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Sydney Metro – Western Sydney Airport

Environmental Impact Statement

October 2020

Certification

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

Environmental Impact Statement prepared by:

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Address	M2A Joint Venture (WSP and AECOM) Level 21, 680 George Street Sydney NSW 2000
In respect of	Sydney Metro – Western Sydney Airport Environmental Impact Statement
Applicant Name	Sydney Metro
Applicant Address	Level 43, 680 George Street, Sydney NSW 2000 PO Box K659, Haymarket NSW 1240
Proposed development	The Sydney Metro – Western Sydney Airport project involves the construction and operation of a new metro railway around 23 kilometres in length between the existing Sydney Trains suburban rail network at St Marys in the north and the Western Sydney Aerotropolis Core precinct in the south, via Western Sydney International (Nancy-Bird Walton) Airport. The project would provide six new metro stations at St Marys, Orchard Hills, Luddenham Road, Airport Business Park, Airport Terminal and Aerotropolis Core. A stabling and maintenance facility and operational control centre would be located in Orchard Hills to the south of Blaxland Creek. Further details about the project are provided in Chapter 7 (Project description – operation) and Chapter 8 (Project description – construction) of the Environmental Impact Statement.
Land to be developed	The project would be located in the local government areas of the City of Penrith and City of Liverpool and on land owned by the Commonwealth including land which is being developed as a new airport (Western Sydney International).
Environmental Impact Statement	An Environmental Impact Statement is attached that assesses all matters specified in the Planning Secretary's Environmental Assessment Requirements dated 16 July 2020, in accordance with Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) 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 Planning Secretary's Environmental Assessment Requirements dated 16 July 2020, and that, to the best of my knowledge the information contained in this Environmental Impact Statement is not false or misleading.
Signature	
Name	Paul Greenhalgh
Date	21 October, 2020

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Sydney Metro –
Western Sydney Airport

Executive summary

Executive summary

Overview

Sydney Metro is Australia's biggest public transport project. Services between Rouse Hill and Chatswood started in May 2019 on the new stand-alone metro railway system. The Sydney Metro network and program of work is shown in Figure E-1 and includes the Metro North West Line (which opened in May 2019), Sydney Metro City & Southwest (which is currently under construction and due to open in 2024), Sydney Metro West (with construction due to start in 2020) and Sydney Metro – Western Sydney Airport (the project). Potential future extensions to Schofields/Tallawong in Rouse Hill in the north and to Macarthur in the south are under consideration and are being safeguarded but do not form part of the project.

The Sydney Metro – Western Sydney Airport project (the project) would become the transport spine for Greater Western Sydney, connecting communities and travellers with the new Western Sydney International (Nancy-Bird Walton) Airport (referred to as Western Sydney International) and the growing region. The city-shaping project, from St Marys through to the new airport and the Western Sydney Aerotropolis, would provide a major economic stimulus for Western Sydney, supporting more than 14,000 jobs during construction for the NSW and national economies, including more than 250 new apprenticeships.

The project comprises components that are located outside Western Sydney International (off-airport) and components that are located within Western Sydney International (on-airport). These two project components are delineated throughout this Environmental Impact Statement to align with the different planning approval pathways applicable to the on and off-airport components.

