**Submission No 71**

# INQUIRY INTO SYDENHAM-BANKSTOWN LINE CONVERSION

**Organisation:** NSW Government

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# NSW Government submission

Legislative Council's Portfolio Committee No 6. – Transport and Customer Service

*Inquiry into the Sydenham-Bankstown Line conversion*

September 2019

# Contents

**Inquiry Terms of Reference**

(a) the adequacy of the business case and viability of Metro

- Refer to Sections 2, 3 and 4

(b) the consideration of alternatives for improving capacity and reducing congestion

- Refer to Sections 2 and 3

(c) the factors taken into account when comparing the alternatives and the robustness of the evidence used in decision-making

- Refer to Sections 2 and 3

(d) whether metro is a suitable means of transport over long distances

- Refer to Sections 2, 3 and 4

(e) the consultation process undertaken with, and the adequacy of information given to, community, experts and other stakeholders

- Refer to Sections 2, 3, 4, 5 and 6

(f) the impact on the environment and heritage conservation

- Refer to Section 5

(g) any lobbying, political donations or other influence of the public and/ or private sector in relation to making that decision

- Refer to Section 6

(h) the tender process for appointing private operators

- Refer to Section 6

(i) the contractual arrangements entered into in respect of the project

- Refer to Section 6

(j) the adequacy of temporary transport arrangements during the conversion process, including for people with a disability

- Refer to Sections 4 and 5

(k) the impact on the stations west of Bankstown

- Refer to Section 4

# 1 Introduction

## *Making New South Wales a better place to live, work and visit*

Transport for NSW is leading the development of safe, integrated and efficient transport systems for the people of NSW. Our customers are at the centre of everything that we do, including transport planning, strategy, policy, procurement and other non-service delivery functions across all modes of transport – cars/vehicles, buses, rail, ferries, light rail and point to point.

We work hand-in-hand with our operating agencies, private operators and industry partners to deliver customer-focused services and projects - we're making NSW a better place to live, work and visit.

Since the Transport cluster formed in 2011, significant progress has been made to deliver improvements across the roads and public transport network.

- New infrastructure has been built and opened, new services have been introduced and there has been a genuine focus on the customer that has helped drive a sustained increase in satisfaction.
- Patronage on public transport continues to increase, which places pressure on our networks, but it is also a sign of customer confidence and a key measure of success.
- In the same timeframe the external environment has changed rapidly – new technologies, new modes and new service models have emerged and a cluster-wide Future Transport strategy has been launched to respond to the environmental shift.
- There has also been a shift in customer needs and expectations. Increasingly, customers are becoming ‘mode agnostic’ which means they are focused on their journey from one point to another, not a journey on a single mode.

However, there are further opportunities for Transport to keep pace with the growth and change and improve its offering to customers. The Transport cluster is currently built around individual modes of transport, which makes it more challenging to be multi-modal. The cluster is therefore currently undergoing major transformation to ensure that customers and communities are receiving the type and level of access and service to support their travel needs, delivering a more integrated transport service which provides seamless door to door journeys.

As this transformation occurs, metro will play a significant part in meeting customer needs while also, with the creation of new metro lines, providing much needed capacity relief to other parts of the overall network, in particular road and rail.

## *Sydney Metro*

Sydney Metro is Australia’s biggest public transport project. It is a key component of Future Transport 2056, the NSW Government’s overarching strategy to achieve a 40 year vision for our transport system.

North West Metro services started in May 2019, and are now providing customers with a new metro train every four minutes in the peak between Tallawong Station at Rouse Hill and Chatswood, serving eight new metro stations and five upgraded stations.

The Sydney Metro City & Southwest project will extend metro services from the north west, under Sydney Harbour, to new underground city stations and beyond to the south west.

Sydney Metro City & Southwest is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney – a level of service never before seen in Sydney. It will deliver a step change in the capacity of Sydney's rail system to connect people to the CBD during peak periods.

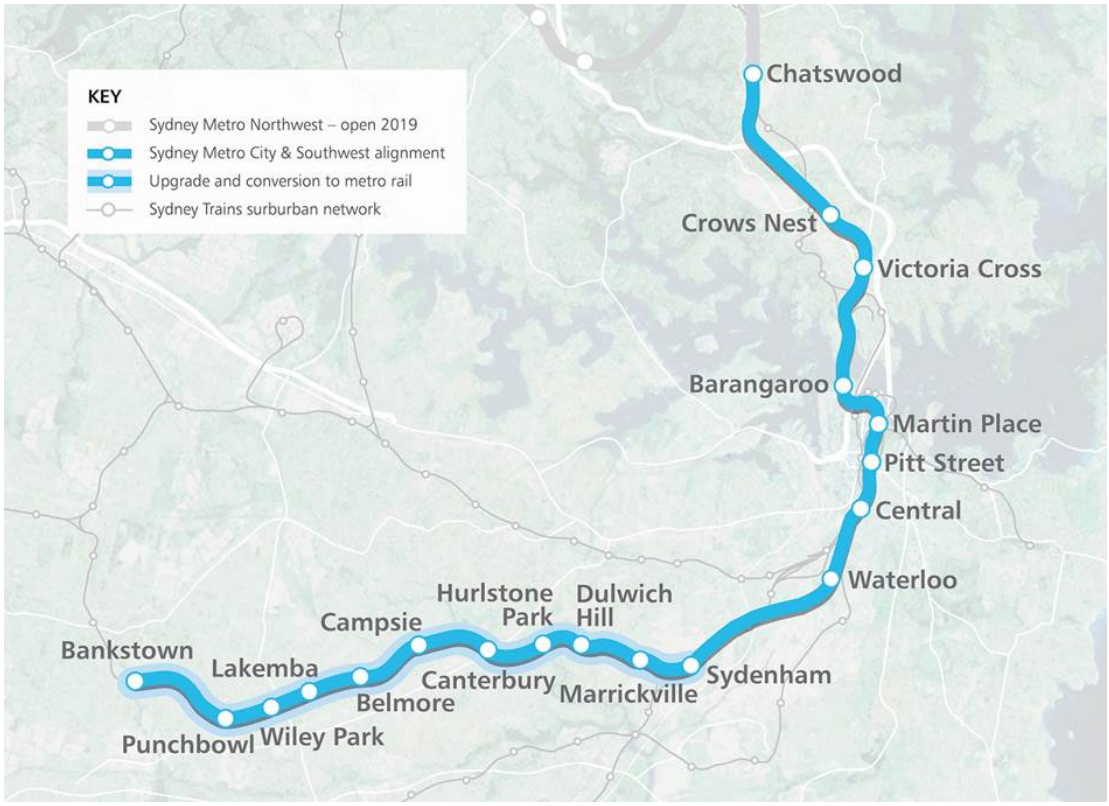


Figure 1: Sydney Metro City & Southwest alignment

The upgrade of the 124-year-old T3 Bankstown Line to metro rail is integral in taking the pressure off the rest of Sydney's suburban rail system. Currently, this line creates a significant bottleneck for the existing rail network. It slows down the network where it merges with other railway lines close to the Sydney CBD, including the T8 Airport and South Line and the T2 Inner West and Leppington Line.

Sydney Metro, together with signalling and infrastructure upgrades across the existing rail network, will increase the capacity of train services entering the Sydney CBD from about 120 an hour today to up to 200 services beyond 2024. Metro trains will run in the peak every four minutes in each direction, with ultimate capacity for a train every two minutes under the Sydney CBD. The NSW Government is committed to investing in the infrastructure required to support tomorrow's Sydney.

Sydney Metro infrastructure like the stations, trains and railway tracks is, and will continue to be, owned by the NSW Government.

In addition, customers on the T3 Bankstown Line can continue to access the City Circle and Redfern by interchanging to Sydney Trains' services or taking the new metro to stations in close proximity. The Martin Place and Pitt Street metro stations will be just a short walk from St James and Museum stations. The new Waterloo metro station is near Redfern Station.  Interchanging on a public transport network happens every day in Sydney – more than 30,000 people a day currently change trains at Central – and is standard in cities across the world.

Sydney Metro customers using the upgraded T3 Bankstown Line will benefit from more trains, faster travel times and easier access to stations. All metro stations will have lifts and level access from platforms to trains – this means easier access and no gaps between the trains and the platforms. Currently there are between four and 10 trains per hour in the peak. When Sydney Metro services start, there will be 15 new fully air-conditioned trains an hour in the peak and six trains per hour in the off-peak in each direction.

The project includes two primary components:

**Chatswood to Sydenham** – a 17.1-kilometre extension, predominantly in tunnel, from Chatswood, under North Sydney, Sydney Harbour, Sydney CBD and Central Station, to Sydenham Station

**Sydenham to Bankstown Upgrade** – a 13.4-kilometre extension, upgrading the existing T3 Bankstown Line from Sydenham Station to Bankstown Station to modern metro operations. All 11 upgraded stations will be fully accessible with lifts and level access between platforms and trains.

Customers will be able to interchange between Sydney Metro and Sydney Trains at Sydenham and Bankstown, supported by improvements to station way-finding and signage at these stations.

The T3 Line west beyond Bankstown will continue to be operated by Sydney Trains, serving stations between Liverpool, Lidcombe and Bankstown.

The upgrade of the Bankstown Line will unlock capacity across the rail network by addressing one of Sydney's biggest rail bottlenecks, providing more reliable journeys for customers across the network. The upgrade includes:

- Air-conditioned metro trains and increased train frequency across the day – including a train at least every four minutes at each station in the peak
- Safety features including improved CCTV surveillance, platform screen doors and platforms level with train floor, for full accessibility
- Improved station interchange facilities at key stations
- All trains stopping at all  stations – no waiting for the right train
- Efficient connections during the peak and non-peak periods between key centres along the T3 Bankstown Line
- New, direct and fast services to Martin Place, Barangaroo, North Sydney, Chatswood, Macquarie Park, Macquarie University and Norwest Business Park
- Travel time savings to key destinations, including up to 25 minutes faster from Bankstown to Barangaroo, and up to 17 minutes faster from Campsie to Macquarie University.
- Interchanges to other rail services at Sydenham, Central and Martin Place
- No need for a timetable – customers will just turn up and go
- More job opportunities with faster, more frequent and direct access to key employment centres, including North Sydney, Chatswood, Macquarie Park and the growing north west region
- Better access to education, with fast, more frequent and direct connections
- All stations fully accessible and DDA compliant, with lifts and level access between trains and platforms
- Fast, safe and reliable – a new generation of 21st century metro trains.

