



Sustainability Plan

Sydney Metro West

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Acknowledgement of Country

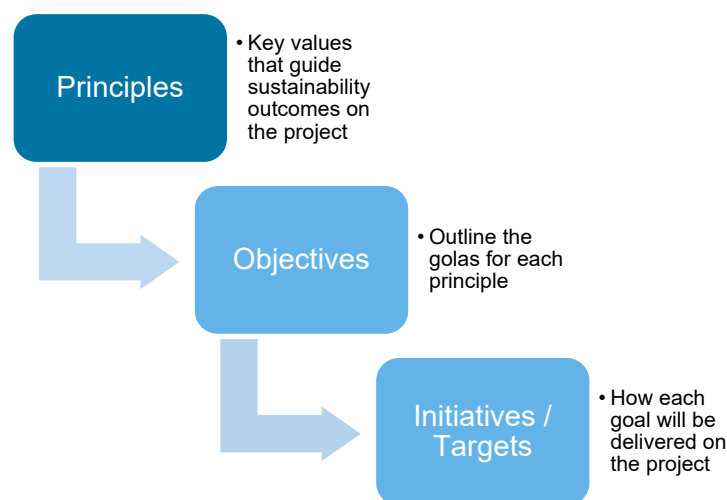
Sydney Metro respectfully acknowledges the traditional owners and custodians of this great land and we pay our respects to Elders past, present and future extending this respect to all Aboriginal and Torres Strait Islander Peoples.

1 Introduction

Sydney Metro has a clear vision for the Sydney Metro West project (the Project) to demonstrate best-practice sustainability in delivery and operation.

For Sydney Metro, 'sustainability' means building public transport for current and future generations that optimises environmental, social and economic outcomes.

This Sustainability Plan (the Plan) outlines the sustainability principles, objectives and initiatives for the Project, including performance targets and outcomes which will be adopted across the project phases from planning, procurement, design, construction and operations to end-of-life. The Plan demonstrates how sustainability is integrated and underpins core objectives for Sydney Metro West.



The initiatives and targets in this document are benchmarked against past Sydney Metro projects, and international best practice on similar infrastructure projects. These are embedded into contract documents to drive sustainability outcomes, and performance will be reported publicly.

Sustainability forms an integral part of Sydney Metro's vision – to transform Sydney with a world class metro. Sydney Metro benchmarks against international best practice, and we are leading the way in Australia – shaping sustainability in the transport sector not only within government but wider industry. Given the size and scale of our program of works, we recognise our ability to influence industry, and set new benchmarks and standards in environmental and socio-economic spheres.

Welcome aboard the largest urban rail infrastructure investment in Australian history.

Jon Lamonte - Chief Executive, Sydney Metro (Sydney Metro City and Southwest Sustainability Strategy, 2019)

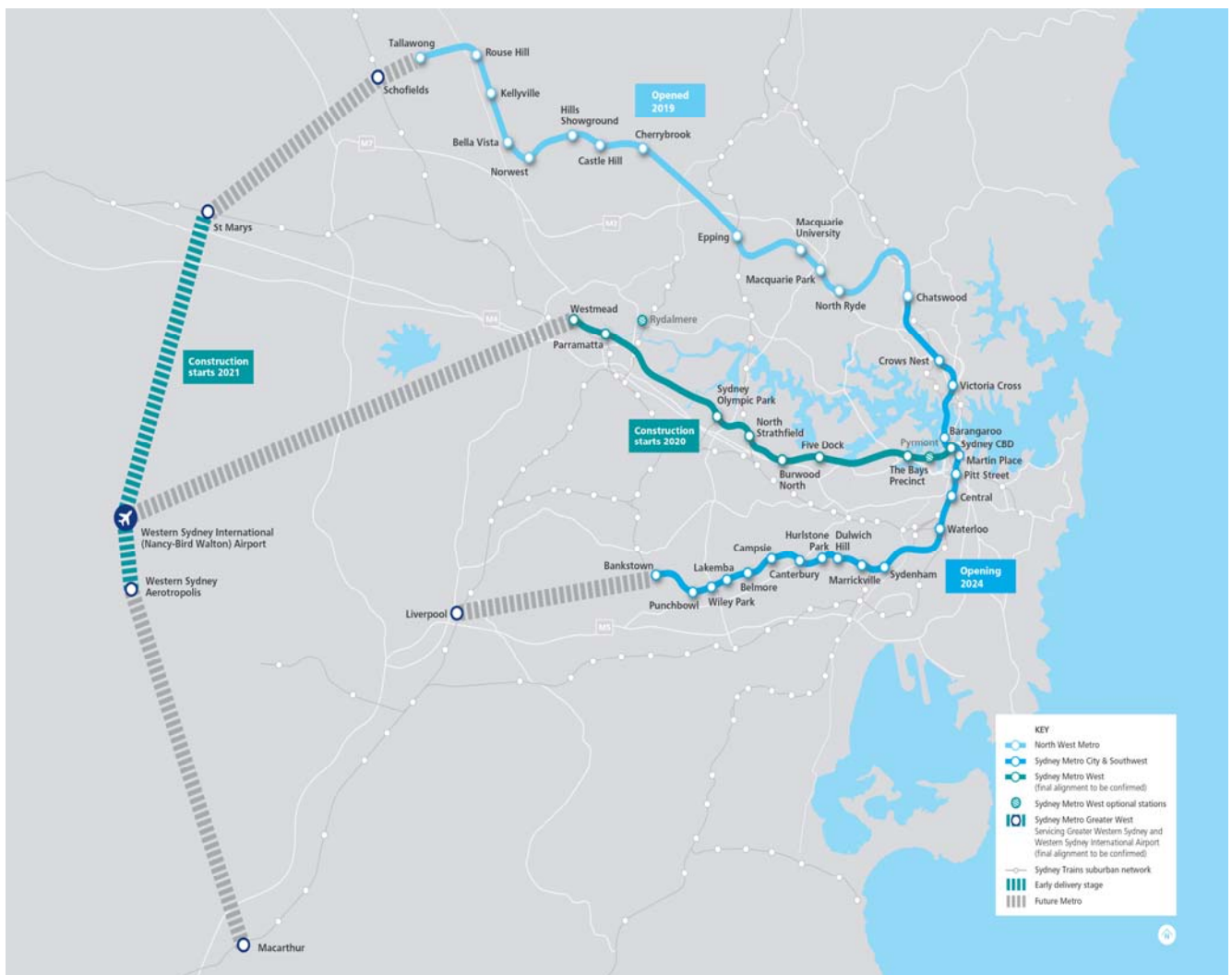
1.1 Sydney Metro Program overview

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

Sydney Metro's program of work is shown in Figure 1.1 and includes:

- Sydney Metro Northwest.
- Sydney Metro City & Southwest.
- Sydney Metro West (this Project).
- Sydney Metro Greater West.

Figure 1.1 Sydney Metro network

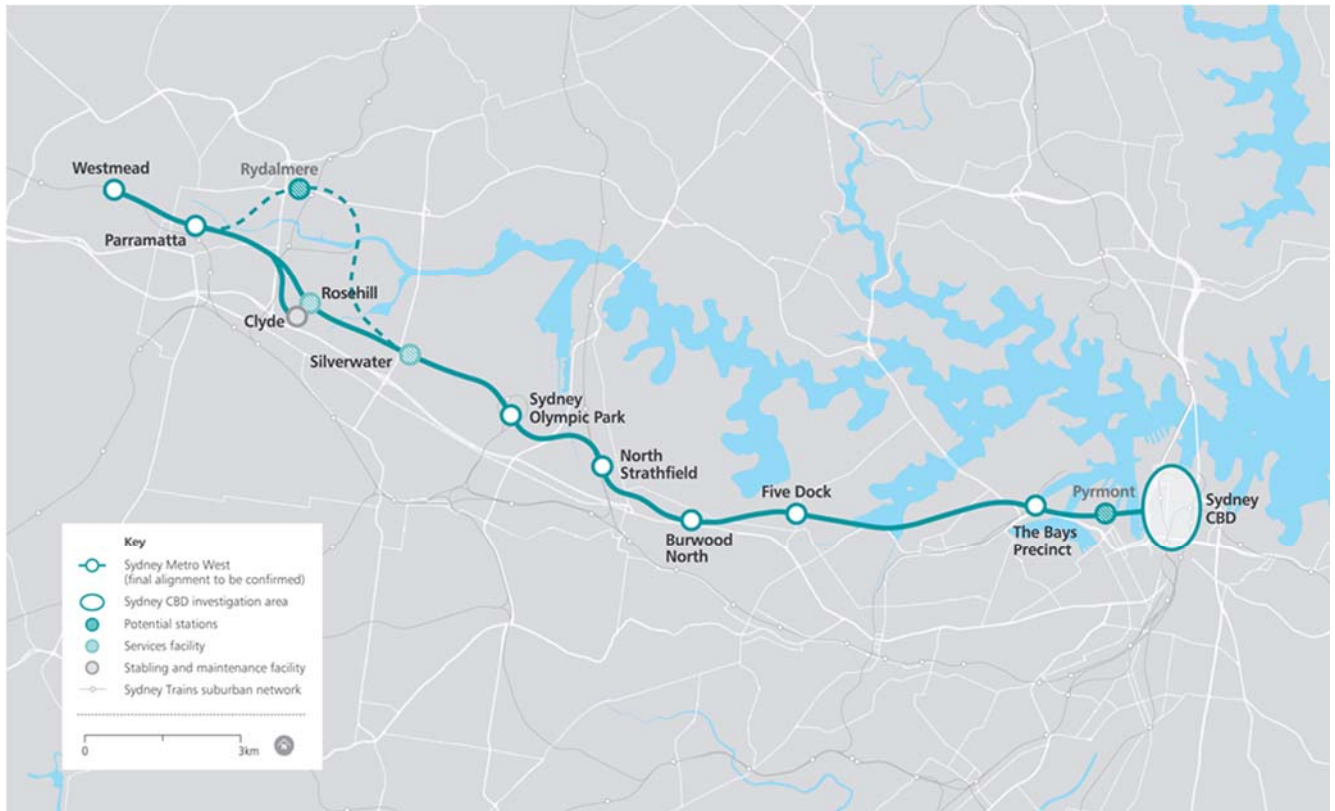


1.2 Sydney Metro West overview

Sydney Metro West (the Project) is a new 24-kilometre metro line that would connect Greater Parramatta with the Sydney CBD by the late 2020s. Confirmed stations include Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays and Sydney CBD. This infrastructure investment would double the rail capacity of the Parramatta to Sydney CBD corridor with a travel time target between the two centres of about 20 minutes.

