



Industry briefing

December 2018



Contents

Premier's message	3
Minister's message	3
Sydney Metro	4
The Sydney Metro experience	6
Western Parkland City	8
Sydney Metro Western Sydney Airport	9
Sydney Metro Western Sydney Airport industry engagement	10
Sydney Metro West	11
Tunnelling	12
Sydney Metro West project development	13
Sydney Metro West industry engagement	14
Sydney Metro West delivery strategy	16
Delivery timeframes	18
Coordinated industry approach	19
Sydney Metro City & Southwest updated project delivery strategy	21
Sydney Metro City & Southwest contract packaging approach	22
Integrated station developments	23
Sydney Metro City & Southwest 2018 milestones	24
Delivery update	24
Sydney Metro Northwest Places overview	27

Premier's message



The NSW Government is delivering new metro rail for Sydney, making it easier to get around our great city.

The first metro line opens next year in the north west, extending into the city in 2024.

The Government's proven track record in delivering new metro rail has allowed us to confirm that the Western Sydney Airport rail line will be built and delivered by Sydney Metro. This will provide a transport spine for this part of Western Sydney when the Airport opens in 2026.

This rail link is a joint initiative by the Australian and NSW governments, as part the Western Sydney City Deal.

As metro rail is further developed, we look forward to continuing the strong partnership with industry that has been a hallmark of Sydney Metro's success to date.

This industry-leading engagement program is now backed up by the NSW Government Action Plan: A ten point commitment to the construction sector, which aims to make the Government 'best in class' client for the construction industry and its suppliers.

Gladys Berejiklian MP
Premier of New South Wales

Minister's message



Right now, Sydney's new metro trains are being tested and commissioned and the finishing touches put on our new stations - as we get ready to open Sydney Metro next year.

Public transport in Australia's only global city is about to take its biggest leap in a century.

This world-scale program of works will shape the future of our great city for generations to come.

This has been a journey of many firsts, including the nation's first fully automated passenger railway and a new generation of fast, safe and reliable trains.

New levels of customer service and safety will set a new benchmark - a fully accessible metro train every four minutes in the peak, with an ultimate future capacity of a train every two minutes under the Sydney CBD. Customers won't need a timetable, they'll just turn up and go.

Sydney Metro has been shaped through strong engagement with industry and that best-practice approach will continue as the delivery strategies for Sydney Metro West and Sydney Metro Western Sydney Airport are developed and refined.

I would again like to thank industry for its collaborative approach as we keep moving forward with the development, construction and delivery of Australia's biggest public transport project.

Andrew Constance MP
Minister for Transport and Infrastructure

This document provides a general overview of Sydney Metro, including Sydney Metro Northwest, Sydney Metro City & Southwest, Sydney Metro West and Sydney Metro Western Sydney Airport. It also outlines the proposed approach to precinct and property development opportunities associated with Sydney Metro.

The document outlines progress made to date and the timeline for the next stages. As further environmental assessments and detailed engineering studies are completed, and additional input from industry is received and considered, construction methodologies and procurement timeframes will be confirmed.

Sydney Metro

A new stand-alone railway, this 21st century network will revolutionise the way Sydney travels.

Services start in the second quarter of 2019, using Sydney's new generation of fully-automated metro trains.

From Sydney's booming North West region, metro rail will extend under Sydney Harbour, through new underground stations in the central business district (CBD) and beyond to the south west by 2024.

Customers won't need a timetable for Sydney Metro – they'll just turn up and go, with a metro train every four minutes in the peak. When Sydney Metro is extended in to the CBD, there will be ultimate capacity for a metro train every two minutes in each direction under the city – a level of service never before seen in Sydney.

Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour today to up to 200 services an hour beyond 2024. That's an increase of up to 60 per cent capacity across the network to meet demand.

Australia's biggest public transport project

Sydney Metro is made up of:

Sydney Metro Northwest – formerly the 36-kilometre North West Rail Link. This \$8.3 billion project is nearing completion and will open in the second quarter of 2019. Construction is progressing rapidly towards completion, and Australia's first fully-automated trains are undergoing testing.

Sydney Metro City & Southwest – a new 30-kilometre metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood, under Sydney Harbour, through new CBD stations and south west to Bankstown. It is due to open in 2024.

Sydney Metro West – a new underground railway between the CBDs of Parramatta and Sydney. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and unlocking housing supply and employment growth between the two CBDs. Sydney Metro West will service the key precincts of Greater Parramatta, Westmead, Sydney Olympic Park, the Bays Precinct and the Sydney CBD. It is expected to be operational in the second half of the 2020s.

Sydney Metro Western Sydney Airport – this joint Australian and NSW government project will form the transport spine of the new Western Parkland city, connecting Western Sydney Airport and the Western Sydney Aerotropolis to St Marys. The two governments have a shared objective to provide a rail connection to Western Sydney Airport in time for its opening in 2026.

Sydney Metro will transform the way Australia's biggest city travels and help shape its future.

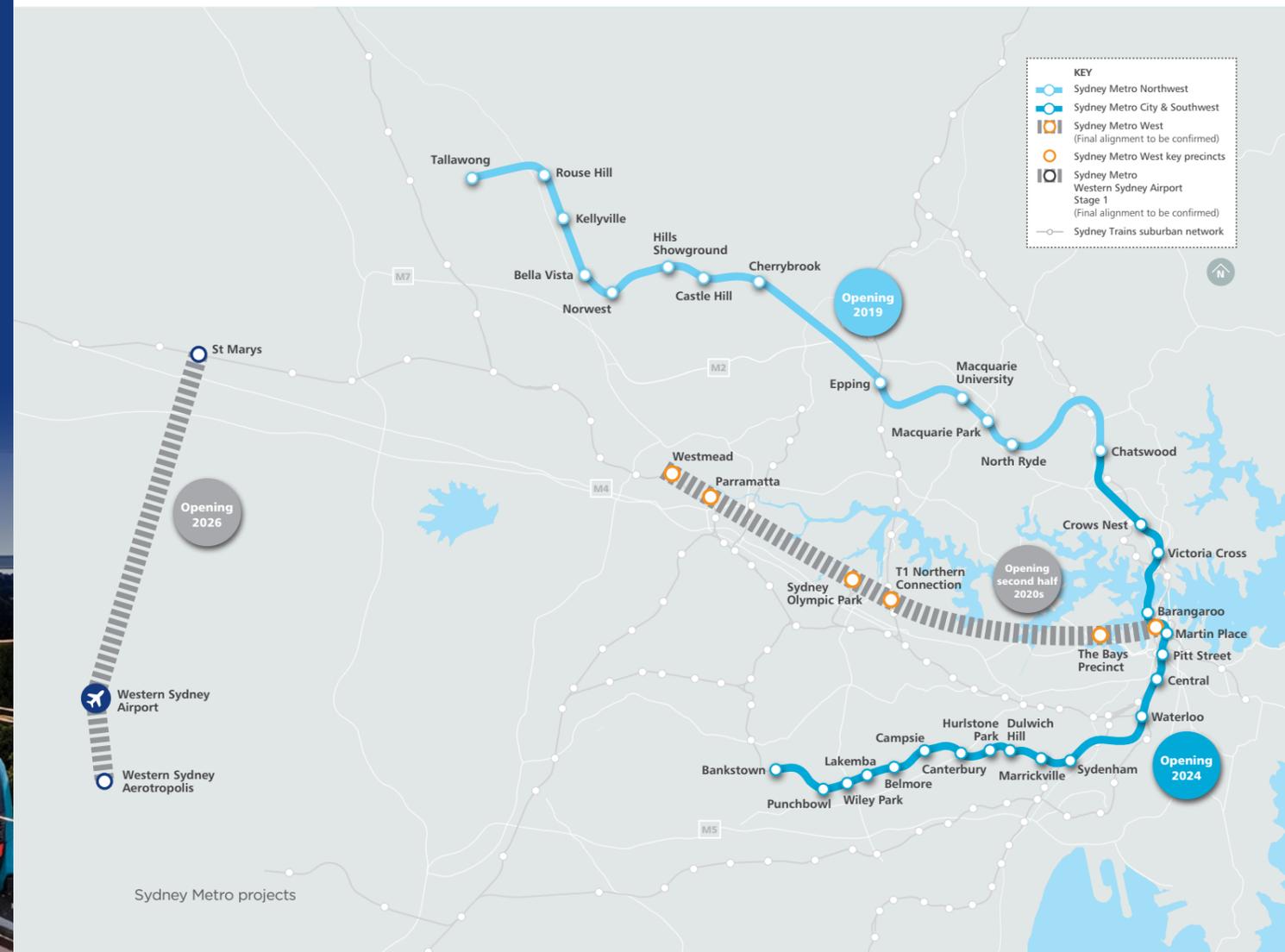
This new world-class mass transit system will evolve with the city it will serve – cutting travel times, reducing congestion and delivering major economic and social benefits for generations to come.