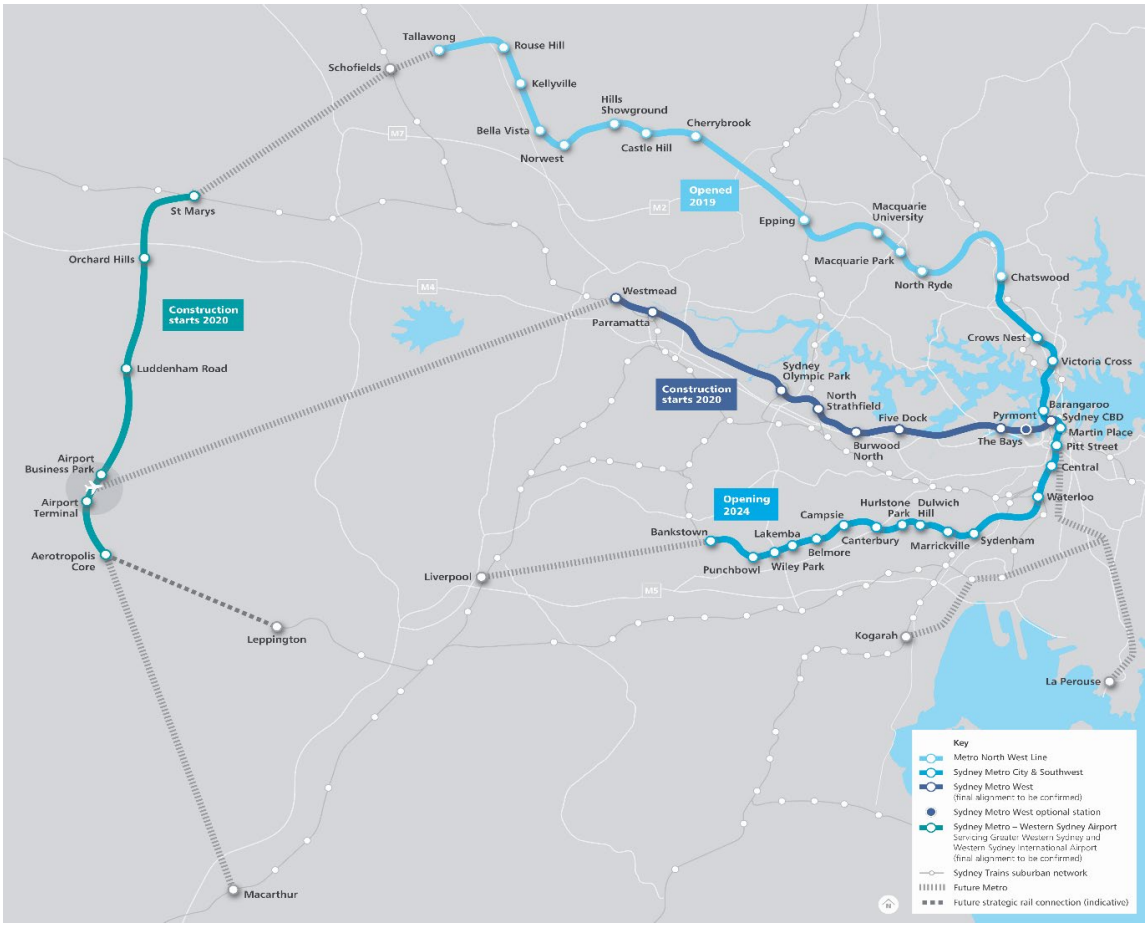

Figure E-1 The Sydney Metro network

Key features

The project involves the construction and operation of a metro railway line around 23 kilometres in length between St Marys in the north and the Aerotropolis Core precinct in the south (see Figure E-2). Station locations for the project would comprise:

- a new metro station connecting to, and providing an interchange with, the T1 Western Line (part of the existing Sydney Trains suburban rail network) at St Marys
- two new metro stations between the T1 Western Line and Western Sydney International; one at Orchard Hills and one at Luddenham within the Northern Gateway Precinct
- two new metro stations within the Western Sydney International site; one at the Airport Terminal and one at the Airport Business Park
- a new metro station within the Aerotropolis Core precinct, south of Western Sydney International.

The alignment of the new metro railway line would:

- include a combination of tunnel, surface and viaduct sections
- interface with key roads including the Great Western Highway, M4 Western Motorway, Luddenham Road, the future M12 Motorway, Elizabeth Drive and Badgerys Creek Road, as well as key utilities such as the Warragamba to Prospect Water Supply Pipelines
- include waterway crossings of Blaxland Creek and Cosgroves Creek.

The project includes works required to support its construction and operation, including all operational systems and infrastructure such as fresh air ventilation systems, signalling, communications, overhead wiring, rail corridor fencing and access tracks/paths. A stabling and maintenance facility and operational control centre would also be required to support operation of the project. This facility is proposed to be located in Orchard Hills, to the south of Blaxland Creek and east of the proposed metro line. Two services facilities would also be located at Claremont Meadows and Bringelly.

It is expected that the end-to-end journey time between the proposed St Marys Station and Aerotropolis Core Station would be around 20 minutes. The journey time from St Marys Station to Airport Terminal Station would be around 15 minutes. The project would initially operate up to three carriages per train with a service frequency of up to 12 trains per hour in the peak. The design for the ultimate service caters for up to four carriages per train and a frequency of 20 trains per hour.

Key features of Sydney Metro include:

- no timetable – customers can just turn up and go
- Opal ticketing – fares are the same as the rest of Sydney
- customer service assistants at every station and moving through the network during the day and night
- Australian-first platform screen doors improving customer safety and allowing trains to get in and out of stations much faster. These doors run the full length of all metro platforms and open at the same time as the train doors
- continuous mobile phone coverage throughout the metro network
- operational performance requirements that include 98 per cent on-time running and clean platforms and trains
- multi-purpose areas for prams, luggage and bicycles
- wheelchair spaces, separate priority seating and emergency intercoms inside trains
- safety benefits including security cameras on trains and the ability for customers to see inside the train from one end to the other
- video help points at platforms, connecting directly with train controllers – an Australian first
- level access between the platform and train for faster loading and unloading
- heating and air-conditioning in all metro trains
- on-board real time travel information and live electronic route maps.