Sydney Metro West would be located largely underground in twin tunnels. Indicative locations of the proposed alignment, stations and the main elements of operational ancillary infrastructure are shown in Figure 1.2.

Figure 1.2 Sydney Metro West



1.3 Project benefits

1.3.1 Transport benefits

Increased transport capacity – 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.

Reduced train crowding – By providing additional rail services, Sydney Metro West would significantly reduce train crowding in the western rail corridor which is forecast to reach capacity by the early-2030s. This would help improve the reliability of Sydney Trains services and improve customer comfort.

Reduced station crowding – The introduction of new rail services and infrastructure, including new stations in the Parramatta and Sydney CBDs, would reduce congestion and help alleviate platform and station crowding. Reduced platform and station crowding would shorten the time spent by customers in heavily crowded platform conditions and improve network performance by reducing station dwell times (and therefore improved travel times).

Increased accessibility to key centres – Sydney Metro West would substantially improve the public transport network accessibility to key economic centres across the Greater Parramatta to Sydney CBD corridor.

Increased public transport network reach and use – Sydney Metro West would increase the reach and use of Sydney's public transport network by:

- Providing new stations at localities not serviced by the existing suburban rail network, including Burwood North, Five Dock and The Bays Precinct.
- Increasing the Parramatta and Sydney CBD rail catchment areas.
- Providing a more direct connection to Sydney Olympic Park.
- Providing additional interchange capability at Westmead, North Strathfield and in the Sydney CBD.

Improved travel times – Sydney Metro West would create a significant opportunity to improve travel times by providing:

- More direct routes in between areas with existing rail services.
- Access to rail services in areas that currently do not have train stations.
- Reduced crowding on trains and at some stations, leading to improved service reliability.
- A high-frequency service, with customers able to 'turn-up-and-go' and no longer relying on timetables.

Road user and community benefits – Sydney Metro West would provide the opportunity for mode shift from car to public transport, which could result in road user travel time savings. The potential reduction in private vehicle car use could create a reduction in environmental impacts such as air pollution, greenhouse gas, noise and water pollution.

1.3.2 Productivity benefits

By improving the connections between key economic centres, Sydney Metro West would foster significant growth in jobs, including directly supporting the creation of new jobs within the corridor particularly at key precincts including Westmead, Parramatta, Sydney Olympic park and The Bays Precinct. It is estimated that Sydney Metro West would create a significant number of jobs during construction and then unlock or accelerate an additional 78,600 jobs in the corridor by 2036.

Sydney Metro West would also support:

- Enhanced international competitiveness through increased accessibility to world-class precincts which would be expected to attract international visitors to jobs and investment.
- A move to productive jobs by attracting knowledge-based industries that would want to take advantage of the corridor's premier location and natural presence of knowledge industries in key areas.
- Connectivity benefits by enabling an increase in the effective employment density of the corridor and a reduction in travel time. This would effectively bring businesses closer together supporting increased knowledge transfer, collaboration and innovation.

1.3.3 City-shaping benefits

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

The key city-shaping benefits of Sydney Metro West are detailed below.

Supporting planned growth – New and improved public transport access offers opportunities for transit-oriented development, encourages urban renewal, and allows more efficient use of land within station catchments. Sydney Metro West would support growth (jobs, homes and residents) that is planned for the Greater Parramatta to Sydney CBD corridor. This planned growth may not otherwise be achieved as transport accessibility and amenity would constrain take-up of growth by businesses, workers and residents.

Expanding the 30-minute cities – Sydney Metro West would help implement the vision for 30-minute cities as outlined in the Greater Sydney Region Plan, by providing customers an easy connection to key destinations including cities, health and education precincts, diverse employment centres and residential precincts. The catchment of Sydney Metro West would be expanded by interchanges with the bus, light rail and the suburban rail network, allowing a greater number of people to reach key destinations within 30 minutes.

Increased all day accessibility – By connecting customers to a diverse range of destinations (cities, health and education precincts, diverse employment centres and residential precincts) and providing a turn-up-and-go service, Sydney Metro West would enable a wide range of trip purposes, which lends itself to higher all day usage.

Reduced public infrastructure provision and household energy consumption – Sydney Metro West would support urban renewal along the corridor. Development within the corridor would provide the opportunity for new homes that use less electricity, gas and water than larger homes in greenfield areas on the urban fringe, reducing the cost of living for these households and greenhouse gas emissions.

Housing supply and affordability – Housing affordability is a key issue in Sydney mainly due to strong demand for new homes, limited future housing supply and a relative lack of housing diversity (and associated diversity in housing prices). With planned improvement in land use, Sydney Metro West would support a broader range of housing opportunities, which can offer improved and more affordable housing with better access to services and employment, and improved liveability.

Social equity – Sydney Metro West would support the creation of jobs and housing opportunities in Western Sydney, allowing people to live near their place of work. The improved west to east

connections would also increase employment options for people in Western Sydney and increase access to services such as educational institutions.

Sustainability, health and amenity benefits – With planned changes to land use, improved accessibility via Sydney Metro West, and by enabling new homes and jobs, people are expected to relocate to the Greater Parramatta to Sydney CBD corridor. This would promote more sustainable travel behaviours and enhanced liveability through:

- Incidental levels of exercise with customers able to walk and cycle to the station.
- Amenity and place-making benefits from enhanced pedestrian environments and active transport links.
- Opportunities for urban renewal and integrated station development along the corridor, resulting in better access to jobs and services and improved social cohesion.
- Potential to reduce travel related stress for people who switch modes in peak hour travel, by decreasing the time spent in congested conditions.

1.4 Defining 'sustainability' for Sydney Metro

One of the most commonly referred to definition of 'sustainability' or 'sustainable development' is from the Bruntland Report, defined as

'...development which meets the needs of the present without compromising the ability of future generations to meet their own needs'.¹

The NSW Government has defined 'sustainability' as

'Sustainability in the NSW public sector means addressing the needs of current and future generations through the integration of social justice, economic prosperity and environmental protection in ways that are transparent, accountable and fiscally responsible.'²

Transport for NSW (TfNSW) Environment and Sustainability Policy reflects a commitment to:

'...delivering transport services, projects, operations and programs in a manner that balances economic, environmental and social issues to ensure a sustainable transport system for NSW.'³

For Sydney Metro, 'sustainability' means a commitment to build a metro system for current and future generations, that:

'Optimise sustainability outcomes, transport service quality and cost effectiveness'.⁴

¹ Bruntland, G. (ed.), 1987, *Our Common Future: The World Commission on Environment and Development*, Oxford University Press, Oxford

² NSW Government, 1991, *Protection of the Environment Administration Act 1991 No 60*

³ Transport for NSW, 2015, *Environment and Sustainability Policy*














⁴ Transport for NSW, 2016, *Sydney Metro Environment and Sustainability Policy*

1.5 Sustainability on Sydney Metro West

Six principles have been developed that will govern environmental and socio-economic outcomes and performance on the Project.

The principles are designed to deliver on the Sydney Metro Environment and Sustainability Policy commitments. Table 1.1 aligns the Sydney Metro West principles against the Sydney Metro themes that have been applied on Sydney Metro Northwest and City & Southwest to demonstrate consistency and traceability. Whilst focus areas responds to intervening drivers, best practice endeavours on past metro projects as well as location and project specific opportunities and constraints.

Table 1.1 Sydney Metro West sustainability principles

Principles	Traditional themes	Focus Areas
Demonstrate Leadership	 Governance  Economic	<ul style="list-style-type: none"> • Innovation • Social benefits assessment • Collaborative partnerships
Manage Resources Efficiently	 Waste & Materials consumption  Water Efficiency	<ul style="list-style-type: none"> • Recycled materials • Water management
Drive Supply Chain Best Practice	 Supply chain  Workforce development	<ul style="list-style-type: none"> • Fair and ethical practice • Social procurement
Tackle Climate Change	 Carbon & Energy Management  Climate Change Resilience	<ul style="list-style-type: none"> • Climate resilience
Value Community and Customers	 Heritage conservation  Liveability  Community benefit	<ul style="list-style-type: none"> • Community benefits • Aboriginal cultural values
Respect the Environment	 Biodiversity conservation  Environmental performance	<ul style="list-style-type: none"> • Avoid ecological impact • Green infrastructure

2 Sustainability principles

	Demonstrate leadership	Deliver a world-class metro that is environmentally and socially conscious, and demonstrates innovation
	Tackle climate change	Integrate a comprehensive climate change response, and drive excellence in low carbon solutions
	Manage resources efficiently	Achieve whole-of-life value through efficient use and management of resources
	Drive supply chain best practice	Collaborate with key stakeholders to drive a lasting legacy in workforce development, industry participation and sustainable procurement
	Value community and customers	Respond to community and customer needs, promote heritage, liveable places and wellbeing for current and future generations
	Respect the environment	Minimise impacts and take opportunities to provide environmental improvements.

