Australian Government

NSW GOVERNMENT

sydney METRO

**Sydney Metro –
Western Sydney Airport**

Environmental Impact Statement Summary

2020

Contents

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

Cover: An artist's impression of Orchard Hills Station.

Right: An artist's impression of the Airport Terminal Station.

About Sydney Metro

Sydney Metro is Australia's biggest public transport project, revolutionising the way Sydney travels.

Metro services started in May 2019 on the Metro North West Line between Rouse Hill and Chatswood. In 2024, Sydney Metro will extend under Sydney Harbour, through to new stations in the CBD, and beyond to the South West at Bankstown.

A new metro railway line will open up connections between the new Western Sydney International (Nancy-Bird Walton) Airport and Greater Sydney. This city-shaping project will also create a transport spine for outer western Sydney that will help drive further development. It will link communities with jobs and services, provide better access to health, education and leisure facilities, and underpin the growth of the region.

The Sydney Metro – Western Sydney Airport project will deliver about 23 kilometres of rail between St Marys Station and the Western Sydney Aerotropolis in Bringelly. Six stations are proposed to be built along the alignment including two at Western Sydney International Airport. Customers will be able to connect to the existing Sydney Trains suburban T1 Western Line at St Marys.

The project will also include stations at Orchard Hills and Luddenham to service a future mixed-use precinct and an education and innovation precinct. These new stations will become central hubs for new communities, creating homes, jobs and recreation options to meet the needs of the fast growing region.

The project is being delivered under the Western Sydney City Deal, a partnership between the Australian Government, NSW Government and eight Western Sydney local governments. It will form a key part of the transport network for the Western Parkland City, which covers districts in Greater Western Sydney including the established centres of Greater Penrith, Liverpool and Campbelltown–Macarthur.

As part of the NSW Government's Transport cluster, Sydney Metro is responsible for the planning, construction, delivery and operation of metro rail services.

The environmental assessment process

This document is intended to be an overview of the Sydney Metro – Western Sydney Airport project. For further detail, please see the Environmental Impact Statement and supporting documents available on our website at: **sydneymetro.info**

Contact us

To speak to your local Place Manager or a member of the project team, please contact us via:

- the community information line: **1800 717 703**
- project email: **sydneymetrowsa@transport.nsw.gov.au**


AIRPORT
M
Platforms

A message from the Australian Government

The Australian Government has partnered with the NSW Government to build the Sydney Metro – Western Sydney Airport rail link. This critical project is part of the Australian Government's $14 billion contribution to infrastructure projects in the Western Sydney region. This includes the federally-delivered Western Sydney International (Nancy-Bird Walton) Airport, major road upgrades under the Western Sydney Infrastructure Plan and a number of important projects under the Western Sydney City Deal.

The Sydney Metro – Western Sydney Airport rail link will establish the spine of the Western Parkland City and enable its transformation into Sydney's third CBD.

Investment in this initiative is part of a long-term strategy to deliver infrastructure that leads and shapes a more sustainable city, where efficient transport and a liveable urban and natural environment support social and economic growth.

The metro line will be delivered in parallel with the NSW Government's Western Sydney Aerotropolis Plan that focuses on the retention of a green biodiverse landscape and recognises the significant Aboriginal cultural heritage value of the Wianamatta South Creek catchment area.

Western Sydney's population is expected to grow by half a million people by the early 2050s and collaboration and investment by all levels of government on significant infrastructure projects will lay the foundation for a successful city.

The Hon Alan Tudge MP
Federal Minister for Population, Cities and Urban Infrastructure

A message from the NSW Government

Welcome to a metro railway like no other.

Already, more than 22 million customers have used Sydney's new metro since the Metro North West Line opened in May 2019.

New metro rail under the centre of the Sydney CBD will open in 2024, and metro will also connect Greater Parramatta and the Sydney CBD as part of the Sydney Metro West project.

Now, the Sydney Metro – Western Sydney Airport project brings a world-class metro railway to Greater Western Sydney.

As the region's public transport spine, this project is being designed to grow with communities, connecting new infrastructure like the international airport and the Western Sydney Aerotropolis with the rest of Greater Sydney.

Now is the time to have your say on this mega project as we shape the region's future for generations to come.

By the end of 2020, the NSW Government will have three mega metro projects under construction simultaneously – an extraordinary infrastructure investment delivering around 90-kilometres of metro rail for Greater Sydney.

Welcome aboard Greater Western Sydney's new metro.

The Hon Andrew Constance MP
NSW Minister for Transport and Roads

Travelling on Sydney Metro.


LUDDENHAM

New metro rail

An artist's impression of Luddenham Station.

Sydney Metro is Australia's biggest public transport project

A new generation of fast, safe and reliable metro trains.

Australia's first fully accessible railway: level access between the platform and train.

Heating and air-conditioning in all metro trains.

New driverless technology, including platform screen safety doors keeping people and objects like prams away from tracks.

At all times, a team of expert train controllers monitor Sydney Metro, making sure everything runs smoothly.

Wheelchair spaces, separate priority seating and emergency intercoms inside trains.

Continuous mobile phone coverage throughout the metro network.

Fast-tracked travel

The metro will have a travel time target of around **20 minutes** between St Marys and the Aerotropolis.

It will take around **15 minutes** to travel between St Marys and the Airport Terminal and about five minutes to travel from Airport Terminal to the Western Sydney Aerotropolis.

The new metro line will take about 110,000 car journeys off local roads every day by 2056.

Growing with the community

The frequency of trains can increase in line with customer demand as the Western Parkland City transport network develops.

Initial capacity

+ Moving up to 7740 people an hour in each direction
+ Up to 12 trains per hour in the peak.

Future service capacity

+ Ultimate capacity to move more than 22,000 people an hour in each direction
+ Up to 20 trains per hour on this line
+ Up to 30 trains per hour for extended line north to Schofields/Tallawong and south to Macarthur subject to future government investment decision(s).

The first stage of the Sydney Metro opened on 26 May 2019. The 36-kilometre Metro North West Line, Australia's first fully-automated driverless railway, was delivered on time and $1 billion under its budget.

With 13 metro stations a new generation of metro trains runs every four minutes in the peak in each direction.

The second stage of this city-shaping project, Sydney Metro City & Southwest, will see a new 30-kilometre metro line extend metro rail from the end of the Metro North West Line at Chatswood under Sydney Harbour, through new Sydney CBD stations and south west to Bankstown.

Construction on Sydney Metro West will start later in 2020, connecting Greater Parramatta to the Sydney CBD.

Sydney Metro – Western Sydney Airport will deliver a new a transport spine for Greater Western Sydney and open up transit to a new airport and centres of employment. Construction will commence before the end of 2020.

The project will support 14,000 jobs during construction, including 250 apprentices.

The biggest urban rail project in Australian history

Metro North West Line

Opened 26 May 2019

13 stations

4000 commuter car parks

36 kilometres

City & Southwest

Opening 2024

18 stations

New CBD connections

30 kilometres, including under Sydney Harbour

West

Construction starts 2020

Eight stations

Connecting Greater Parramatta and the Sydney CBD

3.2 million

Western Sydney population, 2036

Sydney Metro – Western Sydney Airport

Construction starts 2020

Six stations

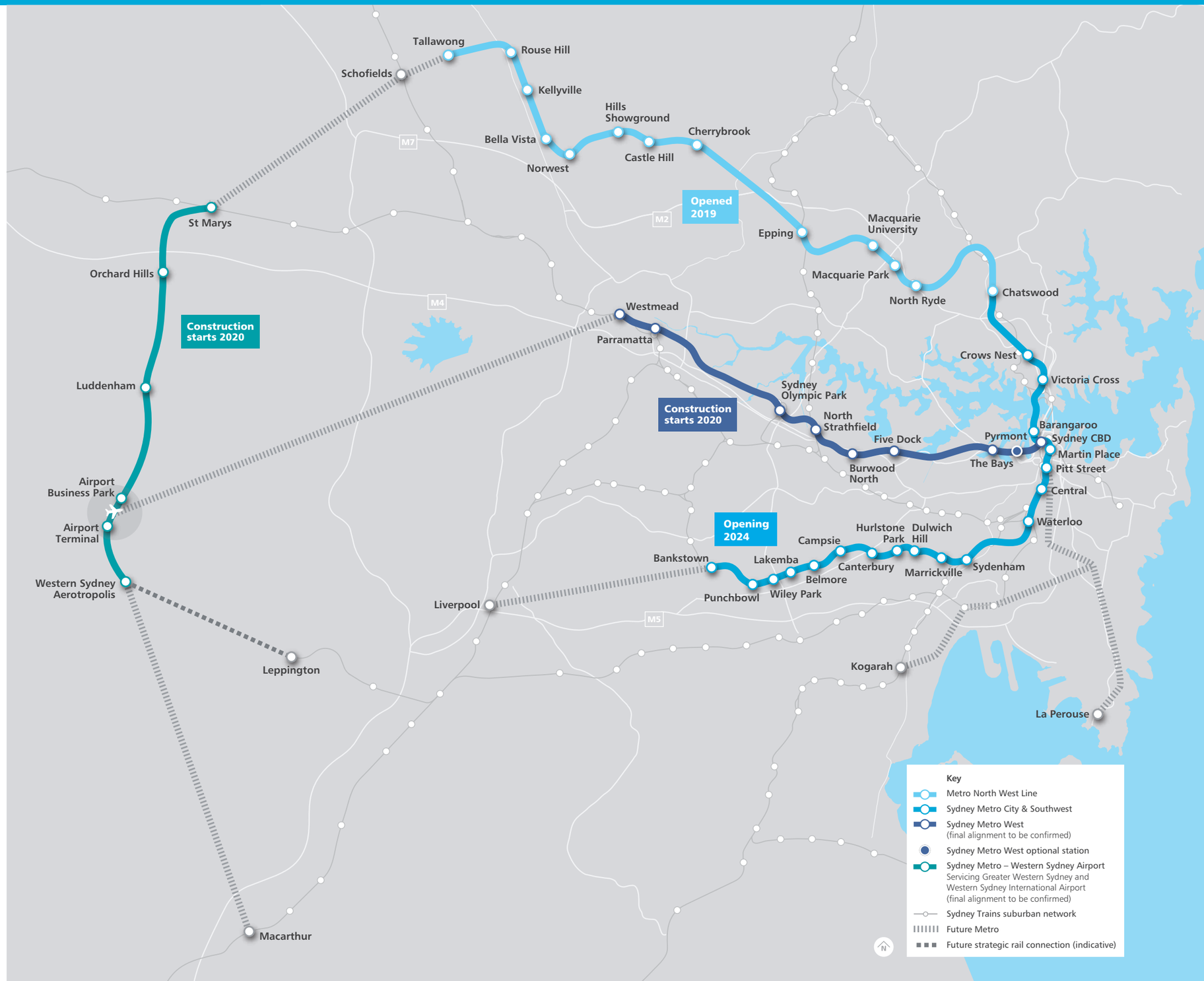
Connecting Western Sydney International Airport to the rest of Greater Western Sydney

Servicing Greater Western Sydney

Sydney Trains suburban network

Future metro

Future strategic rail connection (indicative)



Our customers

Customers don’t need a timetable, they just turn up and go.

Sydney Metro is designed to be an easy part of daily journeys.

State-of-the-art technology keeps customers connected at all stages of their journey – from smart phone travel apps on the way to stations to real-time journey information at metro stations and on board trains.

Sydney Metro stations are fully accessible for people with reduced mobility, people with prams, people travelling with luggage, and children.

This includes level access between platforms and trains and lifts at all stations. Platform screen doors on all metro platforms keep people and objects away from the edge, improving customer safety and allowing trains to get in and out of stations much faster.

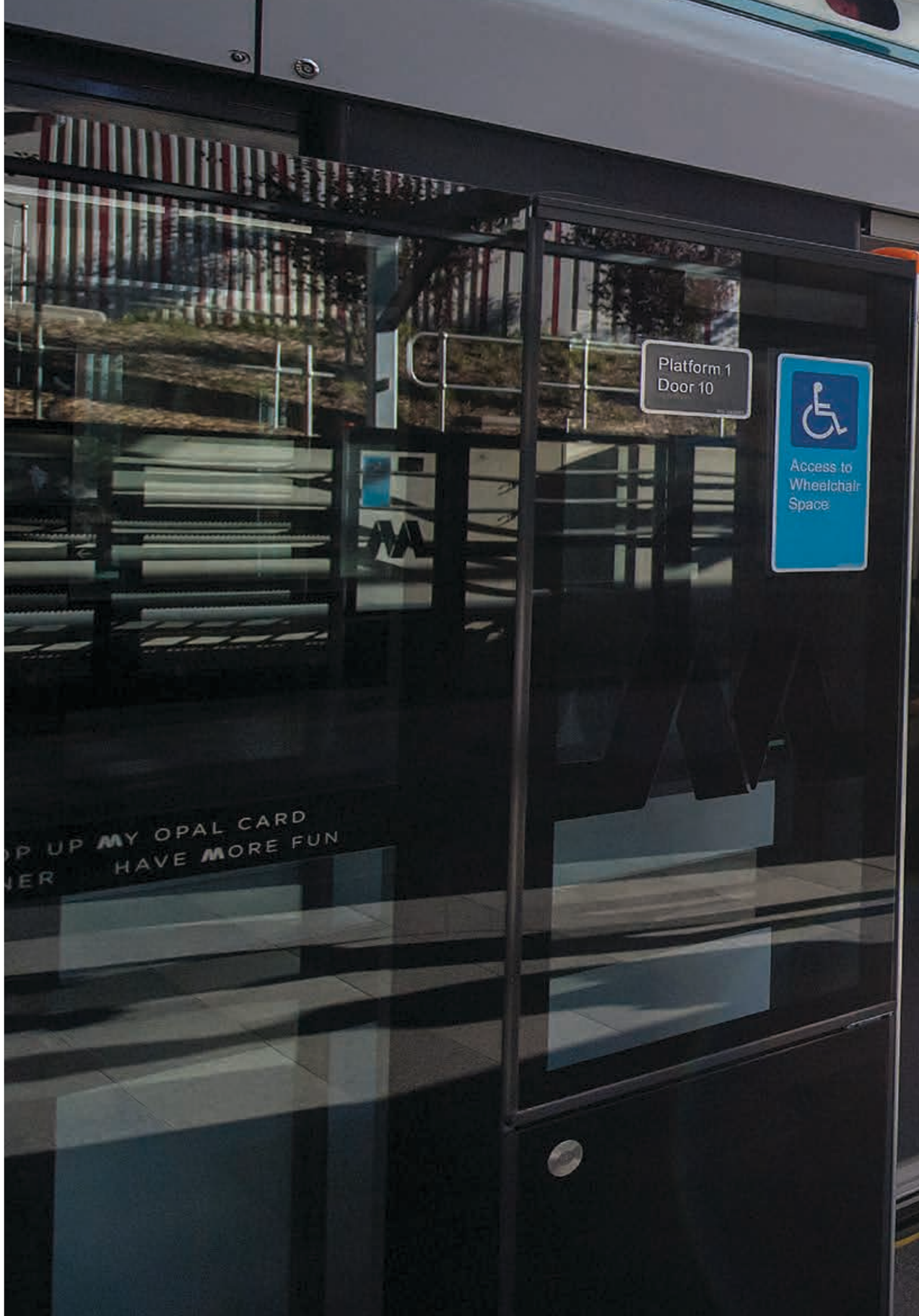
These doors run the full length of the platforms and only open at the same time as the train doors.

Sydney Metro is the first railway network in Australia to use platform screen doors, which are common around the world.

All stations are designed to reflect the character of the local areas they serve and, where possible, include environmentally friendly features such as solar panels, natural light and ventilation.

New metro services will be integrated with other transport modes, including interchanges with Sydney suburban rail as well as buses, light rail and ferries.

Customer safety is the number one priority for Australia’s first fully-automated railway. At all times, a team of expert train controllers monitor the system, making sure everything runs smoothly.



Tallawong Station.


Way out
1

Key facts

In peak
Up to 12 trains an hour

Metro stations
State-of-the-art, fully accessible

No timetable
Customers will just turn up and go

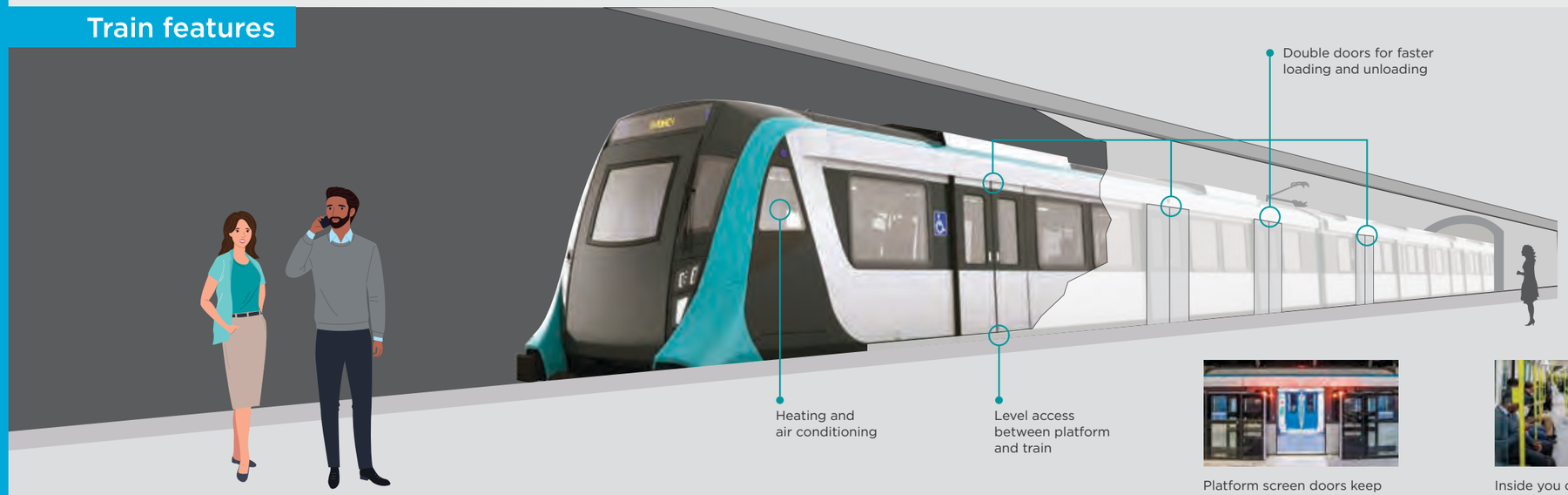
Connected
Continuous mobile phone coverage through network

Security cameras on each train

Video help points on all platforms

Tap your Opal card, credit or debit card, or linked device to pay for your travel

Train features



Double doors for faster loading and unloading

Heating and air conditioning

Level access between platform and train

Multi-purpose areas per train for prams, luggage and bicycles

Wheelchair spaces, separate priority seating and emergency intercoms

Platform screen doors keep people and objects away from the edge and allow trains to get in and out of stations much faster

Inside you can see from one end of the train to the other

Real-time travel information and live electronic route maps

Safety

Sydney Metro is Australia's first fully-automated metro rail network

Around the world, millions of people use these networks every day in cities like Paris, Singapore, Dubai and Hong Kong

Constant monitoring
Expert train controllers monitor entire metro system

Security
Cameras monitor entire rail system, including stations, tunnels and trains

Signalling and communications systems
Control the trains, tunnels, platforms and skytrain to deliver a safe and reliable journey

The Operations Control Centre

Operations Control Centre
State-of-the-art network controlled from new high-tech facility at Tallawong Road

Faster journeys
System minimises the time trains are stopped at stations and the time between each train

The customer is at the centre

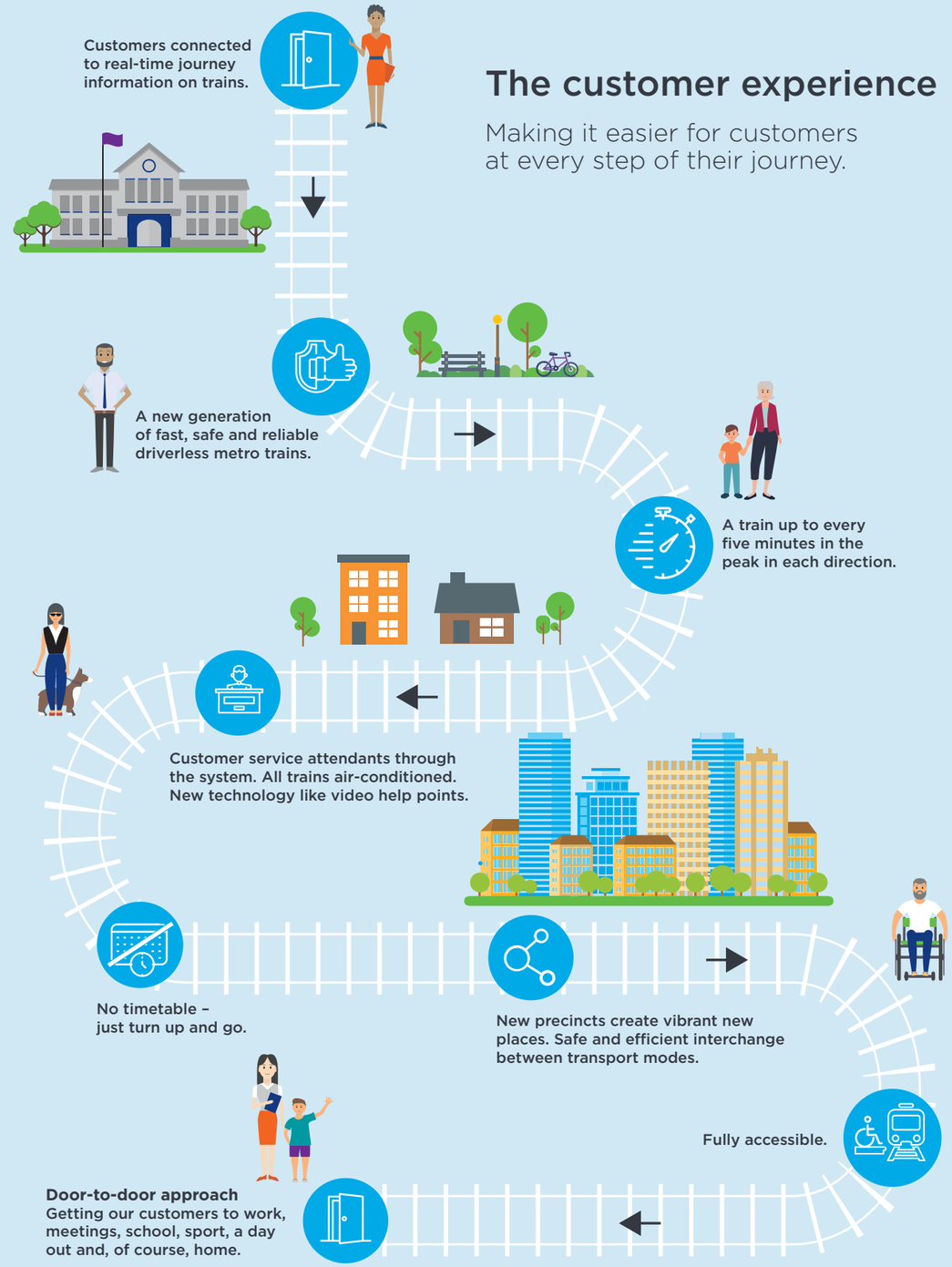
Get where you need to go, easily and quickly.

Sydney's new metro railway is an easy part of daily journeys and will evolve with the city it will serve for generations to come. Sydney Metro makes it easier and faster to get around, boosting economic productivity by bringing new jobs and new educational opportunities closer to home. For the Greater West, that also means creating the infrastructure that will be the driving force behind new suburbs, facilities and transport links to meet the needs of the growing community.

Technology keeps customers connected at all stages of their journey – from smart phone travel apps on the way to stations to real-time journey information at metro stations and on board trains. This door-to-door approach helps 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 needs are at the centre of the plan for every stage of Sydney Metro — and every stage of every journey. The entire network will link communities, workplaces, schools, hospitals, key destinations and businesses, making Sydney a more liveable city for millions of residents.

The metro public transport product has been designed to deliver safe, clean, comfortable services which run on time and are convenient, efficient, accessible and easy for customers to use. Metro stations provide safe and efficient interchange between transport modes, giving priority to pedestrians. Transport links, including bus connections, park and ride, bicycle facilities and walkways lead to fast and safe onward journeys for communities across Greater Western Sydney.



The customer experience

Making it easier for customers at every step of their journey.

Western Sydney International Airport, Western Sydney Aerotropolis and the Western Parkland City

An artist's impression of the Western Sydney International (Nancy-Bird Walton) Airport.

Sydney's first 24/7 airport – a new gateway to a global city

Western Sydney International (Nancy-Bird Walton) Airport is currently under construction at Badgerys Creek, with operations scheduled to start in 2026. This airport will create a new entry point to Sydney, delivering an economic boost to the region and helping to rebalance the city.

The airport, which will operate 24 hours a day, will expand the aviation capacity of Greater Sydney, opening up new domestic and international connections, attracting visitors and creating a new freight hub for the entire metropolis.

Sydney's current Kingsford Smith Airport is forecast to reach capacity around the 2040s, creating the need for another aviation centre. Over time, there will be growing demand for flights to and from Western Sydney International.

The operation of Stage 1 of Western Sydney International will comprise a single runway, a terminal and other facilities. Around 10 million passengers are expected to transit through the airport in this first stage.

Western Sydney International will have capacity to grow with the city. Subject to future regulatory approvals, the airport could expand to include a second runway and other facilities to meet passenger and freight demand.

Fast and efficient rail links will be a key part in ensuring the success of the airport. The Sydney Metro – Western Sydney Airport project would make it easier for passengers and workers to travel to and from the airport and avoid road congestion.

A passenger rail corridor has been identified and protected on the airport site, as well as stations at the airport business park and airport terminal. The Australian and NSW governments have a shared objective to connect rail to Western Sydney International when the airport opens for passenger services.

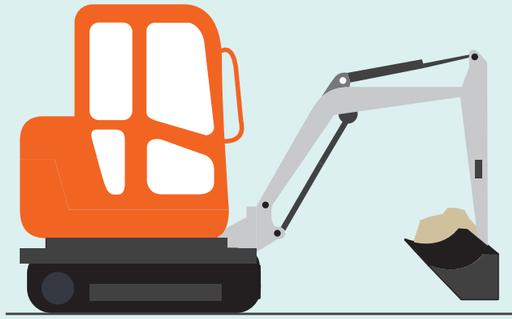
The Sydney Metro – Western Sydney Airport project is one of several major infrastructure projects being concurrently delivered in the Greater Western Sydney region, including the new international airport and the new Western Sydney Aerotropolis.

Information about other projects in this chapter is provided to contextualise this metro rail project within the Western Parkland City, which will come to life around this new public transport spine.

An artist's impression of Western Sydney International Airport.

Western Sydney International

Stage 1 – 2026



3,200+
direct on-airport jobs in the construction period, in addition to

8,100+
indirect jobs throughout Western Sydney

28,000
direct and indirect jobs
expected by 2031

145 million
added value for Greater Sydney

77 million
economic boost for Western Sydney

The Western Sydney City Deal

The Western Sydney City Deal is intended to complement land use decisions over the next 20 years and will focus on local job opportunities, connectivity and liveability.

Created in 2018 between the Australian and NSW governments and eight Western Sydney local councils, the deal seeks to provide an extra 184,500 new homes and 200,000 new jobs for the Western Sydney region to support its growth.

Delivering a new metro railway, linking Western Sydney International Airport and the Aerotropolis with the broader Sydney rail network is a key City Deal commitment.

Growing with Greater Western Sydney

The Sydney Metro – Western Sydney Airport project will create a transport spine for Greater Western Sydney. The metro railway will link residential areas with job hubs and the nationally-significant Western Sydney International Airport. The project will also underpin the development of Western Sydney Aerotropolis — a new centre of innovation, research and productivity that will attract jobs and investment to the region.

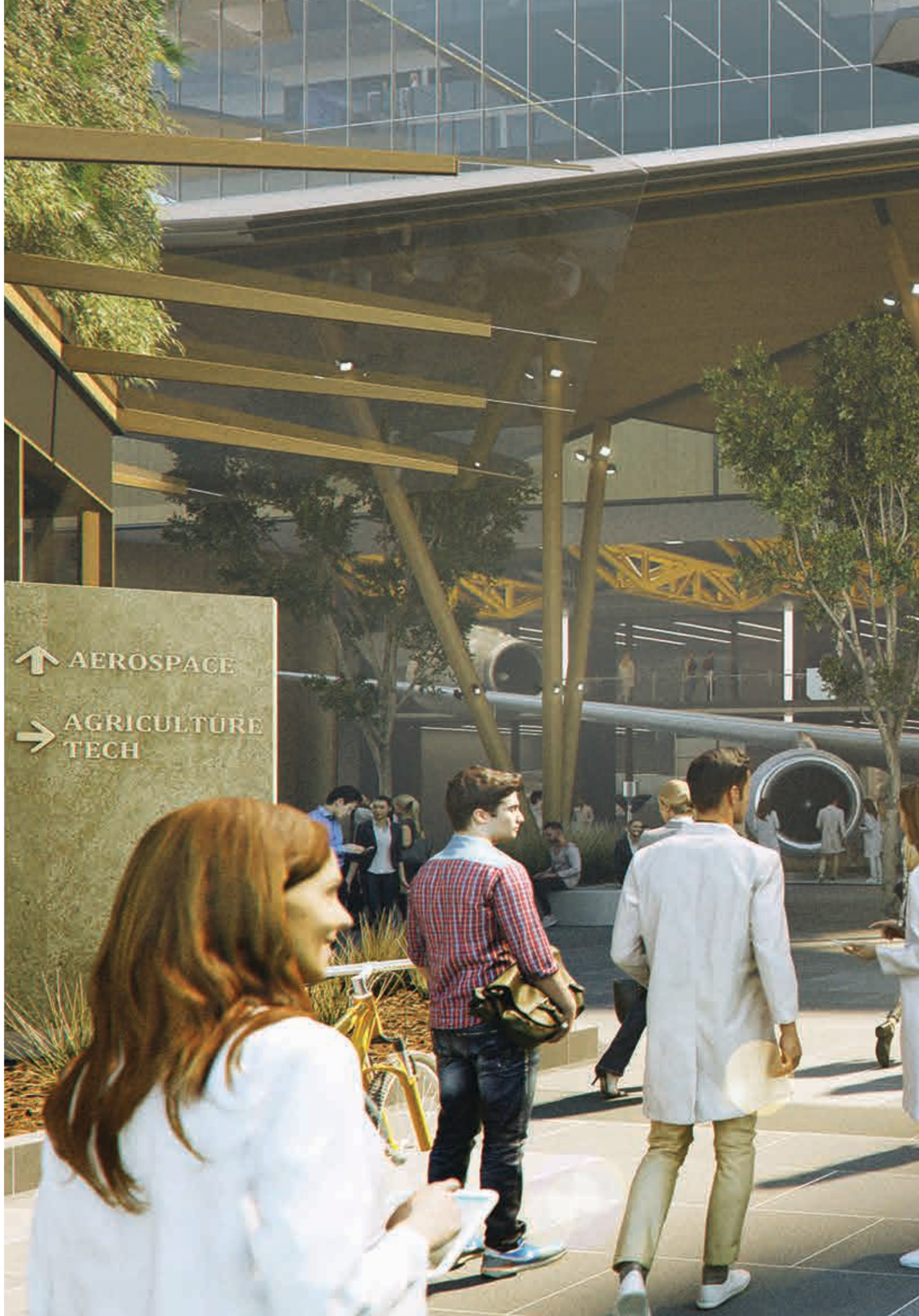
This city-shaping mass transit investment will become the key that unlocks the Western Parkland City, with a mix of residential and employment centres and the South Creek green spine providing spaces for recreation and environmental benefits.