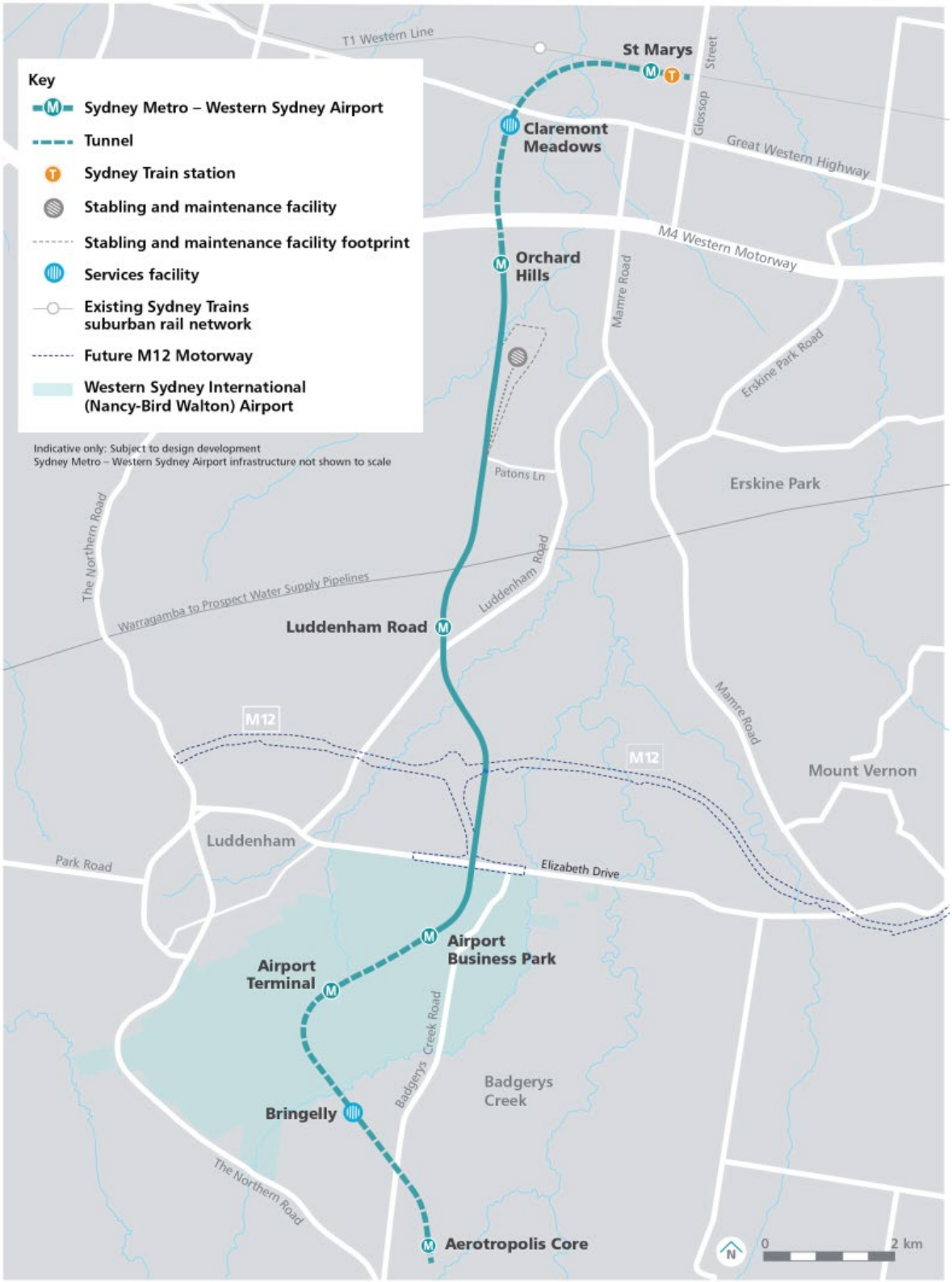

Figure E-2 Overview of the project

Construction works and program

A number of construction sites would be needed. The construction sites would be confirmed once a construction contractor(s) has been appointed. The construction sites include locations for:

- TBM launch and support
- TBM retrieval
- civil structures and earthworks support
- station and precinct works
- ancillary facility construction
- concrete batching and precast concrete segment and viaduct manufacturing facilities.

Enabling works (preliminary construction works required to facilitate the start of substantial construction) would likely begin before main construction works, while some enabling works would continue concurrently with the main construction works. Main construction works include:

- tunnelling and associated works
- corridor and associated works including earthworks, construction of bridge and viaduct structures and rail systems fitout
- station and associated works including excavation, fitout and precinct and transport integration works
- ancillary facilities and associated works such as the stabling and maintenance facility and services facilities.

Following the main construction works, finishing works and testing and commissioning would be undertaken.

Early works including site investigations would be undertaken in 2020; however, these works would be subject to separate approval outside the scope of this Environmental Impact Statement.

The indicative timeframe for the project is for main construction to commence in 2021 and take about five years to complete, subject to planning approval, with project opening intended to align with when Western Sydney International opens for passenger services. The final construction methodology and program would be developed by the construction contractor(s) when appointed.

Interface with Western Sydney International

Rail access to Western Sydney International would contribute to the success of the airport and the Western Parkland City, as it would facilitate passengers' and workers' journeys, reduce road congestion and support the economic viability of the airport.

The Western Sydney Airport Plan sets out the vision for the development and operation of Western Sydney International and provides authorisation for Stage 1 of the airport. The construction of Stage 1 of the airport is expected to be completed to enable operations to commence in 2026 and will comprise a single runway, a terminal and other relevant facilities to accommodate around 10 million passengers annually as well as air freight traffic.

The project is proposed to enter the airport site from the north and would include stations at the Airport Business Park and the Airport Terminal. The rail line would travel through the airport, before exiting the airport site beneath Badgerys Creek in the southeast of the airport site.

Sydney Metro has been, and will continue, working closely with Western Sydney Airport to ensure design development and construction planning of the project is coordinated with the construction and operation of Western Sydney International.