Objectives, targets and initiatives have been developed to support the sustainability principles of the Project. At Sydney Metro sustainability is integrated into the entire project lifecycle. For the purpose of this Plan, the project lifecycle has been divided into five stages to illustrate how a lifecycle approach to sustainability is being considered on the Project and the applicability of each initiative or target at each stage.






Table 2.1 outlines the five stages and the corresponding activities, and Figure 2.2 maps these stages against Infrastructure NSW (INSW) review gateways and Transport Network Assurance Committee (TNAC) configuration management gates. End-of-life (disposal requirements of consumables, assets and civils infrastructure at the end of service life) consideration is given at planning, design and operations stages, as well as in the actual act of disposal and replacement.

Table 2.1 Project lifecycle stages and associated activities

Project lifecycle stage	Activities
Planning (including early stage designs)	Project development, initial designs (scoping, definition, concept and reference), Final Business Case development, planning approval (Environment Impact Statement) and procurement
Design	Stage 1, 2 and 3 designs for construction
Construction	Early works and enabling works, all construction activities, integration and commissioning activities
Operations	All operation and maintenance activities, including benefits realisation

Project lifecycle stage	Activities
End-of-life	Disposal of consumables (e.g. bogie wheel), assets (e.g. rolling stock) and civil infrastructure at the end of service life

Figure 2.2 Project lifecycle stages mapped against INSW review gateways and TNAC configuration management gates

			 Planning and early stage design			 Detail design	 Construction	 Operations	 End-of-life	
INSW Gates	Gate 0	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5			Gate 6	Not covered by INSW and TNAC
	Go/no go	Strategic options	Business case	Delivery strategy and readiness for market	Tender evaluation	Readiness for service			Benefits realisation	
TNAC Gates	Gate 0		Gate 1		Gate 2		Gate 3	Gate 4	Gate 5	Gate 6
	Initiation		Requirement complete		Initial design		For construction	Ready to test	Accept assets	Asset review

2.1 Demonstrate Leadership

Deliver a world class metro that is environmentally and socially responsible, and demonstrates innovation

Sydney Metro is committed to embedding good sustainability governance practices in all processes for Sydney Metro West and providing the resources required to ensure effective implementation of those practices. This also includes ongoing engagement with key internal and external stakeholders, and aligning Project outcomes with industry best practice.

Building on the track record and lessons learned from past metro projects, Sydney Metro West will focus not only on maintaining business as usual practices, but look to innovations and efficiencies in the Projects approach.

The main components of the governance framework to enable this are:

- The Sydney Metro Environment & Sustainability Management Manual (part of the Integrated Management System) sets out roles and responsibilities, processes and procedures for driving sustainable outcomes, monitoring and reporting performance, and continual improvement.
- This Plan (and future updated iterations of this Plan).
- The Environment & Sustainability policy, which sets our Sydney Metro's high level strategic commitment to driving environmental and social outcomes.

Industry recognised sustainability performance benchmarking schemes are used to demonstrate performance of the project relative to best practice and its peers. With a commitment to achieve equivalent or improved level of performance compared to past metro projects Table 2.2 outlines the minimum sustainability performance benchmarking.

Table 2.2 Sustainability performance benchmarks for rating tools

Rating tools	Minimum Performance Benchmarking			
	Northwest	City & Southwest	West	Greater West
Infrastructure Sustainability Council of Australia (ISCA) IS rating Scheme	65 (Excellent) – Version 1.0 – 1.2	65 (Excellent) – Version 1.2	65 (Gold) – Version 2.0	65 (Gold) – Version 2.0
Green Star (Design & As-Built: Railway Stations V1.2 / Sydney Metro Custom)	Not used	5-Star (new underground stations)	5-Star	5-Star
Green Star (Design & As-Built V1.2)	Not used	Not used	5-Star	5-Star
Green Star (Communities)	Not used	Not used	Not used	Under consideration
Green Star (Office Interior) – superseded	4-star (administration building at the SMTF)	Not used	Not used	Not used
TfNSW Sustainable Design Guidelines	Gold	Silver (for enabling and minor works)	Not used	Not used

Understanding the monetary and non-monetary benefits of the Project's sustainability approach is critical to demonstrate the value of delivering environmental and social initiatives. These are considered in whole of life costs for the Project.

Whole of life costs for a project include the costs of construction, operation, maintenance, renewal, disposal and replacement; plus where relevant non-construction costs (such as land), asset income (but not revenue) and externalities, such as the cost of carbon emissions.

Whole of life costing is being adopted:

- At a project-wide level, where the business case for the project takes into account whole-of-life costs.
- In assessing project options, where evaluations consider capital and operating costs.

Table 2.3 Demonstrate Leadership – initiatives and targets

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Embedding sustainability objectives into decision making					
Integrate environmental and social principles into the project framework	●			●	●
Establish collaborative working relationships with stakeholders	●	●	●	●	●
Transparency and assurance					
Develop performance targets across all sustainability focus areas	●	●	●	●	●
Develop a streamlined outcomes-focussed approach to applying sustainability rating tools on the project	●				
Obtain a high Infrastructure Sustainability rating for relevant infrastructure		●	●	●	
Obtain a high Green Star ratings for relevant infrastructure and precincts		●	●	●	
Develop an assurance framework and reporting system to assist Sydney Metro and contractors in reliably reporting against sustainability targets		●	●	●	
Monitor sustainability performance and provide public sustainability reports			●	●	●
Capture sustainability benefits					
Documentation and ongoing evaluation of environmental and social costs and benefits	●	●	●	●	●
Adopt Whole of Life Costing model to maximise benefits	●	●	●	●	●

Initiatives and targets	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Encourage innovation that delivers sustainability benefits					
Identify pathways to pilot new technology and approaches	●	●	●	●	●
Identify opportunities to enable better sustainable approaches	●	●	●	●	
Engage with research organisations and look for opportunities to facilitate the uptake of new technologies and approaches	●	●	●	●	●
Emerging trends, approaches and priority areas for consideration					
Adopt circular economy principles and practices, including increased use of recycled and innovative materials in the construction supply chain	●	●	●	●	●
Prioritise blue and green infrastructure	●	●			
Engage with local Aboriginal communities to develop an interpretation of integrating Aboriginal cultural values appropriately	●	●	●	●	
Consider the future role of emerging technologies in relation to transport infrastructure and precinct development	●	●	●	●	

2.2 Tackle Climate Change

Integrate a comprehensive climate change response, and drive excellence in low carbon solutions

There is widespread scientific consensus that the effects of climate change will be significant. The CSIRO and the former NSW Office of Environment & Heritage (OEH) have undertaken considerable research into the predicted effects of climate change across Australia. Financial institutes across

Australia and globally are taking note and considering the effects of climate hazards in relation to investment decision making.

Sydney Metro West will tackle climate change both in terms of adaptation (actions that help cope with the effects of climate change) and mitigation (efforts to reduce or prevent emission of heat-trapping gases).

2.2.1 Adapting to climate change

Recognising during the 120 year design life of the Project, hazards relating to changes in the climate will have a significant impact, an initial climate change risk assessment has been undertaken. The risk assessment determined the necessary adaptive measures (that are within the Projects control) to enhance the functionality of the asset on day one of operations and into the future with minimal disruption and resilience to climate hazards.

The risk assessment identified potential changes of extreme rainfall events, mean rainfall, extreme temperatures, and increase in mean temperature, heat waves and bushfire to the asset. The Project design has responded to these risks and ongoing work will be undertaken to ensure this is refined over future design stages and control measure allocation through contract mechanisms during construction and operations. Climate change risks have also been added into the Project risk register and will be managed through a Project-wide risk management process.

2.2.2 Mitigating climate change

An important facet of tackling climate change is reducing the Projects carbon footprint through reducing energy intensity, improving energy efficiency and offsetting.

Construction and operation of a new metro system is energy intensive and has the potential to result in significant quantities of greenhouse gases which are associated with fuel and electricity use and contribute to climate change.

The Project will ensure that the design and construction practices for Sydney Metro West minimise overall energy demand as well as minimising energy demand during peak demand periods. Sydney Metro will also identify and implement best practice approaches to managing emissions which are economically feasible and environmentally responsible, including sourcing both onsite and offsite low emission energy.

Primary mitigation measures will involve minimising electricity use and carbon emissions associated with the construction and operation of the Project, utilising the below energy management pathway, which will include:

- Integrating passive design features and including energy efficient equipment.
- Investigating feasible onsite renewable generation (photovoltaics) and battery storage solutions at Sydney Metro West stations and stabling and maintenance facility.
- Maximising convenience and connectivity with other transport modes to encourage customers to utilise metro over more carbon-intensive private vehicles, and encouraging access to metro by sustainable transport modes.