Metro rail means a new generation of fast, safe and reliable trains easily connecting customers to where they want to go.

Sydney Metro will make it easier and faster to get around, boosting economic productivity by bringing new jobs and new educational opportunities closer to home.

With customers at the centre of all design decisions, stations will be fully accessible and quick and easy to get in and out of; trains will be fast, safe and reliable; and technology will keep people connected at every step of the journey.

Sydney Metro will integrate with new communities and transform existing urban centres, as well as the broader transport network, so customers have a range of transport options to get to and from their destinations.



4 The skytrain bridge at Rouse Hill

The Sydney Metro experience

Fast, frequent and easy-to-use metro services will help customers achieve their daily tasks, whether it's getting to work, meetings, school or education, sport, a day out or running errands – and of course, getting home.

Customer benefits of Sydney Metro include:

- no timetable – customers will just turn up and go
- Opal ticketing – fares set and controlled by the NSW Government, the same as the rest of the Sydney transport network
- customer service assistants at every station and moving through the network during the day and night
- Australian-first platform screen doors which keep people and objects away from the edge, 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 only open at the same time as the train doors
- continuous mobile phone coverage throughout the metro network
- 98 per cent on-time running
- clean platforms and trains
- two multi-purpose areas per train for prams, luggage and bicycles
- wheelchair spaces, separate priority seating and emergency intercoms inside trains
- each train has 26 security cameras and customers can see from one end of the train to the other inside the train, a major safety benefit
- video help points at platforms, connecting directly with train controllers – an Australian first
- level access between the platform and train and three double doors per side per carriage, for faster loading and unloading
- heating and air-conditioning in all metro trains
- on-board real-time travel information and live electronic route maps
- customer safety is the number one priority of Sydney Metro, which is Australia's first fully-automated railway. At all times, a team of expert train controllers will monitor the system, making sure everything runs smoothly.



Tallawong Station community day



Bella Vista Station community day

Western Parkland City

Western Sydney is growing rapidly. Currently home to over two million people, Western Sydney's population is projected to grow to three million people by 2036, and four million by 2056, double the current population.

The Sydney Metro Western Sydney Airport project is a key part of delivering an integrated transport system for the Western Parkland City.

The new railway will become the city's transport spine, linking residential areas with job hubs and the nationally-significant Western Sydney Airport. The Australian Government is investing up to \$5.3 billion in equity to deliver the airport through a government-owned company, 'Western Sydney Airport'.

The airport will support almost 28,000 direct and indirect jobs by 2031 and underpin the development of the Western Sydney Aerotropolis, at the centre of the Western Parkland City. The Aerotropolis will support around 200,000 new jobs in aerospace and defence, manufacturing, healthcare, freight and logistics, agribusiness, education and research industries.

The Western Sydney City Deal is a 20-year agreement signed in March 2018 by the Australian Government, the NSW Government and eight Western Sydney councils, to transform the Western Parkland City.

The City Deal is a partnership between governments to deliver new housing, more jobs, better access to education, improve connectivity and enhance liveability through new community infrastructure.

Delivering stage 1 of Sydney Metro Western Sydney Airport, which connects the Aerotropolis core, Western Sydney Airport and St Marys, is a key City Deal commitment. Metro rail will play a major role in supporting the airport and the development of the Aerotropolis and shaping the Western Parkland City.

Sydney Metro Western Sydney Airport

Sydney Metro Western Sydney Airport is the new railway line that will service the new Western Sydney Airport.

The new metro rail will become the transport spine for the Western Parkland City.

A fast, safe and easy metro rail service will connect communities with jobs and services, delivering better access to more employment opportunities, health and education services and leisure activities across the Western Parkland City and Greater Sydney.

Sydney Metro Western Sydney Airport will connect travellers from the new airport to the rest of Sydney's public transport system. Key stations will be built at the airport, Western Sydney Aerotropolis, and St Marys – where customers can connect with the rest of Sydney's rail system.

World-class metro rail means better access to more places, faster travel times, less congestion on roads and a reduced reliance on cars.

The Australian and NSW governments have a shared objective of having Sydney Metro Western Sydney Airport operational in 2026, when Western Sydney Airport is scheduled to open.

Future stages of Sydney Metro would connect the employment hubs at the airport and Aerotropolis with Sydney's major growth areas in the south west and north west, providing easy access for Western Sydney residents to key jobs precincts across Western Sydney and beyond.

The project will underpin the Greater Sydney Region Plan's vision of Sydney as a Metropolis of Three Cities, realising a 30-minute city for the Western Parkland City – where most people can travel to their nearest metropolitan centre or cluster by public transport within 30 minutes, and where everyone can travel to their nearest strategic centre by public transport seven days a week to access jobs, shops and services.

The Australian and NSW Governments, in consultation with local government, are now working together on a joint business case process as part of an integrated planning and city-shaping approach for Western Sydney. Sydney Metro, in collaboration with the Australian Government Department of Infrastructure, Regional Development and Cities and Transport for NSW, is leading development of the final business case for the first stage of the project. The Australian and NSW governments will be equal funding partners for the first stage.

The business case process will be informed by broader strategic planning being led by Transport for NSW.

The Sydney Metro Western Sydney Airport project will have:

- stations at Western Sydney Airport and Western Sydney Aerotropolis
- a station at St Marys, interchanging with the existing station and connecting customers with the rest of Sydney's rail system
- fully-automated driverless trains like the rest of the Sydney Metro system with fast, frequent services – customers won't need a timetable, they'll just turn up and go.

A fast, safe
and easy metro
rail service



Artist's impression of Sydney Metro Western Sydney Airport

Sydney Metro Western Sydney Airport industry engagement

The industry engagement process seeks to maximise industry input throughout the project's development process and provides a communication forum between Sydney Metro, local and international industry participants and key project stakeholders.

Industry engagement on Sydney Metro Western Sydney Airport is underway. Initial, targeted engagement is seeking feedback on city-shaping opportunities, customer services (operations, trains and systems), project delivery and value sharing. This will help Sydney Metro define the project, to ensure the best transport and land use outcomes.

