Concept environmental assessment

6.8.1 Property and land use

Stakeholder identification numbers

SE-125807, SE-125934, SE-126666, SE-126752, SE-126810, SE-127246, SE-127249, SE-127364, SE-126161

Issue raised

Submitters raised the following comments and concern regarding impacts of the project on property and land use:

- Comment that the project will result in zoning near metro stations changing towards increased residential density to maximise the benefit of direct access to the infrastructure
- Comment that the NSW Government should promote development uplift west of North Strathfield Station in the Homebush-North Strathfield GPOP Precinct to support Sydney Metro West
- Concern that there is not enough green open space around Burwood North Station.

Response

Residential development near metro stations

Sydney Metro West would link new communities to rail services and support employment growth and housing supply. This planned growth in the corridor may not otherwise be achieved without Sydney Metro West as current transport accessibility and amenity would potentially restrict planned growth from being realised by businesses, workers and residents.

The Sydney Metro West corridor, from Westmead to Sydney CBD, is an important corridor which would significantly enhance the intercity linkage between the Central River City of Greater Parramatta and the Eastern Harbour City of the Sydney CBD. Sydney Metro West supports the key directions outlined in the *Greater Sydney Region Plan: A Metropolis of Three Cities* (Greater Sydney Commission, 2018a) including supporting greater housing supply. Planned growth and renewal around stations offers opportunities to activate or revitalise the public domain, creating unique and safe places. In the design of each station, consideration would be given to the opportunities for the station to be more than just a transport node, but also an active and vibrant place, with public domains designed to encourage walking, cycling and social interaction that provides value and amenity to the wider community.

In June 2017, the Department of Planning, Industry and Environment announced Burwood, Strathfield and Homebush as a Planned Precinct. Following this, early investigations began to understand the required infrastructure and open space to meet growing demand. The Department of Planning, Industry and Environment has now identified that these areas would be subject to a collaborative planning approach. This would likely involve the Department of Planning, Industry and Environment having a coordination role to facilitate partnerships between the City of Canada Bay, Burwood Council and Strathfield Council and state agencies to drive quality place outcomes. Sydney Metro would continue to work with stakeholders to support planned growth at North Strathfield.

Green space around Burwood North Station

As part of the Greater Sydney Region and District Plans, the Sydney Green Grid provides a spatial framework to underpin *Greener Places*, the draft green infrastructure policy (Office of the Government Architect, 2017). The Sydney Green Grid proposes the creation and consolidation of a 'network of high quality green areas that connect town centres, public transport networks and major residential areas,' enhancing open space throughout Greater Sydney.

With Sydney Metro West following the Parramatta River from Westmead to the Sydney CBD, there are opportunities for the stations and surrounding public domain to connect to or enhance the Sydney Green Grid. St Luke's Park and Concord Oval Green Link have been identified as a Green Grid project opportunity, which would seek to connect active transport to these key open spaces. The Parramatta Road Urban Renewal Corridor is also identified as a project opportunity, with the potential to improve access to open space along the corridor as renewal occurs. A Sydney Metro West station at Burwood North would support improved access to these open spaces by significantly improving transport connectivity in the area.

6.8.2 Landscape character and visual amenity

Stakeholder identification numbers

SE-127740

Issue raised

Submitter expressed concern that Five Dock Station would be three storeys and overshadow Fred Kelly Reserve.

Response

The Environmental Impact Statement considers the design of Five Dock Station at a concept level only and does not include the end-state design of the station. This would be subject to further assessment as part of future stage Environmental Impact Statement(s). The opportunity to generate activity around Great North Road and Fred Kelly Place was a key consideration in site selection for Five Dock Station. Place and design principles for Five Dock Station include respecting and contributing to the local character and amenity of the Five Dock Town Centre and supporting an enhanced Fred Kelly Place, in consideration of the principles outlined in the Five Dock Town Centre Urban Design Study (refer to section 7.10.6 of the Environmental Impact Statement).

While potential future integrated station and precinct development would not be precluded by the design, any such development would be subject to future detailed station and precinct design and a future environmental assessment and a separate future planning approval and would be undertaken in consultation with the community, City of Canada Bay Council and key stakeholders.

6.8.3 Flood resilience

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queried whether Sydney Metro West would be flood resilient if the existing flooding risks increases over the operational lifespan.

Response

Sydney Metro West would be designed to meet the operational performance outcomes for hydrology and flooding listed in Table 8-46 of the Environmental Impact Statement. This includes the requirement that metro tunnels and other critical infrastructure would be protected from the probable maximum flood, or be 0.5 metres above the one per cent Annual Exceedance Probability flood level (whichever is greater).

Detailed flood analysis was undertaken as part of the assessment of Stage 1 of the project. This identified that the probable maximum flood level at the tunnel dive crest under current climate conditions is 7.08 metres Australian Height Datum (AHD), while the probable maximum flood level at the stabling and maintenance facility varies from 5.85 metres AHD to 6.55 metres AHD. The modelling indicates that the dive structure, tunnel portal and the stabling and maintenance facility site is above the influence of the predicted sea level rise of 0.9 metres in the year 2100. Therefore, under the climate change scenario, with sea level rise, the probable maximum flood level remains at existing levels. No increase in the flood protection level is required to account for the effects of climate change on flooding (refer to Table 21-5 of the Environmental Impact Statement).

6.8.4 Operational noise and vibration

Stakeholder identification numbers

SE-126476, SE-127802, SE-127864, SE-127686, SE-127793

Issue raised

Submitters had the following requests, queries and concerns regarding operational noise and vibration impacts:

- Request for further information regarding the depth of tunnel and potential operational noise and vibration impacts in North Strathfield
- Concern regarding operational noise and vibration impacts based on issues on the Chatswood to Sydenham metro line
- Query regarding mitigation measures to ensure operational ground borne noise and vibration aren't experienced at residential properties above the tunnel alignment
- Concern regarding operational noise and vibration impacts on the Five Dock Square building
- Support for the use of resilient track form at Five Dock to mitigate operational ground borne noise impacts on St Alban's Anglican Church
- St Alban's Anglican Church requests to be informed of detailed assessment and mitigation measures proposed for potential airborne noise impacts of aboveground infrastructure associated with Five Dock Station
- Support for the use of resilient track form at Burwood North to mitigate operational ground borne noise impacts on St Luke's Anglican Church
- St Luke's Anglican Church requests to be informed of detailed assessment and mitigation measures proposed for potential airborne noise impacts of aboveground infrastructure associated with Five Dock Station.

Response

Operational noise impacts

The depth of the top of the tunnel at the North Strathfield metro station would be between 18 and 20 metres below ground level.

Section 8.5 of the Environmental Impact Statement provides a qualitative assessment of the potential operational noise and vibration impacts from the Sydney Metro West at a Concept level.

Performance measures have been developed in relation to noise and vibration for operation and construction of the Concept, provided in Table 8-13 of the Environmental Impact Statement.

The project would be designed to meet relevant operational noise and vibration guidelines including:

- The *Rail Infrastructure Noise Guideline* in relation to potential airborne noise, ground-borne noise and vibration impacts
- *Assessing vibration: a technical guideline* (Department of Environment and Conservation, 2006) in relation to potential human comfort vibration impacts to vibration impacts to sensitive equipment
- The *Noise Policy for Industry* (EPA, 2017) in relation to potential noise from fixed facilities such as station and services facilities.

Where there is the potential for ground-borne noise and vibration impacts from operational rail lines in tunnels, the use of resilient track forms would be considered. There are several types of resilient track form that may be used, depending on the likely level of impact at locations along the Concept corridor. The need for resilient track forms would also depend on the extent of the predicted ground-borne noise and vibration impacts (to be determined during future stage environmental assessments), which can be influenced by a range of operational factors including train speed, tunnel depth, tunnel design and position of track turnouts.

Potential operational noise and vibration impacts of Sydney Metro West would be assessed further as part of future stage Environmental Impact Statement(s). Assessments would determine the need for appropriate noise attenuation measures at stations and services facilities, such as equipment selection, positioning of plant and ventilation discharges, in-duct attenuators, and acoustic enclosures.

Further consultation with sensitive receivers

St Alban's Anglican Church and St Luke's Anglican Church's support for the use of resilient track form at Five Dock is noted. Any use of resilient track form and details of any above ground infrastructure including any noise impacts would be considered in further detail as part of a future stage Environmental Impact Statement(s). Future stage Environmental Impact Statements will be placed on public exhibition for comment and feedback.

6.8.5 Greenhouse gases

Stakeholder identification numbers

SE-127377

Issue raised

Submitter expressed concern that with increased urban development near metro stations, there would be an increase in greenhouse gases and other environmental impacts.

Response

Section 8.20 of the Environmental Impact Statement outlines sustainability and climate change related commitments and broadly lists targets and initiatives to be implemented during project development. These initiatives would aim to, among other things, reduce energy and carbon emissions, establish energy efficiency and renewable energy targets, and manage resources efficiently.

Sydney Metro would offset 100 per cent of greenhouse gas emissions associated with consumption of electricity during operation of the railway.

Sydney Metro West would link new communities to rail services and support employment growth and housing supply. This planned growth in the corridor may not otherwise be achieved without Sydney Metro West as current transport accessibility and amenity would potentially restrict planned growth from being realised by businesses, workers and residents. When operational, Sydney Metro West would provide an attractive alternative mode of public transport that may result in a mode shift from road to rail. Analysis undertaken by Sydney Metro shows that total network wide car trips would be reduced by about 83,000 weekday trips by 2036 and about 110,000 weekday trips by 2056. Subject to the extent of mode shift, the Concept would have the potential to result in a net reduction in greenhouse gas emissions.

While Sydney Metro West would not preclude growth in other parts of Sydney, it would support planned growth along the Parramatta to Sydney CBD corridor by providing additional transport options. Growth away from transport corridors could lead to an increased reliance on road transportation and alternatively, lead to increased greenhouse gas emissions.

6.8.6 Transport and traffic

Stakeholder identification numbers

JAE-010, JAE-011

Issue raised

Submitters raised concern about traffic management and congestion on already congested streets once the project is operational and queried what measures will be in place to mitigate congestion.

Response

Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement provides an assessment of potential operational traffic impacts of Sydney Metro West. Performance measures have been developed for operation and construction of the Concept, described in Table 8-7 of the Environmental Impact Statement. Further assessment of potential operational traffic impacts would be undertaken as part of future stage Environmental Impact Statement(s) and would include mitigation measures to manage potential impacts.

Section 2.4.1 of the Environmental Impact Statement identifies that by encouraging people to use the metro network, Sydney Metro West would provide the opportunity for mode shift from car to public transport. This could result in road user travel time savings by reducing the numbers of vehicles on the road network. Analysis undertaken by Sydney Metro shows that total network wide car trips would be reduced by about 83,000 weekday trips by 2036 and about 110,000 weekday trips by 2056. The potential reduction in private vehicle car use could create benefits in the form of:

- Car use travel time savings and improved reliability for remaining car users who do not shift modes
- Reduction in environmental impacts to communities such as air pollution, greenhouse gas, noise and water pollution.

It is acknowledged that once operational there is potential for a localised decrease in the performance of some intersections near metro stations during peak periods associated with commuters using kiss-and-ride facilities, however this would likely be relatively minor in comparison to the broader road network improvements. Further assessment of operational traffic impacts would be undertaken as part of future detailed design of station precincts in the next stages of the project. Future stage Environmental Impact Statements will be placed on public exhibition for comment and feedback.

6.8.7 Biodiversity

Stakeholder identification numbers

SE-127757

Issue raised

Submitter commented that the project should aim for a positive increase in tree plantings rather than 'no net loss of trees'.

Response

Opportunities for the retention and protection of existing street trees and trees within construction sites would be identified prior to construction, along with opportunities to replace trees in the nearby communities in consultation with local councils, however some trees would require removal to facilitate the works.

As set out in mitigation measure LV14, opportunities would be investigated with council to provide plantings in proximity to the impacted areas prior to construction commencing, where feasible and reasonable. The performance outcomes for the Sydney Metro West Concept (refer to Section 27.9 of the Environmental Impact Statement) also identify that there would be no net loss of tree numbers and tree canopy. As set out in mitigation measure LV13, trees removed by Stage 1 of the works for Sydney Metro West would be replaced to achieve no net loss to tree numbers and/or canopy in proximity to the site, as a minimum, in the long term (and part of future stages of Metro West).

Further assessment of urban tree canopy improvements around station precincts will be prepared as part of a future stage Environmental Impact Statement(s), in consultation with councils.

6.8.8 Soils and surface water quality

Stakeholder identification numbers

SE-127757

Issue raised

Submitter recommends a 'post construction' or 'staged application' assessment framework be established to adequately assess the impacts of increased runoff from developed sites as a result of the project.

Response

Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement provides an assessment of the potential soils and water quality impacts associated with the Concept. Further assessment would be carried out during future stages Environmental Impact Statement(s) and would consider any potential runoff from construction sites as a result of future stage works. These would be prepared in accordance with Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979*.

6.9 Stage 1 description

6.9.1 Project footprint

Stakeholder identification numbers

SE-127866

Issue raised

Submitter expressed concern that the strip of land labelled 'Required for future stage' near Clyde Stabling and Maintenance Facility is too close to the creek.

Response

Figure 9-17 of the Environmental Impact Statement shows a section of land within the redundant T6 Carlingford Line corridor, required for the construction of future stages of Sydney Metro West. This land is not close to any major waterways.

6.9.2 Tunnel design and alignment

Stakeholder identification numbers

SE-126769, SE-127366, SE-127854, SE-127419

Issue raised

Submitters raised the following requests, queries and concerns about the design of the tunnel and its impact on groundwater and ground movement:

- Concern that the Sydney Metro West tunnels and the M4 East Tunnels are so close (in a similar vertical and horizontal axis) and through the same geology. Suggest shifting the North Strathfield metro station north by around 100 metres.
- Concern about delays and challenges around using road headers to excavate the spur line to the Clyde Stabling and Maintenance Facility due to conflicts with the existing rail lines and water inundation
- Request details on the location and depth of the tunnel at Five Dock and request that the tunnel be constructed at a maximum depth and in accordance with international best practices
- Query as to why the two tunnels are further apart at Five Dock Station compared with other parts of the tunnel alignment.

Response

The design and alignment of Sydney Metro West has been influenced by a number of factors including (but not limited to) avoiding known built form constraints including existing infrastructure (including other rail and road infrastructure), buildings, basements, utilities, and minimising potential impacts on environmental and social features. Detailed geotechnical investigations have been undertaken as part of the project development and the Sydney Metro West tunnels would not impact on, or be impacted by the M4 East Tunnels.

Section 9.4.6 of the Environmental Impact Statement identifies a dive structure and tunnel portal would be constructed within the Clyde stabling and maintenance facility. Railway infrastructure and tracks from the former T6 Carlingford Line would be removed in this section prior to the excavation of the dive structure. The dive structures would be designed and constructed to be protected from the probable maximum flood level.

Figure 9-2(f) in the Environmental Impact Statement shows the indicative tunnel alignment in Five Dock and indicates that the tunnel would be constructed at a depth of around 30 metres. The width between the tunnels at this location is determined by the expected station design. The Stage 1 alignment is indicative at this stage and has been used for the purposes of environmental assessment, including all specialist investigations. During the detailed design phase the alignment may change.

Any changes to the alignment would be reviewed for consistency with the assessment contained in this Environmental Impact Statement including relevant mitigation measures, performance outcomes and any future conditions of approval.

The tunnels would be constructed in accordance with the relevant Australian and international standards.

6.9.3 Construction program

Stakeholder identification numbers

SE-127366, SE-127773

Issue raised

Submitters raised the following queries about the construction program for Stage 1:

- Query about how long the project will last and when it is likely to commence
- Queried whether the construction program takes into account any possible variation to the proposal put forward in the Environmental Impact Statement
- Queried the duration of construction works at Five Dock and particularly under Second Street
- Queried whether the construction program is realistic given recent delays or extended construction programs on other projects in Sydney
- Queried the total duration of Stage 1 construction works, with different sections of the Environmental Impact Statement describing different times.

Response

Section 9.3 of the Environmental Impact Statement provides an indicative construction program.

Subject to planning approval, construction works would commence in late-2021. The total period for the major civil works (i.e. Stage 1 construction works) between Westmead and The Bays would be around five years followed by a further period for construction of stations, depots and rail systems, with time also required to test and commission the rail line prior to operation. Enabling works (preliminary construction works required to facilitate commencement of substantial construction) would likely begin prior to the commencement of major construction works.

The indicative program indicates that demolition could begin at the Five Dock Station construction site from late-2021 with shaft excavation works beginning around mid-2022 followed by the station cavern excavation until mid-late 2023. The tunnel boring machines that would travel under Second Street are expected to progress at a rate of around 20 metres per day. This means ground-borne noise impacts from tunnelling by tunnel boring machines at individual receivers would likely only be apparent for a few days, when the tunnelling works are directly beneath. The tunnel alignment is subject to further detailed design and therefore the duration of construction works in the vicinity of any particular location would be clearer once detailed design has been completed.

The actual program and commencement of the civil works at each construction site may vary and is subject to the final delivery strategy and actual construction program to be agreed with the successful contractor for each work package.

The opening schedule would be determined by the final construction timeframe, taking into account factors such as the planning approval process.

6.9.4 Cut-and-cover stations

Stakeholder identification numbers

SE-127726

Issue raised

Submitter queried what 'cut-and-cover' construction involves and whether North Strathfield metro station would be fully underground.

Response

Section 9.4.3 of the Environmental Impact Statement identifies that cut-and-cover construction is proposed for Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North and The Bays metro stations. A typical construction method for cut-and-cover station excavation is shown in Figure 9-10 and involves excavating a rectangular hole in the ground, which would then house the underground station. Once the station has been constructed within the excavated area, a 'cover' would be constructed over the excavation at street level such that the station would be completely underground. Each station excavation methodology is selected based on the unique conditions of the site, including the tunnel alignment, existing building basements and positioning of other underground structures. The North Strathfield metro station would be located underground within the construction site as shown on Figure 9-2(e) of the Environmental Impact Statement.

6.10 Transport and traffic – Stage 1

6.10.1 Access

Stakeholder identification numbers

SE-127582, SE-127780, SE-127625, SE-127740, SE-127364, SE-127773, SE-127780

Issue raised

Submitters had the following comments, query and concerns regarding transport and traffic access:

- Concern that the closure of Wentworth Street would impact access to the motorcycle training school
- Concern that the project would restrict access to the Five Dock Square building
- Concern that restricted traffic access on local streets would result from construction barriers and street closures
- Comment that a laneway at Five Dock from Second Avenue to the Waterview Street Car Park would provide improved access during construction
- Concern that Stage 1 would result in traffic conflicts between vehicles exiting the Five Dock Station western construction site and those entering St Alban's Anglican Church car park
- Concern that Stage 1 would result in traffic conflicts between vehicles exiting the Burwood North northern construction site and those entering St Luke's Anglican Church car park
- Query about whether access to the commercial premises known as 'The Avenue' would be obstructed from works taking place on Herb Elliot Avenue.

Response

Chapter 10 of the Environmental Impact Statement outlines temporary property access restrictions that would occur during construction. Stage 1 of the works for Sydney Metro West would not require the closure of Wentworth Street.

Access to the Five Dock Square building would be maintained.

Where property access is impacted alternative access would be provided. Any alternative access arrangements would be developed in consultation with council and potentially affected property owners. As per mitigation measure TT18 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, access to existing properties and buildings would be maintained in consultation with property owners.

Impacts to traffic access on local streets from construction barriers and street closures has been assessed in Chapter 10 (Traffic and Transport – Stage 1) of the Environmental Impact Statement.

The construction of a laneway at Five Dock from Second Avenue to the Waterview Street Car Park does not form part of the proposal for Sydney Metro West.

Sydney Metro would endeavour to minimise potential conflicts between construction vehicles and vehicles entering the St Alban's Anglican Church and St Luke's Anglican Church car parks. As per mitigation measure TT4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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

Since finalisation of the Environmental Impact Statement, it has been proposed to change the construction methodology for the northern pedestrian entry at the Sydney Olympic Park metro station from cut-and-cover construction to a mined tunnel with a cut-and-cover shaft at the northern end to join Dawn Fraser Avenue. This would connect the secondary pedestrian entry to the main station and avoid the need for temporary full or partial closures of Herb Elliott Avenue to carry out cut-and-cover works. This is described further in Chapter 4 of the Amendment Report.

As stated above, access to private properties including 'The Avenue' would be maintained.

6.10.2 Construction traffic and congestion

Stakeholder identification numbers

SE-127582, SE-127805, SE-127806, SE-126535, SE-127355, SE-127358, SE-127625, SE-127678, SE-127818, SE-127819, SE-127856, SE-127764, SE-127780, SE-126666, SE-127377, SE-127644, SE-127647, SE-127708, JAE-004, SE-127764, SE-127783, SE-127783, SE-127795

Issue raised

Submitters had the following comments and concerns regarding heavy vehicle movements and queuing:

- Comment that heavy vehicle routes and queuing areas should be identified, and that drivers of heavy vehicles that do not follow these routes should be fined
- Concern that increased numbers of vehicles on local roads would impact residents and businesses by increased traffic congestion
- Comment that trucks must not use local roads
- Concern that construction vehicle movements, including heavy and light vehicle movements, would increase existing traffic congestion, particularly during peak hours
- Concern that heavy vehicles would use local roads, including narrow roads and roads located near local schools, resulting in safety and amenity issues
- Comment that a detailed plan is needed of the extended route of heavy vehicles beyond Great North Road to the north and south, along Lyons Road, Lyons Road West and Parramatta Road
- Concern that trucks would depart during school zone hours
- Concern regarding traffic impacts on Westmead Primary School
- Concern that heavy vehicles will queue and idle in residential streets and comment that agreed truck marshalling areas are needed
- Concern that traffic congestion on main roads will lead to increased 'rat running' on local streets particularly around Sydney Olympic Park and on street near Five Dock Public School at Five Dock
- Comment that construction vehicles must abide by road rules
- Comment that roads that heavy vehicles have used should be repaired and resurfaced following construction
- Concern regarding the impacts on Hawkesbury Road, and the effects this will have on essential traffic flow such as school bus routes and emergency vehicles
- Comment that Tables 10-8 and 10-9 of the Environment Impact Statement show significant increases in vehicle traffic
- Concern that the actual impact of construction traffic is predicted to be much greater than indicated in the Environmental Impact Statement, as it is not clear if the traffic studies have considered the traffic generated from major events within the Sydney Olympic Park precinct
- Comment that spoil removal and tunnel boring machine launch should occur from Sydney Olympic Park instead of The Bays to reduce traffic impacts.

Response

Heavy vehicle routes

Indicative construction haulage routes for each construction site are identified in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement. The proposed routes have been designed in consultation with relevant road authorities using the following principles:

- Minimising the use of local and residential streets and maximising the use of arterial roads where possible
- Minimising potential interfaces with pedestrians, cyclists and other road users as much as possible.

Driver training would be undertaken, and heavy vehicles would be tracked to ensure compliance with the approved haul routes.

Impacts to local roads and schools

Traffic on local roads and in the vicinity of schools has been assessed in Chapter 10 (Traffic and Transport – Stage 1) of the Environmental Impact Statement. Opportunities to minimise congestion impacts would be further determined in consultation with Transport for NSW. In accordance with mitigation measures TT7 and TT8 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, construction site traffic would be managed to minimise movements during peak periods, during school pick up and drop off times. The proposal to transport spoil from the site up to 24 hours per day and seven days per week also provides for flexibility in staggering vehicles movements throughout the day and managing potential traffic congestion.

The *Sydney Metro Construction Traffic Management Framework* (Appendix F of the Environmental Impact Statement) provides an overall strategy and approach for construction traffic management. It establishes traffic management processes and traffic control techniques, including scheduling of heavy vehicles so that heavy vehicles do not queue on adjacent streets. The Framework also required that trucks must not park on State, Regional or local roads for the sole purpose of waiting to enter the site.

Sydney Metro's delivery partners would be required to comply with the requirements of the *Sydney Metro Construction Traffic Management Framework* and all mitigation measures related to traffic and transport in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. In particular, mitigation measure TT5 outlines additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as:

- 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
- Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.

Rat running

The minimisation of congestion impacts would also minimise the possibility of 'rat running' on local streets.

Road rules

All construction vehicles would be required to operate in accordance with NSW laws.

Damage to roads along heavy vehicle routes

As required by the *Construction Environmental Management Framework* (Appendix C), prior to the commencement of construction the Principal Contractor would prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports would include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths. Any damage caused to local roads caused by construction traffic would either be repaired or compensated in consultation with the local road authority.

Table 10-8 and 10-9 of the Environment Impact Statement show the existing traffic volumes and the existing intersection performance of the road network in Westmead.

Section 10.6.2 of the Environmental Impact Statement outlines the potential construction traffic impacts of Stage 1 in Westmead. Figure 10-5 shows the anticipated performance of key intersections in the year 2023 with and without Stage 1, for the temporary road network arrangement (e.g. during construction). Analysis of modelled intersection performance results shows that at some locations, changes to the road network to accommodate construction activities and the addition of construction traffic may not result in a change in peak hourly intersection performance.

Impacts at Westmead

Modification of the Hawkesbury Road/Alexandra Avenue intersection is forecast to improve its efficiency and overall intersection performance, and may lead to lower delays at the Hawkesbury Road/Grand Avenue and Hawkesbury Road/Bailey Street intersections.

Access along Hawkesbury Road would be maintained during construction and emergency response vehicles travelling to Westmead health precinct would not be impacted. Consultation would be carried out with emergency service providers in relation to changed traffic conditions.

Stage 1 of the works for Sydney Metro West would result in minor temporary impacts to buses currently travelling along Alexandra Avenue east of Hawkesbury Road. These buses would be detoured along Hassall Street, Bailey Street and Hawkesbury Road. The project would also require the relocation of bus stops on Alexandra Avenue between Hawkesbury Road and Hassall Street.

Sydney Metro is working with other parts of Transport for NSW regarding the optimal temporary traffic arrangements during construction at Westmead. Consultation is also ongoing with NSW Department of Education – School Infrastructure in relation to the management of construction traffic in the vicinity of Westmead Public School.

Major events

In accordance with mitigation measure TT17 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, during major events, impacts to the transport and traffic network would be reduced by minimising or ceasing construction activity, maintaining required access, permitting pedestrian access adjacent to and separate from the construction site, and scheduling deliveries outside of event periods.

Tunnel boring machine spoil retrieval location

The tunnelling methodology as identified in Section 9.4.2 of the Environmental Impact Statement identifies The Bays Station construction site as one of the tunnel boring machine launch sites. This was selected through the consideration of a wide range of factors including the availability of land to support tunnel boring machine launch activities, the distance of the site from sensitive receivers and the ease of removing spoil. The Environmental Impact Statement assesses the removal of all spoil from The Bays Station construction site by truck and proposes the impacts associated with the removal of spoil from The Bays Station construction site by truck be managed in accordance with the *Construction Traffic Management Framework*. However, Sydney Metro has identified the potential opportunity to remove spoil from the site by barge at White Bay. Further information on this opportunity is provided in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

6.10.3 Parking

Stakeholder identification numbers

SE-126535, SE-127392, SE-127625, SE-127708, SE-127780, SE-127806, SE-127377, SE-127726, SE-127805, SE-127818, SE-127819, SE-127855, SE-127582, SE-127686, SE-127780, SE-127795

Issue raised

Submitters had the following comments and concerns regarding parking:

- Concern that construction workers may park on local streets or in local car parks, restricting parking for local residents, and that 'park and shuttle' would not be an adequate response
- Concern that construction workers may park on private property or in a way that obstructs access to public property
- Concern that parking spaces on local streets and within local car parks will be removed or will be made unavailable as a result of project construction

- Comment that timed parking restrictions should be increased in local streets surrounding proposed construction sites, or that an alternative residential parking scheme should be established
- Comment that construction workers should not be permitted to park on local streets, and that instead a mandatory shuttle service for construction workers should be implemented
- Comment that a multi-storey car park should be installed in Five Dock. The car park would be used for construction worker parking during the duration of construction and used by Five Dock residents following construction.
- Comment that a residential parking scheme should be established to prevent construction worker parking on local streets. Where residential parking schemes already exist, parking facilities should be constructed for construction workers.
- Concern that patients travelling to medical facilities in Five Dock and Westmead will be unable to park due to loss of parking spaces
- Concern that the loss of on-street parking will push people to use the parking available in the Five Dock Square building
- Concern that the removal of parking at Five Dock would impact users of the St Alban's Anglican Church and childcare facility.

Response

Section 10.5 of the Environmental Impact Statement describes how car parking for construction workers would not be provided at most of the Stage 1 construction sites due to the generally constrained nature of the construction sites. With the exception of the Clyde stabling and maintenance facility construction site, each Stage 1 construction site would typically provide a limited number of parking spaces intended to be used by trade vehicles or other light vehicles that are required for travel between construction sites.

Most construction sites are near public transport services and construction workers would be encouraged to use these services. At The Bays Station construction site, the feasibility of providing shuttle bus services to transfer construction workers to and from major transport interchange(s) would be considered.

'Park and shuttle' services may also be considered by project contractors for other construction sites.

Construction workers would be encouraged to use ride sharing, public transport and active transport wherever practicable.

The construction of a multi-storey car park at Five Dock does not form part of the proposal for Sydney Metro West.

The design of the project has focused on avoiding impacts to parking. This has included modifying the design of Westmead metro station to minimise impacts on the existing commuter car parking around Westmead Station and town centre. While some parking spaces would be removed in proximity to Five Dock and Westmead construction sites, the proposed parking loss is relatively minor and is not located in close proximity to medical facilities and people accessing these services would be unlikely to use the parking spaces removed by the project. At Westmead the main medical precinct is located around 300 metres to the north and includes substantial parking spaces. At Five Dock the majority of medical related premises are located around 250 metres to the north along Great North Road between Lyons Road and Rodd Road. Consultation would also occur with the relevant local council to investigate opportunities to provide alternative parking facilities as per mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.10.4 Active transport, access and safety

Stakeholder identification numbers

SE-127245, SE-127392, SE-127708, SE-127723, SE-127805, SE-127818, SE-127819, SE-127582, SE-126755, SE-127625, SE-127773, 127795

Issue raised

Submitters had the following comments and concerns regarding pedestrian access and safety:

- Concern that pedestrian movements on local streets surrounding construction sites would be restricted
- Concern that increased traffic and heavy vehicle movements could increase the risk of pedestrian accidents
- Concern that local residents would not be able to access necessary goods and services by foot
- Comments that alternative pedestrian crossings and walkways should be implemented

- Concern that no pedestrian changes are proposed at Five Dock given the number of construction vehicles that would be entering and leaving the construction site. To ensure the safety of pedestrians, including school children, the submitter recommends a range of additional measures including additional crossings and crossing guards.
- Concern that construction work on local streets will impact the safety and access of active transport users, including pedestrians and cyclists
- Concern that construction vehicles would impact on safety of the motorcycle cycle training school users who train near Clyde stabling and maintenance facility construction site
- Comment that an alternative haulage route should be provided to improve safety for active transport users in the vicinity of the Westmead metro station construction site.

Response

Active transport movements and safety

Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement outlines the impacts to active transport that would occur during construction at each proposed construction site, including the diversion of pedestrians to temporary or alternate footpaths potentially reducing convenience. Where required, pedestrian crossings would be altered and/or signalised to improve pedestrian safety and access during construction. Pedestrian access to existing train stations would be maintained throughout construction.

As per mitigation measure TT4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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.

In accordance with mitigation measure TT5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as:

- 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
- Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.

Safety near Westmead construction site

The proposed haulage route near the proposed Westmead metro station has been chosen to minimise active transport impacts. Section 10.6 of the Environmental Impact Statement describes how access to and egress from the Westmead Station construction site would be left in from Bailey Street and left out to Hawkesbury Road. The primary haulage route uses Hawkesbury Road to access the Great Western Highway to the south.

Sydney Metro is working with Transport for NSW regarding the optimal temporary traffic arrangements during construction at Westmead. Consultation is also ongoing with the Department of Education – School Infrastructure in relation to the management of construction traffic and pedestrian safety in the vicinity of Westmead Public School. This is reflected in the new mitigation measure TT30 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

East-west connectivity would be maintained, existing signalised pedestrian crossings would be maintained or improved, and bicycle racks and lockers would be relocated close to their current location.

6.10.5 Public transport

Stakeholder identification numbers

SE-127818

Issue raised

Submitter had the following concerns regarding public transport:

- Concerns that increased traffic will delay buses
- Concerns that bus stops located close to construction sites will expose public transport users to amenity and safety concerns, and that bus stops should be relocated.

Response

Chapter 10 of the Environmental Impact Statement describes how there would be some temporary minor increases in travel times for buses due to additional construction vehicles on the road network near construction sites. There would also be temporary detours for some bus routes, which would result in minor impacts.

Bus stops would be relocated as required. Some customers may be required to walk an additional distance to alternative bus stops. The location of the relocated bus stops would be determined in consultation with Transport for NSW, relevant councils, and bus operators in accordance with mitigation measure TT12 in refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.10.6 Traffic control measures

Stakeholder identification numbers

SE-125824, SE-127593, SE-127805, SE-127818, SE-127819, JAE-004, SE-127795

Issue raised

Submitters had the following comments regarding traffic control measures:

- Comment that robust mitigation measures should be provided to mitigate traffic and transport impacts
- Comment that phasing of traffic signals should be revised in the vicinity of construction sites and heavy vehicle routes
- Comment that heavy vehicles accessing construction sites should be certified to four star direct vision standards
- Comment that traffic calming measures should be implemented on streets surrounding construction sites
- Comment that traffic signage should be improved at intersections with limited visibility.

Response

The *Sydney Metro Construction Traffic Management Framework* (Appendix F of the Environmental Impact Statement) 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.

A comprehensive list of mitigation measures was described in the Environmental Impact Statement and is presented in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. In accordance with mitigation measure TT5, additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as:

- 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
- Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.

In accordance with mitigation measure TT1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison.

6.10.7 Intersection performance

Stakeholder identification numbers

JAE-004

Issue raised

Submitter had the following concerns regarding intersection performance:

- Concern that the construction of the Sydney Olympic Park metro station will negatively impact the operation of surrounding intersections
- Concern that intersections in the vicinity of the Sydney Olympic Park metro station construction site will operate at a level of service F during construction
- Concern that reduced capacity of intersections in the vicinity of the Sydney Olympic Park metro station construction site will affect access to and from the Sydney Olympic Park business precinct, which would impact businesses
- Concern that most light vehicle movements for the construction of the Sydney Olympic Park metro station will occur during peak hours.

Response

Existing intersection performance was modelled, and results described in Section 10.10 of the Environmental Impact Statement. For key intersections near the Sydney Olympic Park metro station construction site, modelling shows that existing traffic congestion is high during peak hours, which is reflected in existing intersection performance.

Modelled intersection performance of the key intersections near the Sydney Olympic Park metro station construction site show that two intersections would experience a temporary reduced level of service with construction traffic. Of these two intersections, one is not forecast to adversely impact the arterial road network, and the other is forecast to still operate with spare capacity with the addition of Metro construction traffic. All other intersections on the construction vehicle route would perform at the same level of service compared to the scenario without construction traffic.

In accordance with mitigation measure TT7 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, construction traffic would be managed to minimise movements during peak periods.

6.11 Noise and vibration – Stage 1

6.11.1 Assessment methodology

Stakeholder identification numbers

SE-127366, SE-127366

Issue raised

Submitters had the following queries, concerns and comment regarding the assessment of noise and vibration:

- Concern that the Environmental Impact Statement did not clarify the construction methodology for Stage 1, including acoustic mitigation measures and their effectiveness
- Concern that the acoustic assessment does not provide certainty to the surrounding landholders that the acoustic impact of construction will be appropriately managed
- Comment that the assessment of the potential cumulative impacts as ‘minor’ is strongly disputed
- Concern that it is not clear how the Environmental Impact Statement has determined that the level of acoustic impact will be reduced from ‘high’ to ‘nil’ at Sydney Olympic Park metro station construction site as a result of undetermined mitigation measures
- Query regarding what the number ‘43’ relates to under the heading ‘Human comfort - night’ for the entry in relation to Five Dock Station in Table 11-17 of the Environmental Impact Statement
- Query as to what national and international standards have been considered in relation to noise and vibration impacts during tunnelling
- Query as to whether the vibration assessment has considered factors such as the age of buildings, acoustics and type of foundation.

Response

Construction methodology

The anticipated construction methodology for Stage 1 is outlined in Chapter 9 (Stage 1 description) of the Environmental Impact Statement. In relation to potential noise and vibration generating works, details of construction works are also provided in Technical paper 2: Noise and vibration. A number of acoustic mitigation measures have been incorporated in the base case construction methodology including acoustic sheds (or other acoustic measures) and noise barriers around construction sites. Details of the management approach and mitigation measures are provided in the *Sydney Metro Construction Noise and Vibration Standard* and in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Management of construction impacts

In accordance with mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with communities and sensitive receivers to determine appropriate mitigation and management options.

Cumulative impacts

Cumulative noise impacts are discussed in Section 11.15 of the Environmental Impact Statement and that section does not characterise those impacts as minor. In accordance with mitigation measure NV18 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available. Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible. 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.

Potential construction noise impacts at Sydney Olympic Park

The potential construction noise impacts for Sydney Olympic Park construction site are provided in Section 11.10.2 of the Environmental Impact Statement. Predicted impacts take into account base case noise mitigation measures (refer to Section 11.3.3 of the Environmental Impact Statement). Pre and post mitigation predictions are not provided.

Human comfort – night in relation to Five Dock Station

The number '43' in Table 11-17 of the Environmental Impact Statement refers to the number of receivers in Five Dock that were modelled as experiencing ground-borne vibration levels above the human comfort vibration criteria at night time during tunnelling activities. This means perceptible levels of vibration may occur when tunnelling works are below certain areas.

Assessment considerations

The methodology for the assessment of ground-borne noise and vibration is provided in Section 4.2 of Technical Paper 2 (Noise and vibration). The assessment of ground-borne noise and vibration impacts undertaken for the Environmental Impact Statement does not consider factors specific to individual buildings such as the age of the building, acoustics and type of foundation. The assessment of ground-borne noise and vibration is based on industry standard guidelines including:

- *Assessing Vibration: a technical guideline* (Department of Environment and Conservation, 2006)
- *BS 7385 Part 21993 Evaluation and measurement for vibration in buildings Part 2*, (British Standards Institute, 1993)
- *DIN 4150: Part 32016 Structural vibration – Effects of vibration on structures* (Deutsches Institute für Normung, 1999).

Conservative screening criteria have been adopted on the basis of the above guidelines. As per mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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, a 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.

6.11.2 Construction hours and night works

Stakeholder identification numbers

SE-125998, SE-126535, SE-127377, SE-127764

Issue raised

Submitters had the following comment and query regarding construction hours and night works:

- Comment that works should not be undertaken past 11pm
- Query whether works can be scheduled outside the operating hours of educational institutions and places of worship within proximity to construction sites.

Response

As the tunnel boring machines operate continuously, tunnelling and associated support activities such as spoil and material transport would need to be carried out on a 24 hour per day, seven day a week basis. Most surface construction works, however, would be carried out during the standard construction hours. Site specific mitigation measures have also been identified to reduce noise and vibration impacts, including acoustic sheds (or other acoustic measures), the use of alternative construction methods and programming works around more sensitive periods.

The reduction of temporary noise impacts associated with construction of the project needs to be balanced against the need to efficiently undertake construction works. While it is not possible to avoid working during operating hours of educational institutions and places of worship, as identified in Appendix E (*Construction Noise and Vibration Standard*) of the Environmental Impact Statement, when working adjacent to schools, medical facilities and childcare centres, particularly noisy activities would be scheduled outside normal working hours, where feasible and reasonable (noting that this would need to be balanced with managing potential impacts to residential receivers in out of hours periods). This would include scheduling noisy works to avoid key periods such as a major school exams and church services. As per mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with affected schools, medical facilities and places of worship to understand periods in which they are more sensitive to impact.

6.11.3 Construction ground borne noise and vibration

Stakeholder identification numbers

SE126535, SE127366, SE-127625, SE-127726, SE-127760, SE-127686, SE-127764, SE-127793

Issue raised

Submitters had the following concerns regarding construction ground borne noise and vibration impacts:

- Concern regarding impacts of construction vibration on apartment buildings near the Five Dock Station construction sites and query whether compensation will be provided for those affected
- Concern about vibration exceeding the human comfort criteria at residential properties near Five Dock Station construction site
- Concern regarding ground borne noise and vibration from tunnelling works on buildings above the tunnel alignment, particularly in Sydney Olympic Park and North Strathfield due to the tunnels shallow depth at this location
- Concern that construction vibration would result in property damage to St Alban's Anglican Church at Five Dock
- Concern that construction vibration would result in property damage to St Luke's Anglican Church at Burwood North
- Concern that construction works will result in vibration impacts to residential properties on Callan Street.

Response

Section 11.13.2 of the Environmental Impact Statement outlines the potential ground-borne noise and vibration impacts in Five Dock and identifies that some buildings near the Five Dock Station construction sites would experience exceedances of ground-borne noise and human comfort vibration criteria. The exceedances identified in the Environmental Impact Statement represent the worst-case scenario when shaft excavation works are at surface level and are, therefore, at the closest point to the affected buildings. As the works progress deeper, the impacts are expected to reduce.

Sections 11.5.1 and 11.5.2 of the Environmental Impact Statement outline the potential ground-borne noise and vibration impacts from the tunnel boring machines and identify that there would be exceedances of the ground-borne noise and vibration criteria at some receivers at North Strathfield.

These predictions represent the likely highest noise level inside sensitive receivers when the tunnelling works are directly below each receiver. The predictions are based on the nearest sensitive receivers and most exposed floor (i.e. ground floor for commercial and lowest habitable floor for residential).

The tunnel boring machines are expected to progress at a rate of around 20 metres per day. This means the worst-case ground-borne noise impacts from tunnelling at individual receivers would likely only be apparent for a few days for each tunnel boring machine, when the tunnelling works are directly beneath. As the works progress and move away, a particular receiver's exposure to ground-borne noise would reduce accordingly.

As per mitigation measure NV09 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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. 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–7am.

As per mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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.

6.11.4 Construction noise – general

Stakeholder identification numbers

SE-127366, SE-127377, SE-127523, SE-127625, SE-127855, SE-127788, SE-127793, SE-127795

Issue raised

Submitters had the following comments and concerns regarding construction noise:

- Comment that construction works during standard hours will result in an increase in noise above the existing noise levels
- Concern regarding construction noise impacting sensitive patients treated at a medical practice near the Five Dock Station construction site
- Comment that buildings surrounding Five Dock Station construction site will not be able to close windows to minimise construction noise as this will impact circulation
- Concern that construction noise would impact on students and staff at Westmead Primary School
- Concern that construction noise would impact on students at Five Dock Public School and also impact those living nearby on East Street, Garfield Street, Great North Road and Waterview Street
- Concern that construction noise would impact on St Alban's Anglican Church at Five Dock including the childcare centre, church services, gatherings and events
- Concern that construction noise would impact on St Luke's Anglican Church at Burwood North
- Concern regarding construction noise impacts on residents on Callan Street.

Response

Impacts during standard working hours

Consistent with most major infrastructure projects in urban areas, where receivers are close to construction sites (such as at Westmead, Clyde, North Strathfield, Burwood North and Five Dock) there would be temporary noise impacts during some of the works, particularly when noise intensive equipment such as rock breakers are in use close to receivers. The worst-case impacts are generally predicted to occur in the early stages of the works, such as during enabling works, piling and initial excavation, which require noise intensive equipment to be used prior to the construction of acoustic sheds (or other acoustic measures).

The management of construction noise and vibration would be in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement) which provides a comprehensive list of standard mitigation measures and additional mitigation measures for certain noise and vibration impact levels. This includes behavioural practices to reduce noise, noise source controls and shielding. Site specific mitigation measures have also been identified to reduce noise and vibration impacts, including acoustic sheds (or other acoustic measures), the use of alternative construction methods and programming works around more sensitive periods.

Impacts on sensitive receivers

As identified in the *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement), when working near schools, medical facilities, places of worship or childcare centres, particularly noisy activities would be scheduled outside normal working hours or outside of services, where feasible and reasonable (noting that this would need to be balanced with managing potential impacts to residential receivers in out of hours periods). As per mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with affected schools, medical facilities, childcare centres and places of worship to understand periods in which they are more sensitive to impact.

Sydney Metro would implement feasible and reasonable noise mitigation measures at the construction sites including the use of physical barriers where possible. Closing windows at properties would provide another layer of protection from noise impacts.

Impacts at Callan Street

An amendment to the proposed Rozelle power supply works is proposed in Chapter 7 of the Amendment Report. The proposed amendment would consolidate the power supply works required from the Ausgrid Rozelle sub-transmission station to The Bays Station with the future requirements of other projects. This would include Transport for NSW's Western Harbour Tunnel as well as future capacity for Ausgrid and Port Authority of NSW regarding their future power needs connecting to the Rozelle sub-transmission substation. Additionally, if the design and construction of these works are not coordinated it may, due to the need for separation distances between power cables and other existing underground utilities, preclude some or all of these power connections from occurring in the future. This would limit the ability to undertake future infrastructure projects and to provide power to The Bays precinct and the locality.

The delivery of the power supply works as a single package of work would result in a reduction in the potential cumulative and future impacts compared to these projects being progressed separately. The construction noise associated with the proposed amendment would be likely to still result in exceedances of greater than 20 dB above noise management levels when noise intensive equipment is being used, as described in the Environmental Impact Statement.

Noise associated with utility works would be temporary and would move progressively along the utility service corridor resulting in impacts at particular receivers for only a limited period of time. Relevant mitigation measures described in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report would be implemented to manage any noise impacts.

6.11.5 Construction traffic noise

Stakeholder identification numbers

SE-125824, SE-126535, SE-127392, SE-127818, SE-127795

Issue raised

Submitters had the following comment and concerns regarding noise from construction traffic:

- Concern regarding potential construction traffic noise 24 hours a day and seven days a week
- Concern regarding traffic noise impacts on residents located opposite construction sites and along construction vehicle routes
- Concern regarding the use of air brakes, horns, music and loud talking from construction vehicles
- Comment that road surfaces should be upgraded to reduce construction traffic noise.

Response

Tunnelling and excavation works would require material deliveries and the transport by road of substantial quantities of spoil. To avoid further impacting the operation of the road network, construction vehicle movements during the AM and PM peak periods need to be minimised. Given the volumes of spoil and space constraints at construction sites, which limit the extent of on-site spoil storage, transport of materials and spoil cannot be limited to the hours between 10am and 3pm. Some night-time vehicle movements are therefore necessary.

Construction related traffic has the potential to temporarily increase road traffic noise levels at receivers adjacent to construction haul routes. The forecast construction traffic volumes in the study area have been used to determine where potentially noticeable increases in road traffic noise (i.e. a greater than 2 dB increase above the existing noise level) is likely. Chapter 11 of the Environmental Impact Statement identifies that worst case exceedances of the construction traffic noise criteria are expected at night on a small number of streets with residential properties near the Westmead, Burwood North, and Five Dock construction sites.

As per NV05 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, air brake silencers would be used on heavy vehicles that access construction sites multiple times per night or over multiple nights. As per mitigation measure NV06 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, perimeter site hoarding would 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*) identifies a range of standard mitigation measures that would 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.

Resurfacing roads along the construction haul routes prior to construction of the project would not be feasible due to the extensive costs and construction impacts that would be incurred. This would result in additional noise impacts beyond what would be experienced from construction traffic.

6.11.6 Mitigation, management and monitoring

Stakeholder identification numbers

SE-127366, SE127377, SE-127708, SE-127726, SE-127805, SE-127855, SE-127523, SE-127760, SE-127364, SE-127793, SE-127806

Issue raised

Submitters had the following comments, queries and concerns regarding noise and vibration mitigation, management and monitoring:

- Comment that the project did not consider avoidance and minimisation of impacts at Five Dock Station construction site
- Comment that noise and vibration impacts should be mitigated as much as possible
- Query what measures will be undertaken to reduce noise impacts during construction on residents in Five Dock
- Comment that respite measures need to be put in place for residents that are accessible and understandable, including an easy access 24/7 phone hotline
- Query whether residents impacted by construction noise would be relocated
- Comment that real-time and publicly available continuous noise monitoring should be undertaken
- Concern regarding the lack of acoustic sheds at Five Dock and North Strathfield metro station
- Comment that spoil handling needs to occur within acoustic sheds
- Comment that additional consultation should take place regarding noise and vibration mitigation measures with residents and businesses
- Comment that consultation regarding exceedances of ANZECC blasting guidelines should be undertaken with lease holders at Sydney Olympic Park, rather than the freehold owner of the land
- Comment that freehold owners and ground lease owners should be notified prior to the commencement of construction blasting
- Comment that additional measures to reduce noise impacts at Five Dock including:
 - Respite periods between 12am-5am
 - Two stage airlock doors on construction sites

- Restriction of noise during school hours and at night
- Provision of at property treatment for Five Dock Public School and pre-school buildings
- Scheduling tunnelling works under Five Dock Public School for during school holidays
- Concern regarding monitoring and mitigating vibration impacts on residential apartment buildings and rectifying any potential damages to property
- Comment that mitigation and monitoring needs to consider cumulative impacts from numerous construction projects
- Support for the preparation of a dilapidation report of St Luke's Anglican Church at Burwood North
- Concern about damage to properties in North Strathfield where the tunnel alignment is shallow.

Response

Avoidance and management of impacts

A number of measures have been incorporated into the design and construction method for Five Dock Station to minimise construction noise levels. This includes the design as a binocular cavern station which minimises surface work and contains much of the excavation below ground, and the use of acoustic sheds and noise barriers at both construction sites.

The management of construction noise and vibration would be in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement) which provides standard mitigation measures and additional mitigation measures for certain noise and vibration impact levels. Site specific mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report have also been identified to reduce noise and vibration impacts, including acoustic sheds (or other acoustic measures), the use of alternative construction methods and programming works around more sensitive periods (refer to Chapter 9 (Stage 1 description) of the Environmental Impact Statement).

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 works that are likely to experience high impacts over an extended period of time. Alternative accommodation would be determined on a case-by-case basis. 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 management measures may be implemented.

Acoustic sheds

Acoustic sheds are proposed at all stations, except for Parramatta and North Strathfield construction sites where regular out of hours excavation is not proposed, although alternative means of achieving reduced noise to receivers, such as acoustic panels over the station excavations, may be adopted. Specific noise mitigation measures would be determined during detailed construction planning taking into account construction program, construction working hours and construction traffic management in accordance with the *Construction Noise and Vibration Standard* (refer to Appendix E of the Environmental Impact Statement).

Community consultation

As per mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, community preferences for noise mitigation and management would be considered. Further engagement and consultation would be carried out with affected communities to understand their preferences for mitigation and management measures. Mitigation measure NV03 specifies that appropriate respite would be provided to affected receivers in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement). When determining appropriate respite, the need to efficiently undertake construction would be balanced against the communities' preferred noise and vibration management approach.

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement) identifies that work near schools, particularly noisy activities, would be scheduled outside normal working hours where feasible and reasonable (noting that this would need to be balanced with managing potential impacts to residential receivers in out of hours periods). As per mitigation measure NV01, further engagement and consultation would be carried out with affected schools to understand periods in which they are more sensitive to impact. Dedicated Sydney Metro place managers will also continue to engage with the community, address concerns, and provide accurate and transparent information about the project.

Vibration impact and potential property damage

Where vibration levels are predicted to exceed the cosmetic damage 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, in accordance with mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. Condition surveys of buildings and structures near to the tunnel and excavations would also be undertaken prior to the commencement of excavation at each site, where appropriate, as per mitigation measure NV17. Condition surveys are discussed in more detail in Section 6.18.2 of this Submissions Report.

Blasting management

Protocols for notification prior to blasting would be established in line with mitigation measure NV12 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. When establishing these protocols, Sydney Metro would ensure that lease holders as well as freehold owners near Sydney Olympic Park metro station construction site are notified.

6.12 Non-Aboriginal heritage – Stage 1

6.12.1 Impacts to Non-Aboriginal heritage items

Stakeholder identification numbers

SE-125998, SE-127686, SE-127809, SE-127811

Issue raised

Submitter expressed the following queries and concerns about potential impacts to heritage items:

- Queries who is responsible for any damage to heritage items resulting from construction
- Query how the project will be managed to mitigate any direct impacts to significant heritage items
- Comment that there are three locally listed heritage items on the St Alban's Anglican Church Site adjacent to the Five Dock Station construction site and:
 - Query what are the potential impact of vibration on the three heritage structures and particularly the church building
 - Comment that St Alban's Anglican Church supports the preparation of a structural assessment and vibration impact monitoring
 - Query the relationship of the new station design to heritage structures
- Query whether the project will have a direct impact to the World Heritage listed Old Government House within Parramatta Park
- Comment that the Environmental Impact Statement does not identify the State significant Callan Park or the nationally significant Kirkbride Complex as heritage items or consider potential impacts to these items which are located above the alignment. Consideration must be given to the Callan Park Conservation Management Plan.

Response

The design and development of Stage 1 has focused on avoiding or minimising potential non-Aboriginal heritage impacts so that there would be no direct impacts to heritage buildings. This has included:

- Developing a tunnel alignment that avoids potential direct impacts to heritage items, in particular the World Heritage listed Old Government House within Parramatta Park

- Selecting construction sites that avoid direct impacts to State and local heritage items where possible, including the State heritage listed Parramatta Station and Roxy Cinema (Parramatta), St Alban's Anglican Church (Five Dock), and the White Bay Power Station and Glebe Island Silos (The Bays)
- Where a heritage item is within a construction site, impacts have been avoided or minimised. In Parramatta, this includes the local heritage listed shop on George Street and Kia Ora on Macquarie Street which would be retained and protected. In Sydney Olympic Park, the heritage structure associated with the State Abattoir located in the construction site would be retained and protected.

The project would not have any direct impacts to the Roxy Theatre. The project would potentially have some moderate indirect impact on five heritage items including on two heritage items of State significance; Roxy Theatre and White Bay Power Station. Impacts could include changes to visibility – such as views becoming partially obscured by construction equipment or minor changes to the areas surrounding the buildings. The proposed amendment to construction methodology at Sydney Olympic Park would lower the impact to the State Abattoirs item from the moderate impact described in the Environmental Impact Statement to a minor impact. This is described further in Chapter 4 of the Amendment Report.

The project would not have any direct or indirect impacts on the World Heritage listed Old Government House within Parramatta Park. The Westmead and Parramatta power supply routes would involve trenching within existing roads adjacent to Parramatta Park and would be within the buffer zone for the World Heritage listed Parramatta Park and Old Government House. During excavation works within the road corridor, there is potential for locally significant and State significant archaeology in undisturbed sections of the road. Impacts to fabric and visual impacts are likely to be temporary and minor.

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

Stage 1 non-Aboriginal heritage impacts would be managed in accordance with the *Construction Environmental Management Framework* (refer to Appendix D 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-Indigenous heritage items affected by the works prior to commencement of works.

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 NAH2 refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, a method for the demolition of existing buildings and/or structures at specified construction sites would be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items. As per mitigation measure NV16, where vibration levels are predicted to exceed the cosmetic damage vibration screening criteria, a 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. This 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.

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.

St Alban's Anglican Church

Section 6.9.3 of Technical Paper 3 (Non-Aboriginal heritage) provides a detailed assessment of the potential impacts of the project on the three heritage items associated with the St Alban's Anglican Church, being:

- St Alban's Anglican Church Hall and Shops
- St Alban's Anglican Church Rectory
- St Alban's Anglican Church.

The heritage assessment considers the potential for vibration impacts on the heritage items and draws from the findings of Technical Paper 2 (Noise and vibration) to consider whether vibration levels would be above the cosmetic damage screen criteria. Industry standard cosmetic damage vibration limits are specified in Australian Standard AS 2187-2, British Standard BS 7385 and German Standard DIN 4150.

The assessment identifies that of the three items, only St Alban's Anglican Church has predicted vibration levels that trigger the cosmetic damage screening criteria. As identified in the Environmental Impact Statement, further assessment (including a structural assessment) and vibration monitoring (if required) would be carried out in accordance with mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Future station and precinct design stages would show how stations would interact with their surrounding areas. This information would be included in future stage Environmental Impact Statements and include further assessment and community and stakeholder input.

Callan Park

Industry standard cosmetic damage vibration limits are contained in Australian Standard AS 2187-2, British Standard BS 7385 and German Standard DIN 4150, which specifies a cosmetic damage screening criteria for heritage buildings and structures of 7.5 millimetres per second peak particle velocity (refer to Section 11.3.8 of the Environmental Impact Statement).

Section 12.3.4 of the Environmental Impact Statement identifies that during main tunnelling works, it is anticipated that ground-borne vibration associated with tunnel boring machine use would be much lower than the 7.5 millimetres per second peak particle velocity cosmetic damage screening criteria. As such, the study area for assessment of potential impacts to heritage items does not extend to areas above the tunnel alignment that are outside the nominated study area for each construction site, as Stage 1 of the works for Sydney Metro West would have no indirect impacts from vibration on those heritage items.

6.12.2 Assessment approach

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queries the relevance of the assessment of items on Macquarie Street as the project would not be near St James Station.

Response

The Environmental Impact Statement has considered the potential impacts of the project on heritage items on Macquarie Street, Parramatta due to the proximity of the Parramatta metro station construction site.

6.13 Aboriginal heritage – Stage 1

6.13.1 Impacts to Aboriginal heritage

Stakeholder identification numbers

SE-127811

Issue raised

Submitters raised concern regarding potential cumulative impacts on the Parramatta Sand Body as a direct result of the high levels of redevelopment within the Parramatta CBD and proposed development, including Sydney Metro West.

Response

Areas of high archaeological potential within Parramatta are largely associated with areas near watercourses and the mapped extent of the Parramatta Sand Body. A large area of high potential is located within the Parramatta CBD approximately bound by the Parramatta River in the north and Hunter Street in the south. High levels of redevelopment within this area, including development of Parramatta Square, Parramatta Leagues Club and Parramatta Light Rail, has resulted in the continued reduction of the potential archaeological resource. Further proposed development including the New Powerhouse Museum, as well as development at 89 George Street, 116 Macquarie Street and 7 Charles Street would, if carried out, result in further depletion of this resource.

The potential for impacts to Aboriginal heritage was a key consideration throughout the design and development process and included locating the majority of the Parramatta metro station construction site outside of the known extent of the Parramatta Sand Body, which is known to contain a higher level of archaeological potential.

Aboriginal heritage impacts from Stage 1 of the works for Sydney Metro West would be managed in accordance with the *Construction Environmental Management Framework*. Of relevance, the *Construction Environmental Management Framework* 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.

As per mitigation measure AH2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, archaeological test excavation (and salvage when required) would be carried out where intact natural profiles with the potential to contain significant archaeological deposits are encountered at the specified construction sites, including the Parramatta metro station construction site, and the Parramatta power supply route. Excavations would be conducted in accordance with the methodology outlined in the Aboriginal cultural heritage assessment report. Undertaking archaeological investigations as part of the project provides opportunities for the salvage and management of artefacts and research potential.

6.14 Property and land use – Stage 1

6.14.1 Property impacts from site runoff

Stakeholder identification numbers

SE-127625

Issue raised

Submitter raised a concern that road works adjacent to their property would result in slurry running into their property.

Response

In some locations, road works would require the use of concrete saws which have the potential to generate slurry. Any slurry generated during road works would be managed to prevent the slurry from running offsite. This would include implementing erosion and sediment measures in accordance with *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 2004) and *Managing Urban Stormwater: Soils and Construction Volume 2* (Department of Environment and Climate Change, 2008a) (refer to mitigation measure SSWQ3).

6.14.2 Property acquisition

Stakeholder identification numbers

SE-127736

Issue raised

Submitter raised concerns about the acquisition of property and requested that no further land be acquired at Burwood North Station, specifically for subsequent stages.

Response

The design development of Stage 1 has included a focus on avoiding or minimising the need to acquire private property. This has included:

- Minimising the extent of construction sites and the need for private property acquisition
- Where possible, using existing Government owned land to avoid or reduce the need for private property acquisition. For example, the sites at North Strathfield and The Bays are wholly located on existing Government owned land.
- Locating construction sites where permanent operational infrastructure would also be required, to minimise temporary property impacts and residual land at the completion of construction

- Designing construction sites within existing cadastral boundaries where possible to minimise the need for partial acquisitions.

Despite this, a number of private properties would need to be acquired for the construction of Stage 1 including in Burwood North. It is not expected that subsequent stages of the project would require further property acquisition in Burwood North.

All property acquisition would be managed in accordance with the NSW *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms announced by the NSW Government which can be viewed online at <https://www.propertyacquisition.nsw.gov.au/property-acquisition-process>. Sydney Metro has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process.

6.14.3 Compensation

Stakeholder identification numbers

SE-127740, SE-127772, SE-127855, SE-127864, SE-127625

Issue raised

Submitters requested compensation for impacts to property associated with the project, specifically:

- Request for compensation for reductions in property values
- Request for compensation due to potential loss of tenants or reductions in rent for properties located near construction sites
- Request for compensation for businesses required to relocate due to construction noise
- Request for compensation for loss of amenity.

Response

Property values are influenced by a number of complex factors including demand at a certain point in time, economic climate, general location, accessibility, traffic, noise, and proximity to transport infrastructure and other services.

Where applicable, under the NSW *Land Acquisition (Just Terms Compensation) Act 1991*, Sydney Metro is required to compensate property owners at market value for all properties that would be directly affected by the proposal. This refers to property that is either temporarily or permanently required for the project.

To manage the potential impacts identified, a comprehensive range of mitigation measures would be implemented (refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report). The mitigation measures would be implemented in accordance with the *Construction Environmental Management Framework*, and the *Construction Noise and Vibration Standard* (Appendices D and E of the Environmental Impact Statement).

6.14.4 Underground acquisition and easements

Stakeholder identification numbers

SE-127392, SE-127366, SE-127864, SE-127364

Issue raised

Submitters raised queries and concern about underground acquisition and easements including:

- Query as to how underground acquisition works and how this will affect future use of properties in Five Dock
- Concern that once construction is complete, an easement noted on their title will prohibit any possible opportunities for future development of the house
- Query whether the project would result in restrictions on development and whether approval would be required from Sydney Metro West prior to being able to develop properties above the tunnel alignment
- Query about whether proposed basement parking construction at Sydney Olympic Park would be impacted by the project

Response

It would be necessary to acquire underground land for the construction of the tunnels once the tunnel alignment design is confirmed. This is referred to as substratum acquisition and is undertaken in accordance with the *Transport Administration Act 1988*. Under the *Transport Administration Act 1988*, compensation is not payable where stratum is required for the development of underground infrastructure.

This subsurface layer (or substratum) would be an acquisition envelope around the tunnels, including an allowance for any rock anchors to enable safe construction and long-term protection of the tunnels. Figure 14-1 of the Environmental Impact Statement illustrates how subsurface acquisition works. The Stage 1 alignment is generally shallowest at stations and at the tunnel portal with depth typically increasing between stations.

The proposed tunnel depth and alignment have been selected to minimise surface impacts, subject to considerations of customer amenity and interchange times at stations. Sydney Metro would only acquire the land it needs to safely construct the tunnels and provide for their long-term protection.

Based on assessment undertaken by Sydney Metro, subsurface acquisition would not affect the continued existing uses or in the majority of cases future uses of most properties at the surface. Subject to planning controls, landowners would generally be able to excavate foundations for a new dwelling or for second storey additions or carry out improvements such as installing a swimming pool. Based on proposed tunnel depths there may be a minor impact with respect to limiting some future development potential above Sydney Metro West infrastructure in some locations. There would be no direct impact to existing basement car parking at Sydney Olympic Park.

Ongoing assessment of this issue would continue as part of design development of the tunnel route and all efforts made to minimise impacts.

In April 2020, the Department of Planning, Industry & Environment proposed an amendment to the State Environmental Planning Policy (Infrastructure) 2007 to create a new protective underground corridor related to the proposed alignment of the Sydney Metro West project. The proposed corridor protection would require consent authorities to notify Sydney Metro of development applications within the corridor. Sydney Metro would need to provide concurrence on notified development applications before development consent can be granted by a consent authority.

Excavations would not be permitted within the proposed substratum to be acquired by Sydney Metro for the Project as the substratum is required for the construction of the railway and underground rail facilities. For development above or near the substratum, Sydney Metro will take into account the location, depth and nature of the excavations proposed in the development application and relationship with the substratum and underground rail facilities in determining whether or not to grant concurrence to the development application.

Any proposed new development within the areas referred to above will need to take the rail corridor into account in their proposed design.

Properties for which substratum acquisition is required would be identified as part of future design development. A member of the project team would contact any affected property owners and further information would be provided at that stage.

6.14.5 Construction sites

Stakeholder identification numbers

SE-127740

Issue raised

Submitters queried whether areas marked as 'materials area', 'workshops', and 'site offices' will remain following completion of construction.

Response

Chapter 9 (Project description – Stage 1) includes diagrams of the proposed construction site layouts and identifies specific areas for material storage, workshops and site offices. These figures are indicative and relate to the construction of Stage 1 only. Following completion of Stage 1, these construction sites would likely be used as construction sites for subsequent stages. At the completion of all construction stages, temporary construction support elements would be demobilised from the construction sites.

Ultimately, in most cases, the permanent operational footprint of the Concept would be located within these construction sites. However, in some instances there may be residual land at the completion of construction that is not required for operational infrastructure. Assessment for precinct uses would take place following construction if residual land is not required for operations, however this is not part of the Sydney Metro West project. Uses may support the strategic land use objectives for precincts around new metro stations.

Future land use adjustments for the concept detailed in Chapter 7 (Placemaking) would be assessed at a later stage. Any integrated station and precinct development would be subject to a separate approval process and would include consultation with the community and key stakeholders.

6.14.6 Land use impacts

Stakeholder identification numbers

SE-127757, SE-127811

Issue raised

Submitters recommend that the land use change caused by the Clyde stabling and maintenance facility be upgraded from minor impact, as it would result in a loss of the Sydney Speedway. Any net loss in RE2 zoning should be offset with residual land being designated for recreational use post construction.

Response

The NSW Government announced the relocation of speedway racing to the Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. The new speedway (Sydney International Speedway) would be located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north. The Environmental Impact Statement for the proposed Sydney International Speedway (Application Number SSI-10048) can be found on the Department of Planning, Industry and Environment Major Projects website.

Except for the Sydney Speedway, which is zoned as RE2 Private Recreation, the Clyde stabling and maintenance facility construction site is zoned as IN3 Heavy Industrial and IN1 General Industrial. As a result of Stage 1 there would be a change from industrial and recreational land uses to a transport infrastructure construction site. Consideration and assessment of the potential impacts of a stabling and maintenance facility at Clyde to existing land uses is provided in Chapter 14 (Property and land use – Stage 1), Chapter 16 (Business impacts – Stage 1) and Chapter 17 (Social impacts – Stage 1) of the Environmental Impact Statement.

6.15 Landscape character and visual amenity – Stage 1

6.15.1 Landscape character and visual amenity

Stakeholder identification numbers

SE-126535, SE-126666, SE-127377, JAE-010

Issue raised

Submitters raised the following concerns about landscape impacts:

- Concern regarding loss of natural light and overshadowing as a result of the acoustic shed at Five Dock
- Concern that the gardens at North Strathfield Station will be removed.

Response

Technical Paper 5 (Landscape character and visual impact assessment) included an assessment of potential overshadowing at Five Dock Station western construction site which showed no change from the existing overshadowing impacts to East Street from the western construction site. At the Five Dock Station eastern construction site, the acoustic shed may result in some temporary additional overshadowing of some properties located to the south and west of the site including the rear gardens of properties to the south-west where the shed would extend to the site boundary. Additional overshadowing of properties located to the west would be for a short period during the morning. To minimise this, the shed would be set back from the southern site boundary where it adjoins the existing residential property on Waterview Street. As per mitigation measure LV9, where feasible and reasonable, the location and height of the acoustic shed at the Five Dock Station (if required) would be designed to minimise overshadowing of Fred Kelly Place between 10am and 3pm in mid-winter.

Stage 1 of the works for Sydney Metro West would require the partial removal of the railway heritage gardens at North Strathfield Station, including the clipped hedges and ornamental plantings. As per mitigation measure LV11, LV12 and LV13 opportunities for the retention and protection of trees within the site would be identified during detailed construction planning. Any trees to be retained during construction would be protected in accordance with Australian Standards. Any tree removed by Stage 1 of the works for Sydney Metro West would be replaced following completion of construction.

6.15.2 Mitigation and monitoring

Stakeholder identification numbers

SE-127757, SE-127806

Issue raised

Submitters raised the following comment and request about visual and landscape mitigation:

- Comment that the current landscape character and visual amenity mitigation measures only aim to minimise impact and do not currently aspire to improve landscape character and amenity outcomes for the immediate and surrounding area. This is particularly pertinent regarding 'trees' under Table 15-48 of the Environmental Impact Statement, which should be expanded to include natural vegetation and landscaped areas for all sites covered and should aim to go beyond existing conditions by having more trees on site than are there currently.
- Request for investment in sufficiently mature planting and dedicated resources to ensure any plantings are appropriately maintained.

Response

The mitigation measures outlined in Table 15-48 are for Stage 1 which predominately relates to construction activities at each of the construction sites. Following completion of Stage 1, these construction sites would likely be used as construction sites for subsequent stages of Sydney Metro West (which would be assessed as part of a separate Environmental Impact Statement). This would include placemaking and urban design measures to improve landscape character and amenity at the station and ancillary infrastructure sites and in the immediate surrounds.

Mitigation measure LV13 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits that trees removed by Stage 1 of the works for Sydney Metro West would be replaced to achieve no net loss to tree numbers and/or canopy in proximity to the site as a minimum in the long term (and part of future stages of Metro West). New plantings would be appropriately maintained.

6.16 Business impacts – Stage 1

6.16.1 Impacts to business

Stakeholder identification numbers

SE-127625, SE-127818, SE127856

Issue raised

Submitters raised the following comment and concerns regarding impacts to businesses:

- Concern that construction works will impact businesses operating out of residential properties near construction sites and construction haulage routes
- Concern that local businesses will be impacted by construction works
- Comment that the COVID-19 pandemic has already impacted local businesses and that these businesses will be further impacted by the project.

Response

An *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 this Submissions Report.

