West

Major civil construction between The Bays and Sydney CBD

Environmental Impact Statement

November 2021

Cover: An artist impression of Hunter Street (Sydney CBD) Station.

Executive Summary

Certification

Submission of Environmental Impact Statement

This Environmental Impact Statement has been prepared under Division 5.2 of the (NSW) *Environmental Planning and Assessment Act 1979* and in accordance with Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000.

Environmental Impact Statement prepared by:

Name	Nikki Wallace
Qualifications	Master of Conservation Bachelor of Science
Address	Jacobs/Arcadis Level 7, 177 Pacific Highway, North Sydney NSW 2060
In respect of	Sydney Metro West Environmental Impact Statement – Major civil construction between The Bays and Sydney CBD
Applicant Name	Sydney Metro
Applicant Address	Level 43, 680 George Street, Sydney NSW 2000 PO Box K659, Haymarket NSW 1240
Proposed development	Sydney Metro West involves the construction and operation of a metro rail line, around 24 kilometres in length, between Westmead and the Sydney CBD. The Sydney Metro West Concept and Stage 1 of the planning approval, which includes major civil construction work for Sydney Metro West between Westmead and The Bays, were approved on 11 March 2021 (application number SSI-10038). Stage 2 of the planning approval process (this proposal) includes all major civil construction work including station excavation and tunnelling between The Bays and Sydney CBD. Further details are provided in Chapter 5 (Project description).
Land to be developed	This proposal would be carried out on land in the local government areas of Inner West and City of Sydney. This proposal would be located largely underground in twin tunnels and includes all major civil construction work including station excavation (at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites) and tunnelling between The Bays and Sydney CBD. Five construction sites would be required for supporting tunnel equipment and excavations for future stages, including The Bays tunnel launch and support site (which would be sited within The Bays Station construction site approved under the Stage 1 project approval), two Pyrmont Station construction sites, and two Hunter Street Station (Sydney CBD) construction sites.
Environmental Impact Statement	An Environmental Impact Statement is attached that assesses all matters specified in the Secretary's Environmental Assessment Requirements dated 7 July 2021, in accordance with Division 5.2 of the (NSW) *Environmental Planning and Assessment Act 1979* and other relevant legislation.
Declaration	I certify that I have prepared the contents of this Environmental Impact Statement in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000 and the Secretary's Environmental Assessment Requirements dated 7 July 2021, and that, to the best of my knowledge the information contained in the Environmental Impact Statement is not false or misleading.
Signature	NWallace
Name	Nikki Wallace
Date	25 October 2021

Executive summary

Overview of Sydney Metro

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

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

Sydney Metro's program of work is shown in Figure 1 and includes:

- Metro North West Line – Opened in May 2019
- Sydney Metro City & Southwest – Currently under construction and due to open in 2024
- Sydney Metro West – This project
- Sydney Metro - Western Sydney Airport – Currently under construction and due to open when the airport opens for passenger services.

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

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

Sydney is expanding and the NSW Government is working hard to deliver an integrated transport system that meets the needs of customers now and in the future. The delivery of Sydney Metro West is critical to keeping Sydney moving, and would:

- Comprise a new 24-kilometre metro line with stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and at Hunter Street (Sydney CBD)
- Have a target travel time of about 20 minutes between Parramatta and the Sydney CBD
- Link new communities to rail services and support employment growth and housing supply.

The planning process for Sydney Metro West is being assessed as a staged infrastructure application under section 5.20 of the *Environment Planning and Assessment Act 1979*. The Sydney Metro West Concept and Stage 1 of the planning approval, which includes major civil construction work for Sydney Metro West between Westmead and The Bays, were approved on 11 March 2021 (application number SSI-10038). Stage 2 of the planning approval process (this proposal) includes all major civil construction work including station excavation and tunnelling between The Bays and Sydney CBD.

Key features of the proposal

The proposal is shown in Figure 1 and would involve the major civil construction work between The Bays and Sydney CBD, including:

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

Figure 1 Overview of the proposal

Need for and benefits of Sydney Metro West

Key challenges

Sydney is Australia's financial and economic capital, housing half of the country's globally competitive service sector jobs. The Greater Parramatta to Sydney CBD corridor is one of the city-shaping transport corridors nominated in the *Greater Sydney Region Plan* (Greater Sydney Commission, 2018a). The corridor is of national economic significance and contains nearly 620,000 high productivity jobs, which is around 20 per cent of the jobs in Greater Sydney, and generates eight per cent of the nation's Gross Domestic Product per year.

Recognising the importance of the corridor, several land use planning and development initiatives have commenced in Westmead, Parramatta, Sydney Olympic Park, The Bays and the Sydney CBD. These initiatives are expected to account for more than 60 per cent of forecast population growth and more than 80 per cent of forecast jobs growth in the corridor by 2036.