This new driverless metro railway will deliver an essential transport link to the T1 Western Line, opening up the region and making it easier and faster to travel to other parts of metro railway.

The project will create connections between businesses, workers and workplaces. Drawing airport passengers west, the project will help drive economic growth and rebalance Greater Sydney. This transport spine will connect metropolitan clusters, linking the Greater Penrith to Eastern Creek Growth Investigation Area, the Western Economic Corridor, St Marys and the Greater Penrith, Liverpool and Campbelltown-Macarthur regions.

Western Parkland City currently home to **740,000 people** with growth forecast to reach approximately **1.1 million people by 2036** and to well over **1.5 million by 2056**

Source: Department of Planning, Industry and Environment, 2019.



An artist's impression of Western Parkland City.

Linking jobs to workers across Greater Western Sydney

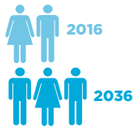
As Australia's next global gateway, built around Western Sydney International, the Western Sydney Aerotropolis will become an inviting place to live, work and invest. The prospect of this new thriving economic hub in the emerging Western Parkland City will deliver new jobs, homes, infrastructure and services for people in the region.

Over the next two decades, the Western Parkland City is expected to transform – driven by the development of the Aerotropolis and Western Sydney International and connected by a new metro railway system.

Supported by a world-class transport network, a new Western Economic Corridor will develop from north to south.

By harnessing the opportunities generated by Sydney's first 24/7 international airport, the Aerotropolis will attract new and emerging industries such as advanced manufacturing, aerospace and defence, high-tech freight and logistics, and agribusiness. The Aerotropolis will help create more jobs, and a greater diversity of jobs, in Western Sydney — this means fewer residents will need to commute out of the area for work.

By being more self-contained and providing more local jobs and services for residents of the district, the Western Parkland City would help make the 30-minute city an achievable goal.



Western Sydney is home to **2 million people** with growth forecast to reach approximately **3.7 million people by 2036** – 55% of Sydney's population.

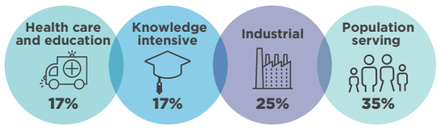
74% of residents **currently travel to work in a car.**

More than **320,000 residents** currently travel outside the Western Sydney region for work or study every day.

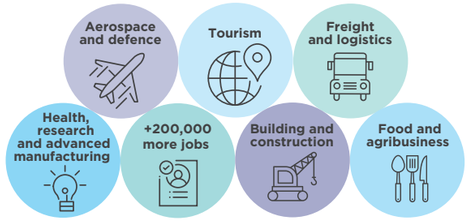
10 million annual Western Sydney International **airport travellers** are forecast by the early 2030s.

A third of residents spend an **average of 90 minutes commuting** to work.

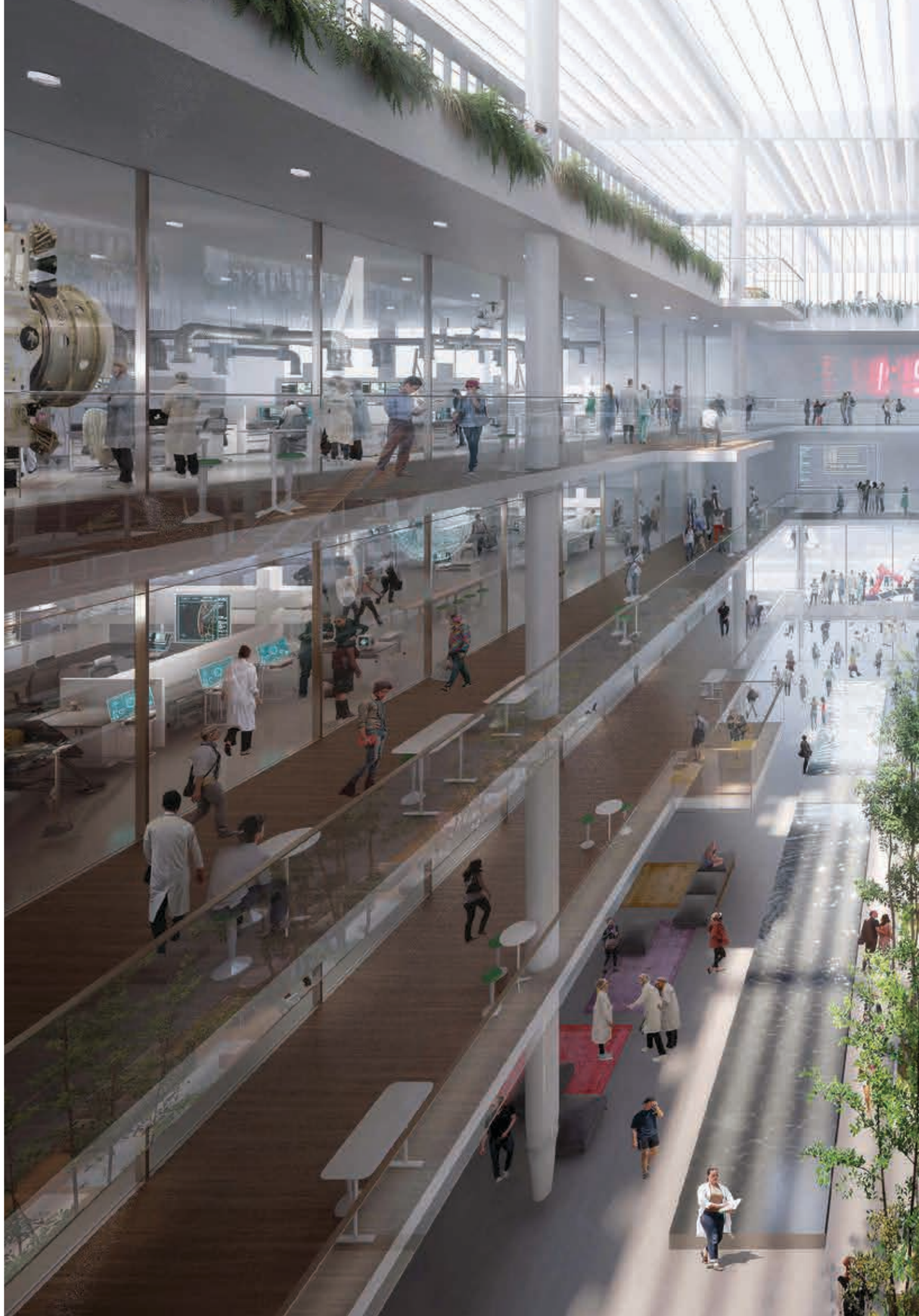
2016 Employment
in the Western Parkland City



2036 Employment
in the Western Parkland City



Western Sydney population sourced from NSW Population Projections by the NSW Department of Planning, Industry and Environment.



Infrastructure and collaboration

The Western Sydney City Deal will optimise infrastructure and business investment, employment and liveability outcomes.

Collaboration Areas at Liverpool, Greater Penrith and Campbelltown-Macarthur will address complexities and coordinate planning, governance and implementation to support growth.

Liveability

The city will emerge with the development of new neighbourhoods and centres, and with urban renewal close to existing centres. Place-making will help to design neighbourhoods with fine grain fabric and human scale. This will support healthy lifestyles and connected communities.

Productivity

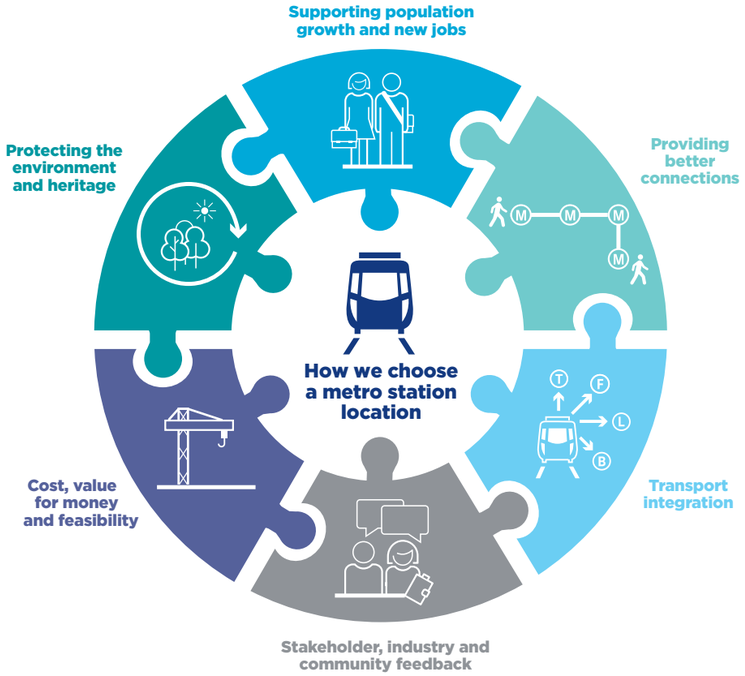
The designation of the metropolitan cluster recognises the opportunity to build on the strengths of the three established centres and deliver a 30-minute city.

The city will include expansive industrial and urban services lands to the north and east of the Western Sydney International. Supported by a freight link, these lands will provide for Greater Sydney's long-term freight, logistics and industrial needs.

Sustainability

Development along the spine of South Creek and its tributaries will re-imagine liveability and sustainability, providing new cool and green neighbourhoods and centres with generous open space in a parkland setting.

Increased tree canopy cover will provide shade and shelter for walkable neighbourhoods within easy reach of shops and services. The parkland character will be enhanced by the national parks and rural areas framing the city.



An artist's impression of the proposed CSIRO facility at the Western Sydney Aerotropolis.

Sydney Metro – Western Sydney Airport project

An artist's impressions of the Airport Terminal Station.

A new railway for Greater Western Sydney

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

A metro station at Western Sydney International Airport will open opportunities for Greater Western Sydney and connect it to the rest of the world.

More opportunities for locals with access to future employment and education hubs within the Western Parkland City.

A new metro station at St Marys, delivering a fast and efficient interchange with the existing Sydney Trains suburban rail network.

A metro station at St Marys, catalysing the revitalisation of the town centre.

A new metro station to service a future commercial and mixed-use precinct at Orchard Hills.

Next generation fully air-conditioned metro trains.

All Sydney Metro stations are fully accessible with lifts and level access between trains and platforms.

A new metro station at Western Sydney Aerotropolis – a future economic hub for Greater Western Sydney.

Delivering rail to service the future research, innovation and commercial precinct in Luddenham.

Creating well-connected centres that are easily accessible for customers using different transport modes including cycling, walking paths and vehicles.

Sydney Metro uses Opal ticketing and fares are set by the NSW Government, the same as the rest of the Sydney public transport network.

A city shaping project

The Sydney Metro – Western Sydney Airport project is a chance to build more than just railway stations. Through excellence in design and delivery, new places will be delivered which:

- respond to the community's needs
- are architecturally unique and easy to get around
- are intuitive and safe, and promote people's health and wellbeing
- are active and vibrant with a mix of uses and activities.

Through urban design principles and placemaking, Sydney Metro precincts will be more than somewhere to catch the train – they will become the centre of communities and provide for a variety of uses.

The project delivery team will work closely with communities and stakeholders on how best to integrate stations that are thriving, welcoming hubs for everyone to enjoy, with new places for people to live, work, shop and play – and public spaces designed to encourage walking, cycling and social interaction.

The stations will be vibrant places and landmarks in their own right that will support the success of the Western Parkland City.

Integrated station and precinct developments

New metro stations create opportunities to provide for community needs in consideration of the future vision, relevant planning controls and local character of each area.

An integrated station and precinct development is made up of the metro station and building(s) above and/or around the station that could deliver a range of uses like community facilities, retail and commercial office spaces, new homes and green spaces and shops and restaurants.

Opportunities for station and precinct developments are being investigated at St Marys and Orchard Hills.

Future development around the Luddenham and Aerotropolis stations are being considered through the Western Sydney Aerotropolis Plan that is being delivered by the Western Sydney Planning Partnership.

All future precinct development would be subject to separate planning approval processes and would include community and stakeholder engagement.

Planning for the future

Sydney Metro – Western Sydney Airport will help provide long-term planning and future development in the following ways:

- agreed station locations and configurations will allow effective urban development around the station precincts and effective transport integration
- the rail corridor alignment will allow for land use planning that best serves the community and minimises disruption
- the alignment will also guide the location of future transport connections.

Early confirmation of project details would allow for strategic land use planning that would:

- maximise the number of people who can access transport
- ensure a high standard of residential amenities
- facilitate access to employment for residents of Western Sydney.

The project is being designed to be fit for the future, allowing the line to be extended as the region grows.

An artist's impression of the Western Parkland City.

Why the Sydney Metro — Western Sydney Airport project is needed

Various State, regional and local policies and plans identify the need for an integrated transport solution that can respond to the needs of a growing Western Parkland City and support this growth in a sustainable manner to enhance the liveability and productivity of the area.

The project, a key commitment of the Western Sydney City Deal, would be a key component in delivering an integrated transport system for the Western Parkland City. The new metro railway would become the region's transport spine, linking residential areas with the Aerotropolis, other job hubs and the nationally significant Western Sydney International.

The project will:

- service and support the needs of the growing population in the Western Parkland City
- provide rail access to the Aerotropolis and Western Sydney International
- deliver an efficient connection to the T1 Western Line
- open access to jobs and increase potential for jobs growth in the Western Economic Corridor
- entice workers and airline passengers westwards, rebalancing Greater Sydney
- optimise land use around station precincts
- improve liveability around station precincts
- support access to urban renewal and new land release areas.

Project aims

- Improve Western Sydney's self-containment and help grow the regional economy
- Facilitate sustainable, long-term development
- Save future investment costs associated with retrofitting mass transit into a developed Western Parkland City
- Provide a structural framework for the development of future transport, education, health and social infrastructure in the region
- Unlock economic development and employment generation activity around St Marys, the Aerotropolis and Western Sydney International
- Provide opportunities for placemaking at the stations, such as public domain improvements, and act as a catalyst for future development in the station precincts
- Provide a sustainable, low carbon travel mode that would reduce private vehicle use and road congestion
- Improve access to air travel for people living in Western Sydney
- Support the successful development of Western Sydney International.

An artist's impression of CSIRO facility.

Key objectives for Sydney Metro – Western Sydney Airport

1	Safe and customer focused transport service	Deliver easy, safe and accessible transport services that meet the needs of our customers
2	Successful airport and Western Parkland City	Support the long-term success of Western Sydney International and the Western Parkland City by optimising land use and development, transport and green infrastructure
3	Attracting knowledge and internationally competitive jobs	Support Western Sydney's International competitiveness and productivity by supporting employment precincts and attracting knowledge-intensive jobs
4	Realising the 30-minute city	Connect Western Sydney communities with an integrated transport network to maximise the 30-minute city catchment of the Western Parkland City and adjoining cities and regions
5	Great places with an increased housing supply	Facilitate the development of the Western Parkland City to create liveable, vibrant and environmentally sustainable precincts and places with a diverse mix of new dwellings
6	Delivering a value for money solution	Ensure a value for money, sustainable and deliverable solution to support long-term growth of the Western Parkland City

Supporting a 30-minute city

The Greater Sydney Commission's 'Towards our Greater Sydney 2056' outlines how the city is planning for future decades. Created on the 30-minute cities concept, the NSW Government is investing in significant new infrastructure projects designed to deliver a renewed urban environment for Sydney that changes the patterns of where people live and work, how they enjoy their spare time and how they travel. New metro rail would help optimise land use and development, supporting precincts and places at station locations and helping to stimulate economic activity and innovation through the co-location of industries.

Western Sydney's rail future

The NSW Government's Future Transport 2056 strategy supports the 30-minute cities concept and builds on the 2012 NSW Long Term Transport Master Plan, which has guided unprecedented investments in transport services and infrastructure across NSW. The Sydney Metro – Western Sydney Airport project is a key part of delivering an integrated transport system for the Western Parkland City, as envisaged in Future Transport 2056. The project is a crucial link that will foster the development of future precincts in the Western Parkland City.

The project will provide a connection to the T1 Western Line at St Marys and two new stations within Western Sydney International Airport. Future key precincts at Orchard Hills and Luddenham will be serviced by two new stations, and a new station will service the commercial heart of Western Sydney Aerotropolis. The Future Transport 2056 strategy can be found at: **future.transport.nsw.gov.au**.


ST MARYS
Express Store

About the Environmental Impact Statement

An artist's impression of the new St Marys Station.

The Environmental Impact Statement – Public Exhibition

This document is a summary of the Sydney Metro – Western Sydney Airport project Environmental Impact Statement (the EIS).

Sydney Metro is making the EIS and supporting materials as easy to access as possible.

Visit **planningportal.nsw.gov.au/major-projects** to view the full EIS.

Visit **sydneymetro.info** to learn more about Sydney Metro and sign up for email alerts.

Visit **sydneymetro.info/wsa** to view an interactive map of the project, find out what you can expect in your area and learn from expert members of the project team.

Call us on **1800 717 703** to talk to one of our dedicated place managers.

Email your queries to **sydneymetrowsa@transport.nsw.gov.au** and we'll get back to you.

The Sydney Metro team, including our team of project experts, is available to provide you with information about Sydney Metro, and to help you find out more about the EIS. If you are having difficulty accessing any of the information available please contact us and we'll make arrangements to assist you.

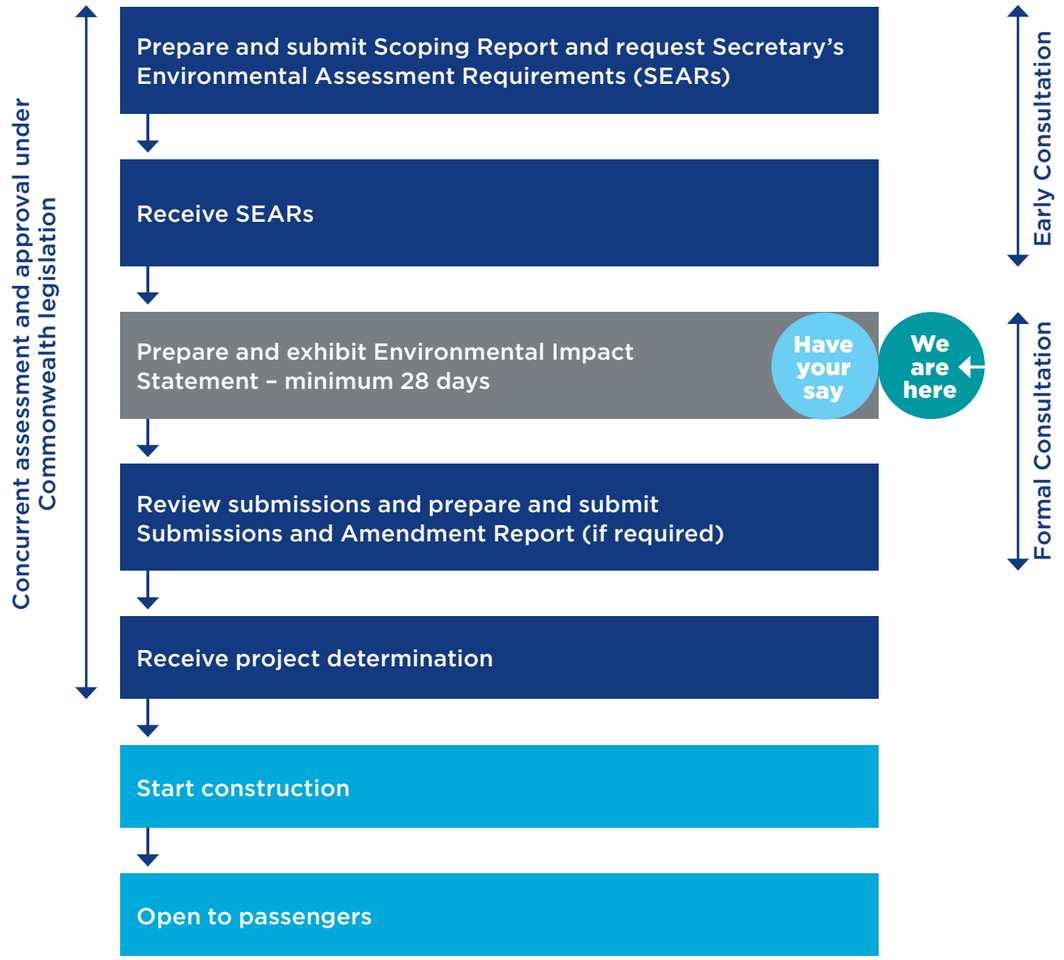
The project will be assessed under three principal statutory schemes:

- *NSW Environmental Planning and Assessment Act 1979 (EP&A Act)* for works outside the boundary of Western Sydney International (off-airport)
- *Commonwealth Airports Act 1996 (Airports Act)* for works located within the boundary of Western Sydney International (on-airport)
- *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*:
  - for off-airport works north of Western Sydney International, assessment and approval is required to address impacts on listed threatened species and communities and Commonwealth land
  - for off-airport works south of Western Sydney International, an existing strategic assessment means no further assessment or approval of impacts of the project on matters of national environmental significance and Commonwealth land is required.

The EIS is presented in three parts — the main EIS, the Appendices and the Technical Papers that form the basis of the information included in the main EIS.

The EIS provides the assessment required under both NSW and Commonwealth legislation in a single document that addresses both the off-airport and on-airport components of the project.

NSW planning process for Sydney Metro – Western Sydney Airport



An aerial view of St Marys.

This document is intended to be an overview of the EIS, which assesses the operation and construction of the project for the following environmental issues:

- transport
- noise and vibration
- biodiversity
- non–Aboriginal heritage
- Aboriginal heritage
- flooding, hydrology and water quality
- groundwater and geology
- soils and contamination
- sustainability, climate change and greenhouse gas
- resource management
- land use and property
- landscape and visual
- social and economic
- air quality
- hazard and risk
- cumulative impacts.

The primary focus of the EIS is to identify strategies to avoid, mitigate and manage potential impacts to the environment and the community.

The project team would continue to work with local communities, businesses and stakeholders to help determine appropriate mitigation measures that could be adopted where feasible and reasonable to further minimise impacts.

The EIS is on public exhibition in accordance with *NSW Environmental Planning and Assessment Act 1979* until **2 December 2020**. During the exhibition period, anyone may make a submission in relation to the off-airport component of the project in any language, and these submissions will be considered by the Department of Planning, Industry and Environment in its assessment of the project.

The Department of Planning, Industry and Environment will provide Sydney Metro with a copy of all submissions received during the exhibition period.

Sydney Metro will review all the submissions and prepare a Submissions Report to respond to issues raised.

If changes are required as a result of the issues raised, an Amendment Report or Preferred Infrastructure Report may also be prepared. Approval from the Minister for Planning and Public Spaces is required before Sydney Metro can proceed with the project.

Any persons wishing to make a submission in relation to the off-airport components of the project in accordance with the *Commonwealth Environment Protection and Biodiversity Conservations Act 1999* or the on-airport components of the project in accordance with the *Commonwealth Airports Act 1996*, can do so via the following email address **sydneymetrosubmissions@transport.nsw.gov.au**. For more information on how to make a submission, see page 119. Submissions to this Commonwealth processes close on **17 November 2020**.

Traffic and transport

Keeping local areas moving

The road network will be kept moving during construction by adopting site-specific traffic management plans to minimise temporary impacts. This may include adjusting haulage routes and timing trucks to minimise movements during peak times and school drop-off and pick-up. Agreed traffic management plans would be co-ordinated in consultation with relevant road authorities.

Measuring traffic and transport

An assessment was carried out for all sites between St Marys and the Aerotropolis site in Bringelly to measure existing traffic levels with the addition of proposed construction traffic and to identify the potential effects that traffic changes – like temporary road closures and detours – could have on the traffic network.
The assessment considered the existing transport network including bus, pedestrian and cycle routes.

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

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

The road network and parking

The largest potential impacts on the transport network during construction would be focused around the urban area of St Marys. The project would require the temporary partial closure of Station Street and relocation of the existing bus stops, layover and routing of buses interchanging at St Marys Station. This could result in minor delays and require commuters to walk further to reach their destinations.

Access to the existing St Marys Station on the T1 Western Line would be maintained throughout construction. A new station plaza on the northern side of St Marys Station would require the removal of the existing at-grade commuter car park on Harris Street. The adjacent multilevel commuter car park on Harris Street is planned to be extended to include two additional levels of parking before the at-grade commuter car park is removed, subject to separate approval.

The Veness Place (Station Street) car park immediately south of Station Street, and other on-street and off-street parking would be removed, however there is capacity at other existing parking locations within 400 metres of the affected area.

Traffic may be temporarily disrupted on roads surrounding the project due to the presence of construction vehicles and road closures.

Pedestrians and cyclists

Pedestrian and cycle routes would be largely unchanged and changes would generally be restricted to temporary closures of footpaths near construction sites at St Marys Station. Alternative arrangements would be made during construction, such as diversions on to footpaths to maintain access.

The design of the station precincts will include footpaths and cycling facilities to encourage walking and cycling by commuters.

Traffic and pedestrian safety

Safety is our number one priority at Sydney Metro and appropriate controls would be established to ensure the safety of local communities. Where vehicles would be required to cross footpaths to access construction sites, manual supervision, physical barriers or temporary traffic lights would be used as required.

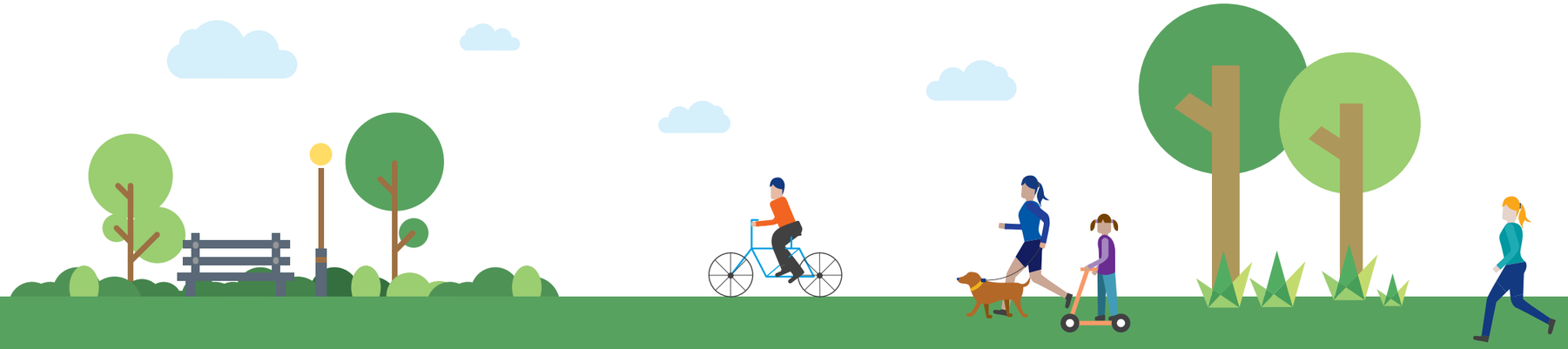
Haulage routes

Designated haulage routes would be used by trucks to transport materials to and from construction sites.

The proposed routes have been designed in consultation with relevant road authorities using the following principles:

- minimising the use of local and residential streets and maximising the use of arterial roads
- minimising potential disruption for pedestrians, cyclists and other road users.

Cumulative temporary delays may be experienced where the same haul routes are concurrently used for the construction of the future M12 Motorway and Western Sydney International.



The Kingsway.

Noise and vibration

Managing noise and vibration

Understanding potential noise and vibration levels means we can plan to use measures aimed at reducing temporary impacts on the community during construction. Common mitigation measures include:

- providing scheduled respite periods during which high noise or vibration activities are not undertaken
- use of acoustic sheds where construction is planned seven days a week or 24 hours a day
- adopting alternative construction methodology where possible.

Sydney Metro plans to manage temporary vibration impacts by ensuring vibration levels from excavation and tunnelling are within limits identified as appropriate for properties and structures above the tunnel alignment and around stations and construction sites. We do this by conducting a detailed and ongoing assessment of the ground conditions and engaging structural engineers and heritage specialists as required to assess buildings.

Potential noise and vibration will be minimised by design through the use of tunnels between St Marys and Orchard Hills and south of Western Sydney International to Aerotropolis.

People are generally more sensitive to vibration, and it is possible that people who live or work near construction sites, or are above the tunnel alignment, would feel vibration when vibration-intensive equipment is in use during construction, even when levels are within appropriate limits. To manage this impact we would work with local communities to provide suitable respite periods.

The impact of vibration on properties, including heritage buildings, would be assessed before construction. There are no sensitive scientific or medical facilities that are likely to be affected by vibration in the area. Vibration during construction has the potential to affect other utilities including the Warragamba to Prospect water supply pipelines. The construction contractor would work with infrastructure owners to assess vibration impacts and mitigation options.