Figure 2.3 Energy management pathway

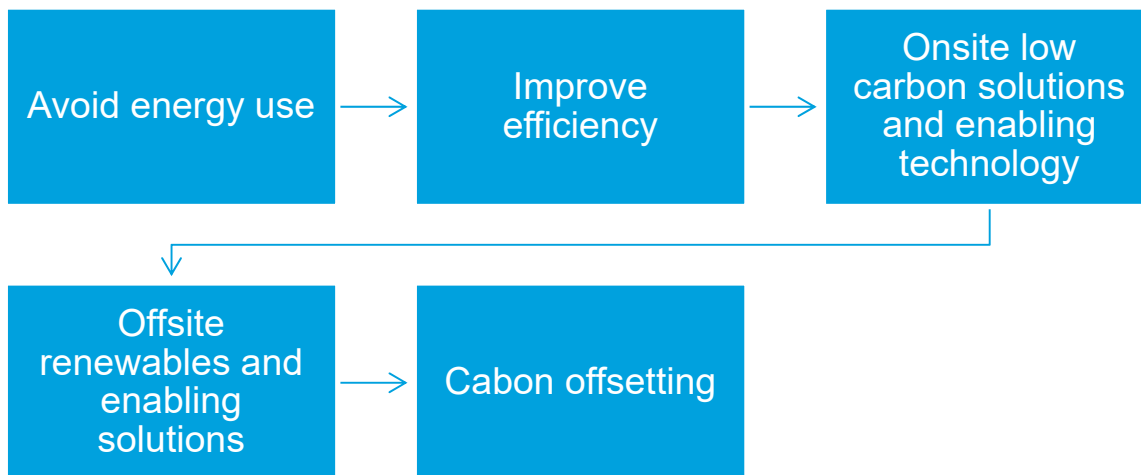


Table 2.4 Tackle Climate Change – initiatives and targets

Initiatives and targets	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Infrastructure and operations will be resilient to the impacts of climate change					
Identify all relevant climate change risks	●	●	●	●	
Identify and implement adaptation measures to mitigate all very high, high and medium risks for the project	●	●	●	●	
Identify sites vulnerable to flooding, and mitigate impacts where feasible	●	●	●	●	
Ensure sensitivity testing is carried out on ventilation and air conditioning equipment		●	●	●	
Ensure emergency procedures adequately address extreme weather events				●	

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Protect sensitive construction equipment from the effects of extreme climate and weather			●	●	
Continued engagement with key stakeholders to develop and implement appropriate responses to interdependent risks		●	●	●	
Reduce energy use and carbon emissions					
Identify and prioritise areas where the greatest reductions in carbon and energy can be achieved	●	●	●	●	
Use energy efficient equipment, methods, and practices			●		
Local sourcing of materials where feasible	●	●	●	●	
Adopt 25kV AC traction system (refer to Appendix B)	●	●	●		
Use an Under Platform Supply (UPS) system (refer to Appendix C)	●	●	●		
Passive design features such as daylight, natural ventilation and passive cooling	●	●	●		
Energy efficient ventilation, air conditioning, pumps, escalators, lifts and appliances	●	●	●		
Efficient lighting and light control systems	●	●	●		
Adopt battery storage, other enabling technology where feasible	●	●	●		●
Establish energy efficiency and renewable energy / offset targets					
Achieve at least a 20 per cent reduction in carbon emissions associated with operations, when compared to business as usual		●		●	
Offset 25 per cent of the greenhouse gas emissions associated with consumption of			●		

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
electricity					
Offset 100 per cent of the greenhouse gas emissions associated with consumption of electricity	●			●	
Develop the Electricity and Offsets Procurement and Management Strategy and develop capacity to support implementation	●			●	
Mandate a minimum 15% improvement on the current (2019) minimum performance requirement stipulated in the National Construction Code (NCC) / Building Code of Australia (BCA) Section J	●	●			
Source 10 – 20% of the low voltage electricity required at above ground stations and stabling facility from onsite renewable energy sources	●	●	●		●

2.3 Manage Resources Efficiently

Achieve whole-of-life value through efficient use and management of resources

According to the United Nations “Should the global population reach 9.6 billion by 2050, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles”⁵. The economic and social progress from the construction and operation of Sydney Metro West must be achieved with a minimum impact on the environment. This will require a change in the consumption, production and waste generation patterns typically associated with large infrastructure projects.

Water is an increasingly scarce resource. Potable (drinking water quality) and non-potable water will be required for the construction and operation. A water balance study will be completed to estimate the quantities, types and potential sources of water which will be required for the construction and operation of the Project. This will enable the identification of the best opportunities to use non-potable water instead of potable water, and minimise the quantities of both potable and non-potable water which will be consumed.

The Project will aim to minimise the environmental footprint of materials consumed through minimising the quantity of material required, selecting materials with lower embodied impacts, using recycled materials where possible and recovering materials from waste throughout construction and operation. This will help reduce construction costs and result in less material being sent to landfill.

Analysis undertaken on previous Sydney Metro projects have clearly identified concrete and steel as having the largest embodied impact, together accounting for over 90% of the embodied carbon in construction. Hence a focus is being placed on the reduction of the embodied carbon on these 2 key materials.

During construction the Project will generate a substantial volume of spoil, contractors will be required to divert all clean reusable spoil from landfill, and reuse 100 per cent of usable spoil from the excavation of the tunnels and station caverns, in accordance with the spoil management hierarchy outlined in Table 2.5.

Table 2.5 Spoil management hierarchy

Priority	Re-use option	Examples
1	Within project	<ul style="list-style-type: none">• Fill embankments, mounds and backfilling of temporary shafts• Restore any pre-existing contaminated sites within the project boundary• As a feed product in construction materials• Replacement of unsuitable material encountered in earthworks excavations• Landscaping
2	Environmental works	<ul style="list-style-type: none">• Coastal protection works such as beach nourishment and land raise• Flood mitigation works• Environmental / sustainable development works

⁵ United Nations Sustainable Development Goals, Goal 12 Responsible Consumption and Production, Facts and figures, <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

Priority	Re-use option	Examples
3	Community works	<ul style="list-style-type: none"> • Development of sports grounds • Rehabilitation of sites for recreational purposes
4	Other development projects (with a preference for other NSW Government projects)	<ul style="list-style-type: none"> • Fill embankments and mounds on projects within an economic transport distance from site • Land reclamation or contaminated site remediation works • Manufacturing concrete and / or bricks and tiles
5	Land restoration	<ul style="list-style-type: none"> • Fill disused facilities, e.g. mines and quarries to enable either future development or ecological rehabilitation
6	Landfill management	<ul style="list-style-type: none"> • Reuse to cap completed landfill cells • Reuse in daily covering of landfill waste

Table 2.6 Manage Resources Efficiently – initiatives and targets

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Minimise potable water use					
Set targets and monitor potable water use		●	●	●	
Integrate current best-practice water-efficient features, equipment and appliances at stations, stabling facility and construction sites	●	●	●	●	
Avoid use of potable water for non-potable purposes if non-potable water is available	●	●	●	●	
Set and implement targets for the use of non-potable water in concrete	●	●	●		
Maximise non-potable water opportunities					
Undertake a water balance to inform feasibility for reuse initiatives		●	●	●	
Identify and implement opportunities for treatment and reuse on the Project, including water from tunnelling works, concrete batching, casting facilities		●	●		

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Connect to district recycled water networks where feasible	●	●	●	●	
Harvest and reuse rainwater at permanent and temporary facilities where feasible	●	●	●	●	
Minimise waste through the project lifecycle					
Target 95 percent construction and demolition waste recycling	●		●		
Enable recycling of waste streams from office facilities and customers	●	●	●	●	
Plan for final disposal of operational assets, such as train carriages		●	●		●
Use modular, prefabricated and precast structural and finishing materials	●	●	●	●	
Reduce materials consumption					
Minimise the use of concrete and steel	●	●			
Dematerialisation of components and finishes		●	●		
Reduce embodied carbon and increase use of recycled materials					
Undertake lifecycle assessments and minimise the embodied impacts of materials, through the selection of low carbon alternatives and considering durability and local sourcing	●	●	●		
Minimise the embodied impacts of concrete through the adoption of project-wide supplementary cementitious materials use target and set targets for the use of alternate binder systems on non-structural elements		●	●		
Minimise the embodied impacts of steel through maximising the use of recycled steel and steel produced using energy-reducing processes		●	●		

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Maximise the use of engineered timber for structural elements	●	●	●		
Investigate and implement trials and pilot programs to demonstrate the viability of recycled alternatives		●	●		
Engage with industry bodies to identify best practice low-impact alternative materials		●	●		
Prioritise products made from recycled content		●	●	●	
Manage spoil effectively					
Minimise volumes of excavation	●	●	●		
Beneficial reuse of 100 per cent of usable spoil	●	●	●		
Practice environmentally responsible sourcing					
Source 100 per cent of all timber products from either re-used timber, post-consumer recycled timber, Forest Stewardship Council or Programme for the Endorsement of Forest Certification certified sources	●	●	●		

2.4 Drive Supply Chain Best Practice

Collaborate with key stakeholders to drive a lasting legacy in workforce development, industry participation and sustainable procurement

Sydney Metro West is driving market transformation on sustainable procurement practices and implementation of sustainability objectives through the supply chain. With recent publication of international standard on sustainable procurement as well as federal and state legislation responding to modern slavery, the complexities of the modern supply chain has never been in more focus.

A sustainable procurement strategy has been developed and implemented on Sydney Metro Northwest. The procurement strategy is based on best practice policy and frameworks including British Standard BS8903 Principles and framework for procuring sustainably – Guide, and informed by benchmarks available at the time. City & Southwest adopted the sustainable procurement principles identified in the Northwest Strategy with updates responding to developing benchmarks and frameworks.