Sydney's growing population will continue to increase demand on the existing transport network. Despite planned upgrades and additional services which will provide some short term relief, the T1 Western Line is expected to reach capacity in 2024 and the T9 Northern Line is expected to reach capacity in 2027. Reliability impacts in the Sydney CBD cause network-wide impacts, reducing network capacity and increasing crowding on trains and platforms.

Benefits of Sydney Metro West

Sydney Metro West would effectively double 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 would result in numerous transport benefits, including:

- Reducing crowding on trains and on station platforms at key existing stations on the suburban rail network
- 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 The Bays, Pyrmont and Hunter Street (Sydney CBD)
- Improving travel times for customers
- Reducing travel time between the Parramatta and Sydney CBDs to a target of around 20 minutes
- Providing an alternative to the existing Sydney Trains suburban rail network thereby reducing the impacts of scheduled maintenance and major unavoidable incidents
- Providing the opportunity to optimise the bus network by reducing the number of buses on congested corridors such as Parramatta Road and Victoria Road and increasing bus services on other parts of the network
- Providing the opportunity for mode shift from car to public transport, which could result in road user travel time savings.

By improving the connections between key economic centres, Sydney Metro West would foster significant growth in jobs across the project corridor, including directly supporting the creation of new jobs within the corridor at The Bays, Pyrmont and the Sydney CBD.

There is a strong link between public transport and land use change. Transport accessibility and amenity are critical to supporting employment, housing supply and urban renewal opportunities and ultimately to support Sydney's economic and population growth. Transport accessibility and amenity issues include crowding and capacity constraints within the Greater Parramatta to Sydney CBD corridor, and traffic congestion from high levels of car use. These issues are limiting the achievement of planned growth because these areas are less attractive to households and developers.

Sydney Metro West would provide city-shaping benefits including:

- Supporting planned growth and land use outcomes in the CBDs, planned precincts and urban renewal areas
- Supporting the implementation of 30-minute cities as outlined in the Greater Sydney Region Plan by providing turn-up-and-go services to key destinations
- Supporting the creation of jobs and housing opportunities in Western Sydney with improved liveability and better access to services and employment
- Promoting healthier and more sustainable travel behaviours through enhanced pedestrian environments, opportunities for incidental exercise and potential for reduced travel related stress.

Sydney Metro West objectives

The Sydney Metro West network objectives are to:

- 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, Future Transport 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 enabling 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 Greater Parramatta to Sydney CBD corridor objectives are to:

- 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.

Options considered

The Sydney Metro West development process has been driven by the identified strategic need to improve connectivity between Greater Parramatta and the Sydney CBD.

The *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a) noted that the preferred location for a Sydney CBD Station was being investigated and Pyrmont was identified as a strategic station option with the potential to strategically enhance Sydney Metro West.

The development process for the major civil construction work between The Bays and Sydney CBD proposal has specifically included:

- Analysis of Pyrmont Station as a strategic station option
- Analysis of options of station locations within Pyrmont and Sydney CBD
- Further optimisation of station construction sites
- Consideration of tunnel alignment
- Analysis of options for the approach to tunnelling and tunnelling support
- Consideration of spoil transport alternatives
- Investigations into potential future extension of the Sydney Metro West line.

During the development of preferred station locations, a range of factors have been considered, including accessibility, integration with surrounding land uses, constructability, impacts on heritage and environmental aspects, integration with other modes of public transport, and potential opportunities for future integrated station and/or precinct development.

Stakeholder and community engagement

Stakeholder and community consultation for Sydney Metro West has played an integral part of the projects development and has informed scoping investigations for this Environmental Impact Statement, and will continue to do so through ongoing project development and construction.

Sydney Metro has been engaging with the community, stakeholders and industry on the planned Sydney Metro West since 2017. Feedback gathered has helped shape the project, including station locations. Sydney Metro will continue to work with the community and stakeholders as the project progresses.

Early engagement with the community and stakeholders began in June 2017 and continued into 2018. Further engagement for Sydney Metro West followed the announcement of confirmed station locations between Westmead and The Bays in October 2019. From 30 April to 28 June 2020, the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a) was on exhibition and the community was asked to provide feedback. Consultation has proactively sought feedback and comments on Sydney Metro West through different forums and channels to inform the development phase and the scope of issues to be assessed as part of the environmental assessment process. This has involved:

- Engagement with state government departments and agencies, local government, peak organisations, the community and industry
- In person and virtual Community information sessions with information sessions held in Pyrmont and the Sydney CBD in 2018 and a virtual information room in 2020 to support exhibition of *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a)
- Provision of project information via an interactive online project portal
- Letterbox drops to residents and businesses

- Proactive media strategy, which resulted in broad coverage across Sydney metropolitan and local print, radio and television outlets
- Advertisements in local and multicultural newspapers
- Email alerts to registered community members and stakeholders
- Social media via the Sydney Metro Facebook page, which has a reach of more than 50,000 people
- Paper and online surveys including a survey inviting feedback about Pyrmont as a strategic station option in 2019 and a community perceptions and priorities survey in 2021
- 'Project Overview' information booklets (published in June 2017, March 2018 and October 2019)
- Westmead to The Bays and Sydney CBD – Environmental Impact Statement Summary published in 2020.