Project need and benefits of Sydney Metro – Western Sydney Airport

Project need

The project is a significant initiative outlined in various State, regional and local policies and plans such as the Western Sydney City Deal, Greater Sydney Region Plan and Western Sydney Aerotropolis Plan. This mass transit link would deliver on the shared objective of connecting rail to the Aerotropolis and Western Sydney International in time for the planned opening of the airport.

The project is needed to:

- service a growing population in the Western Parkland City
- provide rail access to Western Sydney International and the Aerotropolis
- connect with the existing Sydney Trains suburban rail network at St Marys, providing a link to the Central River and Eastern Harbour cities
- open access to jobs and increase potential for jobs growth in the Western Economic Corridor (including the Aerotropolis and Western Sydney International) and in the Greater Penrith to Eastern Creek Growth Investigation Area
- facilitate the movement of workers and airline passengers westwards, helping to rebalance demand and supply across Greater Sydney
- support and shape the sustainable growth of the Western Parkland City by optimising land use around station precincts
- create opportunities for precinct planning that would improve liveability in and around station precincts
- support access to urban renewal and new land release areas including the Greater Penrith to Eastern Creek Growth Investigation Area and the Western Sydney Aerotropolis precincts.

Benefits of the project

The timing of the project is important as it would inform long-term land use planning and provide certainty to local councils about developments in their area that can be built around available transport infrastructure.

The new metro railway would be a city-shaping project that would help optimise land use and development, supporting precincts and places with a high level of accessibility to jobs and services. A fast, safe and easy metro rail service would deliver better access to more employment opportunities, health and education services and leisure activities across the Western Parkland City and Greater Western Sydney.

In the Western Parkland City, green infrastructure is planned to be implemented at the city scale. The project's green infrastructure approach supports the vision of a Western Parkland City that will be cool, green and liveable with healthy waterways and high quality landscapes, open spaces and recreational links.

In summary, the project would:

- provide the initial spine of a transport network to service the Western Parkland City, offering a reliable, efficient public transport option for existing and future residents, customers and employees of the Aerotropolis and Western Sydney International and associated businesses in Western Sydney
- support the successful development of Western Sydney International as a nationally significant economic driver
- provide a sustainable, low carbon travel mode that would reduce private vehicle use and improve accessibility to air travel for people living in Greater Western Sydney
- unlock economic development and employment generation activity around St Marys, the Aerotropolis and Western Sydney International

- provide opportunities for placemaking at the stations, such as public domain improvements, and act as a catalyst for future development in the station precincts
- provide a structural framework for the development of future transport, education, health and social infrastructure in the region around a mass transit corridor.

Project objectives

A robust set of objectives has been developed to represent the outcomes to be achieved by the project (see Figure E-3). The objectives have underpinned the options evaluation process and guided decision-making during design development. The objectives will also be used to guide decision-making during future design development for the project.

Figure E-3 Project objectives

Options considered

The project development process has been driven by the identified strategic need for an integrated transport solution that can respond to the needs of a growing Western Parkland City, and has included:

- consideration of strategic alternatives
- analysis of options for station precincts and optimisation of station locations
- analysis of options for project alignments
- analysis of options for ancillary facilities.

The option selection process has taken into account issues raised during consultation with key stakeholders. Options were assessed against the project objectives and a range of criteria, including engineering and design, customer outcomes, environmental and heritage impacts, land use and property outcomes, and program and cost.

Following identification of the preferred option for the stations, project alignment and ancillary facilities, the design has been further refined to avoid or minimise potential environmental impacts.

Stakeholder and community engagement

Sydney Metro has developed a comprehensive stakeholder and community engagement program to proactively engage with local communities, key stakeholders and government agencies during and following exhibition of this Environmental Impact Statement.

Consultation for the project has been undertaken since June 2015 as part of the Western Sydney corridors identification and *Western Sydney Rail Needs Scoping Study* (Transport for NSW and Australian Government, 2018), with the project being formally announced in June 2020.

Consultation has been undertaken with Commonwealth and NSW government departments and agencies, local government, peak organisations, the community and industry. This has involved:

- project briefing forums and meetings with key stakeholders, local councils and government agencies
- project flyer – letterbox drop to around 16,000 residents and businesses
- proactive media strategy, which resulted in broad coverage across Sydney metropolitan and local print, radio and television outlets
- email alerts to registered community members and stakeholders
- social media via the Sydney Metro Facebook page
- online surveys – 'Have your say' on the Sydney Metro website
- newsletters – delivered via letterbox drop and placed on the project website
- a 'Project Overview' information booklet (published in September 2020).

In addition, a number of channels have been established to provide information and invite feedback, which are available to the public and are advertised on all external communication materials. These channels have been used throughout the project development phase and will remain available during exhibition of the Environmental Impact Statement.

During the exhibition period, the community, stakeholders and government agencies will be able to review the Environmental Impact Statement and will have an opportunity to make a written submission.

Planning approvals

There are three principal statutory schemes that govern the planning and assessment process for the project:

- NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to works located outside the boundary of Western Sydney International (off-airport)
- Commonwealth *Airports Act 1996* (Airports Act) applies to works located within the boundary of Western Sydney International (on-airport)
- Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act):
    - for works located north of Western Sydney International (off-airport), assessment and approval is required under Parts 8 and 9 of the EPBC Act to address impacts on listed threatened species and communities and Commonwealth land
    - for works located south of Western Sydney International (off-airport), impacts on matters of national environmental significance and Commonwealth land have already been assessed and approved under a strategic assessment in accordance with Part 10 of the EPBC Act.