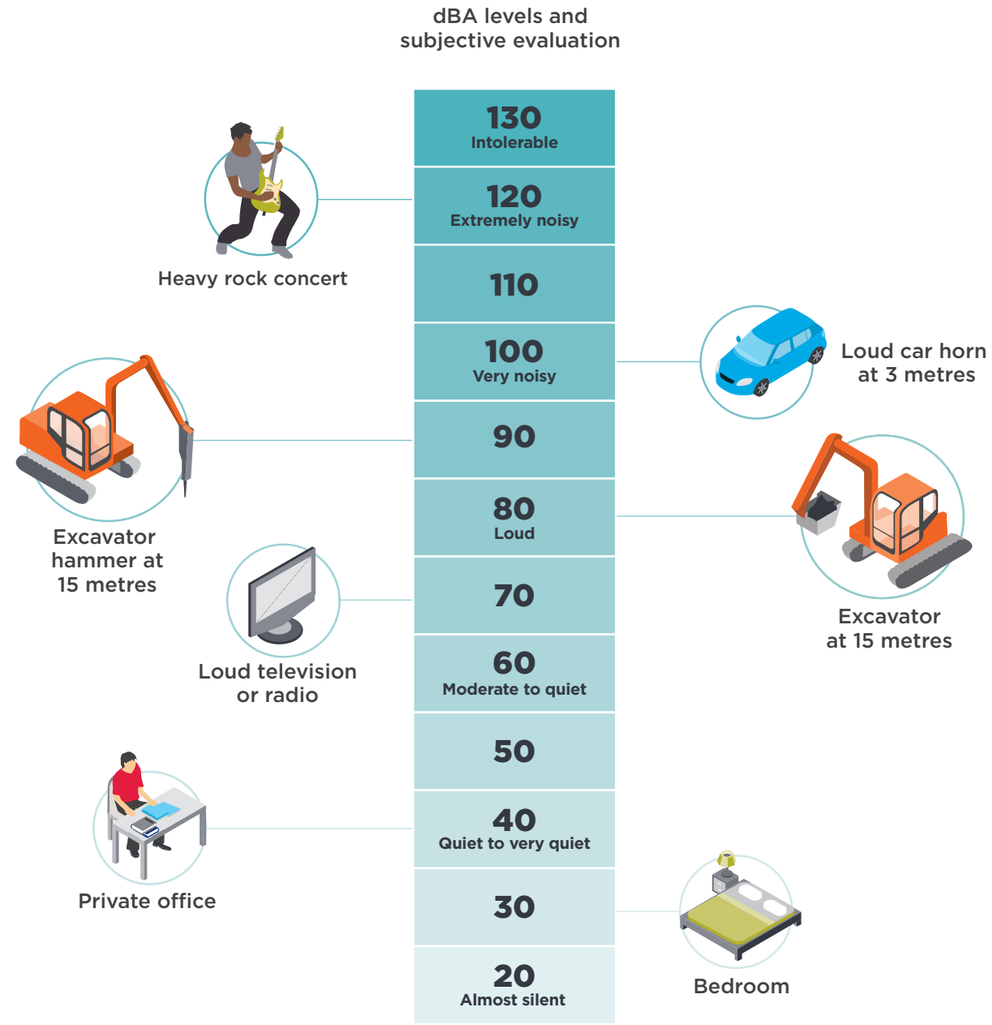
Assessing noise and vibration

Potential temporary noise and vibration impacts were assessed for a number of proposed construction activities along the tunnel alignment and at each site between St Marys and Bringelly.

Areas close to construction sites (such as at St Marys, Claremont Meadows and Orchard Hills) or where the existing background noise levels are low (such as in the semi-rural environments of Luddenham and Bringelly) are likely to experience temporary high noise levels during construction. The highest noise levels are likely where equipment such as concrete saws, dozers and hydraulic hammers are in use.

During construction, there may also be minor increases to traffic noise near Kent Road, Orchard Hills and Badgerys Creek Road, Bringelly. Minor traffic noise impacts are also predicted during operation around Orchard Hills Station, Luddenham Station and Aerotropolis Station.

Further planned urban growth associated with the Western Sydney Aerotropolis and broader Western Parkland City is likely to lead to increased noise from road and rail transport, aircraft and property development.



Note:

- A change of 1 dBA or 2 dBA in the level of a sound is difficult for most people to detect.
- A 3–5 dBA change corresponds to a small but noticeable change in loudness.
- A 10 dBA change corresponds to an approximate doubling or halving in loudness.

Enabling works

The most significant noise and vibration impacts are generally predicted to occur during enabling works, piling and initial excavation and finishing works. Enabling works such as roadworks and power supply works could occur throughout the day and night. Other works such as piling and excavation would generally occur during daytime hours, unless acoustic measures are taken at the site to minimise impacts.

Excavation of stations or shafts

Excavation works to dig the stations or shafts would be undertaken once construction sites have been prepared. Excavation works would require the use of some noise and vibration-intensive equipment like rock hammers. To minimise impacts, works would generally occur during the day unless appropriate measures, like a sealed acoustic shed or noise barriers, are installed over or around the worksite activity to dampen noise during the evening or night.

Tunnelling

Tunnel boring machines (TBMs) need to operate continuously so tunnelling works would occur 24 hours a day, seven days a week and could be a temporary source of ground-borne noise and vibration for a few days as they pass by underground. Movement of the TBMs may be more noticeable at night when other noise and movement levels are lower. These works are predicted to be more noticeable near stations and sites where the tunnel would generally be shallower than elsewhere. The tunnels would typically be between 25 and 40 metres deep but some sections of the tunnels could be as shallow as 15 metres below ground.

The main potential sources of construction ground-borne noise and vibration are associated with the use of TBMs during tunnelling. Ground-borne noise impacts are generally expected to be minor. However, areas above the St Marys to Orchard Hills tunnels and above the Western Sydney International to Bringelly tunnels could be temporarily moderate to high.

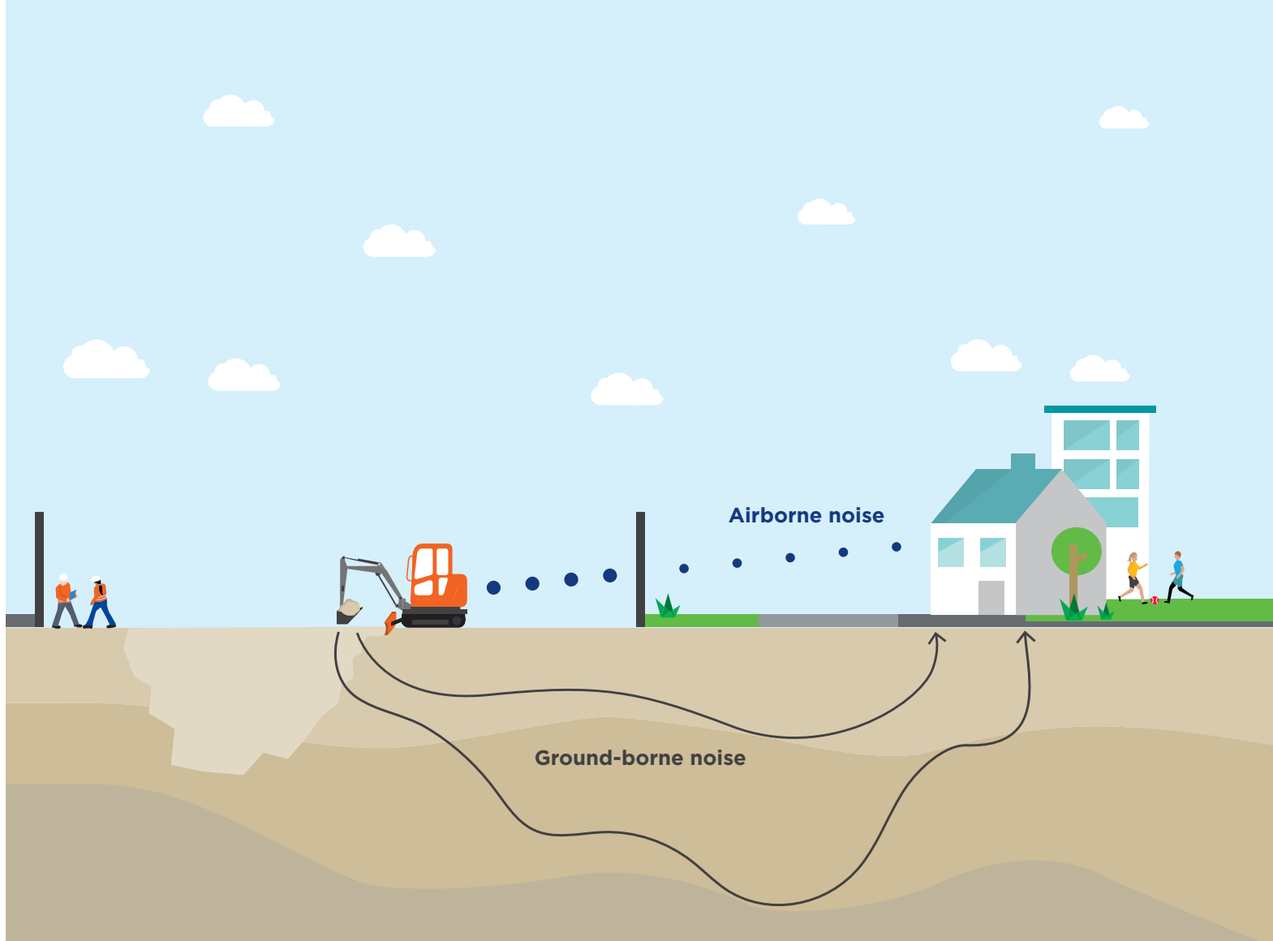
The duration of ground-borne noise from TBMs is likely to vary from up to one night above the deepest parts of tunnels to up to four nights above the shallowest parts.

Mitigation in action

Sydney Metro is committed to thinking outside the box in managing construction impacts and implementing unique and tailored mitigation measures to meet the needs of the community.

Sealed acoustic sheds

Sealed acoustic sheds may be installed over noisy construction activities where the site allows and where works are anticipated to be required in the evening or night. Sealed acoustic sheds have been used on previous Sydney Metro projects to successfully dampen noise levels experienced by communities close to construction sites. Sealed acoustic sheds would generally be constructed as early as possible in the construction program to provide maximum benefit throughout the project. Some activities would not be undertaken inside the acoustic sheds – like loading and unloading heavy vehicles and operating ventilation systems and water treatment facilities. There would also be times when noise could increase temporarily if acoustic shed doors need to be opened to let vehicles or machinery inside.



How does airborne and ground-borne noise differ?

Airborne noise travels through the air and can be dampened by physical structures like buildings, hoarding and sheds.

Ground-borne noise travels through the ground before reaching the surface and its pathway is influenced by the type of rock, sediment and water in the ground. Ground-borne noise can vary depending on the rock conditions and the types of buildings above.

Heritage

Sydney Metro aims to minimise the impact on heritage sites and to protect items of heritage significance that are affected by development.

A heritage assessment was conducted as part of the EIS. This included consultation with heritage specialists to identify local and State heritage-listed items that could be affected by the project. The assessment also considered the likelihood of uncovering Aboriginal heritage artefacts during construction.

Management and mitigation measures would be used where impacts to heritage items have been identified. This may include conservation and re-use of heritage fabric, and archiving and recording the item for future generations.

Non-Aboriginal heritage

The project is likely to have a moderate impact on non-Aboriginal heritage sites including the State-listed St Marys Railway Station and the locally listed McGarvie-Smith Farm. Significant impacts have been avoided but there will be changes to the visual setting of these sites.

The proposed St Marys Station has been designed so there is no change to elements of exceptional heritage significance such as the Goods Shed and the Platform 3/4 building.

There is moderate potential for archaeological remains of local heritage significance to be discovered at St Marys Station, which opened in 1862. An Archaeological Research Design will be prepared for the project to manage any items of local heritage significance.

Listed and potential heritage items within the Western Sydney International site will be removed or managed as part of development plans for the airport.

Minor construction vibration and/or settlement could affect St Marys Railway Station and the Warragamba Supply Scheme.

Aboriginal heritage

Surface and subsurface Aboriginal artefacts have been identified across the study area, and generally near water sources and areas that have been subject to low levels of past disturbance. Sydney Metro plans to avoid direct impacts on known Aboriginal sites and minimise the disturbance of areas with high Aboriginal archaeological potential by using bridges and viaduct structures over waterways.

Further consultation and field surveys would be undertaken and test excavations will be carried out at sites with higher Aboriginal archaeological potential.

Where Aboriginal remains are identified, archaeological results would be used for Aboriginal heritage interpretation in future stages, in consultation with Registered Aboriginal Parties.

Excavation on the Barangaroo site.

Biophysical setting

Biodiversity

The project has been designed to avoid biodiversity impacts, where possible, by being located within tunnels and providing bridges and viaducts over key riparian and vegetated areas. These structures have been designed to minimise the impact on fauna movement and habitats.

All biodiversity impacts to threatened flora, fauna and ecological communities would be offset in accordance with the Biodiversity Assessment Method.

Impacts to biodiversity from the project come from:

- impact upon around 33 hectares of native vegetation off-airport and 27 hectares on-airport
- clearing of threatened ecological communities, including the Cumberland Plain Woodland
- removal of threatened species or disturbance of habitats potential impacts on groundwater-dependent ecosystems resulting from changes to groundwater level or flow during construction and operation.

Sustainability and climate change

When operational, estimated greenhouse emissions from the project would be around 45,450 tonnes of carbon dioxide equivalent per year. As part of our commitment to reduce energy use and addressing climate change, Sydney Metro aims to:

- offset 100 per cent of greenhouse gas emissions from electricity consumption during operation
- offset 25 per cent of the greenhouse gas emissions during construction
- source sustainable materials where feasible
- provision for electric vehicle charging points in at least 20 per cent of all parking spots off-airport
- establish energy efficiency and renewable energy targets
- source at least 10 per cent of the low voltage electricity required at above ground stations, service facilities and stabling and maintenance facility from onsite renewable energy sources.

For Sydney Metro, sustainability means building public transport for current and future generations that optimises environmental and sustainability outcomes, the quality of the future rail service and the cost effectiveness of its delivery. Sustainability principles have been incorporated throughout the design development process.
A project-specific sustainability plan would set targets and identify key activities to meet them.

Flooding, hydrology and water quality

The project would traverse either under or over a number of waterways, including South Creek, Blaxland Creek, Badgerys Creek and Cosgrove Creek. The existing water quality for these creeks is generally poor and generally does not meet the Australian Water Quality Guidelines for Fresh and Marine Waters. Potential impacts on water quality would be managed through mitigation measures and erosion and sediment controls.

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

Further investigation and modelling would be carried out and steps taken to manage any flood events.

Groundwater and geology

Sydney Metro tunnels, cross-passages and station structures would be lined with concrete and waterproof membranes to prevent the inflow of groundwater.

However, groundwater drawdown may occur during construction at the underground cut and cover station locations with drained excavations, such as at St Marys, Airport Terminal and Aerotropolis.

These excavations could allow groundwater ingress to occur, which would result in a lowering of the groundwater levels in the adjacent soils and bedrock. Water levels at locations drained during construction are expected to recover during the operational phase.

Groundwater would be captured and treated at water treatment plants during construction and operation in order to meet the water quality criteria before being either recycled or discharged.

Soils and contamination

There is a risk of excavation of contaminated soil or interaction with contaminated groundwater during construction. Sampling and analysis of areas would be undertaken in areas where a risk has been identified to determine if further remediation is required.

Protocols would be put in place to limit the risk of contamination, prevent spill and manage spoil to avoid impacts on human health and the environment. Other mitigation measures would be used to manage soil erosion and soil salinity.

Impacts on land and property

Local and character

The new stations would be designed to reinforce their role as new vibrant spaces and destinations within the communities that they serve. The stations would provide a catalyst for the regeneration of the surrounding neighbourhoods and become the centres of new developments that drive the growth of Greater Western Sydney.

Landscape

The project would have moderate landscape and visual impacts during construction primarily due to the removal of trees and areas of rural character between Orchard Hills and Western Sydney International. In some portions of the rural landscape, part of the viaduct development would be clearly visible from up to 2.5-kilometres away. The elevated Luddenham Station and the underground station surface buildings would be designed to complement the surrounding landscape. In the long term, the visible portions of the project would be absorbed into the surrounding landscape with the development of the Western Parkland City and Western Sydney Aerotropolis.

Sydney Metro aims to contribute to the Greater Sydney Commission's tree canopy cover, including by using native and climate resilient species in landscaping.

Property acquisition

The design of the project has sought to minimise the need to acquire properties, in particular north of the M4 Western Motorway and south of Western Sydney International, where the project would be located in a tunnel. Property acquisition on NSW land would be managed in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. The construction of the project requires private property acquisition and temporary leasing of public land. This includes around 28 full property acquisitions, 33 partial property acquisitions and 11 temporary leases. Where possible, existing government owned land is being used to avoid the need for private property acquisition.

Land severance

As part of construction, some areas in the off-airport construction corridor between Orchard Hills and Elizabeth Drive could be physically divided by fencing and hoarding. Access to properties or farm infrastructure, such as fences or dams, may be temporarily disrupted during construction. Property owners who may be affected will be consulted prior to these works occurring.

Queen Street, St Marys.

Cumulative impacts

Greater Western Sydney is growing and will be the focus of major developments in coming years. Given the potential overlap of the construction of large infrastructure projects, such as the future M12 Motorway and the development of Western Sydney International, residents may experience cumulative impacts in the area around these projects. Likely cumulative impacts, such as the combined traffic and noise impacts from the projects, have been considered in the EIS. However, the cumulative impacts could vary considerably at different times and locations and are thus difficult to quantify at this stage of the assessment process.

Sydney Metro will work closely with the proponents of neighbouring projects, local councils and stakeholders, such as the Western Parkland City Authority, Transport for NSW and Western Sydney Airport, to coordinate construction activities and minimise impacts on the community.

Overall positive impact

Identified negative impacts need to be considered within the context of the entire project and the significant transport and development benefits it will bring to the area. The project will help drive sustainable and successful growth of the Western Parkland City for generations to come. It will also create a high quality public transport connection to Western Sydney International, which will be crucial to the success of Sydney's newest airport.

Further information about impacts of the project are identified in Chapters 9 to 24 of the EIS.

Environmental management and mitigation

Specific measures to manage and mitigate potential environmental impacts have been identified as part of the EIS. In addition to these, a number of plans and strategies have been developed to manage potential site impacts. These include the:

- Construction Environmental Management Framework – detailing the approach to environmental management and monitoring during construction
- Construction Noise and Vibration Standard – detailing how construction noise and vibration would be managed across Sydney Metro — Western Sydney Airport
- Construction Traffic Management Framework – providing an overall strategy and approach for construction traffic management, including coordination across projects and NSW Government agencies
- Overarching Community Communications Strategy — detailing communication plans to ensure members of the community understand the project and impacts.

Earlier versions of these documents have been successfully implemented on Sydney Metro Northwest and Sydney Metro City & Southwest.

For the construction and operation of the project, an Airport and Rail Integration Deed will be established between Sydney Metro, Transport for NSW, Western Sydney Airport and the Commonwealth, in relation to the on-airport section of the project. Under the Deed, Sydney Metro would be responsible for the ongoing construction and operational environmental management of the project (including the on-airport component of the project), constructing the project under licence and operating it under an easement. An operational environmental management plan or system would be developed for the whole project and, for the on-airport components, would be consistent with the Airport and Rail Integration Deed.

Building the Sydney Metro – Western Sydney Airport project

Track laying inside one of Sydney's metro railway tunnels.

Tunnelling and excavation

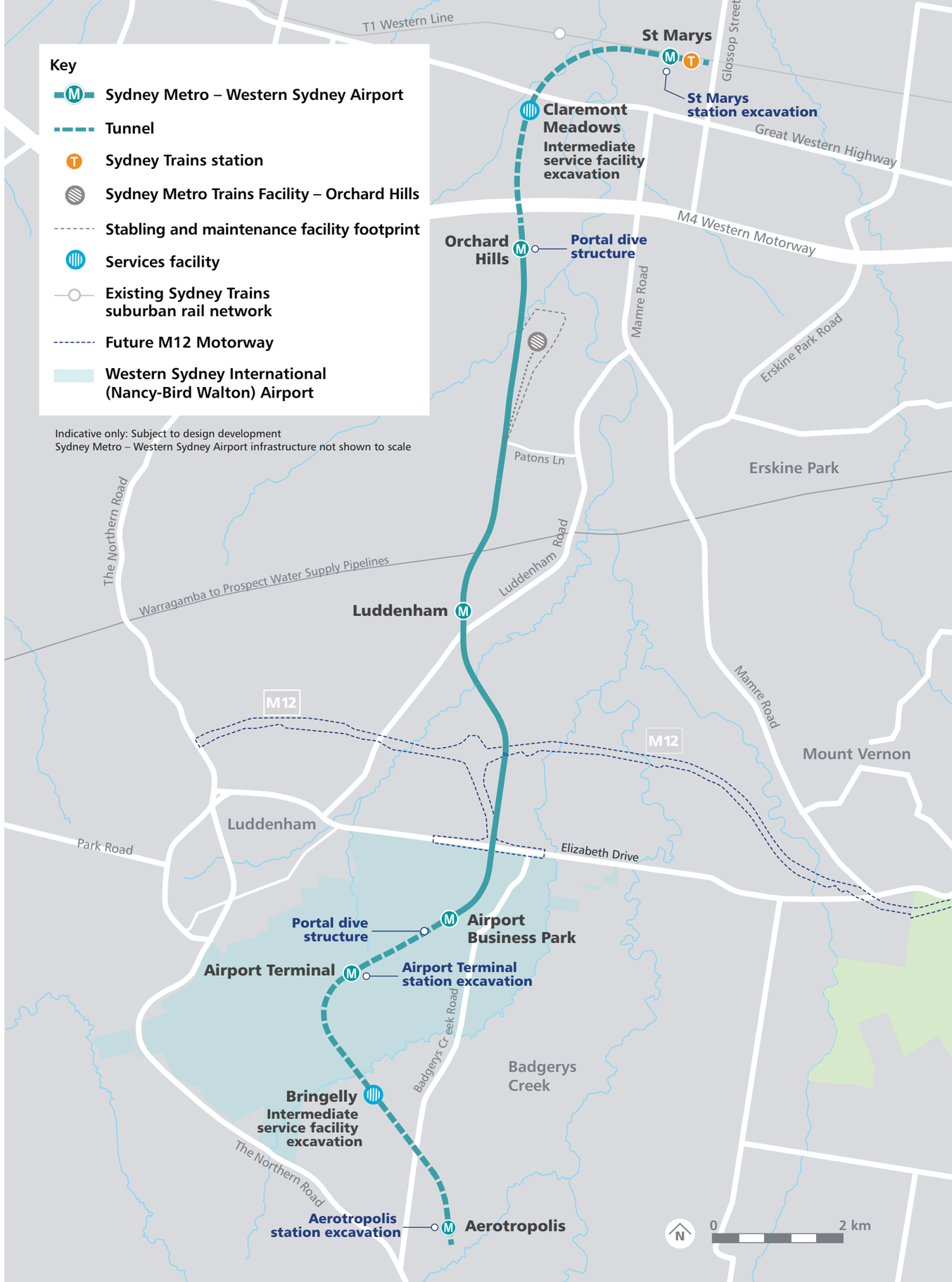
Sydney Metro – Western Sydney Airport would include two sections of twin rail tunnels. Generally, the tunnels would run parallel to each other.

St Marys to Orchard Hills tunnel section

- Tunnels about 4.3 kilometres long, running between the underground station at St Marys and a new tunnel portal around 450 metres south of the M4 Western Motorway at Orchard Hills
- The tunnels would be between 15 and 35 metres below ground.

Western Sydney International to Bringelly tunnel section

- Tunnels about 6.3 kilometres long, running between a tunnel portal about 400 metres southwest of Airport Business Park Station and Aerotropolis Station
- About 3.3 kilometres of the tunnel section is on-airport and about 3 kilometres off-airport
- The tunnels would be between 12 and 30 metres below ground.



Building the tunnels

Four tunnel boring machines (TBMs) would be required for the tunnelling – two for each section.

St Marys to Orchard Hills

1. Launch two TBMs from the tunnel portal site at Orchard Hills and drive north, under the M4 Western Motorway to the Claremont Meadows services facility
2. The TBMs to receive maintenance at the Claremont Meadows services facility, if required, before being relaunched towards St Marys
3. Disassemble the TBMs and retrieve from a temporary shaft excavated to the west of the proposed station box at St Marys.

Western Sydney International to Bringelly

1. Launch two TBMs from the Western Sydney International tunnel portal construction site and drive southwest towards the Airport Terminal construction site
2. The TBMs to receive maintenance at the Airport Terminal station box before being relaunched to the southeast towards the Bringelly services facility
3. Relocate TBM support equipment including grout plants and ventilation fans from the Western Sydney International tunnel portal construction site to the Airport Terminal construction site
4. The TBMs to receive maintenance at the Bringelly services facility before being relaunched southeast towards the Aerotropolis construction site
5. The TBMs to be disassembled and retrieved from a crossover box excavated at the Aerotropolis construction site to the north of the proposed station box.

The tunnelling and excavation method would be guided by ground conditions likely to be encountered during construction, the project design and program.

Proposed tunnel excavation methods, to be confirmed during design development and construction planning, include:

- bored tunnels for the St Marys to Orchard Hills tunnel and the Western Sydney International to Bringelly tunnel
- other techniques including the use of roadheaders or excavators to excavate non-standard sections of tunnels including cross-passages and tunnel stubs at both St Marys and Aerotropolis to support possible future extensions.

A worker inspects a TBM cutter head after it was retrieved at Barangaroo.

Station excavations

Sydney Metro – Western Sydney Airport stations would be based on one of three methodologies — cut-and-cover, in-cutting, surface or viaduct (elevated).

The design of each station is chosen based on the unique conditions of each site, including the landscape, track alignment and other nearby infrastructure.

Cut-and-cover stations
St Marys
Airport Terminal
Aerotropolis

In-cutting or surface stations
Orchard Hills
Airport Business Park

Viaduct (elevated) station
Luddenham

Different types of metro railway stations

Cut-and-cover station

St Marys
Airport Terminal
Aerotropolis

Excavation equipment is used to dig a large trench or rectangular hole in the ground, which is then covered to provide an underground station. Once the underground site is covered, other activities can resume on the surface as construction continues below.

In-cutting and surface station

Orchard Hills
Airport Business Park

An in-cutting station is located below ground level in an excavated trench or rectangular hole which remains open to the sky. A surface station is also open to the sky, in a shallow cutting, with a pedestrian bridge access over the railway to the platform.

Viaduct (elevated) station

Luddenham

This type of station is constructed as a bridge-like raised structure with platforms located above ground level. Elevated stations allow for easier crossings underneath the viaduct (elevated) rail alignment.

An artist's impression of Airport Terminal.


G2
Next train:
Following Train
NOW
4 min

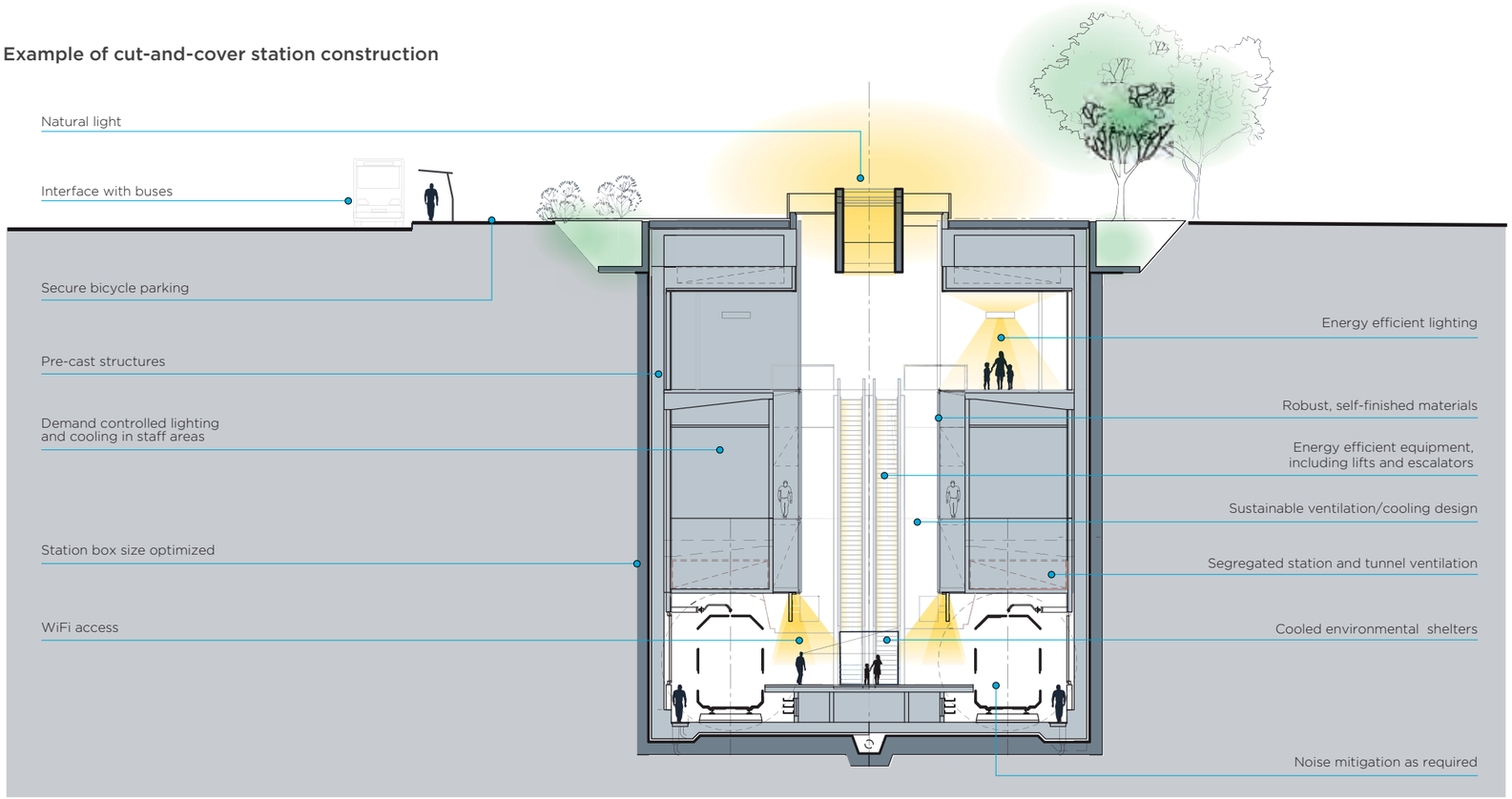
Cut-and-cover station construction

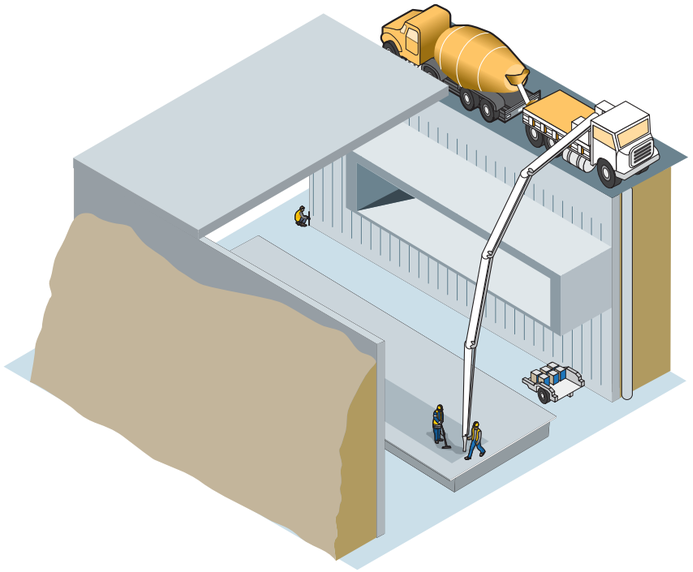
St Marys Station, Airport Terminal Station and Aerotropolis Station.