Communication channels have also been established for Sydney Metro West since the project announcement to provide for ongoing engagement with stakeholders and communities.

The Department of Planning, Industry and Environment will place this Environmental Impact Statement on public exhibition. During the exhibition period, government agencies, stakeholders and the community are able to review this Environmental Impact Statement and have an opportunity to make a written submission to the Department of Planning, Industry and Environment for consideration in its assessment of this proposal.

Construction sites and program

Five construction sites would be required for supporting tunnel equipment and excavations for future stations:

- The Bays tunnel launch and support site (which would be sited within The Bays Station construction site approved under the Stage 1 planning approval)
- Pyrmont Station western construction site
- Pyrmont Station eastern construction site
- Hunter Street Station (Sydney CBD) western construction site
- Hunter Street Station (Sydney CBD) eastern construction site.

Enabling work (preliminary construction work required to facilitate the start of substantial construction) would likely begin before major construction work. The total period for construction would be around three years. An indicative construction program is shown in Figure 2. The actual program and commencement of the civil work at each construction site may vary and is subject to ongoing design development and construction planning to be agreed with the successful contractor for each work package.

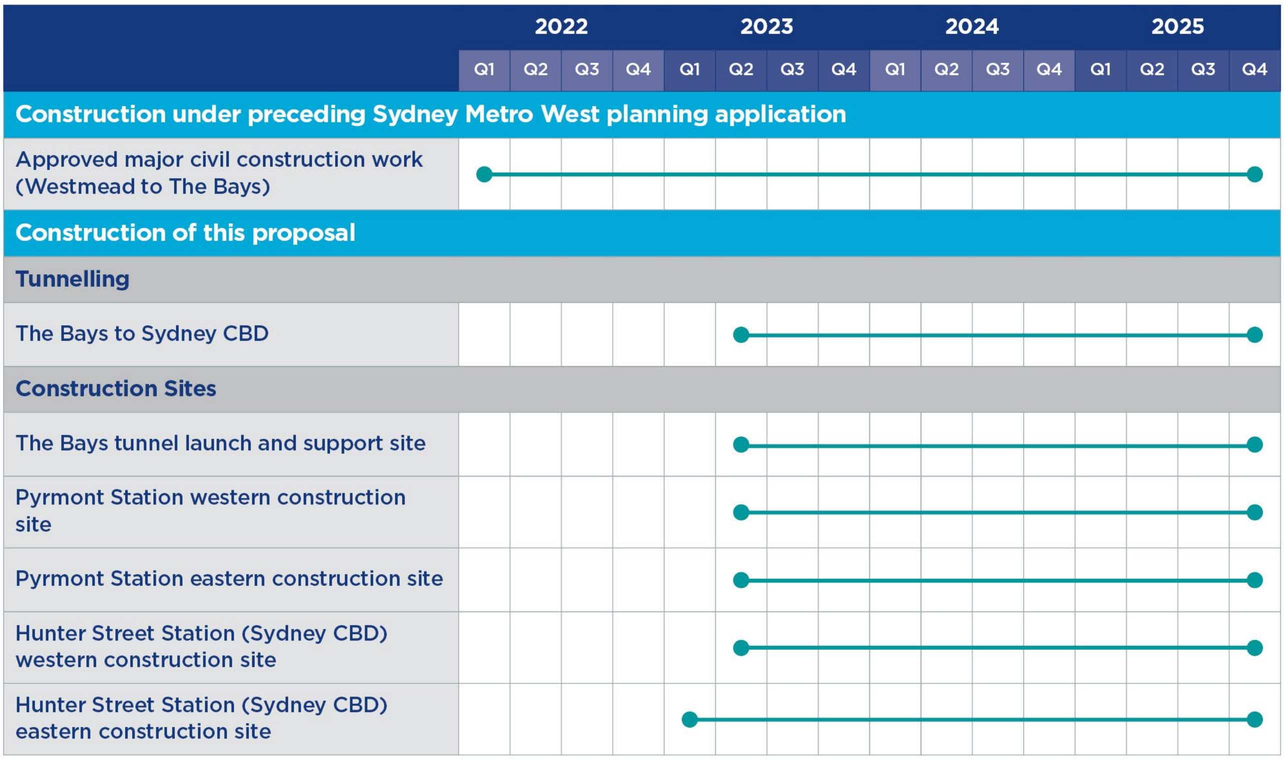

Figure 2 Indicative construction program

Environmental assessment

This Environmental Impact Statement has been prepared in accordance with the provisions of Part 5, Division 5.2 of the *Environmental Planning and Assessment Act 1979*. It addresses the requirements of the Secretary of the Department of Planning, Industry and Environment (refer to Appendix A). It also includes consideration of the issues raised by the community and stakeholders during the development of the project.