This Environmental Impact Statement provides the assessment required under both the off-airport and on-airport statutory schemes in a single document (refer to Appendix J (EPBC Act Draft Environmental Impact Assessment of on-airport proposed action (EPBC 2019/8541)) and Appendix K (EPBC Act Draft Environmental Impact Assessment of off-airport proposed action (EPBC 2020/8687)).

Environmental assessment

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, Sydney Metro has avoided and minimised impacts as part of project

development and design. The assessment has been carried out to meet the Secretary's environmental assessment requirements and Commonwealth assessment requirements.

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

Transport

Potential transport and traffic impacts of the project have been avoided and minimised, primarily by:

- tunnelling underneath or bridging over key roads such as the Great Western Highway, M4 Western Motorway and Luddenham Road
- identifying the most efficient haul route to the arterial road network and minimising movements during existing network peak periods.

In addition, the management of construction traffic would be in accordance with the Sydney Metro Construction Traffic Management Framework and site specific mitigation measures. This includes measures to manage pedestrian, cyclist and motorist safety around construction sites.

Key potential impacts on the transport network during construction would be primarily focused around the urban area of St Marys. The project would require the temporary closure of Station Street and the temporary relocation of the existing bus stops, interchange and routes at St Marys Station. This could result in temporary minor delays and the need for some commuters to walk further to reach their destinations. Access to the existing St Marys Station on the T1 Western Line would be maintained throughout construction.

The provision of a new station plaza on the northern side of the existing St Marys Station would require the removal of the existing at-grade commuter car park on Harris Street. The adjacent multi-level commuter car park on Harris Street would be extended to include two additional levels of parking (subject to separate approval) and is proposed to be in place before the at-grade commuter car park is removed. The project would also require the acquisition of the Station Street car park and affect other on-street and off-street parking; however, there is spare capacity at other existing parking locations within 400 metres of the affected parking.

There may be some potential temporary impacts on traffic performance on the road network surrounding the project due to the temporary addition of construction vehicles and temporary road closures. Cumulative temporary transport impacts may also be experienced where the same haul routes are concurrently used for the construction of the future M12 Motorway and Western Sydney International. Sydney Metro would consult with Transport for NSW to enable the coordination of infrastructure upgrades necessary to maintain effective road network operation.

Once operational, the project would integrate seamlessly with the proposed station precincts and existing and future transport interchange facilities, providing connectivity with pedestrian, cycling and public transport networks, and providing opportunities for integration with future land uses and infrastructure.

Noise and vibration

Potential noise and vibration impacts of the project have been avoided and minimised through design primarily by locating sections of the project in tunnel in areas that are close to sensitive receivers between St Marys and Orchard Hills. An Operational Noise and Vibration Review would be undertaken as the design develops to ensure the project complies with the *Rail Infrastructure Noise Guideline* (Environment Protection Authority, 2013).

The management of construction noise and vibration would be in accordance with the Sydney Metro Construction Noise and Vibration Standard, 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 during construction, including the potential use of acoustic sheds, subject to further investigation during construction planning and design development.

Where receivers are close to construction sites (such as at St Marys, Claremont Meadows and Orchard Hills) or where the existing background noise levels are low (such as in the rural environments of Luddenham and Bringelly), the noise impacts during some of the works are expected to be temporarily high, particularly where noise intensive equipment such as concrete saws, dozers

and hydraulic hammers are in use close to receivers. The use of noise intensive equipment would be planned for standard working hours where possible and respite periods provided (if required).

The main potential sources of construction ground-borne noise and vibration are associated with the use of tunnel boring machines during tunnelling. 'Moderate' or 'high' impacts are predicted above the St Marys to Orchard Hills tunnel and above the Western Sydney International to Bringelly tunnel, either due to the tunnel being shallow at this location or sensitive receivers being near the station shaft excavation works. However, these impacts would be transient at any individual receiver as tunnelling progresses and not expected to last more than three to four nights.

Buildings potentially affected by temporary exceedances of vibration cosmetic damage screening criteria would be identified before commencement of construction activities. Exceedances of the human comfort vibration criteria may occur, meaning occupants of affected buildings may be able to perceive the impacts at times when vibration intensive equipment is in use nearby. Measures such as attended vibration monitoring, scheduling vibration intensive works during less sensitive time periods and providing respite periods would be implemented in accordance with the Sydney Metro Construction Noise and Vibration Standard.

Construction road traffic noise levels are not predicted to exceed the relevant noise criteria at the majority of project affected roads. However, there may be minor construction traffic noise impacts on receivers near Kent Road, Orchard Hills and Badgerys Creek Road, Bringelly.

Biodiversity

The project has been designed to avoid biodiversity impacts where possible, by being located within tunnel and providing bridges and viaducts over key riparian and vegetated areas and ensuring these structures are designed to maintain fauna connectivity. Mitigation measures have also been proposed to minimise or avoid potential biodiversity impacts which have not been able to be avoided through design.