Building a cut-and-cover station includes:

- excavating the station from the surface, using pile walls to support the surrounding soil and rock
- progressing construction down to the base slab, installing intermediate temporary horizontal braces, rock anchors and shoring as required
- building the base slab
- the permanent structure is then built up from the bottom of the excavation, removing temporary horizontal braces as the work progresses upwards
- installing the roof slab, leaving only entry and exit points, ventilation and equipment access points.

Example of cut-and-cover station construction

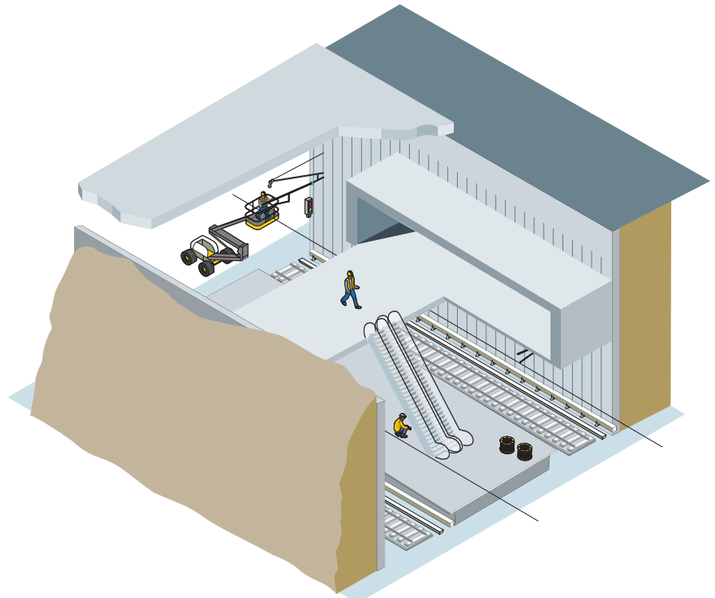




1 Structure

Underground station work involves:

- platforms
- vertical supports
- intermediate floors
- roof slabs.



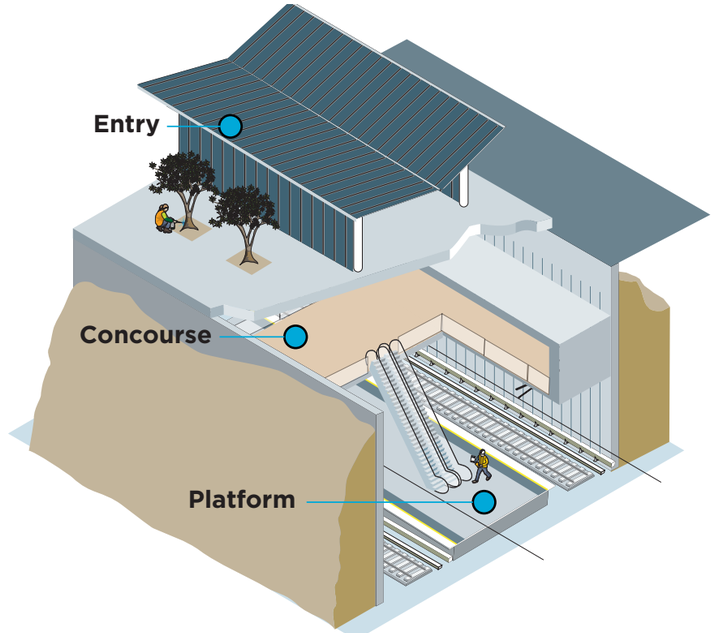
2 Fit-out

Mechanical and electrical work on:

- rail systems
- station systems such as ventilation fans.

Initial fit-out takes place at the same time as structural works using openings left in the floors and roof.

Final fit-out follows structural work and is at the same time as architectural fit-out.



3 Finishing touches

Architectural fit-out applies finishing touches including glazing, wall and ceiling cladding, painting and floor finishes.

In-cutting and surface station construction

Orchard Hills Station (in-cutting)
Airport Business Park (surface station)

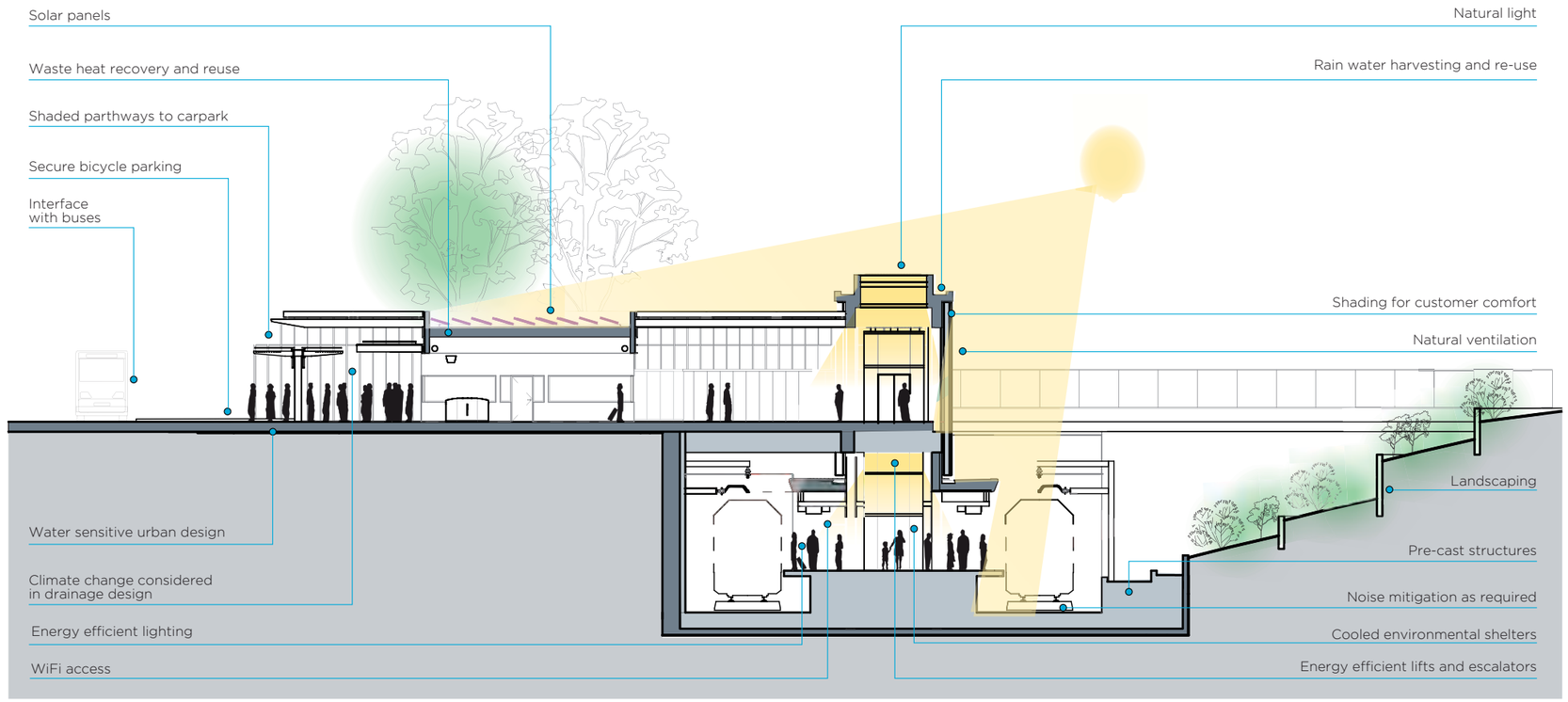
Building an in-cutting or surface station includes:

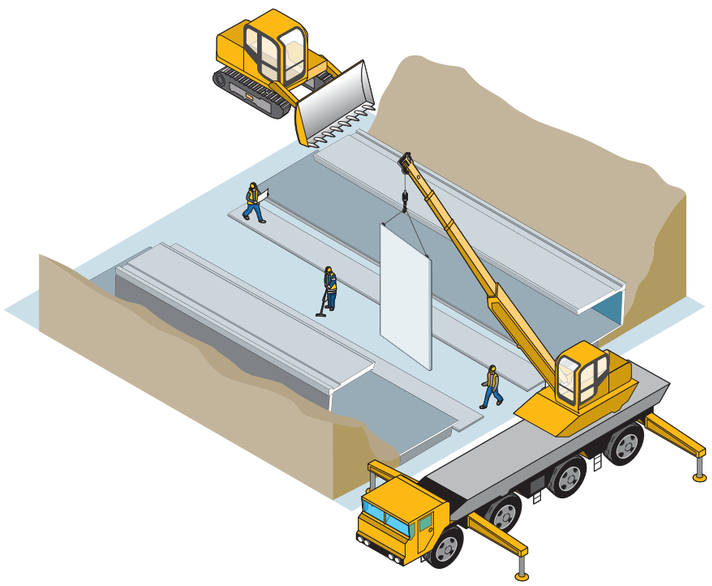
- minor surface excavation to form the station near the surface, using low level retaining walls to support the surrounding surface area
- build the base slab, platform structure and service building
- install the roof structure and equipment access points
- for a surface station, the pedestrian bridge structure is then built over the space retained for a future station providing the customer entry and exit points.

Platform canopies, emergency stairs and framework for elevators are pre-fabricated and assembled on site at ground level and then moved into place by cranes.

Station buildings are built at the same time as station construction.

Example of in-cutting station construction

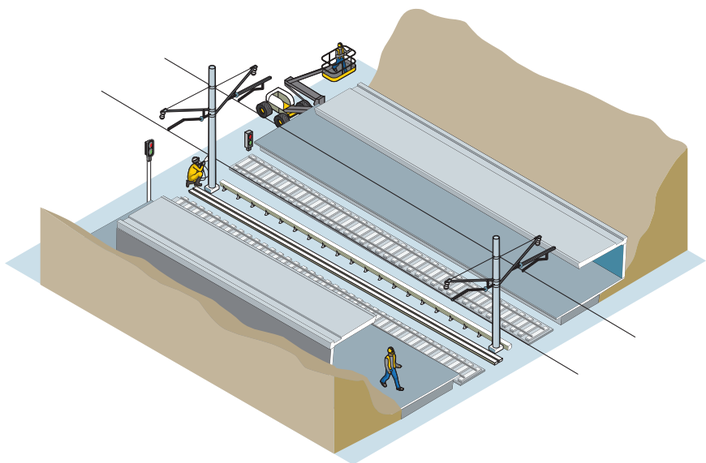




1 Structure

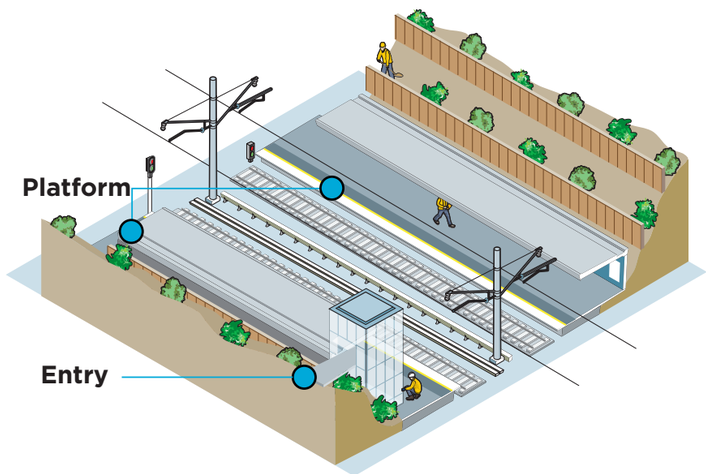
Construction includes:

- support columns and foundations for elevators and station buildings etc
- the platform and canopy
- lifts, escalators and pedestrian access
- emergency stairs
- buildings.



2 Fit-out

Mechanical and electrical fit-out includes rail systems and services for station operations. Fit-out of the stations is similar to the elevated stations.



3 Finishing touches

Architectural fit-out follows structural work and involves final finishing touches, including glazing, wall and ceiling cladding, painting and floor finishes.

Elevated station construction

Luddenham Station

Building a viaduct station includes:

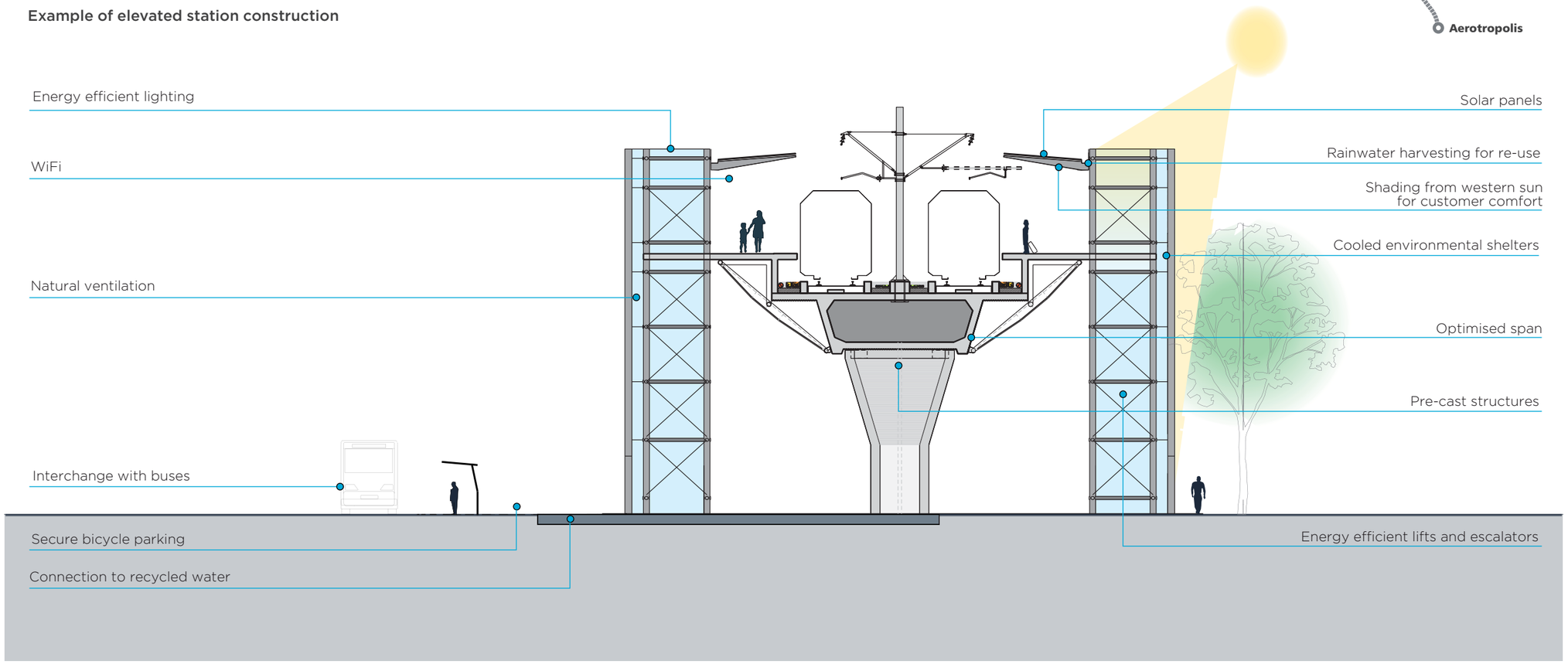
Constructing the substructure to support the viaduct above, likely to be from cast in-situ concrete in the following sequence:

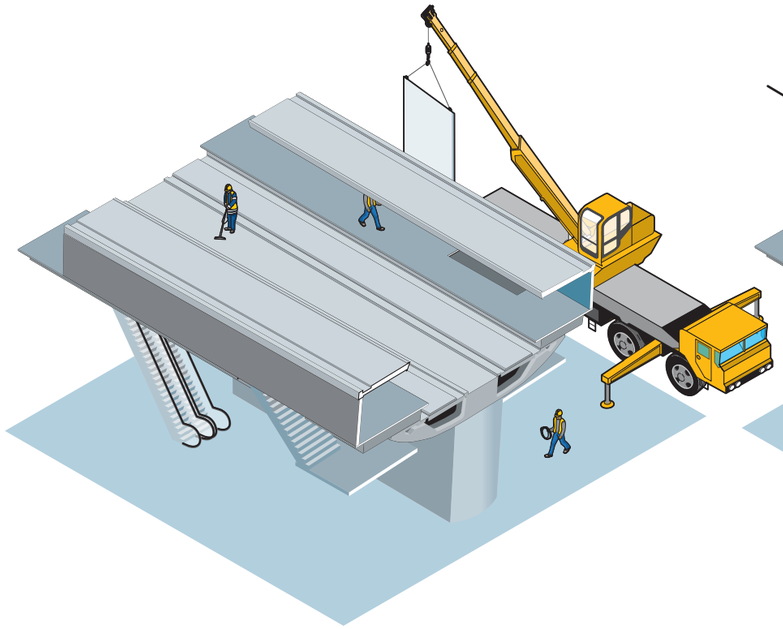
- bored piles
- pile caps including localised excavation
- piers or columns
- headstock.

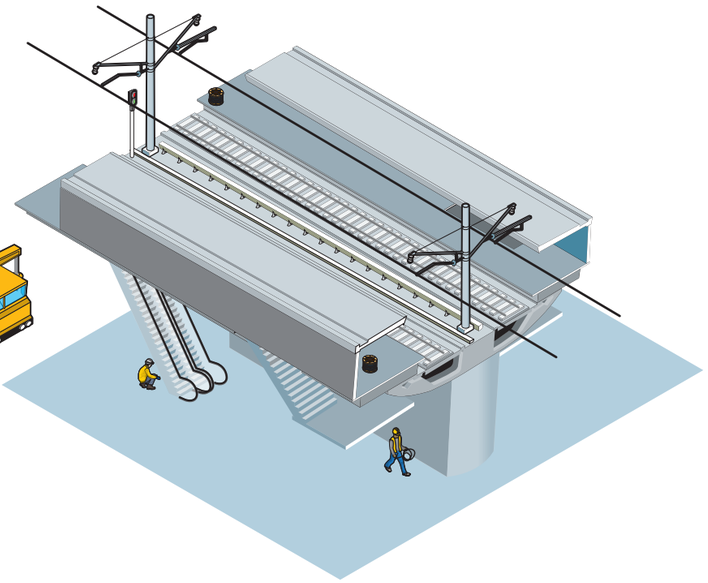
Building the viaduct superstructure, likely through the placement of precast concrete segments and typically through the use of a viaduct gantry or crane.

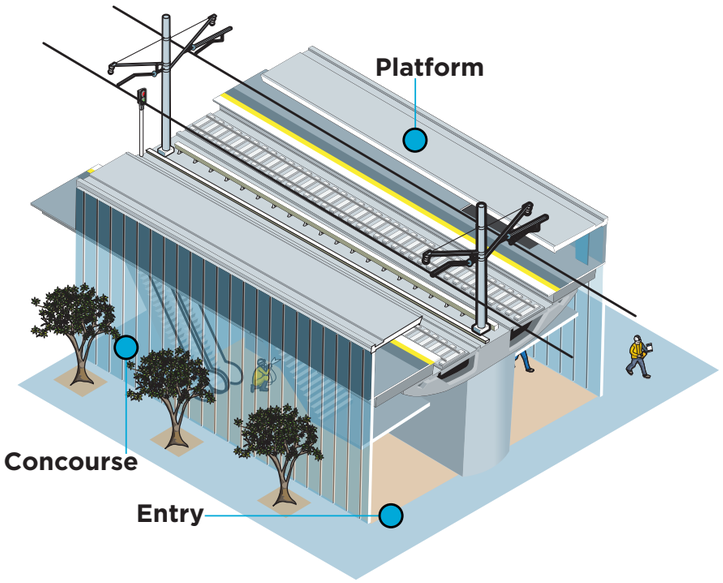
Build either side the entry points to the elevated station side platforms.

Example of elevated station construction









1 Structure

Construction includes:

- support columns and foundations
- emergency stairs
- the platform and canopy
- lifts and escalators
- station buildings.

Platforms will typically be built using pre-cast concrete. Stairs, escalators and lifts can be pre-fabricated, assembled at ground level then lifted into place by cranes.

The platform canopy is built after platforms and other major items using the same method as for stairs and escalators. Station buildings will be built using conventional steel frame methods.

2 Fit-out

Like the underground stations, mechanical and electrical fit-out of elevated stations has two major elements – rail systems and services.

Services are installed at the same time as structural and building frame construction. Final fit out follows structural work and at the same time as architectural fit-out.

3 Finishing touches

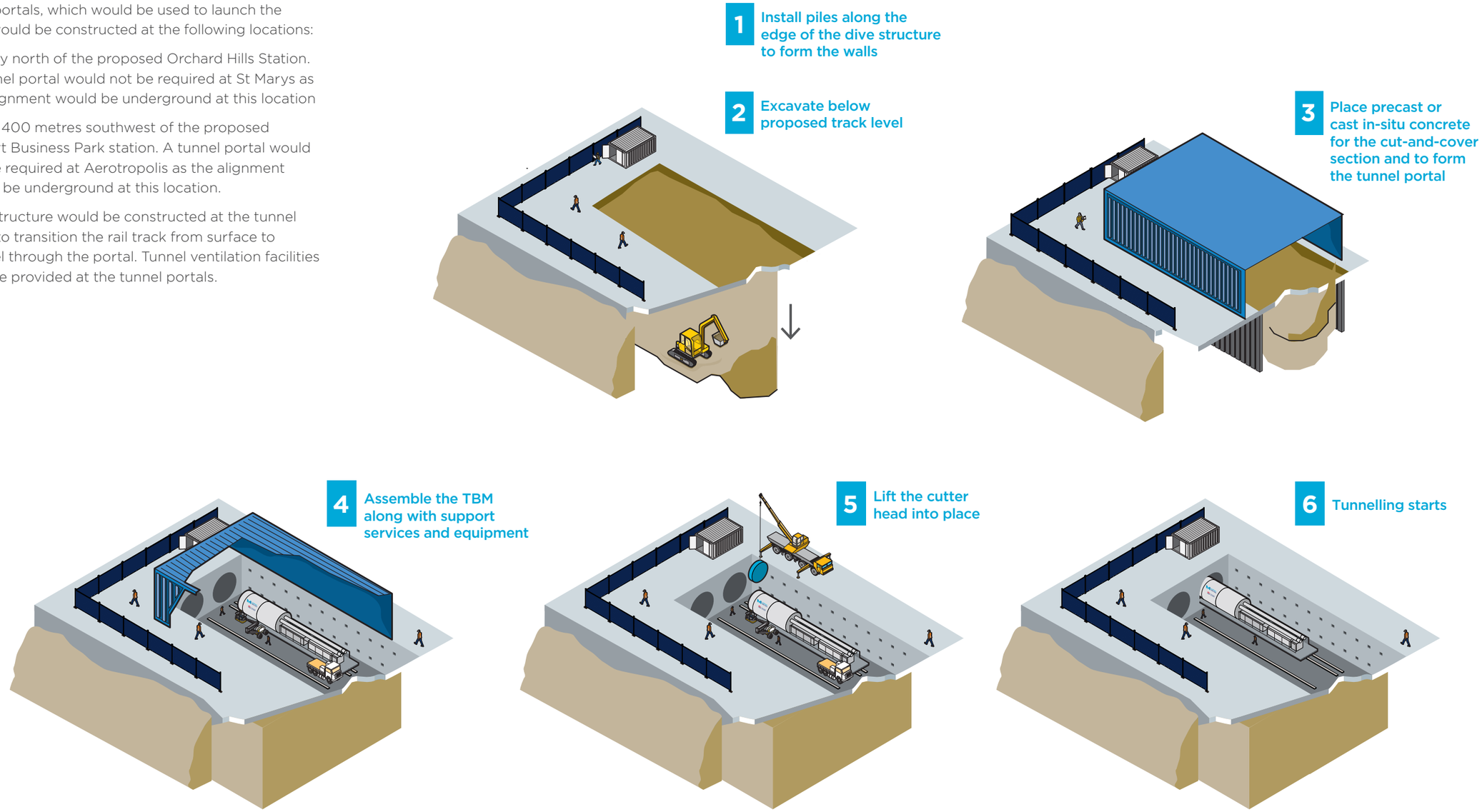
Architectural fit-out of skytrain stations involves final finishing touches including glazing, wall and ceiling cladding, painting and floor finishes.

Building tunnel portals

Tunnel portals, which would be used to launch the TBMs, would be constructed at the following locations:

- directly north of the proposed Orchard Hills Station. A tunnel portal would not be required at St Marys as the alignment would be underground at this location
- about 400 metres southwest of the proposed Airport Business Park station. A tunnel portal would not be required at Aerotropolis as the alignment would be underground at this location.

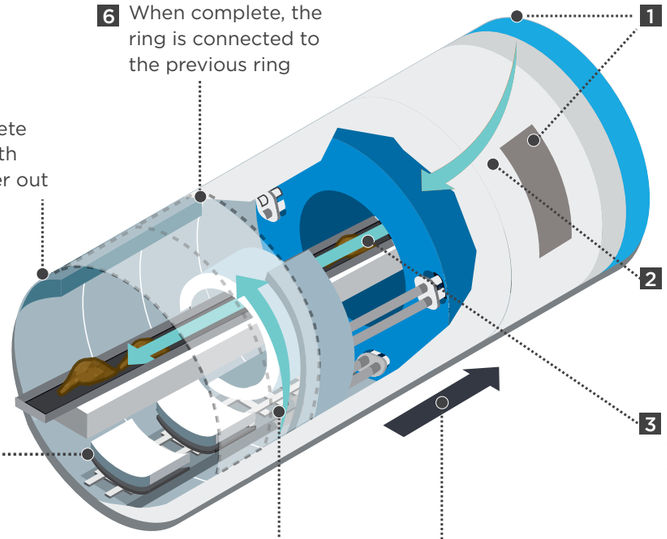
A dive structure would be constructed at the tunnel portals to transition the rail track from surface to in-tunnel through the portal. Tunnel ventilation facilities would be provided at the tunnel portals.



Tunnel boring machines prepared for launch at Chatswood.


NSW
Sydney METRO
Wendy

How a tunnel boring machine works



1 Grippers extend out to the rock surface. Rock is crushed by high strength alloy steel discs on the cutterhead

2 Crushed rock is scooped into the machine's head and onto a conveyor belt

3 Conveyor moves rock through the machine and out of the tunnel behind it

4 Concrete ring segments are delivered to the ring building area

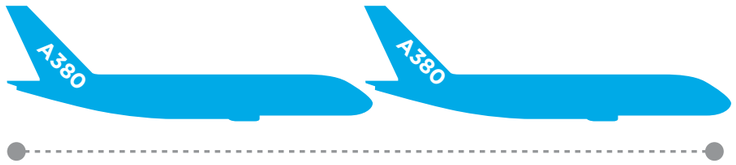
5 Concrete ring is built by putting together the segments using a special vacuum lifting device

6 When complete, the ring is connected to the previous ring

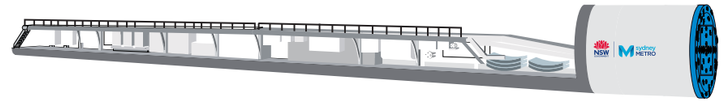
7 The gap between the concrete ring and the rock is filled with grout – this helps keep water out of the tunnel

8 The machine moves forward about 1.7 metres, then the process starts again

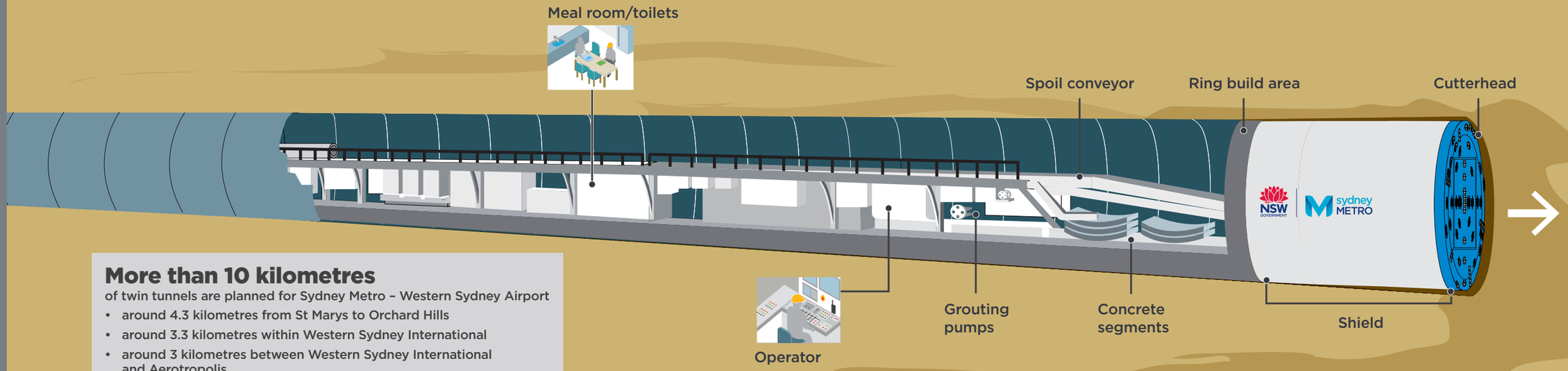
How does a TBM measure up?