ISO 20400:2017 Sustainable procurement — Guidance was published in April 2017, this international standard supersedes the BS8903 published in 2010. Sydney Metro has undertaken a gap analysis between current sustainable procurement procedures and practices, based on the Northwest Strategy, and ISO 20400. The Sydney Metro Sustainable Procurement Strategy is currently under review and will be updated as required based on the recommendations from the gap analysis.

In addition, workforce development and industry participation including Aboriginal participation continues to be key focus areas for the NSW Government and Sydney Metro.

Workforce development forms part of Sydney Metro social sustainability commitments and encompasses Aboriginal and Industry Participation. The workforce development priorities and objectives are outlined in the Sydney Metro West - Workforce Development and Industry Participation Plan (a separate document). The plan sets a vision, objectives and initiatives relating to workforce development to reflect industry skills requirements, local demographics, regulatory drivers and wider government priorities around skill, employment, diversity and business growth. Key priorities of this plan include:

- Industry and jobs participation – Increase opportunities for employment of local people, participation of small and medium enterprises including recognised Aboriginal business and support industry to compete in home and global markets through active participation in client led programs.
- Workforce skills development – Enable targeted and transferable skills development in areas with local and national skills shortages, support changing job roles and increased skill requirements, and embed transferable skills in the workforce.
- Diversity and inclusion – Establish initiatives to increase diversity within the workforce and supply chain through collaborative partnerships.
- Inspiring future talent and developing capacity – Engage young people via education and work experience through higher and vocational education and institutions to encourage interest in shortage STEM disciplines which are necessary for infrastructure related careers.

- Collaboration – Sydney Metro will continue to be collaborative with organisations that have a shared interest in driving skills, diversity, jobs and industry capacity through infrastructure projects.

Table 2.7 Drive Supply Chain Best Practice – initiatives and targets

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Influence contractors, subcontractors and materials suppliers					
Ensure procurement strategies are consistent with ISO:20400 Sustainable Procurement Guidelines	●	●	●	●	●
Ensure supply chain sustainability objectives are adopted downstream	●	●	●	●	●
Provide sustainability training to high impact suppliers		●	●		
Increase supply chain transparency and responsibility					
Adopt ethical governance principles and practices, including the use of Environmental Product Declarations and eco-labelling	●	●	●	●	●
Conduct due diligence to ensure supply of materials and equipment align with human rights legislation and environmental standards	●	●	●	●	●
Drive improvements in workforce development and industry participation					
Increase diversity within the workforce and supply chain	●	●	●	●	
Develop workforce skills which support skill shortages, transferable skills and new technologies	●	●	●	●	
Increase local employment and participation of small and medium enterprises (SMEs) including Recognised Aboriginal Businesses	●	●	●	●	
Inspire future talent and develop capacity in the sector	●	●	●	●	

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Provide opportunities for social enterprise		●	●	●	●

2.5 Value Community and Customers

Respond to community and customer needs, promote heritage, liveable places and wellbeing for current and future generations

Sydney Metro West will support land use change. There is an intrinsic link between public transport and land use change. Public transport accessibility makes particular locations more attractive. 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.

The Project has the ability to deliver a variety of community benefits including:

- Provision of new community gathering place around stations which will create additional opportunities for social connections and cohesion.
- Enhancing mobility access to within the transport network and to social infrastructure, green infrastructure and active transport modes.
- Highlighting the cultural relevance of Aboriginal heritage and history. Western Sydney has the largest Aboriginal population in Australia, with a high proportion of young people of Aboriginal descent, and a rich tapestry of archaeology, heritage, culture and modern Aboriginal narrative in the area, the Project provides an opportunity to consult Aboriginal communities in a meaningful and ongoing way and integrate appropriate culture values into the design, and ongoing operations and maintenance activities.
- Improve the accessibility and connectivity of existing places, whilst also providing for the creation of future great places and precincts along the Sydney Metro West corridor.
- More liveable places and spaces.

Table 2.8 Value Community and Customers – initiatives and targets

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Protect and promote Aboriginal and non-Aboriginal heritage and culture					
Avoid or minimise impacts to heritage	●	●	●		
Identify and implement opportunities to enhance heritage and cultural values via design and interpretation	●	●	●		
Develop partnerships with relevant stakeholders to identify heritage places and promote heritage values	●	●		●	

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Ensure key Aboriginal stakeholders are meaningfully engaged	●	●	●	●	
Create opportunities for archaeological research and interpretation	●	●	●		
Develop Aboriginal cultural design principles for the Project and integrate into Project outcomes	●	●	●	●	
Prioritise community and customer wellbeing					
Design in accordance with best practice urban design principles	●	●			
Incorporate Crime Prevention Through Environmental Design principles	●	●		●	
Design to minimise urban heat island and associated health risks	●	●	●	●	
Prioritise indoor environmental quality	●	●	●		
Promote Customer Centric Design	●	●	●	●	
Provide new public spaces which are adaptable and appropriate for a range of uses by the community	●	●	●	●	
Ensure efficiency and durability of built infrastructure that requires minimum expenditure in maintenance and upkeep by users including housing	●	●	●	●	●
Enable and promote active transport access and public transport usage					
Provide secure access, covered bicycle parking and safeguard for future expansion	●	●	●	●	
Design to enhance connectivity to Blue-Green Grids and integrate with surrounding active transport network such as footpaths, public and green spaces, and bicycle paths	●	●	●	●	

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Station interchanges designed in accordance with the modal hierarchy to priorities more equitable, safe and sustainable modes of transport and enjoyable environment for users	●	●	●		
Measure health benefits of active transport and public transport as an outcome of the Project	●			●	
Deliver community benefits					
Ensure the community and local stakeholders are engaged and kept informed of Project activities	●	●	●	●	●
Provide information in ways that is easily accessible, taking into consider local literacy level and dominate language groups	●	●	●	●	●
Deliver initiatives that benefit local communities and provide positive social outcomes		●	●	●	
Consider opportunities for residual land to enhance precinct development and assist local communities	●	●	●	●	●
Deliver affordable housing in line with Sydney Metro Affordable Housing Policy and if no policy is in place consider the delivery of 5% affordable housing	●				

2.6 Respect the Environment

Minimise impacts and take opportunities to provide environmental improvements

The construction and operation of Sydney Metro West has the potential to cause a variety of environmental impacts including pollution, noise and vibration, air quality, water quality, and biodiversity impacts. These impacts are primarily managed through the Project planning process and pathway under the NSW *Environmental Planning and Assessment Act 1979* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, and governed through the Construction Environmental Management Framework.

Potential impact on biodiversity through the clearing of vegetation and habitat is a key consideration for the Project. Significant effort has been made during the environmental assessment process and design process to reduce impacts to existing vegetation and disturbance to faunal movement.

Having native, endemic and/or drought resilient green infrastructure supports a number of environmental (preserving corridors for native fauna) and social (reducing the effects of heat island and drought) outcomes and provide linkage to existing ecology corridors, supporting green grids strategy set out by Department of Planning, Industry and Environment. This can be achieved through rejuvenation of the landscape and re-establishing riparian ecosystems, and through the utilisation of water sensitive urban design to ensure water is held in the landscape.

Table 2.9 Respect the Environment – initiatives and targets

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Minimise environmental impact					
Target zero major pollution incidents			●	●	●
Reduce sources of pollution through the development and implementation of a Construction Environmental Management Framework	●	●	●	●	
Ensure environmental management plans and systems are in place		●	●	●	
Avoid or minimise noise and vibration impacts	●	●	●	●	
Early identification and management of soil and groundwater contamination issues	●	●	●	●	

<i>Initiatives and targets</i>	Applicable Project Lifecycle Phase				
	Planning	Design	Construction	Operations	End of life
Design to minimise light spill in accordance with standards	●	●	●	●	
Develop an appropriate response to reduce air pollution	●	●	●	●	
Develop appropriate responses to manage stormwater and ground water contamination and runoff	●	●	●	●	
Promote ecological functions and biodiversity					
Avoid or minimise impacts to biodiversity, particularly with regard to endangered, vulnerable and threatened species, habitats and communities.	●	●	●	●	
Preserve ecological function through appropriate planning, management and financial controls	●	●	●	●	
Contribute to the restoration and conservation of local ecological communities	●	●	●	●	
Consider connectivity of existing ecosystems and impact on faunal movements	●	●	●	●	
Provide and promote green infrastructure					
Provide a high level of open green space at precincts, where feasible	●	●	●	●	
Provide green roofs and green walls at stations, the corridor and precincts, where feasible	●	●	●	●	
Use endemic species in landscaping and prioritise use of Aboriginal knowledge (six seasons) in asset management	●	●	●	●	
Integrate water sensitive urban design solutions	●	●	●	●	