The Sydney Metro upgrade of the T3 Bankstown Line will deliver:

- Triple the number of train services at stations like Hurlstone Park, Canterbury and Wiley Park, which currently get as few as four trains an hour in the peak
- A new concourse to connect Metro to Light Rail at Dulwich Hill
- Lifts for the first time at Dulwich Hill, Hurlstone Park, Canterbury, Wiley Park and Punchbowl stations
- A fully accessible rail line with level access between the train and the platform, removing the step up into the train
- The restoration of heritage buildings such as ticket offices and platform buildings, which will be retained and refreshed or renovated where appropriate, retaining the rich history of the existing T3 Bankstown Line
- 15 trains an hour in each direction at all stations during the peak – a major boost to train services for customers.

# 2 A rail network to meet future customer needs

## *Future Transport 2056*

Future Transport 2056 is the NSW Government's overarching integrated transport and land-use planning strategy, supported by a suite of plans to achieve a 40 year vision for our transport system. Future Transport 2056 places the customer at the centre of everything we do. It outlines a vision, strategic directions and customer outcomes, with infrastructure and services plans underpinning the delivery of these directions across the state. The strategy is the first transport plan in Australia to harness technology to improve customer and network outcomes, and it starts with a long term vision for our communities. For the first time, we have aligned how we plan the future of the transport network with how Transport for NSW plans land usage by working closely with key stakeholders such as the Greater Sydney Commission, Infrastructure NSW and the Department of Planning, Industry and Environment.

The Greater Sydney Services and Infrastructure Plan forms part of Future Transport 2056. The Plan sets the strategic vision for transport in Greater Sydney, forming the foundation for further planning of specific corridors and initiatives. It is designed to support the vision for Greater Sydney as a metropolis of three cities - where people can access jobs and services within 30 minutes from their homes, improving connectivity within and between the three cities, enabling Greater Sydney to be a liveable, productive and sustainable metropolis.

The Plan will guide future services across all modes and corridors of Greater Sydney. It includes continuing the delivery of Sydney Metro, which is identified specifically as supporting the city-shaping network which provides access to Greater Sydney's largest centres and links these centres together. The metro network is being delivered to address major capacity constraints particularly in the Eastern Harbour City and Central River City.

Future Transport 2056 and its supporting plans were developed through a process of extensive community and stakeholder engagement. In respect of the metro network, they build on the detailed and comprehensive planning, development, and stakeholder consultation undertaken over previous years, which is outlined below.

## *Sydney's Rail Future and Long Term Transport Master Plan*

In 2012 the NSW Government published Sydney's Rail Future, a key component of the NSW Long Term Transport Master Plan. Sydney's Rail Future was developed after an exhaustive and intensive program of research over a period of twelve months, with community and expert input and independent review. It took into account feedback received from thousands of people who provided suggestions on improvements to rail services. Sydney's Rail Future was a whole-of-network approach to meeting the challenges of a growing population and the needs of customers in the future.

In developing Sydney's Rail Future, 15 rail network development opportunities were considered and grouped into four broad network alternatives, which were assessed against five criteria: customer focus, network capacity, network resilience, delivery risk, and cost effectiveness:

- Rail Future A – the suburban alternative (existing rail network)
- Rail Future B – the rebuild alternative

- Rail Future C – a metro network integrated with the existing rail network
- Rail Future D – an independent metro network

A two-stage ‘decision tree’ was used to assess these alternatives, as shown below.

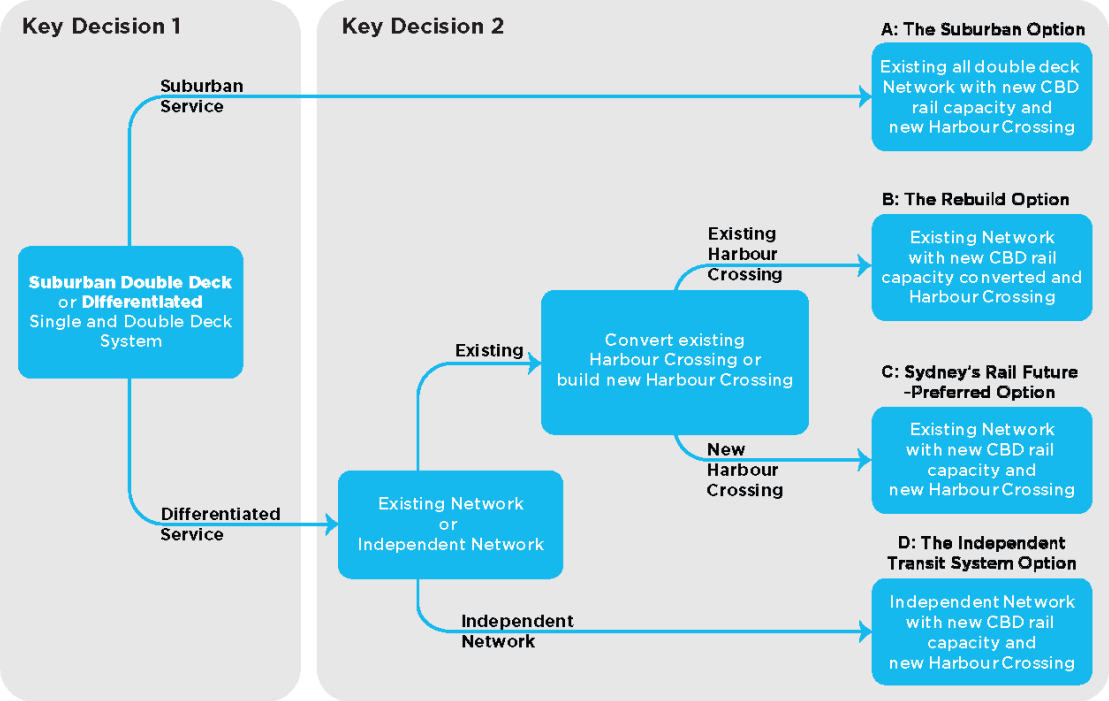


Figure 2: Sydney’s Rail Future Master Planning Decision Tree

The first step (‘Key Decision 1’, above) assessed whether existing rail operations should be maintained and improved (**Rail Future A**) or whether the existing network should be supported by a separate, independent ‘differentiated’ system to provide metro services (**Rail Futures B, C, and D**).

**Rail Future A**, which involves maintaining the existing rail network and continuing to use double-deck rolling stock, including for all future network expansions, would not meet estimated future demand, or address existing issues with the network:

- **Existing bottlenecks would be retained** – with growing pressure on the multiple lines converging into the City Circle
- **Congestion in the Sydney CBD** – By 2031, each of the three busiest CBD stations is expected to have over 10,000 more passengers in the peak hour
- **Capacity challenges** – by 2031, the T1 Western Line, T2 Inner West and Leppington Line and the T3 Bankstown Line would reach or exceed maximum capacity
- **Capability challenges** – the existing network junctions, train types, stations, platforms, and technology, are not capable of dealing with projected future demand.

The second step (‘Key Decision 2’, above) involved analysing the differentiated service opportunities against the assessment criteria. The principal choices were between the development of a new, completely independent network, or the utilisation of some existing rail corridors and rail infrastructure. For example, the choice to utilise existing rail assets led to the consideration of utilising the Harbour Bridge through conversion of the existing Harbour Bridge rail track or conversion of road lanes to additional rail capacity. The alternative to utilising the Harbour Bridge for additional rail services was to deliver a new Sydney Harbour crossing.

Sydney's Rail Future (**Rail Future C**), a metro network integrated with the existing network, was determined as the preferred option because it:

- Offers tailored services that better meet the expectations of most customers.
- Provides the required capacity and flexibility to respond to Sydney's growing demand for rail.
- Creates a more modern, resilient and faster service.
- Delivers a seamless and less disruptive way of modernising Sydney's rail.
- Is more cost effective for the results it will deliver.

Sydney's Rail Future determined that the rail network would be developed into three tiers of services, focused specifically to the needs of customers:

| Tier | Characteristics |
|---|---|
| Tier 1 – Rapid Transit (later renamed to Metro) | • Frequent 'turn up and go' services without the need for consulting a timetable<br>• Fast single deck trains, with plenty of seats, more doors, designed for easy boarding and alighting. |
| Tier 2 – Suburban | • Timetabled services<br>• Double deck trains with more seats per train. |
| Tier 3 – Intercity | • Timetabled services<br>• Double deck trains for Central Coast, Newcastle, Wollongong and Blue Mountains services<br>• Comfortable services for long distance commute and leisure travel with on-board facilities for improved customer convenience. |

**Metro Rail around the World**

Metro is an urban railway transportation system that is associated with high capacity, high frequencies (typically turn-up-and-go, rather than timetabled) and greater automation.

Sydney Metro from Tallawong Station at Rouse Hill to Bankstown will extend 66 km once complete. A sample comparison of other metro networks around the world is summarised below

| City | Line | Length (km) |
|---|---|---|
| Seoul | Line 1 | 201 |
| London | Elizabeth Line (Crossrail) | 100 |
| Shanghai | Line 11 | 82 |
| London | Central Line | 74 |
| **Sydney** | **Sydney Metro (Tallawong to Bankstown)** | **66** |
| Singapore | East West Line | 57 |
| Hong Kong | West Rail Line | 36 |

| | | |
|---|---|---|
| Tokyo | Tozai Line | 31 |
| Paris | Line 13 | 24 |
| Amsterdam | Route 50 | 20 |

Sydney's Rail Future was developed as a five stage program:

1. Operational efficiencies
2. Network efficiencies
3. New rapid transit system
4. Second harbour crossing
5. Southern sector conversion.