Key environmental issues have been examined throughout the design and development process. Consultation has been carried out with affected stakeholders to identify key potential impacts at an early stage. Where possible, these would be avoided or appropriate mitigation measures have been developed. This has resulted in a number of design changes and refinements that have mitigated many of the potential significant impacts.

The main impacts identified in the environmental assessment are described in the following sections.

Environmental Issues

The proposal would involve temporary construction activities associated with tunnelling, excavation and other major civil work between The Bays and Sydney CBD. As a result, the potential temporary impacts associated with the proposal would be limited to the construction phase.

Where possible, Sydney Metro has avoided and minimised impacts as part of project development and design. Potential impacts would be adequately managed through the implementation of construction environmental management documentation and the specific performance outcomes and mitigation measures identified in this Environmental Impact Statement. This would include the use of the Sydney Metro Construction Environmental Management Framework (Appendix C), Construction Traffic Management Framework (Appendix D) and Construction Noise and Vibration Standard (Appendix E) which set out the overall approach to environmental management. These documents have been successfully implemented on previous Sydney Metro projects including Sydney Metro North West and City & Southwest.

Transport and traffic

Potential transport and traffic impacts of the proposal have been avoided and minimised wherever possible, primarily by identifying the most efficient and safe haul route to the arterial road network and minimising movements during existing network peak periods. Potential impacts would be managed through the development of Construction Traffic Management Plan/s as outlined within the Construction Traffic Management Framework (Appendix D). The selection of truck sizes at each construction site has considered a balance between reducing overall truck movements and safe manoeuvrability to, from and within the construction sites. Specific mitigation measures to remove or reduce risks to road users and the public so far as is reasonably practicable have also been identified to manage pedestrian, cyclist and motorist safety around construction sites.

Key potential impacts on the transport network during construction would be potential temporary impacts to traffic performance on the road network due to the temporary addition of construction vehicles and temporary road closures as a result of the proposal. This would result in some deterioration of intersection performance around construction sites, potentially resulting in a minor increase in delays to road users, including bus services on routes around construction sites.

The proposal would also result in the temporary loss of parking spaces, the temporary diversion of pedestrians and the temporary decommissioning of a bus stop adjacent to the Pyrmont Station western construction site.

Noise and vibration

Construction noise and vibration would be managed with reference to the Sydney Metro Construction Noise and Vibration Standard (Appendix E) which provides standard mitigation measures and additional mitigation measures for certain noise and vibration impact levels. Site specific mitigation measures have also been identified to reduce noise and vibration impacts, including bored piling, acoustic perimeter hoarding, and acoustic panels, and acoustic sheds would be constructed where practicable.

The potential for noise and vibration impacts during construction varies across the study area due to a number of factors, including how close the nearest receivers are to the construction sites. Where receivers are close, the noise impacts during some of the work are expected to be 'high', particularly when noise intensive equipment such as rockbreakers are being used. This is consistent with most major infrastructure projects in urban areas.

There would be periods when construction airborne noise levels are much lower than the worst-case levels predicted and there would be times when no equipment is in use and no impacts would occur as noise intensive equipment would not be in use continuously.

Potential temporary 'high' construction airborne noise impacts are predicted at the nearest receivers to the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites during some of the noisiest scenarios (in the early stages of the proposal, where work would be completed at surface level and require noise intensive equipment to be used prior to the establishment of acoustic sheds, or where acoustic sheds are not proposed). These worst-case potential temporary high impacts would be limited to daytime hours and would not occur during the evening or night-time. Receivers that are close to construction sites are predicted to be impacted at times during noise intensive work at night-time at The Bays tunnel launch and support site and Pyrmont Station construction sites.

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 work is directly beneath. Noise levels experienced by receivers further away from the construction sites are generally predicted to comply with the ground-borne noise management levels. Potential temporary 'moderate' or 'high' worst-case impacts during station shaft excavation are predicted at receiver locations adjacent to or opposite the excavation work at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites. The nearest receivers at Pyrmont are generally residential, whereas at Hunter Street (Sydney CBD), are generally commercial or 'other sensitive'. Temporary 'high' or 'moderate' worst-case ground-borne noise impacts are predicted at receivers above the tunnel alignment in the Pyrmont and Hunter Street (Sydney CBD) study areas where the tunnel depth is shallowest. The tunnel alignment is sufficiently deep in most locations for ground-borne noise impacts due to tunnel boring machines to generally be compliant with the management levels or result in 'minor' impacts only.