In accordance with the *Overarching Community Communications Strategy* and mitigation measure B1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Sydney Metro would 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 works and mitigation measures contractors can provide
- Ensure businesses understand the proposed timing of the works
- 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 would endeavour to minimise impacts on individual businesses during construction.

6.16.2 Mitigation, management and monitoring

Stakeholder identification numbers

SE-127818

Issue raised

Submitter suggested the following mitigation measures to reduce impacts to businesses:

- Cafes with outdoor seating should be screened from noise impacts
- Access to businesses should be maintained and signposted with Metro providing additional marketing and promotional material for impacted businesses
- Businesses within 100 metres of construction sites should be relocated at Metro's expense.

Response

In accordance with mitigation measure B11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, small business owner engagement would be undertaken to assist small business owners potentially impacted by construction.

Where impacts are identified, feasible measures to assist specific businesses would be considered. This may include advice on ways that noise impacts can be reduced.

As per mitigation measure B13 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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. Access to existing properties and buildings would also be maintained in consultation with property owners, in line with mitigation measure TT18.

Sydney Metro is committed to engaging with businesses near construction sites in accordance with the mitigation measures described above to assist in minimising the temporary potential impacts of construction.

6.17 Social impacts – Stage 1

6.17.1 Social infrastructure

Stakeholder identification numbers

SE-125998

Issue raised

Submitter expressed concern that changes to parking and active transport links will affect access to social infrastructure services.

Response

As per mitigation measure S1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Sydney Metro would consult with managers of social infrastructure located near construction sites about the timing and duration of construction works and management of potential impacts, with the aim of minimising potential disruption to accessing social infrastructure services.

6.17.2 Inconvenience and community benefit offsets

Stakeholder identification numbers

SE-126408, SE-127806

Issue raised

Submitters made the following comment and raised concern regarding inconvenience and the need for community benefits:

- Concern that proceeding with Sydney Metro West would cause inconvenience
- Comment that additional money needs to be allocated to offset the impacts of multiple infrastructure impacts at a community level.

Response

At times during construction inconvenience would be caused to nearby receivers. This could include a temporary reduction in amenity and temporary potential impacts to people's enjoyment of everyday activities, including physical activities and social interactions in the local area due to construction noise and vibration, increased traffic and air quality. Sensitive receivers closer to the construction sites could experience greater temporary impacts of construction noise and vibration. This includes receivers with higher sensitivity including residential communities and students. These potential impacts would be managed in accordance with the Sydney Metro's *Construction Environmental Management Framework* (described in Chapter 27 (Synthesis of the Environmental Impact Statement) and the *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement), as well as the specific mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

To offset these potential impacts, as per mitigation measure S3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, a Community Benefit Plan would be developed to guide the development of community benefit initiatives (by Principal Contractors) during construction of Stage 1 to make a positive contribution to the potentially affected community. The key objectives of the plan would include:

- 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.

6.17.3 Construction worker behaviour

Stakeholder identification numbers

SE-127377

Issue raised

Submitter expressed concern that construction workers would drink alcohol, create mess on public and private property and harass local residents.

Response

Sydney Metro has established a set of values that guides its approach to the procurement and delivery of Sydney Metro. These values are:

- Safety and wellbeing
- Collaboration
- Integrity
- Innovation
- Excellence
- Achievement.

Sydney Metro has an expectation that contractors would adhere and uphold these values in their dealings with Sydney Metro, other contractors, communities and stakeholders. Our values support us working together to achieve agreed outcomes supporting the delivery of our projects across our many diverse communities.

Sydney Metro has a number of programs and initiatives in place to embed these values, guide behaviours and recognise individuals and teams for consistently demonstrating them.

In accordance with Section 4.1 of the *Sydney Metro Construction Environmental Management Framework* (Appendix D of the Environmental Impact Statement) the established Sydney Metro community liaison and complaints handling system would be utilised by contractors. This includes a 24-hour toll-free community phone line which can be used by the community to report any suspected anti-social behaviours.

6.18 Groundwater and ground movement – Stage 1

6.18.1 Property damage from ground movement

Stakeholder identification numbers

SE-127758, SE-127802, SE-127377, JAE-011, JAE-004, SE-127780, SE-127806, SE-127359, SE-127864, SE127764

Issue raised

Submitters raised the following comment, query and concerns about the potential damages to property from subsidence and ground movement:

- Concern that tunnelling activities will result in subsidence that will damage properties located above the alignment
- Concern about the proximity of underground tunnelling to an underground basement car park and structural supports in Sydney Olympic Park
- Concern that the Environmental Impact Statement has minimised/played down the potential impacts on residential properties. Submitter also expressed concerns regarding the process to prove that their property had been impacted.
- Comment that assessments of property damage need to consider the cumulative impacts
- Submitter queried whether the project would repair any structures at risk of damage prior to commencing construction to make sure they are structurally sound
- Concern that property damage on other metro projects have not been rectified and that they would not be on this metro project
- Comment that conditions of approval should be placed on the project to provide strong protections to landowners and residents properties
- Query whether dilapidation surveys will be undertaken of properties above the tunnel alignment, including all levels and basement parking, and whether properties that experience damage will be repaired by Sydney Metro
- Concern regarding the structural integrity of the Five Dock Square building during construction. Request that details of any plans that may affect the subterranean boundaries of the Five Dock Square building be provided to Building Management Committee.

Response

The tunnels and many other project elements are designed as tanked structures, meaning that groundwater seepage into the tunnels is prevented. Long-term settlement effects associated with groundwater drawdown are therefore anticipated to be minimal.

Section 18.6 of the Environmental Impact Statement identifies that a small number of buildings and structures in proximity to station sites were assessed as having a risk of possible superficial damage. As per mitigation measure GW5, a detailed geotechnical model for Stage 1 of the works for Sydney Metro West would be developed and progressively updated during design and construction. The detailed geotechnical model would include:

- 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 works.

Where building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage. This could include modifying the construction methodology to reduce potential impacts to the building or structure, or if necessary, undertaking structural improvement works.

As per mitigation measure GW6, 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.

In the unlikely event that damage occurs to any properties as a result of the project, this would be rectified by the project at no cost to the owner.

As a precaution, properties located around the station and construction sites and above the tunnel alignment would be offered a property condition survey prior to construction or tunnelling works. A property condition survey records the existing condition of a building or property by taking photographs of its inside and outside as well as other structures on the property like sheds, driveways or swimming pools. Property condition surveys would be undertaken before and after Sydney Metro construction works to provide a useful point of comparison for further investigation and assessment.

Sydney Metro would manage temporary vibration impacts by ensuring vibration levels from excavation and tunnelling are within limits identified as appropriate for properties and structures above the tunnel alignment and around station and construction sites. This is managed by modelling likely vibration levels, assessing nearby buildings, making any necessary adjustments to construction methods and then monitoring vibration levels.

In accordance with the *Overarching Community Communications Strategy* and mitigation measure B1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Sydney Metro would work with local businesses within project catchments to ensure communication and engagement is tailored to their specific needs including providing businesses with information about the project. Property damage complaints would be managed in accordance with the Construction Complaints Management System in consultation with the independent property impact assessment panel.

6.18.2 Condition surveys

Stakeholder identification numbers

SE-127366, SE-127708, SE-127726, SE-127855, SE-127864, SE-127780, SE-127685, SE-127364

Issue raised

Submitters raised the following queries about the proposed property condition surveys to be prepared for impacted properties, including:

- Query as to when property condition surveys will be completed and what measures will be taken to ensure all affected residents are aware of these surveys
- Query as to what buildings will receive property condition surveys and whether this would include 4-12 Garfield Street, Five Dock
- Query as to when properties would be advised that property condition surveys would be completed for the project
- Query as to whether property condition surveys would be independently assessed and the process to appeal the property condition surveys
- Query who would pay for the property condition surveys.

Response

As per mitigation measure GW6, 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. As a precaution, properties located around the station and construction sites and above the tunnel alignment would be offered a property condition survey to identify any pre-existing conditions prior to construction or tunnelling works – refer to mitigation measure GW6 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Properties eligible for property condition surveys would be identified by Sydney Metro project contractors as part of pre-construction planning and would generally include properties located around station and construction sites and above the tunnel alignment. Sydney Metro or the relevant contractor would contact owners of properties identified as eligible for property condition surveys.

A property condition survey records the existing condition of a building or property by taking photographs of its inside and outside as well as other structures on the property like sheds, driveways or swimming pools.

Property condition surveys would be undertaken by Sydney Metro before and after construction works, at Sydney Metro's cost, to provide a useful point of comparison for further investigation and assessment.

In the unlikely event that property damage occurs as a result of Sydney Metro works, this would be rectified by Sydney Metro at no cost to the property owner.

An independent panel may provide assistance in the resolution of property damage concerns following investigation by Sydney Metro and technical specialists in consultation with the affected property owner.

6.18.3 Groundwater drawdown

Stakeholder identification numbers

SE-127806

Issue raised

The submitter expressed concern about potential impacts of groundwater drawdown from tunnelling and the potential impacts on the local environment and landscaping.

Response

Estimates of groundwater level drawdown as a result of Stage 1 excavation at each construction site are provided in Technical Paper 7 (Hydrogeology) and are discussed in Chapter 18 (Groundwater and ground movement) of the Environmental Impact Statement.

Mitigation measures to address the impacts of groundwater drawdown, including the potential for potential reduced baseflow in nearby watercourses, are included in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.19 Soils and surface water quality – Stage 1

6.19.1 Soils and surface water quality

Stakeholder identification numbers

SE-127866, SE-127757, SE-127806

Issue raised

Submitters raised the following comments and concern about soil and surface water quality:

- Comment that the proposed mitigation measures do not address all potential impacts identified in Chapter 19 of the Environmental Impact Statement. Mitigation measures should also include passive measures such as increasing landscaped areas, passive vegetation filtration and permeable surfaces.
- Concern regarding erosion from works at the Clyde Stabling and Maintenance Facility construction site and the new crossing over Duck Creek entering the waterway

- Comment that the project should consider the Greater Sydney Harbour Coastal Management Plan (currently in development) required under the *Coastal Management Act 2016* when finalising environmental controls for construction
- Comment that mitigation measures are needed to address potential acid sulfate soils.

Response

The mitigation measures outlined in Chapter 19 of the Environmental Impact Statement aim to mitigate potential erosion and water quality impacts associated with active construction sites. The use of passive erosion measures such as increasing landscape areas and permeable surfaces is not appropriate on active construction sites which are subject to surface disturbance through use of trucks, plant and equipment. These measures would be considered as part of the end-state design of stations and ancillary infrastructure.

As per mitigation measure SSWQ3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, erosion and sediment measures would 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 2008), commonly referred to as the 'Blue Book'. 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 *Managing Urban Stormwater: Soils and Construction* and *Managing Urban Stormwater, Volume 2D: Main Road Construction* (DECC, 2008).

Additionally a Soil and Water Management Plan and progressive erosion and sediment control plans would be completed in accordance with Sydney Metro's *Construction Environmental Management Framework* which is described in Appendix D of the Environmental Impact Statement.

The Greater Sydney Harbour Coastal Management Plan is still in development with a Stage 1 scoping study completed in 2018. The proposed measures to protect water quality identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report are consistent with first objective identified in the scoping study, which is to protect and enhance natural processes and environmental values of the Greater Sydney Harbour coastal zone.

Mitigation measure SSWQ1 in Chapter 8 (Revised environmental mitigation measures) addresses potential acid sulfate soils.

6.20 Contamination – Stage 1

6.20.1 Contamination impacts

Stakeholder identification numbers

SE-127686, SE-127793

Issue raised

Submitters raised the following concerns regarding contamination:

- Concern that the project would result in contamination impacts on the St Alban's Anglican Church associated with excavation and transportation of contaminated materials during tunnelling
- Concern that the project would result in contamination impacts on the St Luke's Anglican Church associated with excavation and transportation of contaminated materials during tunnelling.

Response

Mitigation measures C1 to C3 in Chapter 8 (Revised environmental mitigation measures) establish a risk based approach to contamination that ensures that areas with potential contamination would be subject to detailed site investigations, and appropriately remediated if required.

Sampling and testing of soils in areas of potential contamination concern would be conducted to characterise the soils, identify reuse opportunities and determine the appropriate waste classification for off-site disposal (which may include hazardous wastes or special wastes). Characterisation would be carried out in accordance with guidelines made or approved under the *Contaminated Land Management Act 1997*. Waste classification would be carried out in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW Environment Protection Authority, 2014). The transport of any contaminated materials would be carried out by appropriately licenced contractors.

A Soil and Water Management Plan would be prepared to manage potential contamination impacts, consistent with the *Construction Environmental Management Framework* (Appendix D of the Environmental Impact Statement). The Soil and Water Management Plan would detail requirements for the tracking and transport of waste materials to be undertaken in accordance with Environment Protection Authority and relevant legislative requirements.

The Soil and Water Management Plan would also include management measures for contaminated material (soils, water and building materials) and a contingency plan in the case of an unexpected discovery of contaminated material. Potential contamination would also be managed in accordance with the mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.20.2 Mitigation, management and monitoring

Stakeholder identification numbers

SE-127757, SE-127806

Issue raised

Submitters made the following comments regarding mitigation measures for contamination:

- Comment that the following guidelines should be considered when adopting screening criteria for spoil contamination:
 - National Environment Protection Measure Health Investigation Levels (HILs) (NEPC 1999 amended 2013a) for public open space, HIL-C
 - National Environment Protection Measure Health Screening Levels (HSLs) (NEPC 1999 amended 2013a) for volatile petroleum hydrocarbons, relevant to exposures in public open space areas, HSL-C
 - CRC CARE Health Screening Levels (CRC CARE 2011)
- Comment that the Environmental Impact Statement does not provide detail on the capacity of the water treatment plant to treat contaminated groundwater which could potentially be encountered
- Comment that for the screening of surface water concentrations, a recreational water guideline that is 10 times higher than drinking water guidelines is recommended. Where drinking water guidelines are not available from National Health and Medical Research Council or the World Health Organisation, United States Environment Protection Agency Regional Screening Levels for tap water may be used.
- Query about what happens if the water treatment plants are not able to operate or where a large flood occurs.

Response

Sampling and testing of soils in areas of potential contamination would be conducted to characterise the soils and determine the appropriate waste classification (which may include hazardous wastes or special wastes). Characterisation would be carried out in accordance with guidelines made or approved under the *Contaminated Land Management Act 1997*. Waste classification would be carried out in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW Environment Protection Authority, 2014).

The suitability for beneficial reuse of tested soils would also be determined in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, 1999) and the Environment Protection Authority NSW resource recovery framework.

Construction water treatment plants would be required at the tunnelling support sites and each construction site and would treat all intercepted groundwater. Water treatment plants would be configured so that treated water is compliant with the ANZECC/ARMCANZ (2000) guideline values as outlined in Section 19.5.2 of the Environmental Impact Statement, which would either maintain or improve the water quality of surface waterways and the marine environment. Discharges from the wastewater treatment plants would be monitored to ensure compliance with any discharge criteria in an environment protection licence(s) issued for Stage 1.

Construction water treatment plants would be designed with sufficient capacity to treat water used in the tunnel boring machine processes, groundwater ingress, runoff into tunnel portals, machinery washdown water and dust suppression water. Management protocols would adequately address circumstances where any of the water treatment plants temporarily cannot operate.

6.21 Hydrology and flooding – Stage 1

6.21.1 Flood protection

Stakeholder identification numbers

SE-126769

Issue raised

Submitter expressed concern regarding flood protection of the declines and tunnel between Clyde and Sydney Olympic Park.

Response

Section 4.1 of Technical Paper 9 (Hydrology and flooding) considers the potential for flood water to enter the declines and tunnel between Clyde and Sydney Olympic Park. The assessment identified that floodwater ingress into the shafts and tunnel could occur due to both overland flooding and mainstream flooding. In response, the project design has incorporated flood protection levels of 1% AEP flood level plus 0.5 metres freeboard or the probable maximum flood level, whichever is higher (refer to Table 8-46 of the Environmental Impact Statement) to prevent ingress of floodwaters into excavated voids or the tunnels underground.

6.21.2 Flood impacts

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queried the difference in flooding between Camellia and Barangaroo.

Response

The Environmental Impact Statement did not consider existing flood behaviour in Camellia or Barangaroo as these locations are not within the scope of the project.

6.22 Biodiversity – Stage 1

6.22.1 Vegetation removal

Stakeholder identification numbers

SE-125998, SE-127757

Issue raised

Submitters raised the following comment and query regarding vegetation removal:

- Query whether the amount of affected land with ecological values can be reduced and whether trees can be relocated instead of removed
- Comment that disturbed areas should be revegetated with local provenance native vegetation which provides native habitat.

Response

The design development of Stage 1 focused on avoiding or minimising potential biodiversity impacts. Stage 1 is largely within a highly urbanised area that does not possess large expanses of intact native vegetation with high biodiversity value. As most Stage 1 of the works for Sydney Metro West would be underground or in pre-existing developed areas, direct impacts to terrestrial biodiversity has been largely avoided and/or minimised. The limited amount of native vegetation to be disturbed is of poor to moderate quality and impacts on fauna habitat is minimal.

As per mitigation measures LV11, LV12 and LV13 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, opportunities for the retention and protection of existing street trees and trees within the site would be identified during detailed construction planning. Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standards and any trees removed by Stage 1 of the works for Sydney Metro West would be replaced to achieve no net loss to tree numbers and canopy in proximity to the site. As per mitigation measure LV14, opportunities would be investigated with the relevant local council to provide plantings in proximity to the impacted areas prior to construction commencing, where reasonable and feasible.

Where vegetation has been removed, replacement plantings would comprise a mix of vegetation native to the area.

6.22.2 Groundwater dependant ecosystems**Stakeholder identification numbers**

SE-125998

Issue raised

Submitter queried whether trees can be watered to offset impacts of groundwater drawdown.

Response

Section 22.4.5 of the Environmental Impact Statement identifies that there are likely a number of plant community types which may depend on the subsurface presence of groundwater in some locations but not in others and may be impacted by groundwater drawdown.

As per mitigation measure B3, additional investigations and assessment would be completed to confirm the potential for impacts to groundwater dependent ecosystems due to groundwater drawdown, and to identify any required mitigation through design.

6.22.3 Biodiversity offsets**Stakeholder identification numbers**

SE-125998

Issue raised

Submitter queried the source of biodiversity offsets.

Response

Biodiversity offsets would be addressed via biodiversity credits calculated in accordance with the Biodiversity Assessment Method – refer to Section 22.6.8 of the Environmental Impact Statement. Under the Biodiversity Offsets Scheme, biodiversity credits are generated from management actions that improve biodiversity values and are used to offset the loss of biodiversity values on development sites.

6.22.4 Riparian corridor**Stakeholder identification numbers**

SE-125998

Issue raised

Submitter raised concern regarding impacts to the riparian corridor due to the proximity of Clyde Stabling and Maintenance Facility construction site to Duck Creek, which is the subject of rehabilitation.

Response

As per mitigation measure B2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the A'Becketts Creek and Duck Creek crossings would be designed to incorporate a vegetated riparian zone within the realigned open channel sections where feasible and reasonable. Opportunities to undertake additional rehabilitation of Duck Creek in the vicinity of the construction site would be explored with Sydney Water.

6.23 Air quality – Stage 1

6.23.1 Air quality impacts

Stakeholder identification numbers

SE-127686, SE-127764, SE-127788, SE-127793, SE-127806

Issue raised

Submitter raised the following concerns relating to air quality and dust impacts:

- Concern regarding modelled risks of potential unmitigated dust impacts from the Westmead Metro Station construction site (Table 23-3 of the Environmental Impact Statement) and the potential dust impacts on Westmead Primary School
- Concern about impacts on St Alban's Anglican Church in Five Dock and the associated childcare centre from excavation, trucks loading spoil and truck movements
- Comment that additional measures to monitor and limit the amount of dust exposure to the students while at school in Five Dock, while getting to school and while actively living in the community
- Concern about impacts on St Luke's Anglican Church in Burwood North
- Concern about impacts on apartment buildings in Sydney Olympic Park
- Concern about dust impacts (including cumulative effects from other projects) on the Rozelle area.

Response

Table 23-3 of the Environmental Impact Statement identifies the unmitigated risks of dust impacts from the Stage 1. Based on outcome of this assessment a number of mitigation measures have been proposed to mitigate these impacts.

Section 9.5.8 identifies excavation works at Westmead metro station, Five Dock Station, Burwood North Station and Sydney Olympic Park metro station construction sites would be undertaken within an acoustic shed which would limit potential for dust and particular matter impacts. Trucks would generally load spoil within the acoustic sheds and would be covered at all times when travelling on public roads.

Further, as per mitigation measure AQ1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the following best-practice dust management measures would be implemented during all construction works:

- 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 inspect dust emissions and apply additional controls as required
- Consider all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each Stage 1 construction site.

The *Construction Environmental Management Framework* included in Appendix D of the Environmental Impact Statement requires the preparation of an Air Quality Management Plan which would include further detail regarding measures to monitor and address air quality impact during construction. Coordination and consultation with stakeholders would occur where required to manage the interface of projects under construction at the same time, in accordance with mitigation measure CI1, described in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.24 Spoil, waste management and resource use – Stage 1

6.24.1 Recycling and reuse

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queries what percentage of materials used on the project would be recycled or reused materials and whether 100 per cent of non-hazardous waste and spoil generated by the project would be reused or recycled.

Response

The development of Stage 1 has included careful consideration of the construction methodology and selection of materials and resources to minimise resource consumption. Consistent with the resource management hierarchy of the *Waste Avoidance and Resource Recovery Act 2001*, resource consumption would be further minimised during construction through reuse of materials, where possible.

The *Construction Environmental Management Framework* (Appendix D of the Environmental Impact Statement) provides the basis for the development and implementation of a construction sustainability management plan. The framework provides minimum requirements for the plan which includes carbon and energy management, and waste management and recycling. Table 8-59 of the Environmental Impact Statement also describes the proposed sustainability initiatives and targets for Sydney Metro West.

Sydney Metro would target beneficial reuse of 100 per cent of the usable spoil generated during construction. The geology of the spoil materials as well as their consistency and quality would determine the reuse options. Chapter 24 of the Environmental Impact Statement provides a further breakdown of potential reuse opportunities for Stage 1.

Spoil generated by the project would be assessed initially against relevant re-use criteria, based on the physical, chemical and geotechnical properties of the spoil. This assessment would determine the management of that spoil based on a hierarchy of management options. The reuse of spoil for Stage 1 construction works would be maximised to the greatest extent possible before alternative off-site opportunities for spoil reuse are pursued. Where spoil cannot be reused for Stage 1, opportunities to reuse this material in future stages or on other projects (preferably within the Sydney region to reduce transport distances), land restoration or landfill management would be identified. Spoil generated by the project that is deemed waste would be classified in accordance with the *Waste Classification Guidelines* (NSW Environment Protection Authority, 2014).

6.24.2 Spoil management

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queries whether spoil generated by the project which cannot be reused onsite would be disposed of offshore.

Submitter queries whether spoil could be barged along the Parramatta River to reduce heavy vehicle movements.

Response

Spoil management related to the project is discussed in detail in Chapter 24 of the Environmental Impact Statement. Where spoil cannot be reused for Stage 1, opportunities to reuse this material in future stages or on other projects (preferably within the Sydney region to reduce transport distances), land restoration or landfill management would be identified. Spoil that cannot be reused on site due to the presence of contaminants would be classified before being diverted to an appropriately licensed waste management facility within Australia.

Section 3.8.3 of the Environmental Impact Statement identifies that barged spoil could also be disposed of at sea (offshore). Licenced disposal grounds are in operation off Sydney Harbour and Newcastle. Offshore disposal would be conducted outside NSW and is regulated under the *Environment Protection (Sea Dumping) Act 1981*. Material would be required to satisfy the requirements of the *National Assessment Guidelines for Dredging* (Department of Environment, Water, Heritage and the Arts, 2009) before being considered suitable for disposal at the designated offshore disposal site.

Sydney Metro has identified the potential to use barges to transport tunnel spoil from The Bays construction site. This was described in Section 9.5.10 of the Environmental Impact Statement, with additional detail provided in Chapter 2 of this Submissions Report.

6.24.3 Resource use

Stakeholder identification numbers

SE-126408

Issue raised

Submitter commented that proceeding with Sydney Metro will consume resources.

Response

A variety of materials and resources would be needed to construct Stage 1. The resource requirements for Stage 1 shown in Table 24-8 of the Environmental Impact Statement are typical for an infrastructure project of this scale. While the materials and resource requirements of Stage 1 have the potential to temporarily impact resource availability within the Sydney metropolitan region over the construction period, the recent concurrent construction of other major infrastructure projects including NorthConnex, WestConnex, Metro North West Line and Sydney Metro City & Southwest (Chatswood to Sydenham) from 2015 to the present demonstrates the market is able to manage the concurrent construction of major infrastructure projects given sufficient opportunity to forward plan. The period between the approval of Stage 1 and the start of major construction would be sufficient to allow the market to prepare for the resource needs of Stage 1 in conjunction with the concurrent infrastructure projects.

The development of Stage 1 has included careful consideration of the construction methodology and selection of materials and resources to ensure fitness for purpose and minimise resource consumption. Consistent with the resource management hierarchy of the *Waste Avoidance and Resource Recovery Act 2001*, resource consumption would be further minimised during construction through reuse of materials, where possible.

6.25 Human health and safety

6.25.1 Human health

Stakeholder identification numbers

SE-127366

Issue raised

Submitter raised concerns regarding the impacts of construction and operation of the project on human health. Submitter commented that they suffer headaches and migraines triggered by noise, lack of sleep, odour and dust.

Response

Chapter 17 of the Environmental Impact Statement acknowledges that the project has the potential to result in temporary impacts to nearby residents, workers and visitors that experience potential construction noise, vibration and air quality impacts. As outlined in Table 27-7 of the Environmental Impact Statement, a key performance outcome for Sydney Metro West is to minimise negative impacts on customers and the community (including transport services, amenity noise, and vibration, water management and air quality).

Chapter 8 (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).

6.25.2 Safety

Stakeholder identification numbers

SE-126773, SE-127686, SE-127786

Issue raised

Submitters raised the following comments and concern regarding impacts of the project on safety:

- Commented that safe access to Westmead Station must be maintained during construction including for pedestrians accessing the station from bus stops and/or kiss-n-ride areas
- Concern that the project would result in safety impacts for parents and children using the Child Care Centre near St Alban's Anglican Church at Five Dock
- Concern regarding the safety of school children accessing Five Dock Public School and that additional safety measures should be adopted including signage, a drop off/pick up zone on West Street and a pedestrian crossing on West Street.

Response

It is anticipated that some modifications would be needed to pedestrian and cyclist facilities to facilitate construction of Stage 1. These modifications are outlined in Table 9-13 of the Environmental Impact Statement. In Westmead this would include construction of a temporary pedestrian footpath to the existing Westmead Station on Alexandra Avenue between Hassall Street and Hawkesbury Road for the duration of Stage 1 construction. Access to the existing Westmead Station would be maintained via a temporary pedestrian footpath, although there may be some short periods when pedestrian access to the southern entrance to the existing Westmead Station would be restricted. The modifications would be reviewed by the construction contractor during detailed design and/or during the preparation of construction traffic management plans, with the objective of minimising disruptions to pedestrians and cyclists. Community and stakeholders would be notified of prior to any modifications.

Access and egress arrangements at construction sites have been developed with consideration of pedestrian and cyclist safety. For example, the need for construction vehicles to perform a right turn to or from an arterial road to access a construction site has been avoided where possible.

Appropriate controls would be established where vehicles are required to cross footpaths to access construction sites. This may include manual supervision, physical barriers or temporary traffic signals as required. Road safety reviews or audits would be carried out at each construction site (refer to mitigation measure TT4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report).

As per mitigation measure TT5 (refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report), options to further enhance pedestrian and cyclist safety near construction sites are currently being considered. This includes consideration of measures such as:

- 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

- Requiring the use of technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.

The project would not have any direct impact to West Street and would not use this street as part of any haul route.

6.26 Cumulative impacts

6.26.1 Power supply works on Callan Street

Stakeholder identification numbers

SE-125945, SE-125962, SE-125963, SE-126058, SE-127625, SE-127817, SE-127582

Issue raised

Submitters raised concerns regarding the installation of a high voltage cable along Callan Street, Rozelle due to cumulative impacts of numerous major projects excavating the roadway. Specifically:

- Concern cumulative works will result in health impacts
- Concern that the cumulative works will result in noise, dust, traffic, parking and access impacts
- Concern that the cumulative works will lead to health and safety risks
- Concern that the cumulative works will disrupt businesses of residents who conduct business from home at Callan Street
- Concern that the cumulative works will result in vibration impacts
- Concern that the cumulative works will impact home values
- Comment that there is little coordination between these projects
- Concern that the cumulative traffic using Callan Street will result in dangerous conditions due to the narrowness of the street and its designation as a shared zone
- Request to modify the proposed route of the high voltage cable to avoid Callan Street
- Proposal of a range of mitigation measures including increased consultation, noise and dust mitigation to reduce these impacts.

Response

Since the development of the Environmental Impact Statement, further planning has occurred between Sydney Metro and Transport for NSW (for the Western Harbour Tunnel project), Ausgrid and Port Authority of NSW to consider their future power needs from the Rozelle sub-transmission substation.

It has been identified that these projects would potentially require future power connections from this location. If these works were progressed separately this would result in trenching occurring through local streets multiple times over the next few years with the associated impacts to the local community such as traffic and noise. Additionally, if the design and construction of these works are not coordinated it may, due to the need to separation distances between power cables and other existing underground utilities, preclude some or all of these power connections from occurring in the future. This would limit to ability to undertake future infrastructure projects and to provide power to The Bays precinct and the locality.

Based on the above and feedback received from residents in Callan Street, the NSW Government is proposing to coordinate these works with Sydney Metro undertaking additional trenching and under bore works to provide empty conduits for use by Transport for NSW (Western Harbour Tunnel), Ausgrid and Port Authority of NSW in the future. Although this would result in an increase in impacts to those described in the Environmental Impact Statement, there would be a substantial reduction in cumulative and future impacts compared to these works being undertaken separately. Further information is provided in the Amendment Report.

The proposed Sydney Metro power supply would also provide sufficient power supply for the operational phase of the project, further reducing potential cumulative impacts in this location.

The proposed power supply works would be managed in accordance with the *Sydney Metro Construction Environmental Management Framework, Construction Noise and Vibration Standard* and the mitigation measures identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

6.26.2 Construction fatigue

Stakeholder identification numbers

SE-127377, SE-127647, SE-127678, SE-127501

Issue raised

Submitters raised the following concerns regarding potential construction fatigue:

- Concern that project timeframes will be extended resulting in increased impacts to nearby residents
- Concern regarding construction fatigue from road works in The Bays area associated with WestConnex, Western Harbour Tunnel and the project. Particular concern around the removal of spoil 24 hours a day, seven days a week.

Response

Construction fatigue was considered in the Environmental Impact Statement as part of the assessment of cumulative impacts in Chapter 8 (Concept environmental assessment), Chapter 11 (Noise and vibration – Stage 1) and Chapter 17 (Social impact – Stage 1).

The *Sydney Metro Construction Environmental Management Framework* (Appendix F of the Environmental Impact Statement) would require the preparation of a Construction Noise and Vibration Management Plan. The Construction Noise and Vibration Management Plan would consider cumulative construction impacts and the likelihood for construction fatigue from consecutive projects in the areas which have substantial night-time works.

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix E of the Environmental Impact Statement) also provides a list of standard mitigation measures that would be implemented where feasible and reasonable at all construction sites which includes measures such as prior notifications of the works, monitoring of the impacts and offers of alternative accommodation where night-time impacts are expected to be high.

As per mitigation measure NV18 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available. Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible. 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.

As per mitigation measure CI1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, co-ordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time:

- Transport for NSW (including Transport Coordination)
- Department of Planning, Industry and Environment
- Sydney Trains
- NSW Trains
- Sydney Buses
- Sydney Water
- Port Authority of NSW
- Sydney Motorway Corporation
- Emergency service providers
- Utility providers
- Construction contractors.

Co-ordination and consultation with these stakeholders would 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.

Stockpiling of spoil at construction sites would reduce the frequency of spoil removal from construction sites. This stockpiling would be managed to balance impacts associated with truck movements and impacts associated with dust, runoff and sedimentation. While the Environmental Impact Statement assesses the removal of all spoil from The Bays Station construction site by truck, Sydney Metro has identified a potential opportunity to remove spoil from the site by barge. Further information on this opportunity is provided in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

6.26.3 Mitigation measures

Stakeholder identification numbers

JAE-004, SE-127806

Issue raised

Submitters raised the following comments and concern regarding mitigation measures for cumulative impacts:

- Concern that there are no mitigation measures for cumulative impacts
- Comment that a condition of consent should be included that requires coordination and engagement with other construction projects within proximity to construction sites
- Comment that a dedicated team within the Department of Planning, Industry and Environment should be established to coordinate the mitigation of major projects within Rozelle
- Comment that mitigation measures should be strengthened and refined
- Comment that necessary works on the Rozelle Public School should be carried out to eliminate all future increased noise and air quality issues associated with NSW Government infrastructure projects in the area.

Response

Mitigation measure CI1, described in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, has been developed to mitigate the occurrence of cumulative impacts. Specifically, coordination and consultation with stakeholders would occur where required to manage the interface of projects under construction at the same time. In addition, mitigation measures specific to cumulative impacts of environmental impacts are presented throughout Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

The *Sydney Metro Overarching Community Communications Strategy* (Appendix B) outlines our approach to coordinating communications between interfacing projects.

6.27 General

Stakeholder identification numbers

SE-125998

Issue raised

Submitter queried what the impact would be if information obtained from a desktop assessment is different to that obtained during a site inspection.

Response

The process undertaken to assess the environmental impacts associated with Stage 1 generally involves multiple steps. The first step in the assessment of most environmental aspects (such as biodiversity and heritage) is to carry out a desktop assessment of existing information sources. This may include reviewing online government databases, existing literature, and other Environmental Impact Statements for projects in similar locations. This information is used to develop a baseline of potential environmental constraints that may impact the project. Following the desktop assessment, it may be necessary to undertake a site inspection to confirm that the conditions on the ground reflect the desktop assessment so that no potential environmental impacts have been missed. The information from the desktop assessment and site inspection is then incorporated into the environmental impact assessment.

6.28 Beyond the scope of the Environmental Impact Statement

6.28.1 Future metro extensions

Stakeholder identification numbers

SE-125813, SE-127241, SE-127816, SE-127862, JAE-008, SE-127792

Issue raised

Submitters made the following comments about possible future extensions of the Sydney Metro Network:

- Comment that the metro network should be extended along the Eastern Suburbs Line to Bondi Beach
- Comment that the metro network should be extended to Randwick
- Comment that the metro network should be extended to Broadway
- Comment that the metro network should be extended to the east of Sydney CBD via Paddington, Waverly, Coogee, Maroubra and Little Bay
- Comment that a north-south metro line should be built to connect Castle Hill and Parramatta.

Response

Additional transport projects are beyond the scope of Sydney Metro West, and would be planned in accordance with the *Future Transport 2056* strategy and subject to further investigations by Transport for NSW and consideration by the NSW Government. The *South East Sydney Transport Strategy* (Transport for NSW, 2020) was released in August 2020 which identifies an extension of Sydney Metro West to the south-east via Zetland and Randwick.

Section 6.6.2 of the Environmental Impact Statement identifies the ability to extend Sydney Metro West would be future-proofed and include the provision of stub tunnels to allow for minimal disruption of the operating line during the construction of future extensions.

6.28.2 Other transport projects

Stakeholder identification numbers

SE-125998, SE-127241, SE-125830, SE-125824, SE-127807, SE-127639

Issue raised

Submitters commented on the other transport projects which are beyond the scope of the Environmental Impact Statement:

- Comment that a new concourse should be constructed at Strathfield to provide improved access to Strathfield TAFE
- Suggests constructing a rail link between Parramatta and Epping
- Suggest an extension of the South Line to Merrylands, Parramatta, Epping and the Hornsby Line
- Query whether the NSW Government will construct a second Redfern concourse with accessible lifts on all platforms and a fourth track between Redfern and Newtown
- Query whether construction of Sydney Metro West would mean that Parramatta Light Rail Stage 2 would no longer be constructed
- Queried whether interim transport improvements can be made to the bus network to The Bays
- Proposes an entire new transport system for Greater Sydney.

Response

The subject of the Environmental Impact Statement relates to the construction and operation of Sydney Metro West at a concept level and Stage 1 which involves all major civil construction works including station excavation and tunnelling between Westmead and The Bays. The suggestions identified in the submissions are beyond the scope of Sydney Metro West.

A new southern concourse at Redfern Station is currently being planned which will be accessible to those with a disability, limited mobility, parents/carers with prams and customers with luggage. An Environmental Impact Statement (EIS) for the project was on public exhibition between 27 May and 24 June 2020. Further details are available at <https://www.transport.nsw.gov.au/projects/current-projects/redfern-station-upgrade-new-southern-concourse>.

Sydney Metro West would not preclude the construction of the planned Parramatta Light Rail Stage 2. This project includes a proposed stop on Dawn Fraser Avenue near Showground Road, in the vicinity of the Sydney Olympic Park metro station. This location would offer easy transfer between the future Parramatta Light Rail Stage 2 and Sydney Metro West.

6.28.3 Other non-transport projects

Stakeholder identification numbers

SE-127819, SE-127509, SE-127862, SE-127806

Issue raised

Submitters raised the following comments and concerns about other non-transport related projects:

- Comment that the NSW Government should construct a new town centre at Five Dock
- Object to the construction of a new 42 storey development in Burwood
- Propose increasing development along the Old Glebe Island Bridge
- Comment that there has been little consultation around The Bays project
- Comment that there is an opportunity to extend a green link corridor connecting the Sydney CBD, Western Harbour, Darling Harbour, the Bays Precinct through to Easton Park, beyond to Callan Park and the Bays Walk and then through Council owned parkland. This is an opportunity to align parkland from the WestConnex path to a Sydney Metro West parkland at The Bays Station site.
- Comment that there should be development uplift west of North Strathfield Station.

Response

The subject of the Environmental Impact Statement relates to the construction and operation of the Sydney Metro West at a concept level and Stage 1 which involves all major civil construction works between Westmead and The Bays including station excavation and tunnelling. Any proposal to revitalise Five Dock town centre, construct a 42 storey development, establish a green link corridor or develop Old Glebe Island Bridge are beyond the scope of the project and the environmental impact assessment.

The Bays precinct is currently undergoing urban renewal and transformation, with the renewal of three key sites; Sydney Fish Markets, Blackwattle Bay and Bays West. These projects are separate to the Sydney Metro West and consultation regarding The Bays precinct projects has been ongoing since 2014. Further details regarding The Bays precinct projects can be found at The NSW Department of Planning, Industry and Environment website: <https://www.planning.nsw.gov.au/Plans-for-your-area/State-Significant-Precincts/The-Bays>.

The development of other projects are beyond the scope of Sydney Metro West.

6.28.4 Sydney Speedway Relocation

Stakeholder identification numbers

SE-125998, SE-127811

Issue raised

Submitters had the following comment and query regarding the Sydney Speedway relocation:

- Query whether there is another suitable location for the Sydney Speedway
- Comment that Sydney Speedway should be provided assurances in relation to relocation and additional funding, and business impacts of its closure/relocation should be further considered.

Response

In December 2019, the NSW Government announced the relocation of speedway racing to the Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports, creating a true motorplex for the New South Wales motorsport racing community. The new Sydney International Speedway would provide the community and racing supporters a unique sporting facility that would cater for local, regional, national, and international racing events while continuing to support the growth of speedway racing in NSW.

The NSW Government is fully committed to the relocation of speedway racing and has already prepared and publicly exhibited an Environmental Impact Statement for the project which was open for community feedback from 19 August to 16 September 2020. Submissions have now closed. That document further considers the potential environmental and business impacts of the relocation.

The new Sydney International Speedway site is located on land owned and managed by Western Sydney Parklands Trust. Sydney Metro (as the proponent) is seeking State significant infrastructure approval and is proposing to build the project on behalf of and pursuant to arrangements with Western Sydney Parklands Trust.

The proposed location of the new Sydney International Speedway within Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports is consistent with Western Sydney Parklands Plan of Management 2030 for this precinct.

6.28.5 The Bays road relocation works

Stakeholder identification numbers

SE-127783

Issue raised

Submitter recommends that the Port Access Road relocation (as detailed in *The Bays road relocation works Review of Environmental Factors* (Sydney Metro, 2020c)) is considered and designed as a temporary solution rather than a permanent feature so as not to constrain the long-term optimal precinct development outcome.

Submitter comment that the transport and traffic assessment as detailed in *The Bays road relocation works Review of Environmental Factors* does not consider cumulative impacts of the concurrent Rozelle Precinct construction activity.

Response

The proposed road works at The Bays are proposed as a temporary solution to facilitate construction works, including Sydney Metro West. The assessment undertaken for The Bays road relocation works (as part of the Review of Environmental Factors) included consideration of potential cumulative impacts with other projects.

The Bays road relocation works is subject to a separate planning approval process. Further information on The Bays road relocation works is provided in Chapter 3 (Related development) of this Submissions Report.

6.28.6 Corridor protection

Stakeholder identification numbers

JAE-004

Issue raised

Submitter acknowledged that future development of the underground corridor related to the proposed alignment of the Sydney Metro West will require notification and concurrence from Sydney Metro.

Response

In April 2020, the Department of Planning, Industry and Environment proposed an amendment to the State Environmental Planning Policy (Infrastructure) 2007 to create a short-term 'protective' underground corridor related to the proposed alignment of the future Sydney Metro West between Westmead and The Bays. The proposed amendment was on exhibition concurrently with the Environmental Impact Statement from 30 April 2020 until 26 June 2020, but is a separate process.

The State Environmental Planning Policy (Infrastructure) 2007 was formally amended in October 2020 to include the Sydney Metro West interim corridor.

6.28.7 Contamination at Camellia

Stakeholder identification numbers

SE-127744

Issue raised

Submitter commented that existing contamination in the Camelia area and the surrounding waterways should be remediated.

Response

The remediation of existing contamination in the Camellia area and the surrounding waterways is beyond the scope of Sydney Metro West.

6.28.8 Other

Stakeholder identification numbers

SE-126010

Issue raised

Submitter highlighted the products and services offered by their company.

Response

The submitter did not raise any issues about Sydney Metro West.

7 Government and key stakeholder submissions

7.1 Overview of issues raised

Submissions were received from the following local councils and government agencies and:

- Cumberland City Council
- City of Parramatta Council
- Strathfield Council
- Burwood Council
- City of Canada Bay Council
- Inner West Council
- City of Sydney Council
- Department of Planning, Industry and Environment (Crown Land)
- Department of Planning, Industry and Environment (Environment, Energy and Science Group)
- Department of Planning, Industry and Environment (Water Group and Natural Resources Access Regulator)
- Department of Primary Industries (Agriculture)
- Department of Primary Industries (Fisheries)
- Environment Protection Authority
- Heritage NSW (Heritage Council of NSW)
- Heritage NSW (Aboriginal Heritage Regulation Branch)
- Infrastructure NSW
- NSW Health
- Sydney Olympic Park Authority (now part of Department of Planning, Industry and Environment)
- Sydney Water.

Submissions were received from the following key stakeholders:

- Ausgrid
- Australian Turf Club
- Business NSW
- Five Dock Chamber of Commerce
- GPT Group
- National Trust of Australia (NSW)
- Parramatta Chamber of Commerce
- Property Council of Australia (NSW) (joint submission with Urban Development Institute of Australia, Western Sydney Business Chamber, Urban Taskforce)
- Royal Agricultural Society of NSW
- Sydney Business Chamber
- Sydney Olympic Park Business Association
- University of Sydney
- Urban Development Institute of Australia (UDIA) NSW
- Urban Taskforce Australia
- Western Sydney Business Chamber.

The approach to processing and responding to submissions (including government and key stakeholder submissions) is described in Chapter 4 of this report. The issues raised in the government and key stakeholder submissions are categorised according to the key issue categories (as described in Section 4.2 of this report) and responses are provided in the following sections.

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

7.2 Cumberland City Council

7.2.1 Support for the project

Support

Issues raised

Cumberland City Council supports the NSW Government's investment in significant new infrastructure projects such as the Sydney Metro West. Council notes that Sydney Metro West will act as a catalyst in supporting Cumberland's vision to become a vibrant and sustainable metropolitan area with a diverse land use mix that supports its residents, visitors and workers by 2030. As identified in the Environmental Impact Statement, it would do so by facilitating the renewal of the south Westmead area, and will provide housing opportunities for key workers and students from the Westmead health and education precinct, particularly in the land south of the existing rail corridor.

Response

Cumberland City Council's support is noted.

7.2.2 Transport and traffic

Construction traffic impacts

Issues raised

Council has reviewed the assessment carried out at Westmead, which measured existing traffic levels with the addition of proposed construction traffic and the effects that traffic changes such as temporary road closures and detours would have on the traffic network.

Although the daily and peak light and heavy vehicle movements likely to be generated are identified in the Environmental Impact Statement for four phases, further discussion is required on its potential impacts on the local and regional traffic network during the various stages of construction as part of Stage 1. Further clarification is also required on the anticipated durations of these phases/stages of construction, and how they would overlap.

As identified in the Environmental Impact Statement and as can be expected in a project of this scale, both temporary and permanent impacts on the surrounding road network are expected due to Stage 1 construction works.

- Significant impact is expected on the immediate surrounds of Hawkesbury Road, particularly Westmead Public School, due to the altered traffic arrangements. The impact on the safety of students and parents due to increased traffic should be carefully considered and steps taken to address this in a timely and collaborative manner with the school and Council. Council acknowledges Sydney Metro's efforts to minimise potential impacts to the road network performance and is supportive of measures such as the reduction of vehicle movements in network peak periods and during school drop off and pick up periods.
- The Hawkesbury Road/Priddle Street, Hawkesbury Road/Amos Street, and the Bailey Street/Hassall Street intersections would experience a reduced level of service. It is recommended that Sydney Metro continue ongoing discussions with Transport for NSW and Council towards identifying potential measures to reduce the level of congestion at these intersections. However, as these intersections would still operate with spare capacity, Council considers this to be acceptable.
- The permanent realignment of Alexandra Avenue to form a new intersection at Hawkesbury Road with Grand Avenue would result in the Alexandra Avenue/Bridge Road intersection experiencing a reduction in level of service during the morning and evening peak hour from B to C and E to F respectively. Although this intersection would still operate with spare capacity in the morning peak, significant congestion is expected during the evening peak. Council therefore recommends Sydney Metro consult with Council and relevant parts of Transport for NSW in a timely manner to identify measures to minimise or mitigate the reduced level of service.

Response

Figure 9-14 of the Environmental Impact Statement provides an indicative construction program for the Westmead Station construction site, with sequence and duration for the four main construction phases in Stage 1. Section 10.6.2 of the Environmental Impact Statement provides details of the light vehicle and truck movements associated with each construction phase that have informed the assessment of potential impacts on the local and regional traffic network.

Temporary potential impacts to road network performance and potential impacts to vulnerable road users (such as pedestrians and cyclists) would be addressed through the implementation of the *Construction Traffic Management Framework* (Appendix F of the Environmental Impact Statement) and mitigation measures identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. Specific measures include:

- Additional enhancements for pedestrian, cyclist and motorist safety near the construction sites (mitigation measure TT5)
- Reducing vehicle movements in network peak periods (mitigation measure TT7) and during school drop off and pick up periods to minimise potential impacts to road network performance (mitigation measure TT8) on Hawkesbury Road and near Westmead Public School
- Sydney Metro will continue to consult with Transport for NSW and Cumberland City Council regarding temporary potential impacts at intersections such as Hawkesbury Road/Priddle Street, Hawkesbury Road/Amos Street, and the Bailey Street/Hassall Street. Discussion would include opportunities to reduce potential impacts.
- Identifying potential opportunities to mitigate the impacts of the permanent realignment of Alexandra Avenue and new Alexandra Avenue / Hawkesbury Road / Grand Avenue intersection in consultation with relevant parts of Transport for NSW and Cumberland City Council, which may include local area traffic management changes, intersection turning bans and similar (mitigation measure TT9).

Sydney Metro is working with Transport for NSW including the Centre for Road Safety regarding the optimal temporary traffic arrangements during construction at Westmead and the potential implementation of additional traffic safety measures. Consultation is also ongoing with the Department of Education in relation to the management of construction traffic in the vicinity of Westmead Public School.

Construction traffic management

Issues raised

Council also recommends that reviews take place during detailed construction planning and ongoing monitoring be undertaken during the various stages of Stage 1 works to ensure any identified and unforeseen traffic and transport impacts are addressed in a timely manner.

Council notes the measures identified in the Environmental Impact Statement to minimise disruption to the pedestrian network and cycling facilities (such as bicycle racks and lockers), and is satisfied that the measures proposed would ensure any impact to pedestrians and cyclists would be minimised as far as practicable.

Within the context of Stage 1 construction works, the potential impacts to bus services such as increase in travel time due to additional construction vehicles on the road network, re-routing of buses, and relocation of bus stops, would in-principle be considered to be acceptable. These should be reviewed, however, during detailed construction planning.

Response

As part of detailed construction planning, Construction Traffic Management Plans would be prepared in accordance with the *Construction Traffic Management Framework* (see Appendix F of the Environmental Impact Statement), which includes consultation with the Traffic Control Group, Traffic and Transport Liaison Group, Transport for NSW, Transport Coordination and other relevant stakeholders. The *Construction Traffic Management Framework* also requires ongoing stakeholder engagement and consultation.

The *Construction Traffic Management Framework* provides for changes to the site-specific traffic management requirements. If changes to a Construction Traffic Management Plan are necessary, then this would follow the review and endorsement processes outlined in the *Construction Traffic Management Framework*.

Council's acknowledgment of measures identified in the Environmental Impact Statement to minimise disruption to the pedestrian network and cycling facilities as being satisfactory is noted.

Impacts on bus services and requirements for the relocation of bus stops would be reviewed during detailed construction planning.

7.2.3 Construction noise and vibration

Consultation

Issues raised

Council recommends that extensive community consultation is undertaken throughout the various stages of this project to ensure all potentially impacted residents are informed about what is happening (e.g. when certain noisy night works are undertaken) so they can be prepared or request additional mitigation/compensation from the developer. It is also recommended that a complaint hotline is made available to residents 24 hours a day, 7 days a week, to maintain community trust and investigate any unforeseen impacts if they arise.

Response

As set out in mitigation measure NV01, further engagement and consultation would be carried out with the affected communities to understand their preferences for mitigation and management measures, and other sensitive receivers such as schools, medical facilities or places of worship to understand periods in which they are more sensitive to impacts. Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable.

The *Sydney Metro Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (Appendix B). Contract specific Community Communication Strategies would 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 Sydney Metro's *Overarching Community Communications Strategy*. This would include ensuring that the community is informed about the timing and duration of noisy works. Further information is provided in Section 4.3.4 of this Submissions Report.

The *Construction Noise and Vibration Standard* (Appendix D) also provides for a construction response telephone line to be established which will operate 24 hours a day, seven days a week.

Sleep disturbance

Issues raised

Where construction works are planned to extend over more than two consecutive nights, Council recommends that an assessment of sleep disturbance impacts should be completed. Council also recommends that alternative accommodation should be an option for the worst-affected residential receivers during noise-intensive night works throughout the development.

Response

A sleep disturbance assessment has been carried out for all construction sites. This assessment would 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 would 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 would be implemented.

As identified in the *Sydney Metro Construction Noise and Vibration Standard* (Appendix D), respite, including alternative accommodation options may be provided for residents living near construction works that are likely to incur high impacts over an extended period of time. Alternative accommodation would be determined on a case-by-case basis. Where it is 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 management measures may be implemented.

Monitoring

Issues raised

Ongoing acoustic and vibration monitoring should be undertaken at each stage of the proposed Stage 1 development to ensure compliance with the Noise and Vibration Technical Paper.

Response

Ongoing monitoring of noise and vibration would be carried out in accordance with the *Construction Noise and Vibration Standard* (Appendix D), which includes monitoring of noise and vibration at the closest affected sensitive receiver for any activity that it predicted to exceed the construction Noise Management Levels (NML) determined in accordance with the *Interim Construction Noise Guideline* dated July 2009.

7.2.4 Contamination

Further assessment

Issues raised

It is expected that any further detailed investigations/remedial actions will be undertaken in compliance with the recommendations of the Contamination Report (Technical Paper 8 of the Environmental Impact Statement) as well as all other relevant NSW contamination guidelines written or endorsed by the NSW Environment Protection Authority.

Response

Mitigation measures C1 to C3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report establish a risk based approach to contamination that ensures that areas with potential contamination would be subject to further desktop data review, detailed site investigations, and appropriately remediated if required. All approaches will be in compliance with relevant NSW contamination guidelines.

7.3 City of Parramatta Council

7.3.1 Support for project

Support

Issues raised

City of Parramatta Council noted the following support for the Sydney Metro West:

- Support for the project and support for the acceleration of planning to help stimulate Sydney's economic recovery from COVID-19 and create more jobs
- Support for the project and support for transport connectivity
- The community has expressed a need for infrastructure provision to support anticipated growth in Westmead and Parramatta
- Council supports the inclusion of a metro station within the Parramatta CBD
- Council's *Strategic Transport Study* suggested the need for a second Parramatta CBD train station by 2056 and encouraged planning work be undertaken to identify an appropriate location
- The introduction of Sydney Metro West will help to deliver connected and productive places is consistent with the *Greater Sydney Region Plan* under Objective 19 and in the *Central City District Plan* under Planning Priority C7
- Council supports location of a metro station at the Horwood Place block as a second station, separate from the Parramatta Train Station
- Council supports the inclusion of a metro station in Westmead
- Council supports the inclusion of a metro station at Sydney Olympic Park
- A metro service between Sydney CBD and Westmead with stations at SOPA and Parramatta CBD will enable Council to deliver on the priorities and actions in its Local Strategic Planning Statement, including supporting growth, improving public transport and improving active transport.

Response

City of Parramatta Council's support is noted.

7.3.2 Development and alternatives

Station alternatives

Issues raised

Include, or as a minimum make provision for, a metro station at Camellia.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would have also been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

Stabling and maintenance facility alternatives

Issues raised

City of Parramatta Council raised the following issues relating to the stabling and maintenance facility alternatives:

- Alternative locations for the stabling and maintenance facility at Clyde should be considered, or as a minimum, loss of recreational space should be replaced
- Concern about relocation of Sydney Speedway, given its long association with the site, and reduced recreational land due to the proposed Clyde stabling and maintenance facility. The proposed site is also highly flood affected. The location of the stabling and maintenance facility should be reconsidered.

Response

An assessment on stabling and maintenance facility alternatives was undertaken and is discussed in Section 3.7.3 of the Environmental Impact Statement. It was determined the Clyde site would be the least constrained of all options assessed and was identified as the preferred location for the stabling and maintenance facility. Consideration and assessment of the potential impacts of a stabling and maintenance facility at Clyde to existing land uses is provided in Chapter 14 (Property and land use – Stage 1), Chapter 16 (Business impacts – Stage 1) and Chapter 17 (Social impacts – Stage 1) of the Environmental Impact Statement.

Detailed flood analysis was undertaken as part of the assessment of Stage 1 of the project which included a quantitative assessment of potential flood impacts for the Clyde stabling and maintenance facility construction site. Technical Paper 9 (Hydrology and flooding) and Chapter 21 (Hydrology and flooding) of the Environmental Impact Statement identifies the Clyde construction site and immediate surrounds as being affected by overland and mainstream flooding. The design of the Clyde stabling and maintenance facility has been refined to ensure adequate flood immunity and to minimise offsite flooding impacts and updated flood modelling is presented in the Sydney Metro West Amendment Report Concept and Stage 1. Further design refinement of the Clyde stabling and maintenance facility would be undertaken during detailed design to further mitigate the identified potential flooding impacts in accordance with mitigation measure HF3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Except for the Sydney Speedway, which is zoned as RE2 Private Recreation, the Clyde stabling and maintenance facility construction site is zoned as IN3 Heavy Industrial and IN1 General Industrial. As a result of Stage 1 there would be a change from industrial and recreational land uses to a transport infrastructure construction site. The NSW Government announced the relocation of speedway racing to the Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. The new speedway (Sydney International Speedway) would be located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north. The Environmental Impact Statement for the proposed Sydney International Speedway (Application Number SSI-10048) can be found on the Department of Planning, Industry and Environment Major Projects website.

Public transport integration

Issues raised

City of Parramatta Council raised the following issues relating to public transport integration:

- Council feels that connectivity with other city shaping services and infrastructure projects is critically important to realising the full benefits of this project. Coordination with future metro lines and planned and existing light rail and bus services will multiply transport benefits for all users.
- The project should be planned in conjunction with Parramatta Light Rail Stage 2, and with bus access plans for properly coordinated feeder routes for each station
- The project should work with councils and Transport for NSW to interface and connect with future train lines
- The design of station areas and access plans should be coordinated with planning for Stage 2 of Parramatta Light Rail
- The project should work with Transport for NSW and councils on public transport access plans to plan and coordinate light rail and bus feeder services
- New feeder bus services are needed.

Response

Chapter 7 (Placemaking) of the Environmental Impact Statement notes that the Concept aims to provide transport services that are integrated with the broader transport network. Sydney Metro would work with relevant stakeholders including councils and Transport for NSW to deliver fully integrated services. Further details regarding station and precinct integration with existing and future transport services and metro lines will be identified and assessed as part of future stages of Sydney Metro West.

Safe and convenient connections to and from Sydney Metro West stations are an important part of the customer journey and experience of the station precinct. Connectivity between different transport modes, including walking, cycling, rail, light rail, buses, taxis and kiss-and-ride, would be legible and easy, acknowledging that Sydney Metro is part of an integrated transport system.

Sydney Metro would work with relevant stakeholders (such as Transport for NSW, other transport operators and local councils) to deliver the following principles to ensure that Sydney Metro West is integrated with the broader public transport network:

- Provide direct, legible, safe and accessible pedestrian routes to and from stations
- Maximise connectivity with metro, Sydney Trains suburban rail network, light rail and intercity rail networks to provide shorter journey times, better connectivity and congestion relief
- Where beneficial to customers, work with Transport for NSW to reorient bus and networks to connect with Sydney Metro West stations, providing feeder service functionality and extending the catchment from which customers can access stations
- Work with Transport for NSW to identify potential opportunities to reduce service duplication by rationalising bus operations to, from and within major centres and along major congested corridors
- Work with Transport for NSW to realign services to major centres in line with customer travel patterns, aiming to minimise the need to transfer between services
- Minimise, where possible, the impact on customers of transferring between services at interchanges, for example by minimising the distance between transport nodes and providing legible wayfinding between nodes.

Number of stations

Issues raised

City of Parramatta Council raised the following issues relating to the number of stations:

- The project, as described in the Environmental Impact Statement, has only two stops in the City of Parramatta, and features long distances between stops on its western end
- All three stations within Parramatta local government area are close to existing rail stations. The benefits of metro rail service can be spread more evenly, and more efficiently, if a new station is built between existing heavy rail stations.
- Council feels that a significant city-shaping opportunity is being missed if an additional station is not built between Parramatta and Sydney Olympic Park
- Council has a preference for a station at Camellia to provide access to recreational and commercial uses and provide city shaping and transport benefits

- It is not evident that locating an intermediate station between Parramatta and Sydney Olympic Park will significantly reduce travel times between the Parramatta and Sydney CBDs
- Council does not agree that Camellia should score poorly in 'Strategic alignment' as Camellia is the subject of a State-led master planning process. Council does not agree that Camellia should score poorly for 'Productivity & jobs,' 'Housing supply' and 'Urban renewal and placemaking'.
- If a station in Camellia is not considered appropriate when the project opens, it should be allowed for, and partially constructed as necessary, to be completed and opened when significant growth in the precinct comes online. Alternatively, other possible locations for a station at Silverwater or Clyde should be considered.

Response

Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement documents the evaluation and development process that was undertaken to determine the preferred option for the Sydney Metro West Concept, including the analysis of options for station locations (refer to Section 3.6).

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of a possible station at Camellia. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment considered a range of factors, including stakeholder and community feedback, alignment with key government priorities and project objectives, affordability, economic evaluation and risk assessment. The NSW Government determined not to proceed with a station at Camellia as it would present considerable construction challenges in relation to contamination and flooding, as well as potential impacts on basements associated with the draft Camellia Town Centre masterplan. Significant remediation works would also have been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

Operating hours

Issues raised

City of Parramatta Council supports the maximisation of service hours to support patronage and workers in the night-time economy.

Response

Council's support of the maximisation of service hours is noted.

Transport interchange

Issues raised

The project should consider potential future north-south heavy rail routes through the city including the location of the design and construction of future lines and how the project will interchange with future lines.

Response

As outlined in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement, Sydney Metro West has been developed to align with relevant strategic planning and policy, including the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018) and the *Future Transport 2056* strategy (Transport for NSW, 2018). Sydney Metro West would facilitate the growth in jobs, homes and residents that is currently planned for the Greater Parramatta to Sydney CBD corridor. North-south mass transit has been identified for future investigation in the *Future Transport 2056* strategy, and are beyond the scope of the Sydney Metro West.

7.3.3 Assessment and approvals

Future stage impacts

Issues raised

Concern that decisions based on this Environmental Impact Statement may have unintended impacts which cannot be identified and weighed without a view of later stages.

Response

This Environmental Impact Statement provides an assessment of the environmental impacts of Concept and Stage 1 of Sydney Metro West. The aim of providing concept level impact assessment for Sydney Metro West was to identify environmental impacts so that they can be appropriately considered and assessed in detail as part of future stages. The continuing development of Sydney Metro West will also be guided by the performance outcomes included in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement.

As discussed in Chapter 5 (Stakeholder and community engagement), ongoing community consultation and stakeholder engagement would also be carried out so that potential cumulative impacts are better understood and reduced where possible.

Consistency with Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

Issues raised

- Clause 21 (Biodiversity, ecology and environment protection) – It is unclear from the current concept detail and the level of detail in Section 8.16 (Biodiversity Concept) and Chapter 22 (Biodiversity Stage 1) how the objectives are being met
- Clause 22 (Public access to, and use of, foreshores and waterways) – Foreshore access along the Little Duck Creek corridor would be of great benefit to the local community, workers, residents and visitors. While the Environmental Impact Statement assessment notes that the Concept would not affect public access to waterways, improved access could be considered that align with Council's plans for access in the surrounding area.
- Clause 25 (Foreshore and waterways scenic character) – The assessment of scenic character impacts at the Clyde stabling and maintenance facility appears not to respond to the landscape character types and visual impact and mitigation guidelines identified under the plan and the related development control plan
- The proposal includes significant in-stream works, including channel modification / realignment. Under Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 zoning identified for the Clyde stabling and maintenance facility land reclamation is specifically prohibited.

Response

The relevant provisions of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 are considered in Chapter 4 (Planning and assessment process) and addressed as relevant to the Concept and Stage 1 in Chapter 8 (Concept environmental assessment), Chapter 15 (Landscape character and visual amenity – Stage 1), Chapter 19 (Soils and surface water quality – Stage 1), Chapter 20 (Contamination – Stage 1) and Chapter 22 (Biodiversity – Stage 1).

Further detail about the treatment of A'Becketts Creek and Duck Creek after construction, foreshore access and the visual impacts of buildings and structures at the Clyde stabling and maintenance facility will be included in the Environmental Impact Statement(s) for future stage(s).

Sydney Metro West is permissible without obtaining development consent under Part 4 of the *Environmental Planning and Assessment Act 1979*.

7.3.4 Stakeholder and community engagement

Future consultation

Issues raised

City of Parramatta Council raised the following issues relating to future consultation:

- Collaboration with local councils and other key stakeholders is required to plan for the stations, interchanges and precincts. The State Significant Infrastructure approval process can help establish a framework for this collaboration (through conditions).
- Council feels that rail connections, including train links from Parramatta north to Epping and Norwest, west to the Western Sydney International Airport and south to Kogarah via Bankstown, are critical for the development of the Central City. To ensure that Sydney Metro West enjoys efficient and easy connections to these new lines, it is imperative that Sydney Metro and Transport for NSW work with local governments.
- Given the complex and overlapping strategic proposals within the Parramatta CBD it is critical that Council is consulted early, and before the lodgement of future stage applications, in order to:
- Enable the relevant Council officers the opportunity to ensure the station design is permeable and links appropriately with the surrounding area

- Facilitate Council's input to ensure the station and precinct design contributes to the precinct's future development, is permeable, and links Westmead North and Westmead South
- Ensure the station integrates appropriately with the development at Carter Street, Melrose Park and Wentworth Point.

Response

Chapter 5 (Stakeholder and community engagement) details the consultation activities that have been undertaken to date as well as plans for ongoing consultation including consultation with local councils and other key stakeholders. Should the Concept and Stage 1 be approved, Sydney Metro would continue to consult with community and key stakeholders during construction and the planning of future stages.

As noted above and described in Chapter 7 (Placemaking) of the Environmental Impact Statement, the Concept aims to provide transport services that are integrated with the broader transport network. Sydney Metro would work with relevant stakeholders including councils and Transport for NSW to deliver fully integrated services. As outlined in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement, Sydney Metro West has been developed to align with relevant strategic planning and policy, including the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018) and the *Future Transport 2056* strategy (Transport for NSW, 2018). Sydney Metro West would facilitate the growth in jobs, homes and residents that is currently planned for the Greater Parramatta to Sydney CBD corridor. Additional transport projects are beyond the scope of Sydney Metro West, and would be planned in accordance with the *Future Transport 2056* strategy and subject to detailed investigations by Transport for NSW and consideration by the NSW Government.

The *Future Transport 2056* strategy identifies a mass transit link from Greater Parramatta to Western Sydney Airport as a city-shaping corridor. The *Western Sydney Rail Needs Scoping Study – Outcomes Report* jointly developed between Australian Government's Department of Infrastructure, Regional Development and Cities and the NSW Government's Transport for NSW in 2018 identifies an East-West link from Greater Parramatta to Western Sydney Airport as part of the preferred network for Western Sydney. Corridor protection for the East West Rail Link was a recommendation of this report. The NSW Government has commenced protecting a corridor for the future East West Rail Link with Stage 1 between the Aerotropolis near Bringelly and Kemps Creek protected through the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020. Stage 2 is between the Aerotropolis near Kemps Creek and Greater Parramatta and this section of the corridor will be identified in collaboration with other Government agencies.

Section 6.6.2 of the Environmental Impact Statement states there would be a 'stub' tunnel at Westmead metro station for connection to a future extension of the Metro line.

All future integrated station and precinct developments will be subject to a separate planning approvals process, including community and stakeholder engagement, in accordance with the provisions of the Environmental Planning and Assessment Act 1979. Consultation with City of Parramatta Council would be on-going throughout the planning of future stages of Sydney Metro West and would occur prior to the lodgement of any Environmental Impact Statement(s).

Ongoing consultation

Issues raised

City of Parramatta Council raised the following issues relating to ongoing consultation:

- Work with local government and other stakeholders to identify changes to walking, cycling and street networks to benefit both local and regional connectivity
- Consultation should be undertaken regarding spoil haulage routes, as well as the 24 hour operation of truck movements across all sites
- Sydney Metro should notify Council as soon as possible regarding any construction or operational matter that may impact any major event in the LGA and especially Parramatta CBD. Notification by Sydney Metro should extend to Class 3 Events where an activity being undertaken is likely to impact on the event (such as a public park or street activity).

Response

As discussed in Chapter 5 (Stakeholder and community engagement), Sydney Metro will continue to work with stakeholders, local councils and other government agencies, and the community to ensure they are informed about the project and have opportunities to provide feedback. Sydney Metro would also specifically consult with stakeholders to implement identified mitigation measures.

As specified in mitigation measure TT1 in Chapter 8 (Revised environmental mitigation measures), the community would be notified in advance of proposed road and pedestrian network changes.

Haulage routes have been developed in consultation with relevant sections of Transport for NSW including Transport Coordination and have aimed to minimise the use of local roads and use the most efficient route to the arterial road network. Information regarding the haul routes to and from each site are provided in Chapter 10 (Transport and traffic – Stage 1). As specified in mitigation measure CI1, co-ordination and consultation with relevant stakeholders would occur where required to manage the interface of projects under construction at the same time. This would include provision of regular updates to haul routes.

As specified in mitigation measure TT17 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, special events near the Parramatta metro station, Clyde stabling and maintenance facility and the Sydney Olympic Park metro station construction sites, that require traffic measures would be developed in consultation with Transport for NSW, including Transport Coordination and the organisers of the event.

Consultation

Issues raised

It is generally unclear as to what targeted community engagement has occurred in any phases of the project, particularly in “business readiness” for the construction phase of the project for affected business. The Environmental Impact Statement only details general communication provided to the public at large, and ad-hoc communication at major milestones via letterbox drop. A more robust communication loop should be developed to ensure affected businesses are made aware of project developments as soon as possible, and actively engaged throughout the construction phase.

Response

Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement details the stakeholder and community consultation and engagement activities carried out up to, and during, preparation of the Environmental Impact Statement. As set out in mitigation measure BI1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, small business owner engagement would be carried out during construction.

Sydney Metro has a demonstrated record of working with small businesses on Metro North West and City & Southwest and we’re committed to continuing to work with small businesses to ensure communication and engagement meets their needs. This includes:

- Consulting with businesses in lead up to major construction to discuss steps we can take to minimise potential impacts
- Providing early notice of upcoming works
- Providing information about construction progress, the type of works and mitigation measures that can be adopted
- Working with businesses to understand specific operational requirements and sensitivities.

Place managers

Issues raised

The Environmental Impact Statement mentions the engagement of Place Managers to support Sydney Metro’s role in creating places and achieving good outcomes for each station precinct. It is unclear as to how this resource is being utilised to support both businesses and the community, what their role is and how the information they collect feeds into the Project Team. Details of these Place Managers and further description of their community relations role should be communicated with Council.

Response

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 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 to generate the community's confidence in the project. As described in Section 5.7.3 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.