The Sydney Metro Northwest is Stage 3 of Sydney's Rail Future. It is now providing customers with a fully automated metro train service between Tallawong Station at Rouse Hill and Chatswood Stations.

The Sydney Metro City & Southwest project will deliver Stages 4 and 5 of Sydney's Rail Future. The new rail tunnels under Sydney Harbour will bring metro services from the north west via Chatswood into new CBD stations and new metro platforms at Martin Place and Central. The second Harbour crossing will create the largest increase in capacity to the Sydney rail network for 80 years.

The extension of Metro services from Sydenham to Bankstown, by upgrading and converting the existing T3 Bankstown Line, is Stage 5 of Sydney's Rail Future. It will deliver significant benefits to customers across Sydney through direct service improvements and by unlocking capacity on the wider network. These benefits, and the processes used to develop the project, are described in the next section.

# 3 Why Sydenham to Bankstown?

## *Developing the Sydney Metro City & Southwest Project*

Following the publication of Sydney's Rail Future in 2012, Transport for NSW continued an extensive program of detailed planning and analysis to further develop Sydney's rail network, including the second harbour rail crossing and extension of the metro network.

These investigations were documented in the business case for the City & Southwest project, prior to commencing procurement processes for the project in early 2016. A 104 page summary of the Final Business Case is publicly available on the Sydney Metro website[1]. This submission provides an overview of the process and key findings of the business case.

The business case documents the comprehensive work undertaken in the project development phase of the project, informed by engagement with numerous community and industry stakeholders and working closely with stakeholders across the NSW Government and local councils.

The business case was prepared in accordance with all relevant NSW and Australian Government frameworks. Its development was overseen by a cross-agency committee including representatives of NSW Treasury, Infrastructure NSW and the Department of Planning, Industry and Environment. Analysis of the project's benefits was undertaken by specialist expert advisers and in accordance with NSW, national and international economic appraisal guidelines.

The business case was independently reviewed under the NSW Government's Infrastructure Investment Assurance Framework and the panel considered that it "provides a compelling and comprehensive justification for the project" and met its requirements for a Final Business Case, recommending its consideration by Government.

The business case was submitted to Infrastructure Australia, the Australian Government's independent infrastructure advisor. Infrastructure Australia conducted a detailed evaluation of the business case methodology and justification of the project. On 14 June 2017, Infrastructure Australia added the Sydney Metro City & Southwest project to the Infrastructure Priority List as a High Priority Project. In its evaluation, Infrastructure Australia stated that the business case '*presented a comprehensive assessment that details the rationale for the final project route and station locations'*. It concluded *'Infrastructure Australia is confident that the benefits of the project will exceed its estimated costs, and that the project will provide a net benefit to the Australian economy.'*

Infrastructure Australia's then Chief Executive, Philip Davies, said *'Sydney Metro City & Southwest is an important step in ensuring that Sydney remains a competitive, global city and an attractive place to live and work. The positive assessment of the Sydney Metro City & Southwest business case reflects that this is a sound investment for Sydney—an investment that will enhance the productivity and connectivity of a city that accounts for one-fifth of Australia's economic output'.*

[1] https://www.sydneymetro.info/sites/default/files/Sydney Metro CSW Business Case Summary.pdf

## *The need for Sydney Metro City & Southwest*

As Sydney continues to develop it faces new challenges to cater for the growth in employment, population and dwellings, ongoing economic productivity and liveability. Greater Sydney's population is forecast to increase from 5 million people to 12 million people by 2056. Driven by population growth, employment in Sydney is expected to increase to 3.1 million by 2036. This employment and population growth will require increased transport capacity, to ensure continued growth in productivity and to sustain Sydney's liveability.

Rail network demand is expected to increase by 41 per cent by 2026, with the growth in demand for rail travel into the CBD expected to increase by 31 per cent by 2026. The number of people travelling to the Sydney city centre each day is forecast to grow to 775,000 by 2031.

Investment in Sydney is vital to the economic performance of NSW, as Sydney makes up over 60 per cent of the State's total population (currently 4.3 million residents), and generates over 70 per cent of NSW's gross state product.

The current transport system cannot provide the capacity required. The road and bus networks are already heavily constrained and cannot effectively be augmented into the CBD. Sydney's rail network is complex and becoming more crowded and unreliable. With the expected rate of population growth, the existing rail network requires significant expansion.

The current suburban rail network, which serves the majority of public transport trips, has a number of significant constraints. It is a complex network with many branch lines converging into six inbound tracks through the CBD. The funnelling of up to 15 branch lines into this limited CBD capacity constrains the utilisation of each branch, but also creates a more complex rail operation, with delays on one line creating flow-on effects throughout the system.

Sydney's roads are already some of the most congested in Australia. As transport demand grows there is limited ability to augment the road network to increase capacity and reduce congestion.

## *Building capacity into the rest of the Sydney Trains heavy rail network is vital to keep Sydney moving*

In recent years, infrastructure constraints have been a barrier to enhancing services. The rail network is particularly complex through and around the Sydney CBD, where up to 15 lines converge into six inbound tracks. This constrains the network and creates a more complex rail operation. There are only two lines through the city (the T1 North Shore Line, the T1 Western Line and the T9 Northern Line, and the T4 Eastern Suburbs & Illawarra Line) and three lines that share the City Circle loop (the T8 Airport & South Line, the T2 Inner West & Leppington Line and T3 Bankstown Line). Because of this, a number of services are required to terminate at Central Station. The T3 Bankstown Line creates a significant bottleneck for the existing rail network. The line effectively slows down the network because of the way it merges with other railway lines close to the Sydney CBD, including the T8 Airport & South Line and the T2 Inner West & Leppington Line.

Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney Central Business District – from about 120 an hour today to up to 200 services beyond 2024.That's an increase of up to 60 per cent capacity across the network to meet demand. The delivery of Sydney Metro City & Southwest will create the opportunity to allow more services to operate on the T4 Illawarra Line and T8 Airport & South Line.

In response to growth in demand the next stages of the More Trains, More Services program will deliver a 30 per cent increase in peak services on the T4 Illawarra Line, and an 80 per cent increase at stations between Green Square and Wolli Creek, meaning trains at least on average every four minutes instead of every six minutes today.

New trains are already on order as part of the program including 17 extra Waratah Series trains and 42 additional New Intercity Fleet carriages. The opening of the Metro North West Line has also provided some relief on parts of the busy T1 Western Line.

Sydney is expanding and Transport for NSW is working hard to deliver an integrated transport system that meets the needs of customers now and in the future. If we do not upgrade the T3 Bankstown Line to metro standards, the existing Sydney Trains heavy rail network will not have the capacity it needs to support Greater Sydney as it continues to grow. Specifically, not upgrading the T3 Bankstown Line would mean that in the years to come we would not be able to look to provide the following on the existing Sydney Trains heavy rail network when the NSW Government next looks to invest in additional fleet and infrastructure as part of the More Trains, More Services program.

**T3 Bankstown Line:**

- Dulwich Hill, Hurlstone Park, Canterbury, Wiley Park and Punchbowl stations will not have lifts for parents with prams and people with disabilities.
- The safety benefits of 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, will not be achieved.
- Stations such as Belmore and Canterbury will continue to only have four trains per hour, instead of the 15 trains per hour Sydney Metro will deliver in the peak.

**T8 Airport & South Line:**

- 2 additional services per hour to / from Revesby, providing additional capacity for 2,400 more people in the peaks.
- 2 additional services from Campbelltown, providing additional capacity for 2,400 more people in the peaks.
- Capacity at Green Square and Mascot would be limited by the available capacity on the City Circle, meaning no further increases could be delivered.
- Unable to increase the frequency of services in the future to 24 trains per hour, providing additional capacity for 7,400 more people in the peaks.

**T4 Illawarra & Eastern Suburbs and South Coast Line**

- If all T8 Airport & South Line services cannot operate via the Airport tunnel, longer New Intercity Fleet trains will not be able to be deployed to the South Coast so existing services will be reduced as shorter trains will need to be used.
- 3 additional service per hour in the peaks, providing additional capacity for 3,600 more people.
- 1 additional South Coast to City service per hour in the peaks, providing an additional 1,200 seats, and a 15 minute service frequency for Intercity hub stations such as Wollongong, North Wollongong, Thirroul and Helensburgh in the peaks.

- 1 additional Waterfall train per hour, providing an additional 1,200 seats in the peaks and providing a 15 minute peak period frequency for customers at Waterfall, Heathcote, Engadine and Loftus.
- 2 additional suburban trains per hour, providing an additional 2,400 seats per hour.
- Unable to increase the frequency of services into the future to 24 trains per hour, providing additional capacity for 4,800 more people in the peaks.

**T2 Leppington & Inner West Lines**

- 4 additional services per hour from Liverpool, providing additional capacity for 4,800 more people in the peaks for customers between the Inner West and Lidcombe.
- Unable to increase the frequency of services into the future to 24 trains per hour, providing additional capacity for 7,200 more people in the peaks.

**T1 Western Line**

- 4 additional services per hour between Parramatta and the Sydney CBD, providing additional capacity for 4,800 more people in the peaks.
- Potential doubling of frequency and capacity to and from Penrith.

**Southern Highlands Line**

- Potential provision of regular hourly Southern Highlands to CBD services.

## *Alternatives to the project*

As described in section 2, a number of alternative options were assessed during the development of the NSW Long Term Transport Master Plan and Sydney's Rail Future including:

- regulatory, governance and better-use reforms
- road, bus and light rail alternatives
- rail network efficiency options
- Sydney's Rail Future network options.

While regulatory, governance and better-use reforms are important, they are not enough on their own. A number of road and bus options are being implemented, but these are also insufficient to address the forecast growth in travel demand.