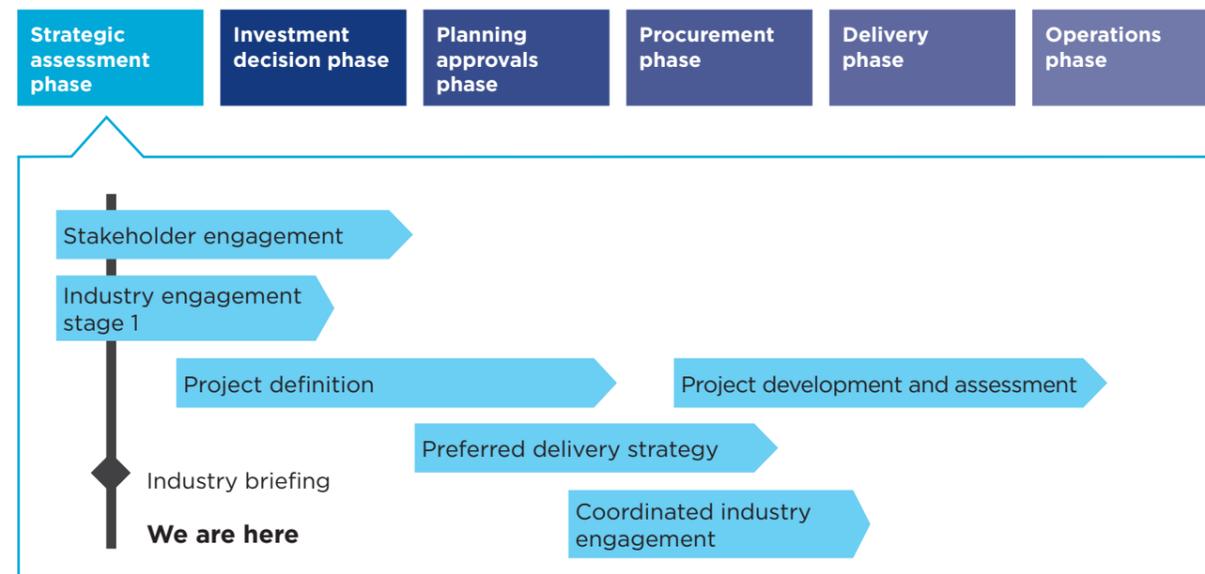
Sydney Metro is planning further engagement for 2019, to inform key aspects of the final business case, which will be coordinated with the broader Sydney Metro industry engagement process.

This engagement will seek out the best industry and market knowledge, to shape the project on issues such as:

- station locations and opportunities for interchange with other transport modes
- opportunities for land use and precinct planning along the project corridor, including interfaces with other Western Sydney City Deal projects, and with Western Sydney Airport
- identifying potential synergies between the project and Sydney Metro West
- packaging, procurement and delivery.

Developing the project will involve the key stages outlined below – the project is now in the strategic assessment phase.

Sydney Metro Western Sydney Airport project development



Sydney Metro West

Sydney Metro West will connect the Sydney and Greater Parramatta central business districts.

This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and unlocking housing supply and employment growth between the two CBDs.

Sydney Metro West will service the key precincts of Greater Parramatta, Sydney Olympic Park, The Bays Precinct and the Sydney CBD.

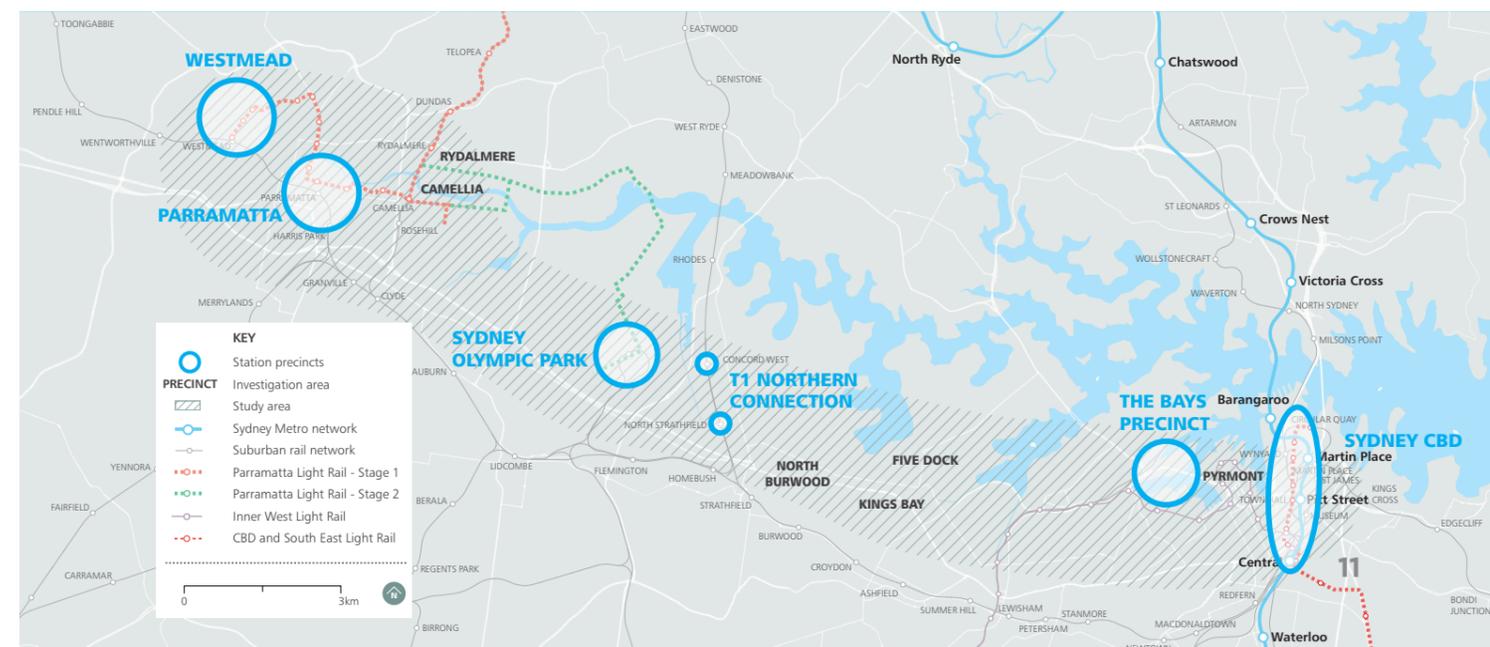
Sydney Metro is investigating new metro stations between the key precincts that the project will service. Delivering a fast, safe and reliable metro service will be balanced with improving

community benefits: the project will deliver faster public transport journey times than currently possible between the two CBDs while also getting the best outcomes for communities, connecting as many people as possible to a new world-class mass transit system. Sydney Metro is investigating options for new intermediate stations, which include Camellia/Rydalmere, North Burwood/Five Dock/Kings Bay and Pyrmont.

Sydney Metro will continue to work with the community and stakeholders like local government and industry to shape the project.

The Sydney Metro West scope of works includes:

- a new underground metro station at Westmead, to support the growing residential area as well as the health, research and education precinct
- an underground interchange with an existing suburban station on the T1 Western Line – either at Parramatta or Westmead – allowing a fast and easy interchange to metro rail services for customers heading to and from the outer west and Blue Mountains
- a new metro station under an existing suburban station on the T1 Northern Line east of Sydney Olympic Park – allowing faster connections for customers from the Central Coast and Sydney's north to Parramatta and Sydney CBD, through a quick and easy interchange between suburban and metro services
- at least one Sydney Metro West station under the Sydney CBD, delivering an easy interchange between suburban rail, new light rail and the new metro stations currently under construction.