Temporary exceedances of the cosmetic damage vibration screening criteria are predicted at all vibration sensitive buildings or structures immediately adjacent to the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites prior to additional site specific vibration mitigation measures being applied. Temporary exceedances of the human comfort vibration criteria are also predicted at the nearest receivers at Pyrmont and Hunter Street (Sydney CBD) as a result of excavation work within the construction sites. This means occupants of affected buildings may be able to perceive impacts at times when vibration intensive equipment is in use nearby.

Non-Aboriginal heritage

Potential non-Aboriginal heritage impacts have been avoided and minimised where possible. For example, station excavation work at the Hunter Street Station (Sydney CBD) construction sites has been designed to retain and protect the State listed heritage Skinners Family Hotel, and avoid direct impacts on the State listed heritage Tank Stream. Potential impacts to built heritage items would be mitigated through design development and the implementation of mitigation measures, including archival recording and reporting, salvage and adaptive reuse opportunities.

Potential ground-borne vibration impacts to non-Aboriginal heritage items in the vicinity of the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites have been assessed as being between neutral and moderate. This includes for heritage items which are directly above the tunnel alignment.

Built heritage impacts within the Pyrmont Station western construction site would result in negligible direct impacts (with the exception of one unlisted potential heritage item) and moderate indirect impacts to the Pyrmont Heritage Conservation Area.

Within the vicinity of the tunnel alignment and the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites, potential settlement impacts would be limited, with negligible or slight (minor) settlement impacts anticipated at the majority of heritage items. Further assessment would be undertaken during detailed construction planning and appropriate mitigation measures would be implemented to reduce the potential for settlement impacts.

At Pyrmont Station construction sites, it is predicted that previous construction activity and basement excavations have removed any buried archaeological resources to varying extents. Proposed construction work at Pyrmont Station construction sites would further impact any remaining archaeological resources, which would be managed in accordance with an Archaeological Research Design.

At Hunter Street Station (Sydney CBD) construction sites, the impact assessment for the proposal has identified the potential for State significant archaeological resources relating to De Mestre's counting house and residence, and locally significant resources related to former road surfaces of the original carriage lane of De Mestre Place, which would be managed in accordance with an Archaeological Research Design.

Where heritage items, including significant archaeology, are impacted by work associated with this proposal, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages.

Aboriginal heritage

The proposal design has largely avoided direct impacts to known Aboriginal sites and minimised the potential interface with areas with high Aboriginal archaeological potential. Consultation carried out to support the Aboriginal cultural heritage assessment report for the major civil construction work between Westmead and The Bays (Stage 1 of the planning approval process) has continued for this proposal. A total of 62 stakeholders registered their interest in the Sydney Metro West project. Aboriginal community consultation has been conducted in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010*.

Consultation has shown the study areas are part of a wider cultural landscape of high cultural significance to many of the Registered Aboriginal Parties despite the construction sites for the proposal being within heavily modified urban landscapes which have been significantly altered.

The Sydney Metro Construction Environmental Management Framework (Appendix C) requires the preparation and implementation of a Heritage Management Plan which would include procedures for recordings of any heritage items, procedures for unexpected finds and monitoring requirements, if required. The background context indicates the survivability of archaeological contexts at the proposal construction sites are considered very low and no Aboriginal testing or salvage excavation is proposed.

Property and land use

The proposal supports the implementation of State and local strategic land use policies for the Eastern Harbour City, including the *Eastern City District Plan* (Greater Sydney Commission, 2018) by supporting a stronger internationally competitive Sydney CBD and enhancing the intercity links with the Central River City of Greater Parramatta.

The design of the proposal has sought to avoid and/or minimise potential impacts on property and land use, including minimising the extent of construction sites and the need for private property acquisition. For example, The Bays tunnel launch and support site is wholly located on existing government owned land. Also, both the Pyrmont Station and the Hunter Street Station (Sydney CBD) would be mined cavern style stations, which reduces the area required for surface construction work, and therefore the extent of land use impacts. No property acquisition would be required at The Bays tunnel launch and support site.

The main property impact would be property acquisition for the construction sites which is managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW). Sydney Metro has appointed personal managers to offer residents and small businesses assistance and support throughout the acquisition process. It would also be necessary to acquire stratum land 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 property at the surface. Property acquisitions are currently underway across all sites between Pyrmont and the Sydney CBD. Construction for Pyrmont Station and Hunter Street Station (Sydney CBD) requires acquisition of thirteen commercial buildings across four construction sites.

As a result of the proposal, there would be a change from commercial, retail and business land uses to transport infrastructure construction sites. At Pyrmont, the land use change would be minor given the existing nature of retail, commercial and residential development in the surrounding area. Within the Sydney CBD, while the change in land use would affect a significant amount of commercial and retail floor space, any loss would be relatively minor in the context of the existing scale and extent of retail, commercial and business development throughout the CBD.