Length: up to 120 metres



>900 tonnes weight = **570** V8 cars



More than 10 kilometres

of twin tunnels are planned for Sydney Metro – Western Sydney Airport

- around 4.3 kilometres from St Marys to Orchard Hills
- around 3.3 kilometres within Western Sydney International
- around 3 kilometres between Western Sydney International and Aerotropolis.

TBM 'Mum Shirl' breaks through at Martin Place Station.

Surface level

12-30 metres
(approximately 5-9 storeys)
Average tunnel depth, **Western Sydney International to Bringelly**

15-35 metres
(approximately 8-12 storeys)
Average tunnel depth, **St Marys to Orchard Hills**

27 metres
(approximately 9 storeys)
Average tunnel depth, **North West**

35 metres
(approximately 12 storeys)
Average tunnel depth, **City & Southwest**

38 metres
(approximately 13 storeys)
Average tunnel depth, **West**

Powering the tunnel boring machines

TBMs and roadheader tunnelling machines used to construct tunnels and cross passages would require dedicated power sources. New cables would need to be installed to supply power to the Orchard Hills construction site and the Western Sydney International tunnel portal construction site.

Orchard Hills power supply

High voltage construction power would be provided to the Orchard Hills construction site from the existing Claremont Meadows substation. Trenching works would be carried out within the road reserve over a period of around six months, commencing in late 2021.

Western Sydney International power supply

High voltage construction power would be provided to the Western Sydney International tunnel portal site from the existing Kemps Creek substation. Trenching works would generally be carried out within the road reserve and existing power distribution easements but may be required in some areas of private property. Where the power route crosses South Creek and Badgerys Creek, horizontal directional drilling may be required to avoid surface impacts to riparian vegetation.

Within the airport site, the indicative construction power route generally follows internal roads or temporary haulage roads for the project. The work would be carried out over a period of around four months, commencing in late 2021.

Other construction sites' power supply

Construction power at other construction sites would be supplied from either local low voltage sources or diesel generators. At the St Marys construction site, construction power may be sourced from an existing substation located on the corner of Harris Street and Glossop Street.

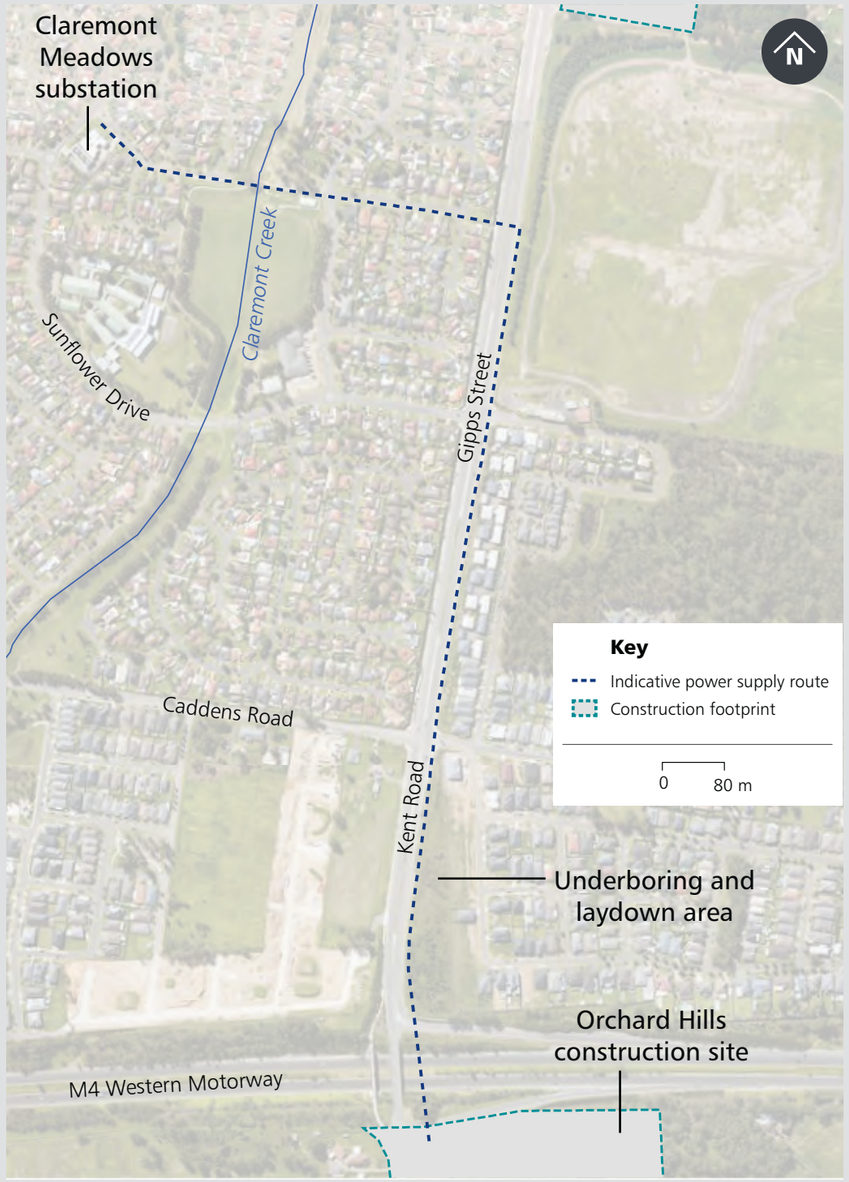
Traction power supply for the operating railway would be provided from a new bulk power supply point at the stabling and maintenance facility from the existing substation located off Lenore Drive, Erskine Park.

The giant cutter head of TBM 'Kathleen' is lowered into the shaft at Barangaroo.

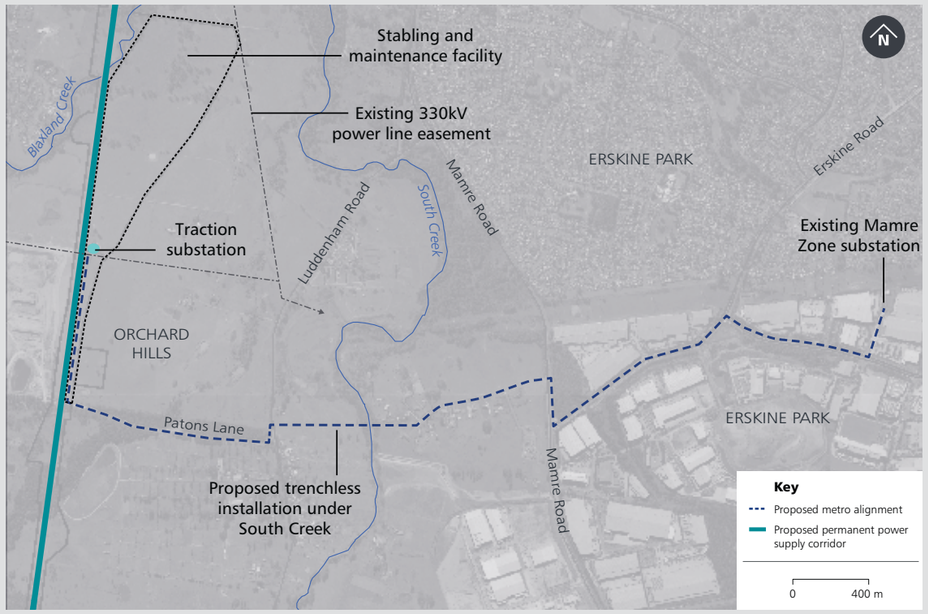
Indicative power supply routes

Orchard Hills power supply

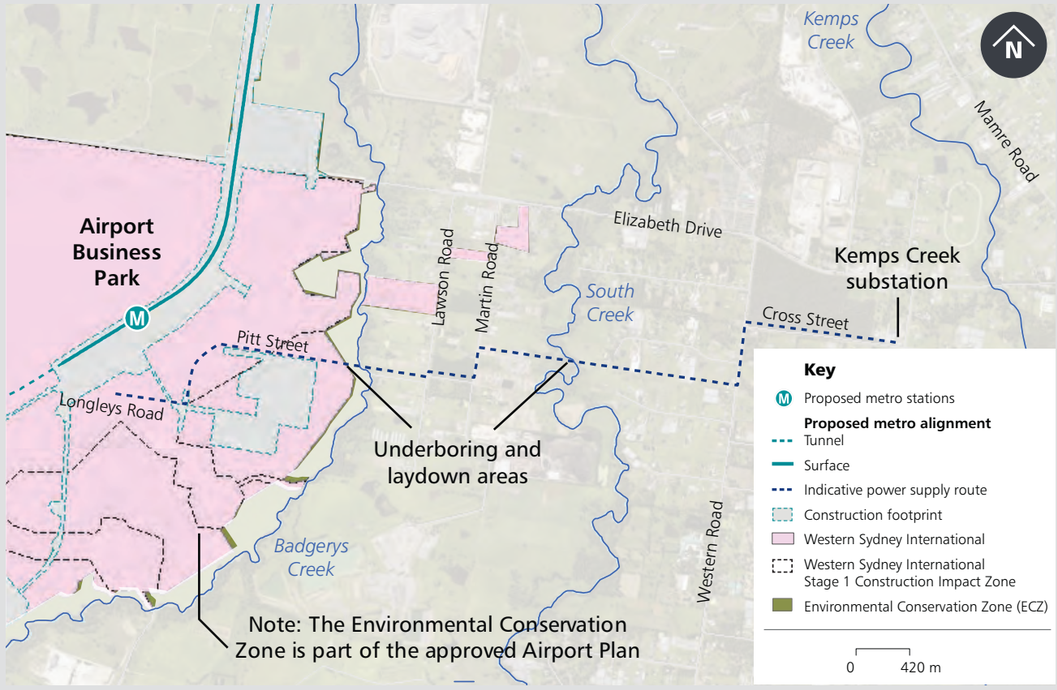
High voltage construction power would be provided to the Orchard Hills construction site from the existing Claremont Meadows substation. Trenching works would be carried out within the road reserve over a period of around six months, commencing in late 2021.



Permanent bulk power supply



Western Sydney International power supply



Tunnelling

The TBMs would work underground 24 hours a day, seven days a week. Residents and businesses along the alignment may be aware of the TBMs for a few days as they pass by underground. How noticeable the TBMs are would vary depending on ground conditions, how deep the tunnel is and the types of buildings above. Movement of the TBM could be more noticeable at night when other noise and movement levels are lower. Property condition surveys would also be offered to properties neighbouring construction sites or above the tunnel alignment to identify any pre-existing conditions prior to construction or tunnelling works.

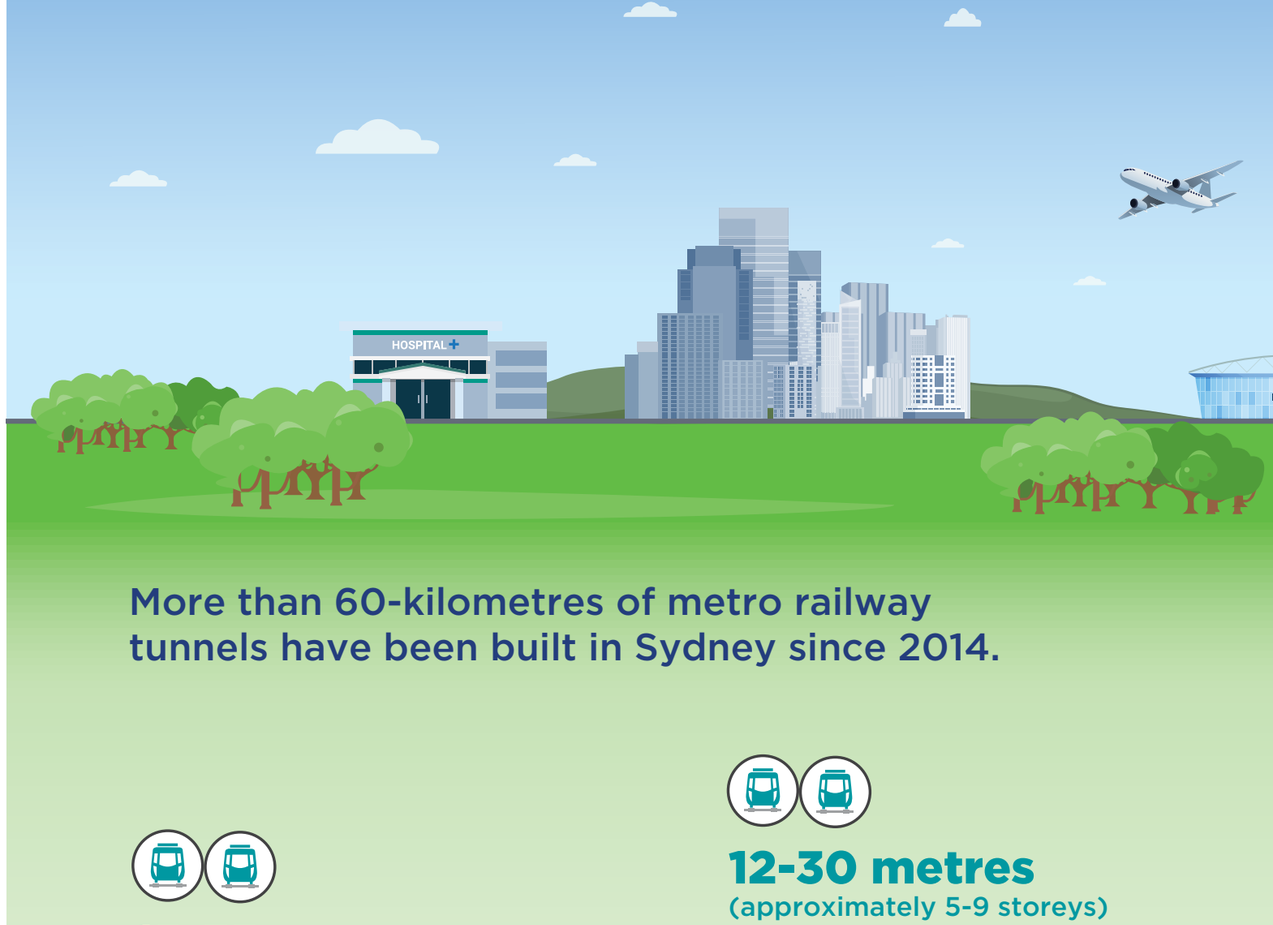
Crossing between tunnels

Crossovers would also be required to allow trains to pass from one track to another. The crossovers are an important part of the safety and reliability of the metro line, enabling trains to move from one tunnel to another in the case of a disruption, ensuring trains can keep moving. Crossovers at St Marys and Aerotropolis would be constructed using cut-and-cover methods as part of the construction of the adjacent station excavation.

Cross-passages would be excavated between the bored twin tunnels at around 240-metre intervals. These would likely be excavated by small roadheaders and/or excavators with rock hammers. Rooms would also be excavated with rock hammers at various points along the bored twin tunnels for rail systems services.

Tunnel stubs at St Marys and Aerotropolis to support potential future extensions would be constructed using roadheaders and extend around 125 metres from the end of the station and crossover structures.

A roadheader is an excavation machine consisting of a boom-mounted rotating cutter head, a loading device usually involving a conveyor, and a crawler travelling track to move the entire machine forward into the rock face.



More than 60-kilometres of metro railway tunnels have been built in Sydney since 2014.

15-35 metres
(approximately 8-12 storeys)
St Marys to Orchard Hills Sydney Metro — Western Sydney Airport
Average depth

12-30 metres
(approximately 5-9 storeys)
Western Sydney International to Bringelly
Average depth

38 metres
(approximately 13 storeys)
Sydney Metro West
Average depth

35 metres
(approximately 12 storeys)
WestConnex (New M5)
Average depth

Tunnel depths in Sydney.

1 metre
(less than 1 storey)
City Circle
York Street/Wynyard rail tunnel

21 metres
(approximately 7 storeys)
Cross City Tunnel
Outside Town Hall

25 metres
(approximately 8 storeys)
Sydney Harbour Tunnel
Average depth

25 metres
(approximately 8 storeys)
Lane Cove Tunnel
Average depth

27 metres
(approximately 9 storeys)
Metro North West Line
Average depth

35 metres
(approximately 12 storeys)
M4-M5 Link
Rozelle Interchange
Average depth

32 metres
(approximately 11 storeys)
Eastern Distributor
Average depth

83 metres
(approximately 28 storeys)
Western Harbour Tunnel
Maximum depth

35 metres
(approximately 12 storeys)
Sydney Metro City & Southwest
(Chatswood to Sydenham)
Average depth

90 metres
(approximately 30 storeys)
NorthConnex
Maximum depth

Tunnel boring machine launch sites

TBM launch sites, located at both the Orchard Hills construction site and the Western Sydney International tunnel portal, would provide support for tunnelling operations including:

- TBM delivery, assembly and commissioning
- high voltage power supply
- spoil storage and removal
- ventilation fans, which operate 24 hours a day
- water supply
- drainage and water treatment
- workforce facilities
- acoustic shed if required.

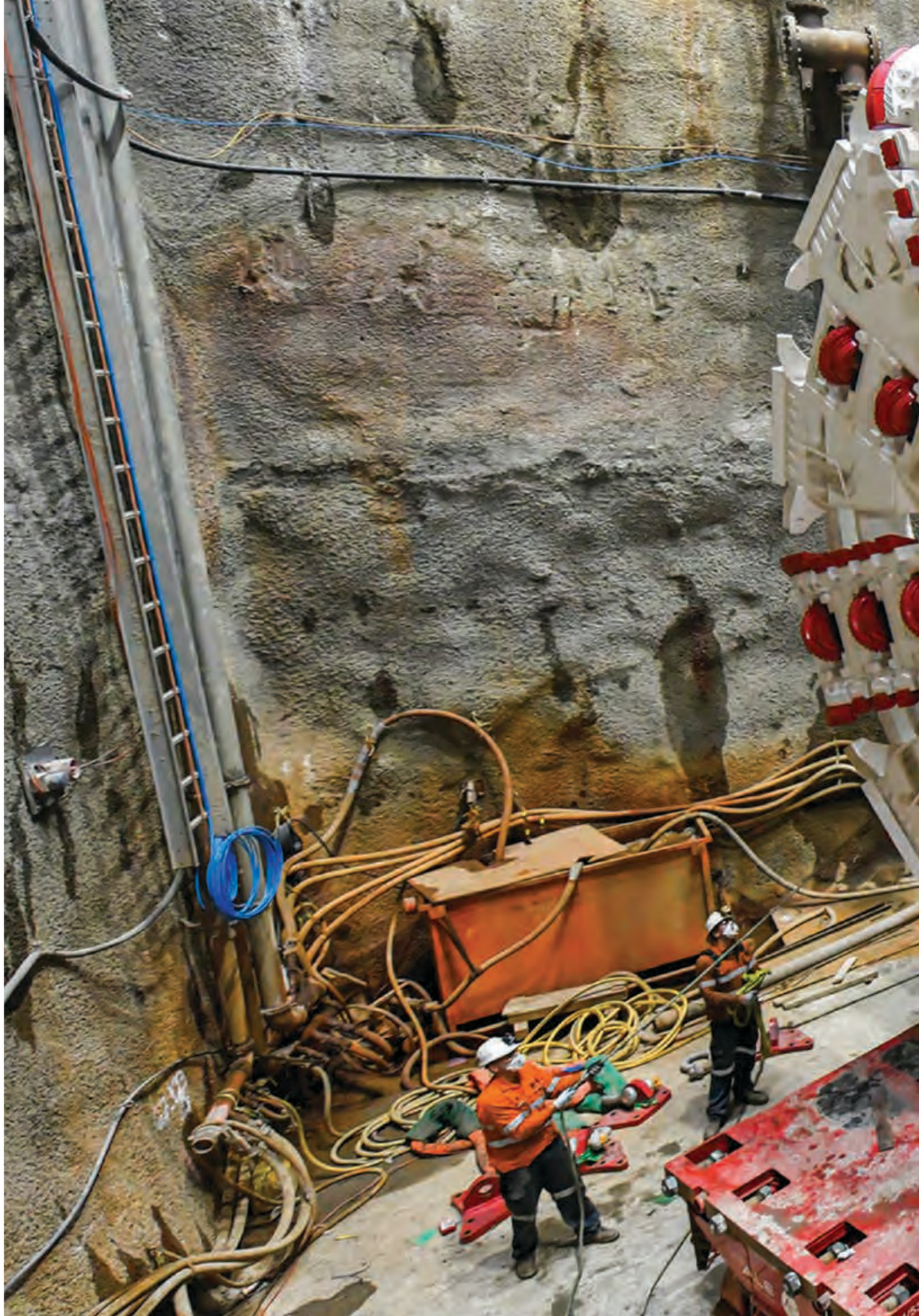
Waste management

During construction, spoil and other waste would be generated from tunnelling, station excavations, demolition of buildings and tunnel and station fit-out.

In a bid to reduce the impact on the environment, the project has a target to reuse 100 per cent of the usable spoil generated during construction, either on site or for other projects. Sydney Metro also aims to recycle 95 per cent of other construction and demolition waste. About 885,000 cubic metres of spoil is expected to be left over from the construction of the off-airport sections of the project and 1,055,000 cubic metres on-airport. Some of the spoil generated could be reused for the construction of Western Sydney International, subject to meeting specified criteria.

On the Metro North West Line, 100 per cent of the crushed rock from tunnelling was reused in projects like new residential and commercial developments in Greater Western Sydney, including an environmental reuse project at Prospect Dam. None went to landfill.

Sydney Metro will also consider opportunities to reuse rainwater, stormwater and wastewater.



The giant cutter head of TBM 'Kathleen' on the Sydney Metro City & Southwest project.


Sydney METRO

Inside the tunnels

Lining the tunnels

The lining for the tunnels would be assembled from precast concrete segments and installed progressively as the TBM moves forward. The pre-cast concrete segments are designed to ensure the long-term life of the tunnels and to minimise groundwater ingress.

The precast concrete segments would be manufactured using concrete from a dedicated concrete batching plant and stored at a tunnel segment precast facility at the airport construction support site.

The precast facility would produce about 300 tunnel lining ring segments per day. The segments would be transported via trucks within the Western Sydney International site and on the road network to Orchard Hills.

Safety inside the tunnels

All tunnels would be built with raised walkways or ramps to the tracks to facilitate safe evacuation from the train in an emergency. Cross-passages would also be built at intervals of about 240 metres to allow customers to exit in the event of an incident.

Tracks

Continuously welded rail tracks would sit inside the tunnels on top of a fixed concrete slab to provide a smooth surface for the metro trains, minimising noise inside the tunnels. In most places, the tunnel track centrelines would be about 16 metres apart.

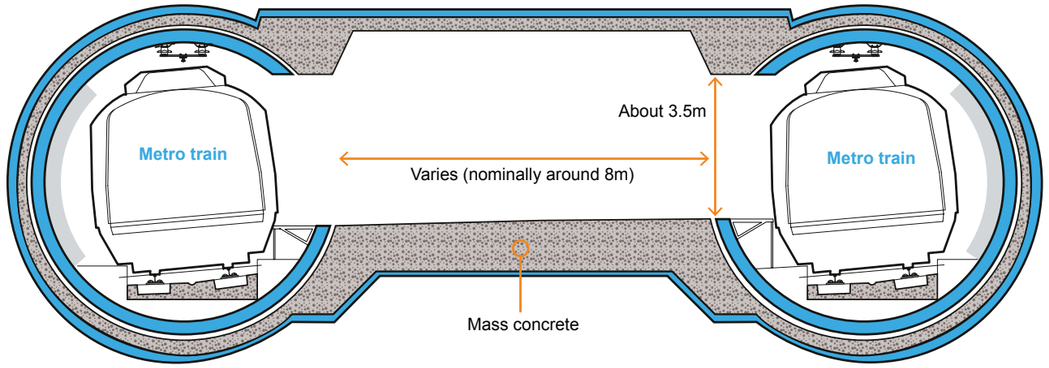
Precast concrete segments stacked in a Sydney Metro construction site.

Tunnel equipment and services

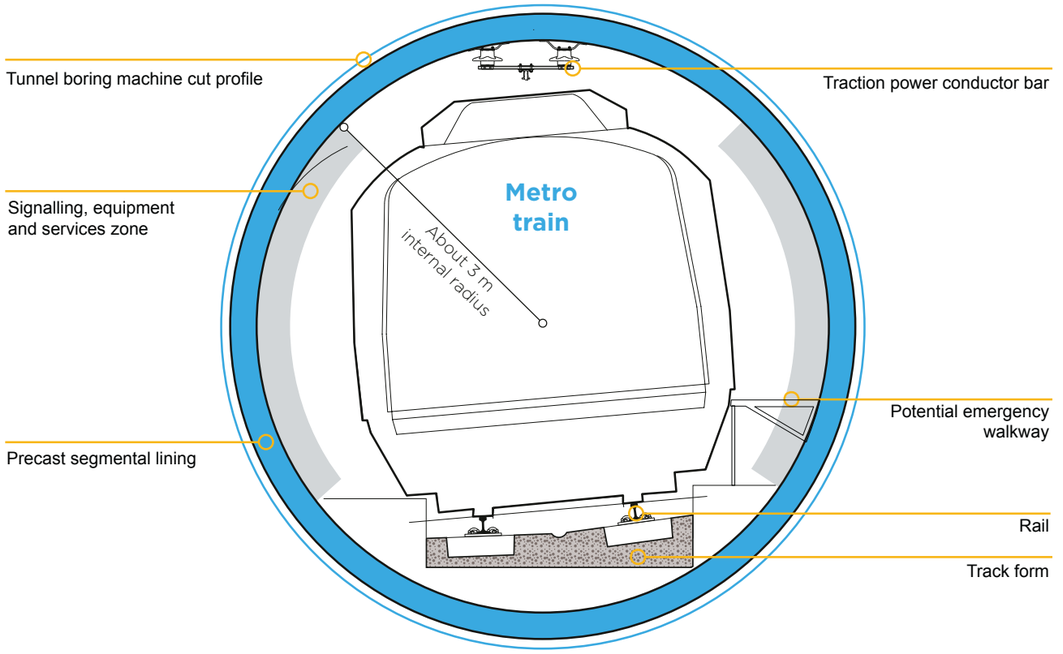
The metro rail tunnels would have a circular cross-section with an internal lined diameter of about six metres to accommodate a typical metro train.

The tunnels would provide space for the trains and tracks, and for other equipment and services including rail signalling, controls and communication, overhead traction power, fresh air ventilation, fire and life safety systems, lighting and drainage.

Indicative cross-section of a tunnel cross-passage



Indicative cross-section of metro twin tunnels



Surface tracks

Surface tracks refer to the components of the alignment that are essentially at ground level, in addition to sections in cutting or located on embankments.

A combination of viaduct and surface rail alignment for about 10 kilometres is planned between Orchard Hills and Western Sydney International, with around another two kilometres of surface rails within Western Sydney International.

Sections of track and surface level would generally consist of a slab or ballast track construction with concrete sleepers. The track type, including for the stabling and maintenance facility, would be confirmed as part of design development. Noise mitigation options, such as noise barriers, may be installed if required.

The tracks would typically be between about five and six metres apart.

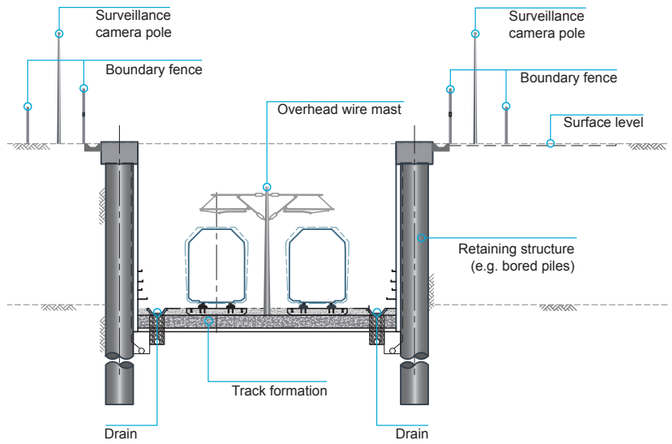
The surface sections of the tracks are shown in the alignment maps on pages 104 to 108 of this document.

Embankments and cuttings

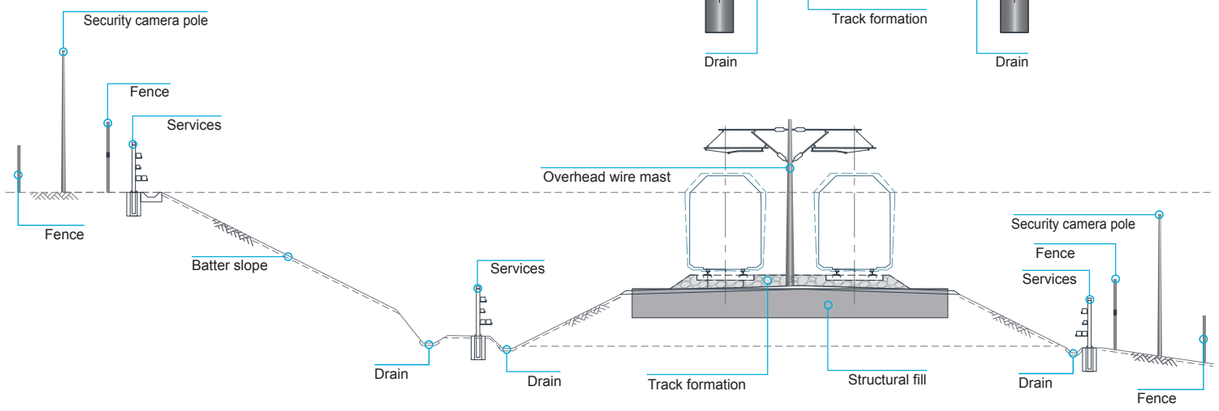
A series of embankments and cuttings would be required along the length of the project due to the varying terrain.