7.3.5 Placemaking

Place and design principles

Issues raised

City of Parramatta Council raised the following issues relating to place and design principles:

- Amend preliminary place and design principles to include:
 - Provision for diverse movement network in the block that includes streets, laneways and pedestrian links equal to (or as a further enhancement of) the draft Civic Link Development Control Plan. Connectivity is alluded to in the simplistic place diagram but written principles only address pedestrian permeability. General, emergency and service vehicles will need access to properties within the block
 - Integration of substations, ventilation stacks, services into development to promote public use and activity within the public realm and along building edges.
- The place diagram is overly simplistic and requires further development to reinforce both State and local governments vision to create a global health and education precinct at Westmead and support its successful delivery with an integrated and connected transport hub
- Placemaking and design response are not provided for Clyde Dive Structures, Clyde Stabling Facility, and Silverwater Services Facility
- Design principles for ventilation stacks, traction substations and service buildings are required to ensure they are well integrated into surrounding fabric and respond to the urban context.

Response

Preliminary place and design principles have been developed for each Sydney Metro West station. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build on the five Sydney Metro-wide design objectives (refer to Section 7.3.3 of the Environmental Impact Statement) and have considered relevant local council strategies and *Better Placed* design objectives. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles.

The indicative place and design diagrams provided in Chapter 7 (Placemaking) of the Environmental Impact Statement are intended to be a high level overview of the preliminary design and place principles. As stated in Section 7.10 of the Environmental Impact Statement, detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by placemaking objectives and principles and feedback from community and stakeholders.

The Rosehill dive structure sits within the Clyde stabling and maintenance facility site and would be subject to the place and design principles for that site. Place and design principles for the Clyde stabling and maintenance facility and the Silverwater Services Facility are provided in Section 7.10.9 of the Environmental Impact Statement.

As described in Section 7.10 of the Environmental Impact Statement, design development of future stage(s) would be informed by a suite of documents, including:

- Sydney Metro Design Objectives
- Design Quality Framework

- Place and design principles (preliminary principles are included in Section 7.10 of the Environmental Impact Statement)
- Design guidelines.

Design guidelines for Sydney Metro West would be developed to provide direction for the design of stations, transport interchange facilities, rail corridor works and service facilities, including ventilation stacks, traction substations and service buildings. These guidelines would be developed and appended to Environmental Impact Statement(s) prepared for future stages.

Westmead metro station precinct

Issues raised

City of Parramatta Council raised the following issues relating to placemaking at Westmead metro station:

- Integrating land use, pedestrian, cyclist and public transport connections is needed at Westmead
- Planning for the Westmead metro station should emphasise connectivity between the metro station, existing rail station and light rail, to facilitate seamless and accessible interchange; and the design and supporting infrastructure for the metro station should contribute generally to the connectivity of the precinct, particularly for users moving north-south across the Western Rail Line, and east-west, across Hawkesbury Road
- The station precinct should seek opportunities to maximise fixed and temporary activation of the station precinct as a civic space, encourage day and night time activation, and support for the night-time economy in Westmead
- The proposed Westmead metro station should respond to the draft Westmead Master Plan in both Parramatta and Cumberland local government areas.

Response

Preliminary place and design principles have been developed for each Sydney Metro West station and are presented in Section 7.10 of the Environmental Impact Statement. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build on the five Sydney Metro-wide design objectives (refer to Section 7.3.3 of the Environmental Impact Statement) and have considered relevant local council strategies and *Better Placed* design objectives. Council's requests relating to transport integration are acknowledged and have been recognised in the preliminary place and design principles for Westmead metro station as follows:

- The indicative Westmead place and design principles, shown in Figure 7-3 of the Environmental Impact Statement, identifies the corridor along Hawkesbury Road, and north-south across the Western Rail Line as areas to support greater activation and reinforce existing activation
- In accordance with Section 7.10.1 of the Environmental Impact Statement the preliminary place and design principles for the Westmead metro station include:
 - Facilitate an integrated transport hub with direct interchange between Sydney Metro and Sydney Trains services and safe, equitable and legible connections with active transport, buses and the future Parramatta Light Rail
 - Provide a gateway to the Westmead Health and Education Precinct in recognition of its status
 - Support growth and renewal opportunities by enhancing connections across the existing railway line with the station as a focal point.

Table 7-3 of the Environmental Impact Statement outlines the integration of Westmead metro station with strategic planning for the precinct and acknowledges that the *City of Parramatta Local Strategic Planning Statement* identifies a need to increase the night-time economy at Westmead. Table 7-3 also acknowledges *Cumberland 2030: Our Local Strategic Planning Statement* which reinforces the future role of the specialised health and education precinct at Westmead, and identifies land south of the existing rail corridor as potential future housing opportunities. The increase in transport amenity provided by Sydney Metro West would support these outcomes. Sydney Metro would continue to work with the City of Parramatta and Cumberland City Council to integrate the station into its wider precinct, taking into account the priorities identified in the Local Strategic Planning Statements.

Parramatta metro station precinct

Issues raised

City of Parramatta Council raised the following issues relating the Parramatta metro station precinct:

- The sensitive integration of the proposed station with the surrounding precinct and urban street network is critical, given the pedestrianised area and surrounding transport interchange
- The place diagram for Parramatta metro station overly simplistic and requires further consideration and alignment with the *Civic Link Framework Plan* and draft Civic Link Development Control Plan
- Integrating land uses, the Civic Link, the over-station development, pedestrian, cyclist and road and public transport connectivity is needed at Parramatta
- There is an opportunity for Sydney Metro to undertake further refinements to the Civic Link Development Control Plan connection alignments, particularly the east-west connection, which are currently working around land ownership constraints. This must be undertaken with an integrated approach to pedestrian, cycle and vehicular access/movement, public domain and built form outcomes and be undertaken in consultation with Council.
- The integration of any future development over Parramatta metro station needs to be consistent with the draft planning controls in the *Parramatta CBD Planning Proposal*
- To create a successful precinct interchange between modes within the heart of Parramatta, further analysis of pedestrian volumes and their spatial requirements is needed
- The Concept does not adequately describe how the station will integrate within the block
- Introducing a new street along the western edge of the heritage building emphasises its side elevation, and thus degrades its historical setting. It also results in odd residual land parcels, which may be unlikely to amalgamate with adjacent properties. A poor built form and public domain outcome is likely.
- The kinked street alignment (indicated within the precinct diagram) is straightened. This arrangement is not typical of the Parramatta street and block pattern and not desirable. Straight alignments of streets and lanes are preferred.

Response

Section 7.10.2 of the Environmental Impact Statement outlines how the strategic planning undertaken for the Parramatta CBD would integrate with development of Parramatta metro station. Preliminary place and design principles developed for Parramatta metro station in consideration of the broader strategic planning and includes the facilitation of activation at the ground plane at the station and surrounds to encourage pedestrian movement in the area. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. As identified in Section 7.10.2 of the Environmental Impact Statement the preliminary place and design principles for Parramatta metro station include:

- Strengthen the connectivity of the city centre between Parramatta Square and the Parramatta River by supporting the realisation of the Civic Link
- Facilitate activation of the ground plane at the station and the surrounds, encouraging pedestrian movement in the area
- Enhance permeability by introducing fine-grain pedestrian links between the station and surrounding streets, breaking down the large city block
- Facilitate intuitive interchange with pedestrian and cycle transport, the future Parramatta Light Rail (Stage 1), and bus services with legible, safe and direct connections from the station entry.

Sydney Metro would work with key stakeholders, including City of Parramatta, to refine and implement these principles during future stage(s) and ensure strategic planning for the precinct (such as the *Civic Link Framework Plan* and associated Development Control Plan) are considered.

Section 14.7.2 of the Environmental Impact Statement acknowledges the planning proposal submitted for Parramatta CBD. Future stage(s) would include consideration of the relevant clauses of the planning proposal.

Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s) and would include the assessment of the operational transport impacts. This would include consideration of potential operational pedestrian access constraints to provide direct, legible, safe and accessible pedestrian routes to and from stations and interchanges with other modes of transport. The design of the station and precincts would be informed by objective and principles and feedback from community and stakeholders.

As described above, the diagrams provided in Chapter 7 of the Environmental Impact Statement showing place and design principles are indicative only and detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by placemaking objectives and principles and feedback from community and stakeholders.

As described in Table 12-7 of the Environmental Impact Statement, the works at Parramatta metro station site would result in changes to the visual amenity and character of the heritage 41-59 George Street (Parramatta LEP 2011 Item No. 1703), as well as views and vistas around the site. The context of the item has been previously altered by modern development restricting views towards this item. The introduction of a street adjacent to the building is not considered likely to further impact the context of the heritage item. Detailed design of the station and public domain elements would take into consideration potential impacts to Parramatta LEP 2011 Item No. 1703 and potential land use impacts, in line with concerns raised by Council.

The kinked street alignment shown in Figure 7-4 of the Environmental Impact Statement is indicative only. City of Parramatta's preference that this street alignment be straightened is noted and would be taken into consideration during development of design for subsequent stages.

Sydney Olympic Park metro station precinct

Issues raised

City of Parramatta Council raised the following issues relating Sydney Olympic Park metro station:

- It is essential that the Sydney Olympic Park metro station integrates with the surrounding area of Sydney Olympic Park. Further detail is required to ensure the Sydney Metro Design Objectives referred to in Table 7-2 of the Environmental Impact Statement can be adequately addressed.
- Council would support designs which cater for event mode, without significantly enlarging the scale of public spaces which then results in poor everyday activation to fill large void areas on non-event days. Prioritisation should be given with the metro development to ensuring that there are appropriately scaled community-focussed spaces in and around the metro station to support the growing high density town centre.
- The project should be designed to cater for large crowds associated with major events
- Night time operation and activation should be considered for design principles.

Response

As discussed in Chapter 7 (Placemaking) of the Environmental Impact Statement, design principles have been prescribed for each design objective. The purpose of these principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. Sydney Metro would work with key stakeholders (including relevant local and State government agencies) to refine and implement these principles.

Chapter 7 (Placemaking) details how strategic planning has been used to inform the development of Sydney Olympic Park metro station. Indicative place and design principles have been developed for the Sydney Olympic Park metro station to ensure the Sydney Metro Design Objectives referred to in Table 7-2 of the Environmental Impact Statement would be adequately addressed. The place and design principles would guide future design to ensure the station integrates with the surrounding area and will be further considered during the design and assessment of future stages of Sydney Metro West. Place and design principles for Sydney Olympic Park metro station (Section 7.10.3 of the Environmental Impact Statement) include:

- Enhance permeability with new pedestrian links and connections to places within the wider station precinct supported by active street frontages, and new open spaces
- Ensure the station provides easy, safe and intuitive interchange with other modes of transport, during day to day operation and events.

The place and design principles would be further refined with key stakeholders and guide future design of the station.

Chapter 7 (Placemaking) of the Environmental Impact Statement also provides for event consideration in the design of the station at Sydney Olympic Park including providing adequate space to cater for event crowds.

Focal points

Issues raised

Unclear as to what is meant by the “focal points” on each of the precinct concept maps while the intent, approach, and expected outcomes of “supporting greater activation” requires further explanation. At a minimum, this should include active street frontages, opportunities for business development, permanent and temporary public art and events and cohesive lighting design to support 24/7 activation of spaces.

Response

‘Focal point’ is used to describe a recognisable local place, supported by complementary uses, activation and high-quality public domain. The indicative place and design diagrams provided in Chapter 7 (Placemaking) of the Environmental Impact Statement are intended to be a high level overview of the preliminary design and place principles. As stated in Section 7.10 of the Environmental Impact Statement, detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by placemaking objectives and principles and feedback from community and stakeholders as well as ongoing discussions with council.

Design process and approach

Issues raised

City of Parramatta Council raised the following issues relating to design process and approach:

- Placemaking and design are critical consideration to ensure that stations fit properly into the surrounding urban fabric, and maintenance, storage, ancillary facilities, track work and structures in Camellia, Rosehill, Clyde and Silverwater contribute to the industrial and recreational land uses in each precinct. Insufficient detail has been provided on the intended outcomes for station locations or public domain structure of blocks to provide detailed feedback on the Concept Design and Stage 1.
- Confirm that station excavation and civil design will enable the Civic Link vision to be achieved across the excavation footprint to support significant tree planting and required soil depths, stormwater storage and management within the public domain including Water Sensitive Urban Design initiatives and shared utilities corridor fit for future development as per the *Civic Link Framework Plan*
- The project should consider accessibility in the design.

Response

The Environmental Impact Statement recognises placemaking and design are critical to ensuring stations integrate with the surrounding areas. As discussed above, the indicative place and design diagrams provided in Chapter 7 (Placemaking) of the Environmental Impact Statement are intended to be a high level overview of the preliminary design and place principles. As stated in Section 7.10 of the Environmental Impact Statement, detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by placemaking objectives and principles and feedback from community and stakeholders, including Council.

As described in Section 7.11.1 of the Environmental Impact Statement, design guidelines for Sydney Metro West would be developed to provide direction for the design of stations, transport interchange facilities, rail corridor works and service facilities, including ventilation stacks, traction substations and service buildings. These guidelines would be developed and appended to Environmental Impact Statement(s) prepared for future stages. Sydney Metro West will continue to engage with City of Parramatta Council throughout detailed design development and planning of future stage(s).

Section 7.10.2 of the Environmental Impact Statement outlines the Parramatta metro station place and design principles, one of which is to support the realisation of the Civic Link.

One of the sustainability initiatives identified in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement is to integrate water sensitive urban design solutions. This and other initiatives would be further refined as part of the design process, committed to in the Sydney Metro West Sustainability Plan and included in the contract documents for all detailed design, construction and operations contracts.

As described in Chapter 6 (Concept description) of the Environmental Impact Statement, accessibility would be a key consideration in the design process. An 'access for all' philosophy has been adopted. As stated in Section 4.5.3 and 4.5.4 of the Environmental Impact Statement, the Concept has been and would continue to be designed in compliance with the objectives of the *Disability Discrimination Act 1992* and the requirements of the *Disability Standards for Accessible Public Transport 2002*. As station design progresses Sydney Metro would conduct compliance and conformance testing, in consultation with the Disability Council and customers from groups advised by the Disability Council.

Stabling and maintenance facility precinct

Issues raised

City of Parramatta Council raised the following issues relating to the stabling and maintenance facility precinct:

- Mitigation of recreation, environmental and flooding issues at Clyde/Rosehill and delivery of the planned regional scale walking and cycling link along the former T6 Carlingford Line is needed
- The Environmental Impact Statement does not sufficiently consider the integration of the Clyde stabling and maintenance facility with the surrounding environment. There are no place and design diagrams for the facilities proposed for Clyde (nor for the facility proposed in or for Silverwater).
- Additional information is required concerning the dive structures, rail infrastructure and the maintenance and stabling facility (including plans for the land north of the dive structure, along the T6 Carlingford Rail Line, marked "Required for Future Stage" in Environmental Impact Statement Figure 9-17) and the relationship of these elements to Rosehill Racecourse, Camellia, James Ruse Drive, and future roads and walking and cycling links.

Response

Mitigation measures have been developed to minimise the potential environmental impacts of the Clyde stabling and maintenance facility and are provided in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, and include:

- Mitigation measure NV15 which requires consultation with the owners and operators of horse stables so that temporary potential impacts to horses are appropriately managed
- Mitigation measure S1 which requires consultation with managers of social infrastructure about the management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity
- Mitigation measure GW2 which requires a review of additional geotechnical and hydrological data to confirm whether drawdown is likely to occur within the vicinity of Duck Creek and A'Becketts Creek
- Mitigation measure GW3 which requires baseline monitoring of surface water flows where the data review undertaken in accordance with GW2 identifies the potential for surface water / groundwater interaction
- Mitigation measure GW4 which requires groundwater monitoring
- Mitigation measure SSWQ4 which requires works in waterways and surrounding low lying areas to be carried out in accordance with progressive erosion and sediment control plans
- Mitigation measures HF3 which requires further design refinement to reduce potential flooding impacts identified in the Environmental Impact Statement.

Mitigations measures C1-C5 which set out the requirements for further assessment of potential contamination in line with the requirements of the *Contaminated Land Management Act 1995*.

Chapter 7 (Placemaking) of the Environmental Impact Statement details the indicative place and design principles that have been developed for the Clyde stabling and maintenance facility and Silverwater services facility. The place and design principles would guide future design to ensure the operational ancillary facilities integrate with their surrounding area and will be further considered during the design and assessment of future stages of Sydney Metro West. Sydney Metro would consult with Council regarding the potential for an active transport link along the former Carlingford Line.

While indicative place and design principle diagrams have not been included in the Environmental Impact Statement for the Clyde stabling and maintenance facility and the Silverwater Services Facility, the preliminary place and design principles for both sites are described in Section 7.10.9. As discussed above and described in Section 7.11.1 of the Environmental Impact Statement, design guidelines for Sydney Metro West would be developed to provide direction for the design of stations, transport interchange facilities, rail corridor works and service facilities, including the Clyde stabling and maintenance facilities and the Silverwater Services Facility. These guidelines would be developed and appended to Environmental Impact Statement(s) prepared for future stages. Sydney Metro West would continue to engage with Council throughout detailed design development and planning of future stage(s).

The section of the Clyde stabling and maintenance facility marked as 'Required for future stage' is for a proposed test track as part of the operational facility. Further details would be provided in future stage assessments.

Public art

Issues raised

City of Parramatta Council raised the following issues relating to public art:

- A stronger commitment to public art should be made and Public art should be considered with Council
- Response to Aboriginal cultural design (7.5), Non Aboriginal Heritage (7.6) and Public Art (7.7) should be in keeping with the draft Civic Link Development Control Plan and the draft Parramatta CBD Public Art and Heritage Interpretation Strategy including future Civic Link Art and Interpretation Plans
- Coordinate with Council regarding any proposed activation initiatives and provide opportunities for temporary public art on any construction hoardings.

Response

Detailed design of stations public domain elements, including opportunities for public art, would be considered in future application(s). The design of the station and precincts would be informed by place and design objectives and principles and feedback from community and stakeholders, including councils.

As set out in measure LV6 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, opportunities for public art on hoardings would be considered in high pedestrian locations. Opportunities to integrate public art into the customer environment, and a process for its curation and production, would be considered in the design of future stations and precincts of Sydney Metro West.

Sydney Metro would consult with Council in relation to the future Civic Link Art and Interpretation Plan.

Heritage interpretation

Issues raised

City of Parramatta Council stated that there should be a firmer commitment to robust heritage interpretation principles being developed, and a commitment to integration of heritage interpretation.

Response

Sydney Metro West is committed to robust interpretation of all significant heritage places and stories, including the interpretation land and archaeology, telling the stories of the place and the people, and referencing the surrounding landscape and heritage.

In relation to the integration of Aboriginal heritage interpretation in the project, the design of the Concept would respect and respond to the culture and stories embedded within the land it passes through. Opportunities for interpretations of Aboriginal culture and heritage, would be explored throughout design by and in consultation with Aboriginal people. Authentic interpretation would be achieved by continued engagement with representatives of the different Aboriginal communities.

As per the Aboriginal heritage operational performance outcome, the design of stations would include Aboriginal heritage interpretation in consultation with registered Aboriginal parties and non-Aboriginal heritage interpretation. Options for heritage interpretation would be considered as part of future stages of Sydney Metro West. Where heritage items are located close to metro stations or other infrastructure, the design would be sympathetic and reflect the heritage context and values of these heritage items. This would effectively manage the potential impacts associated with changes to the setting and views to and from heritage items.

Assessment of the potential impacts to non-Aboriginal and Aboriginal heritage are provided in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement.

Station entry

Issues raised

City of Parramatta Council raised the following issues relating to the station entry for Parramatta and Westmead metro stations:

- A single entry point from Parramatta metro station to the Civic Link is inadequate for the size and significance of interchange, which will occur at this station. Additional entry points, specifically an entry on Church St, should be provided to address crowding and facilitate pedestrian interchange.
- A single station entry to from Westmead metro station to Hawkesbury Road limits opportunities to create an integrated interchange between transport modes and transform Westmead by connecting north and south areas on either side of the existing railway line.

Response

As stated in Chapter 6 (Concept description), a potential additional entry at Parramatta metro station would be determined in future stages of Sydney Metro West. Station design would be further refined during detailed design of stations and subject to assessment in future application(s).

A single station entry to Westmead metro station is currently proposed on Hawkesbury Road. Greater detail about station design, including how it integrates with the existing rail line to facilitate interchange, would be included in the Environmental Impact Statement(s) for future stage(s).

The Westmead metro station place and design principles outlined in Chapter 7 (Placemaking) of the Environmental Impact Statement, recognise the need to support greater activation along Hawkesbury Road, thus unifying North and South Westmead would be a key principle guiding the design of the station.

Transport interchange

Issues raised

City of Parramatta Council raised the following issues relating to transport interchange:

Westmead

- A multi-modal interchange is needed that integrates not only the existing train station but also pedestrians, cyclists, buses and light rail to create a transport precinct that provides safe, equitable and legible access for all users. Prioritising pedestrians and cyclists is not only fundamental to facilitate the growth of the precinct but to support a healthier and more resilient urban environment, an exemplar for a world-class health precinct.

Parramatta

- Consideration should be given to integrating each metro station with existing adjacent public transport network. The project must coordinate with Parramatta Light Rail and Parramatta Station to ensure that safe, accessible and attractive paths of travel are provided between transport modes.
- Consideration must be given to how the project interchanges with the bus stop on Smith Street.

Sydney Olympic Park

- The project should seek opportunities to integrate the metro station with the existing heavy rail station serving Sydney Olympic Park
- Planning and design for this station should include consideration of interchange with stage 2 of the Parramatta Light Rail project
- The project should consider how it will interchange with Parramatta Light Rail Stage 2 at Sydney Olympic Park
- The station at Sydney Olympic Park should include ample interchange facilities to accommodate increased bus services for residents, workers and visitors from surrounding growing suburbs such as Wentworth Point, Newton, and North Lidcombe.

Response

Preliminary place and design principles have been developed for each Sydney Metro West stations. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build upon the five Sydney Metro-wide design objectives (refer to Section 7.3.3 of the Environmental Impact Statement) and have considered relevant local council strategies and *Better Placed* design objectives. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles.

Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by placemaking objectives and principles and feedback from community and stakeholders.

Westmead

Chapter 7 (placemaking) of the Environmental Impact Statement notes that a modal hierarchy would be applied in the design of Sydney Metro West stations. The objective of the hierarchy is to ensure that the design of stations, and their integration with other transport modes, gives the highest priority to the most efficient and sustainable access modes. The hierarchy prioritises walking and cycling connections to provide for the safety and wellbeing of customers and users of the station precinct.

Parramatta

As per the Parramatta metro station place and design principles outlined in Chapter 7 (Placemaking) of the Environmental Impact Statement, the facilitation of intuitive interchange with pedestrian and cycle transport, the future Parramatta Light Rail (Stage 1), and bus services with legible, safe and direct connections from the station entry is a key principle guiding the design of this station.

Figure 7-4 in the Environmental Impact Statement shows a potential connection to Smith Street from the Parramatta metro station.

Customers would be able to connect between Parramatta metro station and the existing Parramatta Station via a short walk, however this station is not being planned as a direct interchange between the two stations. The T1 Western Line interchange is proposed to be at Westmead which provided the opportunity for the Parramatta metro station to be located within the heart of the CBD.

Sydney Olympic Park

Sydney Metro West would work with the existing T7 Olympic Park line on the suburban rail network to cater for events. The details of how Sydney Olympic Park metro station and the T7 Olympic Park line would function together would be considered in consultation with stakeholders during design development. Interchange between the two rail stations is not proposed however customers could make this connection via a short walk.

The proposed northern entry at Sydney Olympic Park metro station would provide for efficient interchange with the planned Parramatta Light Rail Stage 2 on Dawn Fraser Avenue.

As per the Sydney Olympic Park metro station place and design principles outlined in Chapter 7 (Placemaking) of the Environmental Impact Statement, the facilitation of intuitive interchange with other transport modes (including buses) is a key principle guiding the design of this station.

Pedestrian access and wayfinding

Issues raised

City of Parramatta Council raised the following issues relating to pedestrian access:

Westmead

- Create a permeable and high amenity pedestrian environment with multiple linkages
- Bridging the rail line is necessary to improve pedestrian mobility within the precinct and to maximise the transit catchment
- Precinct plans must prioritise pedestrian movement between the transport hub and existing neighbourhood centres at Church Avenue to the south, at Railway Parade and Queens Road to the north, to support economic development and revitalisation of surrounding centres
- Westmead metro station should deliver a clear, accessible and attractive path to interchange with Parramatta Light Rail. This path will also be important for creating an accessible pedestrian route from Metro to Westmead Hospital.

Parramatta

The submission also noted that further detail as to minimisation of the impacts to local amenity, including wayfinding and activation support, should be articulated.

Clyde dive structure, stabling and maintenance facilities

- Investigate opportunities for delivery of publicly accessible connections on all sides of the facility
- Maximise site permeability and public access wherever possible.

Response

Westmead

Metro stations would be designed to facilitate efficient transfer between Sydney Metro West and active transport, including walking and cycling. Station design would be guided by an 'access for all' philosophy using 'priority of access' principles, with pedestrians and cyclists prioritised. The design would allow for bicycles to be transported on trains, allowing cyclists to continue their trip on to surrounding suburbs and existing active transport routes.

One of the preliminary place design principles for Westmead metro station is to facilitate an integrated transport hub with direct interchange between Sydney Metro and Sydney Trains suburban network services and safe, equitable and legible connections with active transport, buses and the future Parramatta Light Rail. Westmead metro station will also provide a gateway to the Westmead Health and Education Precinct.

Parramatta

Further details with relation to wayfinding and support for activation at Sydney Metro West metro stations would be developed as part of the *Sydney Metro West Design Guidelines*. Sydney Metro is committed to a design approach that includes consultation with relevant government agencies and local councils and will continue to consult with Council.

Clyde dive structures, stabling and maintenance facilities

Preliminary place and design principles for the Clyde stabling and maintenance facility are provided in Section 7.10.9 of the Environmental Impact Statement. Sydney Metro would continue to work with Council to refine and implement these principles including consideration of the access points raised by Council. Sydney Metro would also consult with Council regarding the potential for an active transport link along the former T6 Carlingford Line.

Council's desire for active transport connections is noted. Further detail about the design of the Clyde stabling and maintenance facility, including adjacent active transport corridors, would be included in the Environmental Impact Statement(s) for future stage(s). Sydney Metro West would continue to consult with Council about the design of the completed facility.

Maintenance facility design

Issues raised

The City of Parramatta seeks assurances that the Silverwater services facility and Clyde stabling and maintenance facility designs improve the amenity, safety and ecological function of the areas in which they are located.

The design and development of the Clyde stabling and maintenance facility should aim to improve connectivity as well as provide a well-functioning facility.

Response

Chapter 7 (Placemaking) of the Environmental Impact Statement describes the preliminary place and design principles for operational ancillary infrastructure specific to the Silverwater services facility and Clyde stabling and maintenance facility. The place and design principles aim to achieve well designed facilities that integrate to their surrounding spaces. Further detail about the treatment of Duck Creek and A'Becketts Creek during and after construction would be included in the Environmental Impact Statement(s) for future stage(s).

Consideration of other projects

Issues raised

City of Parramatta Council stated that precinct planning for the metro stations should include consideration of the cumulative impacts of Sydney Metro West on local plans (such as the Westmead Masterplan, *Parramatta CBD Planning Proposal*, Civic Link Development Control Plan) and other transport projects including Parramatta Light Rail (stages 1 and 2) and Smith Street bus corridor. At each station, the number and location of entry points should be guided by more detailed assessment of pedestrian movement patterns, spatial requirements, density and flows.

Response

Chapter 6 (Concept description) of the Environmental Impact Statement identifies the number and general location of entries for each proposed station. Integration of station entries with other transport modes, active transport networks, new developments and the directions set by local strategic planning documents would be considered further in assessments for future stages of Sydney Metro West.

As per Chapter 7 (Placemaking), stations would be designed to integrate with state and local government strategic planning for the area. Further detail about the design, including integration with other transport modes and number of station entry points will be included in the Environmental Impact Statement(s) for future stage(s).

Road network

Issues raised

City of Parramatta Council stated that the indicative road layout at Westmead Station does not include any provision for current or future bus priority. Bus priority is important for bus customers, and should be considered in light of the identification of the need for the T-Way to T-Way link identified in the *Future Transport 2056* strategy.

Response

Safe and convenient connections to and from Sydney Metro West stations are an important part of the customer journey and experience of the station precinct. Connectivity between different transport modes, including walking, cycling, rail, light rail, buses, taxis and kiss-and-ride, must be legible and easy, acknowledging that Sydney Metro is part of an integrated transport system. At Westmead, this would include catering for T-way buses as part of the road network changes and the proposed transport interchange.

Sydney Metro would work closely with the Transport for NSW to reorient bus and networks to connect with Sydney Metro West stations, providing feeder service functionality and extending the catchment from which customers can access stations.

Drop off areas

Issues raised

City of Parramatta Council raised the following issues relating to drop off areas:

- Project should accommodate pick up and drop off including not only taxi and ride share services but also private kiss and ride and customers with disabilities
- Project should consult with Parramatta Light Rail regarding proposed kiss and ride in Westmead north of the railway.

Response

Interchange access plans for Sydney Metro West would be developed to provide direction for the design of stations, transport interchange facilities, including bicycle facilities, bus stops, kiss and ride, taxi ranks, and connections to existing rail and light rail infrastructure. The guidelines would be prepared in consultation with local councils and stakeholders, including the Parramatta Light Rail project team, ensuring consideration of the local and state strategic directions and urban design strategies. Sydney Metro would also work with Transport for NSW and other key stakeholders to establish efficient interchanges at each of the metro stations.

Sydney Metro West would be designed to be an accessible system, as described in Chapter 6 (Concept description) of the Environmental Impact Statement. Stations would be fully accessible, and trains would be single deck with level access between the platform and the train. Customer information systems would be modernised, allowing information to be provided to customers with disabilities. Further detail would be provided in assessments for future stages.

As stated in Section 4.5.3 and 4.5.4 of the Environmental Impact Statement, the Concept has been and would continue to be designed in compliance with the objectives of the *Disability Discrimination Act 1992* and the requirements of the *Disability Standards for Accessible Public Transport 2002*.

Design guidelines would be included in the Environmental Impact Statement(s) for future stage(s) and would include consideration of station fit-out and aboveground building construction.

Crime Prevention Through Environmental Design

Issues raised

City of Parramatta Council stated that safety and security considerations should seek to minimise opportunities for opportunistic crime to occur, and the minimisation of dark spots. All four Crime Prevention Through Environmental Design (CPTED) principles should be considered and utilised and a space/activity management CPTED strategy should be identified.

Response

As described in Chapter 7 (Placemaking) of the Environmental Impact Statement, safety is a fundamental consideration for the design of all elements of Sydney Metro West. The design of stations and interchange facilities would be informed by crime prevention through environmental design principles.

As identified in Chapter 7 (Placemaking) of the Environmental Impact Statement, safety is a fundamental consideration for the design of all elements of Sydney Metro West. The design of stations and interchange facilities would be informed by CPTED principles. This would involve incorporating the following CPTED strategies:

- **Natural access control** – public spaces would be designed to attract people to use them, and access would be restricted to areas where customers or the public are not permitted to enter
- **Natural surveillance** – design would enable visibility from surrounding areas, providing for passive surveillance of customers and the community using the station precinct
- **Territorial reinforcement** – clear demarcation would be provided between public and private spaces, encouraging people to use public spaces with a sense of care and ownership
- **Space/activity management.**

The station designs would be developed with consideration given to these principles, to provide safe and secure places for customers and the wider community.

Future development

Issues raised

City of Parramatta Council raised the following issues relating to future development:

- Precinct diagrams indicate large development parcels that may not enable Council's vision. The opportunity is to coordinate the street and block pattern needs with future development to achieve integrated high-quality built form and public domain outcomes.
- It is likely streets and public spaces will be dedicated back to Council for management, however without an understanding of the proposed precinct plan it is difficult to comment on the adequacy of the concept.

Response

Chapter 6 (Concept description) of the Environmental Impact Statement identifies that new metro stations would create opportunities for integrated station and precinct development that provides for community needs and include consideration of relevant planning controls and local character. Potential development opportunities would include a range of uses such as community facilities, new homes, shops, restaurants and commercial office space.

Provision for integrated station and precinct developments would be made at Westmead, Parramatta, Sydney Olympic Park, Burwood North, Five Dock, The Bays and Sydney CBD.

Precinct diagrams shown in Chapter 7 of the Environmental Impact Statement are indicative only. Further details regarding elements incorporated into the station design for the purposes of making provision for future integrated station and precinct development will be identified and assessed as part of future stage Environmental Impact Statements. Integrated station and precinct developments do not form part of the State significant infrastructure application, and would be subject to separate environmental assessments and planning approvals processes.

Sydney Metro is committed to ongoing consultation with Council about future opportunities for integrated station and precinct development.

Rail corridor

Issues raised

City of Parramatta Council stated that the Rosehill Racecourse and the Camellia Peninsula continues to be severed from the city with the new southbound link to Clyde stabling facilities. The south bound link should be kept subgrade to prevent further isolation of the Camellia peninsula and future crossing points should be a priority. A subgrade design would enable the heavy rail corridor southbound to Clyde Station to be retained as a surface transport (future public transport and walking and cycling) corridor. If the southbound link cannot be moved completely sub-grade, it is recommended the dive structure is moved as far south as possible, preferably south of Unwin Street.

Response

The connection between the Clyde stabling and maintenance facility and the mainline metro tunnels would comprise a combination of tunnels, a dive structure and an above ground track within the former T6 Carlingford Line corridor. There would be limited impact on access between Parramatta CBD, the Rosehill Gardens racecourse and the Camellia Peninsula. Sydney Metro will continue to consult with the Australian Turf Club and Council to minimise as much as is practicable the impact of the above-ground elements of the project in this location, including in relation to the potential for an active transport link along the former T6 Carlingford Line.

Relocating the dive structure further south is not a viable option due to the necessary grades of the rail line.

7.3.6 Station design

Commuter car park

Issues raised

City of Parramatta Council stated that unlike the Metro North West Line, which was just finished, last year, it has no commuter car parks.

Response

Chapter 7 (Placemaking) of the Environmental Impact Statement identifies a modal access hierarchy that would be applied in the design of Sydney Metro West stations. The objective of the hierarchy is to ensure that the design of stations, and their integration with other transport modes, gives the highest priority to the most efficient and sustainable access modes. This influences the design of stations and interchanges, highlighting the need to balance transport integration with 'place' elements. The metro stations would focus on providing safe and convenient connections between different transport modes, including walking, cycling, rail, light rail, buses, taxis and kiss-and-ride.

The Concept does not include the provision of any new commuter parking spaces beyond what is already provided near the proposed metro stations.

As described in Chapter 6 of the (Concept description), design of metro stations (where relevant) would include space for access and parking for building services for the future integrated station and precinct development. Further details regarding elements incorporated into the station design for the purposes of making provision for future integrated station and precinct development will be identified and assessed as part of future stage Environmental Impact Statements. Integrated station and precinct developments do not form part of the State significant infrastructure application, and would be subject to separate environmental assessments and planning approvals processes and would involve future community and stakeholder engagement.

7.3.7 Concept description

Active transport

Issues raised

City of Parramatta Council stated that Sydney Metro should investigate opportunities to provide public walking and cycling access alongside the restoration of Duck Creek and A'Becketts Creek.

Response

The potential for a pedestrian connection along Duck River is identified as part of the Sydney Green Grid. The proposed Clyde stabling and maintenance facility would not preclude realisation of this connection. Sydney Metro would continue to consult with Council regarding the design and placemaking opportunities around the Clyde stabling and maintenance facility.

Accessibility

Issues raised

City of Parramatta Council stated that the project should consider accessibility in the design.

Response

Sydney Metro West would be designed to be fully accessible, as described in Chapter 6 (Concept description) of the Environmental Impact Statement. Stations would be fully accessible, and trains would be single deck with level access between the platform and the train. Customer information systems would be modernised, allowing information to be provided to customers with disabilities. Further detail would be provided in assessments for future stages.

As stated in Section 4.5.3 and 4.5.4 of the Environmental Impact Statement, the Concept has been and would continue to be designed in compliance with the objectives of the *Disability Discrimination Act 1992* and the requirements of the *Disability Standards for Accessible Public Transport 2002*.

7.3.8 Stage 1 description

Excavation

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement includes no detail on road pavements and how the existing roads could be affected. There is no information how the excavated material will be removed, how many additional truck movements may be required, and which roads could be affected during the construction phase. Council suggests:

- There should be an agreement between Council, Sydney Metro and their contractor(s) about the responsibility for pavement maintenance during the construction works
- Impact on long term pavement wear as result in increased traffic should be assessed for all affected roads in accordance with Transport for NSW procedures – Roads and Maritime Services Report, Analysis of Marginal Cost of Road Wear – Based on pavement life cycle costing. This compensation to asset owners should be paid in addition to rectification of defects as outlined above.

Response

Vehicle movement forecasts and routes are provided in Chapter 11 (Transport and traffic – Stage 1) of the Environmental Impact Statement.

As required by the *Construction Environmental Management Framework* (Appendix C), prior to the commencement of construction the Principal Contractor would prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports would include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths. Any identified construction related damage would be either repaired or compensated in consultation with Council.

7.3.9 Transport and traffic

Traffic design

Issues raised

City of Parramatta Council stated that the principle to activate Hawkesbury Road requires detailed investigation with respect to traffic movement and design response to prioritise pedestrian movement and achieve the ambition of a unifying north-south spine.

Response

As part of the Environmental Impact Statement(s) for future stage(s), Sydney Metro would carry out further investigations with respect to traffic and pedestrian movements to provide an appropriate design response to cater for traffic, buses and pedestrian movements along Hawkesbury Road. This would support the unification of north and south Westmead.

Active transport

Issues raised

City of Parramatta Council raised the following issues relating to active transport:

- Clyde stabling and maintenance facility indicative construction site layout shows an extension of the construction area to the north, along the former Carlingford Railway line toward Grand Avenue that is labelled “Required for Future Stage”. If this land will be used by Metro for future operations, it is likely to further

separate Camellia and Clyde from the CBD, and will further impact the planned walking and cycling link along the rail line.

- Horwood Place is currently a key north-south route for cycling in the CBD. This path will be severed by the project during construction and Council does not agree that this is a “minor” impact. An alternative solution is required to maintain access.
- The project should work with local government and other stakeholders to identify changes to walking, cycling and street networks to benefit both local and regional connectivity including providing a new shared user path in the former T6 rail corridor
- Chapter 10 Active transport network, states “Horwood Place is also designated on-road cycle route of moderate difficulty. As this would be temporarily closed during construction, cyclists would be required to travel via alternative roads. These could include Smith Street or Church Street.” Council notes that this is not suitable, as Church Street will not be accessible to cyclists to ride through due to the construction of Parramatta Light Rail, and Smith Street has high traffic volume and speed and is an important bus route, and is not suitable as an alternate on-road cycle route.
- With regards to Figure 10-12, Council in collaboration with Transport for NSW has prepared a consultation paper on connecting the Parramatta Light Rail Active Transport Link (ATL) from Camellia along the T6 line to Parramatta Road. Council requests that a minimum five metre wide pedestrian and cyclist link be delivered prior to construction commencing on Metro West, and an assurance the link will remain open for the duration of construction.
- Please include on Page 10-12 the proposed use of former Carlingford Railway T6 corridor as regional walking and cycling route from Parramatta Road to the proposed Parramatta Light Rail ATL at Camellia.

Response

The northern extension of the Clyde stabling and maintenance facility construction site that runs along the Carlingford Railway line is required for future stages and for operations. Council’s desire for an active transport connection along the former Carlingford Rail line at Clyde is noted. Further detail about the design of the Clyde stabling and maintenance facility, including adjacent active transport corridors, would be included in the Environmental Impact Statement(s) for future stage(s). Sydney Metro West would continue to consult with Council about the design of the completed facility.

Parallel north-south roads to Horwood Place which could be used by cyclists are available and this would include Church Street once Parramatta Light Rail Stage 1 is operational. An off-road cycle route is also located nearby along O’Connell Street, around 450 metres away. Horwood Place, like other north-south routes, is an on-road cycle route (with cyclists sharing the road with traffic). This informed the minor impact rating.

Pedestrian, cyclist and motorist safety

Issues raised

City of Parramatta Council raised the following issues relating to pedestrian, cyclist and motorist safety:

- Cycling must be safely accommodated on George Street to allow cyclists to interchange with Parramatta Station
- The impact of closing Horwood Place will not be “minor”. Council has identified Marsden Street as an alternative north-south cycle route through the CBD, however delivery is subject to funding and design to provide a safe facility.

Response

Existing cycle routes along George Street are not expected to be impacted during construction of Stage 1. Sydney Metro West would consult with Council about the design of active transport connections to ensure efficient interchange for cyclists with the Parramatta metro station.

As identified in Chapter 10 (Transport and traffic – Stage 1), the closure of Horwood Place would be temporary and short in duration. Sydney Metro would work with Council to identify suitable and safe alternative cycle routes to be used while Horwood Place is closed.

Further, the future Civic Link which would connect Parramatta Square to the Parramatta River at River Square would allow access by cyclists. Activation of and access to the future Civic Link was a key driver in the site selection and entry placement for Parramatta metro station and is reflected in the place and design principles for the station.

Construction site access

Issue raised

City of Parramatta Council raised the following issues relating to construction site access:

- The construction stage in the Parramatta CBD should include traffic signals at the intersection of George Street and Horwood Place to improve truck and pedestrian safety
- High pedestrian areas such as at Westmead and Parramatta should minimise restrictions to pedestrian movement during construction and seek to augment existing connections during operation when foot traffic will increase markedly.

Response

Sydney Metro is working with Transport for NSW to refine access arrangements to the construction site. At Parramatta metro station construction site, this involves further consideration of the need for traffic signals at the proposed George Street access point.

Pedestrian access around construction sites would be managed to ensure safe pedestrian environments, while balancing the need to provide access to social services and businesses is maintained as much as possible.

Pedestrian movements to and from station entries would be further considered as part of the Environmental Impact Statement(s) for future stage(s).

Access

Issues raised

City of Parramatta Council raised the following issues relating to access:

- Construction of Sydney West Metro must not cause access to properties in Macquarie Street (between Marsden Street and Smith Street) and Church Street (between Macquarie Street and George Street) to be restricted, particularly following the conversion of Macquarie Street to one way traffic
- A pedestrian, cyclist and vehicle connection from Unwin Street through to Parramatta Road should be maintained at all times, unless approved by Council.

Response

As per mitigation measure TT18 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, access to existing properties and buildings would be maintained in consultation with property owners.

As part of Stage 1, Unwin Street and Kay Street would be permanently realigned around the Clyde stabling and maintenance facility (refer to Figure 9-18 of the Environmental Impact Statement). Unwin Street and Kay Street would maintain the existing two-lane road configuration and would be designed to accommodate B-double trucks and general traffic. Sydney Metro would endeavour to maintain this access during construction, however there may be short periods when access is required to be closed to facilitate construction works and traffic tie-ins.

As discussed in Chapter 10 of the Environmental Impact Statement, footpaths located on Unwin Street and Kay Street would be removed to accommodate the construction site. These footpaths serve properties that would be within the construction site and therefore the impact to the pedestrian network is expected to be minimal. Pedestrian access through this area and on the realigned road would be managed to ensure safe pedestrian environments. No impacts to the cycle network are anticipated during construction.

Public transport

Issues raised

Council recommends the following changes be made to reduce public transport impacts at Westmead Station:

- Recommend signalling the intersection on Hawkesbury Road that will incorporate any bus detour to ensure right turns for buses can be made
- Ensure bus stops relocated from Alexandra Avenue to Hassall Street or Bailey Street are universally accessible.

Response

As per mitigation measure TT13 in Chapter 8 (Revised environmental mitigation measures), opportunities to improve bus priority along the temporary detour at Westmead metro station construction site would be investigated during detailed design. Sydney Metro will work with Transport for NSW, other NSW Government agencies and local councils during the detailed design phase. This would include consideration of the signalisation of the Hawkesbury Road intersection.

All temporarily relocated bus stops would be designed having regard to the *Disability Discrimination Act 1992* and *Disability Standards for Access to Public Transport*. As per mitigation measure TT12, any relocation of bus stops and kiss-and-ride facilities would be carried out in consultation with Transport for NSW including Transport Coordination (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.

Construction vehicle routes

Issues raised

City of Parramatta Council stated that the proposed alternative haul route which uses Harris Street near Macquarie Street should minimise heavy vehicle use during school zone times as the route passes the frontage of the former Rowland Hassall Public School site considering any future use of the site.

Response

In accordance with Appendix F (*Construction Traffic Management Framework*) of the Environmental Impact Statement, heavy vehicle movements through designated school zones would be minimised when these zones are in operation (8:00am to 9:30am, 2:30pm to 4:00pm, school days). Sydney Metro is working with Transport for NSW to investigate traffic and pedestrian movements in the area and this work will inform the Construction Traffic Management Plan.

Construction traffic

Issues raised

City of Parramatta Council raised the following issues relating to construction traffic:

- Council requests heavy vehicle movement reductions commencing from 2:45pm, rather than 4pm, owing to proximity of schools (Sacred Heart Primary School, Ralph Street Westmead; Westmead Public School, Hawkesbury Road; and Mother Teresa Primary School, Catherine McAuley, and Parramatta Marist High School, Darcy Road, Westmead)
- While the impact of temporary traffic congestion and travel time, and loss of parking is likely to mostly impact businesses within 100 metres of a construction site, it is recommended that impact analysis of any change to parking or traffic consider a much larger catchment (at least 400 metres)
- Consultation should be undertaken across the Silverwater precinct to understand any impact of the construction of freight haul routes and access requirements for heavy machinery, delivery trucks and the like.

Response

In accordance with Appendix F (*Construction Traffic Management Framework*) of the Environmental Impact Statement, heavy vehicle movements through designated school zones would be minimised when these zones are in operation (8:00am to 9:30am, 2:30pm to 4:00pm, school days).

Businesses most likely to be potentially affected by loss of parking and temporary traffic congestion and travel times are those within 100 metres of a construction site. As per mitigation measure B11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.

Construction haulage routes have been developed to minimise the use of local roads and use the most efficient route to the arterial road network. Haulage routes have been developed in consultation with relevant sections of Transport for NSW including Transport Coordination. Should the Concept and Stage 1 be approved, Sydney Metro would continue to consult with the community and key stakeholders during construction and the planning for future stages. In general, this consultation would involve:

- Ongoing consultation with key stakeholders, local councils and other government agencies
- Provision of regular updates to the nearby communities
- Development and implementation of a community complaints and response management system.

Congestion

Issues raised

City of Parramatta Council did not agree that temporary traffic congestion and increased travel times are “unlikely” to have an impact to businesses in the Parramatta CBD (with a “slight negative” significance).

Response

The results of the intersection traffic analyses carried out for the Parramatta metro station are included in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement. Analysis of the modelled intersection performance indicates Pitt Street/Argyle Street/Park Parade intersection improves with Stage 1 (as a result on the road network changes proposed at Westmead) while the O’Connell Street/Argyle Street intersection would experience a temporary reduction in performance during the evening peak.

As discussed in Chapter 16 (Business impacts – Stage 1) of the Environmental Impact Statement, potential temporary impacts to businesses associated with construction traffic are generally unlikely due to the diversity of employment types and availability of multiple access routes into and out of Parramatta CBD. The ‘slight negative’ rating is considered appropriate based on the discussion provided in Table 16-10 of the Environmental Impact Statement.

Temporary potential impacts to road network performance would be minimised through the implementation of the *Construction Traffic Management Framework* and mitigation measures identified in Chapter 8 (Revised environmental mitigation measures).

Mitigation, management and monitoring

Issues raised

City of Parramatta Council stated that potential impacts to the local road network should be modelled and considered as part of a Construction Traffic Management Plan for the area.

Response

Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement provides details of the light vehicle and truck movements associated with each construction phase that have informed the assessment of potential impacts on the local and regional traffic network.

Modelling for road traffic performance was carried out for each metro station construction site. The results of the modelling are described in Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement. Additional traffic modelling and further consultation with Council will be carried out as part of the more detailed future stage(s) Environmental Impact Statement. Additional traffic analysis may need to be carried out to support the development of Construction Traffic Management Plans.

Temporary potential impacts to road network performance would be minimised through the implementation of the *Construction Traffic Management Framework* and mitigation measures identified in Chapter 8 (Revised environmental mitigation measures). This includes reducing vehicle movements in network peak periods.

All site-specific Construction Traffic Management Plans would be developed in consultation with Traffic and Transport Liaison Group and Traffic Control Group meetings which would include local council representation depending on work site locations. In some cases, additional traffic network performance modelling may be undertaken during the development of Construction Traffic Management Plans.

7.3.10 Noise and vibration

Construction noise and vibration

Issues raised

City of Parramatta Council raised the following issues relating to construction noise and vibration:

- Noise and vibration assessment is required of both actual and planned sensitive receivers along the Metro corridor within the construction time frame. This requires coordination with precinct plans and future uses.
- The Roxy Theatre must be considered as a sensitive receiver and not be negatively constrained (by noise or vibration) from adaptively reuse as a future theatre.

Response

The approach for the noise and vibration assessment is described in detail in Chapter 11 (Noise and vibration – Stage 1) of the Environmental Impact Statement. The assessment considered actual receivers within the noise catchment areas surrounding each construction site. A review of recently approved developments in the study area was also completed and those that would be categorised as sensitive were included in the assessment. Sydney Metro will continue to work closely with Council to remain informed about more recent planned property development so that appropriate mitigations are included in future detailed design.

The Roxy Theatre (a State heritage item) is identified as a receiver within the noise and vibration impact assessment (refer to Section 11.7.2 of the Environmental Impact Statement).

The assessment identifies that there would be some temporary construction noise impacts to the Roxy Theatre which would be managed in accordance with the *Sydney Metro Construction Noise and Vibration Standard* and the mitigation measures identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. The temporary construction impacts to the Roxy Theatre would not impact the long term ability for adaptive reuse of this building.

As per mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures), as the vibration levels have the potential to exceed the cosmetic damage screening criteria, a 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. This 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.

7.3.11 Non-Aboriginal heritage

Operational impacts

Issues raised

City of Parramatta Council raised the following issues relating to non-Aboriginal heritage operational impacts:

- The response to built form of operational infrastructure to non-Aboriginal heritage should comply with the *Civic Link Framework Plan* and draft Civic Link Development Control Plan
- Kia Ora house must be maintained, and the surrounding curtilage and public domain reflect or further enhance the outcomes outlined in the draft Civic Link Development Control Plan.

Response

The design development of Stage 1 has included a focus on avoiding or minimising potential non-Aboriginal heritage impacts. As a result of this, Kia Ora would be retained and protected.

The *Civic Link Framework Plan* and related Development Control Plan would be considered during future development of Sydney Metro West, including integrated station and precinct development.

Construction impacts

Issues raised

City of Parramatta Council raised the following issues relating to non-Aboriginal heritage construction impacts:

- At 41-59 George Street, the street façade and roof line are visible from the street. The remaining building fabric is unknown and requires further investigation to inform how this building will be protected during construction.
- Kia Ora and associated trees should be outside the hoarding of the construction site. Trees on Macquarie Street in front of Kia Ora should be retained.

Response

The local heritage listed shop at 41-59 George Street and Kia Ora would be retained and protected.

Vibration modelling (refer to Section 11.7.2 of the Environmental Impact Statement and Technical Paper 2) indicates that shop at 41-59 George Street could experience vibration levels which have the potential to exceed the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe construction methods are used to protect this heritage item, including that safe vibration levels for the structure are met.

Trees to the front of 60-64 Macquarie Street, outside of Kia Ora, would be retained, protected and trimmed during construction of Parramatta metro station. Council's desire that the construction hoarding not obscure the view of Kia Ora from Macquarie Street is noted. This would be considered as part of detailed construction planning.

7.3.12 Property and land use

Land use

Issues raised

City of Parramatta Council raised the following issues relating to land use:

- The draft Westmead Master Plan will likely facilitate some residential intensification (up to 4500 dwellings by 2036); however, the primary focus is facilitating the intensification of health and education land uses and the associated employment generation. Any land-use change in Westmead must be consistent with the objectives of the innovation precinct and should be supported via a coordinated approach with key stakeholders within Westmead.
- Stronger emphasis should be given in the Environmental Impact Statement to Westmead as a Health and Education Precinct
- The Parramatta metro station would prevent approved redevelopment at the Greenway site (220–230 Church and 48 Macquarie Street).

Response

Sydney Metro acknowledges the importance of Westmead as a health and education precinct. As discussed in Chapter 3 of the Environmental Impact Statement (Sydney Metro West development and alternatives), servicing the precinct with metro would provide a significant opportunity to support the new vision for Westmead by offering improved accessibility to and from the precinct, and attracting global practices and businesses. Westmead was therefore added as a core station location. One of the preliminary place and design principles for Westmead metro station is to provide a gateway to the Westmead Health and Education Precinct in recognition of its status.

As identified in Chapter 7 (Placemaking) of the Environmental Impact Statement, a number of plans and strategies have informed the development of Westmead metro station, particularly raising the awareness of Westmead health and education precinct and would guide future design. This has included consideration of The Westmead Health and Education Precinct Master Plan. The Master Plan includes targets to increase jobs and tertiary students in the precinct. Serving the health and education precinct was a key driver in the selection of Westmead as a core station location. The delivery of Sydney Metro West would provide the transport connectivity required to support the growth of Westmead. Sydney Metro would continue to work with key stakeholders at Westmead to support outcomes of the masterplan.

Further, the Department of Planning, Industry and Environment has identified a precinct planning process for the Westmead locality, including:

- **State-led strategic planning for the entire Westmead locality** – which will include early work by the Department of Planning, Industry and Environment, councils, state agencies and communities in the development of places and the planning frameworks that support them
- **Collaborative planning for the North and South Westmead precincts** – which will involve Department of Planning, Industry and Environment having a coordination role to facilitate collaborative partnerships between Department of Planning, Industry and Environment, councils and state agencies.

Chapter 14 (Property and land use) of the Environmental Impact Statement acknowledges that the proposed station would prevent the approved redevelopment at the Greenway site (220–230 Church and 48 Macquarie Street).

Residual land

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement states that the block bound by Hawkesbury Road, Alexandra Avenue and Bailey and Hassall Streets will be acquired to facilitate the construction and delivery of the future Westmead Metro Station. The future of any surplus land post-construction should be considered in the context of the Westmead Precinct and not just be identified for residential development.

Response

As discussed in Chapter 14 (Property and land use – Stage 1) of the Environmental Impact Statement, most of the sites required to support construction are also associated with the permanent operational footprint of the Concept (included in future stages). Any surplus land post-construction would be addressed in future stages of Sydney Metro West.

Further details regarding elements incorporated into the station design to support future integrated station and precinct development would be identified and assessed as part of future stage Environmental Impact Statements. Integrated station and precinct developments do not form part of the State significant infrastructure application, and would be subject to separate environmental assessments and planning approvals processes and would involve future community and stakeholder engagement.

A portion of the land acquired to support construction at Westmead may be residual to operational needs. Any future development of this land would need to consider the relevant planning controls in place at that time.

Loss of recreational space

Issues raised

City of Parramatta Council raised the following issues relating to loss of recreational space:

- It is recommended that local offsets be identified for the loss of recreational land associated with the relocation of the Sydney Speedway
- Work with local government and other stakeholders to help offset recreational land lost locally.

Response

The proposed construction site at Clyde does not impact any publicly accessible recreation land. The NSW Government announced the relocation of speedway racing to the Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. The new speedway (Sydney International Speedway) would be located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north. The Environmental Impact Statement for the proposed Sydney International Speedway (Application Number SSI-10048) can be found on the Department of Planning, Industry and Environment website.

Future development

Issues raised

City of Parramatta Council stated that Metro must outline impacts to the future redevelopment of the Roxy including future development constraints.

Response

The Parramatta metro station would not impact the potential future redevelopment of the Roxy building. Depending on the nature of the proposed redevelopment, concurrence from Sydney Metro may be required. This would need to be considered at the time of any development application.

Commercial development

Issues raised

City of Parramatta Council raised the following issues relating to commercial development:

- Opportunities at Westmead metro station to maximise the commercial floor space in close proximity to the station precinct and interchange (particularly of local commercial services) should be explored in conjunction with local councils and the Department of Planning, Industry and Environment
- Owing to the station's location within Parramatta CBD, opportunities both to maximise high-value commercial office space, and active ground floor space within the development site should be considered.

Response

Provision for integrated station and precinct developments is proposed at Westmead and Parramatta. An integrated station and precinct development refers to the proposed building(s) above and/or around the station that could deliver a range of uses such as community facilities, new homes, shops, restaurants and commercial office space.

The metro stations would be designed to take into account, and make physical provision for, any design or other requirements associated with future integrated station and precinct development. Design integration would ensure future developments can be built efficiently and effectively. Integrated station and precinct developments do not form part of the State significant infrastructure application, and would be subject to separate environmental assessments and planning approvals processes which would include consultation with local councils.

Any land use changes at Westmead to maximise commercial floor space would be subject to strategic planning and rezoning processes by Council and/or the Department of Planning, Industry and Environment.

Property acquisition

Issues raised

City of Parramatta Council stated that it is unclear what support Transport for NSW is providing to directly affected businesses in seeking alternative properties (or other relevant support) where their existing premises are subject to acquisition by the project.

Response

The design development of Stage 1 has included a focus on avoiding or minimising the need to acquire private property. This has included:

- Minimising the extent of construction sites and the need for private property acquisition
- Where possible, using existing Government owned land to avoid or reduce the need for private property acquisition. For example, the sites at North Strathfield and The Bays are wholly located on existing Government owned land.
- Locating construction sites where permanent operational infrastructure would also be required, to minimise temporary property impacts and residual land at the completion of construction
- Designing construction sites within existing cadastral boundaries where possible to minimise the need for partial acquisitions
- Private properties directly affected by the Concept would be acquired. All property acquisition would be managed in accordance with the NSW *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms announced by the NSW Government which can be viewed online at <https://www.propertyacquisition.nsw.gov.au/property-acquisition-process>. Sydney Metro has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process.

Mitigation, management and monitoring

Issues raised

City of Parramatta Council stated that impact mitigation on amenity at locations should be place-based and seek to maximise opportunities for businesses to trade as usual (operating hours and model). Support should be provided where businesses are forced to make accommodations or changes to the way their business operates as a result of the project.

Response

Business impacts associated with the project would be managed in accordance with Sydney Metro's *Construction Environmental Management Framework* (Appendix C), and mitigation measures BI1, BI2, and BI3 in Chapter 8 (Revised environmental mitigation measures). Stage 1 of the works for Sydney Metro West would include a program to assist small business owners adversely impacted by construction and measures to help maximise the visibility of businesses during the construction period. As set out in mitigation measures BI1, small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.

The *Construction Environmental Management Framework* specifies that a Community Communications Strategy would be prepared and implemented during construction. The Strategy would define the location specific measures and strategies to minimise impacts on individual businesses during construction, with particular consideration of the commercial character of the locality, its general trading profile, and information gained from the business profiling.

An *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 (Appendix B). Contract specific Community Communication Strategies would be developed by appointed project delivery communication teams to address contract and site specific needs of the community, stakeholders and businesses. 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.

Business impacts

Issues raised

City of Parramatta Council stated that any temporary power and utility interruptions should be planned well in advance and conducted at the most convenient time for affected businesses.

Response

As discussed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement, a utilities coordination manager would be appointed for Stage 1 to coordinate the delivery of the utility works. Consultation with utility providers would continue during detailed design and construction to mitigate the risk of unplanned and unexpected disturbance of utilities.

Economic precincts

Issues raised

City of Parramatta Council stated that the Rydalmere-Rosehill-Silverwater area should be further considered as priority economic precincts, including the Speedway and Rosehill Raceway. Council noted that the short, and long term impacts of removal of the speedway should be acknowledged and risks and possible mitigations to access and amenity of the Rosehill Raceway should be identified.

Response

The importance of the Rydalmere-Rosehill-Silverwater economic precinct is acknowledged.

The NSW Government announced the relocation of speedway racing to the Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. While this would have some impact on the local area, the relocation would generate broader economic and employment benefits for Western Sydney. These are discussed in Chapter 17 (Social impacts – Stage 1) of the Environmental Impact Statement.

The measures identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report have been developed to address potential access and amenity impacts on Rosehill Gardens racecourse. Sydney Metro will continue to work closely with the Australian Turf Club so that appropriate measures are established to address the issues associated with ensuring business continuity during construction within and around the Rosehill Gardens racecourse.

Surrounding development

Issues raised

City of Parramatta Council stated that insufficient detail has been provided to fully assess the socio-economic, land use and property impacts. Station locations will trigger development in the surrounding precinct, which will be difficult to assess without a more detailed understanding of the scope of the Metro proposal and surrounding precinct plan.

Response

The Concept environmental assessment (refer to Chapter 8 of the Environmental Impact Statement) is generally based on a 'Concept corridor', however Stage 1 (refer to Chapters 14 and 17 in the Environmental Impact Statement) contains sufficient detail (including station locations) to adequately assess property and land use, and socio-economic impacts for each station. Further detailed environmental assessments would be carried out at future stages of the planning process.

Existing land uses are considered in Section 14.7 of the Environmental Impact Statement which includes an assessment of land use change impacts. Consideration is given in Chapters 2 (Strategic need and justification), Chapter 8 (Concept environmental assessment) and Chapter 14 (Property and land use – Stage 1) to local and strategic land use plans, including the Parramatta Local Environment Plan 2011 and the *Greater Parramatta Interim Land Use and Infrastructure Implementation Plan* (Department of Planning and Environment, 2017). Acknowledgment is also given to a planning proposal submitted for the Parramatta CBD, which seeks to implement a new planning framework to guide the growth and development of the Parramatta CBD.

Acquisition

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement indicates that 70 Macquarie Street forms part on the metro site. This is not the case and is not part of the compulsory acquisition. Council requires use of this site until April 2022 to facilitate building of the 5 Parramatta Square development.

Response

Sydney Metro will liaise directly with Council regarding the appropriate tenure required for use of this site and the timing of Sydney Metro works.

Development corridor

Issues raised

Council requests that the relevant GIS files of the corridor be sent to Council once the amendments to the SEPP are made.

Response

The amendments to State Environmental Planning Policy (Infrastructure) 2007 were managed by the Department of Planning, Industry and Environment. Sydney Metro worked with the Department of Planning Industry and Environment on the amendments, and has provided Council with the relevant GIS files of the corridor.

7.3.13 Landscape character and visual amenity

Assessment methodology

Issues raised

City of Parramatta Council stated that the 'Landscape Character and Visual Amenity' section is primarily analytical and lacks meaning without a proposal for station locations to assess impacts and outcomes against.

Response

A landscape character and visual amenity assessment has been carried out for both the Concept and Stage 1 of Sydney Metro West. While the Concept environmental assessment (refer to Section 8.9 Environmental Impact Statement) is generally based on a 'Concept corridor', Stage 1 (refer to Chapter 15 in the Environmental Impact Statement) identifies the location of construction sites assesses landscape character and visual impacts for each station.

Further landscape character and visual amenity assessment would occur for future stages of Sydney Metro West. Sydney Metro would continue to consult Council during development of these future stages.

7.3.14 Business impacts

Assessment approach

Issues raised

City of Parramatta Council stated that while the use of a 400 metre radius around construction site is a reasonably robust "business affectation area", place-based consideration of impacts beyond this 400 metre buffer (where making large changes to an existing transit corridor, for example), should be considered to ensure impacts are best mitigated and information shared widely and in a timely manner.

Response

As discussed in Chapter 16 (Business impacts – Stage 1) of the Environmental Impact Statement, the use of a 400 metre radius around a construction site is consistent with the approach of using Transport Performance and Analytics travel zone data and is considered appropriate for assessing the potential business impacts from Stage 1 construction activities.

Cumulative impacts

Issues raised

City of Parramatta Council stated that a business impact assessment for the Westmead and Parramatta metro stations should more closely consider cumulative impacts, in particular public transport.

Response

Potential cumulative impacts to businesses around Westmead and Parramatta metro stations are discussed in Chapter 8 (Concept environmental assessment) and Chapter 16 (Business impacts – Stage 1) of the Environmental Impact Statement. Temporary changes and general disruption to transport services is identified as a potential impact to businesses around Parramatta metro station construction site. Further cumulative impact assessments would be carried out at future stages to determine potential impacts during construction of future stages and operation.

Mitigation, management and monitoring

Issues raised

City of Parramatta Council stated that Transport for NSW should consider the following:

- Mechanisms within their business support package to assist businesses to maximise opportunities relating to increased passing trade and the redistribution of trade, where they exist
- Support for local business to minimise any potential impacts to their operations (or to maximise any benefits)

- Techniques to seize potential opportunities afforded by additional construction worker trade.

Response

Business impacts associated with the project would be managed in accordance with Sydney Metro's *Construction Environmental Management Framework* (Appendix C), and mitigation measures BI1, BI2, and BI3 in Chapter 8 (Revised environmental mitigation measures). Stage 1 of the works for Sydney Metro West would include a program to assist small business owners adversely impacted by construction and measures to help maximise the visibility of business during the construction period. As set out in mitigation measures BI1, small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.

The *Construction Environmental Management Framework* specifies that a Community Communications Strategy would be prepared and implemented during construction. The Strategy would define the location specific measures and strategies to minimise impacts on individual businesses during construction, with particular consideration of the commercial character of the locality, its general trading profile, and information gained from the business profiling. As per mitigation measure BI1, small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.

An *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 (Appendix B). Contract specific Community Communication Strategies would be developed by appointed project delivery communication teams to address contract and site specific needs of the community, stakeholders and businesses. 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.

7.3.15 Social impacts

Recreation

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement does not adequately address the social and economic impact on recreation facilities.

Response

A social impact assessment was conducted (detailed in Chapter 17 of the Environmental Impact Statement and Technical Paper 6 (Social impact assessment)) for the project and assesses the potential impacts on social infrastructure and communities during Stage 1 construction. Access to social infrastructure would be maintained during construction. Any social and economic impacts associated with Stage 1 construction on recreation facilities would be temporary in nature.

As set out in mitigation measure S1 in Chapter 8 (Revised environmental mitigation measures), consultation would be carried out with managers of social infrastructure located near construction sites about the timing and duration of construction works and management of potential impacts with the aims of minimising potential disruption to the use of social infrastructure. In addition, mitigation measure S4 specifies consultation would be carried out with festival and event organisers in proximity to construction sites to mitigate potential impacts on the operation of the festival or event.

As mentioned in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement, social impact assessments would be carried out at future stages to determine potential impacts during both construction and operation. If relevant to the stage, social impact assessment will include impacts on community and recreational facilities.

7.3.16 Groundwater and ground movement

Groundwater discharge

Issues raised

City of Parramatta Council stated that clear arrangements should be proposed for permanent pumping of tunnels' seepage water and treatment of this water prior to discharge

Response

As discussed in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement, the tunnels and many other project elements are designed as tanked (or lined) structures, meaning that groundwater seepage into the tunnels is minimal.

Details of the management and treatment of water untanked stations, including mitigation measures where required, would be provided as part of Environmental Impact Statement(s) for future stage(s) of Sydney Metro West. The groundwater and water quality performance outcomes in Chapter 8 (Concept environmental assessment) would apply.

7.3.17 Contamination

Consistency with plans

Issues raised

City of Parramatta Council stated that Sydney Metro should ensure contaminated land strategy is coordinated with public domain structure plan and accompanied with certification of clean fill on all lands dedicated back to Council.

Response

The *Construction Environmental Management Framework* (Appendix C) includes a requirement to prepare a Soil and Water Management Plan which would include management measures for contaminated material (soils, water and building materials) and a contingency plan in the case of unanticipated discovery of contaminated material.

Mitigation measures C1 to C3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report establish a risk based approach to contamination that ensures that areas with potential contamination would be subject to further desktop data review, detailed site investigations, and appropriately remediated if required.

7.3.18 Hydrology and flooding

Flooding

Issues raised

City of Parramatta Council raised the following issues relating to flooding:

- Concern the location of the stabling and maintenance yards with a very large footprint in a high flood impact zone will lead to significant impacts from both an environmental and built form perspective
- Council seeks to ensure no adverse flooding impacts arise, including impacts to flood behaviour and overland flow
- Reference should be made to Council's adopted flood studies, including flood studies currently in preparation
- It is unclear how the identified flood risk impacts will be addressed in the final design
- It is unclear what permanent changes to flood impacts and hydraulic flood hazard flow conditions are expected on completion of the project.

Response

As described in Technical Paper 9 (Hydrology and flooding) of the Environmental Impact Statement, a flooding assessment was undertaken at both a qualitative and quantitative level. The quantitative assessment for Clyde considers the formation works for the future stabling and maintenance facility. As a result, it provides an assessment of the end-state of the facility.

The assessment included a review of floodplain risk management plans adopted by Councils. No significant inconsistencies or conflicts between Stage 1 and any Council floodplain risk management plans were identified.

That assessment found that Stage 1 of the works for Sydney Metro West would result in generally minor flooding impacts, including flood level increases in localised areas that are below existing building floor levels, minor impacts in the probable maximum flood, and minor increases in high flood hazard extent. No new properties were identified as becoming flood-affected in up to the one per cent annual exceedance probability event as a result of Stage 1, while up to seven new properties become flood-affected in the probable maximum flood. The assessment showed that there are no new roads which become significantly affected by high hazard flooding as a result of Stage 1.

A number of mitigation measures (mitigation measures HF1 to HF6, refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report) would be implemented to address flood risk impacts, including on-site stormwater detention, drainage at construction sites, and consultation with relevant stakeholders. In addition, further design refinement at the Clyde stabling and maintenance facility construction site would occur during detailed design to mitigate the identified potential impacts.

In accordance with mitigation measures HF1, detailed construction planning would consider flood risk at all construction sites, including:

- Identification of measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the one per cent AEP flood event
- Provision of flood-proofing to excavations at risk of flooding or coastal inundation during construction, where feasible and reasonable, 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 works to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required. This includes design of site hoardings to minimise disruption to flow paths (if possible).

As described in Section 8.15 of the Environmental Impact Statement, the aboveground infrastructure within the Concept corridor are expected to have a negligible impact on existing surface hydrology as infrastructure would generally be located within the footprint of existing structures and would not greatly alter the extent of impervious surfaces. Table 8-46 of the Environmental Impact Statement sets out the operational performance outcomes for hydrology and flooding for the Concept. Performance outcomes identified include:

- Increases in flood levels are minimised, particularly within private properties, during events up to and including the one per cent annual exceedance probability
- No additional private properties are affected by flood events up to and including the 1 per cent AEP
- Dedicated evacuation routes are not impacted in flood events up to and including the PMF
- The performance of the downstream drainage network is maintained
- Metro tunnels and other critical infrastructure would be protected from the PMF, or be 0.5 metres above the one per cent AEP flood level (whichever is greater).