3 Implementation and monitoring

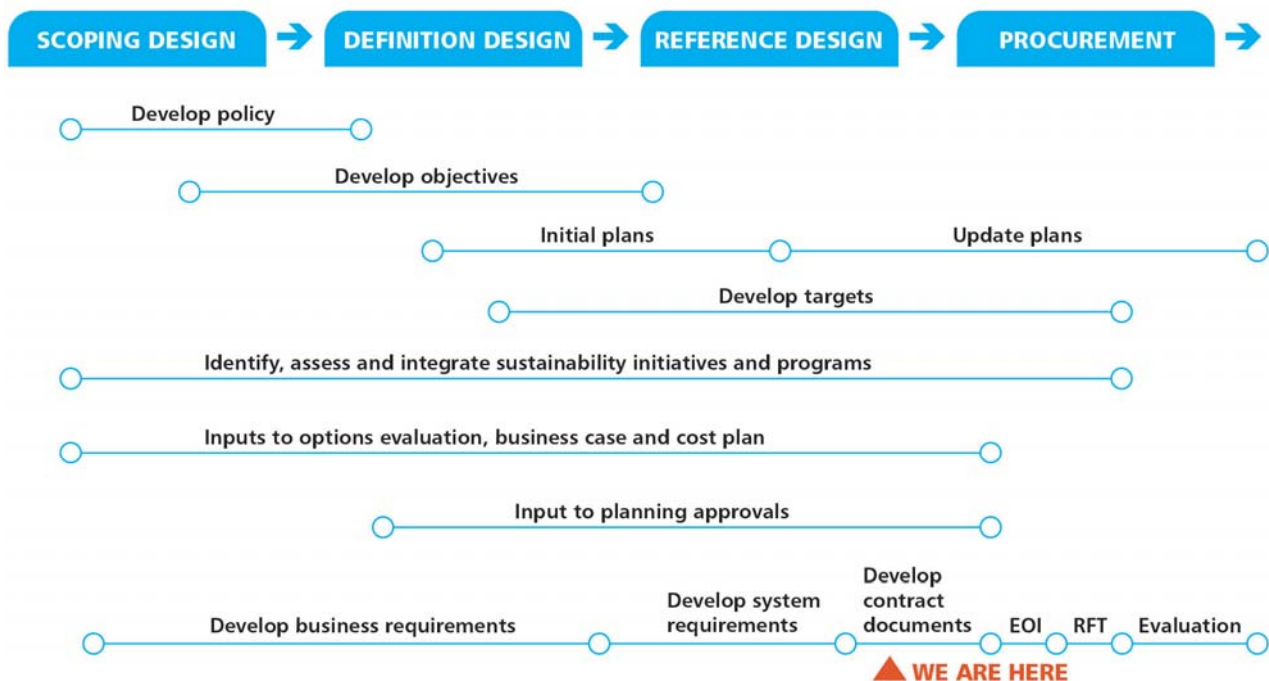
3.1 Roles and responsibilities

The responsibility for ensuring sustainability outcomes extends well beyond the Sydney Metro sustainability team to other work streams, functional groups, Project Executives, contractors and the operator. Whether it is ownership of targets, or promotion of benefits and outcomes, sustainability is integrated across the team and is a shared responsibility.

3.2 Key activities – next steps

The overall process and key activities which have been undertaken during the planning phase to inform and facilitate the realisation of sustainability targets and initiatives for the Project, through to the early procurement stage, are illustrated in Figure 3.1.

Figure 3.1 Key planning phase processes and activities

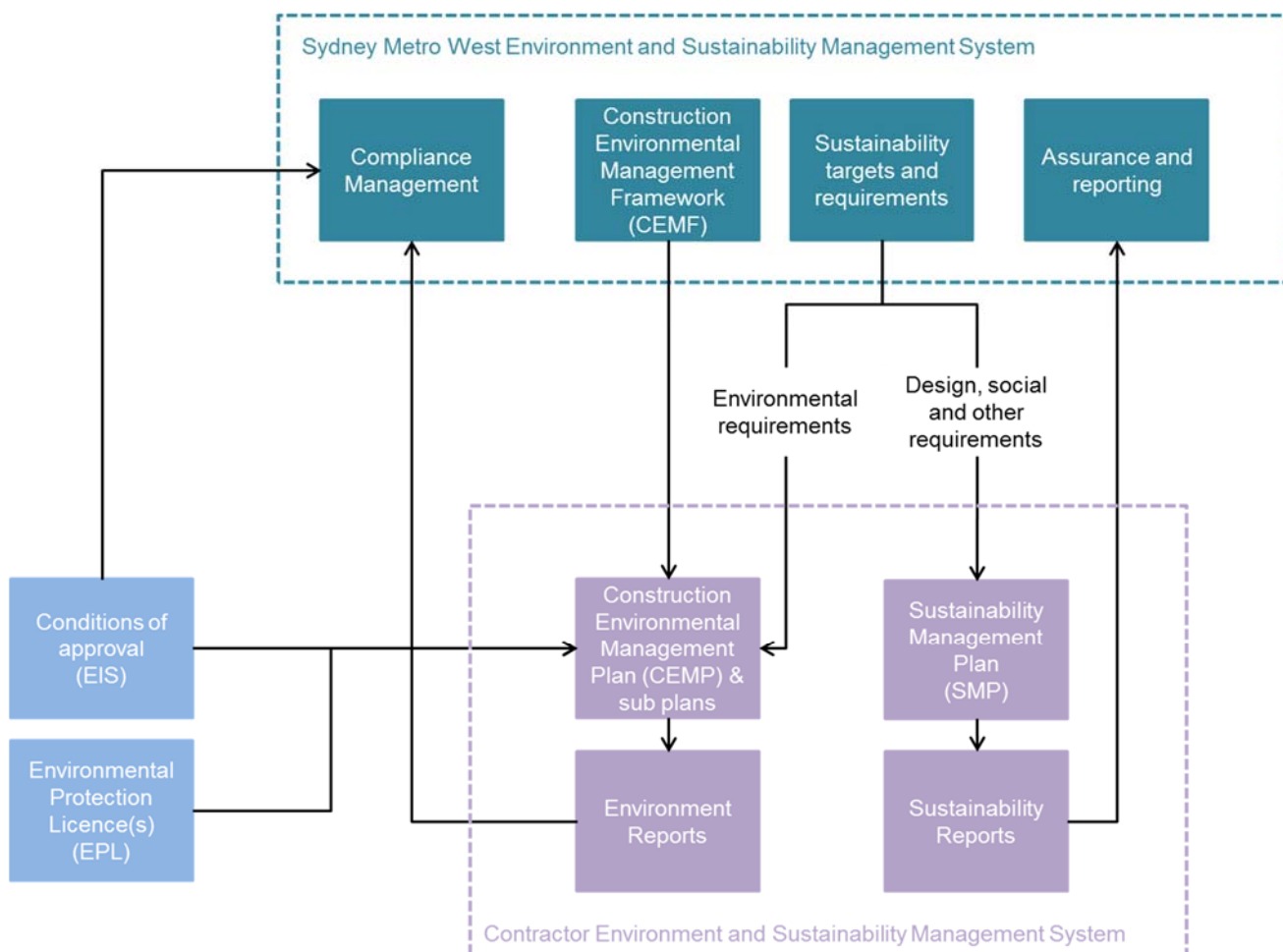


3.3 Management systems – design and construction

The Environment & Sustainability Policy and Strategy has been integrated into the Environmental and Sustainability Management System (E&SMS), outlined in Figure 3.2. This figure also shows relationship between key documents within the Sydney Metro E&SMS and the Principal Contractor's E&SMS. Notably:

- The Construction Environment Management Plan (CEMP) will capture the construction environmental requirements emerging from the Environmental Impact Statements (EISs) and subsequent planning approvals and this plan.
- The Contractor Sustainability Management Plans will capture governance and design requirements as well as social sustainability initiatives required by this plan and contract requirements. These plans will vary in scope across different delivery packages.
- Progress against sustainability objectives and targets will be tracked through regular sustainability reporting over the delivery period. Future design changes may affect the ability to meet all targets. If a target has not been met, commentary will be provided.

Figure 3.2 Sydney Metro West Environment and Sustainability Management System



Appendix A Policies, regulation and legislation

A.1 Key policies, plans and strategic objectives

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
Policies and plans directly supporting the Project							
<i>Greater Sydney Region Plan</i>	A city supported by infrastructure	●	●			●	●
	A collaborative city	●					
	A city for people			●	●	●	●
	Housing the city					●	
	A city of great places	●				●	●
	A well-connected city	●				●	
	Jobs and skills for the city			●			
	A city in its landscape	●	●		●		●
	An efficient city	●	●		●		
	A resilient city	●			●		●
	Implementation	●					
<i>Our Greater Sydney 2056 – Eastern City District Plan</i>	Planning for a city supported by infrastructure	●	●			●	●
	Working through collaboration	●		●			
	Providing services and social infrastructure to meet people's changing needs					●	
	Fostering healthy, creative, culturally rich and socially connected communities					●	
	Providing housing supply, choice and affordability, with access to jobs, services and public transport	●				●	

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
	Creating and renewing great places and local centres, and respecting the District's heritage					●	
	Growing a stronger and more competitive Harbour CBD					●	
	Growing and investing in health and education precincts and the Innovation Corridor					●	
	Growing international trade gateways					●	
	Delivering integrated land use and transport planning and a 30-minute city		●			●	
	Growing investment, business opportunities and jobs in strategic centres					●	
	Retaining and managing industrial and urban services land					●	
	Supporting growth of targeted industry sectors					●	
	Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways						●
	Protecting and enhancing bushland and biodiversity						●
	Protecting and enhancing scenic and cultural landscapes					●	
	Increasing urban tree canopy cover and delivering Green Grid connections				●	●	●
	Delivering high quality open space					●	
	Reducing carbon emissions and managing energy, water and waste efficiently		●		●		