Tunnelling

Twin 15-kilometre tunnels from Bella Vista to Epping were completed in early January 2016 – after just 16 months.

At the time, they were the longest railway tunnels in Australia and were delivered by four mega tunnel boring machines (TBMs).

Tunnelling has started for Sydney Metro City & Southwest, with the first two TBMs now tunnelling from Marrickville towards the CBD. Five TBMs in total will be used to build the tunnels between Chatswood and Sydenham.

Sydney Metro West tunnels

Sydney Metro West is expected to be built largely underground and will be operational in the second half of the 2020s.

A number of factors determine the tunnelling route and alignment. These include:

- the location, depth and structure of the stations
- vertical track grade
- geological conditions
- track curvature, to allow higher train speeds
- the physical constraints of the route, including crossing under bodies of water like the Parramatta River.



The first TBM to start tunnelling on Sydney Metro City & Southwest



A TBM cutterhead



Aerial view of Parramatta, with Sydney CBD in the distance



Sydney Metro Northwest tunnels

Sydney Metro West project development

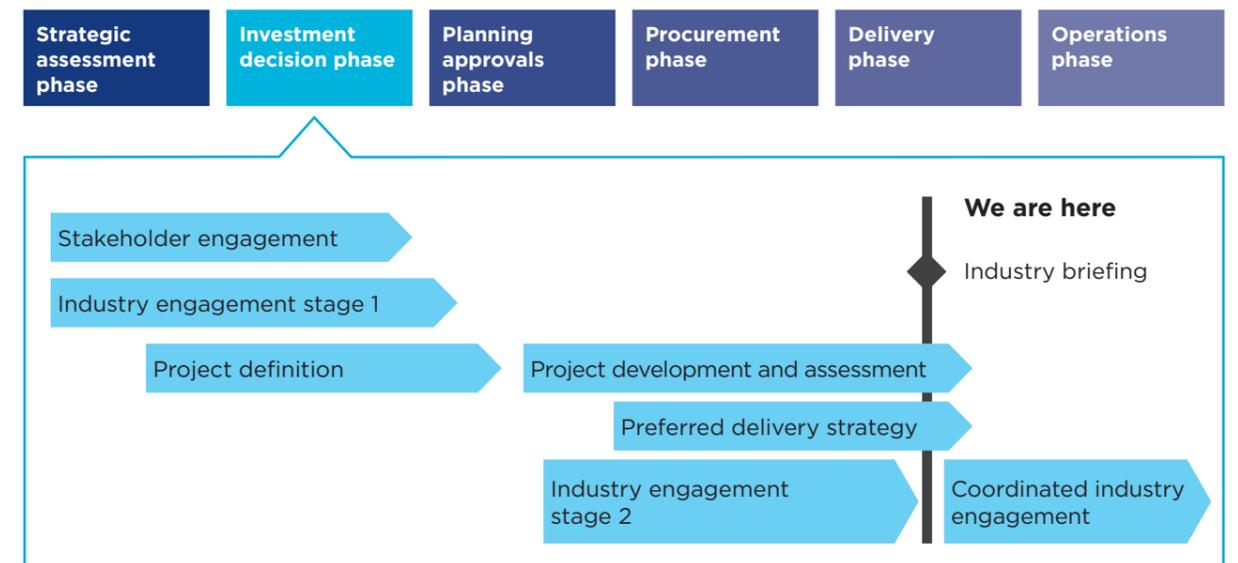
Sydney Metro has continued to refine and develop the project scope throughout 2018, which has been informed by extensive community, stakeholder and industry engagement.

Detailed investigations are taking place to inform decision-making about potential station locations, a project corridor and the optimal contract packaging approach.

This phase of the project will continue into 2019 and Sydney Metro will again engage with industry to help shape the next steps.

The key stages in the development of Sydney Metro West are shown below.

Sydney Metro West project development



Sydney Metro West industry engagement

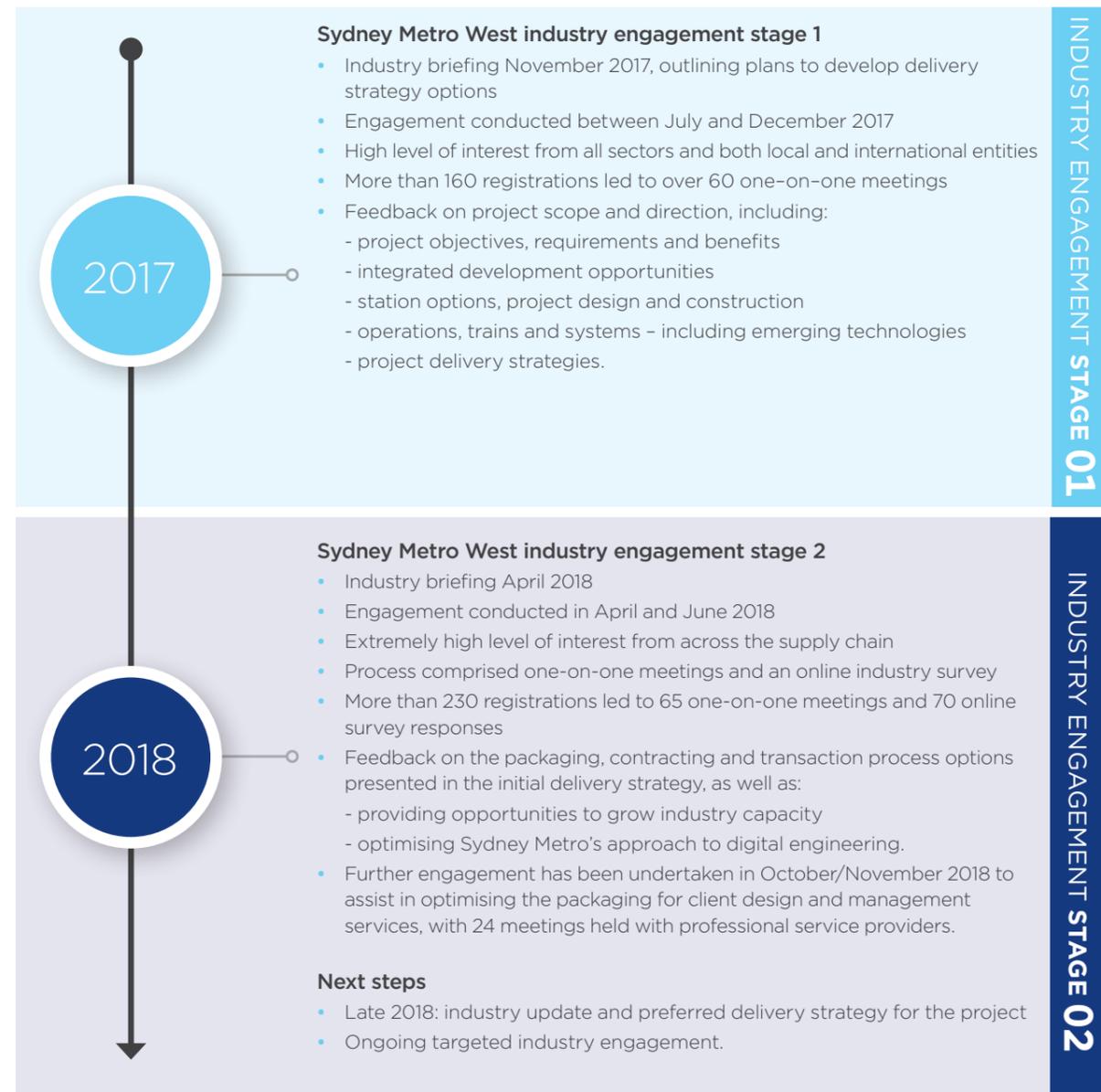
Sydney Metro has been engaging with industry on Sydney Metro West to help inform project definition and to test, refine and optimise the project by harnessing industry expertise and world's best practice.