As stated in Section 8.15.7 of the Environmental Impact Statement, hydrology and flooding impact assessments would be carried out at future stage(s) to determine potential impacts during both construction and operation. The scope of each assessment may vary depending on relevance to the stage and would be undertaken in accordance with any scoping report(s) or Secretary's Environmental Assessment Requirements issued for that stage.

Emergency management

Issues raised

City of Parramatta Council raised the following issues relating to emergency management:

- It is unclear how flood prone sites and their access for flood emergency response will be protected after final construction
- Appropriate consultation and planning of flood emergency management with NSW State Emergency Services should extend beyond the construction stage of these works and should include any impacts due to permanent changed flood conditions.

Response

The flooding assessment described in Technical Paper 9 (Hydrology and flooding) of the Environmental Impact Statement showed that there are no new roads which become significantly affected by high hazard flooding as a result of Stage 1, and that there is not expected to be material impacts to the trafficability of roads and emergency access routes. The increases in flood depths of 0.1 metres on roads in the probable maximum flood would not affect trafficability as these roads are already deeply submerged in the existing case.

As a result, further protection of flood prone sites and their access is not required. Nevertheless, construction planning regarding flooding matters would be carried out with the NSW State Emergency service and the relevant local council in accordance with mitigation measure HF7 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Section 8.15.4 of the Environmental Impact Statement identifies that aboveground stations and ancillary infrastructure are expected have a negligible impact on existing flood behaviour because the infrastructure would be generally located within the footprint of existing structures. Infrastructure would be designed to be compatible with the existing flood hazard and hydraulic function of the sites and to have minimal impact to the community and emergency management response requirements. As described in Section 8.15.7 of the Environmental Impact Statement, hydrology and flooding impact assessments would be undertaken for future stage(s), including the construction of stations, to determine potential impacts during both construction and operation. The protection of flood emergency response access during both construction and operation of the project would be assessed in the Environmental Impact Statements of future stage(s) of the project.

Assessment methodology

Issues raised

City of Parramatta Council raised the following issues relating to assessment methodology:

- Modelling for Metro, referred to in the draft Camellia master plan, notes that if Stage 1 of the Metro is built, it may increase the PMF level at the Parramatta CBD metro station construction site “by up to about 0.5 metres”. It is unclear how this referenced assertion is supported.
- There was no mention of other critical infrastructure such as the location and flood protection of electrical power substations and the flood protection of fresh air ventilation systems and emergency evacuation access points within the floodplain
- No flood map inundation and level comparisons were made to Council's adopted *Lower Parramatta River Flood Study* levels
- Flood modelling sensitivity checks and comparisons should also be made to flood levels and flood hazard flow conditions based on the new *Australian Rainfall and Runoff* (ARR) 2019 methodology for a one per cent AEP flood event
- The Flood Consultant's conclusions appear to minimise the consequences of this proposal by focussing on numerical outputs from computer models rather than analysing the holistic impacts of this work in the floodplain.

Response

Section 4.8.2 of Technical Paper 9 (Hydrology and flooding) includes an assessment of the potential cumulative impact of proposed local strategic plans, including the Draft Camellia Town Centre Master Plan and Stage 1. As part of this assessment, sensitivity testing was undertaken in the Clyde stabling and maintenance facility flood model to estimate potential flood impacts of the Draft Camellia Town Centre Master Plan. The draft landfilling strategy included in the Draft Camellia Town Centre Master Plan was represented in the model which resulted in the stated 0.5 metres impact at the Parramatta metro station.

The focus of the Environmental Impact Statement and supporting technical papers, including Technical Paper 9 (Hydrology and flooding) is Stage 1, which does not include construction of the infrastructure referred to by Council (i.e. the location and flood protection of electrical power substations and the flood protection of fresh air ventilation systems and emergency evacuation access points within the floodplain). Existing flood levels were provided in Technical Paper 9 (Hydrology and flooding) to inform any subsequent design of these elements, which will be assessed during future stage(s) (refer to Section 8.15.7 of the Environmental Impact Statement). As discussed above, Table 8-46 of the Environmental Impact Statement sets out the operational performance outcomes for hydrology and flooding for the Concept with which subsequent stage(s) would comply.

The *Lower Parramatta River Flood Study* focusses on mainstream flooding and does not adequately represent 1 per cent AEP overland flooding relevant to Stage 1. As discussed in Section B.3 of Technical Paper 9 (Hydrology and flooding), review of the Lower Parramatta River MIKE11 modelling indicates it is also limited in its estimation of flood levels in overbank areas, and is considered to significantly overestimate PMF levels due to the truncated model cross sections of flow paths through the streets of the Parramatta CBD area. Based on these factors, the *Parramatta Light Rail Environmental Impact Statement* flood reporting and mapping was referenced rather than the *Lower Parramatta River Flood Study*.

As described in Section 21.2 of the Environmental Impact Statement, most of the existing flood studies reviewed are based on the design rainfall data provided in *Australian Rainfall and Runoff 1987* (AR&R 1987). A limited number of the existing studies are more recent and are based on *Australian Rainfall and Runoff 2019* (AR&R 2019) design rainfall data, which estimates 20 – 30 per cent lower design rainfalls in the Parramatta area compared to AR&R 1987. Due to the lower design rainfalls, potential flood affectation of the Stage 1 construction sites would be lower when modelled using the 2019 data. Consideration of flood affectation and flood impacts during detailed construction planning, as required by mitigation measures HF1, HF5 and HF7 (refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report), would use AR&R 2019 data.

The existing flood studies which have been referred to in Technical Paper 9 (Hydrology and flooding), in conjunction with overall review of other hydrologic factors, including location in catchment, terrain, presence of overland flow paths, indicates that the large majority of Stage 1 sites, including those in the Parramatta Local Government Area, are of low flood-affectation. By necessity the assessment relies on the numerical modelling to quantify the existing case flooding conditions and demonstrate the potential extent of impact. The assessment presented in Section 8.15, Chapter 21 and Technical Paper 9 (Hydrology and flooding) of the Environmental Impact Statement includes a holistic view of the existing flooding conditions and the nature of the development. Based on the assessment that the sites are of low-flood affectation and consideration that the Concept and Stage 1 would result in development of a similar nature and footprint to the existing development, it is concluded that minor flood impacts are expected.

Risk assessment

Issues raised

City of Parramatta Council raised the following issues relating to the risk assessment:

- This Environmental Impact Statement Risk Assessment appears to be mainly focussed on construction phase issues rather than the long-term consequences and risks for the flooding environment
- Flooding and Hydrology are identified as having 'a medium residual risk'. This appears to be an understatement of the Risk overall.

Response

As described in Section 28 of the Environmental Impact Statement, flooding and hydrology was identified as having a medium residual risk due to its consequence being 'moderate' (i.e. medium-term, short-term and/or well contained environmental effects, with minor remedial actions probably required, and moderate impacts or disruptions to stakeholders or customers) and its likelihood being 'likely' (i.e. having an occurrence probability of 50 to 75 per cent). This classification is considered to be accurate, as the flood assessment described in Section 21 of the Environmental Impact Statement showed that protection of the infrastructure from potential floods and any potential impacts on off-site flood behaviour are anticipated to be manageable through appropriate project design.

As described in Section 11.1 of the Environmental Impact Statement, the planning approvals and environmental impact assessment for Sydney Metro West would be broken down into a number of stages. The Environmental Impact Statement covers the Concept and Stage 1 comprising all major civil construction works between Westmead and The Bays including station excavation and tunnelling.

Chapter 21 (Hydrology and Flooding – Stage 1) and Technical Paper 9 (Hydrology and flooding) address construction stage impacts of the Stage 1 on other properties/users. Any increased flood risk due to additional people working on Stage 1 would be subject to flood management plans to be developed by the contractor during construction planning in accordance with mitigation measures HF1 to HF6 (refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report). Operational stage impacts have been considered at a Concept level in Chapter 8 (Concept environmental assessment). Further assessment would be undertaken during future stages.

Stormwater discharge

Issues raised

City of Parramatta Council stated that any flood and drainage impacts to the proposed works due to limitation in hydraulic capacity of council's stormwater drainage system(s) should be addressed and any recommended improvements delivered as part of the Sydney Metro West project.

Response

In accordance with mitigation measure SSWQ7 in Chapter 8 (Revised environmental mitigation measures), Sydney Metro would undertake further design development to 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 investigated.

7.3.19 Biodiversity

Vegetation removal

Issues raised

City of Parramatta Council raised the following issues relating to the vegetation removal:

- The area surrounding the Clyde facility contains patches of mangrove forest. Removal of ecology and riparian habitats may result in biodiversity impacts.
- Estimated loss of 300 trees at Clyde – numerous ecological and aesthetic impacts, change to soil water profile and soil permeability, increased temperatures in the local area.

Response

An assessment of the potential impact of Stage 1 on biodiversity has been conducted and is provided in Technical Paper 10 and summarised in Chapter 22 of the Environmental Impact Statement. This includes an assessment of the biodiversity impact due to the removal of mangrove forest at the Clyde stabling and maintenance facility construction site.

The other potential impacts from the removal of vegetation from the Clyde stabling and maintenance facility construction site, including visual and soil erosion, are assessed in the relevant chapters of the Environmental Impact Statement.

All potential biodiversity impacts during construction would be managed to acceptable levels through the implementation of the mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Mitigation, management and monitoring

Issues raised

City of Parramatta Council raised the following issues relating to the biodiversity mitigation, management and monitoring:

- Design of the new A'Becketts Creek and Duck Creek bridges are to incorporate suitably dimensioned cavities and lattice structures underneath to provide important low maintenance roosting habitat for threatened insectivorous bats
- A wider vegetated riparian zone is required to minimise impacts on A'Becketts and Duck Creeks during both construction and ongoing operation of the stabling and maintenance facility
- Establishment of vegetated riparian zones along Duck Creek and A'Becketts Creek should be guided by a Vegetation Management Plan.

Response

With the proposed change to the B-double transport route at the Clyde Stabling and maintenance facility there has also been a refinement to the design of the creek realignment and culverts (refer to Section 2.2.2 of the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report*). Any potential naturalisation would be carried out beyond the inlet and outlet structures.

As per mitigation measure B2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, A'Becketts Creek and Duck Creek crossings would be designed to incorporate a vegetated riparian zone within the realigned open channel sections where feasible and reasonable. The width of the vegetation riparian zone would be determined during detailed design. Further detail about the treatment of A'Becketts Creek and Duck Creek after construction will be included in the Environmental Impact Statement(s) for future stage(s).

Specific measures to be implemented before, during and after construction, to avoid and minimise the biodiversity impacts would be detailed in a Flora and Fauna Management Plan to be prepared by the principal contractor. The minimum requirements for the Flora and Fauna Management plan are detailed in Section 10.2 of the *Construction Environmental Management Framework* (Appendix C).

7.3.20 Utilities

Issues raised

City of Parramatta Council stated that Sydney Metro should coordinate utilities corridor and deep soil planting zones with the City of Parramatta to ensure continuous outcomes are achieved beyond the Horwood Place Block.

Response

Further consultation with Council would occur via a utilities coordination manager. The role of the utilities coordination manager is discussed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

7.3.21 Cumulative impacts

Construction fatigue

Issues raised

City of Parramatta Council was concerned about construction fatigue in Westmead and Parramatta CBDs.

Response

As discussed in Chapter 27 of the Environmental Impact Statement, coordination and engagement with other projects has been undertaken and would continue through construction to further manage fatigue impacts where possible. Further opportunities to effectively manage construction fatigue would also be considered during the design and construction. Any potential residual cumulative adverse impacts would be more than offset by the many and significant benefits of the Sydney Metro West.

The *Sydney Metro Construction Environmental Management Framework* (Appendix C) would require the preparation of a Construction Noise and Vibration Management Plan. The Construction Noise and Vibration Management Plan would consider cumulative construction impacts and the likelihood for construction fatigue from consecutive projects in the areas which have substantial night-time works.

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix D) also provides a list of standard mitigation measures that would be implemented where feasible and reasonable at all construction sites which includes measures such as prior notifications of the works, monitoring of the impacts and offers of alternative accommodation where night-time impacts are expected to be high.

As specified in mitigation measure NV18 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available. Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible. 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.

Furthermore, as specified in mitigation measure CII in Chapter 8 (Revised environmental mitigation measures), co-ordination and consultation with a range of stakeholders would occur where required to manage the interface of projects under construction at the same time. The *Sydney Metro Overarching Community Communications Strategy* (Appendix B) outlines our approach to coordinating communications between interfacing projects.

7.3.22 Clarification

Existing transport network

Issues raised

City of Parramatta Council stated that Figure 10-7 does not show:

- Existing cycle route on Horwood Place between George Street and Macquarie Street
- Proposed (under construction) Escarpment Boardwalk cycleway between Macarthur Street and Parramatta River Weir.

Response

The existing cycle route on Horwood Place is included in Figure 10-7 however is mostly obstructed by the proposed location for Parramatta metro station. Sydney Metro will continue to work with Council to appropriately mitigate the construction impacts on cyclists.

The Escarpment Boardwalk cycleway connecting Parramatta Park to Melrose Park through completely off-road pathways is currently under construction and it is acknowledged this connection is not shown on Figure 10-7 – refer to Chapter 2 (Environmental impact statement clarifications) of this Submissions Report. This connection would not be affected by Stage 1 construction.

Active transport

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement incorrectly identifies signposted high pedestrian activity areas which have now been superseded.

Response

Section 10.7.1 of the Environmental Impact Statement identified signposted high pedestrian activity areas near the construction site including:

- Church Street between Palmer Street and Macquarie Street
- Phillip Street between Marsden Street and Charles Street
- Charles Street between Phillip Street and George Street
- Horwood Place between George Street and Macquarie Street.

It is noted that, these areas have been recently extended to include most roads in the Parramatta CBD, including George Street and Smith Street. Refer to Chapter 2 (Environmental impact statement clarifications) of this Submissions Report.

Construction noise and vibration

Issues raised

City of Parramatta Council stated that Figure 11-7 shows 126 Church Street (Council's administrative offices) as residential. This should be shown as commercial.

Response

It is acknowledged that Figure 11-7 in the Environmental Impact Statement incorrectly shows 126 Church Street as residential – refer to Chapter 2 (Environmental impact statement clarifications) of this Submissions Report. Regardless of classification, no exceedances of noise management levels are predicted for this location.

7.3.23 Spoil, waste management and resource use

Spoil management

Issues raised

City of Parramatta Council stated that Sydney Metro should ensure spoil reused as part of the project is integrated into the urban context and does not adversely affect future development potential.

Response

Sydney Metro would target beneficial reuse of 100 per cent of the usable spoil generated during construction. The geology of the spoil material as well as its consistency and quality would determine the reuse options. Potential reuse opportunities for spoil based on its particular characteristics is provided in Table 24-5 of the Environmental Impact Statement.

Where spoil cannot be reused for Stage 1, opportunities to reuse this material in future stages or on other projects (preferably within the Sydney region to reduce transport distances) would be identified.

Soils that cannot be beneficially reused would be classified in accordance with the *Waste Classification Guidelines*, managed and transported in accordance with the waste classification and the Protection of the Environment Operations (Waste) Regulation 2014, and disposed of to an appropriately licensed waste management facility. There are several landfills in Sydney that are licensed to accept solid waste, including waste that is classified as general solid waste, restricted solid waste or special waste. It is anticipated the volumes of waste spoil generated during Stage 1 could be readily accommodated at these facilities. Alternatively, materials may be transported to appropriately licenced facilities elsewhere in NSW. If materials are required to be transported interstate, this would be carried out in consultation with the NSW Environment Protection Authority and relevant interstate regulatory bodies, in accordance with regulatory requirements. Further discussion of contamination, including asbestos and other hazardous materials, is provided in Chapter 20 (Contamination – Stage 1).

Spoil would not be reused in a manner that would prevent the future development potential of land.

Waste management

Issues raised

City of Parramatta Council recommended that the waste assessment include numerical quantification to appropriately inform the response.

Response

The Concept waste assessment is detailed in Section 8.18 and includes identifying the indicative operational waste streams along with the likely waste classification under the *Waste Classification Guidelines* (NSW Environment Protection Authority, 2014). The types, classifications and quantities of wastes generated during the operation of the Concept would be confirmed following further design work and considered in future stages.

The Stage 1 waste assessment is detailed in Chapter 24. The volumes of construction wastes are expected to be comparable with other similar infrastructure projects including Sydney Metro Northwest (which opened in May 2019) and the Chatswood to Sydenham component of Sydney Metro City & Southwest (currently under construction). The likely main waste streams for Stage 1 are detailed as well as approximate quantities of demolition materials and wastewater. The quantities and classification of waste streams would be confirmed following further design work.

A waste management and recycling plan would be developed in accordance with the *Construction Environmental Management Framework* (Appendix C) a Spoil Management Plan would be prepared by principal contractors and would include details of spoil quantities/types for reuse within the construction site, for beneficial reuse of spoil off site and for disposal.

7.3.24 Sustainability

Greenhouse gases

Issues raised

City of Parramatta Council raised the following issues relating to greenhouse gases:

- Council encourages greater detail with respect to the applicable boundaries and specific outcomes regarding reducing greenhouse gas emissions and resilience and adaptation to climate change
- No concept level greenhouse gas assessment has been provided that would identify major targets or impacts. No boundary definition has been provided for what emissions will be included or excluded.

Response

Section 26.4 of the Environmental Impact Statement explains the greenhouse gas assessment methodology and provides estimated greenhouse gas emissions associated with Stage 1. Measure SCC4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits to an iterative process of greenhouse gas assessments and design refinements 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.

Section 8.20.6 of the Environmental Impact Statement considers greenhouse gas emissions for the Concept, while Section 8.20.8 notes that assessments for Sydney Metro West stages would identify potential greenhouse gas emissions and identify mitigation and management measures emissions.

Sustainability targets

Issues raised

City of Parramatta Council raised the following issues relating to sustainability targets:

- There is no clear demonstration of commitments to sustainability translating to a planning response and ultimately a design, construction and operational delivery beyond the high level commitment to a IS score of 75 and a 5 star Green Star rating
- No assessment or targeted pathway has been provided to confirm the design will be capable of achieving sustainability outcomes nor has there been any appropriate boundary definition as to which parts of the project will have specific ratings applied.

Response

As discussed in Chapter 8.20 of the Environmental Impact Statement, a Sydney Metro West Sustainability Plan is being developed to 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 (including Stage 1) would also achieve an equivalent or improved level of sustainability performance compared to previous metro projects.

Sustainability principles, initiatives and targets for Sydney Metro West identified as part of the development of the Sydney Metro West Sustainability Plan are discussed in Section 8.20.4 of the Environmental Impact Statement. The sustainability initiatives are incorporated into the planning, detailed design and construction of the Concept. The initiatives and targets have been developed based on the achieved performance of previous Sydney Metro and other infrastructure projects.

Climate change

Issues raised

City of Parramatta Council stated that the climate change assessment should be broadened to consider temperature impacts, particularly at the western end of the line around Parramatta and the risk impacts beyond the site of failure of the project as a key element of infrastructure as well as health and safety impacts to staff and patrons of the infrastructure.

Response

The Concept climate change assessment is detailed in Section 8.20.5 and has been designed to align with the principles of *AS5334-2013 Climate change adaptation for settlements and infrastructure – a risk-based approach*. It takes into consideration future climate including temperature impacts in the Sydney CBD as well as Parramatta CBD. To effectively manage potential climate change risks, each stage in the design and delivery would consider the most up to date climate change projections and design guidelines and would be subject to ongoing review and response by designers and constructors. As per mitigation measure SCC3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, climate change risk treatments would be confirmed and incorporated into the detailed design.

7.3.25 Beyond the scope of the Environmental Impact Statement

Corridor protection

Issues raised

City of Parramatta Council raised the following issues relating to corridor protection:

- The Department of Planning, Industry and Environment should reconsider the thresholds for notification under the draft amendments to the State Environmental Planning Policy (Infrastructure) 2007 to ensure low-impact development applications, which are unlikely to affect Sydney Metro West, are not unnecessarily delayed
- The tunnel at a depth of approximately 25 metres would likely go very near or under some SSPP sites, and the implications of this would have to be dealt with through the development application processes for those sites/construction of the Metro
- Development applications that will need to be notified and obtain concurrence will include those that involve penetration of ground to a depth of 2 metres or more; or with a capital value of more than \$200,000. Council considers that thresholds for requiring concurrence for corridor development are very low, and may cause delay unnecessarily to development applications which are unlikely to impact the metro project.

Response

Division 15 of the State Environmental Planning Policy (Infrastructure) 2007 provides the framework for assessing development applications within rail corridors. Development applications within the rail corridor would be referred to Sydney Metro for a concurrence to ensure that the development does not impact adversely on future rail infrastructure.

Sydney Metro is required to exercise its concurrence functions within legislated timeframes. The requirement for referral should therefore not result in any additional unnecessary delays (noting any delay could be addressed by the Minister for Planning and Public Spaces 'stepping in' under the new State Environmental Planning Policy (Concurrences and Consents) 2018).

Concurrence to Sydney Metro is critical to assess the impacts of proposed development, including the impacts on the safety and structural integrity of future rail infrastructure.

All developments referred to Sydney Metro need to comply with the *Sydney Metro Underground Corridor Protection Technical Guidelines* (October 2017) or the *Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines* (September 2018). The Guidelines outline the technical considerations that need to be considered when assessing a proposed development. These guidelines are available on the Sydney Metro Website.

Road network

Issues raised

City of Parramatta Council stated that the upgrade of the existing bridge carrying Hawkesbury Road over the railway line should be included in the scope of the project.

Response

Sydney Metro West would support the activation of Hawkesbury Road as discussed in Section 7.10 of the Environmental Impact Statement, however upgrade of the existing bridge carrying Hawkesbury Road over the railway line is beyond the scope of the project.

Transport infrastructure

Issues raised

City of Parramatta Council raised the following issues relating to transport infrastructure at Westmead Station:

- Upgrade of the existing heavy rail station should be included within the planning and design scope of the project
- Consideration should be given to moving the light rail terminus to better integrate with other transport modes and realise the opportunity of a truly integrated transport hub
- T-Way bus interchange should be located to integrate with other transport modes.

Response

Chapter 7 (Placemaking) of the Environmental Impact Statement includes principles to guide service and interchange planning for Sydney Metro West. One such principle for Westmead Station is to facilitate an integrated transport hub with direct interchange between Sydney Metro and Sydney Trains services and safe, equitable and legible connections with active transport, buses and the future Parramatta Light Rail. Details of interchange provision at each station will form part of the assessment of future stages of Sydney Metro West, including any necessary works to the existing Westmead Station.

Sydney Metro would work with local councils, key stakeholders and Transport for NSW to ensure seamless interchanges between the metro and other transport modes are planned.

Utilities

Issues raised

City of Parramatta Council stated that Transport for NSW should engage with Sydney Water regarding the potential relocation of the Sewage Pumping Station that may be displaced if the Camellia Town Centre proceeds.

Response

The proposed establishment of the Camellia Town Centre and any changes to the Sydney Water Sewage Pumping Station are beyond the scope of the project.

Active transport

Issues raised

City of Parramatta Council stated that Sydney Metro should deliver the regional walking and cycling link along the former T6 Carlingford Line.

Response

As described in Chapter 6 (Concept description) of the Environmental Impact Statement, the proposed stations would be designed to facilitate efficient transfer between Sydney Metro West and active transport, including walking and cycling.

Sydney Metro will continue to work with Council to future-proof for a north-south active transport connection adjacent to the Clyde stabling facility. The ultimate provision of an active transport connection along the full length of the former T6 corridor is beyond the scope of the Sydney Metro West.

Sydney Olympic Park Master Plan

Issues raised

City of Parramatta Council stated that the Environmental Impact Statement notes the proximity of the future station to commercial zoned land in Sydney Olympic Park. Transport Oriented Demand should be considered to maximise the investment opportunities and the attraction of commercial development to facilitate job opportunities in the precinct in pursuit of the 23,000 jobs target outlined in the *Sydney Olympic Park Master Plan 2030*.

Response

Sydney Metro West would support the implementation of the *Sydney Olympic Park Master Plan 2030*, however investment opportunities, commercial development and associated job creation are beyond the scope of the Environmental Impact Statement.

Sydney Metro West would support the vision of the Master Plan to create a vibrant town centre that would accommodate increased commercial, residential, sports and entertainment ventures. The delivery of Sydney Metro West would provide the transport connectivity required to support the planned growth in this area.

7.4 Strathfield Council

7.4.1 Development and alternatives

Station alternatives

Issues raised

Strathfield council notes no stations are proposed within Strathfield local government area, despite being a major rail network and bus network interchange.

Response

Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement documents the comprehensive evaluation and development process that was undertaken to determine the preferred option for the Sydney Metro West Concept, including the analysis of options for station locations (refer to Section 3.6 of the Environmental Impact Statement).

As outlined in Section 3.6 of the Environmental Impact Statement, Strathfield Station was evaluated as a preliminary station location option for the T9 Northern Line interchange. The option was not short-listed as a station at Strathfield would provide limited residential and jobs growth as high density development already surrounds the station, and the locality is not identified as a key employment centre. The existing Strathfield Station is constrained in terms of capacity and this option would duplicate the existing T1 Western Line services between Parramatta and the Sydney CBD.

7.4.2 Cumulative impacts

Construction traffic

Issues raised

Some cumulative traffic impacts have not been considered at Sydney Olympic Park and North Strathfield stations due to information not publicly available.

Response

The cumulative impact assessment was based on publicly available information about other major projects.

As stated in Appendix G (Cumulative impacts assessment methodology – Stage 1) of the Environmental Impact Statement, the Department of Planning, Industry and Environment is currently developing a guideline on cumulative impact assessment for State significant projects. For Sydney Metro West, the Secretary's Environmental Assessment Requirements required an assessment of the relevant cumulative impacts that take into account other State significant projects that have been approved but where construction has not commenced, projects that have commenced construction, and projects that have recently been completed and approved construction in the relevant precincts.

The *Construction Traffic Management Framework* included in Appendix F of the Environmental Impact Statement sets out the approach to managing traffic impacts (including cumulative impacts) during the construction of project. The framework includes a specific objective to work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts.

Cumulative impacts would also be managed in accordance with mitigation measure C11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report to manage potential cumulative impacts through coordination of construction works with other concurrent projects.

7.4.3 Transport and traffic

Public transport integration

Issues raised

Operational performance outcomes at Strathfield Station as a result of the metro have not been examined in the Environmental Impact Statement.

Response

Section 2.4.1 of the Environmental Impact Statement identifies that Sydney Metro West is expected to result in operational benefits to Strathfield Station in terms of reduced train crowding on both T1 Western Line and T9 Northern Line services, and reduced station crowding in 2036 and 2056.

Construction worker parking

Issues raised

Council has been regularly approached by local residents raising concerns over the lack of parking supply in local streets.

Response

As provided for in mitigation measure TT11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the construction site would be managed to minimise the number of construction workers parking on surrounding streets by:

- Encouraging workers to use public or active transport
- Encouraging ride sharing.

The provision of alternative parking locations and shuttle bus transfers would be investigated further during detailed construction planning.

As set out in mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, where existing parking is removed to facilitate construction activities, consultation would occur with the relevant local council to investigate opportunities to provide alternative parking facilities.

Impact on public transport

Issues raised

Bus services including on-demand bus services and school bus routes, will likely be subject to increases in travel time.

Response

The Environmental Impact Statement acknowledges temporary potential impacts to the bus services around the construction sites, including temporary minor increases in travel time due to additional construction vehicles on the road network. Impacts would be managed in accordance with the measures in Chapter 8 (Revised environmental mitigation measures) and the *Construction Traffic Management Framework* (included in Appendix F of the Environmental Impact Statement). Once operational, Sydney Metro West provides the opportunity to optimise the bus network and provide additional bus interchange with rail services resulting in travel time benefits.

7.4.4 Stakeholder and community engagement

Ongoing consultation

Issues raised

Council should be consulted in the process for necessary mitigation and seeks to work collaboratively as a key stakeholder.

Response

Sydney Metro will work collaboratively with Strathfield Council. Sydney Metro will continue to work with stakeholders and the community to ensure they are informed about Sydney Metro West and have opportunities to provide feedback. This will include ongoing consultation with key stakeholders, local councils and other government agencies.

7.5 Burwood Council

7.5.1 Urban design and precinct planning

Urban design and precinct planning

Issues raised

The proposed Burwood North Station is considered critical to managing the future vision established by state and local strategies. The station will facilitate transit-oriented urban renewal to the north of the Burwood Town Centre and will allow Council to manage the expected growth established by the *Parramatta Road Corridor Urban Transformation Strategy* (PRCUTS). Council has aligned its future vision under its Local Strategic Planning Statement to tie growth to the development of this station and will allow the local community to access greater employment opportunities and encourage the delivery of commercial floor space.

Council is currently preparing studies and a masterplan for Burwood including Burwood North. This will set out an integrated vision for land use and infrastructure in recognition of the metro as a catalyst for change.

The Sydney Metro West project must have regard to the *Local Strategic Planning Statement* and masterplan as well as the urban design principles which support place-making opportunities for the Burwood North Precinct. Further work is needed in the future stage Environmental Impact Statement application for the station design to consider Burwood's current characteristics and minimise impacts to overall neighbourhood amenity. Key design considerations for Burwood North Station include:

- The proposed station is located within the Burwood-Concord Precinct and should be held to the same design standard, or higher, than surrounding properties and enhance the local character of the surrounding area to ensure public benefits, urban design quality and active transport linkages are maximised
- The bulk and scale of the station, as well as any associated over station development, should be of high design quality, complement the surrounding area and minimise any over shadowing impacts onto neighbouring properties
- Burwood North Station should facilitate direct pedestrian movement (i.e. an over or underpass) between the north and south sides of Parramatta Road. The connection must serve pedestrians generally, not just station patrons.
- Pedestrian connections and edges must have regard to the principles of Crime Prevention Through Environmental Design (CPTED) and maximise pedestrian/cyclist safety
- Council recommends the consideration of opportunities to provide for additional public open space, especially at the prominent corner "gateway" of Burwood Road and Parramatta Road

- The Environmental Impact Statement details two entries with one on the north-east corner of Burwood Road and Parramatta Road, and one on the south-east corner of Burwood Road and Parramatta Road. Pedestrian access arrangements from the southern side of Burwood Road are unclear, and insufficient assessment of opportunities to provide direct active transport links to the station from Burwood town centre, and within 800 metres walking distance from the station, has been undertaken.
- Council also requests that the location, operation, and design of the Burwood North Station is consistent with the aims presented in the *Eastern City District Plan*.

Council looks forward to future collaboration and the involvement of the community in future place making and design opportunities. It is hoped that the future application will address the design of the station and further place-making opportunities.

Council also supports the proposed name of the Burwood North Station.

Response

Sydney Metro would continue to work collaboratively with Burwood Council throughout the detailed design of Burwood North Station. Design would take into account the preliminary place and design principles described in Chapter 7 (Placemaking) of the Environmental Impact Statement and would further consider the *Burwood Local Strategic Planning Statement*. The design development process would be guided by a suite of documents, including:

- Place and design principles
- Design guidelines.

The preliminary place and design principles for Burwood North Station are:

- Improve amenity north and south of the Parramatta Road with Sydney Metro as a catalyst for positive change
- Facilitate transit-oriented development with public spaces and local services that support the station as a focal point for activity
- Deliver legible, safe and intuitive station entries that address both the north and south of Parramatta Road
- Improve the priority and amenity for pedestrians in the area
- Facilitate activation and urban renewal around the station in accordance with the *Parramatta Road Corridor Urban Transformation Strategy*
- Enable provision of through-site links to enhance permeability in and around the station.

Integrated station and precinct development would be subject to separate approvals processes which would include consultation with Council and other stakeholders. Future applications would address further design and placemaking opportunities, including the design guidelines developed for each station precinct (refer to Section 7.11 of the Environmental Impact Statement).

CPTED principles would be incorporated during design, as described in Chapter 7 (Placemaking) of the Environmental Impact Statement.

Operational station names would be defined closer to the commencement of operations and would be subject to consultation with the Geographical Names Board of NSW.

7.5.2 Transport and traffic

Construction Traffic

Issues raised

In relation to general construction impacts, Council expects that Sydney Metro will address community concerns in relation to minimising potential impacts on visitors, residents, and businesses during the construction phase. In particular:

- Further details are required regarding number of staff, and estimated parking demand associated with the construction workers and impact on the on-street parking. Potential off-street sites for parking of construction staff should be investigated. Furthermore, shuttle bus services from the Sydney Trains suburban rail network stations (e.g. Burwood Station) to the construction site should be considered for construction staff.
- No details have been provided regarding the proposed location of bus stops that are to be relocated during construction activity. This will impact Burwood Road and Parramatta Road.

- Support is given by Burwood Council for the proposal by the City of Canada Bay Council to consider alternate truck routes at night to minimise disturbance by allowing the currently prohibited right turn movements from Burwood Road southbound into Parramatta Road.

Response

As provided for in mitigation measure TT11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the construction site would be managed to minimise the number of construction workers parking on surrounding streets by:

- Encouraging workers to use public or active transport
- Encouraging ride sharing
- Shuttle bus transfers, where feasible and reasonable.

The provision of alternative parking locations for construction staff would be investigated for the Burwood North Station in consultation with Council, in accordance with mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

As provided for in mitigation measure TT12, bus stop relocations would be determined as part of detailed construction site planning in collaboration with Transport for NSW, Burwood Council and relevant bus service providers. Wayfinding and customer information would be provided to notify customers of relocated bus stops.

The assessment of the proposed construction haul routes to and from Burwood North Station construction site demonstrate that intersections would continue to operate at an acceptable level of service. The Broughton Street / Parramatta Road intersection would be the main intersection used for Sydney Metro construction vehicles turning right onto Parramatta Road. Notwithstanding, Sydney Metro is continuing to work with other relevant part of Transport for NSW in relation to the optimum construction traffic arrangements.

7.5.3 Construction – Amenity

Amenity during construction

Issues raised

Construction will have a large impact on the community, and Council has concerns with noise, vibration, dust and lighting. 24/7 construction activities need to be reconsidered. Actual and perceived safety risks due to construction impacts as a result of night-time construction activities and stress from prolonged exposure to dust, noise and lighting in surrounding residential areas also needs to be considered.

Response

General construction activities would occur during standard construction hours at the Burwood North Station construction site. Construction activities that would occur outside standard hours (including at night) at the Burwood North Station construction site would generally be limited to construction material delivery, utility works, and removal of spoil from underground excavation of the station.

These out of hours works would reduce impacts on the operation of the road network surrounding the construction site, would reduce the overall duration of construction and would be carried out in accordance with the *Sydney Metro Construction Noise and Vibration Standard* including the application of additional noise mitigation measures for out of hours works. The provision of an acoustic shed (or other measures such as acoustic panels) and the implementation of the other construction noise mitigation measures (including NV05 and NV06) would also assist in minimising the potential for construction noise impacts during the night time.

Dust impacts would be managed through the implementation of mitigation measure AQ1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, including:

- Regular wet-down of exposed and disturbed areas including stockpiles, especially during dry weather
- Adjusting the intensity of activities based on measured and observed dust levels and weather forecasts
- Minimising the amount of materials stockpiled and position stockpiles away from surrounding receivers
- Regular inspection of dust emissions and applying additional controls as required.

Lighting would be orientated to minimise glare and light spill impacts on adjacent receivers, in accordance with mitigation measure LV5.

7.5.4 Community and stakeholder engagement

Consultation

Issues raised

Learning from the experience from the construction of WestConnex, it is recommended that more community consultation be undertaken to ensure that the community is aware of project activities, likely extent of disruption, and their avenues for raising concerns and making complaints.

Response

The *Sydney Metro Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (Appendix B). Contract specific Community Communications Strategies would 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 Sydney Metro's *Overarching Community Communications Strategy*. Further information is provided in Section 4.3.4 of this Submissions Report.

Sydney Metro would also consult with the WestConnex contractors, Transport for NSW and other relevant stakeholders to co-ordinate and manage the construction interface to minimise cumulative impacts, in accordance with mitigation measure C11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

7.6 City of Canada Bay Council

7.6.1 Urban design and precinct planning

Urban design and precinct planning

Issues raised

It is recommended that *Your Future 2030* and the *City of Canada Bay Local Strategic Planning Statement* are used as a reference and guide to understanding the community land use vision and aspirations for Canada Bay in the refinement of Stage 1 and further planning and design of Metro West, including to inform future stage Environmental Impact Statement(s).

Operational issues raised by Council in relation to the Sydney Metro West concept include:

- Metro is likely to bring management challenges through the increased use of sports and community facilities, as well as spikes in visitors at peak times
- Council is of the view that the name 'Burwood North' is a confusing title for a station located in Concord, and that it is also disorienting having two station names in succession with 'North' in the title as this may cause confusion for travellers alighting at North Strathfield and Burwood North stations. Council therefore recommends the station name for Burwood North be changed to 'Concord Oval'.
- It is vitally important that interchanges, improved connections to existing bus and rail services and active transport are planned ahead and provided for alongside the project, in consultation with local government and communities. Stations should facilitate outcomes envisaged by endorsed Government Strategies, community consultation and precinct planning earmarked by Council. Future design concepts that should be considered as part of the Place Principles for each station include:
 - Facilitate an increase in the urban tree canopy and landscaping in the public domain
 - Ensure all station locations include end of trip facilities for bicycles and ease of access for those who choose to cycle
 - At Burwood North Station, ensure future open space located adjacent to the Metro station has a high level of solar and acoustic amenity, and deliver new north-south at grade connections as part of future above station development
 - At the North Strathfield Station, provide certainty in relation to how open space will be reinstated in the North Strathfield area by replacing the principle with: "Support an active public domain area focused on Queen Street through the provision of a civic plaza/station entry"
 - Use the opportunity to improve accessibility and a sense of place at each location through wayfinding, exploring local stories and narratives, including local Aboriginal cultural history, and integrating place-based public art in line with local art strategies

- Work closely with Council and the community to develop urban design and place concept plans for stations, consistent with the *Parramatta Road Corridor Urban Transformation Strategy* and emerging work being prepared by Council to implement the Strategy as well as Council's Sydney Metro West Planning Study
- Outline the approach to be taken for wayfinding, the integration of public art and CPTED principles, with further detailed information provided in a future stage Environmental Impact Statement
- Require an Interface Agreement to be prepared between Council and Sydney Metro to inform changes to Council's civil infrastructure arising from construction works and post construction outcomes
- Consider temporary art projects that improve amenity and encourage a sense of place, such as artwork on hoardings.
- There is an opportunity through station and precinct design and place-making measures to attenuate noise, and this potential should be explored during the future stage project design and Environmental Impact Statement. For example, precinct-based placemaking and urban design measures to attenuate Metro West's operational and associated noise could include materials choice, insulation, and landscaping.

Response

Your Future 2030 and the *City of Canada Bay Local Strategic Planning Statement* have been considered to inform the design and development of the Concept, as discussed in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. The *City of Canada Bay Local Strategic Planning Statement* was also considered in Chapter 7 (Placemaking) of the Environmental Impact Statement for North Strathfield, Burwood North and Five Dock stations.

The potential operational issues raised by Council would be considered as part of future stage assessments. Operational station names may be further defined closer to the commencement of operations and would be subject to consultation with the Geographical Names Board of NSW.

Sydney Metro would continue to work collaboratively with City of Canada Bay Council throughout the detailed design of metro stations. Design would take into account the preliminary place and design principles which have been developed for each station described in Chapter 7 (Placemaking) of the Environmental Impact Statement. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles. Integrated station and precinct development would be subject to separate approvals processes which would include consultation with Council and other stakeholders. Future applications would address further design and placemaking opportunities, including the implementation of design guidelines developed for each station precinct.

Transport integration and connectivity are discussed in Section 7.4 of the Environmental Impact Statement. Sydney Metro has developed a set of principles to meet the needs of its customers, including providing direct, legible, safe and accessible pedestrian and cyclist routes to and from stations. Further development of access arrangements would be carried out as part of future design stages. As stated in Section 7.7 of the Environmental Impact Statement, opportunities to integrate public art into the customer environment would be considered in the design of Sydney Metro West. The design of stations and interchange facilities would be informed by crime prevention through environmental design (CPTED) principles. These are described in Section 7.8 of the Environmental Impact Statement.

Opportunities to attenuate noise through station and precinct design and place-making measures would be considered during future station design and assessment.

7.6.2 Concept assessment

Services facility between Five Dock and The Bays

Issues raised

The Environmental Impact Statement is incomplete as it does not provide the location of the proposed services facility location. Council is not aware of a suitable site for the services facility with the Canada Bay local government area and does not consider that there is any land between Five Dock and the foreshore of Iron Cove that would be appropriate for the siting of such a facility.

Response

As identified in the Environmental Impact Statement, a services facility would be required between Five Dock and The Bays and the location of the services facility would be determined following further investigation and consultation with stakeholders. The Environmental Impact Statement provides a number of locational and design criteria for the facility and provides a qualitative impact assessment in Appendix H. The facility would be the subject of a future assessment and approval process once the location has been determined.

Landscape character and visual amenity

Issues raised

Council notes that the potential impact of the stations on local character and amenity has been omitted from the Concept assessment in the Environmental Impact Statement.

Response

The Concept assessment presented in the Environmental Impact Statement provided a high level assessment of the potential impacts on landscape character and visual amenity and other amenity related issues such as noise of the project as a whole. Detailed assessments of potential impacts on landscape character and amenity due to station development would be assessed as part of future stage assessments.

7.6.3 Community and stakeholder engagement

Consultation and Concurrence

Issues raised

Council are concerned that the *Parramatta Road Corridor Urban Transformation Strategy* may be delayed as a result of concurrence requirements along the Sydney Metro West corridor. Council requests that Sydney Metro's concurrence processes and criteria are clearly articulated and subject of further consultation with Council.

Council also raises concerns in relation to the adequacy of the 8-week public exhibition period, and requests that Sydney Metro use innovative methods to engage directly with affected parties, and to grant leniency in response time extensions, and to continue to work with stakeholders and the community in the preparation of the Submissions Report and in implementing mitigation measures.

Response

Concurrence of Sydney Metro is critical to assess the impacts of proposed development, including the impacts on the safety and structural integrity of future rail infrastructure.

Sydney Metro's concurrence processes under State Environmental Planning Policy (Infrastructure) 2007, including relevant requirements and criteria, are detailed in *Sydney Metro Underground Corridor Protection Technical Guidelines* (October 2017) and the *Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines* (September 2018). The Guidelines outline the technical considerations that need to be considered when assessing a proposed development. These guidelines are available on the Sydney Metro Website.

Sydney Metro is required to exercise its concurrence functions within legislated timeframes. The requirement for referral should therefore not result in any additional unnecessary delays (noting any delay could be addressed by the Minister for Planning and Public Spaces 'stepping in' under the new State Environmental Planning Policy (Concurrences and Consents) 2018).

Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement describes that two rounds of community consultation were undertaken during the development phase of the project to increase awareness, help define and refine the scope, and collect community feedback. During round one in 2017, consultation was completed along a broad study area between Greater Parramatta and the Sydney CBD (refer to Figure 5-1 of the Environmental Impact Statement). Round two of community consultation activities occurred in 2018 over a refined area which is shown in Figure 5-2 of the Environmental Impact Statement.

In addition, in 2019 in conjunction with lodgement of the *Sydney Metro West Scoping Report - Westmead to The Bays and Sydney CBD*, communities and key stakeholders surrounding confirmed station locations were provided with project information, newsletters, doorknocks and briefings as appropriate.

Schedule 1 of the *Environmental Planning and Assessment Act 1979* requires all Environmental Impact Statements for State significant infrastructure to be placed on public exhibition for a minimum of 28 days. The Sydney Metro West Environmental Impact Statement was placed on exhibition for a total of 57 days, from 30 April 2020 to 26 June 2020, double the required statutory timeframe to allow additional time for community feedback. The range of consultation activities that occurred during the extended period are described in Chapter 4 (Stakeholder and community engagement). Sydney Metro used a number of innovative methods to engage with stakeholders and the community through virtual means. This included the following virtual engagement tools:

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

Sydney Metro engaged with more than 15,000 people over the eight-week exhibition period.

A toll-free community information line (1800 612 173) has also been in place since the announcement of Sydney Metro West in 2016. This community information line provides an opportunity for the community to contact the Sydney Metro West project team, ask questions and seek further information.

Sydney Metro will continue to work with stakeholders and the community to ensure they are informed about Sydney Metro West and have opportunities to provide feedback. Sydney Metro would also specifically consult with stakeholders to fulfil mitigation measures. These consultation activities would involve:

- Ongoing consultation with key stakeholders, local councils and other government agencies
- Provision of regular updates to the nearby communities
- Development and implementation of a community complaints and response management system. If the project is approved, further engagement and consultation would be carried out with communities near construction sites to understand their preferences for mitigation and management measures.

7.6.4 Transport and traffic

Construction traffic

Issues raised

Construction traffic impacts identified by Council include:

- Insufficient provision is made for construction worker parking at the three stations. During the consultation stage of the Environmental Impact Statement scoping, Council specifically requested detailed consideration of this matter, but the Environmental Impact Statement lacks a detailed quantitative assessment and provides inadequate solutions. The three strategies identified in the Environmental Impact Statement are likely to be ineffective. It is imperative that further detail and mitigation be employed to avoid a repeat of the construction parking impacts arising from previous major infrastructure projects in Canada Bay
 - Relocating car parking spaces, bus stops and kiss and ride spaces at North Strathfield will erode the availability of parking and should be assessed
 - The parking loss at Burwood North will be greater than indicated and it is important that the Environmental Impact Statement assess the true extent of the impact, including as a result of the loss of parking associated with bus-stop relocation in Burwood Road
 - Construction workers are likely to occupy unrestricted parking at Five Dock early, causing difficulties for business employees and their customers to park. Solutions could include the redevelopment of Kings Street carpark in Five Dock to a multi storey carpark or the implementation of a permit parking scheme for residents (and their visitors) and businesses, both of which would require funding
 - Technical Paper 1 (Transport and traffic) incorrectly indicates “parking spaces on the eastern side of Great North Road are not time-restricted” when they are restricted (1/2 hour parking).
- Increased traffic movements at all three station locations will lead to noise and congestion impacts on local street networks and disruptions to existing traffic movements, including bus movements. Impacts on local education providers (schools, colleges, childcare centres) will be particularly significant. Sydney Metro will need to closely liaise with these stakeholders to develop tailored mitigation measures for each location
 - The 24/7 nature of construction necessitates close consultation with Council, Transport for NSW and the local community to minimise the noise and vibration impacts from heavy vehicle movements
 - Night-time truck volumes (up to 14 heavy vehicle movements per hour) will negatively impact residents at Burwood North. Consideration should be given to alternate truck routes to minimise this impact.

- Impacts on the operation of the traffic network include:
 - Historical traffic congestion on Burwood Road southbound approaching Parramatta Road is contrary to typical trends and has not been investigated by the traffic assessment, especially traffic congestion that occurs outside of peak hours, including mid-morning. Further consideration should be given to alternate truck routes at night to minimise disturbance, including allowing the currently prohibited right turn movements from Burwood Road southbound into Parramatta Road
 - The intersection of Burton Street and Burwood Road already causes congestion, and this will only increase during construction. Traffic signals at this intersection should be investigated.
- The Environmental Impact Statement notes temporary potential impacts on walking and cycling routes, including a range of temporary diversions. At the North Strathfield Metro Station construction site:
 - The relocation of the existing pedestrian crossing on Queen Street to the south side of Wellbank Street will require multiple road crossings for pedestrians. Further, the configuration of this intersection is designed to deter regional traffic and is not suited to heavy vehicle movements. Sydney Metro should undertake modelling and a redesign of the intersection in consultation with Council, and should consider installing traffic signals instead of a pedestrian crossing on Queen Street to the south side of Wellbank Street. It would be preferable to implement the 'final' configuration of this intersection in these initial stages of construction
 - Crossing facilities on the south side of the roundabout at Beronga Street will be required during the closure.
- Sydney Metro needs to further consider the impact of heavy vehicle movements on the road surface of local and regional roads, and undertake a condition assessment of road surfaces prior to construction and ensure restoration of surfaces or appropriate compensation is provided to Council
- Consult closely with Council, Transport for NSW, education providers, businesses and the local community in the development of the site-specific Construction Traffic Management Plans and Traffic Control Plans for each station location and precinct, and for special events (e.g. Ferragosto at Five Dock). This must include detailed planning and mitigation to minimise impacts on congestion, noise, active transport routes and parking and access to businesses, homes and facilities.
- Provide a process for mitigating unforeseen impacts to the local traffic and transport network that involves responsive communications with Council and steps in place for resolving issues.

Response

Mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits to consultation with Council to investigate opportunities to provide alternative parking facilities.

Construction sites would also be managed in accordance with mitigation measure TT11 in Chapter 8 of this Submissions Report to minimise the number of construction workers parking on surrounding streets by:

- Encouraging workers to use public or active transport
- Encouraging ride sharing
- Shuttle bus transfers, where feasible and reasonable.

Section 10.11.2 of the Environmental Impact Statement notes that there would be a moderate impact on-street parking at North Strathfield during construction. It is expected that relocation of the kiss and ride would be minor as it would be moved to the closest practical alternative.

The Environmental Impact Statement assessed the temporary loss of about four on-street parking spaces on the western side of Loftus Street adjacent to the Burwood North Station northern construction site boundary. This temporary loss of parking spaces would have only a minor impact considering the proximity and availability of other spaces. As provided for in mitigation measure TT12, bus stop relocations would be determined as part of detailed construction site planning in collaboration with Transport for NSW, Council and relevant bus service providers.

Section 10.13.2 of the Environmental Impact Statement notes that there is limited spare parking capacity available on the local road network in Five Dock. As stated above, opportunities to provide alternative parking facilities at Five Dock would be investigated in consultation with Council.

A clarification has been included in Section 2.5 of this Submissions Report regarding parking restrictions on the eastern side of Great North Road. This clarification does not impact the outcome of the parking assessment provided in the Environmental Impact Statement.

Sydney Metro would continue to consult with Council and the local community in order to minimise the noise and vibration impacts from heavy vehicle movements. As specified in mitigation measure TT23, opportunities to provide vehicle access and egress directly to Parramatta Road would be explored during detailed design. Any such opportunities would reduce the need for heavy vehicles to travel along Loftus Street, Gipps Street, Burton Street and Broughton Street, reducing night time noise and vibration impacts from heavy vehicle movements.

In regard to issues identified on the operation of the traffic network during construction:

- Heavy vehicle routes have been established to avoid as much as possible minimising impacts on the Burwood Road / Parramatta Road intersection and night time heavy vehicle movements would be minimised where possible. Intersection performance is not predicted to be affected by construction of the project. Access to and egress from the Burwood North northern construction site would be left-in from Parramatta Road, and left-out to Loftus Street and Burwood Road. Access to and egress from the southern construction site would be left-in from Burwood Road and left-out to Parramatta Road. Utilising main roads as far as practicable would minimise disturbance to the local road network.
- Opportunities to access and egress directly to Parramatta Road would be investigated during future design stages to further reduce the impacts on the Burwood Road / Parramatta Road and Burton Street / Burwood Road intersections.

In relation to temporary potential impacts on walking and cycling routes at the North Strathfield metro station construction site:

- Sydney Metro would undertake modelling and assessment of the Queen Street / Wellbank Street intersection in consultation with Council, and undertake necessary modification to the intersection so that it can accommodate heavy vehicles movements and provide safe pedestrian access. This may include signalisation and/or changes to zebra crossings.
- Sydney Metro would investigate the need for additional pedestrian crossing facilities at the Queen Street / Beronga Street intersection due to the closure of the pedestrian footpath on the western side of Queen Street.

As provided for in the *Construction Traffic Management Framework* (see Appendix F of the Environmental Impact Statement), Sydney Metro would design construction site accesses in a way that minimises potential damage to local roads. Dilapidation surveys of local roads, where used by work site traffic, would be carried out prior to the commencement of works, with a copy provided to relevant councils.

As specified in mitigation measure TT18, vehicular access to businesses, homes and facilities would be maintained in consultation with property owners. Construction Traffic Management Plans would be prepared in accordance with the *Construction Traffic Management Framework* (see Appendix F of the Environmental Impact Statement), which includes consultation with the Traffic Control Group, Traffic and Transport Liaison Group, Transport for NSW Transport Coordination and other relevant stakeholders. The Construction Traffic Management Plans would include site specific traffic management measures to manage congestion, minimise noise from heavy vehicles, provide for safe use of pedestrian and active transport routes, set out parking management measures, and ensure safe access to the construction and surrounding properties.

Sydney Metro would continue to consult with Council throughout construction. This would include working with Council to resolve any unforeseen issues.

7.6.5 Noise and vibration

Construction noise and vibration

Issues raised

Construction noise and vibration impacts identified by Council include:

- Consultation prior to, and during the construction period will be critical in ensuring that the community, organisations and businesses are prepared for the high level of impacts and overall timeframe for construction works. Further consultation with affected communities and businesses and the Council should be undertaken to determine best options for noise mitigation, monitoring and traffic management.
- At all three station locations, there are important and sensitive receptors including residents, schools, childcare centres and aged care facilities, as well as businesses, community facilities and churches. It will not be possible to adequately mitigate the effect on many of these uses and it may instead be necessary to consider relocation or temporary hibernation of some uses, supported by Sydney Metro.

- 24 hours per day seven days a week works are likely to cause sleep disturbance and substantially disrupt the community, leading to health and wellbeing impacts. Noise impacts due to the proposed use of trucks used for deliveries and haulage of waste 24 hours a day will affect a wider geographical area, including some quiet residential streets. Council requests providing periods of respite for affected residents, particularly those affected by night- time construction works. The 24 hours per day seven days a week nature of operations needs to be further considered and addressed.
- Ongoing monitoring will be essential and Council requests that flexibility is built into the process to ensure community concerns can be accommodated. A 24-hour phone line should be available for the community to register noise concerns.
- Project approval should be subject to a condition that requires Sydney Metro to notify and fund pre-condition and post-condition reports for all interested landowners of property that may be affected by cosmetic or structural damage from vibration impacts. Where a request is made by a landowner for a pre or post-construction condition report, it is important that the report be prepared by an independent expert and not an expert appointed by Sydney Metro. It is recommended that any project approval be granted subject to a condition that requires Sydney Metro to fund dilapidation reports prepared by consultants appointed by landowners. Alternatively, a panel of independent experts should be established. Where a landowner chooses to appoint an expert from the Panel, Sydney Metro should fund their engagement.
- It is critical that Sydney Metro consult with all affected landowners in the location of North Strathfield to minimise disruption from noise impacts throughout construction
- The Environmental Impact Statement predicts 'high' worse-case noise impacts for a small number of residences (1-2) and moderate and low impacts for other residences at Burwood North. 'Moderate' sleep disturbance impacts are predicted for some residences during night-time construction works. Refer to traffic recommendations to minimise night time noise impacts from truck movements.
- It is essential that further consultation is held with Council and landowners/businesses to agree on a mitigation strategy for Five Dock. Noise arising from the proposed works has the potential to disrupt religious services in St Alban's Church. It is preferred that discussions be held with the Parish in order to determine their regular program of formal worship to ensure that noise does not occur during these times, or during funerals or weddings.
- Confirm that the temporary eased construction hours permitted by the NSW Government due to COVID 19 will not apply to the Sydney Metro project given the potential for substantial additional impact on local communities.

Response

In response to construction noise and vibration impacts raised by Council:

- As set out in mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with the affected communities to understand their preferences for mitigation and management measures, and other sensitive receivers such as schools, medical facilities or places of worship to understand periods in which they are more sensitive to impacts. Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise the impacts.
- General construction activities would typically be limited to standard construction hours at the North Strathfield metro station, Burwood North Station and Five Dock Station construction sites. Construction activities that would occur 24 hours per day, seven days per week at Burwood North and Five Dock construction sites would generally be limited to construction material delivery, utility works, underground excavation and removal of spoil from underground excavation of the station. At the North Strathfield metro station construction site underground excavation of the station would also be generally limited to standard construction hours. The implementation of the other construction noise mitigation measures (including NV05 and NV06) would also assist in minimising the potential for construction noise impacts during the night time.
- Ongoing monitoring of noise and vibration would be carried out in accordance with the *Construction Noise and Vibration Standard* (see Appendix D), which includes monitoring of noise and vibration at the closest affected sensitive receiver for any activity that it predicted to exceed the construction noise management levels determined in accordance with the *Interim Construction Noise Guideline* dated July 2009. The *Construction Noise and Vibration Standard* also provides for a construction response telephone line to be established which will operate 24 hours a day, seven days a week.
- Construction activities are not expected to cause damage to public utilities, structures, buildings and their contents (including houses), however, as a precaution, an existing condition inspection of these items would be undertaken in accordance with AS 4349.1 *"Inspection of Buildings"*. Prior to conducting the existing

condition inspections, the property owners would be advised of the inspection scope and methodology and the process for making a property damage claim. 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.

- In accordance with the *Construction Noise and Vibration Standard* a Construction Noise and Vibration Impact Statement would be prepared for the Five Dock Station construction site and consultation would be carried out with Council and other local stakeholders. Where feasible and reasonable, particularly noisy activities at the Five Dock Station construction site would be scheduled so as not to coincide with services at St Alban's Church.
- The current Ministerial Order in relation to construction working hours relates to projects which were approved prior to commencement of the order. Sydney Metro would comply with any relevant Ministerial Orders in place at the time of construction.

7.6.6 Non-Aboriginal heritage

Heritage impacts

Issues raised

Heritage impacts identified by Council include:

- Cosmetic or superficial damage may occur to some items, particularly to St Alban's Church in Five Dock. All owners of heritage items along the corridor and within 400 metres of the works should be made aware of and encouraged to have a condition report undertaken prior to construction works.
- All heritage items must be protected from harm during the proposed works – of particular concern is St Alban's Church. Protection measures must include the protection of non-structural architectural elements as well as structural elements and should be in consultation with a built heritage specialist. Council also requests:
 - A copy of any condition assessment reports prepared for heritage items located in the City of Canada Bay should be provided to Council
 - Council should be advised of any heritage items found to be structurally unsound, and a copy of the structural engineer's report provided to Council
 - Council should be advised of the mechanism for the implementation of remedies in the case of structural or superficial damage to heritage items.
- The street trees (heritage item no. 397 under Canada Bay Local Environmental Plan 2013) located near the proposed North Strathfield Metro Station must be protected from harm during the works and the work is undertaken such that their health is retained
- An archival photographic record of the inter-war Pine Inn Hotel at 19 Parramatta Road (c.1920) should be made and provided to Council. It should include plans of the hotel.
- The Environmental Impact Statement sets out that a Heritage Management Plan would be prepared to accompany the *Construction Environmental Management Framework*, including as a minimum: procedures for undertaking any recordings of heritage items prior to works commencing, procedures for unexpected heritage finds, and heritage monitoring requirements. Council is supportive of this approach.

Response

The design and development of Stage 1 has focused on avoiding or minimising potential non-Aboriginal heritage impacts. This has included selecting construction sites that avoid direct impacts to State and local heritage items where possible, including St Alban's Church. Throughout detailed design development, the project team would look for opportunities to further minimise impacts to known heritage items.

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 NAH2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, a method for the demolition of existing buildings and/or structures at specified construction sites would be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items.

As per mitigation measure NV16, where vibration levels are predicted to exceed the vibration screening criteria, a 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. This 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.

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix D) 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 11-14 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 mm/s PPV (from DIN 4150) would be adopted.

As stated in Section 6.9.3 of Technical Paper 3 (Non-Aboriginal heritage), the cosmetic damage screening criteria are expected to be exceeded at St Alban's Church. Further assessment (including a structural assessment) and vibration monitoring (if required) would be carried out in accordance with mitigation measure NV16 (refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report) to ensure the vibration levels remain below safe levels for the particular building.

Council would be consulted regarding any building condition surveys and potential exceedances of cosmetic damage screening criteria at St Alban's Church. If required, any remedies would also be implemented in consultation with Council. 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.

Appropriate tree protection measures would be installed to protect the street trees located near the proposed North Strathfield metro station construction site 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.

An assessment of significance would be prepared for potential unlisted heritage items which includes the inter-war Pine Inn Hotel at 19 Parramatta Road (c.1920). This would include consultation with Canada Bay Council. If the assessment of significance confirms this item has local heritage value, an archival recording would be undertaken. This is reflected in a new mitigation measure NAH10.

Council's support for the preparation of a Heritage Management Plan in accordance with the minimum inclusions stated in the Environmental Impact Statement is noted.

7.6.7 Aboriginal heritage

Consultation

Issues raised

Sydney Metro should contact Council and the Metropolitan Aboriginal Land Council during the detailed planning of excavation works to ensure that any updated information arising from the review of the Aboriginal Cultural Heritage Study and associated site inspections is taken into consideration.

Response

As set out in mitigation measure AH1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Aboriginal stakeholder consultation would be carried out in accordance with the Heritage NSW, Department of Premier and Cabinet's *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water, 2010).

As part of the preparation of the Environmental Impact Statement, correspondence was sent to the City of Canada Bay Council and the Metropolitan Aboriginal Land Council. An updated Aboriginal Cultural Heritage Assessment report has been prepared to replace Technical Paper 4 of the Environmental Impact Statement. This report has been updated to include outcomes of consultation with Registered Aboriginal Parties that was undertaken following the exhibition of the Environmental Impact Statement (refer to Appendix E of this Submissions Report). Registered Aboriginal Parties (RAPs) would also participate in any Aboriginal archaeological excavations.

7.6.8 Business impacts

Business impacts

Issues raised

Council considers that the assessment of business impacts undertaken in Chapter 16 is inadequate, inaccurate and not sufficiently fine-grained in scope. It provides estimates only of numbers of businesses expected to be affected and lacks consideration of the severe impacts on particularly sensitive uses, such as health consultation services. The assessment of significance of impacts for the three locations within Canada Bay is under-stated:

- At North Strathfield, the loss of parking is likely to cause significant disruption and impacts on trade for businesses in this location
- At Burwood North, the loss of the Pine Inn, which is a key attractor in the Burwood North Precinct, will reduce footfall generally throughout the precinct which will increase the significance found in the Environmental Impact Statement
- At Five Dock, the assessment does not consider the loss of trade resulting from diversion of customers to less-affected centres, which is a likely scenario for a centre like Five Dock. Particular concern is raised in relation to the impacts that will be caused by a large part of the central shopping strip of Great North Road being under construction hoarding for an extended period of time. Loss of parking will result in impacts on businesses that are higher than those stated in the Environmental Impact Statement. Instead of the 'slight negative' significance assessment, a 'moderate negative' impact is more likely for businesses directly to the east and west of the station.

It is critical that a well devised temporary way-finding signage and accessible pedestrian paths are installed to encourage community to continue accessing shops and services.

Further assessment of business impacts is needed and should be included in the Preferred Infrastructure Report. Mitigation should include respite periods and temporary place-making measures.

In the context of COVID-19, the project is likely to have a profound effect on businesses trading within proximity of the metro stations. Compensation and financial support from the NSW Government for the worst-affected businesses must be provided.

Response

In response to issues raised about potential business impacts:

- At North Strathfield, parking for direct access to businesses on the eastern side of Queen Street is proposed to be retained. Opportunities to mitigate on-street car parking impacts would be explored in consultation with the City of Canada Bay Council during construction planning.
- While it is acknowledged that the loss of the Pine Inn is likely to result in some potential temporary reduced footfall around the construction sites, the surrounding businesses are generally not of a type that rely on this type of footfall, as they are mainly specialist or service-oriented businesses
- Amenity impacts at the Five Dock Station construction site have been assessed as a 'moderate negative' impact in Section 16.13 of the Environmental Impact Statement. Loss of parking would be partially offset by reduced demand for parking as a result of the demolition of buildings containing businesses within the western construction site.

As set out in mitigation measure B13 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, 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 related airborne noise. Clear pathways and way-finding signage would be implemented around construction sites to maximise visibility of retained businesses, taking into account key sight lines to businesses, and including sufficient lighting along pedestrian footpaths during night-time where relevant.

The assessment of potential business impacts undertaken in the Environmental Impact Statement is appropriate for this stage of the project and is consistent with the Secretary's Environmental Assessment Requirements.

As set out in mitigation measure LV10, opportunities to provide temporary placemaking measures and activation in the vicinity of the Five Dock Station western construction site during construction would be explored in consultation with the City of Canada Bay Council due to the location being within the Five Dock town centre. Such measures are not considered to be necessary at the North Strathfield metro station or Burwood North Station construction sites.

As identified in the *Overarching Community Communications Strategy* and in accordance with mitigation measure B1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Sydney Metro would 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 includes to:

- Provide businesses with information about construction progress and help manage potential issues and impacts where possible
- Ensure businesses understand the scope of the works and mitigation measures contractors can provide

- 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 acknowledges that the COVID-19 pandemic may have already adversely impacted local businesses. Sydney Metro would endeavour to minimise additional impacts on individual businesses during construction.

7.6.9 Social Impacts

Social impacts

Issues raised

The assessment of corridor tunnelling works in Table 17-6 is inconsistent with the noise and vibration assessment in Chapter 11 (Noise and vibration – Stage 1) of the Environmental Impact Statement.

Stage 1 operations will be undertaken over a longer period- to up to 2 years and 3 months in Burwood North and Five Dock. This will cause significant disruption to the way of life, health and wellbeing, socialising and events of the community, and their access to and use of open spaces, community facilities, services and businesses. The assessment for the three station locations substantially understates the significance and risk. In particular:

- At North Strathfield:
 - Will the bus stop, park bench, bike lockers and accessible parking be removed and if so, will they be relocated?
 - Further details should be included regarding which bus stops would be subject to temporary changes; whether accessible parking spots will be removed; and whether accessible paths of travel will be maintained
 - The likelihood of impacts on community and access should be assessed as 'Likely', not 'Possible' and 'moderate'
- At Burwood North:
 - Assessment of community impacts should be 'Likely', not 'Possible'
 - The likelihood of impacts on culture and on health and wellbeing should be assessed as 'Likely', not 'Possible'
 - Access to St Luke's Church should be considered under access to and use of infrastructure.
- At Five Dock:
 - The social risk for Way of life, Community, Access and Health and wellbeing have been underestimated and should be assessed as 'High' or 'Severe', not 'Moderate'
 - At Five Dock, the risk for Culture and Surroundings has also been underestimated and should be 'Moderate' to 'High', rather than 'Minor.'
 - At Five Dock, the risk for personal and property rights should be 'High' or 'Severe', not 'Moderate', given the scale of acquisitions required and noise impacts, particularly on business
 - The impacts on Five Dock Library have not been adequately assessed
 - Section 10.5.4 needs to include Ferragosto festival.

Sydney Metro must consult closely with key sensitive land users to minimise disruption and adverse effects on health. The assessment has failed to adequately address Council's request to include a Health Impact Assessment as part of the Environmental Impact Statement. Exposure to light pollution is not assessed in terms of its impact on health and wellbeing, despite there being potential for impacts. Potential unmitigated human health and nuisance impacts of dust impacts are not further addressed in the Social Impact Assessment. Other potential health impacts include the potential impacts of construction on community cohesion and active transport, particularly for vulnerable groups, such as the aged or those with disabilities who may become isolated and feel unsafe near construction zones.

Council supports the proposed development of a Community Communication Strategy. Council should be provided with further information regarding the Community Communication Strategy.

The cumulative impacts of infrastructure development should be considered in relation to WestConnex M4 East.

Response

Chapter 17 (Noise and vibration – Stage 1) of the Environmental Impact Statement notes that the tunnel boring machines are expected to progress at a rate of around 20 metres per day. This means the worst-case ground-borne noise impacts from tunnelling at individual receivers would likely only be apparent for a few days for each tunnel boring machine, when the tunnelling works are directly beneath. As the works progress and move away, a particular receiver's exposure to ground-borne noise would reduce accordingly. As such, the worst case noise and vibration impacts from tunnelling shown in Table 17-6 are consistent with the assessment provided in Chapter 11. The Social Impact Assessment in Chapter 17 of the Environmental Impact Statement has assessed the social impacts from noise and vibration impacts across the entire construction period for each individual construction site.

In relation to assessed social impacts for the construction sites, risk assessments are not proposed to be changed:

- North Strathfield metro station construction site:
 - As set out in mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, where existing parking is removed to facilitate construction activities, consultation would occur with the relevant local council to investigate opportunities to provide alternative parking facilities. This would include investigation of opportunities to provide alternative accessible parking spaces.
 - As set out in mitigation measure TT12, relocation of bus stops and associated facilities would be carried out in consultation with Transport for NSW, the relevant local council and bus operators. Accessible paths would be maintained in line with relevant accessibility guidelines and standards
 - As set out in mitigation measure TT15, if existing cyclist bicycle parking is temporarily unavailable due to construction activities, suitable replacement facilities would be provided for this duration of construction.
- Burwood North Station construction site:
 - The assessment of community, culture and health/wellbeing impacts as possible (i.e. could occur and has occurred in similar circumstances) is considered appropriate given the discussion in Table 17-13 of the Environmental Impact Statement
 - Access to St Luke's Anglican Church would be maintained at all times
- Five Dock Station construction site:
 - The social risk for way of life, community, access, surroundings and personal and property rights have all been assessed as 'high'. Medium ratings for health and wellbeing and culture are considered appropriate based on the discussion in Table 17-4 of the Environmental Impact Statement
 - As set out in mitigation measure S1, consultation would be carried out with Council and the manager of the Five Dock Library about the timing and duration of construction works and management of temporary potential impacts, with the aim of minimising potential disruption to the use of the library. Access to the library would be maintained at all times
 - The Ferragosto festival is identified in Chapter 17 (Social impacts) of the Environmental Impact Statement. As set out in mitigation measure S4, in addition to mitigation measure TT17 (which relates to major events within the Parramatta CBD, Rosehill Gardens racecourse and Sydney Olympic Park), consultation would be carried out with festival and event organisers in proximity to construction sites to mitigate temporary potential impacts on the operation of the festival or event. This would include the Ferragosto festival.

Sydney Metro would continue to consult with sensitive receivers throughout construction and future stages of the project.