Residual biodiversity impacts would be offset in accordance with the Biodiversity Assessment Method. Up to 942 ecosystem credits and 3,016 species credits may be required to offset impacts on threatened fauna, flora and ecological communities.

The key biodiversity impacts include:

- potential impact upon around 33 hectares of native vegetation off-airport and 27 hectares of native vegetation on-airport outside the Western Sydney International Stage 1 Construction Impact Zone
- clearing of threatened ecological communities, including the Cumberland Plain Woodland
- removal of threatened species and/or their habitat or potential indirect impacts from noise, dust or light spill
- potential impacts on groundwater dependent ecosystems resulting from changes to groundwater level or flow during construction and operation.

Opportunities to minimise these impacts would be investigated further during design development.

Non-Aboriginal heritage

Potential non-Aboriginal heritage impacts have been avoided and minimised where possible. For example, the proposed St Marys Station has been designed to avoid direct impacts on the elements of exceptional heritage significance such as the Goods Shed and the Platform 3/4 building. In addition to archival recordings and preparation of a conservation management plan, mitigation measures have been identified to minimise direct and indirect impacts to heritage items.

The project would result in a moderate indirect impact to the State heritage listed St Marys Railway Station Group and a major indirect impact to the locally listed McGarvie-Smith Farm, primarily as a result of changes to their visual setting.

Listed and potential heritage items within the Western Sydney International site have been or will be removed or managed in accordance with the *European and Other Heritage Construction Environmental Management Plan* (Western Sydney Airport, 2019e) and the Airport Plan. Potential temporary impacts due to construction vibration and settlement would be negligible to minor, including

at the St Marys Railway Station Group and the Warragamba Supply Scheme. There is also moderate potential for the identification of subsurface archaeological remains related to the heritage of St Marys Station which may be of local heritage significance.

Archaeological remains potentially affected by the project would be managed in accordance with an Archaeological Research Design prepared for the project.

Design development for the project would continue to identify opportunities to minimise adverse impacts on heritage buildings, elements, fabric, spaces and vistas that contribute to the overall heritage significance of heritage items.

Aboriginal heritage

Surface and subsurface Aboriginal artefacts have been identified across the study area, and generally near water sources and areas that have been subject to low levels of past disturbance. Development of the project has largely avoided direct impacts on known Aboriginal sites and minimised the potential interface with areas with high Aboriginal archaeological potential, particularly by providing bridges and viaduct structures over waterways. Further consultation and field survey is being undertaken and test excavations would be carried out at sites with higher Aboriginal archaeological potential. Where Aboriginal archaeological remains are identified, archaeological results would be used for Aboriginal heritage interpretation in future stages, in consultation with Registered Aboriginal Parties.

Searches of the Aboriginal Heritage Information Management System (AHIMS) database found 10 registered sites within the construction footprint, with eight of these located on the airport site. Of the two sites located off-airport, one was identified as having been destroyed under the conditions of an Aboriginal Heritage Impact Permit. The other was a valid artefact scatter site located in the Aerotropolis Core construction footprint.

Further cultural information would also be gathered during consultation with Aboriginal parties and this would inform cultural design principles to be considered during design development.

Flooding, hydrology and water quality

The project would be designed to avoid potential flooding impacts and achieve the recommended performance outcomes. The project would traverse either under or over a number of waterways, including South Creek, Blaxland Creek, Badgerys Creek and Cosgrove Creek. The existing water quality for these creeks is considered poor and generally does not meet the *Australian Water Quality Guidelines for Fresh and Marine Waters* (ANZECC, 2018) due to high nutrient and low dissolved oxygen concentrations. Potential impacts on water quality would be managed through mitigation measures and erosion and sediment controls.

The project has the potential to increase peak flood levels in isolated locations, such as around Blaxland Creek and at the proposed stabling and maintenance facility. Temporary changes to the local flooding regime may also occur during construction due to the temporary blockage of flow paths and increased flow rates due to vegetation clearing.

Further investigation and modelling would be carried out during design development and appropriate arrangements would be in place to manage any flood events should they occur during either construction or operation.

Groundwater and geology

To limit potential groundwater inflows and groundwater drawdown, the metro tunnels would be tanked (designed to prevent the inflow of groundwater, typically using concrete lining and waterproofing membranes). Similarly, the cross-passages and the station structures would be tanked. As a result, limited change is expected to groundwater levels.

During construction, groundwater drawdown may occur at locations with drained excavations, such as at St Marys, Airport Terminal and the Aerotropolis Core. These excavations would allow groundwater ingress to occur, which would result in a lowering of the groundwater levels in the adjacent soils and bedrock. Water levels at locations drained during construction would recover during the operational phase.

Long-term changes in water levels are anticipated to be relatively small and within the range of seasonal and long-term groundwater fluctuation, and localised around the structures. Groundwater

monitoring would be carried out to confirm the predictions. Groundwater would be captured and treated at water treatment plants during construction and operation in order to meet the water quality criteria before being discharged.

Soils and contamination

Soil erosion, soil salinity and potential acid sulfate soils would be managed in accordance with proven standard mitigation measures. The potential risks of encountering contamination would also be appropriately managed to avoid impacts on human health and ecological receivers. Areas of high and medium risk of contamination were identified within the construction footprint associated with the potential excavation or disturbance of existing contaminated soil or interaction with contaminated groundwater. Sampling and analysis of these areas would be undertaken with further investigation to determine if remediation is required.