Landscape and visual amenity

Measures would be implemented to reduce potential landscape and visual amenity impacts. This would include retaining and protecting trees where possible and offsetting trees removed at a ratio of 2:1 across Sydney Metro West to achieve a net outcome of increased tree numbers across the whole project. Other measures to mitigate potential impacts include tree planting, appearance of acoustic sheds and site hoarding during construction, minimising lighting impacts and removal of graffiti.

Temporary landscape and visual impacts would be experienced near construction sites, although the proposal would be located within highly modified urban environments.

Temporary visible elements would be introduced due to the removal of buildings and trees, establishment of site hoarding, acoustic sheds, and construction activities. Negligible to moderate temporary landscape and daytime visual amenity impacts are anticipated, with negligible to minor visual impacts at night. As the proposed tunnel alignment would be located entirely underground, no proposal-wide landscape and visual amenity impacts are anticipated.

Business impacts

Sydney Metro West is anticipated to create up to 10,000 direct and 70,000 indirect jobs across all stages of the project. Construction of the proposal would result in broad economic benefits by way of job generation. Locally, many businesses would benefit from increased demand from construction workers requiring food and beverage services and other goods.

Potential temporary business impacts associated with the proposal would generally be managed through appropriate mitigation of other aspects, such as noise, traffic, visual and air quality. The Overarching Community Communications Strategy (Appendix B) contains the strategy for stakeholder and community involvement that has been developed for the project. The strategy outlines the approach for proactive consultation with affected businesses and the community.

Direct impacts to business would occur where they are located within properties to be acquired. This would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. Small business owner engagement would be carried out to assist small business owners adjacent to major construction sites that are adversely impacted by construction.

Once operational (subject to future planning approval processes), Sydney Metro West is anticipated to have positive local and regional economic and employment impacts. Sydney Metro West will facilitate the transformation of The Bays into a future employment precinct, while metro stations at Pyrmont and Hunter Street (Sydney CBD) will further enhance these localities by improving business accessibility to customers and broadening access to Sydney's labour markets.

Social impacts

Potential temporary social impacts associated with the proposal would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality. The Sydney Metro West Community Benefit Plan for major civil construction work between Westmead and The Bays would be updated to give guidance to Contractors in providing positive social outcomes through the delivery of community benefit initiatives to the Pyrmont and Hunter Street (Sydney CBD) localities. The Sydney Metro West project aims to achieve positive outcomes for the surrounding community. This includes social performance outcomes outlined within the Concept (refer to *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a)) of:

- Maintaining neighbourhood amenity
- Access to local open space and social infrastructure networks
- Access to local facilities and services during construction
- Ensuring community members are effectively communicated with throughout the construction process
- That communities and their connections to each other and to place are recognised, understood and ultimately strengthened for the future.

The proposal has aimed to avoid and minimise potential negative social impacts by minimising the amount of privately owned land needed for construction sites to reduce negative impacts on the community (where possible). No residential land would be acquired or leased for the proposal. Consultation with the community and stakeholders would continue to be carried out in accordance with the Overarching Community Communications Strategy (Appendix B).

The proposal would result in temporary negative impacts to local amenity and changes to access for local social infrastructure and services. There would be potential changes to community character, the connection to place and belonging, as well as potential negative wellbeing impacts associated with construction activities, such as sensitivity to noise and vibration. These impacts are anticipated to be temporary due to the temporary nature of construction. Cumulative negative impacts to wellbeing would potentially result in construction fatigue, a cumulative sense of disruption, inconvenience and frustration.

Groundwater and ground movement

The proposal is in a highly urbanised environment mainly covered by previous surfaces which limits the potential interaction of water on the surface with deeper groundwater sources. To limit potential groundwater inflows and groundwater drawdown, the metro tunnels, cross passages and station excavations would be tanked to prevent the inflow of groundwater, typically using concrete lining and waterproofing membranes.

The groundwater flow regime in the vicinity of each of the construction sites are expected to change due to mined excavations at both Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites. There would be negligible changes to groundwater recharge from surface water infiltration due to the existing impervious nature of the ground surface.

The construction sites would act as local groundwater sinks, causing the surrounding groundwater to flow towards the excavations and leading to groundwater drawdown at Pyrmont Station construction sites and Hunter Street Station (Sydney CBD) construction sites. These excavations would result in groundwater ingress and lowering groundwater levels in nearby soils and bedrock. Groundwater level disruptions would be temporary, and groundwater levels would return to normal following the end of construction work. Drawdown of the water table as a result of tunnel excavation is considered to be negligible.

A small number of existing buildings, infrastructure and utilities have been assessed to be in ground movement risk categories slight or above. Risk category of slight indicates possible superficial damage which is unlikely to have structural significance. For assets where a risk category of slight or above has been assessed, further assessments at later design stages would be undertaken. These include detailed assessment using more sophisticated methods of calculating ground movement, building strains, investigating the existing structural condition of the asset and the consideration of soil-structure interaction effects. Based on such detailed assessment, it may be required to develop mitigation measures to address potential impacts supported by detailed instrumentation and monitoring.