The potential health impacts raised by Council were assessed in the following sections of the Environmental Impact Statement:

- Light exposure was assessed in Chapter 15 (Landscape character and visual amenity – Stage 1)
- Dust impacts are assessed in Chapter 23 (Air Quality – Stage 1).

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

The *Sydney Metro Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (Appendix B). Contract specific Community Communication Strategies would 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 Sydney Metro's *Overarching Community Communications Strategy*. This would include ensuring that the community is informed about the timing and duration of noisy works. Further information is provided in Section 4.3.4 of this Submissions Report.

Cumulative impact assessment methodology is described in Appendix G of the Environmental Impact Statement, and specifically identifies the WestConnex M4 East as a relevant project that has been considered in the cumulative impact assessments for the North Strathfield Station, Burwood North Station, and Five Dock Station construction sites.

7.6.10 Groundwater and ground movement

Groundwater drawdown and baseflow in watercourses

Issues raised

The Environmental Impact Statement has not taken into account the impact of groundwater drawdown from Sydney Metro West on the base flow in St Lukes Canal and Council's recycled water system. It is imperative that Sydney Metro identifies the base flow in St Lukes Canal and options to mitigate impacts on the flow rate in the Canal before the project is approved, as Council relies on this recycled water for open space irrigation. Opportunities for water reuse for open space irrigation, including water from the project should also be identified and discussed with Council.

Response

Based on the current level of site investigations, it is not known whether groundwater at surface construction sites may potentially contribute to baseflow of nearby surface water bodies. However, Table 18-10 of the Environmental Impact Statement notes groundwater is not likely to contribute to flows in St Lukes Canal as it is a concrete-lined channel. Notwithstanding, any possible impact to baseflow to St Lukes Canal during construction would be considered during detailed design in consultation with Council. Monitoring of groundwater levels and quality at the site area would occur before, during and after construction, in accordance with mitigation measure GW4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Section 25.4.3 assesses opportunities for the beneficial reuse of construction wastewater. In particular, Sydney Metro is further investigating options to minimise potable water use and maximise wastewater reuse. Additionally, opportunities to treat wastewater to a higher standard to enable additional end uses onsite or offsite would be considered.

7.6.11 Hydrology and Flooding

Flooding impacts

Issues raised

The Environmental Impact Statement notes the potential for overland flooding at North Strathfield, Burwood North and Five Dock Stations and this will need to be further addressed in the station concept development and future stage Environmental Impact Statement, ensuring the project leads to no increase to flood risk in surrounding areas.

Response

Further consideration of flood risk as a result of station construction will be assessed as part of the Environmental Impact Statement(s) for future stage(s) of Sydney Metro West. This would include mitigation measures to manage potential impacts as appropriate.

7.6.12 Biodiversity

Biodiversity and urban tree canopy

Issues raised

Council is supportive of the overall environmental assessment approach to biodiversity but considers that greater emphasis be placed on increasing green infrastructure and tree planting in station precincts, helping with urban cooling and meeting tree canopy cover targets.

The *Urban Tree Canopy Strategy* notes that Sydney Metro West will lead to increased development, threatening to reduce the existing urban forest, decrease available plantable space and put further pressure on existing public spaces. In anticipation of future increased development, it is imperative that the concept for Metro West includes a target to increase tree canopy and work with Local Councils to develop landscape plans for each station location that increase urban tree canopy and offer opportunities for biodiversity enhancement.

Council is also extremely concerned about the impact of groundwater drawdown on its recycled water supply as it will impact on Council's ability to provide water for the proposed increased tree canopy.

Response

Opportunities for the retention and protection of existing street trees and trees within construction sites would be identified prior to construction, along with opportunities to replace trees in the nearby communities in consultation with local councils, however some trees would require removal to facilitate the works.

As set out in mitigation measure LV14 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, opportunities would be investigated with council to provide plantings in proximity to the impacted areas prior to construction commencing, where feasible and reasonable. The performance outcomes for the Sydney Metro West Concept (refer to Section 27.9 of the Environmental Impact Statement) also identify that there would be no net loss of tree numbers and tree canopy. As set out in mitigation measure LV13, trees removed by Stage 1 of the works for Sydney Metro West would be replaced to achieve no net loss to tree numbers and/or canopy in proximity to the site, as a minimum, in the long term (and part of future stages of Sydney Metro West).

Chapter 8 (Concept environmental assessment) considers tree canopy and landscape plantings to provide improved local visual amenity and landscape character at new metro stations. Further assessment of urban tree canopy improvements around station precincts will be considered as part of a future stage Environmental Impact Statement(s), in consultation with councils.

Further discussion of groundwater drawdown is provided in Section 7.6.10 above.

7.6.13 Waste

Waste management

Issues raised

The overall approach to waste management in the Environmental Impact Statement is supported and the waste principles for the project align with best practice waste management and the waste hierarchy, by prioritising reuse over recycling, and recycling over disposal.

The removal of waste and spoil during Stage 1 will have negative impacts, including the impacts of waste movement on the local road network, increased noise and potential air pollution. It is difficult to fully assess the likely impacts until further detail of the volume of waste generated, the locations for temporary storage, and destinations for recyclable material is provided. Council expects Sydney Metro to employ best practice in implementing dust and pollution controls when managing waste and spoil.

The commitment to following the waste hierarchy should also be extended to the management of construction and demolition waste and related streams in Section 24.5.3.

Response

All waste generated, including waste streams identified in Section 24.5.3 of the Environmental Impact Statement, would be managed in accordance with the Sydney Metro West Sustainability Plan, and waste hierarchy outlined in the *Waste Avoidance and Resource Recovery Act 2001*.

The development of Stage 1 has included careful consideration of the construction methodology and selection of materials and resources to minimise resource consumption. Consistent with the resource management hierarchy of the *Waste Avoidance and Resource Recovery Act 2001*, resource consumption would be further minimised during construction through reuse of materials, where possible.

Spoil generated by the project would be assessed initially against relevant re-use criteria, based on the physical, chemical and geotechnical properties of the spoil. This assessment would determine the management of that spoil based on a hierarchy of management options. The reuse of spoil for Stage 1 construction works would be maximised to the greatest extent possible before alternative off-site opportunities for spoil reuse are pursued. Where spoil cannot be reused for Stage 1, opportunities to reuse this material in future stages or on other projects (preferably within the Sydney region to reduce transport distances), land restoration or landfill management would be identified. Spoil generated by the project that is deemed waste would be classified in accordance with the *Waste Classification Guidelines* (NSW Environment Protection Authority, 2014).

Mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report would be implemented to manage potential impacts associated with waste transport during construction of the project. These include:

- Assessing the suitability of construction haulage routes through sensitive land use areas with respect to road safety (mitigation measure TT5)
- Reducing the need for truck movements during sensitive times, vehicle movements would be scheduled during less sensitive times, and heavy vehicles would not be permitted to idle near sensitive receivers (mitigation measure NV14)
- Maintaining plant and equipment to manage exhaust emissions (mitigation measure AQ2).

7.6.14 Sustainability

Greenhouse gases and climate change risk

Issues raised

Council requests that it is further informed and engaged in the design and planning of sustainability measures for the Concept, particularly for stations within the local government area, as it progresses. In relation to Stage 1 and subsequent stages, Council requests that Sydney Metro:

- Adopt measures to minimise carbon emissions and adopt best practice energy efficient design during the construction and operational stages of the project, including a minimum Infrastructure Sustainability Council of Australia (ISCA) rating of 74, 5-star green rating and consistency with *ISO:20400*
- Introduce further measures to lower emissions from construction materials
- Institute a higher level of offsetting of electricity emissions during construction, and provide further details about how greenhouse gas emissions will be offset
- Increasing tree canopy and landscaping to address urban heat in response to climate risk.

Response

Sydney Metro has developed an Environment and Sustainability Statement of Commitment which states the social and environmental sustainability objectives of Sydney Metro. The policy reflects a commitment in the delivery of the Sydney Metro program to optimising sustainability outcomes and developing effective and appropriate responses to the challenges of climate change. The policy is included in the Environmental Impact Statement in Chapter 8 (Concept environmental assessment).

A Sydney Metro West Sustainability Plan is being developed to 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.

Sustainability principles, initiatives and targets for Sydney Metro West identified as part of the development of the Sydney Metro West Sustainability Plan are discussed in Section 8.20.4 of the Environmental Impact Statement. Sustainability initiatives and targets for Sydney Metro West are included in Table 8-59 of the Environmental Impact Statement.

Sydney Metro West (including Stage 1) have committed to a performance outcome (refer to Chapter 27 (Synthesis of the Environmental Impact Statement) to also achieve an equivalent or improved level of sustainability performance compared to previous metro projects. This would include achieving a minimum Infrastructure Sustainability Council of Australia (ISCA) IS rating of 75 – Version 1.2 (or equivalent) and a 5-Star Green Star rating. Procurement strategies would be consistent with *ISO: 20400 Sustainable Procurement Guidelines* in line with the sustainability initiatives for Sydney Metro West.

In relation to carbon emissions:

- Embodied carbon would be reduced through selection of low carbon alternatives and considering durability and local sourcing. Embodied impacts of concrete would be minimised through the adoption of project-wide supplementary cementitious materials use target and targets for the use of alternate binder systems on non-structural elements. Embodied impacts of steel would be minimised through maximising the use of recycled steel and steel produced using energy-reducing processes. Sydney Metro would also engage with industry bodies to identify best practice low-impact alternative materials and prioritise products made from recycled content.
- At least a 20 per cent reduction in carbon emissions associated with operations, when compared to business as usual and 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset. An Electricity and Offsets Procurement and Management Strategy would be developed.

Further assessment of urban tree and canopy improvements and designs to minimise urban heat island effects would be considered as part of a future stage Environmental Impact Statement, in consultation with councils. Further discussion of opportunities to retain and increase tree canopy coverage is provided in Section 7.6.12 of this Submissions Report.

Councils would be engaged throughout the design of the Concept, including in relation to sustainability initiatives as relevant.

7.7 Inner West Council

7.7.1 Support for project

Issues raised

Inner West Council supports expanding public transport and considers that Sydney Metro West is an essential element in the revitalisation of The Bays Precinct and improvement of connectivity between key economic centres in the region.

Response

Inner West Council's support for the project is noted.

7.7.2 Strategic need and justification

Project objectives

Issues raised

Council requests further information regarding the objective 'to support additional housing supply and employment growth opportunities and urban renewal initiatives in The Bays Precinct corridor'.

Council aims to expand its blue/green infrastructure to enhance ecological and public health benefits across Greater Sydney (map supplied of indicative blue/green grid across the Bays Precinct). Council requests that Sydney Metro deliver the blue/green grid for The Bays Precinct as part of this project. This would be consistent with Sydney Metro's Network-wide objective to 'improve access to and resilience of the transport network through integrated land use and transport planning, including integration of Sydney Metro West with other transport modes'.

Response

One of the Sydney Metro West Greater Parramatta to Sydney CBD corridor objectives (Section 2.7.2 of the Environmental Impact Statement) is to:

'Support additional housing supply and employment growth opportunities and support urban renewal initiatives within the Greater Parramatta to Sydney CBD corridor including key government precincts such as the Greater Parramatta and Olympic Peninsula and The Bays'.

In relation to The Bays Precinct, this refers to the role of the proposed station in supporting the NSW Government vision for urban renewal at The Bays.

Chapter 7 (Placemaking) of the Environmental Impact Statement identifies opportunities to support the green grid. In relation to The Bays this includes improving transport connectivity to the foreshore at White Bay and Blackwattle Bay. The delivery of the blue/green grid is not part of the project scope, however Sydney Metro would work with Inner West Council to integrate The Bays Station with active transport networks and the Sydney Green Grid.

Consistency with strategic plans

Issues raised

Council requests that Sydney Metro West consider the strategic vision for the precinct as outlined in Council's *Local Strategic Planning Statement, Housing Strategy and Draft Employment & Retail Lands Strategy* in planning and designing its interface with The Bays Precinct.

Response

As outlined in Chapter 7 (Placemaking) of the Environmental Impact Statement, integration with existing and developing strategic plans and visions, and local planning provisions is a key consideration in the development of Sydney Metro West. Opportunities to integrate with local land use plans and strategies would continue to be a key consideration in design development, particularly in respect of the stations and their relationship with the surrounding public domain and precincts. An overview of the relevant plans and strategies is provided for The Bays, including *Our Place Inner West – Local Strategic Planning Statement* (Inner West Council, 2019). Sydney Metro would work with stakeholders to support planned growth at The Bays, in line with the Department of Planning, Industry and Environment's precinct planning for Bays West.

Strategic need

Issues raised

Council considers it essential that the Sydney Metro West connection between Sydney CBD and Parramatta CBD (and ultimately Western Sydney Airport) does not overlook long-term opportunities that could be unlocked along this corridor; and as such requests that a long term, strategic vision be provided for the corridor.

Response

As outlined in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement, Sydney Metro West has been developed to align with relevant strategic planning and policy, including the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018) and the *Future Transport 2056* strategy (Transport for NSW, 2018). Sydney Metro West would support planned growth in jobs, homes and residents for the Greater Parramatta to Sydney CBD corridor.

As identified in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement, a number of land use planning and development strategies have commenced in the corridor. These include:

- State led strategic planning at precincts where the Department of Planning, Industry and Environment would lead strategic planning work to inform future rezoning proposals. Relevant precincts include Westmead and Greater Parramatta to Olympic Park.
- Collaborative planning where the Department of Planning, Industry and Environment would play a coordination role to facilitate partnerships across the Department, the local council and other state agencies. Identified precincts include North Westmead, South Westmead, Camellia, Burwood/Strathfield/Homebush, Bays West and Pyrmont.
- The Greater Parramatta Growth Area as defined by the Department of Planning, Industry and Environment and the Greater Parramatta to Olympic Park Peninsula Infrastructure Compact being managed by the Greater Sydney Commission
- Significant urban renewal areas in the *Parramatta Road Corridor Urban Transformation Strategy* area.

7.7.3 Development and alternatives

Route alternatives

Issues raised

Council suggests that running the metro from the CBD to Westmead, and continuing on to Western Sydney International Airport would significantly reshape Greater Sydney in a positive manner.

Reconsider the alignment to avoid sterilising opportunities to expand transport connections for the Inner West Community and beyond, particularly noting the extent and success of the existing Inner West Light Rail. Alternatively, consideration could be given to the provision of a light rail link to The Bays Station, linking Lilyfield (or Rozelle Bay Stations) with The Bays Station, then progressing across Glebe Island Bridge (re-instated for public and active transport only) to the CBD, possibly via Pyrmont Bridge.

There are major social, economic and environmental opportunities that have not been adequately assessed by the Environmental Impact Statement. Consequently, it is requested that the potential for further economic agglomeration in each of these important strategic centres should be thoroughly assessed and considered in the project alternatives for Metro West, and that serious analysis be carried out examining opportunities for the long-term provision of a future Metro Station in Camperdown-Ultimo. Should it not prove viable for Sydney Metro West to service the Collaboration Precinct it is essential that efficient transit links be provided between Camperdown-Ultimo and The Bays Station as well as a future Pyrmont Station. It is then requested that Sydney Metro commit to servicing the Collaboration Precinct with a metro station on a future metro line.

Response

The *Future Transport 2056* strategy identifies a mass transit link from Greater Parramatta to Western Sydney Airport as a city-shaping corridor. The *Western Sydney Rail Needs Scoping Study – Outcomes Report* jointly developed between Australian Government's Department of Infrastructure, Regional Development and Cities and the NSW Government's Transport for NSW in 2018 identifies an East-West link from Greater Parramatta to Western Sydney Airport as part of the preferred network for Western Sydney. Corridor protection for the East West Rail Link was a recommendation of this report. The NSW Government has commenced protecting a corridor for the future East West Rail Link with Stage 1 between the Aerotropolis near Bringelly and Kemps Creek protected through the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020. Stage 2 is between the Aerotropolis near Kemps Creek and Greater Parramatta and this section of the corridor will be identified in collaboration with other Government agencies.

Section 6.6.2 of the Environmental Impact Statement notes that design would be future-proofed in order to allow extension of Sydney Metro West, including beyond Westmead.

Sydney Metro West would be integrated with the broader public transport network, providing a significant increase in transport connectivity, capacity and amenity in the Greater Parramatta to Sydney CBD corridor.

The NSW Government's 40 year strategy for the public transport network is set out in the *Future Transport 2056* strategy. Future public transport projects are beyond the scope of Sydney Metro West and subject to detailed investigations by Transport for NSW and consideration by the NSW Government.

Any additional public transport solutions servicing The Bays would be considered by Department of Planning, Industry and Environment and Transport for NSW as part of urban renewal plans for the precinct.

The strategic opportunities of a station at Pyrmont are acknowledged and identified in the Environmental Impact Statement. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option.

The potential for a metro station at Camperdown-Ultimo is beyond the scope of the Sydney Metro West project.

Station alternatives

Issues raised

Council supports the City of Sydney's proposal for a station in Pyrmont and also requests that the State Government examine, in detail, opportunities to provide an additional station between Five Dock and The Bays stations. Should it not be possible to provide a station between The Bays and Five Dock, significantly enhanced public and active transport links should be provided through the Inner West to both Five Dock and The Bays stations.

The absence of a station in the Inner West local government area (Leichhardt, Rozelle or Lilyfield) unnecessarily impairs access for many of the Sydney's Inner West Community. It is unclear whether the primary reason for an absence of a station in the Inner West is the desire for a 20 minute journey time between the CBD and Parramatta, depth limitations placed on the project by the construction of the WestConnex Rozelle Interchange, or a combination of both. Should the 20 minute travel time be the reason, Council requests that this be re-considered and that it be the subject of a comprehensive travel behaviour study. Should the logic behind the absence of a station in the Inner West local government area be the depth of the metro tunnel alignment (currently dictated by the depth of the WestConnex tunnels), Council requests that detailed consideration be given to a revision of the route alignment and deeper than normal station in the Inner West. Council notes that deep dive stations are becoming increasingly common with recent examples in Kiev, St Petersburg, Moscow, Chongqing and Pyongyang. It should also be considered that a revised alignment could:

- Permit the metro tunnel to be at a lesser depth
- Provide improved interface/interchange with the surface public transport and active transport networks
- Avoid the need for a ventilation/services facility in a very sensitive area (e.g. Leichhardt Park Aquatic Centre or Callan Park).

Response

Inner West Council's support for a metro station in Pyrmont is noted.

Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement describes the process undertaken to determine the preferred option for the Sydney Metro West.

As stated in Section 3.4 of the Environmental Impact Statement, travel time between Parramatta and the Sydney CBD was a key consideration in the development of the alignment and station location selection. A travel time of about 20 minutes between Parramatta and the Sydney CBD would provide the highest volume of travel time benefits to the largest number of customers across Greater Sydney, when compared to a 15- or 25-minute trip. Further detail on the rationale for the travel time principle is provided in Section 3.4 of the Environmental Impact Statement.

Section 3.6 of the Environmental Impact Statement provides discussion on the decision making around alignment options and the balance between travel times and the number of stations. It was concluded that the preferred option was a service with about nine to ten stations, as it provides a balance between travel times and an optimal number of stations to service a large catchment.

As outlined in Section 3.6 of the Environmental Impact Statement, several intermediate station location options were considered, including options in the Inner West local government area. Preliminary station locations were evaluated at Lilyfield, Leichhardt North and Leichhardt, as described in Table 3-6 of the Environmental Impact Statement. The locality presented a highly difficult constructability and deliverability due to interaction with the Rozelle Interchange and Hawthorne Canal. Interaction with these constraints would require a very deep station, resulting in greatly increased access and interchange times for customers. These locations were not short-listed due to the challenging constructability and deliverability conditions, along with limited opportunities for urban renewal and employment opportunities.

Very deep stations would significantly increase access and interchange times for stations, resulting in inefficient outcomes for customers. Sydney Metro West would create opportunities for optimisation of the bus network and to increase the frequency and directness of bus feeder services to new metro stations. This would provide benefits such as travel time savings to residents in the Inner West Council area. Travel time savings may also be provided by a reduction in the numbers of vehicles on the road network, as Sydney Metro West provides the opportunity to mode shift from car to public transport. Analysis undertaken by Sydney Metro and presented in Section 2.4 of the Environmental Impact Statement shows that total network wide car trips would be reduced by about 83,000 weekday trips by 2036 and about 110,000 weekday trips by 2056.

Services facility alternatives

Issues raised

Of specific concern to Council is the absence of a clear understanding of the proposed site for the ventilation/services facility (between Five Dock and The Bays Stations). Due to this lack of clarity, Council requests that this facility be the subject of a separate environmental impact statement or, at the very least, a formal modification which is separately exhibited and consulted on. Comprehensive on-going consultation should be conducted with both Council and the community prior to any location being decided on.

Council requests that the site selection criteria should be expanded to also include, "that the site:

- Should not raise public concern or be considered inappropriate by local authorities or the local community
- Should not be in close proximity to public/community buildings or areas that attract people to linger for extended periods of time."

Should a new station be provided, between Five Dock and The Bays, this would negate the need for a ventilation/services facility as it would permit expulsion of hydraulic air pressure and provision for passenger evacuation. Consequently, Council also requests that, should an additional station prove to be unachievable, Sydney Metro should:

- Continue to work with Council to examine suitable locations for the proposed ventilation/services facility, noting that Council and the Community consider that any site adjacent to Leichhardt Pool is totally unacceptable

- Provide assurance that only spoil directly associated with the ventilation/services facility will be removed from this location (i.e. that no tunnel excavation spoil be removed from the site)
- Recognise that streets in the vicinity of sites currently under investigation are unsuitable to truck and dog configurations. Consequently, it is requested that restrictions be placed on the size of vehicles servicing such a site; with no articulated vehicles to be permitted other than those specifically required for the transport of heavy machinery into and out of the site.
- Recognise that such areas are generally unsuitable for construction worker parking. In response to this it is essential that a comprehensive green travel plan be implemented to discourage workers from driving to the site and that all parking subsequently required be accommodated on the site. Further, pre-and post-commencement parking studies should be carried out and should a restricted parking scheme be required (e.g. resident parking scheme) it is to be implemented at Sydney Metro's expense.
- Carry out location-specific traffic, parking, noise/vibration and other conditions to ensure the safety, amenity and integrity of adjacent residents and other users of the area. These conditions should only be finalised once comprehensive engagement of the Community and Council has been completed. Additionally, the opportunity should be included for such conditions to be varied should circumstances change.

Additional consideration should be given to biodiversity impacts of any proposed mid-station ventilation/services facility as the locations currently under consideration are adjacent to several lightly wooded areas including biodiversity offsets sites created as a result of habitat lost due to the construction of the Inner West Light Rail.

Response

The Environmental Impact Statement identifies that a services facility would be required between Five Dock and The Bays and the location of the services facility is currently being investigated. The Environmental Impact Statement provides a number of locational and design criteria for the facility and provides a qualitative impact assessment in Appendix H. The locational and design criteria outlined in the Environmental Impact Statement are considered to be appropriate to determine a suitable location for the facility. The facility would be the subject of a future assessment and approval process once the location has been determined.

Sydney Metro would continue to consult with Inner West Council regarding the proposed services facility.

7.7.4 Planning and assessment process

Staged approvals

Issues raised

The separation of the Environmental Impact Statement into both concept level and Stage 1 approvals may result in approval being granted with many elements of the proposal still undefined and unclear. The Environmental Impact Statement should have a sufficient level of detail which allows full assessment by key stakeholders, including Council. Limiting the Environmental Impact Statement to Concept and Stage 1 only results in the Environmental Impact Statement containing insufficient detail of the overall project to permit a truly comprehensive and informed assessment by key stakeholders.

Response

Due to the size of the project, the planning approvals and environmental impact assessment for Sydney Metro West has been staged.

Section 4.2 of the Environmental Impact Statement outlines the staged infrastructure applications process under section 5.20 of the *Environmental Planning and Assessment Act 1979*. A staged infrastructure application sets out the concept for the proposed infrastructure and can also set out details of Stage 1.

The aim of providing a concept level impact assessment for Sydney Metro West was to identify environmental impacts so that they can be appropriately considered and assessed in detail as part of future stages. The continuing development of Sydney Metro West will also be guided by the performance outcomes included in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement.

At the time the Environmental Impact Statement went on public display, design of the major civil elements that comprise Stage 1 (all major civil construction works between Westmead and The Bays including station excavation and tunnelling) was well progressed. Future stages would include:

- All major civil construction works including station excavation and tunnelling between The Bays and Sydney CBD
- Tunnel fit-out, station building and operation of the line between Westmead to Sydney CBD.

As stated in Section 1.1.1 of the Environmental Impact Statement, seeking concurrent planning approval for the project concept and Stage 1 between Westmead and The Bays would allow:

- Additional time to consult with the stakeholders on the end-state design of stations including urban design, transport integration and placemaking outcomes
- Earlier commencement of critical construction activities which would allow Sydney Metro West as a whole to be delivered quicker and more efficiently, facilitating earlier realisation of the benefits of Sydney Metro West
- Each planning approval stage to be focussed on the critical issues associated with the particular works and the particular locations
- Additional time to solve certain design elements including the station location and tunnel alignment through the complex Sydney CBD environment.

As discussed in Chapter 5 (Stakeholder and community engagement), ongoing community consultation and stakeholder engagement would also be carried out. Key stakeholders, including Council, will have the opportunity to assess and provide feedback on future staged assessments, in line with Sydney Metro's community and stakeholder engagement program.

7.7.5 Stakeholder and community engagement

Exhibition period and methods

Issues raised

Due to COVID-19, consultation has been conducted almost exclusively online and letter dropping has been undertaken only in areas immediately adjacent to the proposed corridor. A wider area should be consulted, and the consultation period should be extended by at least two weeks.

Response

The Sydney Metro West Environmental Impact Statement was placed on exhibition for a total of 57 days, from 30 April 2020 to 26 June 2020, double the required statutory timeframe to allow additional time for community feedback.

The range of consultation activities that occurred during the extended period are described in Chapter 4 (Community and stakeholder involvement). This included the following virtual engagement tools:

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

Letter box drops were only one tool used to notify the public of the exhibition of the Environmental Impact Statement and provide information to the community. A media release outlining the Concept and Stage 1 Environmental Impact Statement was issued on 30 April 2020 and advertisements were placed in various newspaper outlets to promote the Environmental Impact Statement exhibition period. On the first day of exhibition of the Environmental Impact Statement, Sydney Metro Place Managers reached out to hundreds of community members, businesses, councils, schools, adjoining projects and community groups. More than 50,000 e-newsletters were also sent to community members registered on the Sydney Metro West project database during the exhibition period.

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.

Ongoing Stage 1 consultation

Issues raised

Council welcomes the opportunity to engage with Sydney Metro in delivering this precinct and ensuring that any current and future planning of the precinct, including the station design, location, access and alignment, supports the achievement of the mutually beneficial outcomes.

Council recognises that aspects of the construction methodology may be subject to further refinement and requests that these elements be subject to ongoing consultation with both Council and the community.

Council requests that a comprehensive Community Engagement Process be adhered to throughout the planning and construction phase of the project. Any changes from the project as described in the Environmental Impact Statement should automatically trigger full community and stakeholder consultation.

Council requests that all the concerns expressed in this submission are satisfactorily addressed prior to commencement of the proposed works and that both Council and the community continue to be consulted.

Response

Sydney Metro acknowledges the support of Council in achieving mutually beneficial outcomes.

Any changes to the project not consistent with the description or assessment presented in the Environmental Impact Statement would be subject to relevant statutory processes and consultation with the community and relevant stakeholders, including Council.

Sydney Metro would continue to work with stakeholders and the community in line with Sydney Metro's *Overarching Community Communications Strategy* (Appendix B), which is further discussed in Section 4.3.3 of this Submissions Report.

Issues raised by Inner West Council are addressed in this section of the submissions report.

Future stages

Issues raised

Ongoing consultation is needed for future stage environmental impact statements.

Council requests that any future environmental assessments be the subject of broader letterbox drops and longer notification periods.

Response

Key stakeholders, including Council, will have the opportunity to provide feedback on future staged assessments, in line with Sydney Metro's community and stakeholder engagement program.

As a minimum, consultation activities would meet relevant statutory requirements in place at the time.

7.7.6 Placemaking

Integration of stations

Issues raised

Council recognises that this Environmental Impact Statement is for the Concept and Stage 1, however emphasises the importance of integrating the proposed stations with the existing local character of adjacent areas. Proposed station developments must be cohesive in design and respond positively to the surrounding public domain, public open space and waterfront while minimising negative impacts on the surrounding residential and business communities.

Concern is expressed that key transport integration opportunities are not being realised. Council requests that the State Government initiates a comprehensive review of Sydney's public and active transport networks with a view to creating seamless transfer between all modes. Such a review should include, but not be limited to:

- Providing improved connectivity between the Metro West and existing rail lines (both heavy and light rail)
- Improved north-south connectivity across Inner Sydney
- Improving public and active transport along both the Parramatta Road and Victoria Road Corridors, as well as linking these corridors to the Metro West Line
- An additional metro station in Pyrmont
- Provision of a ferry terminal serving The Bays Station and providing services to North Sydney, Barangaroo and Circular Quay, with (subject to demand) possible links to the Parramatta River Service
- Enhanced active transport links between each Metro station and nearby residential, retail and employment centres
- Providing a link between The Bays Station (and/or a future Pyrmont Station) and the Camperdown Collaboration Precinct.

Response

Chapter 7 (Placemaking) of the Environmental Impact Statement describes the Sydney Metro design objectives, which includes being part of a fully integrated transport system (Objective 2). The principle behind this objective is that 'Sydney Metro is a transit-oriented project that prioritises clear and legible connections with other public and active transport modes within the wider metropolitan travel network that intersect with this new spine.' Transport integration is also a key objective for the project, as stated in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement.

As discussed in section 7.7.2, Sydney Metro West has been developed to align with relevant strategic planning policy, including the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018) and the *Future Transport 2056* strategy (Transport for NSW, 2018). Sydney Metro West would facilitate the growth in jobs, homes and residents that is currently planned for the Greater Parramatta to Sydney CBD corridor.

Preliminary place and design principles have been developed for each of the Sydney Metro West stations, described in Chapter 7 (Placemaking) of the Environmental Impact Statement. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build upon the five Sydney Metro-wide design objectives (refer to Section 7.3.3) and have considered relevant local council strategies and *Better Placed* design objectives. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles.

Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). The design of the station and precincts would be informed by objective and principles and feedback from community and stakeholders.

Inner West Council's support for a metro station in Pyrmont is noted. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option.

The provision of a ferry terminal is outside the scope of this project.

The Bays Station design

Issues raised

To provide the greatest patronage, it is essential that public and active transport networks link safely, reliably and conveniently to the station. To assist in achieving this it is suggested that the station design should include:

- An approach which 'Thinks globally and acts locally', create a unique design which is derived from the surrounding context and has an authentic 'local' vibe and then projected nationally and globally
- Consideration be given to additional entries to the station to provide high levels of accessibility and mobility for all users while also ensuring that there is mitigation for the anticipated impact that additional entry points will have on constrained traffic and parking in the surrounding established residential areas on the Balmain Peninsula
- Significant placemaking and public domain improvements providing opportunities to link the station to a redeveloped White Bay Power Station, an enhanced foreshore and the Cruise Passenger Terminal (noting the possibility of providing public access and activation of the terminal during non-ship days)
- Provision for active transport links to:
 - A reinstated Glebe Island Bridge (reinstated for active and possibly public transport only)
 - A potential future foreshore walk/shared path (including White Bay, Jones Bay and Rozelle Bay)
 - The future Rozelle Railyards Linear Park (and associated active transport network)
 - A future Victoria Road cycleway and enhanced pedestrian paths (to be implemented concurrently with completion of the Iron Cove Link)
 - Northwards into the Balmain residential area, Rozelle and Balmain Main Street shopping areas
 - Directly to the Cruise Passenger Terminal for its ship days, event facility and possible long-term public foreshore access
- Opportunities to connect to the Inner West Light Rail, including a possible spur line from either Rozelle Bay or Lilyfield Light Rail Stations
- Opportunities for a significant bus/metro/ferry interchange.

The design of the station including access, entries, built form design should be in tandem with the design of the surrounding precinct to ensure that place based outcomes are prioritised and achieved. Local distinctiveness should be embedded in the vision for the renewal project in order to create identity and engender community acceptance.

It is essential that early consideration be given to view impacts from surrounding areas as this is one of the central urban design considerations of the Sydney Regional Environmental Plan No. 26 – City West (SREP 26) and Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

The proposed station and precinct design have the potential to contribute to beneficial landscape and amenity impacts, or to negate many years of work in developing and maximising view corridors and scenic attributes of the area. The proposed station should be sensitively designed, particularly in relation to minimising any view loss to the iconic Sydney Harbour and White Bay Power Station.

The proposed preliminary station design and entry location creates concern for Council. In order to ensure the best possible design outcomes it is considered essential that conditions of approval for the project require the designs to achieve the intent of the design guidelines and establish an independent design review panel which include each relevant council.

Response

Preliminary place and design principles have been developed for each Sydney Metro West station. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build upon the five Sydney Metro-wide design objectives (refer to Section 7.3.3) and have considered relevant local council strategies and *Better Placed* design objectives. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles. For The Bays, this would include ensuring station and precinct designs are coordinated with wider precinct planning frameworks and key view corridors frame the new precinct.

Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s). These assessments would include detailed assessment of visual impacts.

Transport for NSW is working with stakeholders so that the project connects with existing and new cycling and pedestrian links to encourage sustainable travel choice and so that customers can easily connect to homes, jobs and surrounding areas. Through this process, feasible active transport options would be investigated, including a potential cycling link between Robert Street and Pyrmont via the Anzac Bridge or Glebe Island Bridge.

Sydney Metro West would continue to consult with Inner West Council during development of the design so that The Bays Station is integrated with existing and planned active transport networks.

The Bays Station access

Issues raised

The Bays Station (as currently proposed) has only one entry; to the south of White Bay, near the future Bays Waterfront Promenade. This proposed entry is supported in principle as it would provide access to the existing community to the south of the station, however, such an important station, located in a major growth area should provide significantly more than a single entry. The provision of only one station entry would funnel all patrons to a single location resulting in high levels of congestion. This congestion would further be exacerbated by mass disembarkation of bus passengers wishing to transfer to the metro. Further, the provision of only one station entry is counter to the design principles referred to in Chapter 7 (Placemaking) of the Environmental Impact Statement, which discusses enhancing legibility and accessibility to all stations.

The Environmental Impact Statement does not clearly demonstrate how the proposed Bays Station will interface with the foreshore. To better serve the needs of potential users it is requested that:

- Connections to the foreshore be designed to optimise the use of the foreshore for active transport/ commuting and recreational activities
- A generous width of walkway, along the water's edge, should be provided for public access and its dimensions should be planned in conjunction with Council to ensure it is future-proofed in relation to the ultimate population to be served
- Additional access points/entries designed to maximise attractiveness for both walkers and riders to use the station

- Safe and legible:
 - Cycle routes which do not conflict with traffic or pedestrians
 - Pedestrian routes which do not conflict with traffic or cyclists
 - Embarkation and disembarkation areas for public transport passengers.
- User-friendly forecourt areas designed to accommodate transferring passengers and possible community activities.

Response

Opportunities for multiple entries at The Bays Station would be investigated in the next stage of design. The design would also investigate safeguarding for potential additional entries in the future as the surrounding development of the masterplan evolves. Figure 7-9 of the Environmental Impact Statement identifies potential connections to the waterfront from The Bays Station. Table 7-9 of the Environmental Impact Statement also identifies that Sydney Metro West would significantly improve transport connectivity to the White Bay foreshore, which is identified as a project opportunity as part of the Sydney Green Grid.

Preliminary place and design principles have been developed for each of the Sydney Metro West stations, described in Chapter 7 (Placemaking) of the Environmental Impact Statement. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The place and design principles for The Bays Station include:

Enhance legibility and accessibility through the Bays Precinct by facilitating connections to White Bay Power Station, Anzac Bridge and White Bay.

Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement this principle.

Modal hierarchy

Issues raised

The modal access hierarchy (as identified in the Environmental Impact Statement) should be specifically referred to in the project's Conditions of Approval to ensure that the safety and convenience of walking, cycling and public transport are placed ahead of the needs of private cars. This modal access hierarchy should also be included as an element of the overall concept, a critical urban design element and an aspect to inform the design of stations (particularly the Bays Station).

Response

Conditions of approval are a matter for the Department of Planning, Industry and Environment to consider during its assessment of the project. The modal access hierarchy identified in Chapter 7 (Placemaking) of the Environmental Impact Statement would be applied in the design of Sydney Metro West stations, including The Bays. As this has been included in the Environmental Impact Statement, this would form part of any approval for the Concept.

Implementation of the modal hierarchy at stations is also a performance outcome for the Concept, as stated in Table 27-7 of the Environmental Impact Statement.

7.7.7 Concept assessment

Transport and traffic

Issues raised

Limiting the Environmental Impact Statement to Concept and Stage 1 only results in the Environmental Impact Statement traffic assessment not including a full analysis of impacts at The Bays Station site, as it excludes the likely use of the site for removal of tunnel spoil for Stage 3 of the project. Council requests that additional detail be provided regarding this spoil removal, including duration of spoil removal operations and construction traffic associated with the site.

Response

Section 8.4 of the Environmental Impact Statement provides an environmental assessment of the traffic and transport impacts of the Concept. Spoil removal is mainly related to tunnelling and is therefore included in the Stage 1 assessment. Potential construction traffic impacts associated with spoil removal for tunnelling works between The Bays and Sydney CBD would be included in future stage assessments and would be subject to separate assessment and approval. Consultation would be undertaken as part of these future stage assessments.

Visual amenity

Issues raised

Concern that the landscape and visual sensitivity levels at the White Bay Power Station are under estimated and should reflect its identification as a heritage item of state significance. The Environmental Impact Statement should reflect the significance of these views and any station/precinct design should have a scale and character which would be in keeping with the surrounding existing built form and not just the future character of the surrounding built form as suggested in Table 8-27.

Further, Council does not support acceptance of the visual impacts of the mid-station ventilation/services facility proposed between Five Dock and The Bays Stations, as outlined for “adverse visual impacts” (Table 8-27). It is acknowledged that the proposed facility would have a function driven scale, however, there is no reason that it cannot be designed sensitively to respond to the surrounding area and potentially have improved visual and landscape impacts through improvement of public domain and additional landscape planting. Sydney Metro’s approach to design of the facility with “adverse visual impacts” is considered completely unacceptable.

Response

The State heritage significance of the White Bay Power Station is recognised in Table 8-15 of the Environmental Impact Statement. The assessment referred to is a preliminary assessment only, undertaken as part of the Concept environmental assessment (Chapter 8 of the Environmental Impact Assessment). It does not take into account improvements to landscape character and visual outcomes that could be achieved as part of the design process.

As stated in Section 5.12.6, design of The Bays Station would take into account the preliminary place and design principles, described in Chapter 7 (Placemaking) of the Environmental Impact Statement, including ensuring station and precinct designs are coordinated with wider precinct planning frameworks and key view corridors frame the new precinct. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles.

A detailed assessment of potential visual impacts for Stage 1 is provided in Chapter 15 (Landscape character and visual amenity) of the Environmental Impact Statement.

The ‘adverse visual impacts’ rating applied to the proposed services facility between Five Dock and The Bays takes into account the sensitivity of the landscape and the likely landscape magnitude of change, described in Table 8-25 of the Environmental Impact Statement. The rating is a worst case scenario assuming a reduction in visual amenity at either a local or regional sensitivity level. Table 8-27 also recognises that the built form of the services facility would be architecturally designed to consider its setting.

Design guidelines for Sydney Metro West would also be developed to provide direction for the design of the services facility between Five Dock and The Bays, as described in Section 7.11.1 of the Environmental Impact Statement. The guidelines would guide the design of the interface between the services facility and the surrounding landscape. Design guidelines would be appended to the Environmental Impact Statement(s) for future stage(s). Transport for NSW would continue to consult with Council regarding the proposed ventilation facility between Five Dock and The Bays.

Further detailed assessment of visual impacts from station/precinct development at The Bays and the proposed ventilation facility between Five Dock and The Bays would be subject to visual impact assessment during future stage assessments.

Public transport

Issues raised

Council would like to see how the State Government will further enhance the Inner City's existing transport network in a manner which will capitalise on the creation of this new system by steps including, but not limited to:

- Ensuring that Sydney Metro West is an integral component (rather than a stand-alone element) of a revised transport network which includes enhancements to and seamless integration of all travel modes in a manner which will accommodate existing and likely future travel needs
- Providing improved linkages between Sydney Metro West and existing rail lines (both heavy and light rail)
- Providing improved linkages between Sydney Metro West and existing (and future) bus services
- Providing improved linkages between Sydney Metro West and existing (and future) ferry services
- Improving north-south public (and active) transport connectivity across Inner Sydney
- Improving public and active transport along both the Parramatta Road and Victoria Road Corridors, as well as linking these corridors to the Metro West Line
- Providing a link between The Bays Station (and/or a future Pyrmont Station) and the Camperdown Collaboration Precinct
- Inclusion of a bus/metro/ferry interchange facility as an integral aspect of The Bays Station
- Safe, legible, direct, all-weather interchange between modes.

Response

Chapter 2 (Strategic need and justification) of the Environmental Impact Statement describes the objectives for the project, including integration of Sydney Metro West with other transport modes to improve access to and resilience of the transport network.

Chapter 7 (Placemaking) of the Environmental Impact Statement describes the Sydney Metro design objectives, which includes being part of a fully integrated transport system (Objective 2). The principle behind this objective is that 'Sydney Metro is a transit-oriented project that prioritises clear and legible connections with other public and active transport modes within the wider metropolitan travel network that intersect with this new spine.'

Specifically, Sydney Metro West would:

- Support the delivery of the '30-minute city' as identified in the *Future Transport 2056* strategy
- Facilitate intuitive and accessible interchange between Sydney Metro and other modes including regional and local bus services near the proposed The Bays Station
- Provide direct, legible, safe and accessible pedestrian routes to and from stations.

7.7.8 Transport and traffic

Construction traffic

Issues raised

Council requests that 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.

Response

Consistent with the *Construction Traffic Management Framework* included in Appendix F of the Environmental Impact Statement, Sydney Metro would work collaboratively with councils and stakeholders and other major projects to mitigate traffic and transport impacts. Sydney Metro would consult with Council as part of its approach to managing potential cumulative traffic impacts.

Construction worker parking

Issues raised

An absence of on-site construction worker parking is likely to result in parking overflow into nearby streets. Council requests that:

- A series of kerbside parking studies should be carried out before and after commencement of construction activity at both The Bays Station and the proposed mid-station ventilation/services facility. Should it be determined that construction is resulting in unacceptable levels of parking demand Metro West will be

responsible for preparing, establishing, funding and managing appropriate kerbside parking schemes (to protect the interests of residents and the Community at large).

- Sydney Metro West should introduce a comprehensive green travel plan (mentioned but not detailed in the Environmental Impact Statement) to encourage use of public transport by all construction workers. This plan should include but not limited to:
 - Installation of workforce “trade lockers” for the storage of personal items including tools
 - Subsidised public transport/Opal cards
 - Shuttle buses from key public transport nodes
 - Quality end of trip facilities
 - An on-site green travel plan coordinator.

Response

Mitigation measure TT10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits to consultation with Council to investigate opportunities to provide alternative parking facilities.

Construction sites would also be managed in accordance with mitigation measure TT11 to minimise the number of construction workers parking on surrounding streets.

Most construction sites are near public transport services and construction workers would be encouraged to use these services. At The Bays Station construction site, the feasibility of providing shuttle bus services to transfer construction workers to and from major transport interchange(s) would be considered.

‘Park and shuttle’ services may also be considered by the relevant contractors for other construction sites.

Construction workers would be encouraged to use ride sharing, public transport and active transport wherever practicable.

The *Construction Traffic Management Framework* (Appendix F of the Environmental Impact Statement) would also be implemented to minimise traffic impacts on local streets.

Mode interchange at The Bays Station

Issues raised

Table 6-10 of the Environmental Impact Statement defines the station’s primary function as “origin and destination”, with the list of station customers not including transferring passengers. Council considers that a significant network integration opportunity is being missed. This is exacerbated by the absence of any reference to provision for a significant metro/bus/ ferry interchange, and/or the possibility of a link between the Inner West Light Rail and The Bays Station. It is consequently requested that Sydney Metro investigate opportunities to create a metro, bus, ferry and active transport interchange at The Bays Station.

Response

While the primary station functions for The Bays Station are identified as origin and destination, interchange with other modes would still be an important consideration for the design of the station and station precinct. One of the preliminary place and design principles for The Bays Station identified in Chapter 7 (Placemaking) of the Environmental Impact Statement is to facilitate intuitive and accessible interchange between Sydney Metro and other modes. Transport interchange modes at The Bays identified in Table 6-10 of the Environmental Impact Statement include:

- Walk
- Cycle
- Bus
- Taxi/point to point transport
- Kiss and ride.

Mitigation, management and monitoring

Issues raised

The proposed hierarchy of access for the *Construction Traffic Management Framework* should be included as a Condition of Approval for the project and be applied to the adjacent road network as well as access to Sydney Metro West construction sites. Safe, reliable, legible routes for public and active transport should be maintained at all times.

Streets near potential services facility sites between Five Dock and The Bays are generally unsuitable to heavy vehicles and therefore restrictions need to be placed on the size of any vehicles servicing the site, with no articulated vehicles (including truck and dog combinations) to be permitted. Further, it is requested that:

- All heavy vehicle drivers including subcontractors have mandatory 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 Sydney Metro West project (ideally including which site they are servicing)
 - A vehicle identification number
 - Contact details for the complaints hotline
- All heavy vehicles 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, a review of construction traffic should be carried out, with a view to adapting construction traffic activity to the likely future configuration of Victoria Road. Active travel will also alter significantly after completion of the Rozelle Railyards Linear Park. As construction at The Bays Station site is likely to extend beyond this time, the review should include consideration of activity likely to be generated by the linear park.

Response

Conditions of approval will be considered by the Department of Planning, Industry and Environment during its assessment of the project. The *Construction Traffic Management Framework* was included as Appendix F of the Environmental Impact Statement, and so would form part of any planning approval.

All other management measures suggested by Council would be considered for inclusion during development of the construction environmental management plan.

Mitigation measures TT24 and CI1 in Chapter 8 (Revised environmental mitigation measures) of this submissions report would be implemented to ensure co-ordination of traffic management arrangements between major construction projects, including WestConnex 3B (Rozelle Interchange) in consultation with relevant stakeholders.

Construction routes

Issues raised

It is considered that Alternative Construction Route 1 (using Victoria Road) may conflict with construction traffic generated by the proposed Western Harbour Tunnel civil site located on Victoria Road, immediately to the west of Darling Street. Additionally, it is considered that Alternative Construction Route 2 (using Robert Street) has the following short-comings:

- Queuing capacity at the Robert Street/Mullens Street intersection is very limited
- Traffic activity will increase in the vicinity as a result of a Bunnings hardware store planned for Parsons Street, Rozelle (adjacent to the Robert Street/Mullins Street intersection)
- Construction associated with the expansion of the event facility at the Cruise Passenger Terminal is likely to conflict with Metro West construction traffic on this route
- Should it be necessary to use Alternative Construction Route 2, particular care should be taken to ensure that construction traffic does not conflict with peak arrival and departure periods for ship days at the Cruise Passenger Terminal and events being staged at the terminals event facility.

Response

Cumulative construction impacts have been assessed at The Bays Station construction site and include consideration of construction traffic generated by the proposed Western Harbour Tunnel Victoria Road construction support site (refer to Section 10.15 of the Environmental Impact Statement). Most construction vehicles would use the primary routes via Sommersville Road and James Craig Road. The potential implications of using Robert Street for construction heavy vehicle movements are acknowledged. This alternative route is identified as a secondary haulage route in the event that the primary haulage route is not available or incidents on the network preclude use of the primary route for short periods of time.

Sydney Metro has committed to specific mitigation measures to manage potential construction traffic impacts. This includes mitigation measure TT24 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report to co-ordinate traffic management arrangements between major construction projects in consultation with Transport for NSW including Transport Coordination. Construction site traffic would also be managed to minimise movements during peak periods, in accordance with mitigation measure TT7.

Construction Traffic Management Plans

Issues raised

Council requests that the proposed future Construction Traffic Management Plans:

- Provide staged management plans which responds to the likely changing dynamics of the adjacent area (e.g. construction of Western Harbour Tunnel, opening of Rozelle Railways Linear Park, enhanced foreshore access, expansion of Cruise Passenger Terminal event facility); reduces the focus on late night/early morning traffic generation
- Should be subject to an ongoing monitoring program which assesses the overall impacts associated with cumulative construction activity, which may change incrementally as demand varies across the adjacent street network and that Council be actively consulted on the preparation of this plan
- Re-examine the use of Alternative Construction Routes 1 and 2
- Should note that queuing of construction vehicles must be fully accommodated on-site and should temporary construction vehicle layover be required this should not be accommodated on local streets
- Includes use of water transport for the removal of spoil and delivery of materials.

Response

The process for the development of Construction Traffic Management Plans is outlined in Appendix F (*Construction Traffic Management Framework*) of the Environmental Impact Statement. As stated in the framework, Contractors would prepare detailed site-specific Construction Traffic Management Plans (CTMPs) for each work site in consultation with relevant stakeholders. Plans may include Traffic Staging Plans, Traffic Control Plans, Vehicle Movement Plans, Pedestrian Movement Plans, a Parking Management Plan and address any changes from the indicative haulage routes presented in the Environmental Impact Statement.

Mitigation measure TT24 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report would be implemented to co-ordinate traffic management arrangements between major construction projects in consultation with Transport for NSW including Transport Coordination. Construction site traffic would also be managed to minimise movements during peak periods, in accordance with mitigation measure TT7.

Regular safety audits (in accordance with the *Construction Traffic Management Framework*), along with regular inspections, would monitor all construction site safety arrangements.

Inner West Council would be consulted during the development of any Construction Traffic Management Plans.

Construction haulage routes have been developed to minimise the use of local roads and use the most efficient route to the arterial road network. Haulage routes have been developed in consultation with relevant sections of Transport for NSW including Transport Coordination. Should the Concept and Stage 1 be approved, Sydney Metro would continue to consult with Inner West Council, the community and key stakeholders during construction and the planning for future stages. In general, this consultation would involve:

- Ongoing consultation with key stakeholders, local councils and other government agencies
- Provision of regular updates to the nearby communities
- Development and implementation of a community complaints and response management system.

The suitability of construction haulage routes through sensitive land use areas with respect to road safety would be assessed during construction, in accordance with mitigation measure TT5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Options for the transport of spoil by barge is being considered for The Bays construction site as discussed in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

The *Construction Traffic Management Framework* (Appendix F of the Environmental Impact Statement) identifies traffic management processes and traffic control techniques, including scheduling of heavy vehicles site access so that heavy vehicles do not queue on adjacent streets.

Other suggested measures above would be considered by during development of Construction Traffic Management Plans.

7.7.9 Noise and vibration

Construction noise

Issues raised

Council requests a more refined approach to the assessment of noise during daytime hours given the current COVID-19 situation and that more people are likely to work from home into the future. Council also raised the following issues:

- Measures should be examined to minimise the impact on adjacent properties at all times (e.g. use of smaller capacity equipment, use of shears and crushers rather than rockbreakers, establishment of acoustic buffers and advance notification of residents when high noise generation activities are likely to take place)
- Concern is expressed regarding the noise monitoring level exceedances shown in Table 11-58 for The Bays Station construction site. While the medium higher level exceedances (>20 dB) are low, Council expresses concern regarding the number of low to medium level exceedances (1-20 dB) anticipated during daytime out of hours and at night for residential receivers. Concern is also expressed regarding the daytime exceedances given the likelihood that an increased number of residents will be regularly working from home in the future.
- The noise and vibration monitoring program should institute a quick response mechanism; particularly noting the possibility that construction may commence during the COVID-19 recovery period. As referred to earlier this may result in a large proportion of the workforce working from home, thus meaning that even if construction activity is limited to normal construction hours it may be disruptive to nearby residents working from home. Such a quick response mechanism should include but not be limited to a direct enquiry line (provided to all nearby residents and businesses) and a transparent line of accountability.
- An explanation should be provided as to why The Bays Station site has not been included in Table 11-17 “summary of vibration criteria exceedances”
- Concern is expressed regarding the possibility of controlled blasting being used at The Bays Station site (noting that this has not been specifically mentioned as a form of rock breaking on this site). Consequently, Council requests that details be provided regarding a comparison of the likely impacts of controlled blasting and machine rock breaking, and that only the lesser impactful form of excavation be used at The Bays Station and mid station ventilation sites within Inner West local government area.

Response

The noise and vibration assessment approach undertaken as part of the Environmental Impact Statement is consistent with the requirements of the Secretary’s Environmental Assessment Requirements. The noise assessment considers potential impacts to residential receivers during all time periods where works are proposed. Therefore the impacts to people who may be occupying residential properties during the day have been considered.

Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would be investigated and implemented where feasible and reasonable, in accordance with mitigation measure NV02 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

The predictions of exceedances in Table 11-58 are representative of the highest noise levels that would be experienced when the works are nearest to the sensitive receivers. Further investigation of potential impacts, including sleep disturbance, would be completed during the next stages of the project when detailed construction planning information becomes available. Monitoring would also be undertaken during construction to measure impacts and determine the need for additional mitigation.

A Construction Noise and Vibration Management Plan would be prepared before any works begin and would define how the predicted impacts would be mitigated and managed. In addition to this, the project specific mitigation measures in Chapter 8 (Revised environmental mitigation measures) would be implemented to address potential noise and vibration impacts.

All complaints handling would be conducted in accordance with the Sydney Metro Construction Complaints Management System. A toll-free information line has been in place since the announcement of Sydney Metro West in 2016. This community information line provides an opportunity for the community to contact the Sydney Metro West project team, ask questions and seek further information and would continue to operate through the construction and future planning stages.

Table 11-17 of the Environmental Impact Statement summarises predicted vibration criteria exceedances for tunnelling. No exceedance of screening criteria is predicted for tunnelling works for The Bays area.

Controlled blasting may be used as an alternative to rockbreaking where deep excavation of rock is required. As stated in Section 11.3.9 of the Environmental Impact Statement, controlled blasting can substantially reduce the length of time that noise and vibration impacts occur compared to rockbreaking alone. As blasting events are instantaneous the duration of potential ground-borne noise and human comfort vibration impacts are generally minimal. Additionally, the blast events are only expected to occur, at most, once a day, and up to two or three times a week. Table 20 of Technical Paper 2 (Noise and vibration) shows the potential reduction in continuous rockbreaking and construction program from using blasting. For The Bays, there is a potential reduction of 41 days from using blasting compared to continuous rockbreaking. Similar comparison for the proposed ventilation facility between Five Dock and The Bays would be carried out during future detailed assessment.

If blasting is required at The Bays, it would be carried out within an acoustic shed, and in accordance with mitigation measure NV12 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. Blasting activities would also be monitored to confirm that vibration levels are within the blasting criteria, as per mitigation measure NV13.

Construction traffic noise

Issues raised

Council notes that to reduce impact on peak period traffic flows heavy vehicle movements are to be focused on the following times:

- 6pm to 6am and
- 10am to 3pm.

While it is recognised that these movements will free up intersection capacity during peak periods, concern is expressed regarding the noise associated with these movements particularly during late night and early morning periods.

Concern is also expressed regarding summer/daylight saving late afternoon and evening periods. Noting that opening of the Rozelle Railyards Linear Park (and a potentially an upgraded foreshore area) will occur during the latter part of the proposed construction period, there is potential for significantly increased recreational use in areas adjacent to the Bays Station site.

Response

Section 11.14.2 of the Environmental Impact Statement describes potential construction traffic noise impacts near The Bays construction site. Roads to the south of the site, including James Craig Road, Port Access Road, Sommersville Road and Solomon's Way have been assessed as potentially experiencing an increase greater than 2 db. No residential receivers are located along these roads and this increase represents the worst-case predicted increase in any period.

Section 5.4 of Technical Paper 2 (Noise and vibration) also notes that construction traffic is unlikely to result in a noticeable increase in noise levels on most of the proposed construction haulage routes due to existing high volumes of traffic compared to the relatively small volume of construction vehicles.

Out of hours work

Issues raised

Tunnel operations will continue 24/7 and consequently spoil removal, material supply and utility management works are programmed to operate 24/7. Tables 11-57 and 11-58 of the Environmental Impact Statement indicate the possibility of 13 scenarios which will result in Out of Hours activities, with up to 623 receivers being affected, including one instance of some 333 receivers being affected by the use of rockbreakers at night.

Council considers that this represents a significant potential impact on the adjacent community and requests that Sydney Metro engage comprehensively with Council and the community with a view to substantially reducing the number of Out of Hours noise exceedances and to minimise all impacts associated with these occurrences.

Experience indicates that unforeseen circumstances may result in a variation to these hours. In response to this experience, Council requests a commitment that the local community will be provided with a minimum of one week's advance notification of any anticipated Out of Hours activities. A minimum of one week's advanced notification should also be provided to the local community when high noise generating activities are programmed (e.g. rockbreakers).

Response

Out of hours work would be carried out in accordance with mitigation measure NV04 in Chapter 8 (Revised environmental mitigation measures). Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would also be investigated and implemented where feasible and reasonable, in accordance with mitigation measure NV02 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Mitigation measure NV01 requires further consultation with affected communities to develop and implement appropriate mitigation and management options to minimise impacts.

Mitigation, management and monitoring

Issues raised

Council requests:

- An ongoing, real-time noise and vibration monitoring program be initiated which includes regular consultation with adjacent residents and businesses (including adjacent commercial premises and childcare facilities)
- The noise and vibration monitoring program should include ongoing assessment of any structural impacts (due to vibration) on adjacent premises, most particularly the White Bay Power Station, Glebe Island Dykes, Glebe Island Bridge, Glebe Island Silos, Anzac Bridge and adjacent port structures
- In addition to the precondition dilapidation surveys proposed for residential and commercial properties, surveys should also specifically include (but not limited to); White Bay Power Station, Glebe Island Dykes, Glebe Island Bridge, Glebe Island Silos, Anzac Bridge and adjacent port structures
- Concern is expressed that the current physical state of White Bay Power Station makes this historic building particularly vulnerable to damage by ground-borne vibration. Council suggests that this site requires detailed attention which does not appear to be detailed in the Environmental Impact Statement. Consequently, Council requests that permanent vibration monitoring stations be installed in and on the White Bay Power Station and that these be monitored in real-time with a view to initiating immediate action should it be required to ensure the structural integrity of this historic building be maintained.

Response

Further engagement and consultation would be carried out with affected communities, in accordance with mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise impacts.

Details of the vibration monitoring program would be developed during detailed construction planning and included as part of the Construction Noise and Vibration Management Plan.

Further detailed assessment and monitoring of the heritage structures associated with the White Bay Power Station would be carried out in accordance with mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. As stated in Technical Paper 2 (Noise and vibration), the more conservative cosmetic damage screening level of 2.5 millimetres per second would be adopted for the White Bay Power Station during this detailed assessment.

Cosmetic damage screening criteria are predicted to be exceeded at the former White Bay Power Station and White Bay Power Station inlet canal. These structures would be subject to ongoing monitoring and assessment. Vibration at the other structures listed are not expected to exceed applicable criteria.

7.7.10 Non-Aboriginal heritage

Assessment of significance

Issues raised

In relation to the non-Aboriginal heritage protocols, Council requests that Sydney Metro note the significance of the following in The Bays area:

- The working port; including its maritime, military, servicing/tendering and container activities (noting that White Bay was the first port in New South Wales to handle containerised shipping)
- The historic nature of rail infrastructure leading to and adjacent to the port and power station (including the significance of its direct link by the Metropolitan Goods Line, for container traffic to Chullora railyards)
- White Bay Power Station, including adjacent works as well as the power station itself

- The numerous wharf structures associated with the port and Glebe Island Bridge.

Response

Section 5.11 of Technical Paper 3 (Non-Aboriginal heritage) provides a summary of the history of White Bay (The Bays) including port operations, rail infrastructure and the White Bay Power Station.

Significance and impact assessments are provided in Section 6.10.3 of Technical Paper 3 (Non-Aboriginal heritage) for potential impacts on all listed items including the White Bay Power Station, White Bay Power Station (Inlet) Canal, White Bay Power Station (Outlet) Canal and Beattie Street Stormwater Channel No. 15.

7.7.11 Aboriginal heritage

Mitigation, management and monitoring

Issues raised

It is essential to recognise the significance of White Bay and the surrounding area to the local indigenous people. While documentation on Aboriginal sites and artefacts nearby is limited, anecdotal advice from the local Community indicates that the area is particularly significant and should be dealt with sensitively and in accordance with all necessary protocols. Council considers that issues of Aboriginal heritage are continually oversimplified and requests that attention be paid to the following:

- Great care should be taken with all excavation, regardless of the depth (noting that there is potential for artefact finds in the top 1m in this area) and that all appropriate archaeological protocols should be adhered to throughout the project's construction phase. This is particularly relevant as the Environmental Impact Statement tends to highlight known sites, however Council's experience is that sites are likely to be distributed throughout the White Bay area.
- 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

Sydney Metro acknowledges the need for sensitivity regarding Aboriginal heritage and the need to follow all necessary protocols. Table 13-12 of the Environmental Impact Statement identifies an area of low to moderate archaeological potential and an area of moderate archaeological significance within The Bays construction site. Potential impacts to Aboriginal heritage during construction would be managed in accordance with mitigation measures AH2, AH3 and AH4 in Chapter 8 (Revised environmental mitigation measures).

Consultation with Registered Aboriginal Parties has been carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water, 2010a). Details of this consultation are provided in Section 13.3.2 of the Environmental Impact Statement. Ongoing consultation will occur in accordance with mitigation measure AH1 and AH3 in Chapter 8 (Revised environmental mitigation measures).

7.7.12 Property and land use

Consistency with local plans

Issues raised

Existing land uses around The Bays Station as presented in the Environmental Impact Statement are inconsistent with the existing zoning under the Leichhardt Local Environmental Plan 2013. Council is extremely concerned about the misinterpretation of land use in the area, with industrial zoned sites fronting Victoria Road, Crescent Street, Parson Street and Robert Street being represented as Residential. This illustrated residential use is not reflective of the existing land uses or Council's policy context. Council is currently finalising its Draft Employment and Retail Lands Strategy. This strategy will provide an approach to managing land in a manner which maximises productivity and facilitates job growth in the Inner West.

Council therefore requests that the Environmental Impact Statement assessment of existing land uses be revised and that, as well as the existing zoning, Council's Draft Employment and Retail Lands Strategy be considered in this assessment.

To assist Metro in better assessing existing and likely future land uses the following actions (from the draft Strategy) are highlighted for consideration:

- **Action 3.2.3** – ‘Work with the state government to enhance the delivery of employment generating land uses at The Bays Precinct by:
 - Encouraging the ongoing and long-term operation of the port to cater to the growing freight demand
 - Lobbying the State government to adopt the ‘agent of change principle’ over land at the port, to require attenuation of surrounding residential’
- **Action E.2** – ‘Establish part of Victoria Road, Rozelle as an enterprise corridor to create additional employment opportunity close to The Bays Precinct which is proposed for significant growth.’

Response

Figure 14-10 in Chapter 14 (Property and land use) of the Environmental Impact Statement is showing observed existing land use, rather than land use zoning. There are a number of residences on IN2 Light Industrial zoned land on The Crescent and Robert Street.

Sydney Metro will consider the Draft Employment and Retail Lands Strategy during future design development and relevant stage environmental assessments.

Sydney Metro will also consider relevant local government strategies throughout design development, as noted in Chapter 7 (Placemaking) of the Environmental Impact Statement.

7.7.13 Contamination

Mitigation, management and monitoring

Issues raised

Council requests that environmental issues associated with White Bay and contamination in the vicinity of White Bay Power Station are carefully managed.

Response

A Soil and Water Management Plan would be prepared to manage potential contamination impacts, consistent with the *Construction Environmental Management Framework* (Appendix C). The Soil and Water Management Plan would 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 would also be managed in accordance with the mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. In particular, mitigation measures C1 to C3 establish a risk based approach to contamination that ensures that areas with potential contamination would be subject to further desktop data review, detailed site investigations, and appropriately remediated if required.

7.7.14 Biodiversity

Removal of vegetation

Issues raised

No details are provided to indicate a phased approach to the removal of existing vegetation and remediation through the planting of new vegetation.

It is requested that:

- Any vegetation to be removed should be phased to allow sufficient time for fauna to relocate. This should include remediation measures and lost vegetation should be replaced and with equivalent planting to offset vegetation removed; in an area that is protected from future development and adjacent to other vegetated area to increase patch size.
- 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 that care should be taken to ensure both maintenance of their habitats and that construction activity does not disturb them
- Consideration should be given to biodiversity impacts of any proposed mid-station ventilation/services facility as the location is currently under consideration and may be adjacent to several lightly wooded areas including biodiversity offsets sites created as a result of habitat lost due to the construction of the Inner West Light Rail.

Response

Biodiversity impacts were considered in the Environmental Impact Statement for both the Concept (Chapter 8) and Stage 1 (Chapter 22).

A Flora and Fauna Management Plan would be prepared as part of the *Construction Environmental Management Framework* (Appendix C) to manage biodiversity impacts for Stage 1. The Flora and Fauna Management Plan would include measures to reduce disturbance to sensitive fauna and procedures for the clearing of vegetation and the relocation of flora and fauna.

Consideration would be given to potential biodiversity impacts during site selection of the services facility between Five Dock and The Bays. A biodiversity assessment would be undertaken (as relevant) as part of future environmental assessments to determine potential impacts associated with the proposed ventilation facility.

7.7.15 Air quality

Monitoring

Issues raised

Air quality is of concern to Council and the community. In addition to Sydney Metro's recognition of the need to manage and mitigate particulate and dust as critical elements of air quality, it is 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 would be prepared as part of the *Construction Environmental Management Framework* (Appendix C) to manage air quality impacts for Stage 1. The plan would include air quality and dust monitoring requirements.

Contractors would 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 (refer to Section 4.3.4 of this Submissions Report).

7.7.16 Sustainability

Station design

Issues raised

The Sydney Metro West project should be designed to support Council and the Greater Sydney Commission's vision for The Bays as a low carbon high performance precinct. Making the precinct a low carbon one relies on high quality and sustainable building design and siting, which will need to be considered thoroughly as the project progresses. This objective can be achieved through increasing public transport use, sustainability building design, sustainable construction practices and the overall planning and design of The Bays Station and its surrounds.

Response

Section 8.20 of the Environmental Impact Statement outlines initiatives and targets for the Sydney Metro West Concept that have been developed to align with relevant government resource efficiency policies. These initiatives and targets would apply to each stage of the project and be further refined as part of the design process. Initiatives and targets would also be committed to in an update to the Sydney Metro West Sustainability Plan and included in the contract documents each stage.

Sydney Metro West is committed to achieving a minimum Infrastructure Sustainability Council of Australia (ISCA) IS rating of 75 – Version 1.2 (or equivalent) and a 5-Star Green Star rating for relevant elements of the project.

7.7.17 Cumulative impacts

Assessment methodology

Issues raised

To ensure the safety and amenity of all users of White Bay, Balmain, Rozelle and Lilyfield, Council calls on the State Government to address cumulative impacts (traffic and other), in and around White Bay. The Government should cease incrementally increasing these impacts (one development at a time) by assessing projects individually, rather projects should be assessed as an integral piece of the overall area.

Response

Cumulative impacts in and around White Bay have been considered in the assessment of Sydney Metro West. Concurrent and consecutive projects considered included:

- WestConnex M4 – M5 Link
- Sydney Metro City & Southwest (Chatswood to Sydenham)
- Western Harbour Tunnel and Warringah Freeway Upgrade
- Glebe Island concrete batching plant and aggregate handling
- Glebe Island Multi-User Facility
- Extension to Longitude Office Building – 36 James Craig Road.

As stated in Appendix G (Cumulative impacts assessment methodology – Stage 1) of the Environmental Impact Statement, the Department of Planning, Industry and Environment is currently developing a guideline on cumulative impact assessment for State significant projects. For Sydney Metro West, the Secretary's Environmental Assessment Requirements required an assessment of the relevant cumulative impacts that take into account other State significant projects that have been approved but where construction has not commenced, projects that have commenced construction, and projects that have recently been completed and approved construction in the relevant precincts.

Cumulative impacts would be managed in accordance with mitigation measure CI1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Construction traffic

Issues raised

Sydney's Inner West, particularly in and around White Bay, Balmain, Rozelle and Lilyfield, is currently being subjected to extensive cumulative construction impacts associated with many State Government projects.

Council specifically expresses concern that analysis provided in the Sydney Metro West Environmental Impact Statement states that several adjacent intersections are already at, or near, capacity and yet the Environmental Impact Statement indicates that the project will add traffic to these intersections. If the intersections are at capacity, Council questions their ability to accommodate additional traffic without causing some of the existing traffic to divert to other locations, including local streets or streets with sensitive uses.

Response

Sydney Metro has committed to specific mitigation measures to manage potential construction traffic impacts. This includes mitigation measure TT24 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report to co-ordinate traffic management arrangements between major construction projects in consultation with Transport for NSW including Transport Coordination. Construction site traffic would be managed to minimise movements during peak periods, in accordance with mitigation measure TT7.

It is also expected that a number of concurrent projects would be completed during the construction period of the Sydney Metro West project, including WestConnex M4 – M5 Link (operational in 2023), which should provide some improvement to the operational performance of the road network near The Bays Station construction site.

Biodiversity

Issues raised

Cumulative impacts on biodiversity would result in further deterioration and fragmentation of vegetation that is already fragmented. The impacts of this issue have already been amplified as many areas of vegetation have been cleared for other projects such as Rozelle Interchange. While the Environmental Impact Statement repeatedly refers to vegetation on and near the site as "highly degraded" it is nevertheless habitat for numerous forms of fauna and should be preserved wherever possible. The Environmental Impact Statement indicates that highly mobile species (e.g. birds) would be able to temporarily move from the area but that less mobile species (such as small mammals and reptiles) would be at risk.

Response

The cumulative biodiversity impacts of the project during construction are considered manageable through the implementation of the mitigation measures in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

The vegetation to be removed at the proposal site is a mix of planted native vegetation and weed species. Due to the redevelopment of The Bays area, replanting of vegetation is not proposed as part of Stage 1 of the works for Sydney Metro West. Revegetation and landscaping would be carried out as part of the broader plans for The Bays area and as part of landscaping around the station precinct.