Work will be designed with the aim of minimising the impact on property, improving urban design and allowing for maintenance. All earthworks would be designed to fit the surrounding context, providing a 'natural fit' within their landscape setting wherever possible.

Indicative cross-section of an in-cutting section of track alignment.



Indicative cross-section of an embankment section of track alignment.



Track laying on a Sydney Metro project.

Viaducts and bridges

Sections of Sydney Metro – Western Sydney Airport would be elevated above the ground on a viaduct, known as the skytrain. The skytrain viaduct allows the communities below to remain connected, with vehicles and people free to move under the structure where possible.

Bridges and viaducts would be used to allow the metro rail to cross floodplains, watercourses and proposed permanent infrastructure such as roads and the Warragamba to Prospect water supply pipelines.

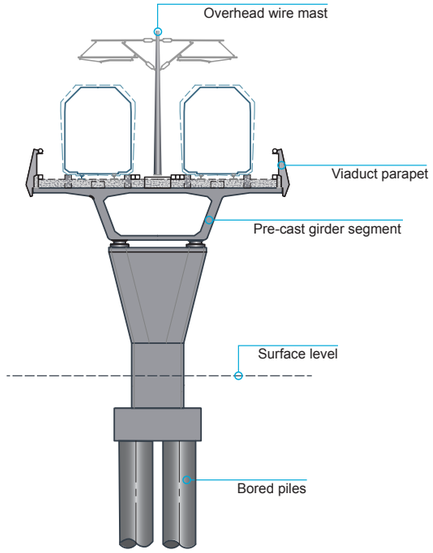
Viaducts and bridges would be constructed using cast in-situ concrete piles, columns and headstocks with precast girders between the columns. The precast viaduct and bridge sections would be manufactured and stored at a dedicated precast facility within Western Sydney International. The precast sections would be transported via trucks on the road network.

The design of each bridge and viaduct would be refined as part of design development.

Each viaduct or bridge structure would be designed to carry the twin track railway and to allow for access walkways on both sides. Wider sections would be built where required to support an elevated station or to span a floodplain or creek. The width of the elevated structures is subject to design development.

All elevated structures would include:

- derailment and collision protection features
- noise barriers if required
- track/bridge deck drainage
- lighting, signalling, communications, overhead wiring and power supply.

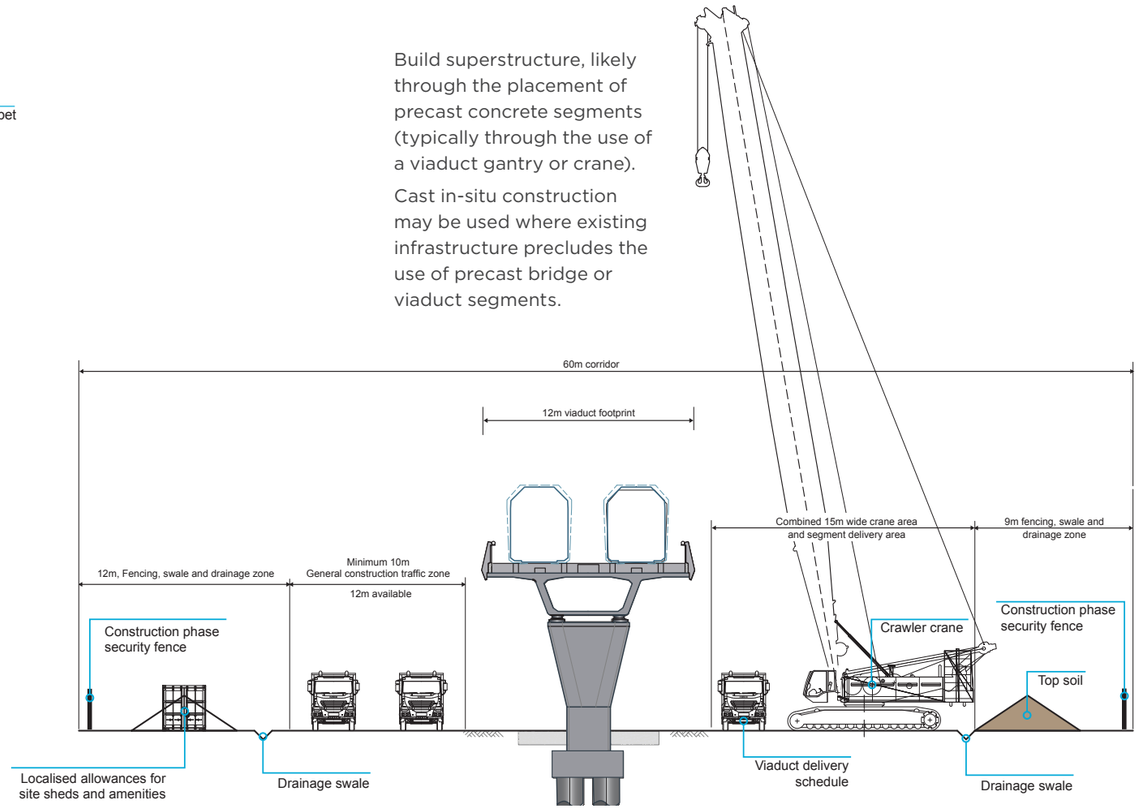


Build substructure, likely to be from cast in-situ concrete in the following sequence:

- bored piles
- pile caps including localised excavation
- piers or columns
- headstock.

Build superstructure, likely through the placement of precast concrete segments (typically through the use of a viaduct gantry or crane).

Cast in-situ construction may be used where existing infrastructure precludes the use of precast bridge or viaduct segments.

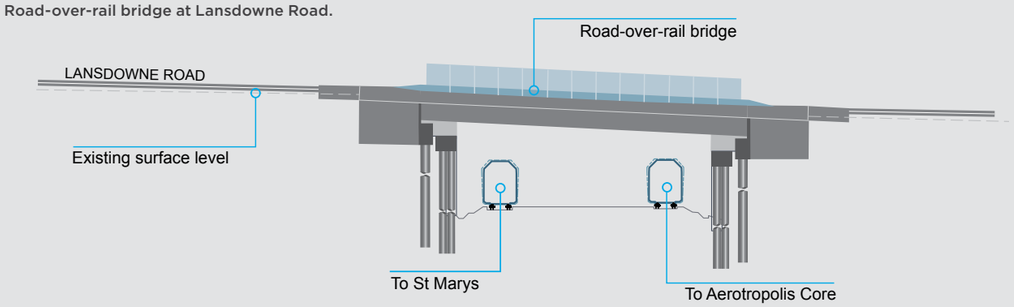


Other bridges and elevated structures

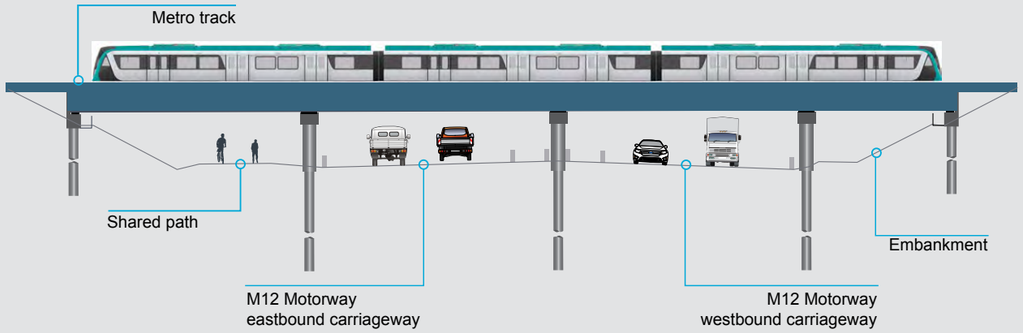
At the point where the project crosses Elizabeth Drive, the railway would be at surface level under a new elevated alignment of Elizabeth Drive. This elevated structure is proposed as part of the future M12 Motorway project.

The project would use a rail-over-road bridge to cross the proposed future M12 Motorway to the north of Elizabeth Drive before entering Western Sydney International. The bridge would be designed to provide the required clearance to the future M12 Motorway.

Road-over-rail bridge at Lansdowne Road.



Proposed bridge structure over the future M12 Motorway.



A metro train on the skytrain viaduct at Rouse Hill.


AEROTROPOLIS

Stations and sites

An artist's impression of Aerotropolis Station.

St Marys metro station

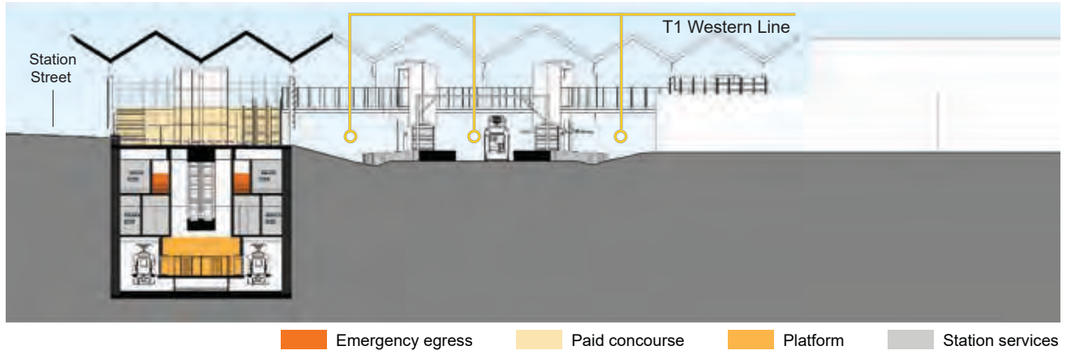
The proposed St Marys metro station would become an important metropolitan transport interchange and new gateway to Sydney to or from Western Sydney International Airport.

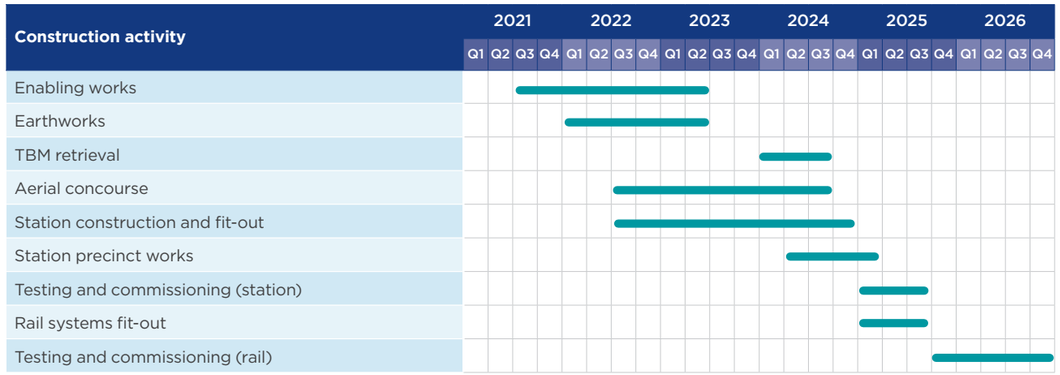
The station would play a vital role in the revitalisation and renewal of St Marys as a strategic centre — promoting future employment growth, supporting the local population now and into the future and improving connections across Greater Western Sydney.

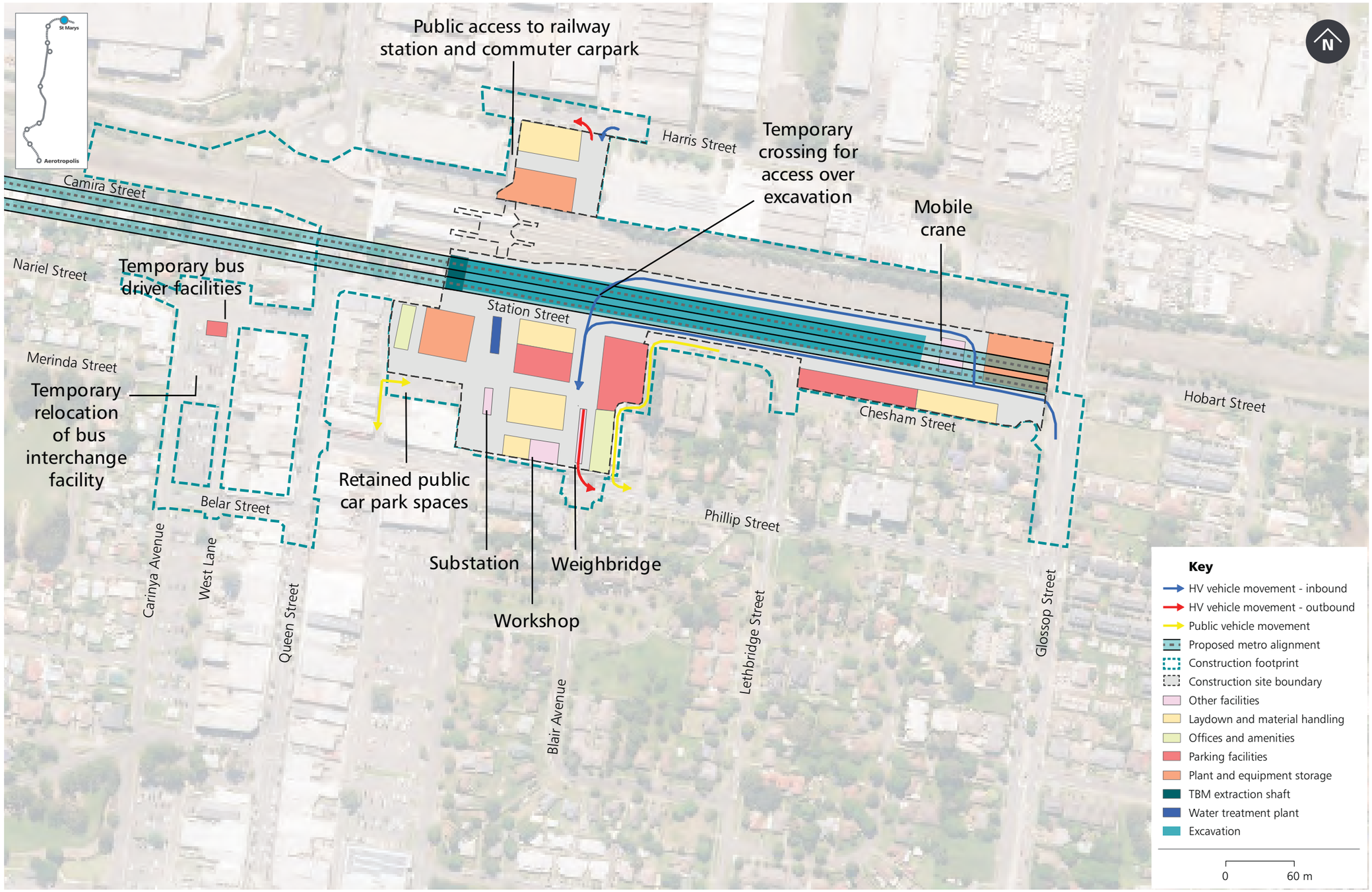
A station at St Marys would:

- allow customers to interchange with the T1 Western Line and local and regional buses
- improve travel times for customers along the Western Sydney Airport alignment to Greater Parramatta and the Sydney CBD
- support renewal of St Marys both north and south of the T1 Western Line
- be designed to create an easier connection to Schofields/Tallawong in Rouse Hill as part of a potential future extension to the north.

Feature	Description
Station entry	Entrances via new plazas on Station Street and Harris Street
Location and orientation	Underground cut-and-cover station with the platforms located below the existing surface level in an east–west orientation located south of and parallel to the existing T1 Western Line
Transport connections	Sydney Trains suburban rail network, walking and cycling, bus, taxi/ride share, kiss-and-ride, park-and-ride
Main features and transport facilities	• new secure bicycle parking • reconfigured bus interchange and shelters located on both sides of Station Street and a bus layover area located to the east of the metro station • kiss-and-ride and point-to-point vehicle facilities on both the northern and southern sides of the T1 Western Line • above-ground pedestrian connection to the existing St Marys Station • existing pedestrian overpass at St Marys Station retained • escalators, stairs and lifts to the new platforms • upgrades to the existing road reserves • new pedestrian crossings • new public plazas adjacent to the proposed station entrances • space for potential future station retail (subject to separate approval) • proposed extension of the existing multi-deck commuter carpark (subject to separate approval)
Local government area	Penrith City Council
Customers	Customers travelling to and from nearby residential homes, customers connecting to travel to and from Parramatta, Penrith or Sydney CBD, customers travelling to and from Western Sydney Airport and Aerotropolis






St Marys
Aerotropolis
N
Public access to railway station and commuter carpark
Harris Street
Temporary crossing for access over excavation
Mobile crane
Camira Street
Nariel Street
Temporary bus driver facilities
Station Street
Merinda Street
Temporary relocation of bus interchange facility
Chesham Street
Hobart Street
Retained public car park spaces
Belar Street
Phillip Street
Carinya Avenue
West Lane
Queen Street
Substation
Weighbridge
Workshop
Blair Avenue
Lethbridge Street
Glossop Street
Key
HV vehicle movement - inbound
HV vehicle movement - outbound
Public vehicle movement
Proposed metro alignment
Construction footprint
Construction site boundary
Other facilities
Laydown and material handling
Offices and amenities
Parking facilities
Plant and equipment storage
TBM extraction shaft
Water treatment plant
Excavation
0
60 m

St Marys metro station

Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Rail possessions – up to 24 hours a day Activities that may be carried out outside the standard construction hours include utility works, tunnelling, works within an acoustic shed, tunnel fit-out, construction during road and rail possessions, spoil haulage, deliveries and TBM activities	
Station type	Cut-and-cover	
Workforce	Estimated peak construction workforce 380	
Demolition	Demolition of the Station Plaza site between Station and Phillip Streets and the T1 Western Line and the St Marys Bus Layover on Station Street	
Heritage	• Existing Goods Shed retained • Station design manages existing heritage elements including station buildings on Platforms 3 and 4, the signal box and jib crane	
Activities	Key construction activities: • administration activities to support construction • construction of new station box, station structures and finishes • construction of the crossover • construction of stub tunnel • spoil handling, storage and transport • temporary TBM retrieval shaft excavation • TBM retrieval • station precinct.	Construction activities within and adjacent to the existing T1 Western Line rail corridor: • establishment of temporary hoarding and fencing • preparatory work to station platforms and infrastructure associated with construction of the aerial concourse at St Marys • potential relocation of the lift shaft on the southern side of St Marys Station. Some construction activities within the rail corridor would be undertaken during scheduled track possessions, where train services are replaced by bus services, which would generally occur over the weekend and at night with replacement bus services provided
Plant and equipment	Bulldozer Compressor Concrete pump Concrete truck Roadheader Concrete saw Excavator Generator	Gantry crane Hand tools Jackhammer Mobile crane Pile boring rig TBM Vibratory roller Water cart
Noise Management	An acoustic shed and/or other acoustic measures would be in place. An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne and ground-borne noise	

Construction at a glance

Traffic changes	**Harris Street –** minor changes to facilitate access for construction vehicles **Station Street** – temporary closure from the Station Plaza site in the east and East Lane in the west. Local traffic access to be provided one-way westbound from Lethbridge Street along Station Street and southbound to Phillip Street via the eastern boundary of the Station Plaza site **Phillip Street** – minor changes to allow exit for construction vehicles opposite Blair Avenue. **Lethbridge Street** – possible temporary use by construction vehicles **Queen Street, West Lane, Nariel Street, Carinya Avenue and Belar Street** – adjustments to kerb and gutter, line marking and street furniture to allow for temporary relocation of bus services Temporary disrupted access to kiss-and-ride on Queen Street south of St Marys Station and Forrester Road to the north
Public transport changes	**Bus services** • Temporary relocation of existing bus interchange and layover at Station Street to Nariel Street with option of temporary relocations to Station Street/East Lane, subject to further consultation • Temporary interchange at Nariel Street would be decommissioned following completion of the precinct works, with new kiss-and-ride and point-to-point facilities located on the northern side of Nariel Street **Train services** • Temporary rail replacement services on the T1 Western Line when track possessions are required • Track closures would generally be scheduled over weekends and at night, with replacement bus services for rail customers
Pedestrian and cyclist changes	**Harris Street** – temporary disruption of footpath to allow vehicles into construction site. Pedestrian access would be maintained through local traffic controls. **Station Street** – temporary closure to pedestrians during construction, with access to St Marys Station via Queen Street. Pedestrian access to residential properties on Station Street would be maintained through local traffic controls
Street parking changes	The multi-deck commuter car park on Harris Street is proposed to be extended with the addition of two levels (subject to separate approval). This work is expected to be completed prior to closure of the Station Street car park and the commuter car park on Harris Street. While some on-street parking around the construction area will be affected, there is capacity at existing parking locations around the St Marys precinct to manage this. **Temporary removal of on-street car parking:** • **Lethbridge Street** – 16 spaces • **Nariel Street** – around 17 spaces • **Carinya Avenue** – around 6 spaces • **West Lane** – around 18 spaces • **Belar Street** – around 30 spaces • **Phillip Street** – around 27 spaces **Permanent changes:** **Station Street** – permanent removal of all on-street car parking (around 41 spaces) **Station Street car park** – permanent removal of 130 to 140 car park spaces with the potential to retain 20-30 car park spaces. The Station Street car park is also subject to further investigation for use as the temporary bus interchange as well as for the endstate use of the site **Nariel Street** – permanent removal of on-street parking (around 10 spaces) **Harris Street commuter car park** – permanent closure (around 130 to 140 spaces) after extension of the existing multi-deck commuter car park, subject to separate approval

St Marys | Claremont Meadows services facility | Orchard Hills | Stabling and maintenance facility | Luddenham | Airport Business Park | Airport Terminal | Bringelly services facility | Aerotropolis

An artist's impression of St Marys Station.

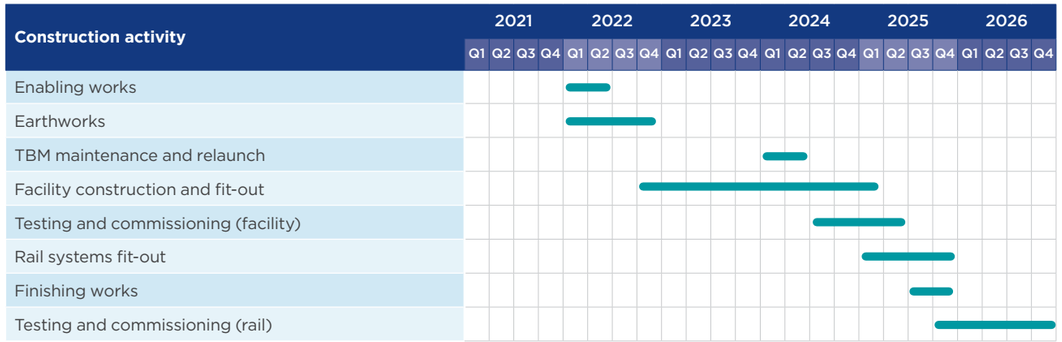
Claremont Meadows services facility

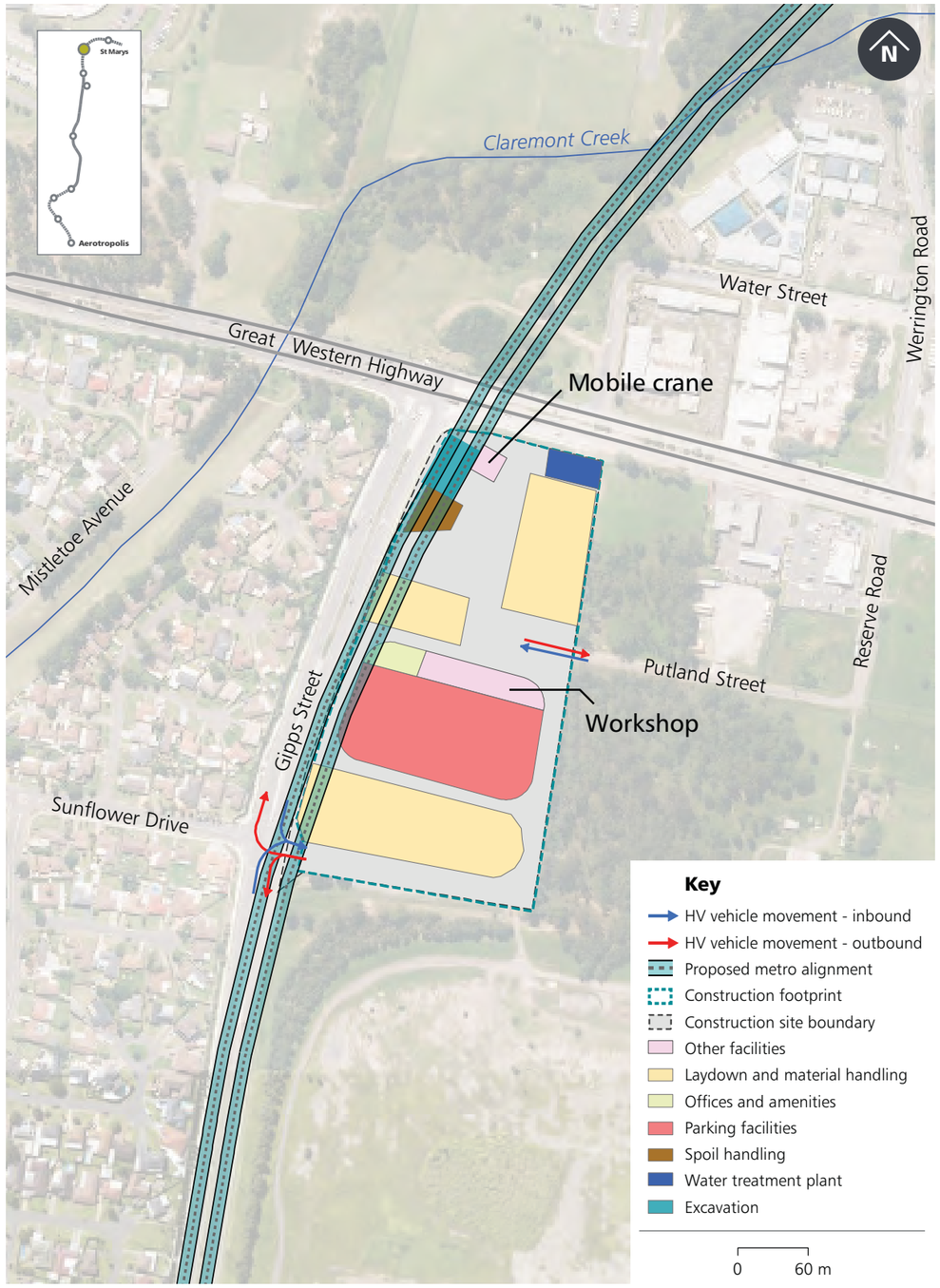
A services facility is proposed to be built at Claremont Meadows to provide fresh air ventilation into the St Marys to Orchard Hills tunnels and emergency exits. The metro train fleet is electric.

The need for the Claremont Meadows services facility is subject to further investigation.

Claremont Meadows services facility – final arrangements

Feature	Description
Location and orientation	Facility would be located in cleared area near south-east corner of intersection of Gipps Street and Great Western Highway
Main features	• tunnel ventilation plant rooms • air-distribution equipment • electrical rooms • fire sprinkler systems • emergency lighting and signage • ancillary rooms supporting the ventilation system • workforce amenities





Construction at a glance	
Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, works within an acoustic shed, tunnel fit-out, construction during road possessions, spoil haulage, deliveries and TBM activities
Workforce	Estimated peak construction workforce 110
Demolition	Nil
Activities	Key construction activities: • enabling work including protection or diversion of utilities • establishment of site access points • site clearing • piling and pile capping • temporary shaft excavation • spoil handling, storage and transport • construction of above and below ground structures for the services facility • TBM maintenance and relaunch • services facility fit-out • rail and tunnel systems fit-out
Plant and equipment	Compressor Concrete pump Concrete truck Roadheader Concrete saw Excavator Generator Hand tools Jackhammer Mobile crane TBM Vibratory roller
Noise Management	An acoustic shed and/or other acoustic measures could be in place during construction An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures to manage operational airborne and ground-borne noise
Traffic changes	Provision of new access from Gipps Street
Public transport changes	Nil
Pedestrian and cyclist changes	Nil
Street parking changes	Nil

Aerial image of Orchard Hills.

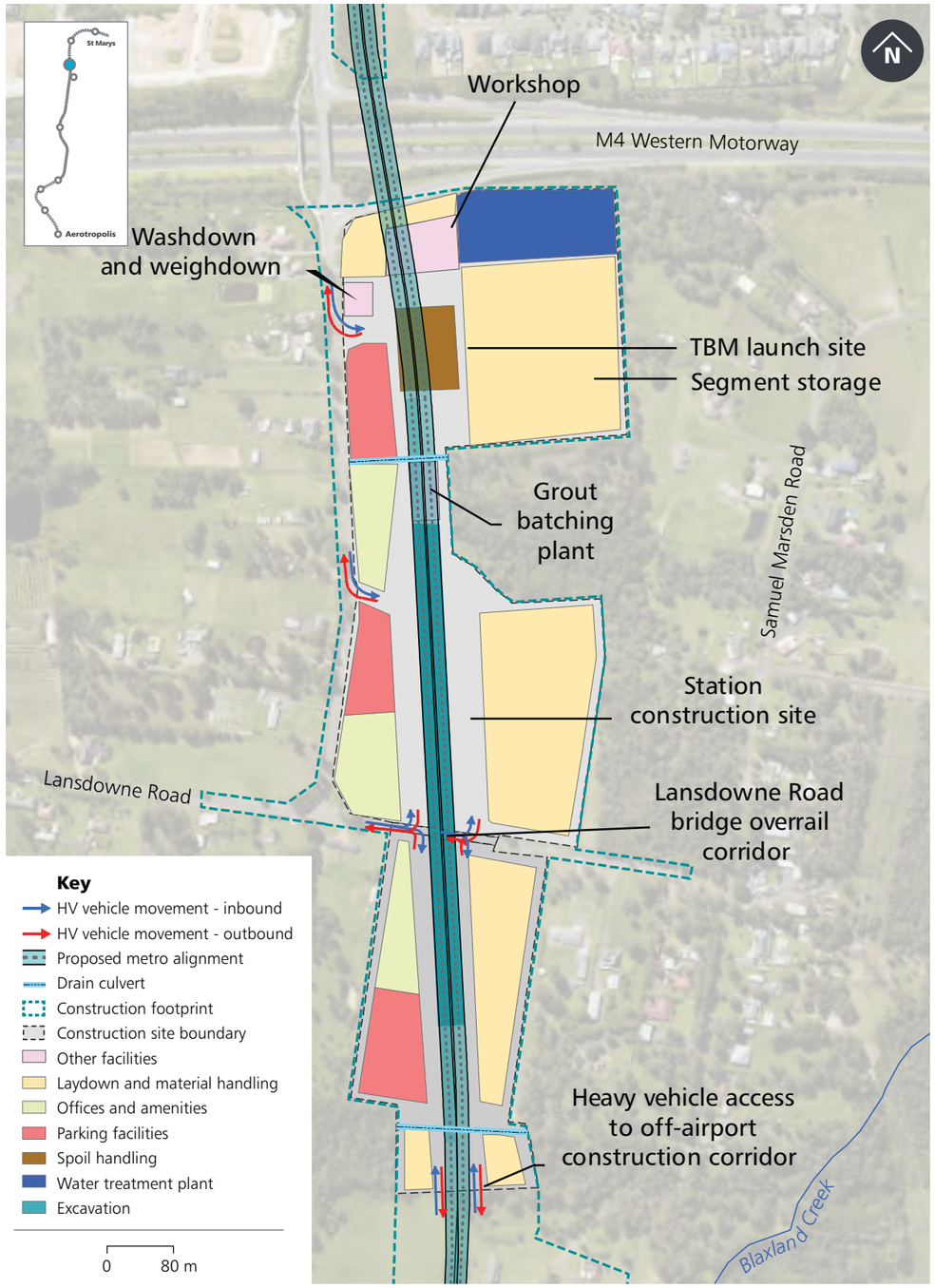
Orchard Hills Station

The proposed Orchard Hills Station would service a future residential and mixed-use precinct — helping to transform the area into a compact, high-amenity and walkable new community.