Soils and surface water quality

The existing water quality in the area is generally poor due to the heavily urbanised state of the surrounding environment. The construction of the proposal has the potential to impact on local waterbodies. Potential impacts are generally associated with construction activities which may disturb and/or spread sources of pollutants, generate soils and waste materials, soil erosion and discharge of concrete dust/slurries. Erosion and sediment mitigation measures would manage these potential pollutant sources to minimise the potential for these to be conveyed to waterbodies. The water treatment plants would be designed with the aim of treating wastewater to a level as close as practicable to relevant surface water criteria to either maintain or improve the water quality of the surface waterways and marine environment.

Given the relatively small areas of surface disturbance anticipated during construction, soil erosion would be adequately managed in accordance with proven standard mitigation measures. Standard construction management measures would be implemented to minimise potential and temporary risks to downstream water quality from station excavation and tunnelling construction activities. The proposal would not negatively impact any water quality objectives. Erosion and sediment mitigation measures would be implemented at all construction sites, and wastewater would be treated at wastewater treatment plants within each site prior to discharge.

Testing would be carried out to determine the presence of acid sulfate soils within construction sites and saline soils. Any identified acid sulfate soils or saline soils would be managed in accordance with relevant guidelines.

Contamination

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

The majority of the areas of environmental interest identified within and/or adjacent to the proposal would have a very low or low potential contamination risk to receivers as a result of the proposal.

Potential groundwater contamination in the vicinity of the Pyrmont Station construction sites resulting from historic 'general industrial use' in the Pyrmont area is considered to have a moderate risk of potential impacts to receivers during construction. In addition, potential acid sulfate soils have been identified as representing a moderate potential contamination risk for the Pyrmont Station eastern construction site. Saline soils may also be present within the same extent as the area of potential acid sulfate soils.

Mitigation measures would be implemented to manage potential contamination impacts. Where required, additional data review will be undertaken to inform these measures. Where there is insufficient data available, detailed site investigations may be required. Where contamination is identified to present a moderate or higher risk to receivers, a Remediation Action Plan or other management plan will be implemented as required.

Hydrology and flooding

Flood modelling results indicate that the overall risk of flooding impacts from this proposal is considered low and the magnitude of impacts would be negligible. While the Hunter Street Station (Sydney CBD) construction sites and The Bays tunnel launch and support site and, to a lesser extent, Pyrmont Station construction sites, are affected by major overland flow paths, the proposed changes to those sites would not significantly alter flooding impacts on neighbouring sites. Localised changes to overland flows are limited in their scale to the immediate vicinity of the construction sites, and are considered minor due to the temporary nature of the impacts.

Flood mitigation measures would be implemented to manage potential flood impacts. A consistent approach to emergency evacuation throughout the construction period would be maintained at all the construction sites.

Biodiversity

The proposal would be located within a highly urbanised area that does not include large expanses of intact native vegetation with high biodiversity value. As the majority of this proposal would be underground or in pre-existing heavily urbanised and developed areas, direct impacts to terrestrial biodiversity have been largely avoided and/or minimised.

A Biodiversity Development Assessment Report Wavier has been granted as the proposal is not likely to have any significant impact on biodiversity values.

The proposal would result in the removal of around 16 trees (seven planted native trees and nine exotic trees) which includes six trees within the construction sites and ten street trees. Options would be investigated for the retention or protection of street trees identified for removal during detailed construction planning. The removal of trees is considered unlikely to significantly impact on threatened fauna species that may use trees for foraging, including the Grey-headed Flying Fox, Powerful Owl and Little Lorikeet. In addition, the mitigation measures described in Chapter 11 (Landscape and visual amenity) would be implemented to ensure that trees removed by the proposal would be replaced to ensure that there is a net increase in the number of mature trees provided at a ratio of 2:1 as part of future stages of the whole Sydney Metro West Concept.

The human-made structures proposed to be demolished within the construction sites are not anticipated to offer suitable roosting habitat for threatened microbats. As such, no impacts to threatened microbat species are anticipated as a result of the proposal.

Mitigation measures have been proposed to further minimise or avoid potential biodiversity impacts, including pre-clearing surveys, removal of vegetation in accordance with relevant guidelines, implementation of weed management measures and the implementation of an unexpected finds protocol for threatened flora or fauna.

Air quality

Air quality during the proposal would be managed in accordance with standard mitigation measures. This would include best-practice dust management measures, such as watering of haul roads and exposed areas, adjusting and coordinating activities, and stockpiling measures.