Biodiversity impacts would be managed in accordance with Sydney Metro's *Construction Environmental Management Framework*, which includes requirements for pre-clearing inspections by a qualified ecologist, and requirements for procedures for the relocation of encountered fauna.

As stated in Section 5.12.15 of this Submissions Report, a Flora and Fauna Management Plan would be prepared to manage potential impacts and include measures to reduce disturbance to sensitive fauna and procedures for the clearing of vegetation and the relocation of flora and fauna.

Mitigation, management and monitoring

Issues raised

In relation to community consultation and engagement, and the ongoing management of complaints, Council requests:

- Continuous comprehensive consultation between all proponents and the community (including Inner West Council)
- The establishment of a transparent and accountable community contact system with:
 - Telephone and email addresses readily available to the community
 - Prescribed response timelines that must be adhered to
 - Prescribed lines of accountability (particularly noting that numerous sub-contractors may be used on the project it is essential that a centralised contact system be established with a single point of contact responsible for solving stakeholder issues)
- On-going pre-and post-commencement reviews including traffic, noise, vibration, hydrology, air quality, water quality, contamination and heritage issues, as well as various social and business impacts/concerns
- Retention of active transport links during construction with design of the new roads to include provision for safe, convenient pedestrian and cycle access. Access should specifically cater for access to a reinstated Glebe Island Bridge as well as links to the surrounding active transport network.
- Active involvement of Inner West Council in the assessment of the cumulative impacts
- A revised review of cumulative construction impacts should include:
 - The Western Harbour Tunnel activities associated with the civil tunnelling site proposed for 138-156 Victoria Road Rozelle
 - The Western Harbour Tunnel/M4 – M5 link works associated with modification of the City West Link intersection with The Crescent (including active transport links)
 - Expansion of the White Bay Cruise Passenger Terminal event facility.

Response

Sydney Metro is committed to continuing extensive community and stakeholder engagement on Sydney Metro West. The *Sydney Metro Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (Appendix B). Contract specific Community Communication Strategies would 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 Sydney Metro's *Overarching Community Communications Strategy*. Consultation during construction of Stage 1 and planning for future stages would be in accordance with the *Overarching Community Communications Strategy*. Specific activities would include:

- Ongoing consultation with key stakeholders, local councils and other government agencies
- Provision of regular updates to the nearby communities
- Enquiries and complaints hotline
- Fact sheets and media releases.

Contractors would 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 (refer to Section 4.3.4 of this Submissions Report).

Place Managers would also 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 (see Section 4.2.7 of this submissions report). Place Managers can be contacted via the toll-free community information line (1800 612 173) or project email (sydneymetrowest@transport.nsw.gov.au).

As required in the *Construction Environmental Management Framework* (Appendix C), Sydney Metro would engage Independent Environmental Representatives to monitor and report on the implementation and performance against approvals. Principal contractors would also be required to undertake monitoring in accordance with relevant construction environmental management plans and community communications strategies.

Active transport links at The Bays Station would be considered as part of the design and assessment process for future stages of Sydney Metro West.

Inner West Council would be consulted regarding potential cumulative impacts, with feedback sought.

Appendix G of the Environmental Impact Statement describes the methodology for the cumulative impact assessment included in the Stage 1 impact assessment. Table 1 of Appendix G describes the screening criteria applied to projects for the cumulative impact assessment. At The Bays Station construction site, the cumulative impact assessment included relevant components of the proposed Western Harbour Tunnel and Warringah Freeway project and the WestConnex M4 – M5 project.

The modification of the City West Link intersection with The Crescent would be carried out as part of the WestConnex M4 – M5 project. The modification did not meet the screening criteria as it would not substantially increase potential impacts already assessed for the WestConnex M4 – M5 project.

7.7.18 Beyond scope of the project

Other transport projects

Issues raised

Consideration should be given to the development of a light rail service from the Lilyfield Light Rail Station to the eastern end of the Bays Precinct and that a good interchange be created between Light Rail and the Sydney Metro West service.

Response

Provision of a light rail service from the Lilyfield Light Rail Station to the eastern end of the Bays Precinct is beyond the scope of Sydney Metro West. Future public transport projects are subject to detailed investigations by Transport for NSW and would be planned in accordance with the *Future Transport 2056* strategy.

Demand management

Issues raised

Council requests that the State Government assists Councils in implementing various demand management mechanisms including:

- Accessibility based parking control regimes
- Bus, bike and pedestrian priority measures
- Reduced speed limits in residential and shopping streets
- Widened footpaths and provision of separated cycle lanes
- Time-based management of service and delivery vehicles
- Focus on movement of people rather than movement of cars.

Response

Demand management initiatives throughout the Inner West Council area are beyond the scope of the Sydney Metro West project. Active transport links, pedestrian and cyclist priority initiatives within the station precincts would be considered during design development.

The Bays Precinct delivery

Issues raised

Council recommend that the State Government limit the establishment of separate government management and delivery agencies for The Bays Precinct and that it establish a strong governance framework consisting of Sydney Metro; Department of Planning, Industry and Environment; Ports Authority; Office of Environment and Heritage; Transport for NSW; local councils, other relevant agencies; industries and community to guide The Bays urban renewal from inception to delivery.

Response

The process and governance arrangements related to urban renewal planning at The Bays Precinct are a matter for the Department of Planning, Industry and Environment. Sydney Metro would work collaboratively with the Department of Planning, Industry and Environment in relation to strategic planning and urban renewal at The Bays.

7.8 City of Sydney Council

7.8.1 Development and alternatives

Station option – Pyrmont

Issues raised

The City has supported the Metro West concept since first proposed, but considers that the key to its success is securing the right number of stations in the right places, which will maximise the overall economic benefit.

The City's comments relate to the Concept, and focusses on the need for a station at Pyrmont, highlighting the following reasons:

- The significant productivity benefits of linking media, communications, arts and recreation, tourism and education and innovation industries with a broader catchment of workers
- The growth in population and jobs in Pyrmont – a station at Pyrmont provides an additional point of access to Sydney Metro West for the City Centre as it expands its innovation and visitor sectors
- The City does not support the shortest possible travel time between Parramatta and Sydney e.g. 20 minutes, at the expense of appropriate intermediate stations, such as Pyrmont.
- The City's view, outlined in its 2018 submission to the Sydney Metro West Project Overview, is that the right number of connections (stations in the right places) maximises rather than reduces overall economic benefit
- The need to create redundancy in the system to mitigate the risk of operational failures – the City is concerned about the implications of a significant operations failure at a single CBD terminus station. Pyrmont is sufficiently close and well connected to respond to this situation.
- The decision relating to a preferred station location should be deferred or co-ordinated with the NSW Government's *Pyrmont Peninsula Place Strategy*.

Response

The strategic opportunities of a station at Pyrmont are acknowledged and identified in the Environmental Impact Statement. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option.

Extension of the Concept

Issues raised

The City acknowledges that Transport for NSW is considering extending the Metro network from the northern City Centre to Randwick and also notes that the *Future Transport 2056* strategy identifies this as a key corridor. A metro serving the corridor will link:

- The University of NSW, University of Sydney and University of Technology Sydney
- Royal Prince Alfred Hospital and Prince of Wales Hospital
- Randwick with the Ultimo Camperdown innovation districts.

The addition of a Sydney Metro City (North) to Randwick line will supercharge the productivity gains of Sydney's metro through this century.

Now that Sydney Metro West ends at the City Centre, it is imperative that the next metro line is planned and constructed as soon as possible, to address the need and opportunity for connections in the City's south and south-east. This includes the development of a station at Zetland, east of Green Square. The NSW Government should outline a concept and funding plan to ensure the opening of a new metro line from the northern City Centre to Zetland (and preferably Randwick) by 2030.

Response

Any extension of the Concept beyond the CBD is beyond the scope of this application. Sydney Metro West was developed within the framework of the *Future Transport 2056* strategy, the long-term transport plan for NSW. The plan includes a range of infrastructure projects which support the delivery of homes and jobs in Greater Sydney, consistent with the Greater Sydney Commission's *Sydney Region Plan*. Opportunities for extensions of Sydney Metro West would be subject to further investigations by Transport for NSW, noting that the *South East Sydney Transport Strategy* (Transport for NSW, August 2020) identifies the extension of Sydney Metro West to the south east (via Zetland and Randwick) as its preferred option.

As identified in Section 6.6.2 of the Environmental Impact Statement, the ability to extend Sydney Metro West would be future-proofed, for example through the provision of stub tunnels.

7.9 Department of Planning, Industry and Environment (Crown Land)

7.9.1 Property and land use

Acquisition of Crown land

Issues raised

Stage 1 of Sydney Metro West will impact Crown land at Clyde. Any Crown land affected by the proposal should be compulsorily acquired using the provisions of the *Land Acquisition (Just Terms) Compensation Act 1991*.

Response

As stated in Section 14.5.1 of the Environmental Impact Statement, acquisition of Crown land would be undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

7.10 Department of Planning, Industry and Environment (Environment, Energy and Science Group)

7.10.1 Biodiversity

Assessment methodology

Issues raised

Part 7 of the *Biodiversity Conservation Act 2016* requires the biodiversity impacts of the services facility between Five Dock and The Bay Stations, including vegetation clearing, be assessed in accordance with Stages 1 and 2 of the *NSW Biodiversity Assessment Method* (Office of Environment and Heritage, 2017).

Response

The location of the services facility between Five Dock and The Bays is currently being investigated and the facility would be the subject of a future assessment and approval process. Assessment of biodiversity impacts associated with the facility would be consistent with the *Biodiversity Assessment Method*.

Removal of vegetation

Issues raised

It is highly likely that the roots of many trees and shrubs of Plant Community Type 849 at Westmead will extend beyond the soil profile into the underlying geology and may therefore be within the zone of potential groundwater drawdown.

Response

Removal of vegetation is assessed in Chapter 22 (Biodiversity – Stage 1) of the Environmental Impact Statement. Should the roots of Plant Community Type 849 at Westmead extend into the underlying geology, the potential impacts of groundwater drawdown on this groundwater dependant ecosystem are considered to be low. This plant community type is likely to be an opportunistic facultative groundwater dependent ecosystem that depends on the subsurface presence of groundwater in locations where an alternative source of water (i.e. rainfall) cannot be accessed to maintain ecological function.

Mitigation, management and monitoring

Issues raised

The submission raised the following regarding mitigation, management and monitoring for biodiversity:

- Measures to mitigate and manage the impacts of the proposal have been identified in a general sense only, with reference being made to a Flora and Fauna Management Plan that has not yet been developed. The Biodiversity Development Assessment Report should include a table of measures to be implemented before, during and after construction, to avoid and minimise the impacts of the proposal. This table should include actions, outcomes, timings and responsibilities.
- A vegetated riparian zone should be incorporated into the realigned sections of A'Becketts Creek and Duck Creek and include a planting schedule with representative species from Plant Community Type 920
- Proposed additional investigations and assessment of groundwater dependent ecosystem impacts should extend to all metro stations and tunnels, to address knowledge gaps and uncertainty regarding the final tunnel alignment. The Sydney Olympic Park metro station construction site should be included as there are high priority groundwater dependent ecosystems nearby.
- The strategy for additional investigations and assessment should be documented and include relevant adaptive management strategy elements identified in the *Biodiversity Assessment Method*.

Response

Stage 1 generally avoids potential biodiversity impacts as it is largely within a highly urbanised area that does not possess large expanses of intact native vegetation with high biodiversity value, and is mostly underground.

Specific measures to be implemented before, during and after construction, to avoid and minimise potential biodiversity impacts, would be detailed in a Flora and Fauna Management Plan to be prepared by the principal contractor, including the timing and responsibilities. The minimum requirements for the Flora and Fauna Management plan are detailed in Section 10.2 of the *Construction Environmental Management Framework* (Appendix C) and include the mitigation measures identified in Section 10 of the Biodiversity Development Assessment Report. As described in Section 10 of the Biodiversity Development Assessment Report and Section 10.2 of the *Construction Environmental Management Framework*, the mitigation measures identified would be implemented during construction of Stage 1.

With the proposed change to the B-double transport route at the Clyde Stabling and maintenance facility there has also been a refinement to the design of the creek realignment culverts (refer to Section 2.2.2 of the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report*). Any potential naturalisation would be carried out beyond the inlet and outlet structures and consideration would be given to using representative species from Plant Community Type 920.

Additional investigations and assessment of groundwater dependent ecosystem impacts have not been proposed at locations, including Sydney Olympic Park metro station construction site, where groundwater dependent ecosystems were not identified within the predicted extent of groundwater level drawdown.

Mitigation measure B3 (as presented in the Environmental Impact Statement) requires:

Additional investigations and assessment would be completed to confirm the potential for impacts to groundwater dependant ecosystems due to groundwater drawdown, and to identify any required mitigation through design.

Mitigation measure B3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report has been amended to include reference to Parramatta metro station. This is consistent with Technical Paper 10 (Biodiversity development assessment report) and recognises that some groundwater drawdown is predicted at the location of Forest Red Gum – Rough barked Apple grassy woodland on alluvial flats of the Cumberland Plain, along the Parramatta River to the north-west of the station.

7.10.2 Hydrology and flooding

Assessment methodology

Issues raised

The submission raised the following regarding the assessment methodology for hydrology and flooding:

- There is insufficient information on flood assessment for the construction and operational phases to adequately identify the project impact on flooding, except for the Clyde Stabling and Maintenance Facility. It is also unclear how project impacts were assessed at sites with no flood information.

- Silverwater services facility flood maps are misleading, as previous flood studies did not cover the site area and accordingly, there is missing flood information at the site. Envelope mapping for different types of flooding should be considered to provide a representation of flood behaviour at the site.
- No calibration of the hydrologic and hydraulic models has been carried out for the Clyde Stabling and Maintenance Facility. Flood depth validation indicates major discrepancies against Council's previous adopted flood studies in the probable maximum flood (PMF). The PMF level is critical as it is the planned level of protection at the construction site at the tunnel dive crest location. It is also essential to meet planned protection and to ensure the impact of the proposed large scale of filling on flooding and on adjacent properties is adequately assessed and documented. Models should be reviewed in consultation with Parramatta City Council and the Department of Planning, Industry and Environment.
- Modelling for the *Leichhardt Flood Study* will need to be revisited to determine the accuracy and adequacy of drainage network data and the assumptions used in the models.

Response

A qualitative assessment has been completed for most of Stage 1 and is based on interpretation of available flood study information for existing conditions and current climate. This level of assessment is considered appropriate for most construction sites given their general low level of flood exposure and the low risk of significant flooding impacts due to Stage 1. The assessment of potential impacts is based on review of terrain information. Locations where no flood modelling and mapping are available include Sydney Olympic Park and Five Dock, which are located on ridges and have therefore been deemed not to be flood affected.

It is acknowledged in Table 2-1 of Technical Paper 9 that the *Duck River and Duck Creek Flood Study Review* (WMAwater, 2015) is applicable to the Silverwater site, however, flooding conditions were not adequately assessed by previous studies and overland flows were not assessed in the existing flood studies. The Silverwater services facility flood maps in Appendix A of Technical Paper 9 (Hydrology and flooding) include a clear annotation explaining that overland flooding in Derby Street is not shown and not assessed by previous studies. The Silverwater services facility site is included in the flood model developed for Clyde, which was based on the following studies:

- *Parramatta Light Rail Flooding Technical Paper* (Arup, 2017)
- *Duck River and Duck Creek Flood Study Review* (WMAwater, 2015)
- *Stage 2 Report – Camellia Precinct Drainage and Flooding Study* (Cardno, 2015a).

The Clyde flood modelling accounts for mainstream flooding from Parramatta River, Duck River and Duck Creek at the Silverwater site. Section 3.3.4 of Technical Paper 9 (Hydrology and flooding) explains that floodway and flood storage areas are expected in Derby Street and Silverwater Road in the 1 per cent Annual Exceedance Probability (AEP) and are likely to spread onto parts of the construction site based on review of detailed terrain data.

Validation of flood modelling is discussed in Section B.3 of Technical Paper 9 (Hydrology and flooding). The Clyde flood modelling was validated against the *Duck River and Duck Creek Flood Study Review* (WMAwater, 2015), among other studies, which in turn was verified with limited information on historic flooding. It was noted that Parramatta City Council's *Duck River and Duck Creek Flood Study Review* (WMAwater, 2015) adopted highly conservative assumptions in relation to its PMF event estimate, including coincidence of peak flooding in Duck River/Duck Creek with Parramatta River peak flooding (highly unlikely due to differing critical storm durations in each catchment), and that the model does not extend downstream of the junction of the Parramatta River with the Duck River. The model adopted for assessment of the Clyde stabling and maintenance facility in the Environmental Impact Statement extends a marked distance downstream to Whitton Bridge (Ryde Road) and represents a more realistic representation of coincident flooding combinations in Duck River/Duck Creek and Parramatta River. As described in Section B.3 of Technical Paper 9 (Hydrology and flooding), the design flood levels in the 5 per cent and 1 per cent AEP event are similar and consistent across all the flood studies reviewed. Variations in design flood levels for the PMF event are markedly greater across the studies and the reasons for the differences with each study are discussed in Section B.3 of Technical Paper 9 (Hydrology and flooding).

It is understood that the *Leichhardt Flood Study* and subsequent floodplain risk management study and plan used the best available drainage asset data from Council. A site walkover was conducted during preparation of Technical Paper 9 (Hydrology and flooding) on The Bays construction site and former White Bay Power Station site which did not uncover any significant drainage structures that would have bearing on drainage conditions on the site, particularly for the PMF which is the more critical event for The Bays construction site.

Flooding impacts

Issues raised

The submission states that floodwater at The Bays will overtop and distribute uniformly towards Port Access Road due to its natural topography and inundate the development site with an anticipated floodwater depth of 0.2-1 metres along with high flood hazard at some locations within the site. A comprehensive assessment of the flooding condition is needed prior to investigating the potential flood mitigation measures under the PMF event to ensure safety to commuters and protect physical assets of the station.

The submission also identifies the need for a comprehensive assessment of the flooding condition and notes that all stations and tunnel portals need to be located outside the floodplain above the PMF level or to be protected from the PMF flood. This is to ensure floodwater does not enter the tunnels for the full range of flooding, safety to commuters and protection station assets.

Response

The Environmental Impact Statement identifies that The Bays Station construction site would be partially impacted during the 1 per cent AEP flood event and mostly affected during the PMF as a result of significant overland flood flows originating from the gully extending up into Rozelle. Coastal inundation potential is also identified across low-lying portions of the construction site during the one per cent AEP event.

Detailed construction planning would further consider flood risk at The Bays Station construction site and identify site specific measures to address potential flood behaviour impacts during construction, in accordance with mitigation measure HF5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, which requires:

Detailed construction planning for The Bays Station 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.

As noted in Section 8.15.4 of the Environmental Impact Statement, flooding risk would be taken into account during design development of future stages so that station entries and aboveground rail system facilities sit above the PMF level and at least 0.5 metres above the one per cent annual exceedance probability flood level, where feasible and reasonable. Where it is not feasible and reasonable to meet these design criteria, design would consider the need for sumps and pumps to manage any potential inflows.

7.11 Department of Planning, Industry and Environment (Water Group and Natural Resources Access Regulator)

7.11.1 Waterfront land

Creek crossings and realignment

Issues raised

The Environmental Impact Statement identifies a creek crossing and partial realignment works at Duck Creek and A'Becketts Creek located near the proposed Clyde stabling and maintenance facility. The Environmental Impact Statement should provide detail of proposed works on waterfront land and demonstrate design in accordance with the *Natural Resources Access Regulator Guidelines for Controlled Activities* located at – <https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities/guide>.

Response

With the proposed change to the B-double transport route at the Clyde stabling and maintenance facility there has also been a refinement to the design of the creek realignment and culverts (refer to Section 2.2.2 of the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report*).

The design of the creek realignment and culverts would consider the *Natural Resources Access Regulator Guidelines for Controlled Activities*. As per mitigation measure B2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, A'Becketts Creek and Duck Creek crossings would be designed to incorporate a vegetated riparian zone within the realigned open channel sections where feasible and reasonable. The width of the vegetation riparian zone would be determined during detailed design. Further detail about the treatment of A'Becketts Creek and Duck Creek after construction will be included in the Environmental Impact Statement(s) for future stage(s).

7.11.2 Groundwater and ground movement

Assessment methodology

Issues raised

Clarify if a proposed service shaft between Five Dock Station and The Bays Station will be constructed. If so, this needs to be included in the revised groundwater modelling.

The conceptual hydrogeological model should include a hydrogeological model schematic or figures and cross sections.

Response

The Environmental Impact Statement identifies the need for a services facility between Five Dock and The Bays. The location of this services facility is currently being investigated. The Environmental Impact Statement provides a number of locational and design criteria for the facility and provides a qualitative impact assessment in Appendix H. The facility would be the subject of a future assessment and approval process once the location has been determined.

The conceptual hydrogeological model is described in Section 4.9 of Technical Paper 7 (Hydrogeology). The geological long section in Appendix A of Technical Paper 7 presents the conceptual model, diagrammatically, with respect to the various components of Stage 1.

Groundwater drawdown

Issues raised

A revised hydrogeological model and assessment of the potential impacts upon groundwater system for all Stage 1 elements (proposed metro stations, shafts, dives, plus the twin main metro railway tunnels) combined with the predicted effects from other major projects during the time of the Stage 1 developments should be prepared during detailed design and construction planning. This should include predicted effects:

- Individually and cumulatively (combined)
- With attention to the section of Stage 1 from Sydney Olympic Park Station to Haberfield, beyond the proposed Five Dock Metro Station.

A revised estimate of the groundwater take for each and all the developments should be provided, including the full length of the twin main railway tunnels and the groundwater take to be licensed under the *Water Management Act 2000*.

The revised hydrogeological assessment should include projections for groundwater dewatering (direct and passive take) as well as potential impacts for all further development stages beyond Stage 1. Actions required both during operation and post-closure to minimise the risk of inflows and a strategy for accounting for any water taken beyond the life of the operation of the project should be included.

Response

Section 18.6.3 in Chapter 18 (Groundwater and ground movement) of the Environmental Impact Statement provides indicative maximum inflows at station and services facility sites at both one and two years after excavation to address the requirements of the *NSW Aquifer Interference Policy* and the *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources* (NSW Department of Primary Industries, 2011). It is understood that the aquifer interference approval provisions of the *Water Management Act 2000* have not commenced.

The mainline tunnels will have precast segmental tunnel lining installed as excavation progresses and groundwater level drawdown due to the tunnels is not likely to be significant. Tunnel cross passages may be open for a short period of time prior to being waterproofed, but given their relatively small footprint, the impacts of cross passage construction on groundwater are not likely to be significant.

For Stage 1, details of proposed extraction, use and disposal of groundwater, and measures to mitigate potential impacts to groundwater sources will be included in a groundwater management plan or equivalent (refer to Section 7 of the *Construction Environmental Management Framework* included in Appendix C). A detailed geotechnical and hydrogeological model would be developed for Stage 1 and progressively updated during design and construction, including prediction of groundwater inflows, groundwater take and changes to groundwater levels, in accordance with mitigation measure GW5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Groundwater and ground movement assessment will be carried out in future stages of Sydney Metro West and will include, as relevant to the stage, modelling of groundwater flow to assess the potential groundwater inflows during construction.

Mitigation, management and monitoring

Issues raised

The submission requests Sydney Metro complete the following in relation to assessment mitigation, management and monitoring for groundwater and ground movement:

- Undertake a detailed study to define the groundwater environment, receiving surface water environment, baseflow rates and water quality. Then outline the subsequent discharge water quality levels required and devise appropriate trigger levels and trigger action response plans for each construction site. The study should include comparative assessment in relation to other nearby major projects.
- Undertake a detailed study of each construction site to map and determine the extent of any geological structures; hydraulic parameters, potential acid sulfate soil, saline soils, saline groundwater (onsite or within the predicted groundwater drawdown extent), or other contaminants
- Define management and mitigation measures and criteria to be taken during the construction of the twin main line tunnels, each station, shaft and dive development which will be enacted to further reduce the groundwater take and potential impact due to the ongoing dewatering
- Define management and mitigation measures to minimise the impact on water quality from saline interception in the shale aquifers overlying fresher groundwater sources in the Sydney Basin Central Groundwater Source
- Consider saline intrusion, from estuarine and saline groundwater in shale into the underlying fresher aquifer (sandstone)
- Include salinity monitoring bores positioned between estuarine areas and the Stage 1 construction sites in all future monitoring programmes
- Include a detailed groundwater level and quality monitoring programme for each development site
- Clarify the construction and groundwater ingress prevention methods to be used during excavation, the final construction state each excavation site will be finished at the end of Stage 1 and how this will affect the groundwater ingress and drawdown.

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. An assessment of potential groundwater impacts for each construction site is presented in sections 5.3 to 5.11 of Technical Paper 7 (Hydrogeology).

The design development of Stage 1 has included a focus on avoiding or minimising potential groundwater impacts and ground movement. This has included:

- Tanking at Parramatta, Five Dock and The Bays stations to avoid ongoing groundwater inflow
- Tanking of tunnels to avoid ongoing groundwater inflow.

The *Construction Environmental Management Framework* requires the preparation of a Groundwater Management Plan and includes the following groundwater management objectives:

- Reduce the potential for drawdown of surrounding groundwater resources
- Prevent the pollution of groundwater through appropriate controls.

Mitigation measures identified in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report include measures for the further assessment and management of groundwater during design and construction of Stage 1. Applicable mitigation measures include:

- Mitigation measure GW2 requires a review of additional geotechnical and hydrogeology data to determine the potential for surface water / groundwater interaction
- Mitigation measure GW3 requires additional site investigations, including baseline monitoring of creek flows where the investigation undertaken in accordance with mitigation measure GW2 identifies the potential for surface water and groundwater interaction and the adoption of design responses at station and shaft excavations to reduce potential baseflow loss where predicted

- Mitigation measure GW4 includes a commitment to monitoring of groundwater levels and quality, and regular review by a qualified hydrogeologist and data would be provided to relevant Government agencies prior to construction
- Mitigation measure GW5 commits to development of a detailed geotechnical model for Stage 1 with exceedance of target changes to groundwater levels at surrounding land uses and nearby water supply works to be identified and appropriate responses implemented.

Groundwater mitigation and monitoring requirements would be included in a groundwater management plan or equivalent (refer to Section 7 of the *Construction Environmental Management Framework* included in Appendix C).

7.12 Department of Primary Industries (Agriculture)

7.12.1 General

No comments.

Issues raised

No comments or recommended conditions.

Response

Noted.

7.13 Department of Primary Industries (Fisheries)

7.13.1 General

No comments.

Issues raised

No comments or recommended conditions.

Response

Noted.

7.14 Environment Protection Authority

7.14.1 Contamination

Assessment methodology

Issues raised

Only a high-level desktop assessment of contamination was provided in the Environmental Impact Statement and contamination assessment.

Response

The contamination assessment undertaken in the Environmental Impact Statement met the requirements of the Secretary's environmental assessment requirements and is considered appropriate to identify potential contamination risk.

The assessment of contamination for Stage 1 included a desktop review of available information relevant to historical land uses and contamination site inspections the results of geotechnical and contamination investigations undertaken by Sydney Metro and high level contamination risk prioritisation. For sites where potential contamination risk is identified as moderate, high or very high, a further review of data has been proposed in accordance with mitigation measure C1. Subsequent detailed site investigations and remediation would be undertaken where required, in accordance with mitigation measures C2 and C3, respectively in Chapter 8 (Revised environmental mitigation measures) of this Submissions report.

Mitigation, management and monitoring

Issues raised

A detailed site assessment for contamination is required for Rosehill, Clyde, Silverwater, and Sydney Olympic Park.

An Environment Protection Authority accredited site auditor should be engaged for the duration of works to ensure that any work required in relation to soil or groundwater contamination is appropriately managed. Interim audit advice from the site auditor should be provided, commenting on the appropriateness of reports and management plans, and the nature and extent of the contamination.

Soil and Water Environmental Management Plans and a Sampling and Analysis Quality Plan should be submitted.

Response

The contamination assessment undertaken in the Environmental Impact Statement met the requirements of the Secretary's environmental assessment requirements and is considered appropriate to identify potential contamination risk.

Based on the findings of the contamination assessment undertaken as part of the Environmental Impact Statement, it is envisaged that detailed site assessments would be required at the Clyde Stabling and Maintenance Facility, Silverwater services facility, Sydney Olympic Park metro station and The Bays Station construction sites – refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report). In accordance with mitigation measure C2, detailed site investigations would be subject to documented sampling, analysis and quality requirements prescribed by the *National Environment Protection (Assessment of Site Contamination) Measure* (2013) and other guidelines made or endorsed by the NSW Environment Protection Authority.

In accordance with mitigation measure C4, where contamination is highly complex or 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. Interim advice would be sought from the Site Auditor as needed.

Principal contractors would develop and implement a Soil and Water Management Plan for their scope of works – refer to the *Construction Environmental Management Framework* in Appendix C.

7.14.2 Groundwater and ground movement

Baseline monitoring

Issues raised

Baseline monitoring of hydrogeological attributes is not adequate. Spatial details and mapping of the extensive monitoring network, including the 40 monitoring bores from nearby projects have not been provided. The absence of this dataset limits an assessment of groundwater parameters, their distribution across the project footprint, and their spatial trends (e.g. areas of high salinity, low pH, areas of elevated iron concentrations, shallow water tables etc).

While further sampling of the network is proposed, spatial details of the monitoring network are critical to determine if the anticipated baseline will be fit for purpose. The suite of water quality analytes to be sampled and tested, as well as the frequency of monitoring groundwater quality, should also be provided.

The commitment to baseline monitoring is noted, however baseline monitoring data should preferably be submitted as part of the Submissions report. However, if time constraints prevent this, a Water Management Plan with up to date baseline data should be provided prior to commencement of construction and should be reviewed by the relevant state authority.

Response

Monitoring of groundwater levels and quality at the site area would occur before (baseline), during and after construction – refer to measure GW4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. A Groundwater Management Plan would be developed and would include details of monitoring locations, monitoring frequency, water quality analysis and requirements for consultation with relevant government agencies – refer to Section 7 of the *Construction Environmental Management Framework* included in Appendix C. Mitigation measure GW4 has been revised to state that groundwater monitoring data would be provided to NSW Environment Protection Authority and Department of Planning, Industry and Environment, Water and the Natural Resources Access Regulator for information.

7.14.3 Noise and vibration

Assessment methodology

Issues raised

The submission raised the following regarding the assessment methodology for noise and vibration:

- The *Construction Noise and Vibration Standard* references the *Environmental Criteria for Road Traffic Noise* (NSW Department of Environment and Climate Change, 1999) and the *Environmental Noise Management Manual* (Roads and Traffic Authority, 2001) both of which have been superseded
- Categorisation of exceedances of noise management levels (NMLs) as low, medium or high does not represent a subjective response to noise and may understate construction noise impacts and lead to unrealistic noise impacts in the community. This categorisation is also not consistent with the requirements of the *Interim Construction Noise Guideline* (NSW Department of Environment and Climate Change, 2009), where any exceedance of NMLs requires specific noise management actions.
- It is not clear what relative weight will be given to subjective factors such as the likelihood for sleep disturbance and the period when work will take place to determine the impact category or how this will be used to inform the selection of feasible and reasonable mitigation to minimise noise impacts on the community
- Monitoring location B.08 does not appear to be representative of residential receivers in NCA08. The proponent should provide justification that B.08 is representative of residential receivers in NCA08 or provide monitoring data that can be considered representative.

Response

The *Construction Noise and Vibration Standard* (Appendix D) has been revised to remove references to the *Environmental Criteria for Road Traffic Noise* and the *Environmental Noise Management Manual*. The section of the *Construction Noise and Vibration Standard* regarding sleep disturbance has been updated to reflect the more current guidance from the *Noise Policy for Industry* (Environment Protection Authority, 2017).

The construction assessment uses three exceedance categories (minor to marginal, moderate and high) to assess the predicted noise levels and impacts. The report acknowledges that the subjective response depends on the time of day the noise levels occur, as people are generally more sensitive to impacts in the evening and night-time. The assessment approach and exceedance categories are consistent with other recent major infrastructure projects, including Sydney Gateway project and WestConnex M4 – M5 Link.

The approach for determining the requirements for mitigation is a separate process and is completed as per the requirements of the *Construction Noise and Vibration Standard*. The required mitigation depends on the extent of the exceedance of the NML and the time of day in which the impacts occur, with the requirements for evening and night-time works being more onerous. The approach to how mitigation is applied is outlined in Section 8.2 of Technical Paper 2 (Noise and vibration).

In accordance with the *Construction Noise and Vibration Standard*, classification of subjective classification of the noise impact would be further refined during the preparation of Noise and Vibration Impact Statements. The extent of NML exceedances is one of several considerations that would contribute to the refined low, moderate or high impact ratings. Specific noise management actions at each construction site would be determined in accordance with the *Construction Noise and Vibration Standard*.

The potential sleep disturbance impacts have been assessed against the sleep disturbance screening criteria to determine the likelihood of impacts from night-time works near to residential receivers. Locations where impacts are considered likely have been identified, and feasible and reasonable mitigation measures have been identified in accordance with the requirements of the *Sydney Metro Construction Noise and Vibration Standard*.

Mitigation measures have been included in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, to further assist with reducing the impacts as far as feasible and reasonable. These include, use of alternative construction methodologies (mitigation measure NV02), use of respite (mitigation measure NV03), scheduling high noise works to the Standard Construction Hours (mitigation measure NV04) and designing hoarding at construction sites to minimise sleep disturbance impacts from heavy vehicles (mitigation measure NV06).

Residential receivers are sparsely distributed in NCA08, are generally distant from the construction site, and are predicted to have relatively minor impacts from the works. Monitoring at each residential receiver location is not feasible for an Environmental Impact Statement assessment and the measured data at B.08 is considered representative of existing noise levels in the catchment. Additional background noise monitoring would be undertaken in the next stages of the project, where necessary, when detailed construction planning information becomes available and detailed management plans and noise and vibration impact statements are completed.

Out of hours work

Issues raised

The submission raised the following regarding out of hours work:

- A significant amount of out of standard hour's works is likely to be needed for local area and utility works adjustments. These works can have a significant impact on adjoining communities and should be assessed so that appropriate mitigation can be identified and formalised through conditions of approval.
- Where local area and utility works adjustments cannot be scheduled to take place during the recommended standard hours of work, appropriate limits on the number of nights per week that these works may be undertaken should be formalised to minimise noise impacts
- Any approval pathway that would allow the applicant to 'self- approve' work outside of the recommended standard hours (for example through an out-of-hours protocol or similar) should exclude work that will require an environment protection licence
- Tunnelling 'ancillary' activities should not be granted approval for 24/7 operation without a process to determine if these ancillary works are essential and necessary to support tunnelling activities.
- No rock hammering should be permitted between 10pm and 7am in noise sensitive areas where the night-time ground-borne noise exceeds the objectives in the *Interim Construction Noise Guideline*
- Sydney Metro and Transport for NSW are encouraged to coordinate out of standard hours work so that cumulative impacts can be identified and effectively managed.

Response

Chapter 11 of the Environmental Impact Statement includes an assessment of construction noise impacts associated with utility works and acknowledges relatively high noise impacts are likely where noise intensive plant items are required near adjacent receivers. Assessment of these activities would be further refined in Noise and Vibration Impact Statements prepared in accordance with the *Construction Noise and Vibration Standard* (Appendix D).

Appropriate respite would be provided to affected receivers in accordance with the *Construction Noise and Vibration Standard*. This would include consideration of impacts from Stage 1 utility and power supply works when determining appropriate respite periods for affected receivers. When determining appropriate respite, the need to efficiently undertake construction would be balanced against the communities' preferred noise and vibration management approach.

The assessment of construction noise and vibration considered 'tunnelling and ancillary activities', with the ancillary activities being spoil/materials transport, road intersection modification and utility works. Proposed construction hours are detailed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement, while the duration and timeframes for out of hours work would be confirmed in the Noise and Vibration Impact Statements prepared in accordance with the *Construction Noise and Vibration Standard*.

Cumulative impacts would be managed in accordance with mitigation measure CI1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, which requires co-ordination and consultation with a range of stakeholders.

Mitigation, management and monitoring

Issues raised

The submission raised the following regarding mitigation, management and monitoring:

- The noise assessment does not describe the mitigation and management measures that will be applied to each key study area and construction stage where the NMLs or noise impact categories are exceeded
- It is unclear if residual impacts will occur following implementation of all feasible and reasonable mitigation
- As the noise assessment relies upon the development of site and activity specific noise mitigation measures in a Construction Noise and Vibration Impact Statement after any approval is granted, it does not offer sufficient detail or certainty on what practical measures will be taken to prevent or mitigate construction noise and

vibration impacts within each key study area and during each construction stage, including any action to address residual noise impacts

- There is no indication in the noise assessment or the *Construction Noise and Vibration Standard* if the minimum mitigation measures will be adopted in all instances; and what (if any) additional mitigation measures will be applied to each key study area and construction stage where NML exceedances are predicted
- Neither the noise assessment nor *Construction Noise and Vibration Standard* explain if noise mitigation approved by the Acoustics Advisor (if appointed) will ensure construction noise impacts are reduced to below the relevant NMLs or result in other appropriate outcomes, for example a negotiated community agreement
- Detailed information will need to be provided to the community so they can understand what construction activities will take place, where they will take place, when they will take place, and for how long. Where construction activities are proposed outside of the recommended standard hours, the community should, as far as practicable, be engaged to identify feasible and reasonable mitigation, including periods of respite.

Response

A range of project-specific mitigation measures were included in the Environmental Impact Statement, including the identification of which sites they apply to. In addition, standard mitigation measures are identified in the *Construction Noise and Vibration Standard* which would be applied at all construction sites.

Site-specific Noise and Vibration Impact Statements would be prepared for:

- All works outside standard construction hours likely to exceed the relevant NMLs
- Activities likely to result in highly noise affected receivers
- Activities likely to generate vibration levels at receivers in excess of the relevant criteria.

The Noise and Vibration Impact Statements would clearly indicate which mitigation measures have been/are to be incorporated into the calculations for the noise assessment. This allows consideration of residual impacts.

The purpose of Noise and Vibration Impact Statements are to provide more accurate predictions of noise and vibration impacts when compared to the potential construction scenarios considered in the Environmental Impact Statement. To achieve this, they will be undertaken immediately prior to construction by construction teams who are in control of the activity or location. The Construction Noise and Vibration Impact Statements ensure that accurate impacts are defined, NMLs are achieved wherever possible, works scheduling is considered and sensitive receivers are aware of the approach to minimising impacts upon them. Work described in a Construction Noise and Vibration Impact Statements cannot proceed until approved by an Acoustic Advisor appointed under the planning approval.

For sites where works are predicted to exceed noise goals and impact on receivers for an extended period of time, additional feasible and reasonable noise mitigation measures such as those outlined in Section 7 of the *Construction Noise and Vibration Standard*, would be considered if practical to reduce the noise levels and impact on sensitive receivers.

Measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions report commits to further engagement and consultation to understand their preferences for mitigation and management measures.

7.14.4 Soils and surface water quality

Assessment methodology

Issues raised

The submission raised the following regarding the assessment methodology:

- The water quality objectives and environmental values are identified for each waterway that may be affected by the project, but protection levels are not stated
- It should be noted in the Environmental Impact Statement that the equivalent protection level under the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018) for toxicants that bioaccumulate is 99 percent
- The Environmental Impact Statement does not characterise existing water quality for each affected waterway adequately with dissolved oxygen and turbidity identified specifically but other physical and chemical stressors and toxicants identified by category only
- Table 19-6 of the Environmental Impact Statement assesses each waterway against the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, but it is not clear if guideline values are being met

- The assessment is not completed for each waterway affected by the proposal but is generalised for the project. Some of the trigger values listed in the table are not consistent with those in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, notably chlorophyll- a and dissolved oxygen. While a set of physical and chemical stressors has been listed, toxicants are defined by category only as 'chemical contaminants'.
- Conclusions have been made about the impacts of Stage 1 in Table 19-11 of the Environmental Impact Statement without adequate wastewater discharge impact assessments
- Clear statement(s) on the adopted protection levels for each affected waterway should be provided including:
 - Information on existing water quality characterising each waterway, including not using categories for pollutants; and
 - An assessment of whether water quality objectives are currently being met in each waterway
- The information presented in Technical Paper 7 (Hydrogeology) does not allow for an adequate assessment to be made on the impacts of encountered water quality to a receiving environment.

Response

Measure SSWQ5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report has been updated and commits to water treatment plants being designed so that wastewater is treated 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 level for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities.

Table 7-1 shows the indicator values that would be adopted for construction wastewater discharges from Stage 1. The changes to this table from those presented in the Environmental Impact Statement include:

- An amended guideline value for dissolved oxygen for lowland rivers due to a transcription error within Table 19-11 of the Environmental Impact Statement
- A footnote for the mercury guideline to identify that the guideline value provided is the 99 per cent species protection limit as this toxicant bioaccumulates
- Adoption of the draft ANZG (2020) default guidelines for the toxicants iron (in freshwater and marine/estuarine water) and zinc (in marine/estuarine water), which are likely to be finalised in October 2020.

The trigger value of 3 µg/L for chlorophyll-a for lowland rivers remains unchanged as this is the recommended limit provided in the footnotes in Table 3.3.2 of the ANZECC/ARMCANZ (2000) for NSW east-coast flowing lowland rivers of this the sites in the Environmental Impact Statement are classified.

Table 7-1: Indicator values for Stage 1 discharge criteria

Indicator	Freshwater (95% species protection)	Estuarine (95% species protection)
Conductivity (µs/cm)	200–300	No guideline
pH	6.5–8.5	7–8.5
Dissolved oxygen (% saturation)	85–110	80–110
Turbidity (NTU)	6–50	0.5–10
Total Suspended solids (mg/L)	No guideline	No guideline
Ammonia (µg/L)	20	15
Oxidised nitrogen (µg/L)	40	15
Total nitrogen (µg/L)	350	300
Total phosphorus (µg/L)	25	30
Chlorophyll-a (µg/L)	3	4
Benzene (µg/L)	950	500
Toluene (µg/L)	180	180
Ethylbenzene (µg/L)	80	80

Indicator	Freshwater (95% species protection)	Estuarine (95% species protection)
o – xylene (µg/L)	350	No guideline
m – xylene (µg/L)	75	75
p – xylene (µg/L)	200	No guideline
m+p – xylene (µg/L)	No guideline	No guideline
Bromofluorobenzene	No guideline	No guideline
Dichloroethane	No guideline	No guideline
Manganese (mg/L)	1.9	0.08
Naphthalene (µg/L)	16	50
Iron (mg/L)	0.7 [^]	0.18 [^]
Arsenic (III) (mg/L)	0.024	No guideline
Arsenic (V)	0.013	No guideline
Cadmium (mg/L)	0.0002	0.0007
Chromium (VI) (mg/L)	0.001	0.0044
Copper (mg/L)	0.0014	0.0013
Nickel (mg/L)	0.011	0.007
Lead (mg/L)	0.0034	0.0044
Zinc (mg/L)	0.008	0.0052 [^]
Mercury (mg/L)*	0.00006	0.0001

* 99% trigger value as this toxicant bioaccumulates

[^] Draft DGV (ANZG 2020)

Characterisation of existing water quality for each affected waterway was based on a review of the publicly available data listed in Section 19.3 of the Environmental Impact Statement. While impacts have been assessed more generally for Stage 1 as a whole, measure SSWQ6 commits to a surface water monitoring program to observe any changes in surface water quality that may be attributable to Stage 1 and inform appropriate management responses.

While Chapter 19 (Soils and surface water quality – Stage 1) of the Environmental Impact Statement draws on some information in Technical Paper 7 (Hydrogeology), the focus of the technical paper is on assessment of groundwater impacts.

Mitigation, management and monitoring

Issues raised

The submission raised the following regarding mitigation, management and monitoring:

- There is insufficient detail regarding water treatment plants including their location, the expected discharge volumes and the expected duration they would be operating. The discharge of high volumes of treated wastewater has the potential to scour stream banks and add significant loads of pollutants to receiving waters if not managed appropriately.
- The Environmental Impact Statement does not identify and estimate the quality of each wastewater discharge including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment
- The Environmental Impact Statement does not demonstrate how each proposed wastewater discharge will be managed to ensure the water quality objectives will be met at the discharge point or by the edge of the near-field mixing zone. Additional information regarding discharge treatment options across the alignment should be provided in a pre-construction water management plan.

- The assessment of wastewater treatment plants does not consider all pollutants that pose a risk of non-trivial harm to human health and the environment that are present in the groundwater. Risks from groundwater contamination to aquatic receiving systems are not fully understood as sampling and analysis has not been undertaken to establish background conditions.
- It is likely that the range of pollutants in groundwater and their concentrations will change as a result of remediation at Silverwater and The Bays
- A Wastewater Pollution Impact Assessment should be provided for wastewater treatment plants at Westmead, Parramatta, North Strathfield, Burwood North and Five Dock station sites
- Temporary sediment basins are proposed as a mitigation measure to address sedimentation and erosion but it is not clear where they will be required, the rainfall event they will be designed for and if they will be discharging to waterways
- If sediment basin discharges are proposed that will not be treated by the wastewater treatment plants, a Water Pollution Impact Assessment will be required to inform licensing under *Protection of Environment Operations Act 1997*.

Response

The indicative location of water treatment plants is shown for most construction sites in Chapter 9 (Stage 1 description) of the Environmental Impact Statement, while indicative treatment capacity, general discharge location and receiving watercourses is provided Chapter 19 (Soils and surface water quality – Stage 1). The details of water collection and treatment (such as collection of inflows until sufficient volumes have been reached and then treating and discharging in bulk, or continuously treating and discharging collected water) and specific discharge locations would be determined as part of detailed construction planning.

The indicative overall discharge volume from the project is provided as part of the water balance in Chapter 19 (Soils and surface water quality – Stage 1), however Sydney Metro is further investigating options to minimise potable water use and maximise wastewater reuse, which would reduce the overall discharge volume.

As set out in the revised mitigation measure SSQW5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, water treatment plants would be designed so that wastewater is treated 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) detailed procedures for the treatment, testing, and discharge of groundwater from the site would be included in a Groundwater Management Plan (or equivalent).

Monitoring of groundwater levels and quality at the site area would occur before (baseline), during and after construction – refer to measure GW4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report. A surface water monitoring program would be implemented to observe any changes in surface water quality that may be attributable to Stage 1 and inform appropriate management responses (measure SSQW6).

Consistent with the requirements of mitigation measure SSQW3 and the *Construction Environmental Management Framework*, principal contractors would prepare a Soil and Water Management Plan and Progressive Erosion and Sediment Control Plans. These plans would detail the locations of sediment basins, their design rainfall event, and testing, treatment and discharge requirements.

7.14.5 Waste

Spoil management

Issues raised

Spoil characteristics have been outlined; however, estimated volumes of each type of spoil (i.e. clean granular fill, versus contaminated soils) is not provided. Details of spoil generation and reuse including onsite storage (including capacity to minimise amenity impacts) are also not provided.

The Environmental Impact Statement briefly discusses spoil classification and re-use with a resource recovery exemption / order. Material that is generated by the project and applied to land will require a specific resource recovery exemption / order prior to application, even if being used between different sites of the Sydney Metro West project.

Response

Spoil would be managed in accordance with the spoil management hierarchy included in Chapter 24 (Spoil, waste management and resource use – Stage 1) of the Environmental Impact Statement. Consistent with the requirements of the *Construction Environmental Management Framework* (Appendix C), a Spoil Management Plan would be prepared by principal contractors and would include details of spoil quantities / types for reuse within the construction site, for beneficial reuse of spoil off site and for disposal. The Spoil Management Plan would also include processes and procedures for the management of the environmental and social impacts of spoil transfer and reuse. Indicative locations for the temporary on-site storage of spoil are shown on the construction site layouts provided in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

Reuse of tested soils and spoil would be in accordance with a resource recovery order and/or exemption under the Protection of the Environment Operations (Waste) Regulation 2014 where required. In accordance with mitigation measure WR5, 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 – refer to Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

Waste management

Issues raised

The submission identifies a number of specific requirements for waste management during construction. This includes the requirement that waste be segregated, uniquely identified, classified using the *Waste Classification Guidelines* (NSW Environment Protection Authority, 2014), and tracked to its destination.

Prevention of illegal dumping is not discussed in the Environmental Impact Statement. Audits of the waste tracking process are required to ensure that waste is being delivered to the appropriate destination is also identified. Evidence of lawful disposal of all waste from the project will need to be retained and provided to the Environment Protection Authority on request.

Response

All waste would be assessed, classified, managed, transported and disposed of in accordance with the *Waste Classification Guidelines* and the Protection of the Environment Operations (Waste) Regulation 2014 – refer to measure WR1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

A material tracking system would be implemented for material transferred between Sydney Metro West sites and to offsite locations such as licensed waste management facilities in accordance with management measure WR5. Consistent with the requirements of the *Construction Environmental Management Framework* (Appendix C) and the Protection of the Environment Operations (Waste) Regulation 2014, compliance records would be retained by the principal contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site and would be made available to the Environment Protection Authority on request.

7.15 Heritage NSW (Heritage Council of NSW)

7.15.1 Non-Aboriginal heritage

Impacts on the White Bay Power Station

Issues raised

The project would require the construction zone to extend into the White Bay Power Station curtilage, which would adversely impact the setting and context of the White Bay Power Station and potentially diminish its overall massing, configuration and visibility. Heritage NSW recommends that the project should consider reducing the construction zone within the state heritage register curtilage.

Consideration should be given to reducing the height of acoustic sheds constructed to the east of the White Bay Power Station and their placement should be carefully positioned to ensure visual impacts to the setting of the White Bay Power Station are minimised. The White Bay Power Station should not be substantially obscured by any development on nearby sites.

There is potential for White Bay Power Station to experience vibration levels above the cosmetic damage screening criteria. Damage to significant White Bay Power Station buildings and structures due to construction vibration would be unacceptable. Further details should be provided to confirm the avoidance/mitigation measures for vibration impacts on White Bay Power Station.

Several non-significant structures within the White Bay Power Station curtilage would be demolished. It is unclear which items and how significant these structures are. Further clarification should be provided to confirm the significance and location of these structures and the justification for the demolition. In particular, consideration should be given to retaining the unlisted former warehouse shed at Glebe Island in its current location.

Response

Sydney Metro has minimised the size of the construction site where possible, taking into account the specific construction activities that are required to be carried out, and has moved the construction site as far away as possible from the White Bay Power Station curtilage while taking into account the operational requirements of surrounding port activities. The construction site has been selected to avoid impacts to the White Bay Power Station and other heritage items where possible, and no significant buildings or structures in the curtilage of the White Bay Power Station would be directly affected. The former warehouse shed at The Bays Station construction site is required to be demolished to facilitate construction works.

In relation to visual impacts to the White Bay Power Station, as identified in mitigation measure NAH4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, the policies of the *White Bay Power Station Conservation Management Plan* would be considered in regard to visual impacts of the Stage 1 works, particularly the acoustic shed (or other acoustic measures) and any other temporary structures. Significant view lines would be retained during Stage 1 works.

Mitigation measure NV16 states that 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 an experienced heritage architect and/or heritage engineer to ensure sensitive heritage fabric is adequately monitored and managed structure.

The proposed mitigation measures are considered adequate to manage the risk of potential damage to heritage structures. Mitigation measure NV16 requires more detailed assessment of vibration risks to heritage items. If damage is caused as a result of Stage 1 construction works, then Sydney Metro would undertake repair and rectification works to make good, in consultation with the property owner and relevant stakeholders, such as the Heritage Council for the White Bay Power Station.

Impacts on the Roxy

Issues raised

Heritage NSW notes that the Roxy is outside the construction zone for the Parramatta metro station, but it would be immediately adjacent to this zone and may experience vibration and settlement impacts. Further details of how the project proposes to manage settlement impacts to the Roxy is requested.

Heritage NSW recommends the setting could be improved by confirmed height limitations for the metro station in direct proximity to the Roxy.

Response

The Environmental Impact Statement identifies potential settlement of up to 25 millimetres (based on preliminary settlement contours), which is unlikely to have structural significance for the Roxy Theatre.

As set out in mitigation measures GW5 and GW6 in Chapter 8 (Revised environmental mitigation measures), a detailed geotechnical model would be developed to assess the potential for damage to structures, services, basements and other subsurface elements through settlement or strain, and 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.

If building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage. This could include modifying the construction methodology to reduce potential impacts to the building or structure, or if necessary, undertaking structural improvement works.

In relation to potential vibration impacts, the cosmetic damage screening criterion is predicted to be exceeded at the Roxy Theatre. The *Sydney Metro Construction Noise and Vibration Standard* (Appendix D) provides details for assessing site vibration levels and monitoring during construction. This includes modelling of likely vibration levels, assessing the potentially impacted building, making any necessary adjustments to construction methods, and then monitoring of vibration levels during construction to ensure vibration levels remain below appropriate limits for that structure. In the unlikely event that damage occurs to any properties as a result of the project, this would be rectified by the project at no cost to the owner. An independent panel may provide assistance in the resolution of property damage concerns following investigation by Sydney Metro and technical specialists in consultation with the affected property owner.

As a precaution, properties located around the station and construction sites and above the tunnel alignment would be offered a property condition survey prior to construction or tunnelling works. A property condition survey records the existing condition of a building or property by taking photographs of its inside and outside as well as other structures on the property like sheds, driveways or swimming pools. Property condition surveys would be undertaken before and after Sydney Metro construction works to provide a useful point of comparison for further investigation and assessment.

Assessment of potential impacts of the operational metro station structure, including its height, would be included as part of the Environmental Impact Statement for future stage(s) and would take into account the heritage values of the Roxy Theatre. Future integrated station development would also be subject to a separate assessment and approval process, and would need to consider the potential impacts of future buildings on the heritage values of the Roxy Theatre.

Impacts on State Heritage Items from over station development

Issues raised

Heritage NSW notes that there are implications from future over station development at Metro stations proposed to items of State, National and World Heritage values.

Over station development is of particular concern for the White Bay Power Station and the Roxy Cinema.

The landscape analysis has not engaged with the future over station development limits although those may impact views from and to State Heritage Register listed places as noted above.

Response

While the potential for integrated station development has been identified for The Bays Station and Parramatta metro station, this is not part of the Sydney Metro West Concept for which State Significant Infrastructure approval is being sought. Integrated station development would be subject to separate assessment and approval processes, including any necessary heritage assessments, and would take into account the heritage values of surrounding heritage items.

Impacts on historical archaeology

Issues raised

Heritage NSW considers that the analysis underpinning the current Environmental Impact Statement is not based on adequate site specific research consistent with an historical archaeological assessment. The analysis in Technical Paper 3 (Non-Aboriginal heritage) is high level only with a heavy reliance on secondary source material and historic plans. Further site specific research is warranted to underpin development of an appropriate archaeological mitigation strategy. The project would also impact two areas of identified historical archaeological potential. The project has the potential to fully remove all archaeological evidence of State and local heritage significance for the Parramatta metro station and locally significant archaeology for The Bays Station.

- The first in Parramatta of State significance, linked to the early colonial occupation of the Colonial Town
 - Heritage NSW notes the avoidance of sites 'Kia Ora' and the archaeological site known as the 'Horse Parapet Façade' item from the construction zone of the Parramatta metro station and supports this action
 - For Parramatta metro station the Environmental Impact Statement analysis relies on the *Parramatta Historical Archaeological Landscape System* (PHALMS) which dates to 2000, although much of the potential has been known since 1991. PHALMS should be treated as a guide only, not a final assessment
 - The assessment has not considered the survivability of the resource from 1996 excavation of 41-53 George Street, Parramatta (in AMU 2873). Heritage NSW understands that a convict hut was retained within the

1996 redevelopment, that not all remains were salvaged, and that there is greater potential for survivability under part of 'Parramall'

- The assessment, in an overview historical analysis has also failed to identify the potential for the mid-19th century Ritchie Parramatta Iron works, which existed in the study area and was a significant industrial enterprise in the Parramatta area (likely within AMU 3075). Heritage NSW notes an assessment of neighbouring allotments 220–230 Church Street, Parramatta (in AMU 3075) has also taken place to inform a development application and will partly be included in the proposed construction zone
- Excavation at 236 Church Street also revealed intact archaeological deposit
- Management of the Convict Barrel Drain should aim to avoid the fragment surviving in Macquarie Lane and within the study area, and Heritage NSW requests further advice on how the project would manage the retained and conserved in-situ remains of the Barrel drain
- A combined archaeological approach which to record and manage Aboriginal and historical archaeological evidence (potentially also in a post contact phasing) is recommended by Artefact (2020, p278) and supported by Heritage NSW
- Heritage NSW notes that early and often ephemeral and fragmentary occupation evidence dating from the late 18th and early 19th century in Parramatta would not often survive well once excavated. It may not be practical for in-situ retention. An archaeological resource is often better retained unexcavated and conserved such as at Parramatta Justice Precinct. Therefore, if the project is to be approved in this location with the impact anticipated on Colonial-era remains, Heritage NSW recommends the preferred strategy may involve a full archaeological open area salvage program including interpretation of the results, public open days and the preparation of a publication at the end of the program based on the final excavation report.
- The second, assessed as locally significant at The Bays, involving early-late 19th century occupation. Heritage NSW is unclear why the White Bay Hotel archaeological resource would warrant detailed investigation and management by the project or what new information would be revealed. Heritage NSW requests that the proponent provide more evidence to justify the archaeological approach being proposed.

Response

An archaeological research design has been prepared and is provided at Appendix F. The archaeological research design applies to the Parramatta metro station and The Bays Station construction sites, and sets out the approach to management of potential archaeological resources at the two sites. The archaeological research design sets management approaches and parameters, which would be further refined in site specific Archaeological Method Statements which would be prepared by the construction contractors once detailed constructability methodology is known.

At the Parramatta metro station construction site, the archaeological research design specifies that an Archaeological Method Statement would be required for all potential archaeological resources, which would include monitoring, test excavation and salvage excavation as follows:

- Convict huts, yards and gardens – monitoring of final building removal and salvage excavation
- Early colonial residences and yards – monitoring of final building removal and salvage excavation
- Convict drain – test and salvage excavation
- Commercial buildings, rear yards and outbuildings – test excavation with salvage excavation as required.

At The Bays Station construction site the archaeological research design identifies that the historic soil deposits would be subject of an Unexpected Finds Protocol only due to their potential for local significance, while an Archaeological Method Statement would be required for the remaining potential archaeological resources, as follows:

- Outbuildings and structures of the original White Bay Hotel – test excavation and salvage as required
- Reclamation fills – test excavation
- Rail infrastructure and former industrial structures – archaeological monitoring of selected significant rail infrastructure remains.

Impacts at Sydney CBD, Pyrmont and Rydalmere

Issues raised

Unclear what the implications from this project would be for a proposed new station in the Sydney CBD, or the impacts from the proposed Rydalmere and Pyrmont stations are excluded for now and considered separately in future, based on an assessment of the project impacts and appropriate environmental and site specific assessment.

Response

A concept level assessment of heritage impacts for the CBD is provided in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. Further assessment of the potential heritage impacts of the Sydney CBD station would be included in future stage assessments. If it is decided to include a station at Pyrmont, it will be assessed as part of a future stage Environmental Impact Statement.

A station at Rydalmere will not proceed given its distance from the proposed railway alignment, the additional project cost and the additional time it would add to the journey between Parramatta and the Sydney CBD. Further clarification regarding Rydalmere is included in Chapter 2 (Environmental Impact Statement clarifications) of this Submissions Report.

Rectification of impacts

Issues raised

The Environmental Impact Statement does not state that rectification works to respond to any damage from the project in line with the earlier condition survey, would take place. It is also unclear how works would be rectified if issues are identified as a result of vibrations from the project. This requires clarification and further commitment by Sydney Metro. Commitments about rectification of heritage impacts should be made for all heritage items within and immediately adjacent to the study area.

Response

With the implementation of the mitigation measures (including NV16, NAH2 and GW5) in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, damage to heritage items is considered unlikely. If damage is caused as a result of Stage 1 construction works, then Sydney Metro would undertake repair and rectification works to address the damage, in consultation with the property owner and relevant stakeholders, such as the Heritage Council for the White Bay Power Station.

Assessment methodology

Issues raised

Heritage NSW reiterates a consistent standard for measuring vibration impact to heritage items should be adopted by Sydney Metro. Heritage NSW recommends the measure of 2.5mm/s PPV (DIN 4150) is applied for consistency.

Response

Heritage items should not be assumed to be more sensitive to vibration unless found to be structurally unsound. Section 12.3.4 of the Environmental Impact Statement notes that all heritage structures have been assessed against the conservative 7.5 millimetres per second peak particle velocity, which is designed to minimise the risk of threshold or cosmetic surface cracks, and is set well below the level that has potential to cause damage to the main structure, except where the item is already structurally unsound. Because the structure of the White Bay Power Station is known to be unsound, a more conservative cosmetic damage screening level of 2.5 millimetres per second peak particle velocity has been applied.

7.16 Heritage NSW (Aboriginal Heritage Regulation Branch)

7.16.1 Aboriginal heritage

Additional assessment

Issues raised

Heritage NSW commented that some areas have not yet been assessed including the proposed services facility between Five Dock Station and The Bays Station and the connection from The Bays Station to the Sydney CBD.

Response

The Concept assessment is a high level assessment and does not consider the exact route and subsurface impacts, especially in the Sydney CBD where further planning is underway to determine the location of a new metro station. The requirements in regard to further Aboriginal heritage assessment for the Concept ensure that it would be considered as part of the environmental impact assessment for a future stage once specific details are known and where meaningful impact assessment and management can be undertaken.

As identified in the Environmental Impact Statement, a services facility would be required between Five Dock and The Bays and the location of the services facility would be determined following further investigation. The Environmental Impact Statement provides a number of locational and design criteria for the facility and provides a qualitative impact assessment in Appendix H. The facility would be the subject of a future assessment and approval process once the location has been determined.

Archaeological test excavations

Issues raised

Heritage NSW raised the following comments about archaeological test excavations:

- Archaeological test excavation in Stage 1 should be undertaken pre-approval across the full extent of the Concept corridor to properly inform the identification of Aboriginal cultural heritage values that may be impacted by the proposed works, in accordance with the SEARs. The impact of the construction on Aboriginal cultural heritage values is not known because test excavation has not been conducted.
- A detailed archaeological test excavation methodology for Stage 1 should be prepared and forwarded to Heritage NSW to assess the adequacy of the proposed test excavations. It is not appropriate to combine the test excavation and salvage excavation programs, as suggested in the ACHAR (AH 2020)
- The test excavation methodology must describe how any contact archaeological material identified during the test excavations will be managed. The Aboriginal archaeological test excavation program must clearly interact with the proposed historical archaeological test excavation program. This should include a comprehensive discussion and location map of the proposed historical archaeological test excavations and how these relate to the proposed Aboriginal archaeological test excavations.
- The test excavation program should include sampling areas of predicted low archaeological potential to test and refine the predictive modelling and increase the reliability of the Aboriginal cultural heritage assessment for this project
- Additional detail is required on the location of proposed test units, the extent of the proposed testing and proposed rationale for ceasing test excavation. The test excavation program must describe how the known disturbances have informed the proposed test excavation program and decisions about the location of the test excavation units.
- Without the results of the test excavations it is not known if there are Aboriginal objects that require in-situ conservation or detailed archaeological salvage excavation.

Response

The proposed construction sites are either occupied for existing uses and/or covered by built structures that would need removal/partial removal to allow for test excavation to take place, an action that is not possible at this stage of the project. The identified area of archaeological potential at Clyde and the construction site at Silverwater are both cleared. However, a portion of the area of archaeological potential at Clyde is currently used as a heliport and the remainder of the area is not accessible for the purposes of undertaking archaeological test excavation. The construction site at Silverwater was from the late 1940s/1950s until the early 2000s the location of a large industrial structure(s) that has since been demolished. Technical Paper 4 (Aboriginal cultural heritage assessment report) describes the site as a 'modified industrial landscape' and assessed the construction site as demonstrating low archaeological potential with no recommendation for test excavation.

The staged methodology proposed in the Aboriginal Cultural Heritage Archaeological Report is a high level methodology that would be further refined by the site specific Work Method Statements which would be prepared under the planning approval once detailed subsurface impact information is known. This would ensure that archaeological management is undertaken appropriately at later stages.

As identified in Section 12.2 of Technical Paper 4 (Aboriginal cultural heritage assessment report), one of the key themes of the proposed archaeological test excavations would include the opportunity to investigate contact period archaeology, including any evidence of interaction between the local Aboriginal community and British colonists, and the nature and extent of Aboriginal objects in historical archaeological contexts, particularly within the Parramatta metro station construction site and The Bays Station construction site.

As identified in Section 12.3.5 of Technical Paper 4 (Aboriginal cultural heritage assessment report), the assessment of areas of predicted low archaeological potential would be determined based on certain triggers. For areas considered to have low archaeological potential due to their topographical positioning or level of disturbance, the trigger threshold would be the identification of Aboriginal objects as unexpected finds.

The methodology for the archaeological test excavations provided in Technical Paper 4 (Aboriginal cultural heritage assessment report) is a guiding methodology for Stage 1. A detailed and site specific methodology called an archaeological method statement would be prepared where archaeological excavation is required for each activity or site specific work stage. This would include specifics such as the location of proposed test units, the extent of the proposed testing and proposed rationale for ceasing test excavation.

Approval process

Issues raised

Heritage NSW commented that Department of Planning, Industry and Environment should consider whether the required Aboriginal cultural heritage test excavations are covered by section 5.23(1)(d) of the *Environmental Planning and Assessment Act 1979*.

Response

As identified above, test excavations are not possible at this stage of the project and where required would be completed prior to the commencement of construction in a particular area.

Consultation

Issues raised

Heritage NSW commented that Sydney Metro must clarify whether the Aboriginal Cultural Heritage Assessment Report has been provided to the Registered Aboriginal Parties for comment as required under clause 60 of the National Parks and Wildlife Regulation 2019 and the *Aboriginal Community Consultation Requirements for Proponents 2010*. Evidence of this consultation must be provided. Any comments received from the Registered Aboriginal Parties must be appropriately addressed.

Response

Consultation with Registered Aboriginal Parties has been undertaken throughout preparation of the Technical Paper 4 (Aboriginal cultural heritage assessment report). Records of this consultation are included in the unredacted version of the report provided to Heritage NSW.

Aboriginal stakeholder consultation would be ongoing and (as per mitigation measure AH1 (refer to Chapter 8 of this Submissions Report) would be carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water, 2010). Representatives of Registered Aboriginal Parties would participate in all archaeological test excavations. The archaeological method statement prepared for each work stage would be provided to the Registered Aboriginal Parties prior to archaeological work commencing. Registered Aboriginal Parties sign off on individual archaeological method statement would not be required as the archaeological method statement would be prepared in adherence to the final Aboriginal Cultural Heritage Assessment Report.

Adequacy of assessment

Issues raised

Heritage NSW considers that the assessment has not met the requirements of the scoping report including:

- Undertaking archaeological test excavations to inform the Environmental Impact Statement
- Identifying Aboriginal heritage values that need to be conserved and measures to avoid minimise or mitigate impacts to Aboriginal heritage

Response

Section 9.4.2 of the Scoping Report outlines the proposed Aboriginal heritage assessment methodology for Stage 1. The scoping report states that the assessment would identify the need for further archaeological testing and/or detailed archaeological excavations however did not commit to undertaking these works as part of the Environmental Impact Statement assessment process.

Chapter 9 of Technical Paper 4 (Aboriginal cultural heritage assessment report) identifies Aboriginal heritage values that need to be conserved and Chapter 13 (Aboriginal heritage – Stage 1) identifies measures to avoid, minimise or mitigate impacts to Aboriginal heritage. As per mitigation measure AH1 and AH2 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, this will involve carrying out further consultation with Aboriginal stakeholders and archaeological test excavations.

Management, mitigation and monitoring

Issues raised

Heritage NSW commented that an Aboriginal heritage management plan should be prepared to guide the Aboriginal heritage management requirements of this project.

Measures to avoid, minimise or mitigate potential impacts must be based on an accurate understanding of the Aboriginal cultural heritage values that are present. This can only be determined after the results of the test excavations have been analysed.

Response

Section 13.16.1 of the Environmental Impact Statement identifies that a Heritage Management Plan would be prepared prior to the commencement of construction which would guide the Aboriginal heritage management requirements for the project.

As specified in the *Construction Environmental Management Framework* (Appendix C), the Heritage Management Plan would include:

- Evidence of consultation with Registered Aboriginal Parties and the NSW Heritage Council
- Initiatives that will be implemented for the enhancement of heritage values and minimisation of heritage impacts
- Heritage mitigation measures as detailed in the environmental approval documentation
- The responsibilities of key project personnel with respect to the implementation of the plan
- Procedures for undertaking salvage or excavation of heritage relics or sites (where relevant) consistent with and any recordings of heritage relics prior to works commencing that would affect them
- Procedures for interpretation of heritage values uncovered through salvage or excavation
- Details for the short and/or long term management of artefacts or movable heritage
- Details of management measures to be implemented to prevent and minimise impacts on heritage items
- Procedures for unexpected heritage finds, including procedures for dealing with human remains
- Monitoring and compliance management.

Request for information

Issue raised

Heritage NSW requested that Sydney Metro provide Heritage NSW with an unredacted version of Technical Paper 4 (Cultural heritage assessment report).

Response

Sydney Metro has provided Heritage NSW with an unredacted version of Technical Paper 4 (Cultural heritage assessment report).

7.17 Infrastructure NSW

7.17.1 Noise and vibration

Vibration screening criteria

Issues raised

No exceedance of screening limits for White Bay Power Station is predicted for tunnelling works (Technical Paper 2, Table 83).

Technical paper 2 notes the 2.5mm/s screening criterion will need to be considered for White Bay Power Station. We note this may include vibrations due to blasting in the station box excavation. However, no consideration of vibration exceedance has been given in Table 11-17 of the Environmental Impact Statement for The Bays area including White Bay Power Station. As several buildings may be considered structurally unsound, exceedance of 2.5mm/s would be a potential risk to the structure.