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
	Adapting to the impacts of urban and natural hazards and climate change				●		
Our Greater Sydney 2056 – Central City District Plan	Planning for a city supported by infrastructure	●	●			●	●
	Working through collaboration	●		●			
	Providing services and social infrastructure to meet people's changing needs					●	
	Fostering healthy, creative, culturally rich and socially connected communities					●	
	Providing housing supply, choice and affordability, with access to jobs, services and public transport	●				●	
	Creating and renewing great places and local centres, and respecting the District's heritage					●	
	Growing a stronger and more competitive Greater Parramatta					●	
	Delivering a more connected and competitive GPOP Economic Corridor					●	
	Delivering integrated land use and transport planning and a 30-minute city		●			●	
	Growing investment, business opportunities and jobs in strategic centres					●	
	Maximising opportunities to attract advanced manufacturing and innovation in industrial and urban services land					●	
	Supporting growth of targeted industry sectors					●	

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
	Protecting and improving the health and enjoyment of the District's waterways						●
	Creating a Parkland City urban structure and identity, with South Creek as a defining spatial element					●	
	Protecting and enhancing bushland, biodiversity and scenic and cultural landscapes					●	●
	Increasing urban tree canopy cover and delivering Green Grid connections					●	
	Delivering high quality open space					●	
	Better managing rural areas					●	
	Reducing carbon emissions and managing energy, water and waste efficiently		●		●		
	Adapting to the impacts of urban and natural hazards and climate change				●		
<i>Future Transport Strategy 2056</i>	Customer focused	●				●	
	Successful places	●				●	●
	Growing the economy			●			
	Safety and performance	●		●		●	
	Accessible services	●				●	●
	Sustainability	●	●		●	●	●

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
<i>State Infrastructure Strategy 2018-2038: Building Momentum</i>	Improve integration of land and infrastructure planning					●	
	An infrastructure program that represents the best possible investment and use of public funds	●			●		
	Optimise the management, performance and use of assets	●	●		●		
	Ensure infrastructure is resilient to natural hazards and human-related threats	●	●		●		●
	Improve state-wide connectivity and realise the benefits of technology	●					
	Drive consumer-centric services and expand innovative service delivery models	●		●			
Other relevant policies and plan							
National							
<i>Smart Cities Plan</i>	30-minute cities to easily access the places you need					●	
	Investing in fast, efficient public transport	●					
	Value capture to support financing of infrastructure delivery	●					
	Collaborative 'city deals' to deliver better outcomes for cities	●					
<i>Australian Infrastructure Plan</i>	Productive cities and productive regions	●					
	Efficient infrastructure markets	●					
	Sustainable and equitable infrastructure	●				●	
<i>National Innovation and Science</i>	Culture and capital					●	
	Collaboration	●		●			

Plan or policy	Strategic objective	Demonstrate Leadership	Manage Resources Efficiently	Drive Supply Chain Best Practice	Tackle Climate Change	Value Community and Customers	Respect the Environment
<i>Agenda</i>	Talent and skills			●			
	Government as an exemplar	●					
State							
<i>State and Premier's priorities</i>	Strong budget and economy	●					
	Building infrastructure	●	●	●			
	Protecting the vulnerable				●	●	●
	Better services						
	Safer communities			●		●	

A.2 Sydney Metro Environment and Sustainability Policy (2016)



Environment & Sustainability Policy



This Policy reflects a commitment in our delivery of the Sydney Metro program to:

- Align with, and support, Transport for NSW (TfNSW) Environment & Sustainability Policy.
- Optimise sustainability outcomes, transport service quality, and cost effectiveness.
- Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation.
- Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations.
- Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.

To deliver on these commitments, the Sydney Metro team will:

Industry leadership

- Implement coordinated and transparent decision making, by engaging with stakeholders and suppliers, encouraging innovation and demonstrating sustainability leadership.
- Explore new benchmarks for the transport infrastructure sector by requiring high standards from our designers, contractors and suppliers, building on experience gained through development of Sydney Metro Northwest.

Community and customer

- Provide accessible, safe, pleasurable, and convenient access and transport service for all customers.
- Establish positive relationships with community and stakeholders to maximise opportunities to add value to local communities.

Land use integration and place making

- Create desirable places, promote liveability and cultural heritage, and optimise both community and economic benefit.
- Balance transit oriented development opportunities with stakeholder expectations.

Embedding environmental and social sustainability

- Establish robust sustainability objectives and targets.
- Maintain an environmental management system that is integrated into all our project activities.
- Ensure thorough and open environmental assessment processes are developed and maintained.
- Develop and maintain an environmental management framework to embed best practice pollution management and sustainable outcomes during construction.
- Apply effective assurance processes to monitor performance against the project environment and sustainability objectives and identify appropriate reward or corrective action, as required.
- Apply environment and sustainability specific processes to the procurement of delivery activities.

Accountability

- Undertake public sustainability reporting.
- Hold employees and contractors accountable for proactively meeting their environmental and social sustainability responsibilities.
- Provide appropriate training and resources necessary to meet our responsibilities.

Rodd Staples
Program Director, Sydney Metro

A.3 Sydney Metro strategic objectives

Our vision:

To transform Sydney with a world-class Metro.

Our strategic objectives exist to sharpen our focus as a **successful and outcomes-oriented business**. Over 2019-21, our priority focus areas are:



Successful Engagement

- Communicating a compelling vision for Sydney Metro
- Forging stronger relationships with existing and new stakeholders
- Ensuring business and cultural alignment with the Board's strategic direction
- Providing the NSW Government with an innovative and affordable investment opportunity for Sydney Metro West and Sydney Metro Greater West, servicing the Western Sydney International (Nancy Bird Walton) Airport



Meeting Delivery Commitments

- Completing Sydney Metro Northwest by December 2019
- Supporting Sydney Metro City and Southwest in delivery phase activities
- Commencing appropriate enabling and mobilisation activities for Sydney Metro West and Sydney Metro Greater West, for a smooth transition to delivery



Operational Excellence

- Creating and embedding a clear vision of operational success, a structure to be an intelligent client, and a program for achieving it
- Bringing Sydney Metro Northwest services online, with positive Government, customer and local community responses
- Achieving all operational performance standards, successively building our service delivery with high levels of customer satisfaction across the end-to-end service
- Vibrant station precincts developing in line with our vision of integrated transport and land use
- Safeguarding the physical and cyber security of the network



Financial Responsibility

- Clarifying and baselining the Metro product, without loss of core customer benefits
- Managing project Capital budgets, in partnership with TfNSW and NSW Treasury
- Establishing an agile and sustainable organisational structure which best supports cross-business efficiency and the business' long-term functional requirements
- Managing our property and operational asset base from a commercially prudent, whole-of-life perspective
- Developing a clear and actionable plan for growing Farebox and other revenues



Workforce Capability

- Developing innovative delivery strategies for Sydney Metro West and Sydney Metro Greater West, to attract high-quality, competitive tenders
- Embedding Sydney Metro as an enduring and sustainable organisation
- Standing up a highly capable leadership group, able to lead Sydney Metro in the implementation of the Board's strategic direction
- Continuously improving our corporate systems, services and processes to enhance affordability and fitness-for-purpose
- Building the operational capability of Sydney Metro

A.4 Other regulatory drivers for Sydney Metro West

Driver	Description
NSW Transport Administration Act (1988)	A common objective and service delivery priority of public transport agencies is 'To promote the delivery of transport services in an environmentally sustainable manner'.
NSW Environmental Planning and Assessment Act (1979)	<p>The EP&A Act objectives encourage Ecological Sustainable Development (ESD). The EP&A Act recognises that ESD requires the effective integration of economic and environmental considerations into decision making processes.</p> <p>There are four main principles supporting the achievement of ESD:</p> <ul style="list-style-type: none"> • Precautionary principle • Intergenerational equity • Conservation of biological diversity and ecological integrity • Improved valuation and pricing of environmental resources.
NSW Greater Sydney – Green Grids and Blue Grids (2016)	<p>Green Grids acknowledges that green space is a key hallmark of liveability and proposes a network of high-quality green space that connects town centres, public transport hubs and major residential areas. This is an integral part of the Greater Sydney Region and District Plans and promotes sustainable development while maximising quality of life and wellbeing.</p> <p>The Green Grids utilises the natural Blue Grid of waterways and watercourses that thread throughout Greater Sydney, and calls for the restoration of these. It includes an extensive range of open spaces: from national, regional and local parks, through the harbour, wetlands, rivers, beaches and creeks to playgrounds, playing fields, golf courses and cemeteries.</p> <p>Further links will be made through enhancements to creek corridors, transport routes, footpaths and cycle ways to encourage walking, help promote healthy living patterns and reduce extremes of urban heat that can be expected to increase with climate change.</p>
NSW Five million trees for a greener Sydney by 2030 (2018)	Aiming to increase Greater Sydney's tree canopy to 40 percent by 2030 by planting more trees in streets, parks, bushland areas and yards.
Australia Jobs Act (2013)	Under the Australian Jobs Act (2013), the Project is required to prepare and implement an Australian Industry Participation Plan. The Plan outlines how the project will provide full, fair and reasonable opportunity to Australian Industry to supply goods and services to the project.
United Nation's Sustainable Development Goals	<p>It is expected that the Sydney Metro West project will support the follow United Nation's Sustainable Development Goals:</p> <ul style="list-style-type: none"> • Good health and well-being • Decent work and economic growth • Industry innovation and infrastructure • Reduced inequalities • Sustainable cities and communities • Climate action • Life on land • Peace, justice and strong institutions.
Infrastructure Skills Legacy Program – NSW Department of Industry	<p>The Infrastructure Skills Legacy Program (ISLP) will capitalise on the NSW Government's record levels of infrastructure investment to boost the number of skilled construction workers and create fresh pathways to employment across the state.</p> <p>Sydney Metro City & Southwest has been a demonstration pilot for the program since 2016. To date over 2000 workers have achieved accredited training outcomes program. Sydney Metro will continue working collaboratively with NSW Department of Industry as part of the approach for Sydney Metro West.</p>