All five stages of Sydney's Rail Future are required to meet the long-term capacity challenges facing the transport network. While Stages 1 to 3 are being implemented, they cannot of themselves achieve the strategic policy goals and objectives over the longer term without the addition of Stages 4 and 5.

An alternative to implementing Stages 4 and 5 is to increase capacity on the T1 North Shore Line, T9 Northern Line and T1 Western Line to 24 trains per hour. While this would help to achieve some of the strategic policy goals and objectives in the short term, it has significant cost and risk, and only provides an incremental capacity increase while forcing more passengers through Town Hall, Wynyard and North Sydney stations, which are already capacity constrained.

Implementing Stages 4 and 5 of Sydney's Rail Future (Sydney Metro from Chatswood to Bankstown) is the preferred network option. It achieves all strategic policy goals and objectives and is the most appropriate long-term mass transit solution.

### Metro alternatives considered

Many options were considered and evaluated during the development of the project. The outcomes of the option development processes were confirmed through government and project governance arrangements.

The analysis identified and assessed 41 station location options, including strategic options to incorporate additional stations. The new station locations between Chatswood and Sydenham are Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Central and Waterloo.

### Alternatives to Sydenham-Bankstown conversion

Transport for NSW considered a number of existing lines in the southern sector of the Sydney Trains network for conversion to metro operations. These options involved various combinations of full or partial conversion to metro of the T8 Airport & South Line, T2 Inner West & Leppington Line, T3 Bankstown Line, T4 Eastern Suburbs & Illawarra Line, and T5 Cumberland Line.

A long list of feasible conversion options was assessed in terms of their ability to meet the key criteria established for Sydney's Rail Future. The short-listed options and outcome of their assessment is shown below.

| Option | Summary of assessment |
|---|---|
| Base Case – Sydney Metro on the T3 Bankstown Line to Cabramatta and Lidcombe, and the T4 Eastern Suburbs and Illawarra Line to Hurstville. | Performs reasonably with some disadvantages which could be overcome through variation of option |
| Option 1 – Sydney Metro via the T4 Eastern Suburbs and Illawarra Line, and the T8 Airport & South Line, to Hurstville and Revesby, with the T3 Bankstown Line remaining suburban but terminating at Central Station. | Some disadvantages, as well as constructability issues. Variations were explored in subsequent analysis to attempt to overcome disadvantages. |
| Option 2 – Sydney Metro via the T8 Airport & South Line and T2 Inner West & Leppington Line, with the T3 Bankstown Line remaining suburban but terminating at Central Station. | Inferior, particularly in terms of system capacity, and would have constructability challenges and high cost. |
| Option 3 – Sydney Metro to Revesby via Airport only, with the T3 Bankstown Line and the T4 Eastern Suburbs and Illawarra Line remaining suburban. | Provide excessive capacity for T8 Airport Line patronage, while inadequately addressing network demand and relieving broader network capacity constraints. |
| Option 4 – Sydney Metro to Revesby via Airport only, with the T3 Bankstown Line remaining suburban but terminating at Central Station. | |

Options 2, 3 and 4 were rejected and a review of the remaining options led to the development of a number of sub-options for consideration:

- **Enhanced base case** – extension of Sydney Metro tunnel from Central Station to Sydenham Station, conversion of the T3 Bankstown Line to metro operations between Sydenham and Bankstown stations, and safeguarding a future connection to Liverpool.
- **Option 1, sub-option C** – Sydney Metro via Airport to Hurstville and Revesby (with the T3 Bankstown Line remaining as suburban and continuing to operate around City Circle).

- **Option 1, sub-option D** – Sydney Metro via Airport to Hurstville and Revesby (with the T3 Bankstown Line remaining as suburban and terminating at Central Station).

A detailed, multi-criteria analysis identified the enhanced base case and Option 1D as the two best performing options, with the enhanced base case superior overall.

The preferred option best provides increased capacity, growth, reduced station crowding, enhanced reliability and simpler conversion. Upgrading and converting the T3 Bankstown Line between Sydenham and Bankstown into a dedicated metro line will improve rail network reliability by reducing the number of rail lines sharing the same existing tracks and will facilitate much needed capacity increases from the west and south west.

The Sydenham to Bankstown upgrade will unlock capacity at Central Station platforms and enable the relocation of train paths on the City Circle. It will also significantly reduce platform and train crowding. On this section, the T3 Bankstown Line does not share operations with other lines or rail freight. It would therefore be less complex to convert and segregate from the existing rail network when compared with other lines. The T3 Bankstown Line would require less infrastructure work to convert to a metro service when compared with other lines, such as the T8 South Line and T4 Illawarra Line, which would require additional tunnels and tracks, significant enabling works such as alternative freight routes and a new train stabling and maintenance facility for Sydney Trains.

## *Benefits for customers across Sydney*

Sydney Metro is delivering a step-change in the capacity and customer experience of Sydney's rail network by providing a fully automated metro rail system– an Australian first. The City & Southwest project will deliver significant benefits not only directly to customers using the Metro, but also to customers on other rail lines and across the transport network.

**Sydney Metro customers** – Current T3 Bankstown Line customers, as well as metro customers from the North West and North Shore, will benefit from significant travel time savings, more frequent, reliable, safer and more accessible services, and direct rail access to key destinations in the CBD, North Sydney, Macquarie Park, Macquarie University and beyond.

Metro customers will also benefit from improved interchange with bus, light rail, pedestrian and cycling networks, provision of taxi and kiss and ride at key stations, and improved linkages to park and ride facilities at outer stations.

**Sydney Trains customers in the CBD** – will experience reduced crowding at Wynyard, Town Hall and Central, with improved accessibility to all platforms at Central, as a result of the new CBD metro stations and platforms built for the project.

**T4 Eastern Suburbs & Illawarra Line customers** – will be able to interchange between Sydney Trains and Sydney Metro services at Sydenham, Martin Place and Central to access new stations in the CBD, North Sydney and Macquarie Park. T4 customers between Sydenham and the City will benefit from reduced crowding.

**T8 Airport & South, T2 Inner West & Leppington Lines** – customers of these lines, which currently share the City Circle with the T3 Line, will benefit from reduced crowding, improved reliability and the scope for additional services when T3 Line services are removed.

**T1 North Shore & Western, T9 Northern Lines and Intercity Lines** – these customers will experience reduced crowding on trains and platforms as passengers switch to Metro services, for example south of Chatswood on the T1 and T9. The

project also provides an alternative option for customers during unplanned and planned events, which may force closure of other CBD and cross-harbour links.

**Reduced rail network complexity** – the figure below illustrates the benefit that will be delivered to customers from the Sydenham to Bankstown conversion unlocking the capacity constraint presented by the existing network configuration at Sydenham and into the City Circle.

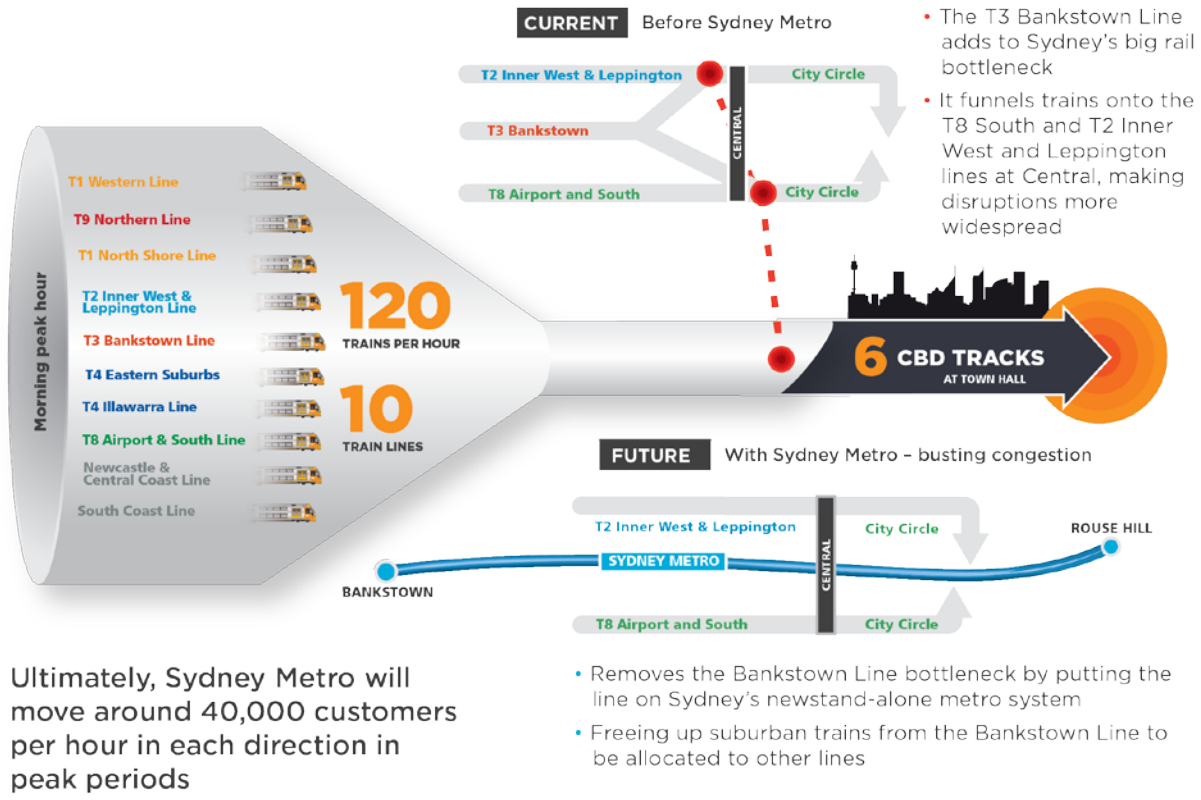


Figure 3: Congestion on Sydney's current heavy rail network

**Bus customers** – will benefit from increases in bus services to support connection to the metro, and will also benefit from reduced congestion as fewer buses will be required on the congested Sydney Harbour Bridge. Since Sydney Metro Northwest opened, weekday patronage on M2 bus services has fallen by an average of 37 per cent. Sydney Metro City & Southwest will allow a further 18 southbound and 17 northbound bus services to be removed from the Harbour Bridge during the AM peak hour. These buses can be redeployed to more feeder routes to Metro Stations and to provide stronger cross-regional connections.