Any contamination encountered on the airport site that has not been remediated by Western Sydney Airport would be managed in accordance with a project-specific remediation action plan that would be consistent with the existing *Western Sydney Airport Remediation Action Plan* (Department of Infrastructure and Regional Development, 2019). Other mitigation measures would include an unexpected finds protocol and measures for the prevention of contamination, including spill prevention and spoil and stockpile management.

Sustainability and climate change

Sydney Metro is preparing a Sustainability Plan for the project that will set out the sustainability policy and objectives and identify key activities so that sustainability considerations are embedded across the project life cycle.

Six principles have been developed to govern environmental and socio-economic outcomes and performance for the project based around demonstrating leadership, addressing climate change, managing resources efficiently, driving supply chain best practice, valuing community and customers and respecting the environment. Targets and initiatives would be developed to support these sustainability principles.

Cumulative impacts

Given the potential overlap of construction with a number of large infrastructure projects, such as the future M12 Motorway and the development of Western Sydney International, cumulative impacts may occur in the vicinity of these projects. Cumulative impacts would be highly dynamic and time/activity specific so are difficult to define in any detail at this stage of the assessment process. Nevertheless, existing available data from the projects, such as traffic and noise impacts, have been considered in this assessment.

Sydney Metro would work closely with the proponents of other neighbouring projects and stakeholders, such as the Western Parkland City Authority, Transport for NSW and Western Sydney Airport, to manage and coordinate the interface with other major projects under construction at the same time as the project.

Other issues

A number of other issues were assessed including social, economic, land use, air quality, hazards and risk, waste and resources 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.

Environmental management and mitigation

Potential construction 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 (refer to Appendix F), Construction Noise and Vibration Standard (refer to Appendix H), Construction Traffic Management Framework (refer to Appendix G) and Overarching Community Communications Strategy (refer to Appendix C) which set out the overall approach to environmental management. Earlier versions of

these documents have been successfully implemented on the Metro North West Line and Sydney Metro City & Southwest projects.

For the construction and operation of the project, an Airport and Rail Integration Deed would be established between Sydney Metro, Transport for NSW, Western Sydney Airport and the Commonwealth, in relation to the on-airport section of the project. The Deed would represent an agreement between the parties that would establish a regime where Sydney Metro would be responsible for the ongoing construction and operational environmental management of the project (including the on-airport component of the project), constructing the project under licence and operating it under an easement.

An operational environmental management plan or system would be developed for the whole project and, for the on-airport components, would be consistent with the Airport and Rail Integration Deed.

The approach to environmental management is illustrated in Figure E-4.