Driver	Description
Aboriginal Participation in Construction Policy (2018)	The Policy aims to 'increase the employment and education opportunities for Aboriginal people within the construction industry'. Under the Policy a percentage of the total estimated value of the contract (termed 'targeted project spend') must be directed to Aboriginal related employment and education activities, procurement of goods or services from recognised Aboriginal businesses or other programs. An Aboriginal Participation Plan must be prepared and published shortly after contract award. A Participation Report must be prepared and published (once construction is 90 per cent complete) describing how the Plan was implemented.
PBD-2017-05 Construction training and skills development	NSW Government agencies must set targets for the engagement of apprentices and trainees on construction projects over \$10 million and must report outcomes to the Department of Industry. Since 2013, Sydney Metro has set targets for contract packages across all Sydney Metro projects. Sydney Metro will continue to set apprentice and trainees targets suited to the scope of the package and relevant skills shortages at the time
NSW Strategic Business Case Gateway	Sustainability indicators form a key component of the Gateway Review System. The Gateway Review is a NSW Government process that assesses the progress of projects against the following seven criteria service (including sustainability) to inform the procurement process.
TfNSW Environment & Sustainability Policy (2015)	TfNSW's commitment to delivering transport services, projects, operations and programs in a manner that balances economic, environmental and social issues to ensure a sustainable transport system for NSW.
Transport Environment and Sustainability Policy Framework (2013)	The Framework was developed to establish a collective and coordinated approach to deliver the NSW Government's environmental and sustainability agenda across the transport sector. The Framework includes objectives, targets, measures and action plans to deliver positive environmental outcomes. The Framework has been developed to align with the State Plan 2021 and Transport Master Plan. The TfNSW sustainability aspiration is 'to provide a world class sustainable transport system that meets customer expectations and optimises economic development for NSW' (TfNSW Framework, 2013). A number of TfNSW sustainability guiding principles are outlined and have been used to guide the development of the sustainability objectives for City & Southwest.
Sydney's Walking Future, Connecting people and places (2013)	The goal of Sydney's Walking Future, Connecting people and places (2013) is to 'get people in Sydney walking more through actions that make it a more convenient, better connected and safer mode of transport.'
Sydney's Cycling Future, Cycling for everyday transport (2013)	Outlines how the NSW Government will 'improve the bicycle network and make sure that the needs of bike riders are built into the planning of new transport and infrastructure projects.' Sydney's Cycling Future provides the strategic and policy context, articulating: <ul style="list-style-type: none"> • [ensuring] that the needs of bike riders are built into the planning of new transport and infrastructure projects • Deliver bicycle infrastructure through major transport and development projects.'
Sydney's Bus Future, Simpler, faster, better bus services (2013)	Sets out how essential improvements to the bus network will be implemented to meet changing customer needs, including being able to access major centres outside the Sydney CBD.
NSW Procurement Policy Framework 2014	Sets out mandatory requirements and guidance on sustainable procurement practices for NSW government agencies. Includes
NSW Renewable Energy Action Plan (2013)	The REAP intends to position NSW as the clean energy State of Australia – attracting investment, building a clean energy knowledge industry and creating jobs, whilst reducing the State's contribution to greenhouse gas (GHG) emission.

Driver	Description
Sydney Metro Environment & Sustainability Policy	<p>Sydney Metro's commitment to sustainable outcomes on the projects in being environmentally and socially responsible through</p> <ul style="list-style-type: none"> • Industry leadership • Community and customer engagement • Land use integration and place making • Embedding requirements, and • Accountability
Transport Administration Amendment (Sydney Metro) Act 2018	The Act calls for Sydney Metro projects and the business to exhibit a sense of social responsibility by having regard to the interests to the community in which it operates
NWRL Sustainability Strategy (2012)	Used to benchmark Sydney Metro West's approach to social sustainability.
City & Southwest Sustainability Strategy 2017-2024	Used to benchmark Sydney Metro West's approach to social sustainability.
Sydney Metro West Business Requirements Specifications	Requires Sydney Metro West to be socially and environmentally responsible in the delivery and operations of the project. It sets of the initial project requirements that will be used to develop the definition design and inform the Systems Requirement Specifications.
Sydney Metro West Systems Requirements Specifications	Requires Sydney Metro West to be socially and environmentally responsible in the delivery and operations off the project. It sets out the project requirements in further detail and will be used to inform the reference design of the project.
Sydney Metro West Workforce Development and Industry Participation Plan	The workforce development objectives and approach to implementation, including investigating specific programs.
Sydney Metro West Aboriginal Participation Plan	Underpins the development of a diverse and inclusive workforce and supply chain by increasing Aboriginal participation and enhancing skills development through targeted programs that develop both specific technical and generic transferable skills. Having a targeted and focused approach to Aboriginal participation will result in a lasting legacy of more skills for individuals and greater capability and capacity for Aboriginal Peoples and Aboriginal businesses to respond to these opportunities.
Sydney Metro Heritage Strategy (pending)	Currently in draft, when completed will set out the strategic direction for all heritage works across the program at Sydney Metro, including Sydney Metro West.
City of Sydney Social Sustainability Policy (2016)	Used to benchmark Sydney Metro West's approach to social sustainability. The policy is specific to the City of Sydney local council area and will be used to inform initiatives specific to stations, ISDs and residual land developments that fall within this locality.
Resilient Sydney (2018)	A five-year plan outlining the direction Sydney must take to strengthen the city's ability to survive, adapt and thrive in the face of global uncertainty. The Plan recognises that Sydney regularly responds to a range of shock events such as extreme heat, storms, flooding, bushfires and cyber-attacks. In working with local and international experts, the Plan identified five directions to ensure a resilient city. Direction is to "live with our climate objective", which can be broken down into three guiding principles; local adaption; global performance; and a diverse economy.
The National Greenhouse and Energy Reporting (NGER) Act (2007)	NGERS is a mandatory national system for reporting greenhouse emissions, abatement actions and energy consumption. Under NGERs the Project will have reporting obligations due to the anticipated energy demand.
NSW Government Resource Efficiency Policy (2014)	<p>The NSW Government Resource Efficiency Policy (2014) (Policy) aims to drive resource efficiency, with a focus on energy, water and waste, and reducing harmful air emissions. The Policy aims to ensure NSW Government agencies: meet the challenge of rising costs for energy, water, clean air and waste management use purchasing power to drive down the cost of resource-efficient technologies and services show leadership by incorporating resource efficiency in decision-making. The policy includes specific measures, targets and minimum standards to drive resource efficiency.</p>

Driver	Description
NSW Waste Avoidance and Resource Recovery Strategy 2014-21(2014)	The NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (2014) (Strategy) provides a framework for waste management and aligns with the NSW Government's waste reforms in NSW 2021. The Strategy includes the following six key result areas: avoid and reduce waste generation, increase recycling, divert more waste from landfill, manage problem wastes better (including asbestos), reduce litter, and reduce illegal dumping.
The NSW Government's commitment to an aspirational objective of achieving net-zero emissions by 2050	This aspirational objective is intended to provide a clear statement of the government's intent, commitment, and level of ambition and to set expectations about future emissions pathways that will help the private sector and government agencies to plan and act. It is consistent with the Paris Agreement which the Commonwealth Government has committed to ratifying, and is intended to complement, rather than replicate or duplicate the Commonwealth Government's shorter term national emissions reduction targets.
Transport for NSW (TfNSW) Climate Risk Assessment Guidelines (2018)	The Climate Risk Assessment Guideline is developed to provide contractors and our stakeholders with support on how to complete a Climate Risk Assessment (CRA) in line with the latest Sustainable Design Guidelines (SDG) requirements.
NSW Modern Slavery Act 2019	Action taken to address risks of modern slavery in the supply chain with implications for all forms of procurement, directly includes government procurement
Modern Slavery Act 2019	Action taken to address risks of modern slavery in the supply chain with implications for all forms of procurement, indirectly impacts government procurement
National Climate Resilience and Adaptation Strategy (2015)	Articulates how Australia is managing the risks of a variable and changing climate. It identifies a set of principles to guide adaptation practices and the role of State and Territory Governments in delivering adaption responses for transport infrastructure and services.
Critical Infrastructures Resilience Strategy (2010)	Aims for the continued operation of critical infrastructure in the face of all hazards. This strategy defines critical infrastructure as the "facilities, supply chains, information technologies and communication networks which, if unavailable, will significantly impact the wellbeing of Australians or their national security". Resilience refers to coordinated planning across sectors and networks including responsive, flexible and timely recovery measures and an organisational culture that can provide a minimum level of service during interruptions while quickly returning to full operation.
NSW Climate Change Policy Framework (2016)	Aims to maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate, while looking to current and emerging international and national best practices. The Framework has two objectives: to achieve net-zero emissions by 2050; and be more resilient to climate change. The key policy direction relevant to SMGW is to reduce the "risk and damage to public and private assets" by "embedding climate change considerations into asset and risk management". Delivery of the Framework also includes the NSW Government "investigating how to embed...climate change mitigation and adaptation across [its] operations including service delivery, infrastructure, purchasing decisions, and [the] regulatory framework".

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