Figure 11-34 shows the Coal Handling Shed as at risk of exceeding the cosmetic damage vibration criterion. It is not clear if this is the reduced criterion for unsound heritage structures (2.5mm/s) or for industrial buildings (25mm/s). It is possible that other structures within White Bay Power Station will be assessed as at risk of damage due to the tunnel and station box construction.

Section 11.14 also predicts that the vibration criterion for human comfort level will be exceeded in some White Bay Power Station buildings as a result of construction works. Acceptable mitigation measures are in place (NV13, NV16, NV17) for The Bays Station that should capture any risks.

An attachment to this submission provided specialist advice from Design 5 Architects regarding The Bays Road relocation works, including the physical and visual heritage impacts to the White Bay Power Station. This was provided in response to *The Bays road relocation works Review of Environmental Factors* (Sydney Metro 2020a).

Response

Table 11-17 of the Environmental Impact Statement summarises predicted vibration criteria exceedances for tunnelling. As noted by Infrastructure NSW, no exceedance of screening limits is predicted for tunnelling works for The Bays area, including White Bay Power Station.

As stated in Technical Paper 2 – Noise and Vibration, the more conservative cosmetic damage screening level of 2.5 millimetres per second applies to the White Bay Power Station (including the coal shed). An exceedance of the 2.5 millimetre per second screening level for heritage structures is predicted for the coal handling shed. Further detailed assessment and monitoring of the heritage structures associated with the White Bay Power Station would therefore be carried out in accordance with mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures). This would include a more detailed assessment of the structure (in consultation with a structural engineer) and specific consideration of the heritage values of the structure in consultation with a heritage specialist to ensure sensitive heritage fabric is adequately monitored and managed.

Infrastructure NSW's comment in regard to mitigation measures for The Bays Station is noted.

The specialist comments regarding physical and visual heritage impacts to the White Bay Power Station as a result of The Bays Road relocation works have been addressed in Section 1.1.2 of Appendix B of *The Bays Road Relocation Works Review of Environmental Factors Determination Report* (Sydney Metro 2020b).

Construction Noise and Vibration Impact Statements

Issues raised

Construction Noise and Vibration Impact Statements are proposed for the works – it is expected that this will cover potential risks to the individual structures of White Bay Power Station and include condition assessments by a structural engineer and comment on acceptable vibration limits and methods of control.

Response

Infrastructure NSW's comment is noted. The process for preparing Noise and Vibration Impact Statements is set in the *Construction Noise and Vibration Standard* (Appendix D), and takes into account vibration sensitive receivers such as the White Bay Power Station.

Ground-borne vibrations during operation

Issues raised

No consideration has been given in the environmental impact statement to the impacts of ground-borne vibrations transmitted to the White Bay Power Station buildings from operation of the Metro trains, or any mitigation measures proposed.

Response

The detailed vibration assessment contained in the Environmental Impact Statement was for Stage 1 only (all major civil construction works including station excavation and tunnelling between Westmead and The Bays). A high level assessment of potential operational impacts associated with the Concept was provided in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. Further assessment of potential operational vibration impacts to the power station, including development of mitigation measures, will be undertaken as part of future stage assessments.

Issues raised

Table 12-22 in the Environmental Impact Statement provides comment on vibration impacts (magnitude considered to be minor). This is reasonable if the appropriate mitigation measures are applied.

Response

Infrastructure NSW's comment is noted. Mitigation measures as proposed would be applied.

7.17.2 Groundwater and ground movement

Ground movement

Issues raised

Table 12-3 in the Environmental Impact Statement shows no settlement is predicted under the White Bay Power Station site as a result of the construction.

Response

Infrastructure NSW's comment is noted.

7.18 NSW Health

7.18.1 Assessment process

Assessment methodology

Issues raised

NSW Health comments are contingent on confirmation by the NSW Environment Protection Authority (EPA) that the methods and modelling used to assess environmental impacts are appropriate.

Response

Noted. A response to the EPA submission is included in Section 7.10.

7.18.2 Noise and vibration

Mitigation, management and monitoring

Issues raised

Measures to limit community exposure to noise are important to protect public health due to emerging evidence of the health impacts of environmental noise. Standard noise mitigation measures are set out in Table 9, Appendix E of the Environmental Impact Statement however, details of mitigation measures that will be implemented if exceedances do occur should be provided at the earliest possible stage of the planning process.

Measures that will be taken if noise management levels are exceeded should be informed by, and shared with, communities that could be most impacted.

Response

Section 11.16.1 of the Environmental Impact Statement details the approach to mitigation and management of construction noise. Specific noise mitigation measures would be developed during detailed design through the preparation of Noise and Vibration Impact Statements. The Noise and Vibration Impact Statements provide more accurate predictions of noise and vibration impacts. To achieve this, they would be undertaken immediately prior to construction by construction teams who are in control of the activity or location. The Noise and Vibration Impact Statements ensure that accurate impacts are defined, noise management levels are achieved wherever possible, works scheduling is considered and sensitive receivers are aware of the approach to minimising impacts upon them. The additional mitigation measures would be incorporated into a Construction Noise and Vibration Management Plan prior to any work commencing.

The *Construction Noise and Vibration Standard* (Appendix D) also identifies additional management measures where there is a potential exceedance of the construction noise and vibration management levels. These are primarily aimed at pro-active engagement with affected sensitive receivers and include additional monitoring, individual briefings, respite periods, temporary alternative accommodation, and additional communications.

In accordance with mitigation measure NV01 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with affected communities to understand their preferences for mitigation and management measures.

7.18.3 Air quality

Mitigation, management and monitoring

Issues raised

It is important that regular evaluation of dust suppression measures occurs to ensure measures are effective at minimising community exposure to poor air quality.

Response

In accordance with mitigation measure AQ1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, best-practice dust management measures would be implemented. Dust emissions would be regularly inspected, and additional controls applied as required.

Temporary potential impacts to air quality would be managed in accordance with the *Sydney Metro Construction Environmental Management Framework* (Appendix C). The framework includes the requirement for the Principal Contractor to carry out regular air quality and dust monitoring and keep records of inspections.

7.18.4 Cumulative impacts

Mitigation, management and monitoring

Issues raised

The screening method (Appendix G of the Environmental Impact Statement) to identify cumulative impacts from construction of concurrent or consecutive projects is appropriate. Consideration should be given to providing additional mitigation measures where communities have recently been impacted by other construction activities.

Response

It is expected that adoption of the mitigation and management measures set out in Table 27-6 of the Environmental Impact Statement would be adequate to manage cumulative impacts. Specific mitigation measures TT24, NV18, CI1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report have been developed to manage potential cumulative impacts through coordination of construction works with other concurrent projects. This would involve co-ordination and consultation with key stakeholders, including:

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

The likelihood of cumulative construction impacts would be reviewed during detailed design, and further specific mitigation strategies would be developed, if required.

7.19 Sydney Olympic Park Authority

7.19.1 Support for project

Support

Issues raised

Sydney Olympic Park Authority strongly supports the Sydney Metro West project and specifically, the delivery of a Metro station at Sydney Olympic Park.

Response

Sydney Olympic Park Authority's support is noted.

7.19.2 Transport and traffic

Mitigation, management and monitoring

Issues raised

Prior to the issue of the relevant Construction Certificate, a Traffic and Pedestrian Management Plan must be prepared in consultation with the former Sydney Olympic Park Authority's Director, Environment and Planning.

Response

The *Sydney Metro Construction Traffic Management Framework* (Appendix F) includes a requirement for the preparation of site-specific Construction Traffic Management Plans for each Sydney Metro construction site. The Construction Traffic Management Plans can include Pedestrian Movement Plans and will be developed in consultation with the Traffic and Transport Liaison Group and Traffic Control Group meetings, at which government and key stakeholders relevant to each site would be represented including Sydney Olympic Park Authority. The development and approval of a Construction Traffic Management Plan would include a review process and consideration by, Transport for NSW including Transport Coordination, local councils and other stakeholders as required.

7.19.3 Non-Aboriginal heritage

Mitigation, management and monitoring

Issues raised

The applicant must engage a suitably qualified person to prepare a Pre-Construction Dilapidation Report including all buildings and significant fabric within the Abattoir Heritage Precinct, infrastructure and roads within the 'zone of influence'.

Response

The *Sydney Metro Construction Environmental Management Framework* (Appendix C) includes the requirement that Pre-construction Building Condition Surveys be offered to the owners of buildings where there is a potential for construction activities to cause damage, regardless of severity. This would apply to buildings and structures within the Abattoir Heritage Precinct. If accepted, an appropriate professional will be engaged to undertake the relevant works prior to commencing construction. In addition, the Principal Contractor will prepare a Pre-Construction Dilapidation Report for all local public roads proposed to be used by heavy vehicles.

7.19.4 Property and land use

Property impacts

Issues raised

Prepare a Post-Construction Dilapidation Report in accordance with the requirements of the former Sydney Olympic Park Authority's *Infrastructure Engineering and Construction Manual* (IECM), to ascertain whether the construction works created any structural damage to adjacent buildings, infrastructure and roads.

Response

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix D) includes the requirement to undertake an Existing Condition Inspection in accordance with AS 4349.1 "Inspection of Buildings" if construction activities have potential to cause damage through vibration to nearby public utilities, structures, buildings and their contents. The findings of all surveys conducted would be compiled in a report and Follow-up Condition Inspections would be undertaken at the completion of certain major works.

7.19.5 Groundwater and groundwater movement

Mitigation, management and monitoring

Issues raised

Prior to the issue of the relevant Construction Certificate, a Groundwater Monitoring Plan for the Sydney Olympic Park precinct must be submitted and approved by the former Sydney Olympic Park Authority's Director, Environment and Planning. The plan would be prepared in consultation with the Traffic and Transport Liaison Group and would be approved by the relevant authority before construction commences.

Response

The *Sydney Metro Construction Environmental Management Framework* (Appendix C) requires the preparation of a Groundwater Management Plan (or equivalent), which would include details of groundwater monitoring if required. Sydney Olympic Park Authority would be consulted during the development of the Groundwater Management Plan.

7.19.6 Soils and surface water quality

Mitigation, management and monitoring

Issues raised

Sydney Olympic Park Authority raised the following issues relating to soils and surface water quality mitigation, management and monitoring:

- Prior to the issue of the relevant Construction Certificate, a Soil and Water Management Plan must be prepared for works proposed within Sydney Olympic Park by an appropriately-qualified person in accordance with the former Sydney Olympic Park Authority's *Stormwater and Water Sensitive Urban Design Policy* and the provisions of the 'Blue Book'
- A sediment basin is required for every catchment discharging from the site as part of any Soil and Water Management Plan
- The Soil and Water Management Plan must be endorsed by a qualified stormwater engineer prior to commencement of works. A qualified stormwater engineer must inspect implementation of the Plan regularly throughout the project including prior to commencement of earthworks, monthly until the site is stabilised, and within 24 hours of rain events greater than 10mm.
- Records of any discharges made to the former Sydney Olympic Park Authority's stormwater drainage network must be provided to the former Sydney Olympic Park Authority's within two days of any discharge.

Response

As noted in Section 19.71 of the Environmental Impact Statement, a soil and water management plan would be prepared and implemented during construction, in accordance with the *Sydney Metro Construction Environmental Management Framework* (Appendix C). The soil and water management plan would be prepared in accordance with *Managing Urban Stormwater: Soils & Construction Volume 1* (Landcom, 2004) (known as the 'Blue Book') and would include mitigation, management and monitoring measures to manage the potential for erosion and water quality impacts in the aquatic environment. Sydney Olympic Park Authority would be consulted during the development of the Soil and Water Management Plan.

Mitigation measure SSWQ3 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report states erosion and sediment measures would be implemented at all construction sites in accordance with the principles and requirements in *Managing Urban Stormwater – Soils and Construction, Volume 1* (Landcom 2004), commonly referred to as the 'Blue Book' and *Volume 2D* (NSW Department of Environment, Climate Change and Water 2008). Temporary sediment basins would be designed in accordance with *Managing Urban Stormwater: Soils and Construction* and *Managing Urban Stormwater, Volume 2D: Main Road Construction* (DECC, 2008).

As required by the *Sydney Metro Construction Environmental Management Framework*, the Principal Contractor would undertake weekly soils and water monitoring inspections, and additional inspections following significant rainfall events (greater than 20 millimetres in 24 hours). All water would be discharged from the site would comply with relevant approvals and licence requirements. No Records of testing any water prior to discharge from the construction site to the receiving environment would be kept as required.

7.19.7 Construction

Works permit

Issues raised

Prior to the commencement of development, if required, the proponent must obtain a Work Permit to occupy the public way, footpaths, road reserves and the like.

Response

Sydney Metro would continue to consult with Sydney Olympic Park Authority regarding construction access arrangements to public spaces within Sydney Olympic Park.

Public infrastructure damage

Issues raised

All public footways, paving, sub-surface infrastructure, kerbs, gutters, pavers, road pavement and any other public domain assets damaged during the works must be immediately repaired following the damage, to a satisfactory state that provides for safe use by pedestrians and vehicles.

Response

The *Sydney Metro Construction Environmental Management Framework* (Appendix C) includes requirement that Pre-construction Building Condition Surveys would be offered to the owners of buildings where there is a potential for construction activities to cause damage. If accepted, an appropriate professional would be engaged to undertake the relevant works prior to commencing construction. In the unlikely event that damage occurs to any properties as a result of the project, this would be rectified by the project at no cost to the owner. An independent panel may provide assistance in the resolution of property damage concerns following investigation by Sydney Metro and technical specialists in consultation with the affected property owner.

Any identified construction related damage would be either repaired or compensated in consultation with Sydney Olympic Park Authority.

7.20 Sydney Water

7.20.1 Stakeholder and community engagement

Consultation

Issues raised

Close engagement between the proponent and Sydney Water will be required as the project design development progresses. This includes coordination to manage the interface with other concurrent projects.

Response

Sydney Metro will continue to work with stakeholders, including Sydney Water, and the community to ensure they are informed about Sydney Metro West and have opportunities to provide feedback. As per mitigation measure C11 in Chapter 8 (Revised environmental mitigation measures) of this report, co-ordination and consultation with key stakeholders, including Sydney Water, local councils and other government agencies would occur where required to manage the interface of projects under construction at the same time. The *Sydney Metro Overarching Community Communications Strategy* (Appendix B) outlines our approach to coordinating communications between interfacing projects.

7.20.2 Non-Aboriginal heritage

Heritage impacts

Issues raised

Sydney Water recommends that future works do not impact The Beattie Street Stormwater Channel (No.15). Monitoring measures such as vibration monitoring should be considered to prevent any adverse effects to the heritage listed stormwater channel.

Response

The Beattie Street Stormwater Channel (No.15) item is located a sufficient distance from The Bays Station construction site such that there would be no direct impacts. This is consistent with the impacts described in Table 12-22 of Chapter 12 (Non-Aboriginal heritage) of the Environmental Impact Statement. Vibration from the works is not anticipated to impact on the structure.

7.20.3 Public utilities

Water infrastructure

Issues raised

The submission raised the following issues regarding water infrastructure:

- Service demands for water-related infrastructure requirements within the proposed Sydney Metro West corridor should be considered and satisfactory arrangements should be made to prevent any unwarranted damage to drinking water, wastewater and recycling water networks
- No buildings (including future ancillary development building envelopes), permanent structures are to be located over or too close to Sydney Water stormwater assets and adequate allowance should be made for Sydney Water to access, inspect, maintain and safely/cost efficiently rebuild or amplify existing Sydney Water stormwater assets in the future. Alternatively, Sydney Water will help identify acceptable asset relocation options.
- Relocated stormwater assets should be designed and sized to accommodate future flood mitigation aspirations as identified by Sydney Water or the relevant council
- Sydney Water would be concerned with any proposals to concrete line existing natural waterways or promote development that would constrain the potential for Sydney Water further invest in the naturalisation and rehabilitation of urban waterways. Design features that align with Sydney Water strategies for waterway naturalisation should be incorporated.

Response

Further consultation with Sydney Water would occur via a utilities coordination manager and include consideration of impacts to Sydney Water assets. The role of the utilities coordination manager is discussed in Section 9.6.5 of Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

Some creek realignment works and new culverts are required at the Clyde stabling and maintenance facility site to accommodate the future metro tracks and the realigned Unwin Street. Any potential naturalisation would be carried out beyond the inlet and outlet structures. Sydney Metro would continue to consult with Sydney Water on these proposed works.

7.20.4 Soils and surface water quality

Mitigation, management and monitoring

Issues raised

Sydney Water should be consulted during the preliminary stages of the project to ascertain the water allocations required from the existing mains supply network.

Any discharge of treated wastewater into our stormwater system be investigated during detailed construction planning phase. Disposal via Sydney Water Trade Waste agreements to be investigated during detailed construction planning.

Response

Sydney Water would be consulted regarding water supply requirements and disposal via any Sydney Water Trade Waste agreements during construction planning.

7.20.5 Contamination

Mitigation, management and monitoring

Issues raised

The Environmental Impact Statement identifies that there may be a possible contamination risk to groundwater at the Sydney Olympic Park metro station and The Bays Station construction sites. Monitoring regimes should be implemented to observe any potential contamination output and ground movements near construction sites. The approach to ensure groundwater is not adversely affected by any potential contamination should be made available to Sydney Water.

Response

Section 18.8.2 of Chapter 18 (Groundwater and ground movement) of the Environmental Impact Statement includes mitigation measures that would be implemented to address potential groundwater and ground movement impacts. These mitigation measures include monitoring of groundwater levels and quality and regular review by a qualified hydrogeologist. Mitigation measures also include the development of a detailed geotechnical model for Stage 1 with exceedance of target changes to groundwater levels at surrounding land uses and nearby water supply works to be identified and appropriate responses implemented.

7.20.6 Hydrology and flooding

Mitigation, management and monitoring

Issues raised

The Environmental Impact Statement recommends that Sydney Water naturalise the St Lukes Park Canal and Barnwell Park Canal near the proposed Sydney Metro station construction sites. We do not believe that it is prudent to pursue naturalisation of the St Luke's Park and Barnwell Park Canals.

Response

Chapter 18 (Groundwater and ground movement) of the Environmental Impact Statement notes the potential naturalisation of these channels by Sydney Water as part of the assessment of surface water-groundwater interaction. It does not make any recommendations regarding channel naturalisation at these locations.

Flooding impacts

Issues raised

Stage 1 Clyde stabling and maintenance facility construction site would increase flood level up to 0.08 metres in and adjacent to Duck Creek and Duck River in the five per cent and one per cent AEP events. The increase affects several commercial and industrial properties outside of the site. These increased flood levels appear to be below the floor levels of existing buildings affected, based on ground levels and site observations.

Sydney Metro would engage with Sydney Water and the local council at the early stages of design development to address the consumption of local flood storage, potential cumulative impacts and equity considerations related to any proposal to fill the floodplain.

The extensive filling of floodplain land is not supported, and alternative design strategies must be developed and fairly assessed. The project generally should not diminish or consume flood storage volumes associated with the principal flood planning level for the project – one per cent annual exceedance probability plus 500 millimetres.

Potential cumulative impacts should be addressed more specifically and should be assessed on a basis of 'everyone else who is in a similar situation as us doing as we do'. This is a fundamental principal of sustainable flood plain development practice. Sydney Water would be concerned if a similar strategy of landfilling per the marshalling yards near Sydenham Pit was undertaken without providing compensatory flood storage.

These principals would also extend, where relevant, to other sites including the proposed services facility between Five Dock Station and The Bays Station not assessed by the Environmental Impact Statement.

Response

Mitigation measure HF1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits to identification of measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the one per cent annual exceedance probability flood event. In this context, 'not worsen' is defined as including a maximum increase in flood levels of 50 millimetres in a one per cent annual exceedance probability flood event.

The design of the proposed creek realignment and new culvert works and embankment footprint design at the Clyde stabling and maintenance facility construction site have been refined and the flood modelling updated to reflect these design refinements (refer to the Sydney Metro West Amendment Report Concept and Stage 1). Based on the modelling, this would result in some expected changes to potential flooding impacts, including reduced impacts in some areas during some flooding events. The previously identified 0.08 metres increase in five per cent and one per cent AEP event flood levels in Duck Creek would be reduced to 0.03 metres. Opportunities to minimise flooding impacts would occur during detailed design and would be informed by floor level surveys of existing properties, in accordance with mitigation measure HF3.

The Clyde stabling and maintenance facility site is generally of low flood-affectation in up to the 1 per cent AEP event and the flood modelling demonstrates that impacts are generally minor or there are substantial reductions in the 1 per cent AEP flood event. The 0.08 metre impact previously reported in Duck Creek was identified and mitigation and design solutions identified to reduce this impact.

Potential cumulative impacts have been assessed for other approved/proposed significant developments as required, and no cumulative impacts were identified as a result of Stage 1 construction, in combination with other developments.

7.20.7 Sustainability

Water sensitive urban design

Issues raised

Sydney Water seeks a commitment to best practice Water Sensitive Urban Design of the sites and associated stormwater drainage infrastructure. Given location within the catchments, a green infrastructure stormwater retention strategy may be more appropriate than a proposed on-site stormwater detention approach – for example as noted in measure HF2 in the Environmental Impact Statement.

Response

One of the sustainability initiatives identified in Table 8-59 of Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement is to integrate water sensitive urban design solutions. This and other initiatives would be further refined as part of the design process, committed to in the Sydney Metro West Sustainability Plan and would form part of contractor requirements.

Measure SCC1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report commits to including sustainability initiatives as part of the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives.

7.21 Ausgrid

7.21.1 Stage 1 description

Utilities

Issues raised

Ausgrid notes that the proposed treatment of existing Ausgrid assets and proposed new connections will be subject to formal application by the proponent via Ausgrid's contestable works process.

Response

Sydney Metro acknowledges this requirement and will submit a formal application as per the Ausgrid contestable works process.

7.22 Australian Turf Club

7.22.1 Support for project

Support

Issues raised

Australian Turf Club supports the Sydney Metro West project.

Response

Australian Turf Club's support is noted.

7.22.2 Air quality

Dust

Issues raised

Australian Turf Club are concerned that dust levels have been assessed in terms of impacts to humans and have not considered air quality impacts on thoroughbred racehorses. Australian Turf Club requests the opportunity for further ongoing consultation with the project to ascertain the likely air quality impacts.

Response

Section 23.6 of the Environmental Impact Statement considers the potential unmitigated dust impacts of the project on attendees at Rosehill Gardens racecourse immediately adjacent to the northern boundary of the construction site. This also includes horses stabled at the racecourse.

Potential dust emissions would be temporary in nature and comparable to other similar infrastructure projects. Best-practice management measures (as per mitigation measure AQ1 in Chapter 8 of this report) would be implemented during all construction works to adequately manage potential dust impacts. This would include regularly wetting down exposed and disturbed area and adjusting construction activities based on observed dust levels and weather forecasts.

Construction activities would involve clearing and demolition, excavation, materials handling, stockpiling and compaction activities. Dust potentially generated from these activities is expected to be the main potential air quality impact during Stage 1.

Sydney Metro is committed to ongoing consultation with Australian Turf Club so that dust impacts are adequately managed.

7.22.3 Concept impacts

Operational ground-borne noise and vibration

Issues raised

An equine specialist advises that once the project is completed, it is also conceivable that there might be chronic physiological aberrations in resident horses in the event there is perceptible vibration due to the transit of trains through the tunnels adjacent to the stable complexes.

Further assessment needs to be carried out in relation to the construction and operations of the Sydney Metro West, some 20 metres from the stables so as to ensure that appropriate mitigation measures and strategies are conditioned into the approval to enable the activities of both the Racecourse and Metro to co-exist.

Response

The operational noise and vibration impacts of Sydney Metro West were considered at a concept level in Section 8.5 of the Environmental Impact Statement. Further detailed assessment of operational noise and vibration impacts would be carried out as part of the Environmental Impact Assessment for future stage(s).

Where there is the potential for ground-borne noise and vibration impacts from operational rail lines in tunnels, the use of resilient track forms would be considered. There are several types of resilient track form that may be used, depending on the likely level of impact at locations along the Concept corridor. The need for resilient track forms would also depend on the extent of the predicted ground-borne noise and vibration impacts (to be determined during future stage assessments), which can be influenced by a range of operational factors including train speed, tunnel depth, tunnel design and position of track turnouts.

7.22.4 Hazards

Safety impacts

Issues raised

Australian Turf Club commented that horses can react in a variety of ways to sudden and/or loud noises while being ridden or exercised, such as abrupt changes in direction (baulking), galloping uncontrollably and irrationally propelling themselves into traffic, fixed objects or crowds, or rearing on their hind limbs and flipping backwards or onto their side or striking their head. These reactions pose serious risks to the horse, the rider/handler and to the public and have been known to cause serious and sometimes fatal injuries to both. Such a situation poses a profound workplace safety risk as well as a major horse health and welfare concern.

Response

Sydney Metro recognises that horses stabled at Rosehill Gardens racecourse may be more susceptible to noise and vibration impacts and are committed to working closely with Australian Turf Club. As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), Sydney Metro has committed to ongoing consultation with Australian Turf Club so that temporary potential impacts to horses are appropriately managed.

7.22.5 Noise and vibration

Assessment methodology

Issues raised

Australian Turf Club raised the following comments and concerns regarding the assessment methodology for noise and vibration:

- There remains uncertainty regarding the noise management levels in the Environmental Impact Statement for vibration and noise associated with aboveground and underground works and whether the identified mitigation measures are suitably protective of the horses stabled at Rosehill Gardens racecourse
- While there is limited available literature describing the effects of construction (noise or vibration) on an equine receptor, there is widely published understanding that:
 - Human lower limit perception of vibration is between 0.1 and 0.15mm/s
 - For an equine receptor, vibrations that can cause stress in horses are felt at an order of magnitude lower than humans, placing it from 0.01mm/s
 - Sudden noise and vibration changes could cause stress
- The Australian Turf Club requests further targeted investigation to inform additional requirements and protective measures, including initial discussion with the project for their work methodology, locations, timing to decide optimal monitoring instrumentation siting. Further consultation should be undertaken with equine veterinary experts and the thoroughbred industry to determine more appropriate noise and vibration management levels at which additional mitigation measures are required.

Response

Sydney Metro recognises that horses stabled at Rosehill Gardens racecourse may be more susceptible to noise and vibration impacts and are committed to working closely with Australian Turf Club. As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), Sydney Metro has committed to ongoing consultation with Australian Turf Club so that temporary potential impacts to horses are appropriately managed.

Construction noise

Issues raised

Australian Turf Club raised the following comments and concerns regarding construction noise:

- The Australian Turf Club are highly concerned that the potential noise and vibration generated by the proposed works at the Clyde stabling and maintenance facility and tunnelling (underneath and adjacent to Rosehill Gardens racecourse), will impact on the operation of stabling, training and racing at Rosehill Gardens. The Australian Turf Club are particularly concerned about noise and vibration generated by aboveground construction activities including surface construction, piling, excavation; and underground construction activities including controlled blasting and the resulting impacts it may have on the welfare of horses stabled at Rosehill Gardens racecourse.
- Australian Turf Club understands that Rosehill Gardens racecourse has been considered in the assessment as an 'other sensitive' active recreation areas, consistent with the *CBD and South East Light Rail Environmental Impact Statement* (Transport for NSW, 2013). Table 11-10: NMLs identifies an External Noise Management level of 60 dB for the Rosehill Gardens racecourse Stabling Facilities. Notwithstanding, construction work involving piling will result in percussive, sudden onset, audible noise above 60dB in its immediate locality.
- The 'high' worst-case noise impacts on Rosehill Gardens racecourse has been assessed in terms of human receivers and does not consider the 'hyper-sensitive' nature of horses stabled at Rosehill Gardens racecourse. The assessment in the Environmental Impact Statement overlooks the fact that horses are magnitudes of order more sensitive to noise than humans and there is a significant risk to animal and human welfare if a horse responds unpredictably to sudden loud noises, or from stress induced by excessively loud noises over an extended period. Further testing and assessment is required by Sydney Metro to understand the likely impacts on horses stabled at Rosehill Gardens racecourse from noise.

Response

Section 11.8.2 of the Environmental Impact Statement identified that some construction activities would result in an exceedance of the noise management level for the Rosehill Gardens racecourse and stables. It should be noted that the assessment represents the worst-case noise impacts when plant and equipment is operating nearest to the stables.

The assessment adopted a noise management level of 60dBA for the assessment of the impact of construction noise at the stables as specific noise management criteria do not exist for equine receivers. This noise management level is consistent with the approach taken for the *CBD and South East Light Rail Environmental Impact Statement* in relation to Randwick Racecourse (Transport for NSW, 2013).

Sydney Metro recognises that horses stabled at Rosehill Gardens racecourse may be more susceptible to noise and vibration impacts. As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), Sydney Metro has committed to ongoing consultation with Australian Turf Club so that temporary potential impacts to horses are appropriately managed.

Vibration

Issues raised

Australian Turf Club notes that Figure 11-12 in the Environmental Impact Statement identifies that buildings at Rosehill Gardens racecourse, including stables, will receive vibration impacts that exceed cosmetic damage screening criteria. This indicates there will be significant vibration impacts on hyper-sensitive equine receptors at Rosehill Gardens racecourse so far above background levels that it is highly likely to have significant consequences.

Response

It is acknowledged that Figure 11-12 of the Environmental Impact Statement indicates that the cosmetic damage screening criteria are predicted to be exceeded at four commercial buildings at Rosehill Gardens racecourse located east of the existing rail corridor section of the site. The predictions are representative of the highest vibration levels that would likely be experienced by the nearest receivers when works are at their closest. As per mitigation measure NV16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of vibrations and vibration monitoring would be carried out to ensure vibration levels remain below appropriate limits for that structure.

As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), Sydney Metro has committed to ongoing consultation with Australian Turf Club so that temporary potential impacts to horses are appropriately managed.

Equine impacts

Issues raised

The Australian Turf Club has serious concerns about the adequacy of the technical reports that are being relied upon to support the consideration of the project. The Environmental Impact Statement does not properly, fully and completely consider the unique sensitivity of Rosehill Gardens racecourse and its most important function being the stabling and managing of 400 thoroughbred racehorses. The Environmental Impact Statement provides no expert consideration of the impacts of both the construction works and future operating activities of the Metro upon the health and well-being of the occupants of the stables.

Response

The Environmental Impact Statement has been prepared by experienced professionals to address the environmental assessment requirements of the Secretary of the Department of Planning, Industry and Environment (the Secretary's Environmental Assessment Requirements), dated 11 December 2019 (refer to Appendix A of the Environmental Impact Statement). Section 11.8.2 of the Environmental Impact Statement considers the potential noise and vibration impacts on Rosehill Gardens racecourse stables.

As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), Sydney Metro has committed to ongoing consultation with the owners and operators of the horse stables near the Clyde stabling and maintenance facility construction site so that temporary potential impacts to horses are appropriately managed. A high level assessment of the operational noise impacts have been assessed under Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement. Further assessment of the operational impacts of Sydney Metro West on Rosehill Gardens racecourse would be undertaken as part of the environmental impact assessment for future stage(s).

Mitigation, management and monitoring

Issues raised

Australian Turf Club has concerns of impacts on horse welfare from noise, vibration and dust could make the stabling of horses in their current location untenable if not addressed properly. Due to the potential impacts over an extended construction timeframe, there may need to be consideration for possible relocation of the stables. The timeframes and cost of relocating the Stabling Facilities within Rosehill Gardens racecourse should be a serious consideration for the Sydney Metro West project.

Response

Sydney Metro acknowledges the sensitive nature of the stabling facilities and the importance of minimising potential impacts of the project on horse welfare. As per mitigation measure NV15 (refer to Chapter 8 of this Submissions Report), consultation with the owners and operators of the horse stables near the Clyde stabling and maintenance facility construction site would be carried out so that temporary potential impacts to horses are appropriately managed.

7.22.6 Transport and traffic

Access

Issues raised

It is important to the Australian Turf Club and vital for its operation that pedestrian access to the site is safely maintained for the thousands of patrons that visit the site during each event. The key pedestrian access points include:

- Northern at-grade access across the former rail corridor,
- Footbridge over the former rail corridor

The Australian Turf Club seeks formal confirmation that the footbridge from the former Rosehill Train Station will be maintained for use by the Australian Turf Club and that suitable lighting after dark is provided to ensure safety and security for pedestrians using the bridge.

It is also critical for the operation of Rosehill Gardens racecourse that the existing access to the Stabling Facilities from Unwin Street remains unrestricted. This entrance is critical for horse floats to enter and exit the site daily as required and for events personnel and equipment during bump in and bump out for events.

Response

Sydney Metro understands the importance of pedestrian access to and from the Rosehill Gardens racecourse. Sydney Metro will continue to work with the Australian Turf Club so that pedestrian access across the former T6 rail corridor is maintained.

The proposed relocation of Unwin Street would facilitate ongoing vehicular access to the stabling facilities. Sydney Metro would endeavour to stage the relocation works to provide ongoing access, however there may be short periods when closures are required. Sydney Metro would consult with the Australian Turf Club regarding the timing of any necessary closures to maintain access at critical times.

7.22.7 Stakeholder and community engagement

Ongoing consultation

Issues raised

The Australian Turf Club requests the opportunity for further discussion with the project regarding measures to ensure safe pedestrian and vehicle access to Rosehill Gardens racecourse.

The Australian Turf Club kindly requests the following recommendations are considered and actioned:

- Sydney Metro acknowledge the sensitive operational requirements for the Australian Turf Club and Racing NSW as detailed in this submission.
- There be further ongoing consultation between Sydney Metro and Australian Turf Club in relation to land acquisition, environmental impacts and operations during construction

- Sydney Metro staff attend a site visit at Rosehill Gardens racecourse Stabling Facilities to understand the unique and sensitive nature of the land use, and undertake further testing in respect to noise, vibration and dust impacts
- Sydney Metro and Australian Turf Club further discuss and agree upon appropriate mitigation measures for noise, vibration, dust impacts and address vehicle and pedestrian movements so that Rosehill Gardens racecourse can continue operating without unreasonable impacts.

The Australian Turf Club requests further consultation with the project to negotiate opportunities for respite periods to allow for events to be held at Rosehill Gardens racecourse without restriction, interference or serious disturbance.

Response

Sydney Metro acknowledges the sensitive operational requirements of the Australian Turf Club at Rosehill Gardens racecourse. Sydney Metro will continue to work closely with Australian Turf Club to ensure appropriate measures are established to address the issues raised in its submission.

7.23 Business NSW

7.23.1 Support

Support

Issues raised

Business NSW notes longstanding support for Sydney Metro West and are pleased to see its progress to the Environmental Impact Statement stage. Business NSW agrees with the assessment of strategic need for the Concept and Stage 1 as provided by the Environmental Impact Statement.

Business NSW also supports the Infrastructure Skills Legacy Program which sets targets for select large construction projects. The program will ensure these projects pave the way for improving our workers' skills and increasing the representation of young people, Aboriginal and Torres Strait Islander people and women in the construction industry.

Response

Business NSW's support is noted. Sydney Metro has been an active participant in the Infrastructure Skills Legacy Program since the launch of the pilot program in 2016.

7.23.2 Development and alternatives

Strategic station option – Pyrmont

Issues raised

To maximise the benefits from the development of the Metro West line, a station at Pyrmont is essential. A Pyrmont metro station has much greater strategic merit and 'city shaping' impact than one at White Bay and should be given greater priority. The biggest constraint to the future development of the Pyrmont Peninsula is its lack of connectivity to the rest of the Sydney. This constraint would be removed by Pyrmont metro station. Negotiations over the balance of funding between government and local developers are reasonable, so long as they lead to an agreement.

Response

The strategic opportunities of a station at Pyrmont are acknowledged and identified in the Environmental Impact Statement. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option.

Strategic station option – Camellia

Issues raised

Notes that Sydney Metro West would aid the regeneration of Camellia.

Camellia was one of the five station options between Olympic Park and the Parramatta CBD considered in 2018. Subsequently the options narrowed to Camellia and Rydalmere. Now that Rydalmere has been ruled out as a candidate for a metro train station, Camellia should be further investigated as the best option. Camellia has not been properly considered based on the evaluation described in Table 3-8) within the Environmental Impact Statement and there is potential for outperformance for many of the evaluation criteria.

A metro station located at, or in proximity to, the Camellia Town Centre would catalyse major urban renewal and result in a significant uplift in employment and residential floorspace in the Central City. Camellia could provide an interchange between Parramatta Light Rail and Sydney Metro West. There is also the possibility for ferry access providing one of the few locations in Sydney where three different public transport modes can interchange.

Camellia is designated for significant urban renewal under the Camellia Master Plan. The draft master plan for a redeveloped town centre at Camellia “establishes the framework for delivering up to 10,000 new dwellings with 5,000 new jobs”. Developers in the area are willing to contribute to the costs of a ‘box’ that would allow a metro station to be completed later after the line is open. If Sydney Metro enables this option, it could have a neighbourhood with transport access central to its design. A station at Camellia could also add a further interchange point to the Parramatta Light Rail network.

Uncertainty over the status of the Camellia Master Plan and the timing of proposed renewal of Camellia Town Centre should not prevent constructing enabling infrastructure for a station now. This can be developed alongside the Camellia Town Centre into a key interchange point in between the Sydney Olympic Park and Parramatta hubs.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would have also been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

7.23.3 Business impacts

Mitigation, management and monitoring

Issues raised

Lessons from other recent transport infrastructure projects indicate that efforts to minimise the impact of major construction works on neighbouring businesses have been hindered by:

- Poor communication with businesses, with many complaining of not knowing when works would be conducted, for how long disruptions would occur, nor the types of activities being carried out. This made it difficult for them to plan their business operations.
- Construction impact compensation and property acquisition schemes that were slow and laborious and which provided smaller than anticipated payouts to some of businesses.

Efforts should be made to ensure that businesses adjacent to construction sites are supported. Small cafes and other ‘stall’ style businesses may also be viable around the perimeter of construction sites serving construction workers and pedestrians ensuring the area surrounding the site doesn’t become a dead zone.

Response

As set out in mitigation measure B11 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, engagement measures would be carried out with small business owners during construction.

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

- Proactively provide businesses with information about construction progress and help manage potential issues and impacts where possible
- Ensure businesses understand the scope of the works and mitigation measures contractors can provide
- 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.

All property acquisition would be managed in accordance with the NSW *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms announced by the NSW Government which can be viewed online at <https://www.propertyacquisition.nsw.gov.au/property-acquisition-process>. Sydney Metro has appointed Personal Managers to offer small businesses assistance and support throughout the acquisition process.

In other locations, Sydney Metro would focus on retaining access to, and minimising construction impacts on, existing businesses.

7.23.4 Landscape character and visual amenity

Visual amenity

Issues raised

Transport for NSW should engage local artists to design hoarding around the site.

Response

As set out in measure LV6 in (refer to Chapter 8 of this Submissions Report), opportunities would be considered for public art on temporary hoarding in high pedestrian locations.

Opportunities to integrate public art into the customer environment, and a process for its curation and production, would be further considered in the design of future stages of Sydney Metro West. Future station and precinct design would include the development of a public art strategy for Sydney Metro West.

7.24 Five Dock Chamber of Commerce

7.24.1 Transport and traffic

Business Impacts – parking

Issues raised

Given the significant reliance on travel by cars, it is imperative that details of mitigation measures is provided by the proponent regarding provision of car parking provided elsewhere within Five Dock Local Centre to compensate for the proposed removal of public car parking (minimum of 34 car parking spaces).

Any reduction in the number of car parking spaces will detrimentally impact the business surrounding the proposed construction of Five Dock Station.

Removed car parks should be relocated elsewhere within Five Dock Local Centre during construction phase and reinstated at the completion of construction. Further details regarding specific duration and timing for car parking to be removed from the site and its reinstatement should be provided.

Response

The loss of public parking spaces at Five Dock has been minimised as far as practical and is limited to a small number of on-street parking spaces and a small car park. The proposed one-way north bound circulation of traffic along Waterview Street would also minimise the potential loss of car parking – refer to the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b).

Consultation would occur with City of Canada Bay Council to investigate opportunities to provide alternative parking facilities – refer to measure TT10 in Chapter 8 (Revised environmental mitigation measures).

The provision of shuttle bus transfers for construction workers would be considered for all construction sites including Five Dock Station construction site. In addition, as provided for in mitigation measure TT11, parking availability around the construction site would be managed to minimise the number of construction workers parking on surrounding streets by:

- Encouraging workers to use public or active transport
- Encouraging ride sharing.

Business Impacts – relocation of loading zones, mail zones, bus stops, taxis

Issues raised

Further clarification is required regarding the loss of any existing loading zones and mail zones as the removal and or relocation of these types of facilities will have a significant impact on the local businesses reliant on these services.

Further details are also required in relation to relocation of bus stops, taxi ranking/parking, and on-street loading zones and pedestrian access to any relocated bus stops/loading zones. Any resultant car parking loss should also be addressed.

Response

There is no proposed loss or relocation of loading zones, mail zones, bus stops or taxi parking in the vicinity of Five Dock Station construction site.

As provided for in mitigation measure TT12 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, any bus stop relocations would be determined as part of detailed construction site planning in collaboration with Transport for NSW including Transport Coordination, the relevant Council and relevant bus service providers. Wayfinding and customer information would be provided to notify customers of relocated bus stops.

As part of detailed construction planning, Construction Traffic Management Plans would be prepared in accordance with the *Construction Traffic Management Framework* (see Appendix F of the Environmental Impact Statement), which includes consultation with the Traffic Control Group, Traffic and Transport Liaison Group, Transport for NSW including Transport Coordination and other relevant stakeholders. The *Construction Traffic Management Framework* also requires ongoing stakeholder engagement and consultation.

Business impacts – construction traffic

Issues raised

Construction vehicles (including up to 10 heavy vehicle movements per hour overnight) will be using Great North Road. This will result in reduction of pedestrian safety, cause potential pedestrian-vehicle conflict, reduce amenity of the Five Dock Local Centre and contribute to flow-on economic and amenity impacts related to loss of trade, decreasing the attractiveness of the Local Centre as a place to visit and conduct business and result in traffic congestion.

Details of the construction site access arrangements must be provided as soon as practicable for public exhibition and comment. Any changes to the movement of traffic along any roads within Five Dock must also be provided prior to the determination of the State Significant Infrastructure application.

Further clarification is required regarding heavy vehicle movements and timing, signage, footpaths and pedestrian crossings and access routes, the location of lighting, ramps and other overlays for project construction, and the provisions to redirect pedestrian flows, provision of any new pedestrian crossings and any proposed relocation of existing pedestrian crossings at Great North Road. Increased signage and lighting are required to maintain pedestrian safety at Great North Road

Elderly people will be susceptible to changes in pedestrian, parking and traffic changes. Any discouragement of the elderly to visit Five Dock Local Centre could in turn greatly impact on the economic viability of the centre.

Response

Mitigation measure TT4 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report sets out that vehicle access to and from construction sites would be managed to maintain pedestrian, cyclist and motorist safety, and TT5 provides additional enhancements for pedestrian, cyclist and motorist safety near the construction sites to be implemented during construction. These measures include:

- 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
- Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.

As part of detailed construction planning, Construction Traffic Management Plans would be prepared in accordance with the *Construction Traffic Management Framework* (see Appendix F of the Environmental Impact Statement), which includes consultation with the Traffic Control Group, Traffic and Transport Liaison Group, Transport for NSW including Transport Coordination and other relevant stakeholders. The *Construction Traffic Management Framework* also requires ongoing stakeholder engagement and consultation.

Construction Traffic Management Plans would include site specific traffic management measures to manage congestion, minimise noise from heavy vehicles, provide for safe use of pedestrian and active transport routes, set out parking management measures, and ensure safe access to the construction site and surrounding properties and businesses.

As part of this continued consultation Sydney Metro would seek to minimise the impacts from heavy vehicle movements, and ensure that vehicular access to businesses, homes and facilities would be maintained in consultation with property owners as required by measure TT18 in Chapter 8 (Revised environmental mitigation measures).

As set out in measure BI3, 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 way-finding signage would be implemented around construction sites to maximise visibility of retained businesses, including sufficient lighting along pedestrian footpaths during night-time where relevant.

It is proposed to convert Waterview Street from a two-way street to a northbound one-way street north of the main Five Dock car park up to Second Avenue, for the period of Stage 1 construction – refer to the Amendment Report. This would minimise potential conflicts with northbound heavy vehicle movements arriving at the Five Dock Station eastern construction site and is anticipated to improve safety and traffic outcomes for the local area and avoid the need for additional on-street parking removal. No other road closures or changes to the movement of traffic around the Five Dock station construction site are envisaged to be required. If short-term temporary traffic diversions are required during construction, relevant arrangements would be documented in the Construction Traffic Management Plans.

7.24.2 Business impacts

Economic impacts

Issues raised

No economic impact statement has been submitted. An in depth assessment into the economic impacts should be prepared.

Specific target timeframes for rehabilitation following the completion of construction of Five Dock Station should be provided.

Additional details are requested, including:

- Framework of commitments and strategy to be implemented by Sydney Metro
- Details of measures and financial investment to be made available to all impacted businesses during and post-construction phases.

Response

The broader economic benefits of Sydney Metro West are documented in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement. The economic benefits of the Concept are overwhelmingly positive, with particular consideration of the productivity benefits as well as through enabling healthy, resilient and socially connected communities.

Impacts on local business areas have been assessed in Chapter 16 (Business impacts – Stage 1) of the Environmental Impact Statement. Engagement with potentially impacted small business owners would be carried out prior to and during construction.

Consultation

Issues raised

All recommendations within the NSW Customer Service Commissioner's report titled "*Impacts of new government infrastructure on small business*" dated February 2019 including the "Easy Access" principle should be adopted to involve small businesses in the consultation process for the entirety of the project.

Sydney Metro should also ensure in-depth consultation with all business owners within Five Dock Local Centre is carried out, and the name and contact details of relevant persons to be the liaison for businesses impacted during the project.

Response

As set out in measure B1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, small business owner engagement would be undertaken to assist small business owners potentially impacted by construction.

An *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 this Submissions Report.

Contract specific Community Communication Strategies would be developed by appointed project delivery communication teams to address contract and site specific needs of the community, stakeholders and businesses.

Contractors would 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.

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.

During construction community members can contact the project team via a 24 hour project information line or via email.

The *Construction Environmental Management Framework* (Appendix C) provides the approach to environmental management and monitoring during construction including monitoring and management of noise and vibration. The *Construction Noise and Vibration Standard* (updated in Appendix D of this Submissions Report) details how construction noise and vibration would be managed across Sydney Metro West

7.24.3 Noise and vibration

Construction vibration

Issues raised

Dilapidation reports should be prepared for each property along Great North Road to record the current physical and structural condition of all relevant buildings and to assess any vibration impacts resulting from the project.

Prior to the commencement of any works, relevant noise and vibration information should be provided to all land owners within Five Dock Local Centre.

Response

The *Sydney Metro Construction Environmental Management Framework* (Appendix C) includes requirement that Pre-construction Building Condition Surveys be offered to the owners of buildings where there is a potential for construction activities to cause damage, regardless of severity.

The *Sydney Metro Construction Noise and Vibration Standard* (Appendix D) specifies that the existing condition inspection would be carried out in accordance with AS 4349.1 "*Inspection of Buildings*".

If accepted, an appropriate professional would be engaged to undertake the relevant survey prior to commencing construction. The findings of all dilapidation surveys conducted would be compiled in a report and follow-up condition inspections would be undertaken at the completion of certain major works.

As specified in the *Sydney Metro Construction Noise and Vibration Standard*, further quantitative noise and vibration assessments would be undertaken, and Noise and Vibration Impact Statements prepared for activities and/or locations where work would occur. The purpose of a Noise and Vibration Impact Statement is to provide more detailed predictions of noise and vibration impacts based on a more detailed understanding of the construction methods. To achieve this, they are undertaken immediately prior to construction by construction teams who are in control of the activity or location. Feasible and reasonable mitigation measures for each work activity would be identified as part of the Noise and Vibration Impact Statements based on the predicted noise impacts.

The *Sydney Metro Overarching Community Communications Strategy* sets the requirements for stakeholder and engagement to be undertaken by delivery partners (Appendix B). Contract specific Community Communication Strategies would be developed by appointed project delivery communication teams to address contract and site specific needs of the community, stakeholders and businesses. This would include ensuring that the community is informed about the nature, timing and duration of noisy works.

7.24.4 Stakeholder and community engagement

Engagement methods

Issues raised

The Five Dock Chamber of Commerce supports the NSW Government's intention to deliver an integrated transport system for Sydney. However, the Sydney Metro West project will have potential significant adverse amenity, economic and social impacts on the Five Dock Local Centre. Additional information requested should be publicly exhibited for review and comment before any determination of the application is made.

It is noted that due to the COVID-19 pandemic other measures should be taken to extend the consultation time period and to reach the elderly community within the surrounding Five Dock area.

Response

This Submissions Report will be publicly released. As set out in Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement, Sydney Metro has implemented, and will continue to implement, a range of engagement methods to ensure all members of the community are able to contribute to community consultation.

The exhibition period for the *Sydney Metro West Westmead to The Bays and Sydney CBD – Environmental Impact Statement* was more than eight weeks (double the statutory requirement) between 30 April and 26 June 2020 to allow additional time for the community and key stakeholders to provide feedback.

7.24.5 Landscape character and visual amenity

Activation and public art

Issues raised

Due to the significantly reduced landscape and visual amenity of the Five Dock Local Centre for two years, temporary “pop-up” and “parklet” public domain activation areas are recommended to provide some improvement to the amenity of Five Dock Local Centre. Opportunities to provide temporary art displays and other similar activations during the construction period should also be implemented.

Response

As set out in measure LV10 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, Sydney Metro would explore opportunities to provide temporary activation in the vicinity of the Five Dock Station western construction site during construction, in consultation with the City of Canada Bay Council. Pop up parks and parklets have been successfully used on other projects.

As set out in measure LV6, opportunities would be investigated to include public art on temporary hoardings in high pedestrian areas.

7.24.6 Air quality

Dust

Issues raised

In relation to dust emissions, Five Dock Chamber of Commerce requests that:

- Dust mitigation measures outlined in the Environmental Impact Statement are implemented
- Sydney Metro commits to regularly cleaning all properties affected by dust and budget/costs are apportioned for such cleaning. Five Dock Chamber of Commerce request that Sydney Metro provide:
 - Details of the equipment to be used for cleaning dust
 - Commitments on frequency of cleaning of dust.

Response

In accordance with the *Construction Environmental Management Framework* (Appendix C) an Air Quality Management Plan would be prepared. In accordance with measure AQ1 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report) all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each Stage 1 construction site would be considered.

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

As a requirement of the *Sydney Metro Overarching Community Communications Strategy* (refer to Appendix B), contractors would 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 would be managed through this framework.

7.24.7 Placemaking

Placemaking

Issues raised

Noting that the placemaking strategy will be subject of a future application process, the following key issues require attention:

- Walking and cycling connections to be integrated with new metro stations
- Appraisal of all on-street car parking to be undertaken with no loss of existing car parking in Five Dock Local Centre
- Improved pedestrian connections to be delivered to facilitate movement within Five Dock Local Centre.

The application should clearly state the intention of Sydney Metro regarding whether the series of vehicle and pedestrian lanes that are located within the Five Dock Town Centre (identified in the Canada Bay Development Control Plan) will be delivered as part of the project.

Response

Preliminary place and design principles have been developed for each Sydney Metro West station. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build on the five Sydney Metro-wide design objectives (refer to Section 7.3.3 of the Environmental Impact Statement) and have considered relevant local council strategies and *Better Placed* design objectives. As identified in Section 7.4, safe and convenient connections to and from Sydney Metro West stations are an important part of the customer journey and experience of the station precinct. Connectivity between different transport modes, including walking and cycling, is a key consideration which will guide the development of station precincts. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement the place and design principles.

A modal access hierarchy, shown on Figure 7-2 of the Environmental Impact Statement, would be applied in the design of Sydney Metro West stations. This influences the design of stations and interchanges, highlighting the need to balance transport integration with 'place' elements. Every arrival to or departure from the station would be as a pedestrian – either from the precinct or after transferring to or from connecting modes.

Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement considers potential operational parking impacts. This would be assessed further in future stage environmental impact statements. Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future application(s).

Sydney Metro would work with Canada Bay Council to integrate the station with local strategic planning. The realisation of vehicle and pedestrian lanes beyond the station precinct are outside the scope of Sydney Metro West.

7.24.8 Beyond scope of EIS

Placemaking

Issues raised

The documentation submitted must acknowledge the further, potentially significant adverse impacts resulting from the construction of any “over station development” or “Integrated station and precinct development”. Economic and amenity impacts may continue for several years following the completion of the Metro Station works on this basis.

A clear analysis of the cumulative impacts of any future integrated station and precinct development should be provided on the basis such future development is being facilitated by the proposed Five Dock Station.

Response

As identified in Section 8.21.5 of the Environmental Impact Statement, the key performance outcome for the Concept in relation to cumulative impacts is that cumulative impacts are to be minimised through co-ordination of construction activities and communication processes with nearby projects.

Integrated station and precinct development (including over station development) would be subject to separate planning approvals process including environmental impact assessment and community and stakeholder engagement.

7.25 GPT Group

7.25.1 Support for project

Support

Issues raised

Support for the project as key piece of public transport infrastructure that will ensure the long-term productivity, liveability and sustainability of the region, providing a fast, reliable and frequent rail service between Greater Parramatta and the Sydney CBD. Specific support for the proposed station at Sydney Olympic Park.

Response

GPT Group's support is noted.

7.25.2 Air quality

Dust

Issues raised

The proposed works at Sydney Olympic Park metro station have the potential to cause dust impacts for surrounding development. While not considered a sensitive land use, the tenants within nearby commercial buildings should still be afforded due consideration and measures should be implemented to ensure impacts are appropriately minimised. The relative proximity of the spoil storage area to 6 Herb Elliot Avenue will require attention.

Response

Consistent with the *Construction Environmental Management Framework* (Appendix C) an Air Quality Management Plan would be prepared for the project and would require best-practice dust management measures and dust monitoring requirements be implemented during all construction works in accordance with mitigation measure AQ1 (refer to Chapter 8 of this Submissions Report). This would include:

- Regularly wetting down any exposed surfaces

- Regularly inspecting dust emissions and application of additional controls as required such as wetting down vehicles
- Adjusting work practices during adverse weather conditions
- Considering all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each Stage 1 construction site.

Where provided, acoustic sheds would also effectively control dust by enclosing those parts of the construction site where excavation works are occurring.

7.25.3 Noise and vibration

Construction noise

Issues raised

Concern regarding potential noise impacts of construction works at Sydney Olympic Park metro station on nearby commercial buildings, including 3 Figtree Drive and 6 Herb Elliot Avenue. Provision of an acoustic shed across the full length of the excavation site for the full duration of all noisy works will therefore be critical. Adoption of suitable respite periods across the day will also be necessary to minimise impacts. Sydney Metro could focus more intensive works and activity outside of business hours to minimise impacts to adjacent commercial properties.

Response

Stage 1 is generally predicted to result in noise impacts at the nearest receivers during the higher noise generating activities at Sydney Olympic Park metro station construction site. The worst-case impacts are predicted during enabling works and initial excavation, which would occur before the acoustic shed (or other acoustic measures) is constructed. As required by measure NV01 and NV02 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, further engagement and consultation would be carried out with the affected communities to understand their preferences for mitigation and management measures during construction. Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would be investigated and implemented where feasible and reasonable.

For all sites where acoustic sheds are proposed, the sheds would be designed and constructed to minimise noise emissions as identified in measure NV08. Although acoustic sheds are not proposed to extend over the entire station excavation, other acoustic protection measures would be in place over the excavation once the excavation is sufficiently progressed.

Appropriate respite would be provided to affected receivers in accordance with the *Sydney Metro Construction Noise and Vibration Standard* (updated in Appendix D this Submissions Report). The timing of noise intensive works at Sydney Olympic Park would need to consider the potential impacts to both commercial, residential and hotel receivers in the area.

7.25.4 Placemaking

Station precinct

Issues raised

GPT Group supports the preliminary place and design principles identified for Sydney Olympic Park in the Environmental Impact Statement.

It is critical that during the next phase of detailed design for the integrated station and precinct development that the town centre is looked at holistically and Sydney Metro not just focus on the land it has identified as necessary to physically construct the new station. The following thinking and aspirations for the town centre are provided as a foundation for integrating the new metro and ensuring the transport benefits can be leveraged.

- **Vibrant town centre:** The mix of retail, community, commercial, residential, hotel and potentially tertiary education, all underpinned by a metro, will allow the town centre to always feel busy on a day to day basis and not just in event mode. It is critical that the life and vibrancy of the town centre at ground level is directly supported and not diminished through underground metro station access points that would see people removed from interacting at ground level. The role and function of the metro station across all modes therefore needs to be carefully considered.

- **Community green space:** The current design and place principles identified for Sydney Olympic Park indicate a main station entry and focus on a large open space. GPT believes a more successful placemaking outcome revolves around a series of smaller more contained spaces that are activated by retail and dining with other more passive spaces surrounded by residential. Opportunities for a layering and multi-level approach to community spaces has also been identified.
- **Event mode:** The new metro and surrounding public domain will need to support the day to day activities of an active, progressive and vibrant urban place along with accommodating through intelligent and intuitive design the more infrequent large scale events that occur at Sydney Olympic Park. GPT also aspires to create a place outcome that supports Sydney Olympic Park as a destination beyond its historic and current association with sports and entertainment.
- **Intuitive interchange:** It is assumed second northern entry off Dawn Fraser Avenue would be via tunnel (over 100 metres long) under the heritage Abattoir precinct. This may not be sound from a placemaking perspective, noting it would affect the activation and vibrancy of the town centre, taking people off the street. An at-grade solution should be investigated to provide direct and convenient access from the main station entry north towards Dawn Fraser Avenue and the existing Sydney Trains Olympic Park Station. This would encourage activation of the ground plane as well as improve safety for visitors through passive surveillance.
- **East-west permeability:** Connections to and through the town centre are critical, not only to cater for game day or event mode, but also to promote the visual and physical access. East-west streets and lanes prevent the town centre core from being a full stop to the potential redevelopment to the sites to the east and start to set up a framework of pedestrian focused movement. Barriers to east-west pedestrian flows and visibility because of the station design should be avoided.

Response

As acknowledged in the submission, Sydney Metro supports the creation of a new town centre and emphasis on Sydney Olympic Park as a premier destination for major events in line with the principles outlined in the *Sydney Olympic Park Master Plan 2030*. Integration with the Master Plan was a key consideration in site selection for Sydney Olympic Park metro station. Sydney Metro would continue to work with the Department of Planning, Industry and Environment, Sydney Olympic Park Authority and other relevant stakeholders so that Sydney Olympic Park metro station is integrated with and supports the Master Plan.

Chapter 7 (Placemaking) of the Environmental Impact Statement identifies the following preliminary place and design principles for Sydney Olympic Park metro station:

- Support the creation of a new town centre and reinforce Sydney Olympic Park as a premier destination for major events in line with the principles outlined in the *Sydney Olympic Park Master Plan 2030*
- Deliver a station and public domain designed to support day to day activities and flexibility to accommodate major events and periodic large crowds
- Facilitate east-west access from Olympic Boulevard to the station and town centre to accommodate event crowds
- Enhance permeability with new pedestrian links and connections to places within the wider station precinct supported by active street frontages, and new open spaces
- Ensure the station provides easy, safe and intuitive interchange with other modes of transport, during day to day operation and events.

The design of Sydney Olympic Park metro station would include strategies to separate event and non-event customer flows, to enable operational efficiency to be achieved during major events.

Sydney Metro has commenced engagement with local councils and other relevant stakeholders to seek feedback on preliminary place and design principles. Sydney Metro would continue to engage these stakeholders throughout detailed design development. The placemaking comments included in the GPT Group submission would be further considered in detailed design development.

7.25.5 Stage 1 description

Tunnel boring machine retrieval

Issues raised

There is an 18-month lag period between these two tunnel boring machines being retrieved at Sydney Olympic Park. Clarification is sought from Sydney Metro as to why there is such a significant time difference. Potential benefits that could be realised by having these tunnel boring machines retrieved at a similar time include reduced disruption and the ability to bring forward station works. Alternatively, the Sydney Olympic Park metro station construction site could be used as the launch site for the eastern and western tunnel boring machines.

Response

The program provided in Chapter 9 (Stage 1 description) of the Environmental Impact Statement is indicative. The actual program may vary and is subject to the final delivery strategy and actual construction program to be agreed with the successful contractor for each work package. The timing of tunnel boring machine retrieval at Sydney Olympic Park is influenced by a number of factors including timing of procurement of construction packages, site access to the tunnel boring machine launch sites, the necessary works at those sites prior to commencement of tunnelling and the length of each tunnel drive. Sydney Metro is continuing to explore opportunities to enable efficient construction at all sites.

Principles influencing the selection of tunnel boring machine launch and retrieval sites are detailed in Section 3.7.4 of the Environmental Impact Statement. The Sydney Olympic Park metro station construction site was identified as a preferred tunnel boring machine retrieval site, as it would provide sufficient land to support tunnel boring machine retrieval activities due to its open cut-and cover construction method and surrounding wide modern streets. The site would minimise impacts on residential properties relative to other nearby site options and would have direct access to the arterial road network and the M4 Motorway.

7.25.6 Stakeholder and community engagement

Future consultation

Issues raised

As a key stakeholder and landlord, ongoing consultation with GPT during the construction works will be critical. GPT Group would welcome participation in any future Community Consultative Committee that is established.

Response

Sydney Metro will continue to work with stakeholders and the community to ensure they are informed about Sydney Metro West and have opportunities to provide feedback. This will include ongoing consultation with key stakeholders such as GPT Group, local councils and other government agencies.

7.25.7 Transport and traffic

Construction traffic

Issues raised

Works at Sydney Olympic Park are proposed to involve trucks entering and exiting the construction site to the north-east along Herb Elliot Drive (directly passing GPT's office at 6 Herb Elliot Drive). The location of the access point in relation to 6 Herb Elliot Drive along with the concentration and quantity (over 306 trucks per day) of construction traffic along Herb Elliot Drive will need to be carefully considered and managed. Options to rotate access points could be investigated to provide respite to surrounding businesses.

Response

Construction traffic entering and leaving the Sydney Olympic Park metro station construction site would be managed in accordance with the *Construction Traffic Management Framework* included in Appendix F of the Environmental Impact Statement. This would include minimising construction traffic during road network peak periods and implementing measures to avoid heavy vehicles queuing on the road network near the worksite.

Access and parking during construction

Issues raised

The Environmental Impact Statement notes the potential for partial or full closure of Herb Elliot Avenue to facilitate the construction works. Any such proposal will need to ensure the continued access and use of parking at 6 Herb Elliot Drive. Further, any proposal to relocate the taxi rank parking should not be at the expense of existing on-street parking in front 6 Herb Elliot Drive. These spaces provide an important function for existing tenants.

Response

Additional engineering and design investigations have been undertaken to explore construction methodology options to minimise the proposed construction impacts associated with the construction of the northern pedestrian entry at Sydney Olympic Park. As a result, the construction methodology for the northern pedestrian entry at Sydney Olympic Park metro station is proposed to be changed from cut and cover to a mined tunnel with a cut and cover shaft. This would avoid the need for the temporary closure of Herb Elliott Avenue discussed in Section 10.10.2 of the Environmental Impact Statement and would minimise the impacts on the heritage listed Abattoir Heritage Precinct garden. Refer to the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report*.

The taxi rank on the southern side of Herb Elliott Avenue adjacent to the construction site would be temporarily relocated to an alternative site close to its current location. Mitigation measure TT16 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report requires that relocation of taxi ranks would be carried out in consultation with Transport for NSW, the relevant local council and taxi operators. Potential impacts on parking would be considered in deciding on a temporary location.

7.26 National Trust of Australia (NSW)

7.26.1 Non-Aboriginal heritage

Impacts to heritage

Issues raised

The proposed tunnel route passes through Parramatta Park which is State, National and World Heritage listed and is in proximity to the National Trust's own property Old Government House. The National Trust seeks assurances that there will be no adverse impacts on Old Government House and the historic landscape of Parramatta Park.

Response

The project would have no direct or indirect impacts to Old Government House.

The design development of Stage 1 has included a focus on avoiding or minimising potential non-Aboriginal heritage impacts which has included developing a tunnel alignment that avoids potential direct impacts to heritage items, in particular Old Government House within Parramatta Park.

There is potential for locally significant and state significant archaeology within the buffer zone of Parramatta Park and Old Government House to be impacted by the Westmead power supply route, which runs along Macquarie Street, Pitt Street and Park Parade. Due to the location of the power supply route along road reserves, the potential for archaeology is considered to be low.

Impacts to archaeology

Issues raised

The National Trust has concerns regarding the archaeological impacts of positioning the new Parramatta metro station in the centre of Parramatta, including:

- Impacts to State significant early colonial evidence in the form of convict huts and occupation evidence of early settlement
- c.1860s Ritchie Iron works.

The location is likely to require full archaeological salvage of any remaining historical archaeological resources in that area, which are assessed as both highly significant and very rare in Parramatta.

Response

As per measure NAH8 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, in the event that State significant archaeology associated with early convict occupation is located at Parramatta metro station:

- In-situ conservation would be considered. If in-situ conservation is not feasible and reasonable, a strategy to mitigate impacts would be prepared in consultation with the NSW Heritage Council (or delegate).
- An Archaeological Method Statement would be prepared in consultation with the NSW Heritage Council (or delegate) for management of the archaeological remains, whether for conservation or archaeological investigation and recording
- An accessible publication would be prepared within two years of archaeological excavations to document the archaeological investigations
- Sydney Metro would provide for the meaningful curation, display and public access of any artefacts collected. This may involve partnerships with museums, local heritage centres and/or universities.

Regarding the c. 1860s Ritchie Iron works, an archaeological research design would be prepared and implemented identifying archaeological testing or monitoring requirements at Parramatta metro station, which would be carried out in accordance with Heritage Council guidelines, and where appropriate supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology (measure NAH6). An Archaeological Excavation Report would also be prepared by the Excavation Director and be provided to NSW Heritage Council within two years of the completion of archaeological excavations specified in the archaeological research design (measure NAH7).

Vibration impacts

Issues raised

The National Trust is concerned at the direct impacts of proposed tunnelling on the Parramatta Roxy Theatre which is both listed on the National Trust Register and listed on the State Heritage Register. Chapter 12 of the Environmental Impact Statement indicates the project would result in settlement of 25 millimetres resulting in possible superficial damage to the Parramatta Roxy Theatre which is unlikely to have structural significance. The Trust questions what monitoring will be put in place to determine settlement and vibration impacts and if superficial damage or even significant structural damage does occur, how that damage will be rectified, and the rectification funded.

Response

The reference to settlement of 25 millimetres at the location of Roxy Theatre is based on preliminary settlement contours. As required by measure GW5 in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report, detailed geotechnical model for Stage 1 of the works for Sydney Metro West would be developed and would include assessment of the potential for damage to structures, services, basements and other subsurface elements through settlement or strain. 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. Condition surveys of buildings and structures in near the tunnel and excavations would also be carried out prior to the commencement of excavation at each site (mitigation measure GW6).

As the vibration levels have the potential to exceed the cosmetic damage screening criteria, a 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. This 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 (refer to mitigation measure NV16).

7.26.2 Concept impacts

Issues raised

The National Trust is concerned about the potential heritage impacts and demolition of heritage buildings required during construction of stations in future stages of the project. The National Trust urges Sydney Metro West to consider station locations so to minimise these potential heritage impacts.

Response

Consistent with the performance outcomes identified in Chapter 8 (Concept environmental assessment) of the Environmental Impact Statement, Sydney Metro would continue to focus on avoiding and minimising potential heritage impacts during the design development for future stages of Sydney Metro West. The performance outcomes are as follows:

- Direct impacts on World Heritage and National Heritage List items are avoided
- Impacts on State Heritage Register items are avoided or minimised so that the overall heritage value of the item is maintained
- Impacts to non-Aboriginal heritage items and archaeology are avoided or minimised where feasible and reasonable
- Accidental impacts to heritage items are avoided
- Design is sympathetic to retained and adjacent heritage items
- Appropriately qualified and suitably experienced heritage architect and relevant stakeholders are consulted during design
- The design of stations include non-Aboriginal heritage interpretation.

Non-Aboriginal heritage impact assessments would be carried out for future stage(s) to determine potential impacts during both construction and operation.

7.27 Parramatta Chamber of Commerce

7.27.1 Support for project

Support

Issues raised

The Parramatta Chamber of Commerce supports Sydney Metro West.

Response

The Parramatta Chamber of Commerce's support is noted.

7.27.2 Development and alternatives

Station alternatives

Issues raised

The submission raised the following regarding station alternatives:

- Given that the Rydalmere/Camellia area could be serviced in the future by another metro line, provision should be made as part of Sydney Metro West to connect these lines and link to the light rail
- A station in the Rydalmere/Camellia area would allow people to access Parramatta and the Rosehill Gardens racecourse
- A station in the Rydalmere/Camellia area would contribute to continued growth of the area and provide access to businesses, facilities, tourism and extended residential development
- A station in the Rydalmere/Camellia area would provide further access to the Sydney CBD
- A station in the Rydalmere/Camellia area should be considered instead of a station at Pyrmont, as Pyrmont has other rapid transport alternatives.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at both Rydalmere and Camellia as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would also have been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

A station at Rydalmere was ruled out given its distance from the proposed railway alignment and the additional time it would add to the journey between Parramatta and the Sydney CBD.

7.27.3 Non-Aboriginal heritage

Housion House

Issues raised

The submission raised concerns that the development of the proposed Parramatta metro station would impact on the historic Housion House in Macquarie Street, Parramatta.

Response

Housion's Cottage, located at 64 Macquarie Street Parramatta, is identified in the Parramatta Local Environmental Plan 2011 as 'Kia Ora' (and potential archaeological site) (Item no. 1716).

The heritage-listed structure at Kia Ora at 62-64 Macquarie Street would be retained and preserved. The potential indirect impacts to this item are discussed in Chapter 12 (Non-Aboriginal heritage) of the Environmental Impact Statement. Demolition and construction near Kia Ora would change the configuration and presentation of the site and would potentially temporarily detract from the historic quality of the 19th century residence. The construction site would result in an additional visual impact on Kia Ora, although this would be temporary in nature.

Measures to address heritage impacts are included in Chapter 8 (Revised environmental mitigation measures) of this Submissions Report.