**Road users** - by encouraging mode shift to the rail network, Sydney Metro City & Southwest will reduce the number of trips that would otherwise be made on the road network – a reduction of over 20,000 morning peak trips in 2036, including 500 fewer vehicles using the Sydney Harbour Bridge and Tunnel.

## *Benefit analysis*

The business case demonstrated that Sydney Metro City & Southwest is a city-shaping project that will deliver significant benefits:

- **Transport benefits** – including enabling the transport network to better cater for growth, travel time savings, increased network capacity, decreased train

and station crowding, increased reliability of the rail network, enhanced customer satisfaction on the use of public transport, and improvements in customer safety.

- **Economic benefits** – including valuation of transport, land-use and wider economic benefits, and an economic appraisal.
- **City-building benefits** – including increased economic activity, economic productivity, jobs, worker income, savings in infrastructure provision, lower cost of living, sustainability benefits, health benefits, more choice of housing and more affordable housing, more access to services, and greater social equity.
  Sydney Metro City & Southwest will enable businesses to become effectively closer together, by reducing travel times between major economic centres, and between economic centres and potential employees

The quantified benefits of the project include:

- Supports **forecast growth in rail patronage** from 168,400 to 288,000 trips in the one-hour AM peak by 2036.
- Delivers **31 per cent more train services in 2024** (40 additional services in 2024) than if the project is not implemented.
- Peak additional employment during the construction period of **6,233 workers**.
- **$8,562 million per annum additional value add** in 2036, from increased co-location and productivity of businesses and workers in the corridor.
- Stimulates **44,245 additional jobs** in the corridor by 2036.
- Between $721 and $1,761 savings per annum in 2036 for households through reduced cost of living.
- Total economic benefits of **$62,120 million** (real), $12,988 million (present value).
- Transport economic benefits of **$9,118 million** (present value)
- Productivity or wider economic benefits of **$2,713 million** (present value)
- City building or land use benefits of **$1,157 million** (present value).

# 4 Serving customers across Sydney

Metro is a fully automated technology used worldwide to provide safe, reliable, turn-up-and-go mass transit services for customers. Integrated with the broader transport network, it is connecting more places and more people across Sydney.

Customers are at the centre of Sydney Metro's 21st-century design, including the development of Sydney's new metro train, and new metro railway stations, interchanges and precincts. State-of-the-art technology will keep customers connected at all stages of their journey, from smart phone travel apps to real-time journey information at metro stations and on-board trains.

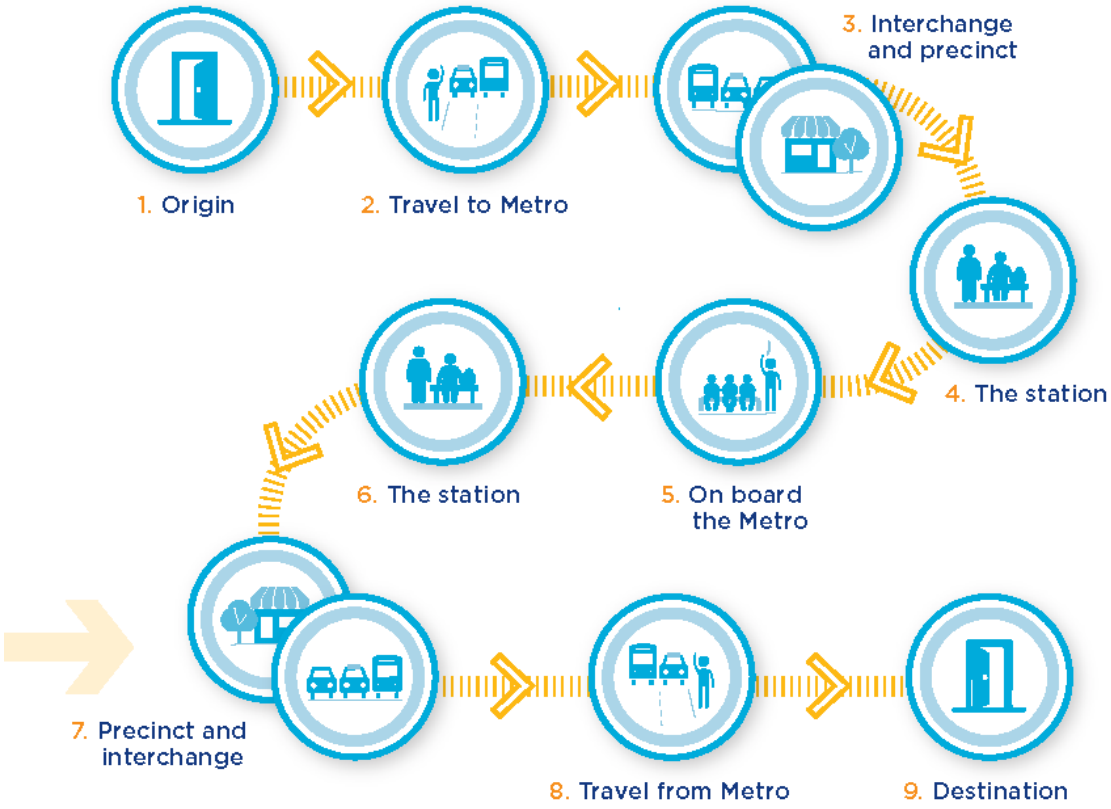


Figure 4: The customer transport journey

This door-to-door approach 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. Making it easy for customers at each stage of their journey will be integral in the successful delivery of Sydney Metro.

Sydney Metro makes it easy for customers to get where they need to go.

New metro services will be integrated with other transport modes, including interchanges with the existing Sydney railway network, buses, light rail and ferries.

Sydney Metro is working with the Department of Planning, Industry and Environment to support the development of an active transport corridor, including walking and cycling infrastructure, aligned with the Sydenham to Bankstown upgrade. When complete, the corridor will link public transport interchanges between Marrickville and Bankstown, and encourage more active, healthier lifestyles.
The project will also benefit bus customers by enhancing connections between bus and rail services, and providing bus stops as close as practicable and with accessible paths to station entries. Other accessibility benefits of the project include:

- improving the interchange with bus, light rail, pedestrian, and cycling networks, and provision of additional and more convenient taxi, kiss and ride, and bike parking facilities at all stations
- enhancing the accessibility of each station precinct with regard to walking and cycling, and
- providing infrastructure to ensure that the travel paths between different transport modes meet statutory accessibility requirements.

Figure 5: Artist's impression of upgraded Dulwich Hill Station

## *Delivering a step change in customer services*

The T3 Bankstown Line is being upgraded to modern metro rail standards between Sydenham and Bankstown. This means:

- an air-conditioned train every four minutes in each direction in the peak - Train services will be more than tripled at stations like Hurlstone Park, Canterbury and Wiley Park, which currently get as few as four trains an hour in the peak
- all upgraded stations will be fully accessible with lifts as well as level access between the train and the platform, removing the step up into the train
- safer platform environments, with improved CCTV surveillance,
- platform screen doors – this technology, used for the first time in Australia but common around the world, keeps people and objects like prams away from the tracks and allows trains to enter and leave platforms much faster
- minimal gaps between platforms and trains
- new or upgraded concourses, greater circulation space, including a new concourse to connect Metro with Light Rail at Dulwich Hill
- new station entries better located to connect with local town centres
- improved public domain
- improved station interchange facilities
- all trains stopping at all local stations – no waiting for the right train

- less time spent waiting due to higher frequency services (four minutes instead of the current wait of six to nine minutes in the peak, and 10 minutes instead of up to 30 minutes in the of-peak)
- safe and efficient connections during the peak and off-peak periods between key centres
- reduced travel times to key destinations such as Central and Town Hall
- new direct and fast services to Martin Place, Barangaroo, North Sydney, Chatswood and Macquarie Park
- interchanges to other rail services at Bankstown, Sydenham, Central and Martin Place.

All Sydney Metro stations and trains will be fully accessible, with lifts to be installed for the first time Dulwich Hill, Hurlstone Park, Canterbury, Wiley Park and Punchbowl stations.

Customers will not have to wait until 2024 for this improved access:  upgraded stations will be opened progressively from 2020.

**Travel time savings**

Sydney Metro will deliver significant savings in travel times to key destinations compared to today – as summarised below.

| | Central | Pitt St (new CBD station) | Barangaroo | Victoria Cross (North Sydney) | Chatswood | Macquarie University |
|---|---|---|---|---|---|---|
| | | | Minutes saved, 'up to'* | | | |
| **Bankstown** | 6 | 15 | 25 | 15 | 25 | 25 |
| **Campsie** | 5 | 23 | 33 | 16 | 23 | 17 |
| **Dulwich Hill** | 4 | 12 | 22 | 31 | 22 | 26 |
| **Marrickville** | 4 | 12 | 22 | 17 | 22 | 22 |

*including interchange and/or walk time

## *Integrated Sydney Trains and Metro services to customers*

When the Sydenham to Bankstown upgrade is complete, customers on the T3 Bankstown Line can continue to access the City Circle via Sydney Trains services at Sydenham. Alternatively, customers can elect to stay on the metro: the Martin Place and Pitt Street metro stations are just 350 metres away from Museum and St James stations.