Two initial stages of engagement have provided a strong base for refining the contract packaging and procurement approach.

Sydney Metro has valued the feedback received from industry and stakeholders to date and is looking forward to continuing to work across all

related sectors as Sydney Metro West is further developed. Industry engagement has taken place in parallel with engagement with local stakeholders such as councils and the community. The industry engagement included briefings and market sounding with organisations from Australia and overseas.

Industry engagement timeline



Industry engagement stages 1 and 2

The first round of industry engagement took place in the second half of 2017. The aim was to build awareness of the project and to obtain market information to shape its scope and definition to help ensure optimal transport and land use outcomes. This informed the development of an initial delivery strategy.

The second stage of industry engagement sought feedback on:

- The level of industry appetite and preference for packaging, contracting, and transaction process options as identified in the initial delivery strategy.
- Specific issues to inform development of the definition design and implementation considerations. This included Sydney Metro digital strategy and industry capacity constraints and opportunities.

- Options to enhance the benefits of Sydney Metro West through value sharing or possible partnership with the private sector to deliver greater value for money to the people of NSW.

Feedback from industry engagement stage 2 has been used to inform the development of a refined delivery strategy as part of the final business case for the project. The following table highlights some of the key elements of industry feedback and how Sydney Metro is seeking to address this as the project develops.

To date the focus of industry engagement has been on the main works packages and future engagement will seek more feedback on other aspects, including common commodities and components, and advanced and enabling works.

What you told us	Our response (base case delivery strategy)
Packaging	
Operations and Maintenance: Integration of operations and maintenance provides better operational flexibility.	A stand-alone, performance-based Operations and Maintenance package.
Systems: For rail and line-wide systems and rolling stock, preferences ranged from a single, combined 'systems' package to separate packages for key elements.	Separate packages for rolling stock, signalling and train control and the remaining rail and line-wide systems with options to aggregate (subject to further feedback and analysis).
Tunnels: At least two tunnel packages of a similar scale preferred.	Two tunnel packages of roughly equivalent scale, split to align with drive strategy and including station excavations. To be validated in final round of Industry engagement.
Stations: Combining selected stations generally preferred by industry respondents.	Separate station packages aimed at broadening opportunity with the option to potentially combine similar stations (subject to further feedback and analysis).
Development: <ul style="list-style-type: none"> • Integration of development with station construction at constrained locations with potential for large-scale commercial development. • Separation of development from station construction at suburban stations with smaller-scale development. 	<ul style="list-style-type: none"> • Integrated station development packages for the Sydney and Parramatta CBD station locations. • Separate station construction and development packages at suburban station locations.
Contracting	
Preference for collaborative contracting models, particularly for higher-risk elements and where scope is less clearly defined/subject to change.	Collaborative contract forms/payment mechanisms, including incentivised target cost for station excavations, Signalling and Train Control, and Rail and Line-wide Systems packages.
Preference for standard forms of contract.	Investigating ways to simplify and standardise contracts across Sydney Metro.
Growing industry	
A range of issues and initiatives was identified to support growth. Examples include: assistance in navigating regulatory and related requirements, training support, standard specifications, and regular engagement.	Developing a Sydney Metro wide industry strategy that will address industry feedback and respond positively to the NSW Government Action Plan: A ten-point commitment to the construction sector.
Digital capability	
The design review process should be interactive and use a digital model.	A digital engineering-based design review process is being developed to enable design review in an interactive, digital environment.

Sydney Metro West delivery strategy

A base case delivery strategy has been developed for the project, with key recommendations for packaging, contracting and transaction processes. It represents a further development of the initial delivery strategy, following review as part of the second, comprehensive round of industry engagement and stakeholder consultation.

Overall, the delivery strategy reflects the following:

- Sydney Metro has a rapidly developing capability, which is being built through a period of continuous delivery.
- The infrastructure market in Australia is experiencing unprecedented levels of demand, and managing industry appetite and responding to supply-side constraints will be critical to the successful delivery of Sydney Metro West. Where it offers benefits to the project, the delivery strategy has sought to align package scope to market appetite and has made some provision for collaborative contracting arrangements that are consistent with industry appetite.
- The delivery strategy reflects the current level of project definition and does not set out to identify a single definitive strategy for delivery. Instead, it sets out a 'base case' recommendation and allows opportunity for future optimisation as the project is further defined and to respond to evolving market conditions.

The delivery strategy is the product of broad engagement with industry, advice taken from global peer organisations, guidance from a wide range of stakeholders, and the consideration of government policy and commitments. The timeline and key events to develop the strategy are shown in the figure on page 17.

This figure presents the base case packaging and contracting strategy.

There are two packages of works for tunnels and station excavations – an eastern package from Sydney CBD to an intermediate retrieval site and a western package to Westmead. Stations will comprise a combination of integrated station development (for CBD stations in Parramatta and Sydney), station-only packages (for non-CBD stations), and separate development packages at suburban stations. Advanced and enabling works will comprise a suite of packages delivered through a panel of frameworks.

The following have been identified for procurement as separate packages:

- rolling stock
- signalling and train control – with an option to combine rolling stock and signalling and train control
- rail and line-wide systems and depot
- operations and maintenance.