7.27.4 Beyond scope of the project

Other transport projects

Issues raised

The submission raised a concern that there is a disconnect between the north-south metro and the North-West Metro by the failure to complete the section between St Marys and Tallawong as part of the first stage, and noted that a link to the Western Sydney International Airport would be essential to the North West.

Response

Sydney Metro West was developed within the framework of the *Future Transport 2056* strategy, the long-term transport plan for New South Wales. The plan includes a range of infrastructure projects which support the delivery of homes and jobs in Greater Sydney, consistent with the Greater Sydney Commission's *Sydney Region Plan*.

A north-south metro link between St Marys and Tallawong is beyond the scope of Sydney Metro West. A Scoping Report for Sydney Metro – Western Sydney Airport was released in June 2020 and an Environmental Impact Statement was released in October 2020. A potential metro line between St Marys and Tallawong is identified in the *Future Transport 2056* strategy.

7.28 Property Council of Australia (NSW) (joint submission with UDIA, Western Sydney Business Chamber, Urban Taskforce)

7.28.1 Development and alternatives

Station alternatives

Issues raised

The submission raised concerns that a station should be considered at Camellia for the following reasons:

- A metro station located in proximity to the Camellia Town Centre would catalyse major urban renewal

- The distance between Sydney Olympic Park and Parramatta is too long
- An alternative route incorporating a station at Camellia can be delivered through an additional 200 metres of tunnelling, which should be prioritised
- Camellia is an important future centre which could provide 5,000 jobs and 10,000 dwellings
- Camellia holds long-term potential to strategically extend the land footprint of the Parramatta CBD as a 'planned precinct'

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the strategic planning for the Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment considered a range of factors, including stakeholder feedback, alignment with key government priorities and project objectives, technical and construction considerations, affordability, economic evaluation and risk assessment.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia Town Centre masterplan. Significant remediation works would also have been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

7.29 Royal Agricultural Society of NSW

7.29.1 Support for project

Support

Issues raised

The proposed Sydney Metro West project is supported by the Royal Agricultural Society (RAS) of NSW and we are excited about opportunities for the future that will also enable Sydney Olympic Park to connect to the massive opportunities to be created by the Western Sydney Airport.

Response

Royal Agricultural Society of NSW support is noted.

7.29.2 Strategic need and justification

Project demand

Issues raised

The Royal Agricultural Society has plans before Government for the improvement of the Government owned Showground site. This development once delivered will create substantial demand for the Sydney Metro West service, particularly from Monday to Friday. It is paramount to the success of Sydney Olympic Park and the proposed metro station that this development is complete prior to the completion of Sydney Metro West or, demand for the service at Sydney Olympic Park will be sub-optimal.

Response

The Royal Agricultural Society's plans for development in Sydney Olympic Park are noted. As identified in Chapter 2 of the Environmental Impact Statement, Sydney Metro West is required to provide increased transport network capacity and reduce crowding on trains and at stations along the T1 Western Line and T9 Northern Line. While it is acknowledged that the Royal Agricultural Society of NSW's plans for a development in Sydney Olympic Park would result in an increase in demand for the service at Sydney Olympic Park, the need for the project is not dependent on any one development.

7.29.3 Development alternatives

Station alternatives

Issues raised

With the decision to not include a station at Rydalmere in the current scheme, that the importance of Parramatta Light Rail Stage 2 (or its equivalent) has become more acute as, without this the opportunity to link to the burgeoning suburbs of Melrose Park and Wentworth Point to create an efficient network of transport will be lost and the creation of a 'Place' at Sydney Olympic Park will be significantly diminished.

Response

The delivery of the planned Parramatta Light Rail Stage 2 is outside of the scope of Sydney Metro West. Further information on Parramatta Light Rail Stage 2 can be found at: www.parramattalightrail.nsw.gov.au/

7.29.4 Noise and vibration

Noise impacts

Issues raised

Part C, Section 11 of the application identifies two Noise catchment Areas (NCA 08 and 09) and sensitive receivers (L08 and 09) and suggests noise and vibration impacts are anticipated to be mitigated with no impacts identified on Royal Agricultural Society property, however neither of the receivers are located close to the Dome or Exhibition Halls. The Royal Agricultural Society expressed concerns about these findings. The Royal Agricultural Society notes Sydney Showground operates a 'sensitive' business events business outside the Sydney Royal Easter Show with many events such as exams, exam marking and conferences, requiring quiet in order to operate and function. The Royal Agricultural Society has requested that specific testing be undertaken in this location to ascertain what impacts can be expected and what appropriate solutions will be employed to ensure business and clients will be unaffected by either construction or operation of the project.

Response

Section 4.1.1 of Technical Paper 2 (Noise and vibration) notes that a noise model of the Stage 1 study area has been used to predict noise levels from the Sydney Olympic Park construction site to the surrounding receivers. The model uses SoundPLAN computer software to predict the noise levels at external building facades of each receiver. Local terrain, receiver buildings and structures were digitised in the noise model to develop a three-dimensional representation of the construction sites and surrounding areas. As such further noise assessment is not required.

Based on this assessment, Stage 1 construction works at Sydney Olympic Park metro station are predicted to comply with the applicable noise management levels at the Dome and the Exhibition Halls.

As per mitigation measure NV01 (refer to Chapter 8 of this Submissions Report), further engagement and consultation would be carried out with the affected community to understand their preference for mitigation and management measures. As per mitigation measure NV03, appropriate respite would be provided where warranted, to affected receivers in accordance with the *Sydney Metro Construction Noise and Vibration Standard*.

Vibration impacts

Issues raised

The Royal Agricultural Society notes an identified tunnel depth of approximately 20 metres at Murray Rose Avenue, the location of the Royal Agricultural Society Administration Building and Dome Foyer and the key access point for many of the business and entertainment events held at Sydney Showground. It should be noted that existing occupied service tunnels under these locations have a depth of approximately four metres below ground level and should be thoroughly investigated to ensure sufficient depth is created to mitigate any potential construction noise or vibration impacts both during construction and operation. It should also be noted that the 'piers' supporting the Dome Foyer are of a greater depth than the aforementioned service tunnels.

Response

Section 11.5.2 of the Environmental Impact Statement considers the potential worst-case vibration impacts from the tunnel boring machines. Based on the vibration model, no properties would be affected within Sydney Olympic Park.

Appendix F of Technical Paper 2 (Noise and vibration) identifies buildings in Sydney Olympic Park which are likely to be subject to ground-borne noise impacts during tunnelling works and identifies that the Royal Agricultural Society of NSW Administration Building would experience minor ground-borne noise impacts of between 0-10 dB above the noise management level.

The tunnel boring machines are expected to progress at a rate of between 20 metres per day. This means the worst-case ground-borne noise impacts from tunnelling at a receiver would likely only be apparent for a few days for each tunnel boring machine as they pass beneath. Further, the ground-borne noise predictions are based on the nearest sensitive receivers and most exposed floor (i.e. ground floor for commercial and assumed lowest habitable floor for residential). The ground-borne noise impacts would reduce for sensitive receivers which are further away from the alignment or for receivers higher up in buildings.

Detailed information regarding basements and service tunnels is generally not available at the Environmental Impact Statement stage and the assessment in the Technical Paper 2 represents the predictions at ground level for most receivers. Site specific details of individual receivers, such as the presence of basements and/or service tunnels, would be factored in to more detailed assessment during detailed design.

7.30 Sydney Business Chamber

7.30.1 Support for project

General support

Issues raised

The Sydney Business Chamber supports the prioritisation and fast tracking of this project. Notwithstanding improvements to the Western Line and the more recent completion of the early stages of WestConnex, congestion and transit times have considerably worsened. Without a new, high volume and high-speed transport connection, both the road and rail connections between the Sydney CBD and Parramatta will be soon be overwhelmed.

Response

The Sydney Business Chamber's support is noted.

7.30.2 Development and alternatives

Station alternatives

Issues raised

The submission questions the justification for The Bays Station suggesting its inclusion is not based on current information, studies, and economic benefit. The following issues are raised:

- Much of the original argument supporting a station at The Bays was based on the perceived need for better transport to support greater commercial and residential density, however in recent years many of the original assumptions which underpin the strategic case for The Bays Precinct's urban renewal have been challenged. Much of the original rationale for this station is now gone because of changes to the WestConnex interchange at Rozelle and the fact that much of The Bays Precinct can still be developed (such as the Fish Markets and Rozelle Stabling Yards) without an enabling metro station.
- The Greater Sydney Commission planning directive "A city that Works" clearly states that the critical shortage of employment lands in the Eastern City means areas like White Bay should not be lost from industrial and port activity. The White Bay and Blackwattle Bay employment lands are the only substantial industrial zoned lands adjacent to a deep-water port outside the privately owned ports at Botany and Port Kembla.
- It is questionable whether development in much of the precinct is still compliant with the directions of the new finalised *A Metropolis of Three Cities – The Greater Sydney Regional Plan*.

Response

The *Eastern City District Plan* (Greater Sydney Commission, 2018b) identifies the Bays Precinct for urban renewal opportunities to transform the Eastern Harbour CBD, expanding the innovation corridor of the CBD. The Bays is identified as a new world-class destination and employment hub where 95 hectares of land is being regenerated. Sydney Metro West would enable The Bays to be developed to its full potential, with a focus on improved international competitiveness and knowledge-based jobs.

The comments regarding retention of industrial and urban services land, and the issues discussed in *A Metropolis that Works* (Greater Sydney Commission, 2018c) are acknowledged. The Bays Station would not compromise port and related land side activities as part of the masterplan for the Bays Precinct and would affect land is generally unused or used for temporary port-related activities.

Strategic station options

Issues raised

The submission argues a metro station at Pyrmont is a higher priority than a station at The Bays. The following comments were raised:

- One of the biggest impediments holding back the Pyrmont/Ultimo precinct is its relatively poor connectivity with the rest of the Sydney. While it is near the CBD, Darling Harbour presents a significant barrier to both pedestrians, services, and deliveries.
- Almost all of the Pyrmont/Ultimo precinct is outside the 800 metre 'Ped shed' for any of the stations on the City Circle or Northern lines. Other transport services such as buses and ferries are constrained, and the road network is at capacity.
- For the government to realise its aspiration of employment and economic growth by expanding the CBD to encompass Pyrmont/Ultimo, areas of connectivity deficit need to be addressed
- The approved redevelopment of the Fish Markets site for a mixed used, high density development, and the approved new and larger Fish Markets on Blackwattle Bay, much closer to a potential station at Pyrmont than they are to the proposed station at The Bays. The entire eastern half of The Bays Precinct is better serviced by a station at Pyrmont.

Response

The strategic opportunities of a station at Pyrmont are acknowledged and identified in the Environmental Impact Statement. The feasibility and affordability of the Pyrmont Station option is currently being investigated as a strategic station option. The Pyrmont strategic station option is discussed in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement.

7.30.3 Beyond the scope of the Environmental Impact Statement

Other transport projects

Issue raised

The Chamber notes if the government remains committed to activating the western Bays area with greater development density perhaps alternative transport options could be considered, such as a short extension of the Inner West Light Rail. The Environmental Impact Statement gives a clear indication that the construction of a metro station at The Bays would be the most expensive of all the stations along the route. Extending the light rail would be much cheaper.

Response

As outlined in Section 3.3.3 of the Environmental Impact Statement, light rail is generally complementary to mass transit modes, bringing customers to and dispersing them from the major transport hubs served by the Sydney Trains suburban rail network and metro rail services. The current and planned light rail network would largely serve local demand and provide feeder services to mass transit spines (currently the Sydney Trains suburban rail network), rather than providing connectivity across the entire corridor. Light rail cannot wholly support the large hourly commuter movements that are provided for by metro rail. Sydney Metro West would provide the transport accessibility to enable The Bays to be developed to its full potential, with a focus on improved international competitiveness and knowledge-based jobs.

The Environmental Impact Statement does not include any information relating to the costs of stations and does not provide any indication of the cost of The Bays Station in relation to the other proposed metro stations.

7.31 Sydney Olympic Park Business Association

7.31.1 Support for project

Support

Issue raised

The Sydney Olympic Park Business Association supports Sydney Metro West.

Response

The Sydney Olympic Park Business Association's support is noted.

7.31.2 Placemaking

Activation of public spaces

Issue raised

The submission encourages the activation of the areas surrounding the Sydney Olympic Park Metro Station to provide a good transport experience for commuters and potential investment opportunities.

Response

Preliminary place and design principles have been developed for each Sydney Metro West station and facility, including Sydney Olympic Park metro station. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. The principles build upon the five Sydney Metro-wide design objectives (refer to Section 7.3.3) and have considered relevant local council strategies and *Better Placed* design objectives.

Preliminary place and design principles for Sydney Olympic Park metro station are included in Chapter 7 (Placemaking) of the Environmental Impact Statement and include a focus on enhancing permeability with new pedestrian links and connections to places within the wider station precinct supported by active street frontages, and new open spaces.

Detailed design of stations, interchange and public domain elements would be developed and subject to assessment in future stage(s) of Sydney Metro West. The design of the station and precincts would be informed by design objective and principles along with feedback from the community and stakeholders.

7.31.3 Stakeholder and community engagement

Consultation

Issue raised

The submission raised the following regarding stakeholder and community engagement:

- Sydney Metro should provide timely, high level information on project benefits to all stakeholders and residents across the alignment of the project in order to mitigate negative responses to disruptions during construction
- Sydney Metro should conduct regular one-on-one communications and a genuine two-way dialogue with major stakeholders
- Membership of the Sydney Olympic Business Association would be an opportunity for Sydney Metro and its partners to communicate with key stakeholders.

Response

Information on the benefits of Sydney Metro West are provided in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement.

Sydney Metro will continue to work with stakeholders and the community to ensure they are informed about Sydney Metro West and have opportunities to provide feedback. Sydney Metro would also specifically consult with stakeholders to plan mitigation measures. These consultation activities would involve:

- Ongoing consultation with key stakeholders, local councils and other government agencies
- Provision of regular updates to the nearby communities
- Development and implementation of a community complaints and response management system.

7.31.4 Beyond the scope of the project

Other transport projects

Issues raised

The submission encourages the construction of the Parramatta Light Rail Stage 2 to be delivered in conjunction with or prior to the opening of the Sydney Metro West to create a functional transport network.

Response

The delivery of the planned Parramatta Light Rail Stage 2 is outside of the scope of Sydney Metro West. Further information on Parramatta Light Rail Stage 2 can be found at: www.parramattalightrail.nsw.gov.au

7.32 University of Sydney

7.32.1 Beyond scope of the project

Addition to proposed metro alignment

Issues raised

The University of Sydney would like to express their interest in engaging with the Department of Planning, Industry and Environment to consider options for incorporating a spur line or switchback addition to the proposed alignment to provide access to the Camperdown-Ultimo Health and Education Precinct.

Response

An addition to the proposed alignment to provide access to the Camperdown-Ultimo Health and Education Precinct is beyond the scope of Sydney Metro West. The NSW Government is considering potential public transport improvements for south east Sydney, including the area around the University of Sydney, as identified in the *South East Sydney Transport Strategy* released in August 2020.

The Concept includes a station in the Sydney CBD that would enable transfer to and from the Camperdown-Ultimo Health and Education Precinct via existing public transport networks, including the suburban rail network and bus networks.

7.33 Urban Development Institute of Australia (UDIA) NSW

7.33.1 Development and alternatives

Station alternatives

Issues raised

UDIA considers a station between Sydney Olympic Park and the Parramatta CBD is critical to creating the second CBD to provide further growth opportunities with jobs and housing in a mixed-use precinct of the Second CBD's inner-city.

Camellia should be considered as a station alternative as:

- It could strategically extend the footprint of the Parramatta CBD by rezoning employment lands
- It represents an intergenerational placemaking opportunity to renew derelict and underutilised land in Greater Parramatta and provides a substantial opportunity for urban renewal with opportunity to provide 38,000 jobs and 3,500 dwellings
- It would be supported by landholders who are prepared to provide funding for the variation.

UDIA NSW requests that the project prepares an option assessment for a metro station at Camellia.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the early strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would have also been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

7.34 Urban Taskforce Australia

7.34.1 Development and alternatives

Station alternatives

Issues raised

Urban Taskforce Australia commented that Camellia holds the long-term potential to strategically extend the land footprint of the Parramatta CBD by rezoning employment lands as exhibited by the Department of Planning, Industry and Environment in 2018 as a 'Planned Precinct' with proposed changes to zoning likely to result in 5,000 new jobs and 10,000 new dwellings in Camellia.

Urban Taskforce strongly supports the inclusion of a metro station stop at Camellia as it would provide a catalyst for major urban renewal and result in significant uplift in employment and residential floorspace. Urban Taskforce believes that a station at Camellia has not been properly considered based on the evaluation described in Table 3-8 within the Environmental Impact Statement and believes there is potential for outperformance for many of the evaluation criteria.

The distance between Sydney Olympic Park and Parramatta is approximately 7 kilometres. It is highly unusual for metro rail lines to have such long distances between stations. Urban Taskforce identified an alternative route which would allow for a station at Camellia and only require an additional 200 metres of tunnelling.

The Urban Taskforce requests that Sydney Metro urgently prepares an option for a metro station at Camellia considering all the evidence and includes only the marginal cost of the preparation of a station box at Camellia along with a modest re-alignment of the route.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would also have been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

7.34.2 Stakeholder and community engagement

Consultation prior to the Environmental Impact Statement

Issues raised

Urban Taskforce believes there has been inadequate consultation with industry, the community and local Council.

Response

Stakeholder and community consultation for Sydney Metro West has played an integral part of the project's development and has informed scoping investigations for this Environmental Impact Statement, and will continue to do so through ongoing project development and construction.

Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement describes that two rounds of community consultation were undertaken during the development phase of the project to increase awareness, help define and refine the scope, and collect community feedback. During round one in 2017, consultation was completed along a broad study area between Greater Parramatta and the Sydney CBD (refer to Figure 5-1 of the Environmental Impact Statement). Round two of community consultation activities occurred in 2018 over a refined area which is shown in Figure 5-2 of the Environmental Impact Statement.

During exhibition of the Environmental Impact Statement, Sydney Metro used all feasible channels to reach as many people as possible to inform them about exhibition of the Environmental Impact Statement and to call for submissions and feedback – refer to Chapter 4 (Stakeholder and community involvement) of this Submissions Report. Sydney Metro engaged with stakeholders and the community through virtual means. This included:

- Virtual community engagement (including an interactive portal, virtual information room and virtual community meetings)
- Stakeholder briefings (including local government, NSW Government agencies, peak bodies and industry associations)
- Phone calls and emails.

Sydney Metro engaged with more than 15,000 people over the eight-week exhibition period.

If the project is approved, further engagement and consultation would be carried out with communities near construction sites. Future engagement and consultation would be undertaken in accordance with the *Overarching Community Communications Strategy* (Appendix B of this Submissions Report).

7.35 Western Sydney Business Chamber

7.35.1 Support for project

Support

Issues raised

The Western Sydney Business Chamber supports Sydney Metro West. The Chamber notes that Sydney Metro West would encourage greater investment and growth in Parramatta and would support 10 000 direct and 70 000 indirect jobs during construction. The Western Sydney Business Chamber also supports the future-proofing of Sydney Metro West and an extension from Westmead to the Western Sydney Airport as the next stage of the metro line.

Response

The Western Sydney Business Chamber's support is noted.

The *Future Transport 2056* strategy identifies a mass transit link from Greater Parramatta to Western Sydney Airport as a city-shaping corridor. The *Western Sydney Rail Needs Scoping Study – Outcomes Report* jointly developed between Australian Government's Department of Infrastructure, Regional Development and Cities and the NSW Government's Transport for NSW in 2018 identifies an East-West link from Greater Parramatta to Western Sydney Airport as part of the preferred network for Western Sydney. Corridor protection for the East West Rail Link was a recommendation of this report. The NSW Government has commenced protecting a corridor for the future East West Rail Link with Stage 1 between the Aerotropolis near Bringelly and Kemps Creek protected through the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020. Stage 2 is between the Aerotropolis near Kemps Creek and Greater Parramatta and this section of the corridor will be identified in collaboration with other Government agencies.

As outlined in Chapter 2 (Strategic need and justification) of the Environmental Impact Statement, Sydney Metro West would help safeguard a future extension west of Westmead, which could connect to the Western Economic Corridor.

7.35.2 Development and alternatives

Justification

Issues raised

Further information is requested regarding the benefits of the project to the T1 Western Line between Penrith and Westmead. Construction of the Western Sydney Airport is likely to add additional commuters to this line and the benefits of Metro West appear to be focused east of the Central city.

Response

Sydney's growing population will continue to increase demand on the existing transport network within the region. Despite planned upgrades and additional services which will provide some short-term relief, T1 Western Line is expected to reach capacity in 2024. By providing additional rail services, Sydney Metro West would significantly reduce train crowding on the T1 Western Line. This would help improve the reliability of Sydney Trains services and improve customer comfort. Train crowding relief would occur on parts of the T1 Western Line, including at Westmead, due to direct interchange with Sydney Metro West. Sydney Metro West would also reduce congestion and help alleviate platform and station crowding along the T1 Western Line.

The NSW Government is currently planning projects to service Western Sydney Airport such as Sydney Metro – Western Sydney Airport.

The *Future Transport 2056* strategy identifies a mass transit link from Greater Parramatta to Western Sydney Airport as a city-shaping corridor. The *Western Sydney Rail Needs Scoping Study – Outcomes Report* jointly developed between Australian Government's Department of Infrastructure, Regional Development and Cities and the NSW Government's Transport for NSW in 2018 identifies an East-West link from Greater Parramatta to Western Sydney Airport as part of the preferred network for Western Sydney. Corridor protection for the East West Rail Link was a recommendation of this report. The NSW Government has commenced protecting a corridor for the future East West Rail Link with Stage 1 between the Aerotropolis near Bringelly and Kemps Creek protected through the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020. Stage 2 is between the Aerotropolis near Kemps Creek and Greater Parramatta and this section of the corridor will be identified in collaboration with other Government agencies.

Sydney Metro West would include the provision of stub tunnels from the twin tunnels near Westmead metro station to safeguard a potential future extension of the metro network.

Sydney Metro West would attract some customers from further west of the Sydney Metro West corridor (that is, west of Westmead), who would use Sydney Metro West for part of their journey by interchanging at Westmead instead of using the suburban rail service the whole way to reach their destinations. For trips originating from Penrith to the Sydney CBD, it is expected that Sydney Metro West would attract around 41 per cent of these customers due to the net travel time saving, even when including interchange time.

Construction program

Issues raised

The submission raised the following issues relating to the construction program:

- Westmead station should be delivered faster.
- Construction program of Sydney Olympic Park station should be minimised. Western Sydney Business Chamber recommends that construction of the buildings above the station box should commence before the station is completed.

Response

The actual program and commencement of the civil works at each construction site may vary and is subject to the final delivery strategy and actual construction program to be agreed with the successful contractor for each work package.

Integrated station and precinct developments do not form part of the State significant infrastructure application and would be subject to separate environmental assessments and planning approvals processes. The Sydney Olympic Park metro station would however be designed to take into account, and make physical provision for, any design or other requirements associated with future integrated station and precinct development.

Number of stations

Issues raised

Western Sydney Business Chamber supports a station at Camellia.

Response

As identified in Chapter 3 (Sydney Metro West development and alternatives) of the Environmental Impact Statement, Sydney Metro undertook a comprehensive analysis of including a station at Camellia as part of the strategic planning for Sydney Metro West. This assessment precluded a station at Camellia/Rosehill in 2019.

The assessment 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.

A station at Camellia was not progressed as there were technical constraints on the constructability due to flood protection requirements, as well as potential impacts on basements associated with the draft Camellia masterplan. Significant remediation works would also have been required which would have impacted construction timing.

The NSW Government is delivering Stage 1 of Parramatta Light Rail which will connect Westmead to Carlingford via the Parramatta CBD and Camellia.

7.35.3 Station design

Active transport

Issues raised

Westmead Station should be given active transport opportunities.

Response

One of the major preliminary place and design principles for Westmead metro station is to facilitate safe, equitable and legible connections with active transport. Chapter 10 (Transport and traffic – Stage 1) of the Environmental Impact Statement lists the footpaths, pedestrian crossings and cycle networks which already exist near the Westmead metro station. Sydney Metro West would link into the already-established active transport networks located near the Westmead metro station construction site.

Further details on active transport integration around stations would be provided as part of the assessments for future stages(s).

7.35.4 Placemaking

Station precinct

Issues raised

Placemaking around the Westmead station should include infrastructure that supports children and young adults to recognise the Westmead Children's Hospital, schools and universities in the precinct and the growing population of younger people.

Response

As identified in the *Central City District Plan* (Greater Sydney Commission, 2018), the Westmead health and education precinct is a major attribute to Westmead. The development of Westmead metro station was informed by the goal of raising the awareness of the Westmead health and education precinct. Serving the health and education precinct at Westmead was a key driver in the selection of Westmead as a core station location.

Preliminary place and design principles have been developed for each Sydney Metro West station and facility, including Westmead. The purpose of the principles is to guide future design through identifying outcomes which would be achieved at the station and in the immediate public domain and interchange area. Sydney Metro would work with key stakeholders (including relevant local and state government agencies) to refine and implement these principles. This would include consideration of infrastructure that supports children and young adults.

7.35.5 Property and land use

Acquisition

Issues raised

Sydney Metro should work with landowners at Sydney Olympic Park to avoid acquisition where possible.

Response

The Sydney Olympic Park metro station construction site would require the acquisition of three commercial premises. Sydney Metro makes every effort to avoid the need to acquire private property. Site selection for the project generally sought to minimise acquisition of residential land. All property acquisitions would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms implemented by the NSW Government. Sydney Metro has appointed Personal Managers to offer residents and small businesses assistance and support throughout the acquisition process. No further property acquisition is planned at Sydney Olympic Park.

7.35.6 Stakeholder and community engagement

Consultation

Issues raised

The Chamber recommends that consultation with stakeholders needs to be improved commenting that several members who are large landholders in affected areas have indicated they have had no direct consultation in the design process to date.

Response

Stakeholder and community consultation for Sydney Metro West has played an integral part of the project's development and has informed scoping investigations for this Environmental Impact Statement, and will continue to do so through ongoing project development and construction.

Chapter 5 (Stakeholder and community engagement) of the Environmental Impact Statement describes that two rounds of community consultation were undertaken during the development phase of the project to increase awareness, help define and refine the scope, and collect community feedback. During round one in 2017, consultation was completed along a broad study area between Greater Parramatta and the Sydney CBD (refer to Figure 5-1 of the Environmental Impact Statement). Round two of community consultation activities occurred in 2018 over a refined area which is shown in Figure 5-2 of the Environmental Impact Statement.

During exhibition of the Environmental Impact Statement, Sydney Metro used all feasible channels to reach as many people as possible to inform them about exhibition of the Environmental Impact Statement and to call for submissions and feedback – refer to Chapter 4 (Stakeholder and community involvement) of this Submissions Report. Sydney Metro engaged with stakeholders and the community through virtual means. This included:

- Virtual community engagement (including an interactive portal, virtual information room and virtual community meetings)
- Stakeholder briefings (including local government, NSW Government agencies, peak bodies and industry associations)
- Phone calls and emails.

Sydney Metro engaged with more than 15,000 people over the eight-week exhibition period.

If the project is approved, further engagement and consultation would be carried out with communities near construction sites. Future engagement and consultation would be undertaken in accordance with the *Overarching Community Communications Strategy* (Appendix B of this Submissions Report).

7.35.7 Beyond scope of the EIS

Other projects

Issues raised

The Chamber raised the following issues relating to other projects in the area:

- The Chamber encourages Sydney Metro to advocate that Parramatta Light Rail Stage 2 be delivered in time to support the opening of Sydney Metro West.

Response

The delivery of the planned Parramatta Light Rail Stage 2 is outside of the scope of Sydney Metro West. Further information on Parramatta Light Rail Stage 2 can be found at: www.parramattalightrail.nsw.gov.au/. The planned Parramatta Light Rail Stage 2 would provide a complementary service to Sydney Metro West.

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8 Revised environmental mitigation measures

This chapter provides a complete set of revised environmental management measures, highlighting how they have changed compared with the management measures in the Environmental Impact Statement.

8.1 Revised environmental mitigation measures

The approach to environmental management is provided in Chapter 27 of the Environmental Impact Statement. At this stage measures to avoid or minimise impacts have been developed only for Stage 1 works – which involves construction only. Measures applicable to the Concept including operation stage mitigation measures would be developed when planning approval applications are made for future stages.

The list of management measures presented in Chapter 27 (Synthesis of the Environmental Impact Statement) of the Environmental Impact Statement has been updated with consideration given to:

- Clarifications to the Environmental Impact Statement – as outlined in Chapter 2
- Submissions received – as addressed in Chapter 6 and 7
- The proposed amendments – as addressed in the *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b)
- Additional assessment work carried out in this Submissions Report and/or the Amendment Report to address clarifications and/or proposed amendments.

The assessment carried out for the clarifications and the proposed amendments, 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 (where impacts have now been avoided through the proposed amendments).

Table 8-1 provides the full set of revised environmental mitigation measures to avoid, mitigate and/or manage the potential impacts of Stage 1 works. 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.

Measures that have changed as a result of responding to community and agency submissions or the clarifications identified in Chapter 2 (Clarifications of the Environmental Impact Statement) are presented in yellow. Measures that have changed as a result of the proposed amendments (as outlined in the Amendment Report) are presented in green.

Table 8-1: Revised environmental mitigation measures

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
Traffic and transport			
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, including Transport Coordination and/or the Transport Management Centre's Operations Manager.	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	Additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as: - 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 - Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots, and monitor vehicle location and driver behaviour.	All
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 immediately around construction sites would be managed to minimise vehicle movements through school zones during pick up and drop off times.	WMS, PMS, BNS, FDS
TT9	Congestion	Opportunities to minimise impacts at the Alexandra Avenue/ Bridge Road intersection would be determined in consultation with Transport for NSW.	WMS
TT10	Loss of parking	Where existing parking is removed to facilitate construction activities, consultation would occur with the relevant local council to investigate opportunities to provide alternative parking facilities.	All

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
TT11	Loss of parking	Construction sites would be managed to minimise the number of construction workers parking on surrounding streets by: • 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
TT12	Change of bus stop locations	Any temporary closure or relocation of bus stops and kiss-and-ride facilities would be carried out in consultation with Transport for NSW including Transport Coordination (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	WMS, NSMS, BNS, TBS
TT13	Bus priority	Opportunities to improve bus priority along the temporary detour at Westmead metro station construction site would be investigated during detailed design.	WMS
TT14	Active transport	Pedestrian and cyclist access would be maintained during the temporary closure of Alexandra Avenue at Westmead. Wayfinding and customer information would be provided to guide pedestrians and cyclists to alternative routes.	WMS
TT15	Impacts on active transport	Where existing cyclist facilities (e.g. bicycle parking) would be temporarily unavailable to facilitate construction activities, suitable replacement facilities would be provided for this duration.	WMS, PMS
TT16	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.	SOPMS
TT17	Impacts on special events	During major special events, impacts to the transport and traffic network would be reduced by (as necessary): • 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. For special events that require specific traffic measures, those measures would be developed in consultation with Transport for NSW, including Transport Coordination (for relevant locations) and the organisers of the event.	PMS, CSMF, SOPMS
TT18	Property access	Access to existing properties and buildings would be maintained in consultation with property owners.	All
TT19	Construction vehicle impacts	Traffic control measures required at the Parramatta metro station construction site access on George Street would be determined in consultation with Transport for NSW.	PMS
TT20	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.	NSMS, FDS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
TT21	Construction vehicle impacts	Construction site traffic generated at the Five Dock Station construction site would be managed to avoid or minimise travel during the evening peak period.	FDS
TT22	Construction vehicle impacts	Construction site traffic generated at the Five Dock Station construction site would be managed to minimise movements during church service times at St Albans Anglican Church.	FDS
TT23	Construction vehicle impacts	Opportunities to provide vehicle access and egress directly to Parramatta Road and minimise the use of Loftus Street at the Burwood North Station construction site would be explored during detailed design.	BNS
TT24	Cumulative construction traffic impacts	Co-ordination of traffic management arrangements between major construction projects would occur in consultation with Transport for NSW including Transport Coordination.	TBS
TT25	Impacts on maritime traffic and waterway users	If barging of spoil is progressed, a Marine Traffic Management Plan would be developed by the construction contractor. The plan would outline the general operational plan for the movement and management of barging vessels in accordance with TT27, TT28 and TT29. The Plan would also outline the process for consultation in accordance with TT26.	TBS
TT26	Impacts on maritime traffic and waterway users	If barging of spoil is progressed, clubs which operate watercraft would be consulted about potential barging and potential changes to courses for watercraft such as yachts before the start of barging.	TBS
TT27	Impacts on maritime traffic and waterway users	If barging of spoil is progressed, barging vessel movements would be scheduled to avoid times and locations of high recreational marine traffic where feasible and reasonable in consultation with Transport for NSW.	TBS
TT28	Impacts on maritime traffic and waterway users	If barging of spoil is progressed, barging vessel movements would be managed to not interfere with port operations or the navigation of seagoing ships and ferries, unless prior approval has been obtained from the Harbour Master.	TBS
TT29	Impacts on maritime traffic and waterway users	If barging of spoil is progressed, barging vessel movements would not be undertaken during special events when navigation restrictions are in place.	TBS
TT30	Construction and operation of vehicular traffic	The design of the temporary traffic arrangements at Westmead metro station construction site would consider construction traffic, alternate bus routes and bus stops, local vehicular traffic and pedestrian safety. The design of the temporary traffic arrangements would be undertaken in consultation with Transport for NSW, Schools Infrastructure, Heath Infrastructure, relevant local councils and bus operators.	WMS
TT31	Potential parking impacts as a result of partial and full road closures required to facilitate construction works	Where existing parking is removed to facilitate construction activities for The Bays Station construction site power supply route, consultation would occur with the relevant local council, local businesses, the community and schools (where appropriate) to investigate opportunities to provide alternative parking facilities.	TBS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
TT32	Potential access and parking impacts as a result of partial and full road closures	Provision of assistance to carry shopping, luggage and other heavy or large goods between the alternative parking area at Ausgrid Rozelle sub-transmission substation (subject to final agreement between Sydney Metro and Ausgrid) and residences during times when access is limited.	TBS
Noise and vibration			
NV01	Community preference for noise mitigation and management	Further engagement and consultation would be carried out with: - The affected communities to understand their preferences for mitigation and management measures. 'Other sensitive' receivers such as schools, medical facilities or places of worship to understand periods in which they are more sensitive to impacts. Based on this consultation, appropriate mitigation and management options would be considered and implemented where feasible and reasonable to minimise the impacts.	All
NV02	Alternative construction methodologies	Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would be investigated and implemented where feasible and reasonable. This would include consideration of: - The use of hydraulic concrete shears in lieu of hammers/rock breakers - Sequencing works 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 for noise intensive works - 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 works sequencing / hours to minimise impacts during peak pedestrian times and / or adjoining neighbour outdoor activity periods.	All
NV03	Construction noise – respite periods	Appropriate respite would be provided to affected receivers in accordance with the <i>Sydney Metro Construction Noise and Vibration Standard</i>. This would include consideration of impacts from Stage 1 utility and power supply works when determining appropriate respite periods for affected receivers. When determining appropriate respite, the need to efficiently undertake construction would be balanced against the communities' preferred noise and vibration management approach.	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 works would be undertaken as early as possible in each work shift.	All

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
NV05	Night-time noise impacts	Air brake silencers would be used on heavy vehicles that access construction sites multiple times per night or over multiple nights.	All
NV06	Sleep disturbance impacts from heavy vehicles	Perimeter site hoarding would be designed with consideration of on-site heavy vehicle movements with the aim of minimising sleep disturbance impacts.	All
NV07	Noise emissions from equipment	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: • 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	For all sites where acoustic sheds are proposed, the sheds would be designed and constructed to minimise noise emissions. This 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 • The door of the acoustic shed 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.	WMS, SOPMS, BNS, FDS, TBS
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 works 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	An activity specific Construction Noise and Vibration Impact Statement (in accordance with the requirements of the <i>Construction Noise and Vibration Standard</i>) 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
NV12	Blasting Management Strategies	Blasting would be planned during hours that would cause the least disruption and disturbance to the nearest receivers. Notification protocols prior to blasting for the nearest sensitive receivers would be established.	WMS, PMS, SSF, SOPMS, NSMS, BMS, FDS, TBS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
NV13	Blasting Monitoring	~~Attended~~ Vibration and overpressure measurements would be completed at the start of any blasting activities to confirm that vibration levels are within the blasting criteria.	WMS, PMS, SSF, SOPMS, NSMS, BMS, FDS, TBS
NV14	Construction traffic noise	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 2 dB increases are predicted). The potential impacts would be managed using the following approaches, where feasible and reasonable: - 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
NV15	Noise impacts to horses at Rosehill Racecourse Stables	Consultation with the owners and operators of the horse stables near the Clyde stabling and maintenance facility construction site would be carried out so that potential impacts to horses are appropriately managed.	CSMF
NV16	Construction vibration	Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure (in consultation with a structural engineer) and ~~attended~~ 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.	All
NV17	Building condition surveys – construction vibration	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.	All
NV18	Cumulative construction noise impacts	The likelihood of cumulative construction noise impacts would be reviewed during detailed design when detailed construction schedules are available. Co-ordination would occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible. 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.	All

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
NV19	Operational road traffic noise impacts	Further assessment of operational road traffic noise mitigation would be undertaken for receivers identified as being eligible for consideration of treatment. The mitigation would likely include at-property treatment. Receivers that are identified as requiring at-receiver noise mitigation would be identified and, where possible, offered treatment prior to the start of construction works which have the potential to affect them.	WMS
Non-Aboriginal heritage			
NAH1	Archival recording	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): - Shops (and potential archaeological site) (Parramatta LEP Item No. I703) - Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716) - RTA Depot (Parramatta LEP Item No. I576) - State Abattoirs (SEPP Listing No. A) - White Bay Power Station (SHR Listing No. O1015).	PMS, CSMF, SOPMS, TBS
NAH2	Demolition	A method for the demolition of existing buildings and/or structures at specified construction sites would be developed to minimise direct and indirect impacts to adjacent and/or adjoining heritage items.	PMS, CSMF, SOPMS, TBS
NAH3	Salvage	Prior to commencement of demolition of heritage elements at White Bay Power Station within The Bays construction site, significant heritage fabric would be identified for salvage and reuse opportunities for salvaged fabric considered.	TBS
NAH4	Visual impacts	The policies of the <i>White Bay Power Station Conservation Management Plan</i> would be considered in regard to visual impacts of the Stage 1 works, particularly the acoustic shed (or other acoustic measures) and any temporary structures. Significant view lines would be retained during Stage 1 works.	TBS
NAH5	Heritage interpretation	Where heritage items, including significant archaeology are impacted by Stage 1 works, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages.	All
NAH6	Archaeology	An archaeological research design(s) would be prepared and implemented identifying archaeological testing or monitoring requirements, which would be carried out in accordance with Heritage Council guidelines, and where appropriate supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology. The archaeological research design would be implemented. Significant archaeological findings would be considered for inclusion in heritage interpretation (as per NAH5) for the project and be developed in consultation with the relevant local council.	All

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
NAH7	Archaeology	An Archaeological Excavation Report would be prepared by the Excavation Director and be provided to the NSW Heritage Division within two years of the completion of archaeological excavations specified in the archaeological research design(s).	All
NAH8	Archaeology	In the event that State significant archaeology associated with early convict occupation is located at Parramatta metro station: • In-situ conservation would be considered. If in-situ conservation is not feasible and reasonable, a strategy to mitigate impacts would be prepared in consultation with the NSW Heritage Council (or delegate) • An Archaeological Method Statement would be prepared in consultation with the NSW Heritage Council (or delegate) for management of the archaeological remains, whether for conservation or archaeological investigation and recording • An accessible publication would be prepared within two years of archaeological excavations to document the archaeological investigations • Sydney Metro would provide for the meaningful curation, display and public access of any artefacts collected. This may involve partnerships with museums, local heritage centres and/or universities.	PMS
NAH9	Direct heritage impacts	The impacted gardens within the State Abattoirs would be reinstated with sympathetic landscaping that is in keeping with the provisions of the Conservation Management plan.	SOPMS
NAH10	Archival recording	An assessment of significance would be prepared in consultation with the relevant local council for the following potential unlisted heritage items: • 220 Church Street, Parramatta • 48 Macquarie Street, Parramatta • Pine Inn at 19 Parramatta Road, Concord • 338-340 Parramatta Road, Burwood • Former warehouse shed, Glebe Island. If the assessment of significance confirms these items have local heritage value, an archival recording would be undertaken.	PMS, BNS, TBS
Aboriginal heritage			
AH1	Consultation	Aboriginal stakeholder consultation would be carried out in accordance with the Heritage NSW, Department of Premier and Cabinet's Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010). NSW Department of Planning, Industry and Environment's (Environment, Energy and Science Group); Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.	All
AH2	Test excavation	Archaeological test excavation (and salvage when required) would be carried out where intact natural profiles with the potential to contain significant archaeological deposits are encountered at the specified construction sites and the Parramatta power supply route. Excavations would be conducted in accordance with the methodology outlined in the Aboriginal cultural heritage assessment report.	PMS, CSMF, TBS and PSR

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
AH3	Aboriginal heritage interpretation	If Aboriginal archaeological remains are recovered during Stage 1, results would be incorporated into Aboriginal heritage interpretation for the Concept in consultation with registered Aboriginal parties.	All
AH4	Unexpected finds	In the event that a potential burial site or potential human skeletal material is exposed during construction, the <i>Sydney Metro Exhumation Management Plan</i> would be implemented.	All
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 character and visual amenity			
LV1	Visual impacts	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts (for example storing materials and machinery behind fencing).	All
LV2	Visual impacts	The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impact.	All
LV3	Visual impacts	Graffiti would be removed promptly from hoardings and any other aspects of construction sites.	All
LV4	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 impact, if visible from areas external to the construction site. This finish is to be applied to all visible fixtures and fittings (including exposed downpipes).	WMS, PMS, SOPMS, SNMS, BNS, FDS
LV5	Lighting impacts	Lighting of construction sites would be orientated to minimise glare and light spill impacts on adjacent receivers.	All
LV6	Public art	Public art would be adopted on temporary hoarding, particularly around future station precincts. Implementation would be as soon as feasible and reasonable after the commencement of construction, and any public art would remain for the duration of the construction period. Construction site hoardings would be designed in accordance with <i>Sydney Metro Brand Design Guidelines</i> and opportunities for public art on hoardings would be considered in high pedestrian locations.	All
LV7	Visual impacts affecting events	Works would be coordinated with the Department of Planning, Industry and Environment to manage the potential impact of construction on sporting events in other areas of Sydney Olympic Park.	SOPMS
LV8	Visual impacts affecting events	Works would be coordinated with City of Canada Bay Council to manage the potential impact of construction on sporting events at Concord Oval.	BNS
LV9	Overshadowing	Where feasible and reasonable the location and height of the acoustic shed at the Five Dock Station (if required) would be designed to minimise overshadowing of Fred Kelly Place between 10am and 3pm in mid-winter.	FDS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
LV10	Activation of streetscapes	Opportunities to provide temporary activation in the vicinity of the Five Dock Station western construction site during construction would be explored in consultation with the City of Canada Bay Council.	FDS
LV11	Trees	Opportunities for the retention and protection of existing street trees and trees within the site would be identified during detailed construction planning.	All
LV12	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
LV13	Trees	Trees removed by Stage 1 would be replaced to achieve no net loss to tree numbers and/or canopy in proximity to the site as a minimum in the long term (and part of future stages of Metro West).	All
LV14	Trees	Opportunities would be investigated with the relevant local council to provide plantings in proximity to the impacted areas prior to construction commencing where feasible and reasonable.	All
Business impacts			
BI1	General business impacts	Small business owner engagement would be undertaken to assist small business owners adversely impacted by construction.	All
BI2	Power and utility interruptions	Planned power and utility interruptions would be scheduled to before or after typical business hours where feasible and reasonable. Prior notice would be provided to all affected business owners of the interruptions.	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 night-time 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 works and management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity.	WMS, PMS, CSME, SSF, SOPMS, NSMS, BNS, FDS, TBS
S2	Loss of social infrastructure	Engagement would be carried out with Parramatta City Council to identify alternative locations for the Parramatta Artist Studios to provide opportunities for facilitating local creative and cultural activities.	PMS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
S3	Social impacts	A Community Benefit Plan would be developed to guide the development of community benefit initiatives (by Principal Contractors) during construction of Stage 1 to make a positive contribution to the potentially affected community. The key objectives of the plan would include: - 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.	WMS, PMS, SOPMS, NSMS, BNS, FDS, TBS
S4	Impacts on events or festivals	In addition to mitigation measure TT17, consultation would be carried out with festival and event organisers in proximity to construction sites to mitigate potential impacts on the operation of the festival or event.	PMS, FDS
S5	Promote local cultural and identity	In addition to mitigation measure LV16, consultation would be carried out with stakeholders to identify opportunities for public art to reflect community values, culture and identity of the local community.	WMS, PMS, SOPMS, NSMS, BNS, FDS
S6	Activation of streetscapes	In addition to mitigation measure LV10, potential temporary activation in the vicinity of the Five Dock Station western construction site would include opportunities to provide spaces and places for the community to gather and meet each other, culture and identity.	FDS
S7	Potential impacts on school infrastructure	In addition to mitigation measure S1, ongoing engagement would be undertaken with NSW Department of Education to continue to investigate feasible and reasonable mitigation measures related to construction traffic, pedestrian safety, construction noise and vibration, and air quality.	WMS, PMS, BNS, FDS
Groundwater and ground movement			
GW1	Loss of groundwater available to existing groundwater (bore supply) users	Site inspection would be carried out on private domestic supply bore GW305646 to confirm the current viability of that bore. If found to be viable, the bore would be monitored throughout construction. ~~It~~ and predicted to be significantly impacted by the project, make good measures would be implemented if a loss of yield were to occur.	BNS
GW2	Potential reduced baseflow to Toongabbie Creek, Domain Creek, A'Becketts Creek, Duck Creek, Haslams Creek, Powells Creek and the Mason Park wetlands, Bicentennial Park wetlands, Brickpit and Powells Creek Reserve	A review of additional geotechnical and hydrogeology data would be undertaken to confirm the geological and groundwater conditions and determine, based on these local conditions, whether predicted groundwater drawdown from Stage 1 is likely to occur in the vicinity of these creeks. Where the additional data review shows local conditions and predicted groundwater drawdown are likely to cause surface water/groundwater interaction, then additional site investigations (in accordance with GW3) would be undertaken for those creeks or surface water bodies.	WMS, CSMF, SOPMS, NSMS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
GW3	Potential reduced baseflow to Toongabbie Creek, Domain Creek, A'Becketts Creek, Duck Creek, Haslams Creek, Powells Creek and the Mason Park wetlands, Bicentennial Park wetlands, Brickpit and Powells Creek Reserve Requirements for baseline monitoring of hydrological attributes	Additional site investigations would be carried out at creeks or surface water bodies where the additional data review in GW2 shows there is a likely surface water/groundwater interaction. This would involve baseline monitoring of creek flows (streamflow gauging) prior to construction, and baseflow streamflow analysis to confirm the existing groundwater baseflow contribution to streamflow for each creek. Where a significant reduction in baseflow is predicted due to Stage 1, design responses would be implemented at station and shaft excavations to reduce potential baseflow loss.	WMS, CSMF, SOPMS, NSMS
GW4	Requirements for baseline monitoring of hydrological attributes. Migration of contaminants in groundwater and reduction in beneficial uses of aquifers	Monitoring of groundwater levels and quality at the site area would occur before, during and after 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 Environment Protection Authority and Department of Planning, Industry and Environment and the Natural Resources Access Regulator for information.	WMS, PMS, CSMF, SSF, SOPMS, NSMS, BNS, FDS, TBS
GW5	Ground movement and settlement	A detailed geotechnical and hydrogeological model for Stage 1 would be developed and progressively updated during design and construction. The detailed geotechnical and hydrogeological model would include: - Assessment of the potential for damage to structures, services, basements and other sub-surface elements through settlement or strain - Predicted groundwater inflows, groundwater take and changes to groundwater levels including at nearby water supply works. - Where building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage. - Where a significant exceedance of target changes to groundwater levels are predicted at surrounding land uses and nearby water supply works, 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.	Where required
GW6	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
Soils			
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).	PMS, CSMF, TBS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
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, 2008). Erosion controls would be implemented in accordance with the 'Blue Book' (Landcom, 2004).	All
Surface water quality			
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 <i>Volume 2D</i> (NSW Department of Environment, Climate Change and Water 2008), commonly referred to as the 'Blue Book'. 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</i> and <i>Managing Urban Stormwater, Volume 2D: Main Road Construction</i> (DECC, 2008).	All
SSWQ4	Working in waterways and surrounding low lying areas	Works in waterways and surrounding low lying areas would be carried out in accordance with progressive erosion and sediment control plans.	CSMF
SSWQ5	Wastewater discharge	The water treatment plants would be designed so that wastewater is treated 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.	All
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 Stage 1 and inform appropriate management responses. The program would be developed in consultation with the EPA and relevant Councils. The program would consider monitoring being undertaken as part of other infrastructure projects such as the WestConnex M4 East monitoring. Monitoring would occur during pre-construction and during construction at all waterways with the potential to be impacted. Monitoring sites could be located upstream and downstream of the potential discharges and 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

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
Contamination			
C1	Management of low risk contamination	For sites where potential contamination risk is moderate, high or very high, a further review of data would be performed. Where the additional data review provides sufficient information to confirm that contamination is likely to have a very low or low risk, the site would then be managed in accordance with 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	Detailed Site Investigation	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 on the basis of the Stage 1 assessment, it is anticipated that Detailed Site Investigations would be required at the specified application locations.	CSMF, SSF, SOPMS, TBS
C3	Remediation	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, a Remediation Action Plan would be developed for the area of the construction footprint. Each Remediation Action Plan would detail the remediation works required to mitigate risks from contamination throughout and following completion of construction. 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. Remediation would 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 and remediation would be confirmed following the additional data review (mitigation measure C1) and Detailed Site Investigation (mitigation measure C2), however on the basis of the Stage 1 assessment, it is anticipated that Remediation Action Plans and remediation could be required at the specified application locations.	CSMF, SSF, SOPMS, TBS
C4	Site Audit Statement	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. The sites requiring Site Audit Statements would be confirmed following the preparation of Remediation Action Plans (mitigation measure C3), however on the basis of the Stage 1 assessment, it is anticipated that Site Audit Statements would be required at the specified application locations.	CSMF, SOPMS, TBS, and as applicable

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
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
Hydrology and flooding			
HF1	Flooding behaviour impacts	Detailed construction planning would consider flood risk at construction sites. This would include: • Identification of measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the one per cent AEP flood event • Provide flood-proofing to excavations at risk of flooding or coastal inundation during construction, where feasible and reasonable, 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 works to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required. This includes design of site hoardings to minimise disruption to flow paths (if possible). Not worsen is defined as: • A maximum increase in flood levels of 50mm in a one per cent AEP flood event • A maximum increase in time of inundation on one hour in a one per cent AEP flood event • No increase in potential soil erosion and scouring from any increase in flow velocity in a one per cent AEP flood event.	PMS, CSMF, SSF, NSMS, TBS
HF2	Flooding behaviour impacts	On-site stormwater detention would be provided for the Clyde stabling and maintenance facility to manage peak site runoff rates and volumes due to increased imperviousness of the site.	CSMF
HF3	Flooding behaviour impacts	Further design refinement at the Clyde stabling and maintenance facility construction site would occur during detailed design to mitigate the identified potential impacts including: • The increases in flood levels of up to ~~0.08~~ 0.03 metres in Duck Creek and adjacent properties in the one per cent AEP flood event • Increases in flow velocities and the potential increased risk of scour at the proposed creek crossings and in the downstream channels • The potential flooding impacts from filled features ~~including the road overbridge approach.~~	CSMF
HF4	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
HF5	Flooding behaviour impacts	Detailed construction planning for The Bays Station 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.	TBS

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
HF6	Flood protection	Consultation would occur with the proponent of the Camellia Town Centre redevelopment to understand potential flood impacts from the redevelopment on Stage 1 and to identify any additional flood protection (if required).	PMS
HF7	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.	PMS, CSMF, TBS
HF8	Impacts to flood mitigation works	Detailed construction planning for The Bays Station construction site would aim to avoid conflicts with the potential construction of flood mitigation works in Robert Street, Rozelle in consultation with Inner West Council.	TBS
Biodiversity			
B1	Impacts to fish passage	During construction, sufficient flow and fish passage would be maintained similar to current conditions during in-stream works where feasible and reasonable.	CSMF
B2	Impacts of proposed creek crossings	The A'Becketts Creek and Duck Creek crossings would be designed to: • Provide sufficient fish passage in accordance with <i>Policy and guidelines for fish habitat conservation and management Update 2013</i> (DPI (Fisheries NSW) 2013) • Incorporate suitable scour protection • Avoid worsening existing flow velocities downstream from the crossing locations • Incorporate a vegetated riparian zone within the realigned open channel sections where feasible and reasonable.	CSMF
B3	Impacts to groundwater dependent ecosystems	Additional investigations and assessment would be completed to confirm the potential for impacts to groundwater dependant ecosystems due to groundwater drawdown, and to identify any required mitigation through design.	WMS, PMS , CSMF, NSMS, BNS, FDS
Air quality			
AQ1	Dust impacts	The following best-practice dust management measures would be implemented during all construction works: • 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 inspect dust emissions and apply additional controls as required • ~~Implement~~ Consider all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each Stage 1 construction site.	All
AQ2	Exhaust emissions from the combustion of fossil fuels	Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of preacceptance checks.	All

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
AQ3	Odour emissions	The following best-practice odour management measures would be implemented during relevant construction works: • 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 ~~generated~~ 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
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	Risks to people, property and the environment associated with transport and storage of explosives	The method for delivery of explosives would be developed prior to the commencement of blasting (if proposed) in consultation with the Department of Planning, Industry and Environment and be timed to avoid the need for on-site storage.	All
HA2	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
HA3	Impacts on underground utilities	Ongoing consultation would be carried out with utility providers for high pressure gas or petroleum pipelines to identify appropriate construction methodologies to be implemented. Any interaction with high pressure gas or petroleum pipelines would comply with the relevant standards, including AS 2885 Pipelines – Gas and Liquid Petroleum.	All
Sustainability and climate change			
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

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
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
Cumulative impacts			
C11	Occurrence of cumulative impacts	Co-ordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time: • ~~Other parts of~~ Transport for NSW including Transport Coordination • Department of Planning, Industry and Environment • Sydney Trains • NSW Trains • Sydney Buses • Sydney Water • Port Authority of NSW • Sydney Motorways Corporation • Emergency service providers • Utility providers • Construction contractors. Co-ordination and consultation with these stakeholders would 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.	All

¹ Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (e.g. tunnel boring machine works); PSR: Power supply routes.

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9 Conclusion and next steps

This chapter provides a conclusion to the Submissions Report and outlines the next steps in the approvals process.

The *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* was placed on exhibition from 30 April 2020 to 26 June 2020. 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, Industry and Environment.

A total of 188 submissions were received by the Department of Planning, Industry and Environment in response to the Environmental Impact Statement during the exhibition period, consisting of 154 community submissions and 34 government agency (including local councils) and other key stakeholders.

This Submissions Report presents responses to issues raised in submissions received during the exhibition of the Environmental Impact Statement.

An Amendment Report has also been prepared. The *Sydney Metro West Westmead to The Bays and Sydney CBD – Amendment Report* (Sydney Metro, 2020b) outlines the proposed amendments since the exhibition of the Environmental Impact Statement and the associated environmental assessment. Where relevant, clarifications to the Environmental Impact Statement and responses to submissions have reflected those proposed amendments.

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

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

The Minister for Planning and Public Spaces would 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, Industry 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.

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Glossary

Terms	Definitions
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEP	Annual exceedance probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ARR	Australian Rainfall and Runoff
ATL	Active Transport Link
BC Act	<i>Biodiversity Conservation Act 2016</i>
BTEX	Mixtures of benzene, toluene, and the three xylene isomers
CBD	Central business district
CCMS	Construction Complaints Management System
CCS	Community Communication Strategies
CPTED	Crime Prevention Through Environmental Design
CTMP	Construction traffic management plan
DECC	NSW Department of Environment, Climate Change and Water
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>

Terms	Definitions
HIL	Health investigation level
HSL	Health screening level
ICEM	Infrastructure Engineering and Construction Manual
ISCA	Infrastructure Sustainability Council of Australia
LEP	Local environmental plan
NCA	Noise catchment area
NEPC	National Environment Protection Council
NML	Noise management level
NRAR	Natural Resources Access Regulator
NSW	New South Wales
OCCS	Sydney Metro Overarching Community Consultation Strategy
PAH	Polycyclic aromatic hydrocarbons
PDCT	Project Delivery Communication Teams
PFAS	Poly-fluoroalkyl substances
PHALMS	Parramatta Historical Archaeological Landscape System
PMF	Probable maximum flood
PRCUTS	Parramatta Road Corridor Urban Transformation Strategy
RAP	Registered Aboriginal Parties
RAS	Royal Agricultural Society of NSW
SEPP	State Environmental Planning Policy
SHR	State Heritage Register
Stage 1	Sydney Metro West – Major civil construction work between Westmead and The Bays
The Concept	Sydney Metro West – the construction and operation of a metro rail line, around 24 kilometres long, between Westmead and Sydney CBD
TRH	Total recoverable hydrocarbons
UDIA	Urban Development Institute of Australia

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Appendix A

Where to find responses to issues raised
in community submissions

Appendix A

Where to find responses to issues raised in community submissions

Guide to tables

An assessment of each submission was undertaken, identifying all issues raised and coding the issues. A total of 27 key issues and 107 sub-issues were identified and coded throughout the submission review process. The list of issues, together with where they are addressed in this report, is provided in Table 1.

Table 1: Issue code and where addressed in this report

Issue code	Issue	Where addressed in this report
A. Support for the project		
A1	Support for the project	Section 6.1.1
B. Strategic need and justification		
B1	Capacity and congestion	Section 6.2.1
B2	Consistency with plans	Section 6.2.2
B3	Project cost	Section 6.2.3
B4	Demand	Section 6.2.4
B5	Economic impacts	Section 6.2.5
B6	Future development	Section 6.2.6
B7	Justification	Section 6.2.7
B8	Project objectives	Section 6.2.8
B9	Project priorities	Section 6.2.9
B10	Strategic need	Section 6.2.10
C. Sydney Metro West development alternatives		
C1	Alignment alternatives	Section 6.3.1
C2	Sydney CBD connection	Section 6.3.2
C3	Location and number of stations	Section 6.3.3
C4	Power supply	Section 6.3.4
C5	Stabling and maintenance facility	Section 6.3.5
C6	Tunnel size	Section 6.3.6
D. Planning and assessment process		
D1	Concept and staged assessment process	Section 6.4.1
E. Stakeholder and community engagement		
E1	Environmental impact statement exhibition	Section 6.5.1
E2	Complaints	Section 6.5.2
E3	Community consultation	Section 6.5.3
E4	Stakeholder consultation	Section 6.5.4
F. Concept description		
F1	Station access	Section 6.6.1

Issue code	Issue	Where addressed in this report
F2	Rolling stock	Section 6.6.2
F3	Interchange	Section 6.6.3
F4	Platforms	Section 6.6.4
F5	Station accessibility	Section 6.6.5
F6	Wayfinding	Section 6.6.6
F7	Active transport and pedestrian access	Section 6.6.7
F8	Parking	Section 6.6.8
F9	Public transport integration	Section 6.6.9
F10	Stub tunnels	Section 6.6.10
F11	Construction program	Section 6.6.11
G. Placemaking		
G1	Integration with site	Section 6.7.1
G2	Public art	Section 6.7.2
G3	Water sensitive urban design	Section 6.7.3
G4	Public safety	Section 6.7.4
G5	Station design and interchange	Section 6.7.5
H. Concept environmental assessment		
H1	Property and land use	Section 6.8.1
H2	Landscape character and visual amenity	Section 6.8.2
H3	Flood resilience	Section 6.8.3
H4	Operational noise and vibration	Section 6.8.4
H5	Greenhouse gases	Section 6.8.5
H6	Transport and traffic	Section 6.8.6
H7	Biodiversity	Section 6.8.7
H8	Soils and surface water quality	Section 6.8.8
I. Stage 1 description		
I1	Project footprint	Section 6.9.1
I2	Tunnel design and alignment	Section 6.9.2
I3	Construction program	Section 6.9.3
I4	Cut-and-cover stations	Section 6.9.4
J. Transport and traffic – Stage 1		
J1	Access	Section 6.10.1
J2	Construction traffic and congestion	Section 6.10.2
J3	Parking	Section 6.10.3
J4	Active transport, access and safety	Section 6.10.4
J5	Public transport	Section 6.10.5
J6	Traffic control measures	Section 6.10.6

Issue code	Issue	Where addressed in this report
J7	Intersection performance	Section 6.10.7
K. Noise and vibration – Stage 1		
K1	Assessment methodology	Section 6.11.1
K2	Construction hours and night works	Section 6.11.2
K3	Construction ground borne noise and vibration	Section 6.11.3
K4	Construction noise – general	Section 6.11.4
K5	Construction traffic noise	Section 6.11.5
K6	Mitigation, management and monitoring	Section 6.11.6
L. Non-Aboriginal heritage – Stage 1		
L1	Impacts to Non-Aboriginal heritage items	Section 6.12.1
L2	Assessment approach	Section 6.12.2
M. Aboriginal heritage – Stage 1		
M1	Impacts to Aboriginal heritage	Section 6.13.1
N. Property and land use – Stage 1		
N1	Property impacts from site runoff	Section 6.14.1
N2	Property acquisition	Section 6.14.2
N3	Compensation	Section 6.14.3
N4	Underground acquisition and easements	Section 6.14.4
N5	Construction sites	Section 6.14.5
N6	Land use impacts	Section 6.14.6
O. Landscape character and visual amenity – Stage 1		
O1	Landscape character and visual amenity	Section 6.15.1
O2	Mitigation and monitoring	Section 6.15.2
P. Business impacts – Stage 1		
P1	Impacts to business	Section 6.16.1
P2	Mitigation, management and monitoring	Section 6.16.2
Q. Social impacts – Stage 1		
Q1	Social infrastructure	Section 6.17.1
Q2	Inconvenience and community benefit offsets	Section 6.17.2
Q3	Construction worker behaviour	Section 6.17.3
R. Groundwater and ground movement – Stage 1		
R1	Property damage from ground movement	Section 6.18.1
R2	Condition surveys	Section 6.18.2
R3	Groundwater drawdown	Section 6.18.3
S. Soils and surface water quality – Stage 1		
S1	Soils and surface water quality	Section 6.19.1

Issue code	Issue	Where addressed in this report
T. Contamination – Stage 1		
T1	Contamination impacts	Section 6.20.1
T2	Mitigation, management and monitoring	Section 6.20.2
U. Hydrology and flooding – Stage 1		
U1	Flood protection	Section 6.21.1
U2	Flood impacts	Section 6.21.2
V. Biodiversity – Stage 1		
V1	Vegetation removal	Section 6.22.1
V2	Groundwater dependent ecosystems	Section 6.22.2
V3	Biodiversity offsets	Section 6.22.3
V4	Riparian corridor	Section 6.22.4
W. Air quality – Stage 1		
W1	Air quality impacts	Section 6.23.1
X. Spoil, waste management and resource use – Stage 1		
X1	Recycling and reuse	Section 6.24.1
X2	Spoil management	Section 6.24.2
X3	Resource use	Section 6.24.3
Y. Human health and safety		
Y1	Human health	Section 6.25.1
Y2	Safety	Section 6.25.2
Z. Cumulative impacts		
Z1	Power supply works on Callan Street	Section 6.26.1
Z2	Construction fatigue	Section 6.26.2
Z3	Mitigation measures	Section 6.26.3
AA. General		
AA1	General	Section 6.27
BB. Beyond the scope of the Environmental Impact Statement		
BB1	Future metro extensions	Section 6.28.1
BB2	Other transport projects	Section 6.28.2
BB3	Other non-transport projects	Section 6.28.3
BB4	Sydney Speedway Relocation	Section 6.28.4
BB5	The Bays road relocation works	Section 6.28.5
BB6	Corridor protection	Section 6.28.6
BB7	Contamination at Camellia	Section 6.28.7
BB8	Other	Section 6.28.8

Table 2 identifies the issues raised in each submission (provided as the issue code). The first column of table shows the submission number assigned by the Department of Planning, Industry and Environment. The second column shows the issues raised by the submission, as coded for entry into the database. The issue covered by each issue code, and where it is addressed in this report, is detailed in Table 1.

Table 2: Issues raised by each submission

Submission number	Issues raised
JAE-004	E4, J2, J6, J7, R1, Z3, BB6
JAE-008	A1, BB1
JAE-009	C1
JAE-010	C3, H6, O1
JAE-011	H6, R1
SE-125800	A1, C3
SE-125802	A1
SE-125807	H1
SE-125812	C1
SE-125813	C3, BB1
SE-125824	A1, J6, K5, BB2
SE-125826	A1, C3
SE-125830	B9, BB2
SE-125835	A1, C3
SE-125839	C3
SE-125840	C3, F10
SE-125845	F4
SE-125847	F1, F4
SE-125848	A1, F3
SE-125920	C3
SE-125934	C3, C6, G1, H1
SE-125945	Z1
SE-125961	C3
SE-125962	Z1
SE-125963	Z1
SE-125977	A1
SE-125981	A1
SE-125998	B1, C1, C3, C5, E1, E4, F5, F6, H3, K2, L1, L2, Q1, U2, V1, V2, V3, V4, X1, X2, AA1, BB2, BB4
SE-126010	BB8
SE-126058	Z1
SE-126145	C3
SE-126161	G5, H1
SE-126185	C1

Submission number	Issues raised
SE-126291	A1, B6, C3, G5
SE-126408	B5, Q2, X3
SE-126476	H4
SE-126535	J2, J3, K2, K3, K5, O1
SE-126548	C3
SE-126554	C3
SE-126563	F1
SE-126564	C3
SE-126580	C3
SE-126585	C3
SE-126603	C3
SE-126627	C3
SE-126630	C3
SE-126650	C3
SE-126661	F9
SE-126666	C3, H1, J2, O1
SE-126690	C3
SE-126715	C3
SE-126727	C3
SE-126752	A1, G5, H1
SE-126755	J4
SE-126769	I2, U1
SE-126773	F9, Y2
SE-126810	G5, H1
SE-126892	C3
SE-127237	A1
SE-127241	C1, C3, BB1, BB2
SE-127242	C3
SE-127245	J4
SE-127246	H1
SE-127248	C3
SE-127249	H1
SE-127250	C3
SE-127251	C3
SE-127252	C3
SE-127269	C4
SE-127285	C4

Submission number	Issues raised
SE-127355	J2
SE-127356	C3
SE-127358	J2
SE-127359	R1
SE-127360	C3
SE-127364	A1, G5, H1, J1, K6, N4, R2
SE-127366	C1, C3, E1, E3, F7, F11, I2, I3, K1, K3, K4, K6, N4, R2, Y1
SE-127368	B6
SE-127370	G5
SE-127373	C3
SE-127377	B3, B7, B10, E3, H5, J2, J3, K2, K4, K6, O1, Q3, R1, Z2
SE-127388	C3
SE-127392	J3, J4, K5, N4
SE-127408	B10
SE-127410	C3
SE-127419	B10, C3, D1, F3, F4, I2
SE-127426	A1, F7
SE-127427	A1, F7
SE-127450	C3, F2
SE-127459	A1
SE-127470	B10
SE-127482	C3
SE-127494	C3
SE-127501	Z2
SE-127504	A1, E4, G5
SE-127509	BB3
SE-127523	K4, K6
SE-127582	J1, J2, J3, J4, Z1
SE-127588	C3, F1, F3
SE-127593	J6
SE-127625	J1, J2, J3, J4, K3, K4, N1, N3, P1, Z1
SE-127639	BB2
SE-127644	F7, J2
SE-127647	B10, E3, F7, J2, Z2
SE-127661	F7
SE-127665	C3
SE-127678	C3, C4, G5, J2, Z2

Submission number	Issues raised
SE-127685	R2
SE-127686	A1, E4, G1, H4, J3, K3, L1, T1, W1, Y2
SE-127708	J2, J3, J4, K6, R2
SE-127722	B7
SE-127723	J4
SE-127726	B3, C3, F1, F11, I4, J3, K3, K6, R2
SE-127728	A1
SE-127734	B2, B9
SE-127736	N2
SE-127739	C3
SE-127740	E3, F1, F8, H2, J1, N3, N5
SE-127744	C3, BB7
SE-127751	G5
SE-127757	G3, H7, H8, N6, O2, S1, T2, V1
SE-127758	R1
SE-127759	C3, F1, F3, F4
SE-127760	K3, K6
SE-127764	A1, E4, J2, K2, K3, R1, W1
SE-127772	N3
SE-127773	A1, E4, I3, J1, J4
SE-127780	E2, J1, J2, J3, R1, R2
SE-127783	F1, G1, J2, BB5
SE-127786	Y2
SE-127788	C3, K4, W1
SE-127792	A1, C2, C3, F3, F4, F9, BB1
SE-127793	A1, E4, G1, H4, K3, K4, K6, T1, W1
SE-127795	E2, E4, J2, J3, J4, J6, K4, K5
SE-127801	B8, B10, C1, C3
SE-127802	E2, H4, R1
SE-127805	E2, J2, J3, J4, J6, K6
SE-127806	E3, J2, J3, K6, O2, Q2, R1, R3, S1, T2, W1, Z3, BB3
SE-127807	B4, B10, C1, F2, BB2
SE-127809	L1
SE-127811	C3, L1, M1, N6, BB4
SE-127812	A1, G5
SE-127814	C3, C4
SE-127817	Z1

Submission number	Issues raised
SE-127818	G2, J2, J3, J4, J5, J6, K5, P1, P2
SE-127819	E2, J2, J3, J4, J6, BB3
SE-127854	I2
SE-127855	J3, K4, K6, N3, R2
SE-127856	C3, F8, J2, P1
SE-127862	B2, C3, F2, F7, F9, G4, BB1, BB3
SE-127864	H4, N3, N4, R1, R2
SE-127865	C3, C4
SE-127866	I1, S1
SE-128241	C3