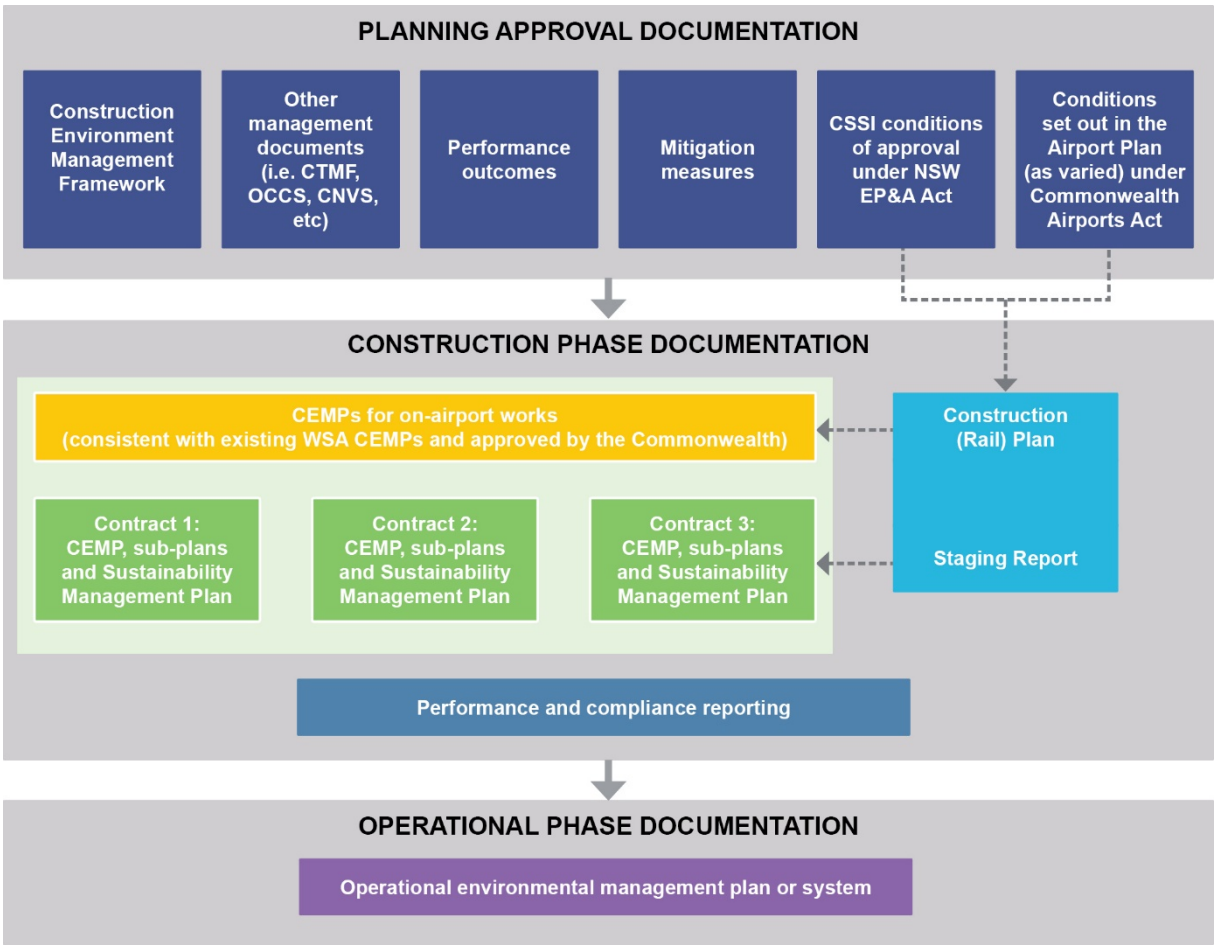

Figure E-4 Construction environmental management approach

Justification and conclusion

Sydney Metro – Western Sydney Airport would be a city-shaping mass transit investment that would unlock and accelerate delivery of the vision for a new Western Parkland City, centred on the economic anchors of the Aerotropolis and Western Sydney International. It would provide an essential transport link to the existing Sydney Trains suburban rail network, and support high-amenity centres, precincts and recreation areas. These factors all work as major attractors for housing and jobs growth across the Western Parkland City.

The project would establish the first stage of a public transport system for the Western Parkland City that would underpin Greater Western Sydney's growth and prosperity for generations to come. It would do this by:

- providing a fast, frequent mass transit link from the existing Sydney Trains suburban rail network at St Marys to Western Sydney International and the Aerotropolis – this would be a critical early connection to establish and maintain city-wide business-to-business connections, providing high-quality worker access to a local job pool and drawing airport passengers westwards. This would ultimately safeguard economic success and the rebalance of Greater Sydney
- connecting metropolitan clusters – linking the Greater Penrith to Eastern Creek Growth Investigation Area, the Western Economic Corridor, St Marys and the Greater Penrith, Liverpool and Campbelltown-Macarthur metropolitan clusters
- providing the foundation for an expanded 30-minute Western Parkland City – by connecting people to jobs, education, goods and services across metropolitan, strategic and local centres and delivering an integrated transport network alongside the metro service.

Sydney Metro – Western Sydney Airport has been justified in relation to its strategic transport need and its anticipated benefits, taking into account the objectives of the EP&A Act and matters of ecologically sustainable development. It best meets the project objectives when compared to all other alternatives considered.

Key environmental issues have been examined throughout the design development process. Consultation has been carried out with affected stakeholders to identify key potential impacts at an early stage. This has resulted in a number of design changes that have avoided or mitigated many of the potential significant impacts. With the achievement of performance outcomes and implementation of mitigation measures specified in the Environmental Impact Statement, the identified environmental impacts are considered to be acceptable and manageable.

Next steps

Sydney Metro is seeking approval from the NSW Minister for Planning and Public Spaces and the Commonwealth Environment Minister for the construction and operation of the off-airport components of Sydney Metro – Western Sydney Airport. Subsequent steps in the off-airport process include:

- exhibition of this Environmental Impact Statement and invitation for the community and stakeholders to make submissions
- consideration of submissions. Sydney Metro may then be required to prepare and submit:
  - a Submissions Report, responding to issues raised in the submissions
  - an Amendment Report or Preferred Infrastructure Report, outlining any proposed changes to the project to minimise its environmental impacts or to deal with any other issues raised
  - final environmental impact assessment under the EPBC Act
- approval of the project by the NSW Minister for Planning and Public Spaces and the Commonwealth Environment Minister.

In parallel with the off-airport process, variation of the Airport Plan (for the on-airport components of the project) by the Commonwealth Infrastructure Minister would involve:

- exhibition of the draft environmental impact assessment of on-airport works and invitation for the community and stakeholders to make submissions
- consideration of submissions and preparation of a response to the issues raised
- submission of a final environmental impact assessment of on-airport works
- a decision by the Commonwealth Infrastructure Minister on whether to vary the Airport Plan, taking into account advice from the Commonwealth Environment Minister.

To view an interactive map of the project and to find out more, visit www.sydneymetro.info/wsa.

Any person wishing to make a submission in relation to the off-airport components of the project in accordance with the EP&A Act can do so online via the following web page 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-10051)
- 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.

Postal address:

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

Any person wishing to make a submission in relation to the off-airport components of the project in accordance with the EPBC Act or the on-airport components of the project in accordance with the Airports Act, can do so via the following email address:
sydneymetrosubmissions@transport.nsw.gov.au

Submissions can also be made to the following postal address:

Sydney Metro
Level 43, 680 George Street
Sydney NSW 2000
Your submission should be marked Attention: Associate Director, Planning Approvals.

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List of Appendices

Technical Papers