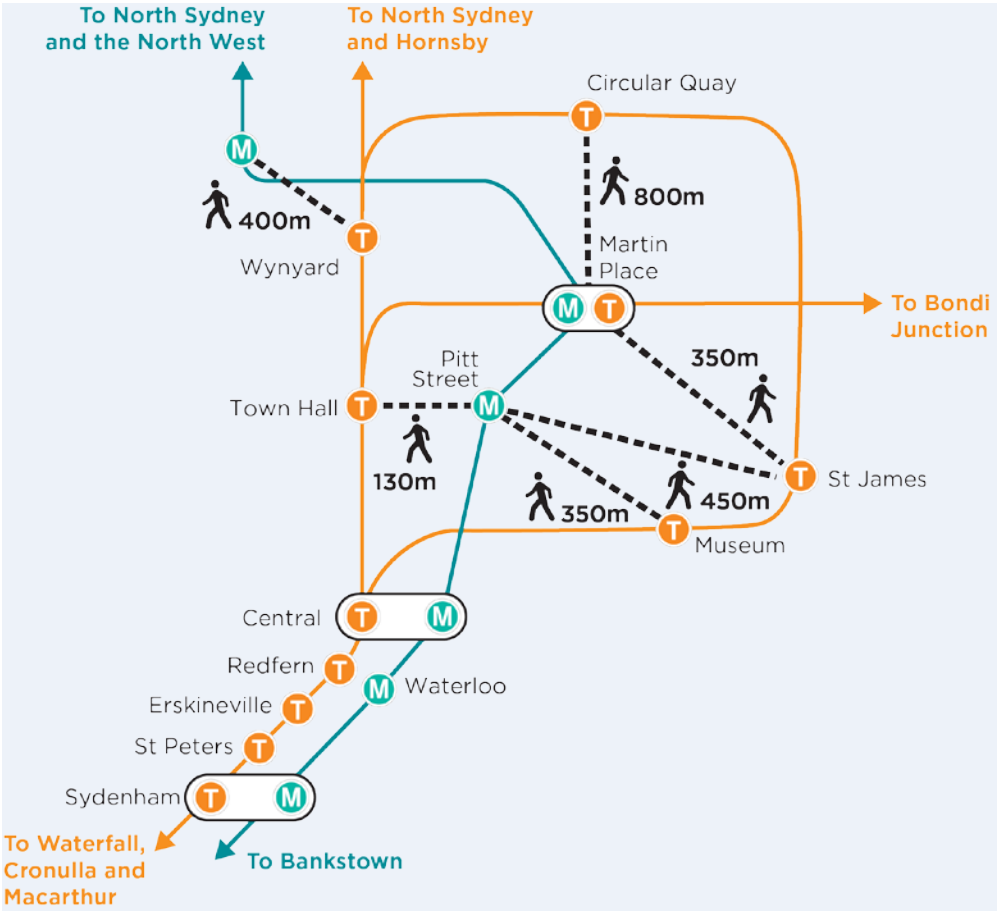

Figure 6: CBD Connections

When Sydney Metro opens in 2024, St Peters and Erskineville stations will continue to be serviced by Sydney Trains. Sydney Metro will deliver new and direct access to key employment and educational precincts like Barangaroo, North Sydney, Chatswood and Macquarie University.

Stations west of Bankstown will continue to be serviced by Sydney Trains, via trains operating between Liverpool, Bankstown, and Lidcombe stations on the redesigned T3 Bankstown Line.

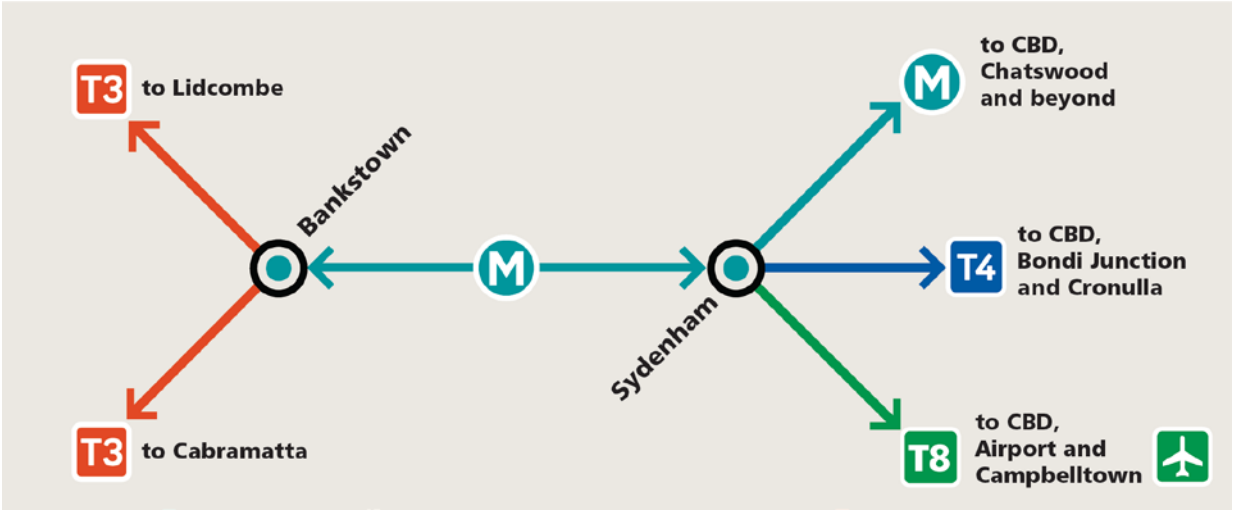

Figure 7: Metro integration with Sydney Trains services

Customers wishing to access Sydney Metro services would be able to change at Bankstown Station.

Customers wishing to travel via Sydney Trains to other destinations could change at:

- Lidcombe Station, for travel via the T1 Western Line or the T2 Inner West and South Line
- Cabramatta Station, for travel via the T2 Inner West and South Line or the T5 Cumberland Line.

## *Temporary transport services during construction*

The T3 Line will remain open during the majority of construction for Sydney Metro. Works to upgrade the Sydenham to Bankstown line to metro are being coordinated with regular weekend track work to minimise customer impacts.

Nevertheless, there is a need for some closures of the line while it is being upgraded to Sydney Metro standards. A program of closures is currently being refined and will be designed to minimise impacts on customers. During closures, Transport for NSW will provide temporary transport bus services and amended rail services.

As described in section 5 of this submission, and in the project's Submissions and Preferred Infrastructure Report (SPIR), following community feedback, there will be reduced closures.

Under the revised plans, there will also be reduced annual track possessions. Temporary possessions are now only planned for two weeks over Christmas school holiday periods when there will be fewer customers on the network.

These possessions have reduced from up to six weeks at Christmas to only two, and the project is no longer planning for two week possessions during the July school holidays each year.

To complete the Sydenham to Bankstown upgrade a final closure of between three to six months will be required to do work that can only be done once Sydney Trains has stopped operating on the line. This closure will be just before metro services start in 2024.

**Christmas 2019 – New Year 2020**

At this stage, the only confirmed T3 Bankstown Line closure for upgrade is scheduled between 24 December 2019 to 5 January 2020. During this period, the temporary transport plan will consist of dedicated buses operating between Punchbowl and Central stations. The majority of the T3 Bankstown Line will remain open with rail services operating between Campsie and Lidcombe Stations, maintaining rail access to the City via Lidcombe.

A service plan has been developed to reflect customer demand and travel needs. During the Christmas – New Year period, patronage across the T3 Bankstown line is usually reduced by around 35 per cent, with up to 40 per cent fewer customers at some stations such as Marrickville, Hurlstone Park and Canterbury.

During this closure, up to 90 buses will be running during the busiest part of the day. This level of service will provide 70 per cent of train capacity, and in addition a further 20 per cent capacity will be available through standby busses which will be deployed if required. Low floor accessible buses will be provided on the majority of services between Punchbowl and Central. Bus marshals or station staff will also be available during the busiest parts of the day to provide assistance to customers with accessibility. Sydney Trains will have extra station staff assisting customers during this period and during New Year's Eve.

In addition to continuing rail services between Campsie and Lidcombe, the bus service plan consists of two phases – five routes from 24 to 28 December (no trains

between Campsie, Sydenham and Central), and three routes from 28 December to 5 January (with rail services between Sydenham and Central). These bus routes will provide regular services to train customers, along with existing bus services.

The five routes are:

- Punchbowl to Central via Wiley Park, Lakemba and Belmore
- Campsie to Central via Canterbury, Hurlstone Park, Dulwich Hill, Marrickville, and Sydenham
- Campsie to Central direct express service
- Canterbury to Central via Hurlstone Park and Dulwich Hill
- Sydenham to Central via St Peters, Erskineville and Redfern.

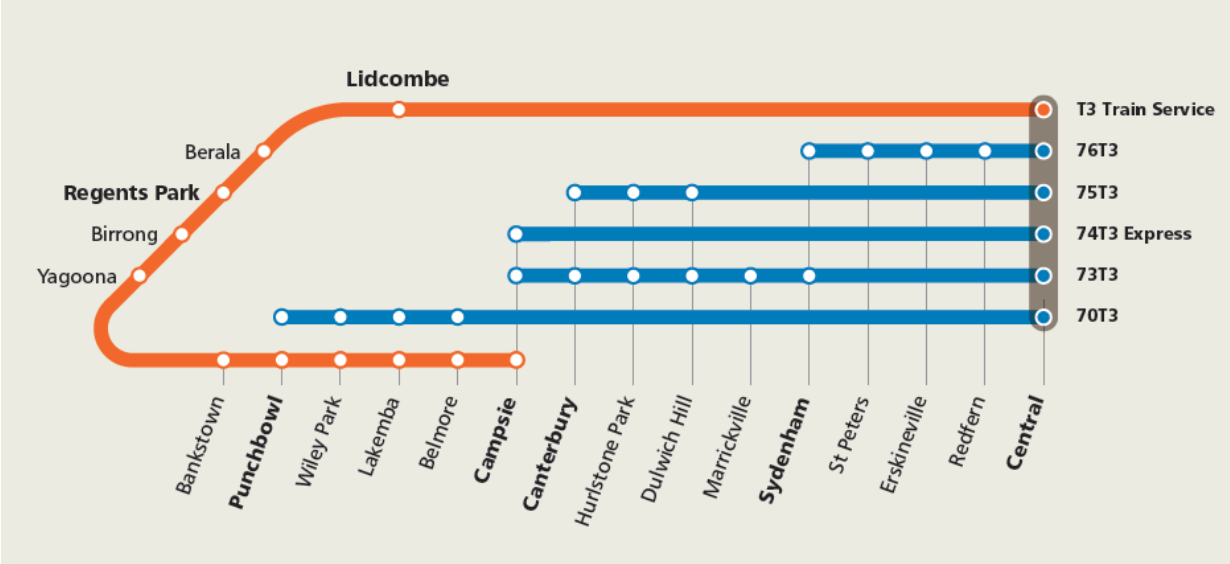


Figure 8: Five routes service diagram

From 28 December to 5 January, there will be three routes:

- Punchbowl to Central via Wiley Park, Lakemba and Belmore
- Campsie to Sydenham, via Canterbury, Hurlstone Park, Dulwich Hill and Marrickville
- Campsie to Sydenham.