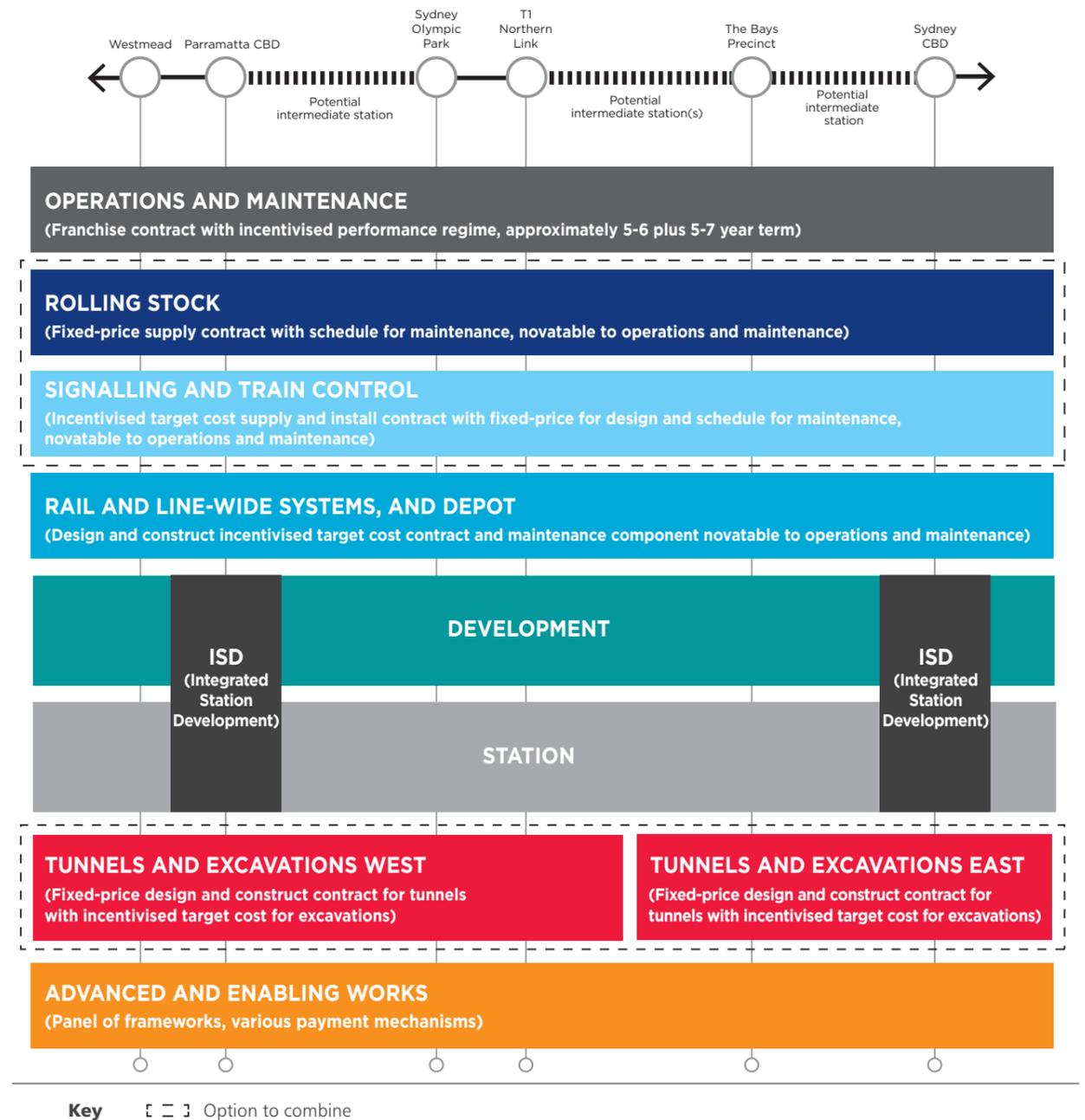
Where it offers benefits to the project, the strategy has been configured to allow for early involvement of contractors and suppliers and for implementation of collaborative contracting arrangements. This is consistent with emerging government requirements, including the NSW Government Action Plan: A ten-point commitment to the construction sector, and industry appetite.

A project design strategy has also been developed to ensure client and contractor design is fully integrated across the project. Client design will be developed to mitigate potential design constraints and duplication at the handover between Sydney Metro design for procurement and the contractor's ongoing design development. The base case packaging of design services is currently being refined following industry feedback in October and November 2018.

PPP option

In addition to the base case strategy presented in the diagram and described above, a number of packaging, contracting and transaction process options have been carried forward for further consideration, including the potential for use of a Public Private Partnership (PPP). Sydney Metro intends to seek feedback from industry on the base case and options through ongoing coordinated engagement.

Sydney Metro West delivery strategy





Sydney Olympic Park

Delivery timeframes

Sydney Metro West will open in the second half of the 2020s. By this time, Sydney Metro will have benefited from the integration of the Northwest and City & Southwest projects, as well as almost a decade of operating experience.

Sydney Metro West is expected to enter the delivery phase in 2019, comprising contract procurement and subsequent delivery of works, goods and services.

Given the scale of the project, the procurement of tunnelling contractors would commence as the first major contract/s in the delivery phase. Project design services, and agreements related to spoil management, will be procured prior to tunnelling works.

Providing your input

The next round of industry engagement provides an opportunity for industry to further engage with Sydney Metro West to assist in optimising the base case delivery strategy proposed in the final business case.

Sydney Metro is seeking to progressively engage with local and international entities from across relevant sectors of the supply chain, to seek feedback on a range of issues to inform the delivery strategy in response to changing industry conditions.

Initially, the engagement will focus on one-on-one meetings with selected participants to further investigate key aspects of the delivery strategy including:

- finalising the tunnelling strategy
- potential for private sector participation through a Public Private Partnership.

Meetings will be scheduled and arranged to encourage maximum participation, including with international representatives.

Coordinated industry approach

A new transport era has started in Sydney with the new Sydney Metro statutory authority coming into effect to deliver the city's world-class metro system. The new organisation's focus is beyond just delivery and the first day of operations. Sydney Metro will have accountability for the entire metro lifecycle - from the planning, construction, delivery and operations of Sydney Metro services to its integration within the urban fabric of Sydney.

Working with industry has been a hallmark of Sydney Metro since 2011. Consultation has helped define and refine the projects. Industry engagement has tested, refined and optimised both Sydney Metro Northwest and Sydney Metro City & Southwest by harnessing industry expertise and world best practice. Sydney Metro is now preparing for the planning and delivery of Sydney Metro West and Sydney Metro Western Sydney Airport.

Throughout the development of Sydney Metro projects, we have engaged with industry on a range of topics. As Sydney Metro moves forward, industry engagement will be coordinated, where appropriate, to cover both Sydney Metro West and Sydney Metro Western Sydney Airport.

Sydney Metro intends to engage further with industry in 2019, to further refine its delivery strategies and design strategies and to inform its approach to the supply chain across all projects. By taking a business-wide engagement approach, Sydney Metro is able to capture synergies across all projects whilst maximising opportunities for innovation and value sharing.

Further engagement will involve:

- industry insights on potential Sydney Metro West and Sydney Metro Western Sydney Airport procurement synergies
- Sydney Metro initiatives for growing industry appetite and response to the NSW Government Action Plan: A ten point commitment to the construction sector.



Sydney Metro industry briefing

Further information

Find out more about industry engagement for Sydney Metro West and Sydney Metro Western Sydney Airport:

sydnymetro.info/industry

industry.sydnymetro@sydnymetro.info



Pre-cast concrete tunnel lining segments at the Marrickville dive site

Sydney Metro City & Southwest updated project delivery strategy

Sydney Metro City & Southwest is on track for completion in 2024, with seven major contract packages awarded. Procurement of the remaining packages is well underway.

Sydney Metro achieved a number of key project milestones during 2018, including:

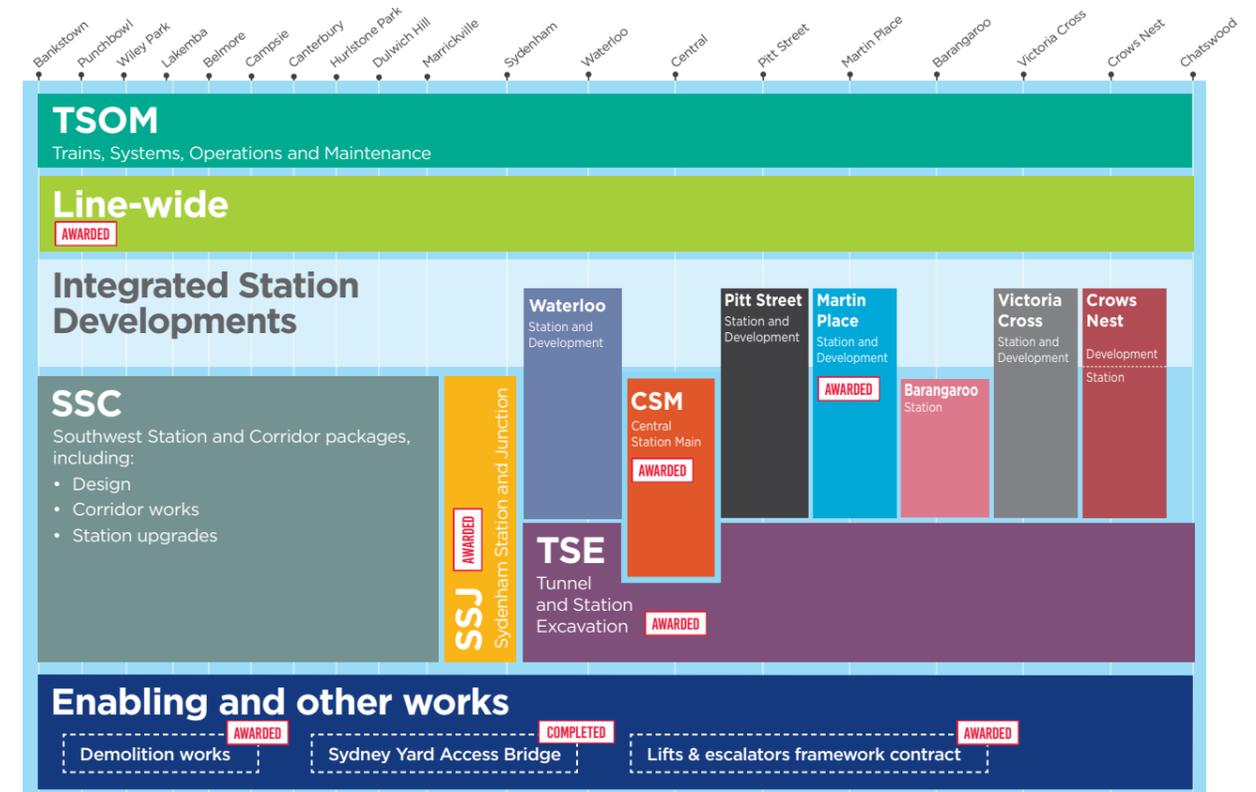
- the start of tunnelling, with the first two TBMs in the ground and tunnelling from Marrickville to the CBD
- full-scale operation of the pre-cast tunnel segment manufacturing plant (see image opposite)
- commencement of major civil works on a number of sites, including the critical works required to transform Central Station.

In 2019, Sydney Metro City & Southwest will be focused on developing the detailed design of the stations and continuing with the successful procurement of the remaining major contracts.

Early works along the T3 Bankstown Line will start next year, including site geotechnical investigations, design, and enabling works such as surveying and utilities investigations. Future work packages will include upgrades to the corridor, tracks and stations.

Sydney Metro is now procuring a design partner to complete detailed design work on the Crows Nest Station component of the project. Following the completion of the detailed design, a separate contract will be released for the station construction in early 2020.

Sydney Metro City & Southwest delivery strategy



Sydney Metro City & Southwest contract packaging approach

Package	Status	Overview of scope
TSOM: Trains, Systems, Operations and Maintenance	Tender evaluation underway	<ul style="list-style-type: none"> Rolling stock Signalling system Central control Communications and other systems Radio systems Platform screen doors Systems integration, testing and commissioning Operations and maintenance
Line-wide	Awarded Q4 2018	<ul style="list-style-type: none"> Tunnel ventilation Track and tunnel services (drainage, lighting, fire systems, low voltage power supplies), combined services Stabling High voltage power supply Overhead line and traction supply
Barangaroo Station	EOI release planned for Q4 2019	<ul style="list-style-type: none"> Station fit-out, including mechanical and electrical
TSE: Tunnel and Station Excavation works	Awarded Q2 2017	<ul style="list-style-type: none"> Demolition and site preparation (via novation of demolition contractors) Tunnel boring and lining Cavern mining and lining Excavation of station shafts (extent varies at different station locations) Station structure at Barangaroo only
CSM: Central Station Main works	Awarded Q1 2018	<ul style="list-style-type: none"> Temporary decommissioning of platforms and reinstatement Metro box excavation Central Walk eastern concourse and entry Station structure and fit-out, including mechanical and electrical
SSC: Southwest Station and Corridor works	Procurement commenced	<ul style="list-style-type: none"> Station works (including demolition, upgrades) Bridge and non-station civil works Services buildings and facilities Electrical works (low voltage) Cable and services routing Track and other rail infrastructure
SSJ: Sydenham Station and Junction works	Awarded Q3 2017	<ul style="list-style-type: none"> Station works Services buildings and facilities Services adjustments and relocations (rail and non-rail) Signalling Track and other rail infrastructure (including stageworks)
Lifts and Escalators Framework	Awarded Q3 2018	<ul style="list-style-type: none"> Design, supply and installation of lifts and escalators for new and upgraded stations Maintenance services for the lifts and escalators until 2034

Integrated station developments

Building new metro stations for Sydney will create exciting opportunities to bring together international best practice and innovative urban thinking, to shape and create vibrant and attractive places in the precincts surrounding each station.

Vibrant places help strengthen communities, attract visitors, workers and investment, and enhance our city's liveability.

Sydney's new metro stations will create focal points in the communities that they serve, with new places for people to live, work, shop and play – and public spaces designed to encourage walking, cycling and social interaction.

Each station is different in character, and will require a tailored place-based approach to planning and place making to realise opportunities in each area.

As the new metro stations are built underground, integrated station developments (ISDs) will be able to be built above them at the same time.

This helps reduce community impacts and the length of time required to deliver the outcomes of integrated station developments.

The metro stations have been designed so that work on the integrated developments can start while station construction is underway. This integrated approach means buildings can be completed close to when Sydney Metro City & Southwest services start in 2024.

Martin Place

The NSW Government has awarded Macquarie Group a contract to deliver the largely underground station component of the new Martin Place metro station – including new underground pedestrian connections and improvements to the public domain.

Macquarie Group's unsolicited proposal for the integrated station development was evaluated and found to provide a unique positive outcome for the State, satisfying all evaluation criteria including providing value for money. It delivers a larger precinct with new pedestrian connections and better customer and public transport outcomes.

ISD contract packaging approach

Package	Status	Overview of scope
Crows Nest	Procurement of design partner Q1 2019	<ul style="list-style-type: none"> Excavation of remaining station shafts (to the extent not undertaken by TSE contractor)
Victoria Cross	Tender evaluation underway Q4 2018	
Martin Place	Awarded Q3 2018	<ul style="list-style-type: none"> Station structure Station fit-out, including mechanical and electrical
Pitt Street	RFT released Q4 2018	<ul style="list-style-type: none"> Development structure
Waterloo	RFT released Q4 2018	<ul style="list-style-type: none"> Development fit-out, including mechanical and electrical



Artist's impression of Martin Place Station southern entrance

Sydney Metro City & Southwest 2018 milestones

Project timeline milestone	Commenced
Start of major civil works at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo	Q1/Q2 2018 ✓
Temporary barging facility approved to reduce spoil removal truck movements	Q2 2018 ✓
Victoria Cross ISD Environmental Impact Statement exhibition	Q2 2018 ✓
Completion of Sydney Yard Access Bridge	Q2 2018 ✓
Commencement of major civil works at Central	Q3 2018 ✓
Marrickville concrete casting factory begins producing segments for new metro tunnels	Q3 2018 ✓
Pitt Street ISD Environmental Impact Statement exhibition	Q3 2018 ✓
First and second TBMs launched	Q4 2018 ✓
Third and fourth TBMs delivered to site	Q4 2018 ✓
Crows Nest ISD Environmental Impact Statement exhibition	Q4 2018 ✓
Waterloo ISD Environmental Impact Statement exhibition	Q4 2018 ✓

Delivery update

Seven major contract packages have been awarded – Tunnel and Station Excavation, Central Station Main, Sydenham Station and Junction, Line-wide, Martin Place, Lifts and Escalators, and Demolition works.

The Tunnel and Station Excavation, Central Station Main works, and Sydenham Station and Junction works packages have commenced work on site.