A station at Orchard Hills would:

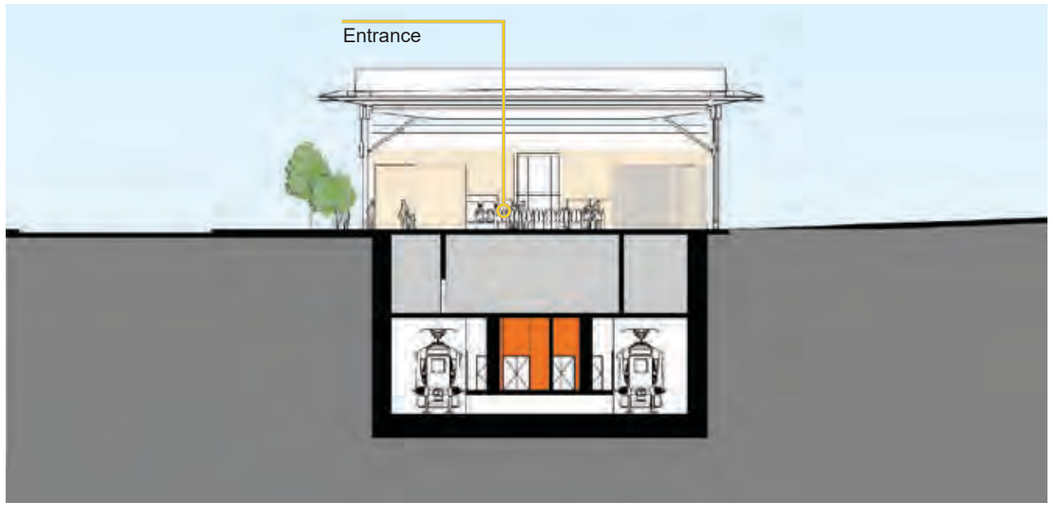
- transform the precinct by establishing a new town centre with high amenity residential and mixed-use commercial and retail development
- support urban development surrounding the new town centre with a mix of diverse housing types
- create opportunities to extend the station catchment by establishing an interchange hub to serve the area.

Feature	Description
Station entry	Entrances from new plaza via Kent Road and new eastern connection
Location and orientation	In-cutting station below the existing surface level in a generally north–south orientation located around 450 metres south of the M4 Western Motorway
Main features and transport facilities	• secure bicycle parking • park-and-ride facilities (up to 500 spaces) • transport interchange facilities, including bus bays and shelters, kiss-and-ride bays and point-to-point vehicle facilities • upgrades to Kent Road and Lansdowne Road, including intersections with new precinct roads, new pedestrian crossings and creation of a new public plaza adjacent to the proposed station entrance • potential for future station retail
Local government area	Penrith City Council
Customers	Customers travelling to and from nearby residential homes, customers travelling to and from Western Sydney Airport and Aerotropolis



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, works within an acoustic shed, tunnel fit-out, construction during road and rail possessions, spoil haulage, deliveries and TBM activities
Station type	Cutting
Workforce	Estimated peak construction workforce 300
Demolition	Demolition of residential structures and all sheds and other structures at properties on Kent Road and Lansdowne Road
Heritage	Nil
Activities	Key construction activities: • construction of the tunnel portal • TBM launch and support • spoil handling and storage • construction of road-over-rail bridge for Lansdowne Road • construction of rail alignment • construction of station structures and finishes • station precinct works
Plant and equipment	Bulldozer, Compressor, Concrete pump, Concrete truck, Roadheader, Concrete saw, Crusher, Excavator, Generator, Gantry crane, Hand tools, Jackhammer, Mobile crane, Pile boring rig, TBM, Vibratory roller, Water cart
Noise Management	An acoustic shed and/or other acoustic measures would be in place An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne and ground-borne noise
Traffic changes	During construction: **Kent Road** – Upgrade and widening between the M4 Western Motorway and Lansdowne Road. Upgrade of the Kent Road/Lansdowne Road intersection to allow for heavy vehicle movements **Lansdowne Road** – Temporary diversion for the construction of the road over rail bridge
Public transport changes	N/A
Pedestrian and cyclist changes	Short-term local pedestrian diversions may be required adjacent to the Orchard Hills construction site on Lansdowne and Kent roads. Local pedestrian and cyclist diversions would be accommodated within the existing road environment
Street parking changes	N/A



Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																								
Earthworks																								
Tunnelling activities																								
Station construction and fit-out																								
Station precinct works																								
Testing and commissioning (station)																								
Rail systems fit-out																								
Testing and commissioning (rail)																								


ORCHARD HILLS Community Library


ORCHARD HILLS
M
Platforms

Stabling and maintenance facility

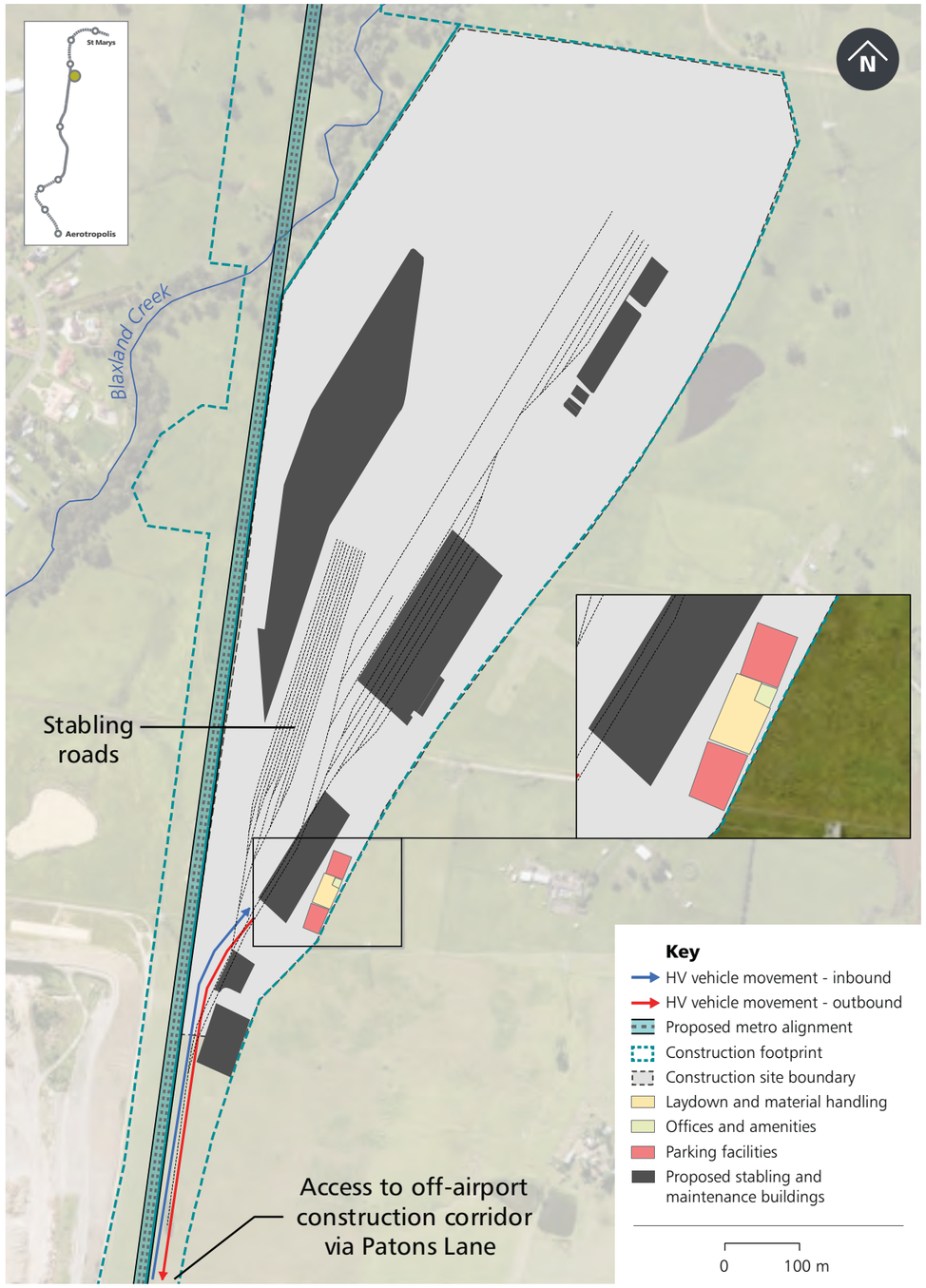
Sydney's new metro railway is a state-of-the-art driverless system. The new airport railway line will be controlled from the Sydney Metro Trains Facility – Orchard Hills. Trains will be stabled, cleaned and maintained here and the driverless system will be controlled from here as well. At the 24-hour-a-day Operations Control Centre, expert train controllers will monitor every aspect of the system, including the lifts, escalators and platform screen doors used in the fully-accessible railway. Permanent power supply for the project would be provided by a new substation.

Signalling and communications systems will control the trains, tunnel and platforms to deliver a safe and reliable journey. The system, which includes hundreds of cameras, minimises the time trains are stopped at stations and the time between each train. It is a secure system with no external connections, as a safeguard. Australia's first driverless railway, the Metro North West Line, has carried more than 20 million customers since services started in May 2019 and, around the world, millions of people use driverless networks every day in cities like Paris, Singapore, Dubai and Hong Kong. Before passenger services start, the operator will have to be accredited by the National Rail Safety Regulator.

Stabling and maintenance facility – final arrangements

Feature	Description
Location and orientation	Facility built in Orchard Hills to the south of Blaxland Creek and east of the proposed project alignment. Access via Patons Lane
Main features	• vehicle equipment measurement system • up to 10 stabling roads to store trains • infrastructure maintenance shed • test tracks • train monitoring system • train wash facilities • wheel lathe • operations control centre, administration building and driver training facility • traction substation and bulk power supply point • site security personnel area • offices and general storage areas • staff car parking and internal access roads • fire control systems • on-site water detention and water quality treatment basins • site landscaping

Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																								
Earthworks																								
Building works																								
Rail systems fit-out																								
Testing and commissioning																								



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, construction during road possessions and deliveries Estimated peak construction workforce 170
Workforce	Nil
Demolition	Nil
Activities	Key construction activities: • Site establishment and enabling works • earthworks and structural works for the stabling and maintenance facility including buildings and internal roads • construction of the stabling and maintenance facility rail entry/exit • Laying of track and stabling roads
Plant and equipment	Bulldozer Compressor Concrete pump Concrete truck Concrete saw Excavator Generator Gantry crane Hand tools Jackhammer Mobile crane Vibratory roller Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures to manage operational airborne and ground-borne noise
Traffic changes	To facilitate trenching works for permanent power connection, there may be short term (around four weeks) traffic changes on Patons Lane
Public transport changes	Nil
Pedestrian and cyclist changes	Nil
Street parking changes	Nil

The Sydney Metro Trains Facility at Rouse Hill.

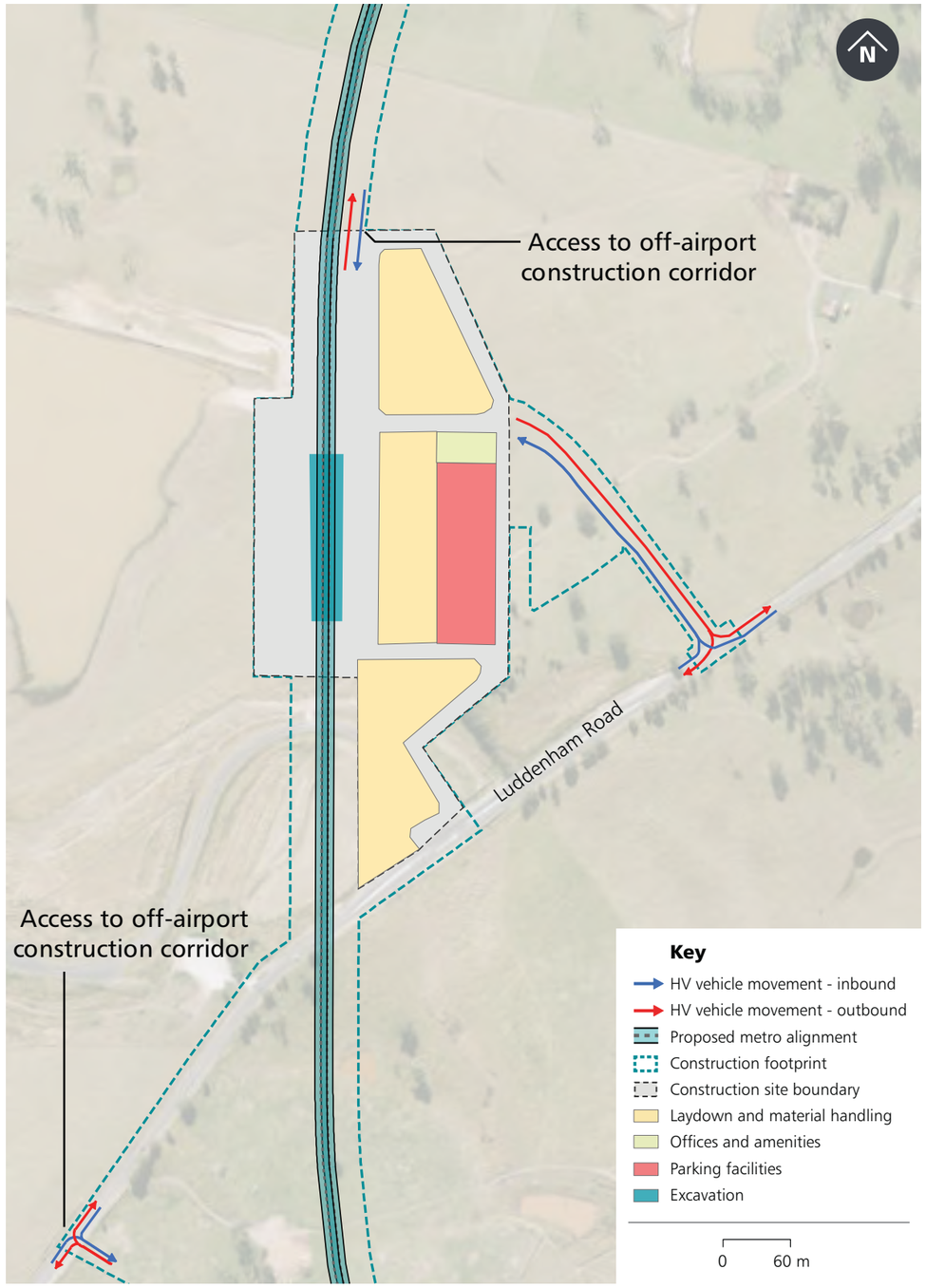
Luddenham Station

The proposed Luddenham Station would be designed to support a future employment, research and knowledge-based employment precinct in the area, along with a mixed-use residential development with access to jobs, transport and green space.

A station at Luddenham would:

- support Western Parkland City Northern Gateway precinct focused on education, advanced technology, research and development
- provide a new metro station to an area not served by high-quality public transport and provide opportunities for interchange with future bus and active transport networks.

Feature	Description
Station entry	Entrance from northern end of station via a pedestrian plaza off a new local road near Luddenham Road
Location and orientation	Elevated viaduct structure with side station platforms above ground level in a generally north–south orientation The station would be divided into two main levels, with a ground floor concourse and raised platform
Transport connections	Walking, cycling, local and rapid bus, point-to-point transport, kiss-and-ride, park-and-ride
Main features and transport facilities	• secure bicycle parking • transport interchange facilities including bus bays, shelters • bus layover facilities indicatively located under the viaduct structure • kiss-and-ride bays and point-to-point vehicle facilities • park-and-ride facilities, with up to 200 spaces and potential for future expansion • upgrades to Luddenham Road with new intersections to precinct, new pedestrian crossings and new public plaza adjacent to proposed station entrance • scope for potential future station retail
Local government area	Penrith City Council
Customers	Customers travelling to and from nearby residential homes, customers travelling to and from Western Parkland City Northern Gateway



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include oversize deliveries, utility works, road works on Luddenham Road, viaduct construction over Luddenham Road and system commissioning works	
Station type	Elevated	
Workforce	Estimated peak construction workforce 130	
Demolition	Nil	
Heritage	Nil	
Activities	Key construction activities: • construction of station structures and finishes • construction of viaduct section of rail alignment over Luddenham Road • station precinct works.	
Plant and equipment	Bulldozer Compressor Concrete pump Concrete truck Concrete saw Excavator Generator	Hand tools Jackhammer Mobile crane Pile boring rig Vibratory roller Viaduct segment gantry Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne noise	
Traffic changes	Upgrade of Luddenham Road for construction access and subsequent permanent access into the station precinct	
Public transport changes	Nil	
Pedestrian and cyclist changes	N/A	
Street parking changes	N/A	

Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works								■																
Earthworks								■	■	■	■													
Station construction and fit-out											■	■	■	■	■	■	■	■	■					
Station precinct works															■	■	■	■						
Testing and commissioning (station)																	■	■						
Rail systems fit-out															■	■	■							
Testing and commissioning (rail)																			■	■	■	■	■	■


LUDDENHAM
Way Out

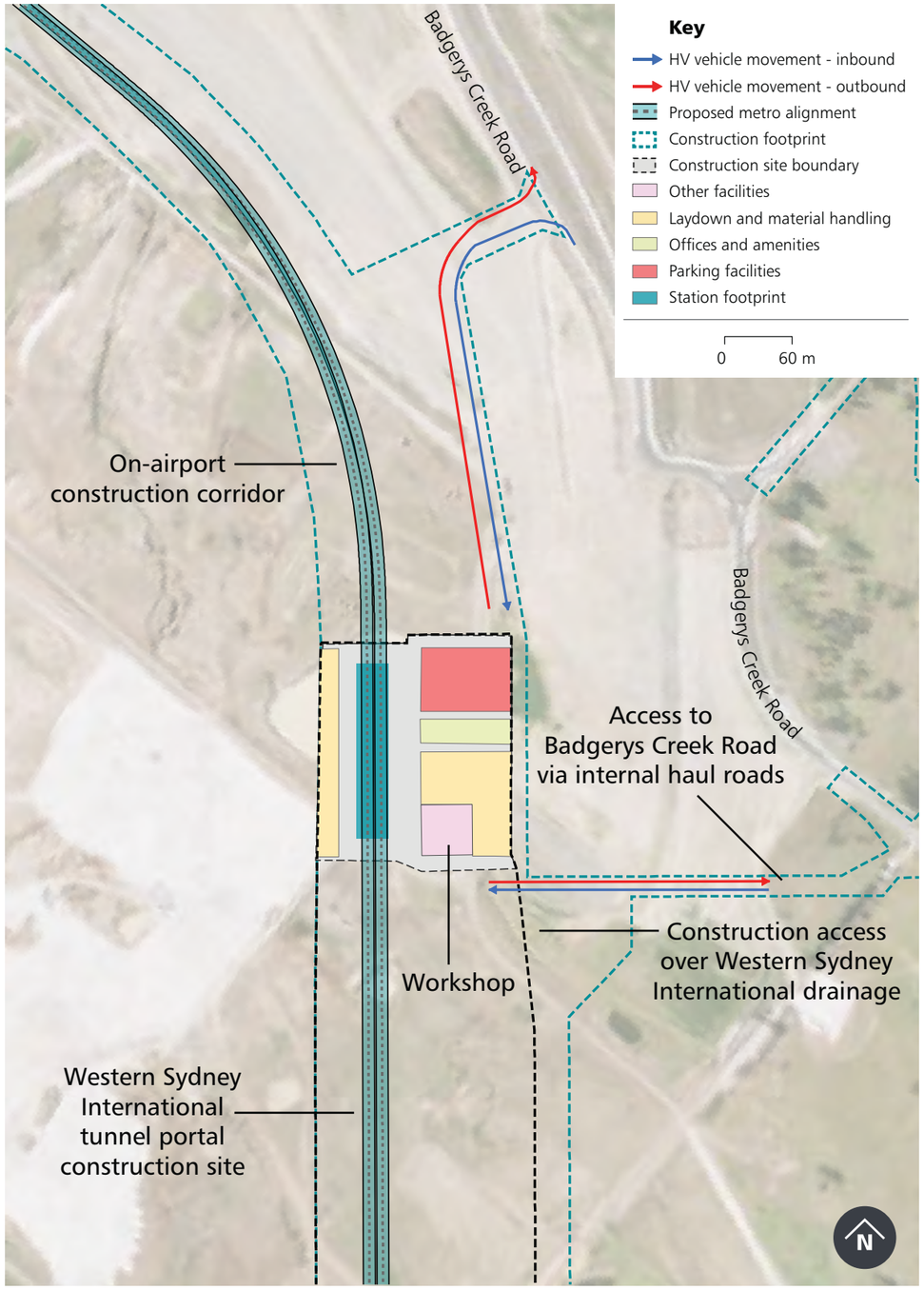
Airport Business Park Station

The proposed Airport Business Park would service a major new employment and services hub within the Western Economic Corridor. The metro station would become a key interchange for customers working in the precinct, servicing a walkable and high-amenity place with strong public transport connectivity.

A station at Airport Business Park would:

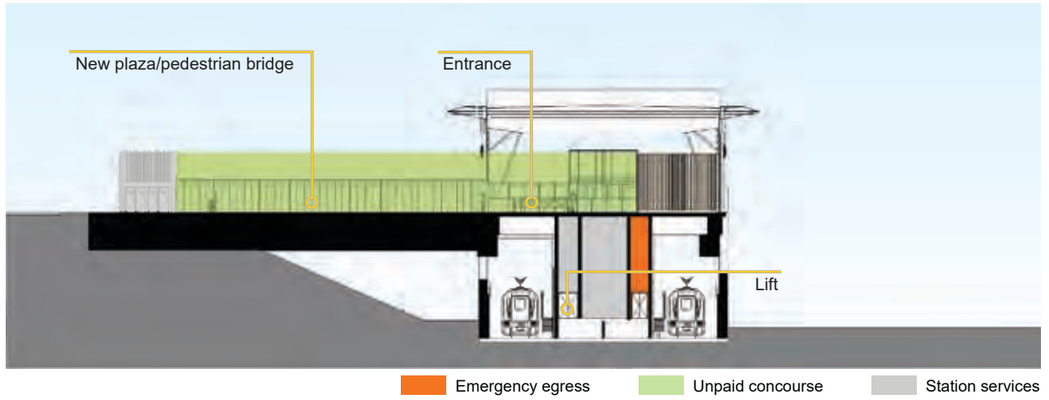
- support easy and efficient interchange with bus services and a future East West Rail Link towards Greater Parramatta
- support the success of the broader airport precinct and maintain flexibility for longer-term development around the Airport Business Park
- provide easy, efficient and safe cross-corridor active transport connections into the north and south Airport Business Park precinct
- be designed to allow for future widening across the corridor to create a high amenity public domain as the Business Park grows.

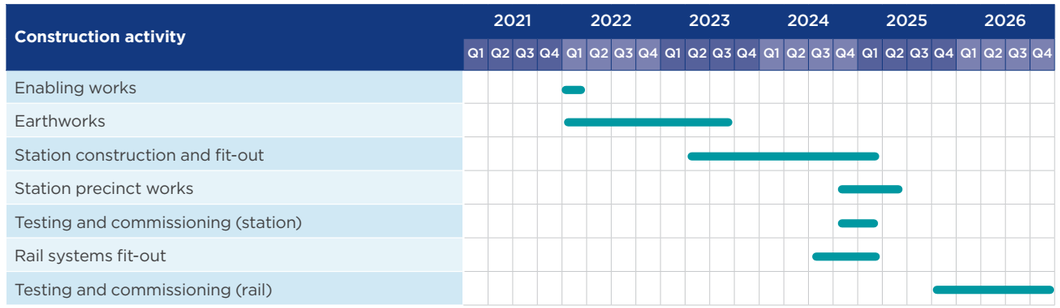
Feature	Description
Station entry	Entrance via concourse connected to a new local road
Location and orientation	Surface station with island platform located in a shallow cutting, with access to the station from the south via a pedestrian bridge connecting to the future street network of the business park
Transport connections	Walking and cycling, bus (including a new Rapid Bus network), kiss-and-ride, point-to-point transport and safeguarded for a future interchange with an East West Rail Link. Additional ground transport connections to be determined in conjunction with Transport for NSW Safeguarded for a future interchange with an East West Rail Link
Main features and transport facilities	• bus interchange with shelters and road kerb to enable customer transfer • kiss-and-ride facilities
Local government area	Liverpool City Council on-airport land within the WSI airport site
Customers	Customers travelling to and from employment centres within the business park



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, tunnel fit-out, construction of road works, spoil haulage, deliveries and TBM activities	
Station type	Surface	
Workforce	Estimated peak construction workforce 200	
Demolition	Nil	
Heritage	Nil	
Activities	Key construction activities: • construction of rail alignment including the transition from surface to in-cutting and portal dive structure • TBM tunneling from the portal dive structure • construction of access road to station from Badgerys Creek Road • construction of station and tunnel ventilation and equipment building, structures, finishes and fit-out	
Plant and equipment	Bulldozer Compressor Concrete pump Concrete truck Concrete saw Excavator Generator	Gantry crane Hand tools Jackhammer Mobile crane Pile boring rig Vibratory roller Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne and ground-borne noise	
Traffic changes	Provision of access to Badgerys Creek Road via internal haul roads	
Public transport changes	Nil	
Pedestrian and cyclist changes	Nil	
Street parking changes	Nil	






AIRPORT BUSINESS PARK


AIRPORT BUSINESS PARK

Airport Terminal Station

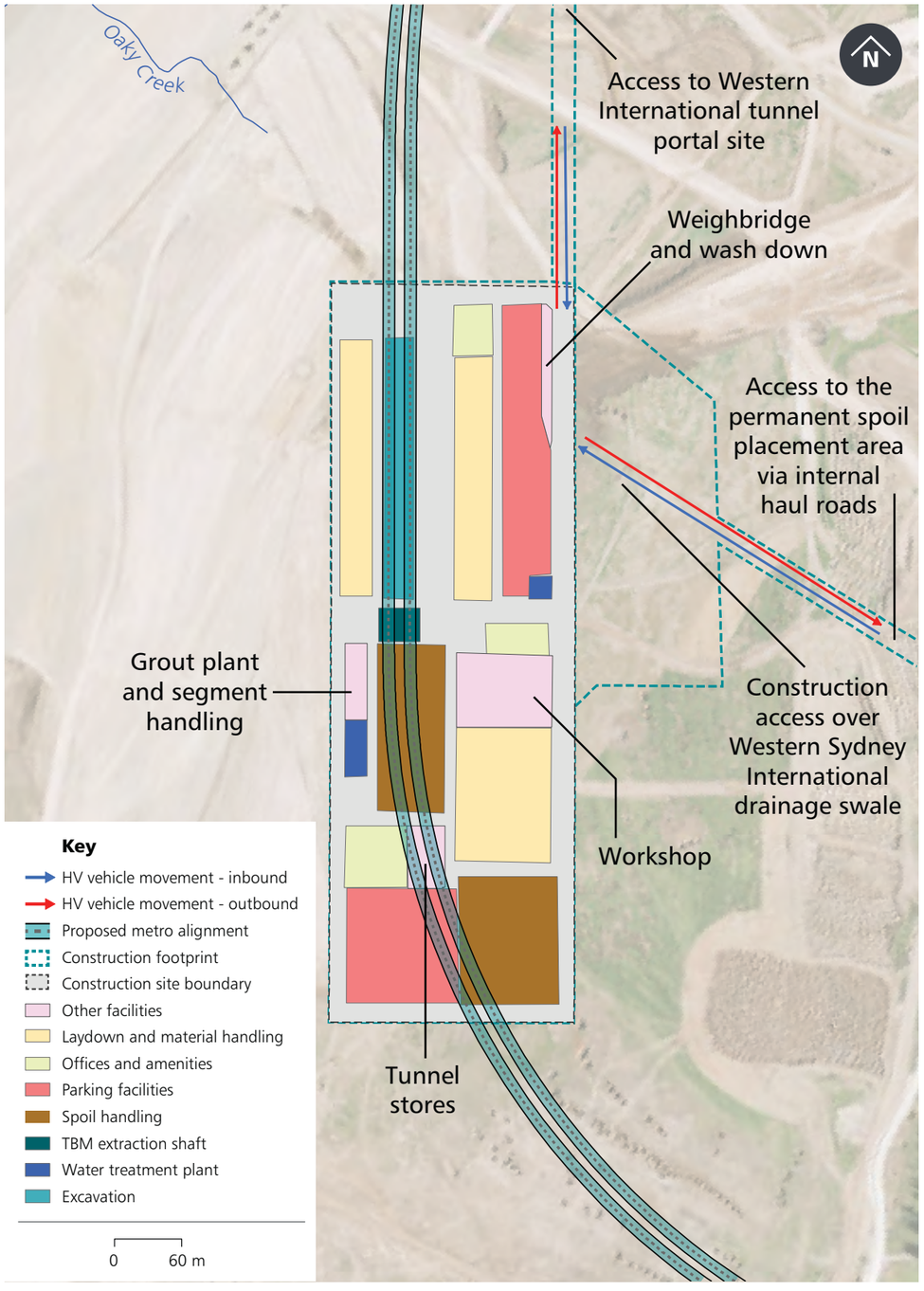
The proposed Airport Terminal Station would enable easy and efficient customer access to the new Western Sydney International Airport. The airport site is owned by the Australian Government.