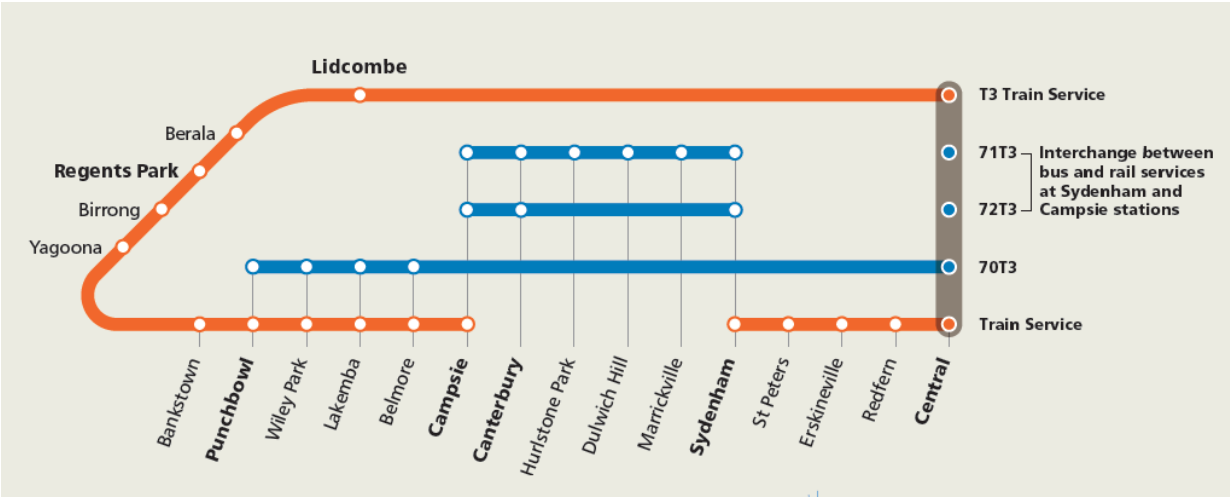


Figure 9: Three routes service diagram

Regular train services will operate from Campsie to Central via Lidcombe during this period, including additional services for customer travelling to and from the City for New Year's Eve celebrations.

**Temporary Transport service management**

Transport for NSW and Sydney Trains staff will provide additional support to customers as well as network monitoring during the closure. Bus marshals will assist customers, including people with limited mobility. Street teams (known as Pink Shirts) will help customers with wayfinding to stops and trip planning during, and ahead of the closure period. Dedicated station signage will display routes and bus stop locations.

Transport Commanders and precinct managers will be deployed to address any issues, incidents or illegal parking. Additional CCTV cameras for network monitoring will be installed. Dedicated network monitoring teams, including bus operators and Police will be in place within the Transport Management Centre to monitor the operations. They will address hotspots and ensure bus services run smoothly through adjustments to traffic light phasing and clearing of any incidents.

For New Year's Eve, special arrangements will be in place to enable customers attending the CBD fireworks.

**Stakeholder consultation and communication**

Currently consultation is underway on proposed temporary parking changes for temporary bus stops. This includes a letterbox drop customer notification, door knocking for any impacted businesses and residents, an interactive map for customers and businesses to understand the plans and allow feedback, and consultation with local councils.

A communications program in the lead up to the temporary transport service will inform customers and allow for trip planning well in advance. As well as media releases and briefings, Transport for NSW has released an information brochure, and published a project web page at mysydney.nsw.gov.au to provide customers with information ahead of the closure. Material will be translated for culturally and linguistically diverse communities, and specific messages will be provided for particular locations.

# 5 Community consultation and planning approval

In addition to the extensive public engagement carried out for development of Sydney's Rail Future and the Long Term Transport Master Plan, Sydney Metro has been working with the community since 2015 on the development of the City and Southwest project, including the Sydenham to Bankstown conversion. This consultation has included community information sessions held at local venues, newsletters, flyers, mobile information centres, web information, as well as the formal consultation undertaken during the planning approval process.

During this time the Sydenham to Bankstown element of the project has been significantly modified in response to community feedback. Planning approval was granted on 19 December 2018.

## *Planning approval process*

The Sydney Metro City & Southwest project was assessed under the NSW Environmental Planning & Assessment Act 1979. The project was declared Critical State Significant Infrastructure (CSSI). Developments are deemed to be State Significant Infrastructure if, due to their size, economic value or potential impacts, they have a wider significance and impact than on just a local area.

The State Significant Infrastructure assessment process was as follows:

- The proponent (Sydney Metro) lodged an application and supporting documentation to the Department of Planning, Industry and Environment (DPIE).
- DPIE prepared the Secretary's Environmental Assessment Requirements (SEARs), in consultation with councils and other government agencies. The SEARs outlined key issues to be addressed in the project's Environmental Impact Statement (EIS).
- Sydney Metro prepared and lodged the EIS.
- DPIE publicly exhibited the EIS and consulted with local councils, government agencies, other key stakeholders and the community.
- After exhibition, DPIE published all public submissions and asked Sydney Metro to address any concerns or issues raised by the community, council and government agencies.
- Sydney Metro addressed feedback in a Submissions and Preferred Infrastructure Report (SPIR), which DPIE made publicly available.
- The Department placed the SPIR on public exhibition for further comment.
- DPIE assessed the merits of the project, including consideration of the Preferred Infrastructure Report, all submissions and community feedback.
- DPIE made a recommendation to the Minister for Planning for determination.

## *Sydenham to Bankstown Environmental Impact Assessment (EIS)*

The Sydenham to Bankstown Environmental Impact Statement was exhibited in 2017. Volume One contained the main Environmental Impact Statement and the appendices. Volumes Two to Six contained the technical papers that form the technical basis of the information in Volume One. As required by the Secretary of

the Department of Planning and Environment the EIS assessed environmental issues including:

- operation and construction of the project
- traffic, transport and access
- noise and vibration
- Aboriginal and non–Aboriginal heritage
- land use and property
- socio-economic impacts and business impacts
- urban design and place making, landscape and visual amenity
- soils and contamination, hydrology, flooding and water quality
- air quality, biodiversity, sustainability and climate change
- hazards, risks and safety
- waste management
- cumulative impacts.

The EIS identified strategies to avoid, mitigate and manage potential impacts and a framework was developed to define the approach to environmental management and monitoring during construction.

## *Community consultation*

In June 2015, consultation started along the Sydney Metro City & Southwest corridor. This was not required by the planning process, but was carried out by Sydney Metro to proactively engage with the community before starting the Environmental Impact Statement assessment. The community was provided with information about the project proposal and provided feedback via online forums and community information sessions held at Marrickville Metro, Bankstown Sports Club and Canterbury-Hurlstone Park RSL.

In 2017 the Environmental Impact Statement for Sydenham to Bankstown was exhibited from 13 September to 8 November. During this time, consultation activities were carried out with key stakeholders and the community. Engagement leading up to and during the Environmental Impact Statement exhibition included:

- distributing a project update to 70,000 properties
- hosting 13 community information displays at Marrickville, Campsie, Hurlstone Park, Belmore, Lakemba, Punchbowl and Bankstown
- hosting information displays at the Sydney Royal Easter Show and Sydney Festival at Barangaroo and Haldon Street Festival
- handing out information flyers and talking to customers at stations between Marrickville and Bankstown
- informing station design using customer focus groups
- producing advertisements and newsletters in seven languages other than English
- hosting planning focus meetings with local councils and government agencies

- meeting with community groups, relevant government agencies and key stakeholders.

## *Community feedback on EIS and Sydney Metro's response*

A total of 563 submissions were received, with traffic, noise and retention of heritage buildings and local character being top issues.

In response, Sydney Metro developed a revised design solution ('the preferred project'). The preferred project addressed a number of issues raised in submissions, but also significantly minimise potential impacts – particularly in respect to vegetation, construction noise and traffic impacts. The preferred project was identified and assessed in the Submissions and Preferred Infrastructure Report (SPIR) which was placed on public exhibition in June 2018.

Consultation on the SPIR included:

- Early notification via a newsletter letterbox drop to about 80,000 properties. The newsletter was also available on the Sydney Metro website and translated into Chinese, Korean, Vietnamese, Bengali, Greek, Hindi and Arabic.
- 15,325 information postcards handed out at train stations.
- 6,382 community members and stakeholders registered on the project database were sent email notifications providing updates.
- Three advertisements in the Sydney Morning Herald, Inner West Courier and Canterbury Bankstown Torch.
- Five advertisements in non-English papers including The Australian Chinese Daily, Al-Furat, The Greek Australian, The Korean Daily and Chieu Dong.
- Four community information sessions with members of the project team available to provide detailed information.
- A detailed Preferred Infrastructure Report Overview on the website and handed out at community information sessions.
- A series of stakeholder briefings.
- Notification to all community members and stakeholders who made a submission to the EIS, and invitation to attend the information sessions.
- A dedicated free-call hotline and email.