Temporary dust generating activities would include dust generated from clearing and demolition, excavation, materials handling, stockpiling and compaction activities, as well as from wind erosion of stored materials and exposed surfaces. This could result in potential impacts at surrounding human and ecological sensitive receivers. Temporary emissions from combustion of diesel fuel by heavy vehicles, mobile construction equipment and stationary equipment such as diesel generators are not expected to result in adverse impacts on the surrounding environment.

Cumulative impacts

Given the potential overlap of construction with a number of other large infrastructure projects particularly at The Bays and within the vicinity of the Hunter Street Station (Sydney CBD) construction sites, the main potential cumulative impacts are expected to be experienced at these locations. Cumulative impacts would be highly dynamic and time/activity specific. Sydney Metro would work closely with the proponents of other nearby projects and stakeholders such as Transport for NSW to manage and coordinate the interface with other major projects under construction at the same time.

Potential cumulative impacts at The Bays with the construction of the Stage 1 planning approval of Sydney Metro West for major civil construction work between Westmead and The Bays (approved on 11 March 2021) are assessed where relevant. Future planning approval applications for Sydney Metro West will include tunnel fit-out, construction of stations, ancillary facilities and station precincts, and operation and maintenance of the Sydney Metro West line, between Westmead and Sydney CBD and the potential cumulative impacts associated with future stages are addressed where relevant.

Other potential issues

A number of other potential issues were assessed including:

- Spoil, waste management and resource use
- Hazards
- Sustainability, climate change and greenhouse gas.

No issues of major risk or consequence were identified. Notwithstanding this, management and mitigation measures have been identified to minimise any potential impacts.

Justification and conclusion

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

This proposal, as Stage 2 of the planning approval process for Sydney Metro West, has been justified in relation to its strategic transport need and its anticipated benefits, taking into account the objectives of the *Environmental Planning and Assessment Act 1979* and matters of ecologically sustainable development. The proposal best meets the network and corridor objectives when compared to all other alternatives considered.

The approved Sydney Metro West Concept included consideration of the justification of the project as a whole in the *Sydney Metro West Environmental Impact Statement – Westmead to The Bays and Sydney CBD* (Sydney Metro, 2020a). This proposal is seeking planning approval to enable the Sydney Metro West Concept to be realised by undertaking major civil construction work from The Bays to Sydney CBD, which would link the major civil construction work from Westmead to The Bays (approved under Stage 1 of the planning approval) to the Sydney CBD.

Key environmental issues have been examined throughout the design development process. Consultation has been carried out with affected stakeholders during the assessment process so that key potential impacts of the proposal have been identified at an early stage, and where possible, avoided or appropriate mitigation measures developed. This has resulted in a number of changes to the earlier designs that have mitigated many of the potential significant impacts. Provided the measures and commitments specified in the Environmental Impact Statement are applied and effectively implemented during the design, construction and operational phases, the identified environmental impacts are considered to be acceptable and manageable.

Next steps

Sydney Metro is seeking approval from the Minister for Planning and Public Spaces for major civil construction work between The Bays and Sydney CBD (this proposal). Subsequent steps in the process include:

- Exhibition of the Environmental Impact Statement – And invitation for the community and stakeholders to make submissions
- Consideration of submissions – Submissions received by the Secretary of the Department of Planning, Industry and Environment would be provided to Sydney Metro who may then be required to prepare and submit:
  - A submissions report, responding to issues raised in the submissions
  - A preferred infrastructure report and/or an amendment report, outlining any proposed changes to the proposal to minimise its environmental impacts or to deal with any other issues raised
- Determination of the application for approval of this proposal by the Minister for Planning and Public Spaces including, if approved, any Conditions of Approval.

Consultation with the community and stakeholders would continue throughout the detailed design and construction phases.

Any person wishing to make a submission should use the online form if possible. To find the online form go to the web-page for the proposal via www.planningportal.nsw.gov.au/major-projects/projects/on-exhibition.

Your submission must reach the Department of Planning, Industry and Environment by the close of the exhibition period. Before making your submission, please read the Privacy Statement at www.planning.nsw.gov.au/privacy or for a copy, telephone the number below. The Department of Planning, Industry and Environment will publish your submission in accordance with the Privacy Statement.

If you cannot lodge online, you can write to the address below. If you want the Department of Planning, Industry and Environment to delete your personal information before publication, please make this clear at the top of your letter. You need to include:

- Your name and address (at the top of the letter only)
- The name of the application and the application number (SSI- 19238057)
- A statement on whether you support or object to the proposal
- The reasons why you support or object to the proposal
- A declaration of any reportable political donations made in the previous two years. To find out what is reportable, and for a disclosure form, go to https://www.planning.nsw.gov.au/donations or phone 1300 305 695 for a copy.

Address:

Department of Planning, Industry and Environment
Locked Bag 5022
Parramatta NSW 2124
Your submission should be marked Attention: Director, Transport Assessments.

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