Tunnel and Station Excavation

The first two TBMs have commenced tunnelling from Marrickville towards the CBD. The third and fourth TBMs have been delivered to the Chatswood dive site and are currently being assembled.

The Marrickville pre-cast facility is in full production, manufacturing the 99,000 tunnel segments required for the twin tunnels. Demolition on the CBD sites is nearing completion, and excavation of station boxes is underway.

Central Station Main works

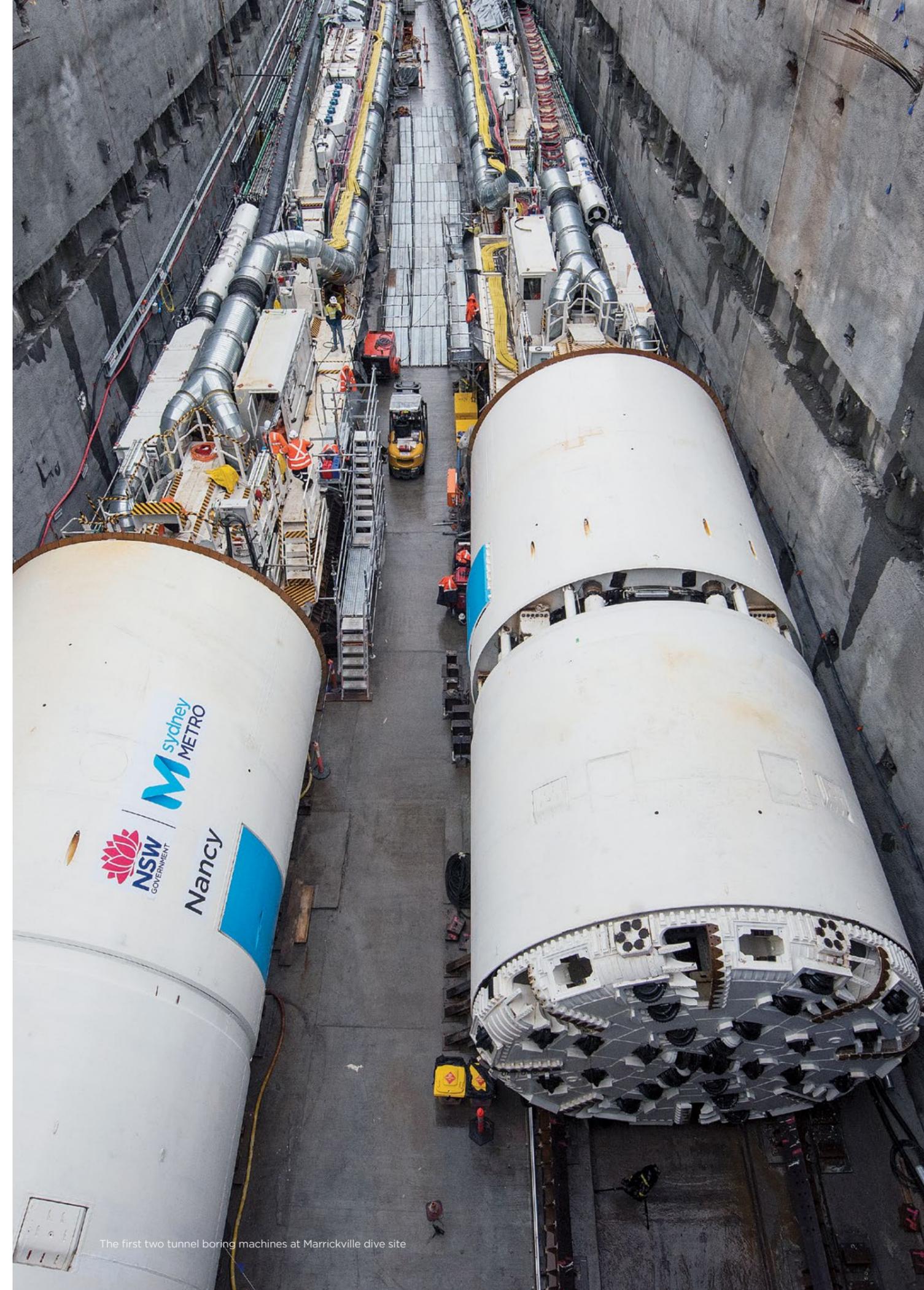
Work at Central Station is well underway with platforms 13, 14 and 15 closed for metro enabling works, including demolition of the platforms and removal of the associated tracks. New stairs will be installed, linking platforms 21/22 and 22/23 to the Olympic tunnel.

A new bridge has been completed providing easy access to the Sydney Yard, where site offices are located and plant and material will be stored. Weekend and out-of-hour possession work has commenced and will continue throughout the project to complete critical works.

Sydenham Station and Junction works

Construction has commenced on the Sydenham Station and Junction works package, including the relocation and modification of existing traction power and rail systems, to facilitate the remodelling of Sydenham Junction.

Work is underway to demolish buildings and construction has commenced on the foundations for the new metro concourse and southern station entrance.



The first two tunnel boring machines at Marrickville dive site



Artist's impression of Tallawong Station Precinct South

Sydney Metro Northwest Places overview

Sydney Metro will help deliver housing and employment growth, creating new and diverse opportunities to support changing communities.

To be successful, the Sydney Metro transport service will be integrated into active precincts around each metro station.

The Sydney Metro program includes transport, commercial and residential mixed land use opportunities at and around the station precincts.

This place making strategy for the development and activation of precincts aims to:

- support the NSW Government's planning strategies and objectives
- maximise the urban outcomes and place benefits
- enhance customer experience and urban amenity
- create an urban environment that drives high usage of new metro rail
- ensure station precincts are activated as soon as possible following completion of the metro infrastructure.

In the north west of Sydney, vibrant new communities are planned around metro station locations.

Sydney Metro Northwest Places is a long-term planning program for the development of government-owned land close to metro stations at Tallawong, Kellyville, Bella Vista, Norwest, Castle Hill, Hills Showground and Cherrybrook stations, as part of the \$8.3 billion Sydney Metro Northwest.

Landcom, as master developer of Sydney Metro-owned land, is working closely with state and local government agencies, the Department of Planning and Environment, councils, businesses and communities to finalise concept proposals for sites within the program.

On behalf of Sydney Metro, Landcom will coordinate a sale process, which typically includes calls for Expressions of Interest followed by an Invitation to Tender for suitable developers.

Sydney Metro and Landcom will ensure the areas around stations offer initial services, activities and pop-up retail initiatives from the commencement of metro services in the second quarter of 2019.

Over 10 years, the Northwest Places program will deliver:

- around 11,000 new dwellings including diverse and affordable housing types for new and future residents
- up to 350,000 square metres of floorspace dedicated to employment in retail and commercial enterprises
- parks and spaces for community use
- community facilities.

To date, the program has included:

- Tallawong – calls for Expressions of Interest in March 2018.
A concept State Significant Development Application lodged for Tallawong Station South Precinct in July 2018.
- Kellyville – NSW Planning Secretary's Environmental Assessment Requirements (SEARS) requested in September 2018.
Expressions of Interest called to deliver stage 1 of Kellyville Project: an estimated 2500 dwellings including a minimum five percent affordable housing, and up to 10,000 square metres of retail, commercial, and public spaces next to Kellyville Station.
- Bella Vista – NSW Planning Secretary's Environmental Assessment Requirements (SEARS) requested in September 2018.
- Hills Showground – calls for Expressions of Interest in June 2018.
- Norwest – Registrations of Interest called for the development, leasing or investment in Norwest Project.