Key changes to the project in response to feedback and further analysis of opportunities included:

**Heritage**

Reflecting community feedback, the project will reuse existing station features. This includes retaining heritage and landscape features and seeking opportunities to integrate stations into the surrounding urban fabric. All heritage buildings within the stations will be retained. Heritage buildings will be used for station operations and heritage platforms will be retained and made level to deliver a fully accessible metro railway. All current heritage listed items at stations will continue to maintain their heritage listings on State and local registers. Wiley Park and Punchbowl stations will now retain their heritage status on local heritage registers.

**Traffic, transport and access**

Closures to facilitate track work will be scheduled over more weekends and nights and less during school holidays and peak times. School holiday closures will be

restricted to up to two weeks in the Christmas holidays each year. There will be no two-week possession closure during the July school holidays. The project will not require any full closures of rail bridges. Bridge work will require partial road closures that can be limited to outside of peak traffic times and at night. Haulage routes have been reduced and rationalised to reduce the impact on road users and communities.

**Noise, vibration and dust**

Construction activities will have less potential to impact on surrounding businesses and homes with lower noise, vibration and dust levels overall than originally conceived. By reusing and retaining existing infrastructure, higher impact activities like rock breaking, track tamping and ballast replacement will now be minimised.

**Waste and resource use**

The project will now require about half of the originally assessed amount of fill material for construction. The project will generate less waste from excavation and risks associated with hazards, such as the removal of buildings and structures; contamination and subsidence will also be reduced.

**Hydrology**

The project will not create any significant changes to existing overland water flow or groundwater conditions.

**Social impact and community infrastructure**

The project will have less potential to impact on community infrastructure during construction because there will be fewer changes to station areas and access into and around stations. Retention and reuse of existing infrastructure along the rail corridor means the construction methodology will change and other alternatives to the proposed active transport corridor will be developed to boost active transport options along the alignment. Sydney Metro will work collaboratively with other areas of Transport for NSW, the NSW Department of Planning, Industry and Environment and local government to identify customer and community initiatives to encourage walking and cycling to Sydney Metro stations.

**Trees and biodiversity**

Trees will be removed only where absolutely necessary to complete the works at each station and along the corridor. The number of trees requiring removal near stations will be reduced by 390. No remnant native vegetation will be removed as part of the project including the Downy Wattle (Acacia pubescens) within the project area. The wattle is listed under both the *Threatened Species Conservation Act* 1995 (NSW) and the *Environment Protection and Biodiversity Conservation Act* 1999 (Commonwealth).Visual impacts during construction will be reduced. When services start, the railway corridor will essentially look the same from nearby areas as it does now.

**Land use and property**

The project no longer requires the acquisition of any properties and most commercially leased properties around stations will be able to continue to hold their leases during project delivery. Most work sites will now only be required for up to 18 months and not for the duration of the project. The project will now not require the use of McNeilly Park or Livingstone Road Bridge for work sites.

**Socio-economic and business impacts**

Impacts to local businesses will be reduced because construction at each station will be completed in one year instead of two.

Following exhibition of the Submission Preferred Infrastructure Report, the Minister for Planning approved the project on 19 December 2018. The Conditions of Approval for the project, as prepared by the Department of Planning, Industry and Environment, contain specific conditions including conditions related to heritage items.

Sydney Metro is delivering the project in accordance with the Conditions of Approval.

# 6 Working with industry to deliver

Sydney Metro is committed to upholding the highest standards of probity at all stages of project development and delivery. Sydney Metro has rigorous probity processes in place in line with the NSW Government's policies and guidelines, including the *NSW Government Procurement Policy Framework*, the *NSW Industrial Relations Guidelines: Building and Construction Procurement* and the *Transport Statement of Business Ethics*. All Sydney Metro projects have a probity adviser appointed to ensure that the community can have absolute confidence in the integrity of the decision making process.

## *Project delivery contracts*

The delivery strategy for the Sydney Metro City & Southwest project was developed in close consultation with NSW Treasury and external commercial, financial and legal advisers. The delivery strategy was confirmed in April 2016 following industry consultation. The two key elements of the industry engagement process were:

- an initial industry briefing, to introduce the project and provide a brief overview of the project to industry; and
- a market sounding process, which included engagement with industry to obtain written feedback on the project in response to a questionnaire, in addition to a series of one-on-one meetings with a representative sample of selected industry participants from key market sectors.

Sydney Metro has continued to engage with industry to refine the project delivery strategy during the procurement phase.

As at 17 September 2019, the delivery strategy for the project is illustrated in the diagram below, which depicts each of the major contracts awarded, or remaining to be awarded, for the delivery and operation of the project.

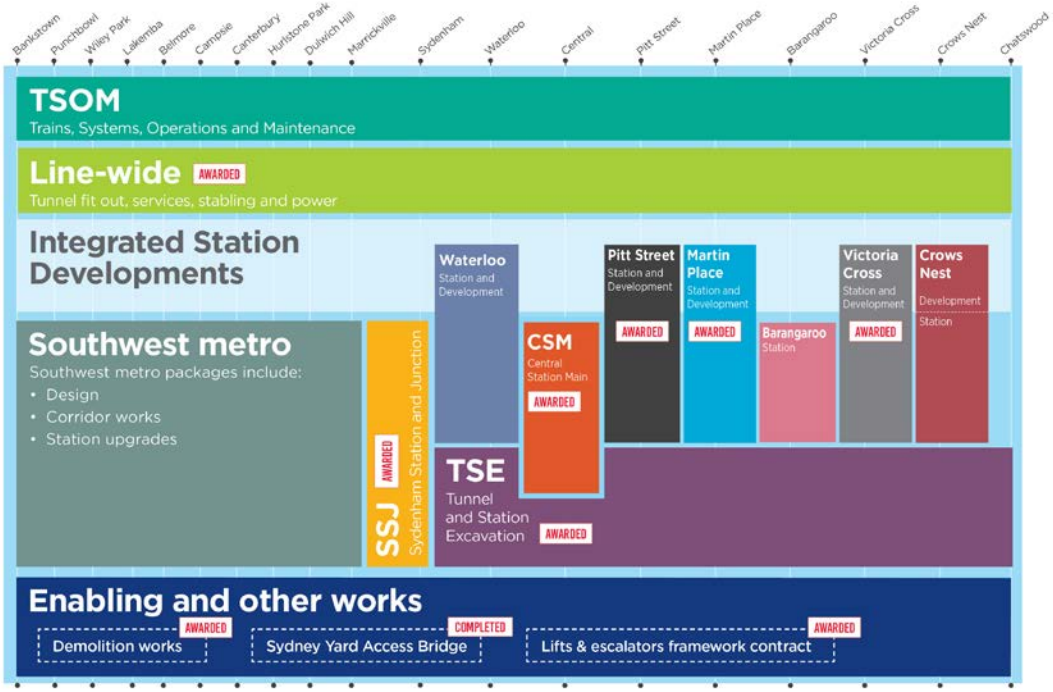


Figure 10: Project delivery strategy

Details of all awarded contract packages are available on the TfNSW website.

In addition to the above Sydney Metro has entered into a number of ancillary agreements in relation to the project (e.g. independent certifier appointments and adviser and consultancy appointments), as is customary for a project of this nature.

## *Procurement of the operator*

Sydney Metro's priority is to get the best outcome for customers and the best value for taxpayers.

Sydney Metro is currently in an active procurement for this package of services. Through the procurement process, Sydney Metro is evaluating the best means by which to contract the Trains, Systems, Operations and Maintenance (TSOM) package. Sydney Metro is currently considering, subject to NSW Government approval, whether to award the TSOM package via either a potential pre-agreed augmentation of the existing Public Private Partnership contract for Sydney Metro North West Operations, Trains and Systems (OTS) or through an alternative delivery strategy with an alternate provider(s).

When Transport for NSW competitively procured the OTS contract in 2014, the contract was designed so that future changes to expand the metro line could be included. The OTS contract, including the augmentation provisions referenced above, is publicly available on the Transport for NSW website since 2014 and regular updates on the process have been provided publicly. By operating as one integrated line between Tallawong Station at Rouse Hill and Bankstown, Sydney Metro will be able to deliver the highest standards of service to customers from Tallawong to Bankstown.

# 7 Appendices

## *7.1 Future Transport 2056 – March 2018*

Refer to the Attached – Future Transport Strategy [available at https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/Future_Transport_2056_Strategy.pdf]

## *7.2 Greater Sydney Services and Infrastructure Plan – March 2018*

Refer to the Attached – Greater Sydney Services and Infrastructure Plan [available at https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/Greater_Sydney_Services_and_Infrastructure_Plan_0.pdf]

## *7.3 State Infrastructure Strategy 2018–2038: Building Momentum*

Refer to the Attached – State Infrastructure Strategy 2018–2038: Building Momentum [available at https://www.nsw.gov.au/improving-nsw/projects-and-initiatives/nsw-state-infrastructure-strategy]

## *7.4 Final Business Case Summary – October 2016*

Refer to the Attached – Sydney Metro City & Southwest Final Business Case Summary October 2016 [available at https://www.sydneymetro.info/sites/default/files/Sydney%20Metro%20CSW%20Business%20Case%20Summary.pdf]

## *7.5 Infrastructure Australia Project Evaluation Summary - Sydney Metro City & Southwest – June 2017*

Refer to the Attached – Infrastructure Australia Project Evaluation Summary - Sydney Metro City & Southwest [available at https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/sydney_metro_city_southwest_summary.pdf]

## *7.6 Sydenham to Bankstown EIS Overview*

Refer to the Attached – Sydenham to Bankstown Environmental Impact Statement Overview September 2017 [available at https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Overview%20September%202017.pdf]

## *7.7 Sydenham to Bankstown Preferred Infrastructure Report Overview*

Refer to the Attached – Sydenham to Bankstown Preferred Infrastructure Report Overview June 2018 [available at https://www.sydneymetro.info/sites/default/files/document-library/Sydenham_to_Bankstown_Preferred_Infrastructure_Report_Overview.pdf]

## *7.8 Sydney's Rail Future*

Refer to the Attached – Sydney's Rail Future 2012 [available at https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/sydneys-rail-future.pdf]