The new metro station would integrate with and support the design outcomes for Western Sydney International Airport, and maintain flexibility to allow for future airport expansion.

A station at Airport Terminal would:

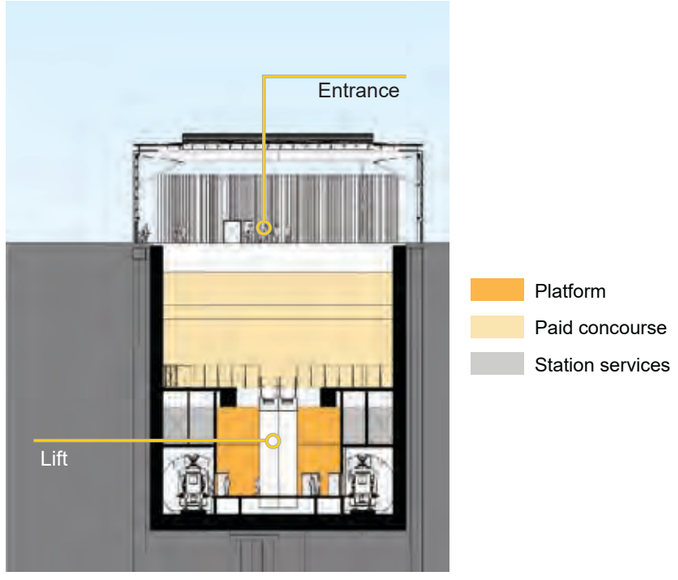
- allow easy, efficient, safe, comfortable and intuitive customer access to the airport
- be designed to allow flexibility to support the long-term growth and development of the airport
- allow for a future East West Rail Link towards Greater Parramatta.

Feature	Description
Station entry	Towards the western end of station via a connection to the airport terminal (to be determined)
Location and orientation	Cut-and-cover station with an island platform
Transport connections	Ground transport connections to be determined in conjunction with Transport for NSW
Main features and transport facilities	Other transport modes servicing the airport will include road access for private vehicle, taxi and kiss-and-drop, buses and coaches. scope for retail facilities
Local government area	Liverpool City Council
Customers	Customers travelling to and from airport



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, tunnel fit-out, spoil haulage, deliveries and TBM activities
Station type	Cut-and-cover
Workforce	Estimated peak construction workforce 220
Demolition	Nil
Heritage	Nil
Activities	Key construction activities: • Station box excavation • TBM maintenance and relaunch • TBM operations and support including spoil handling • construction of the station structures, finishes and fit-out
Plant and equipment	Bulldozer, Compressor, Concrete pump, Concrete truck, Roadheader, Concrete saw, Excavator, Generator, Gantry crane, Hand tools, Jackhammer, Mobile crane, Pile boring rig, TBM, Vibratory roller, Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne and ground-borne noise
Traffic changes	Nil
Public transport changes	Nil
Pedestrian and cyclist changes	Nil
Street parking changes	Nil



Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works					■																			
Earthworks					■	■	■	■	■															
TBM retrieval										■	■													
Aerial concourse										■	■	■	■	■	■									
Station construction and fit-out												■	■	■	■	■	■	■	■					
Station precinct works																		■	■					
Testing and commissioning (station)																		■	■					
Rail systems fit-out																		■	■	■				
Testing and commissioning (rail)																				■	■	■	■	■


AIRPORT
TERMINAL
M
Metro
Lift
Lift


Platforms
Metro

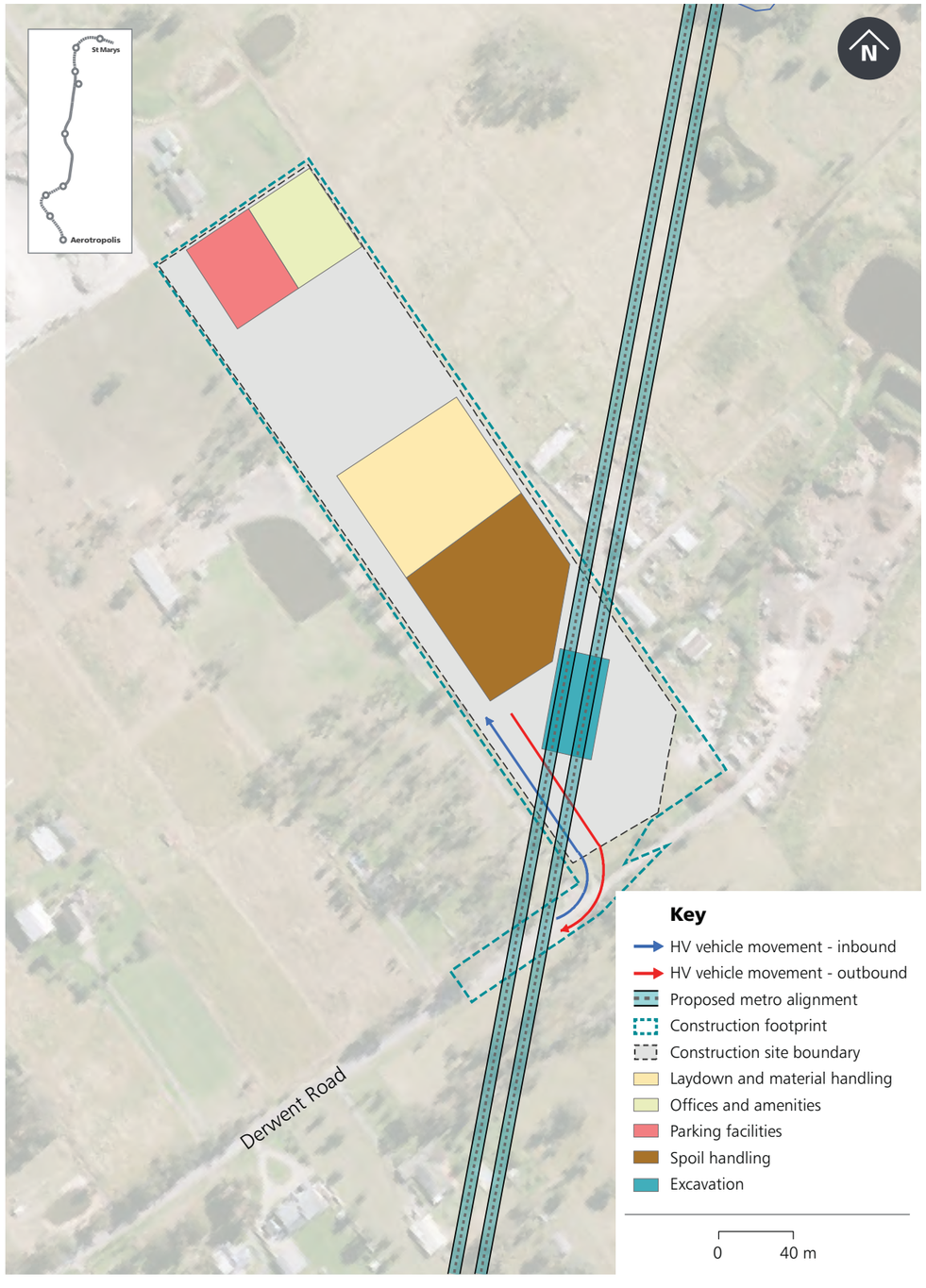
Bringelly services facility

A services facility is proposed to be built at Bringelly to provide fresh air ventilation into the Western Sydney International to Bringelly tunnel section and emergency exits. The metro train fleet is electric.

Bringelly services facility – final arrangements

Feature	Description
Location and orientation	Facility near northern end of Derwent Road
Main features	• water quality treatment plant • ventilation plant rooms • air-distribution equipment • electrical rooms • fire sprinkler systems • emergency lighting and signage • ancillary rooms supporting the ventilation system • workforce amenities

Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																								
Earthworks																								
TBM maintenance and relaunch																								
Facility construction and fit-out																								
Testing and commissioning (facility)																								
Rail systems fit-out																								
Finishing works																								
Testing and commissioning (rail)																								



Construction at a glance		
Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, works within an acoustic shed, tunnel fit-out, construction during road possessions, spoil haulage, deliveries and TBM activities	
Workforce	Estimated peak construction workforce 70	
Demolition	Nil	
Activities	Key construction activities: • enabling work including protection or diversion of utilities • establishment of site access points • site clearing • piling and pile capping • shaft excavation • spoil handling, storage and transport • construction of above and below ground structures for the services facility • TBM maintenance and relaunch • services facility fit-out • rail and tunnel systems fit-out	
Plant and equipment	Bulldozer Concrete pump Concrete truck Roadheader Crusher Excavator Generator	Gantry crane Hand tools Jackhammer Pile boring rig TBM Vibratory roller Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures to manage operational airborne and ground-borne noise	
Traffic changes	Derwent Road – upgrade and provision of turning lanes to provide access	
Public transport changes	Nil	
Pedestrian and cyclist changes	Nil	
Street parking changes	Nil	

An example of a Sydney Metro services facility.

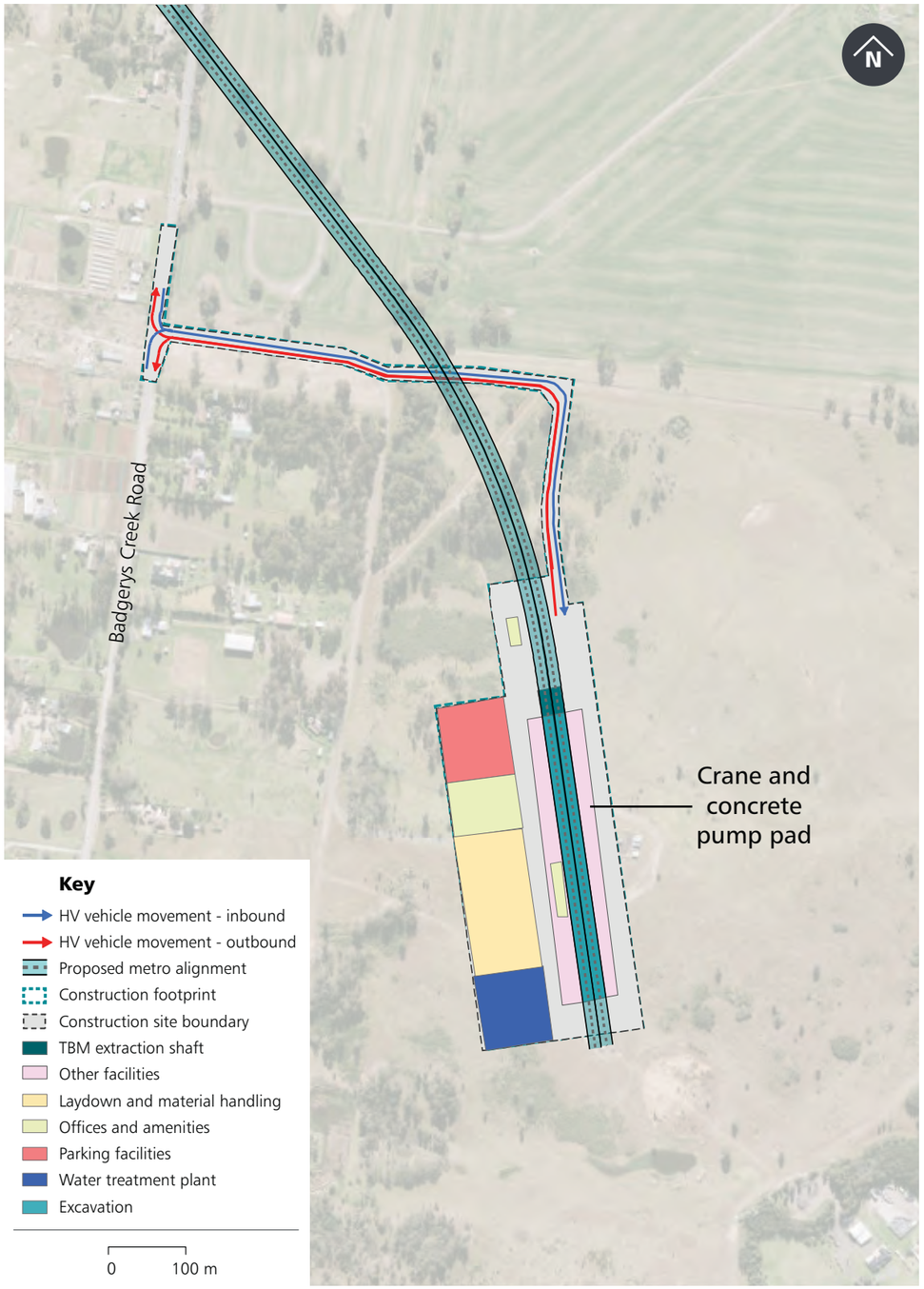
Aerotropolis Station

The proposed Aerotropolis Station would serve the commercial heart of Western Sydney Aerotropolis, known as the Aerotropolis. Aerotropolis Station would become a major transport interchange, providing important connectivity to the future new central business district of the Western Parkland City.

A station at the Aerotropolis would:

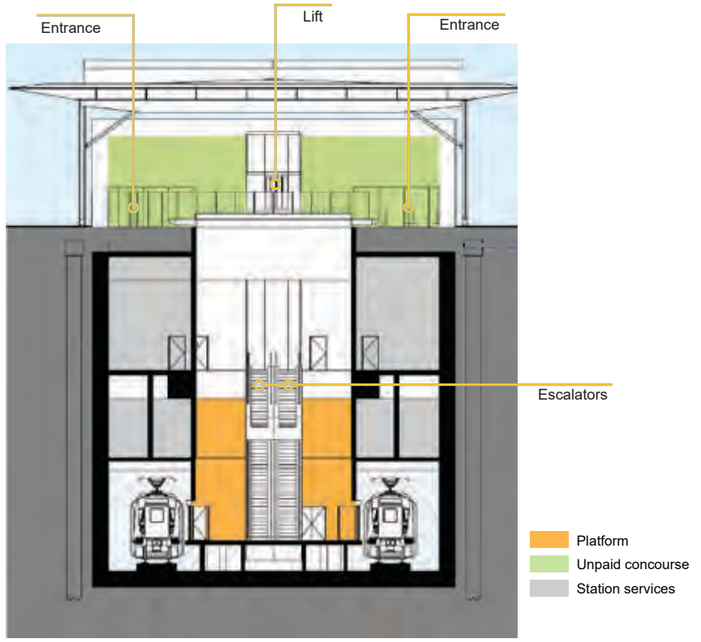
- catalyse a thriving city centre precinct at the heart of the Western Parkland City
- contribute to a high-amenity public realm within the Aerotropolis that celebrates the Western Parkland City
- minimise severance of the city centre precinct
- support easy, efficient and safe interchange with a potential future South West Rail Link Extension, East West Rail Link and rapid and local bus services.

Feature	Description
Station entry	Entrance at the northern end of the metro station via a new station plaza with links to a new road network
Location and orientation	Cut-and-cover station with an island platform in a generally north–south orientation. The station would be divided into three main levels, consisting of ground floor concourse providing access, a mezzanine level area providing vertical transport and a possible transfer point to a future east-west metro service, and a platform level
Transport connections	Bus (including the new Rapid Bus network), kiss-and-ride, temporary park-and-ride, point-to-point transport, walking and cycling and safeguarded for a future interchange with a potential future East West Rail Link and South West Rail Line extension
Main features and transport facilities	• secure bicycle parking • transport interchange facilities including bus bays and bus layover facilities accessed from a bus-only street • kiss-and-ride bays and point-to-point vehicle facilities • temporary surface park-and-ride facility with up to 300 spaces, located within the space allocated for potential future rail corridors • new road carriageways to connect the wider precinct • new pedestrian crossings • new public plaza adjacent to the proposed station entrance • scope for future station retail
Local government area	Liverpool City Council
Customers	Customers travelling to and from employment centres and other facilities in Western Parkland City



Construction at a glance

Construction hours	Standard hours – Monday to Friday 7:00am to 6:00pm, Saturday 8:00am to 1:00pm Activities that may be carried out outside the standard construction hours include utility works, tunnelling, tunnel fit-out, spoil haulage, deliveries and TBM activities
Station type	Cut-and-cover
Workforce	Estimated peak construction workforce 220
Demolition	Nil
Heritage	Nil
Activities	Key construction activities: • Station box excavation • TBM maintenance and relaunch • TBM operations and support including spoil handling • construction of the station structures, finishes and fit-out
Plant and equipment	Bulldozer Compressor Concrete pump Concrete truck Roadheader Concrete saw Excavator Generator Gantry crane Hand tools Jackhammer Mobile crane Pile boring rig TBM Vibratory roller Water cart
Noise Management	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures for airborne and ground-borne noise
Traffic changes	Provision of access from Badgerys Creek Road into the station precinct
Public transport changes	Nil
Pedestrian and cyclist changes	Nil
Street parking changes	Nil



Construction activity	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Enabling works																								
Earthworks																								
TBM retrieval																								
Station construction and fit-out																								
Station precinct works																								
Testing and commissioning (station)																								
Rail systems fit-out																								
Testing and commissioning (rail)																								


M
A


ROTROPOLIS
M
CAFE

Project corridor and tunnel alignment

Workers inspect a completed Sydney Metro railway tunnel.

Proposed corridor and tunnel alignment

The new metro will be built on an alignment within a railway corridor. Due to topography and construction methodologies, operational needs and to get the best outcome for customers, the alignment is made up of a combination of:

Tunnels

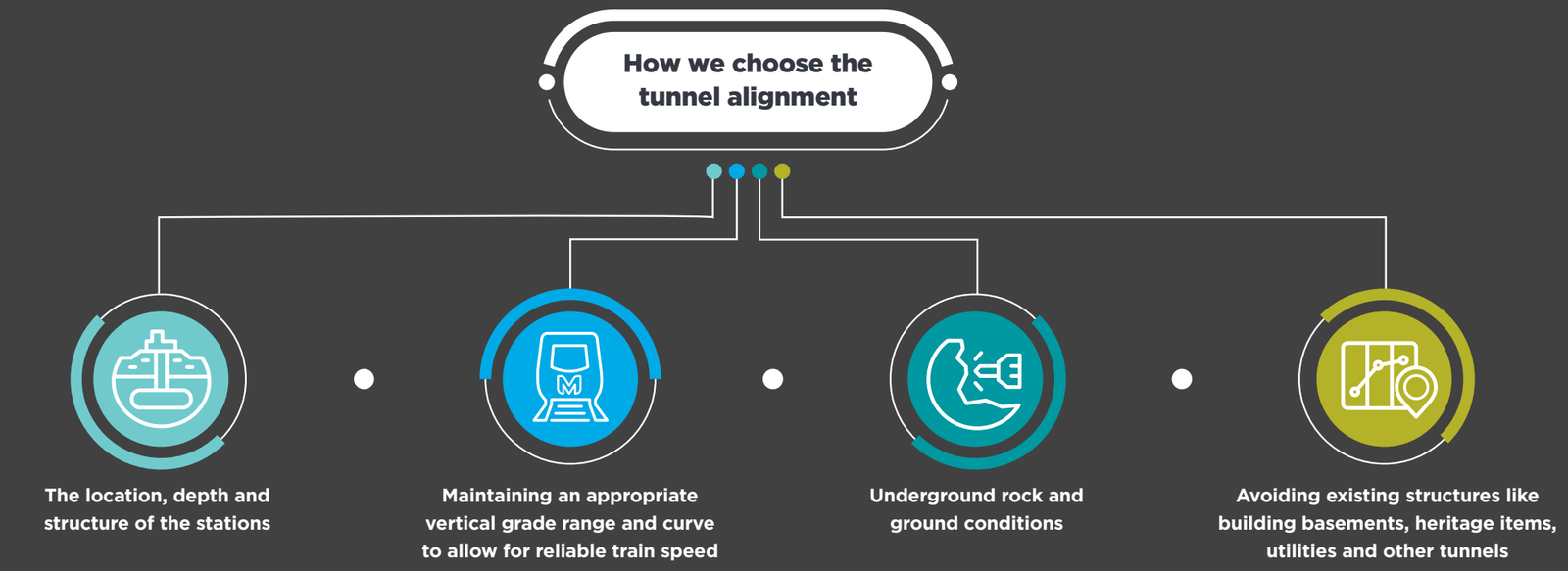
Twin metro railway tunnels built by tunnel boring machines take the railway below ground under roads, waterways and property. The tunnel boring machines are underground mechanical factories, which dig out the rock then build the tunnel as they go, leaving behind them a fully-formed tunnel which is then fitted out with tracks and overhead wiring.

At-grade

The railway is built at ground level. The railway corridor is fenced and monitored by the fully-automated railway system, with intrusion detection technology keeping train operations safe.

Skytrain

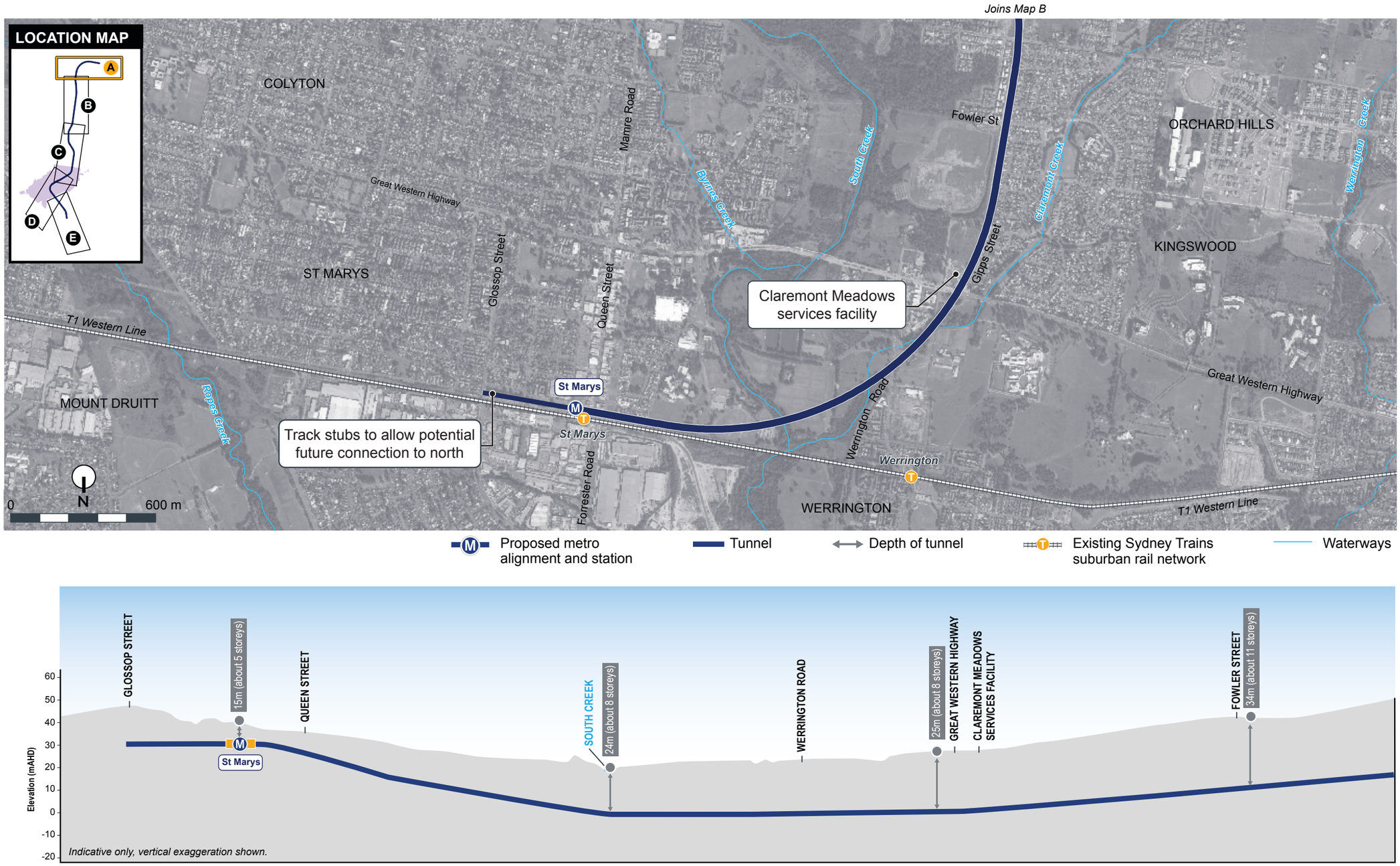
The railway is elevated above the ground on a viaduct, with the station platforms also built above ground. The viaduct allows the railway to be located above roads, utilities such as the Warragamba to Prospect Water Supply Pipelines and waterways. The skytrain viaduct also allows the communities below to remain connected, with vehicles and people free to move above under the structure, where possible.



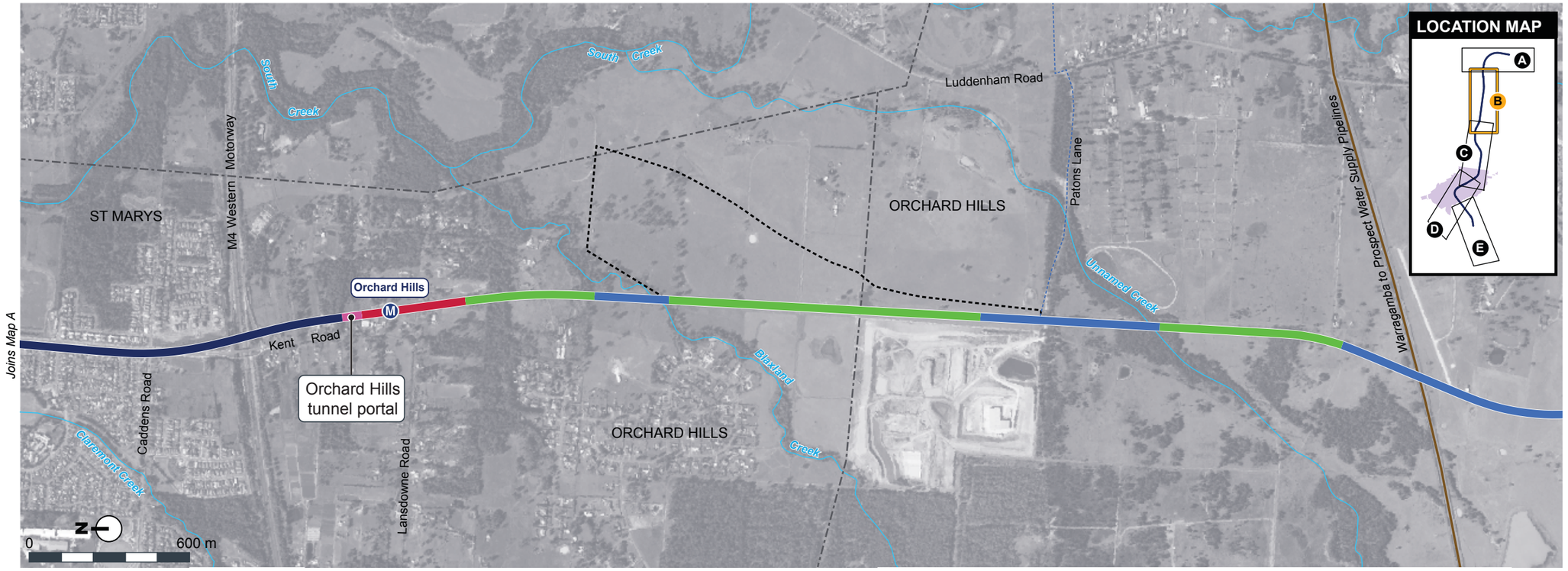
A train on the skytrain viaduct in Sydney's north west.


60 60
60 60
40
KEEP CLEAR

St Marys to Orchard Hills corridor alignment



Orchard Hills to Luddenham corridor alignment



Proposed metro alignment and station

Tunnel

Cut-and-cover

In-cutting

Surface

Bridge/viaduct

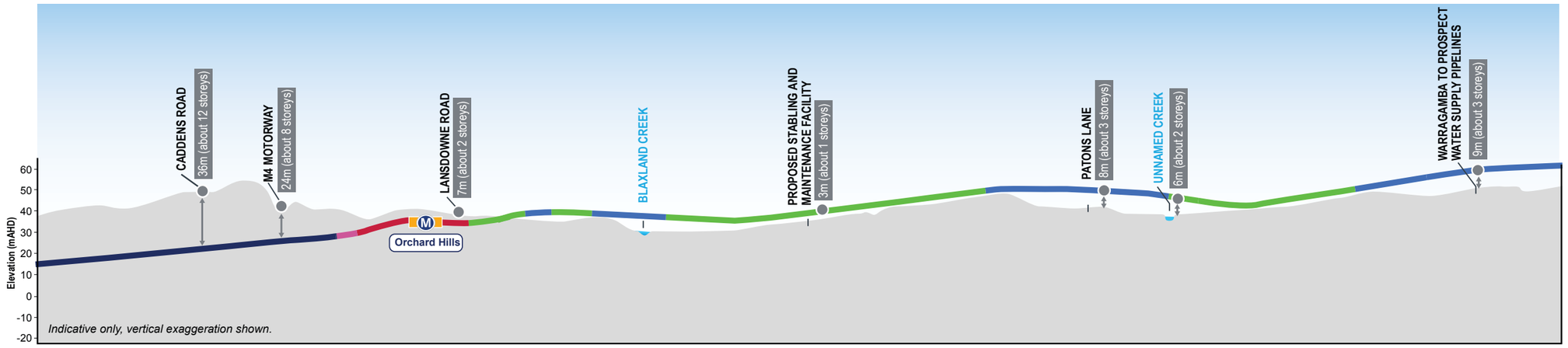
Waterways

Existing 330kV power line

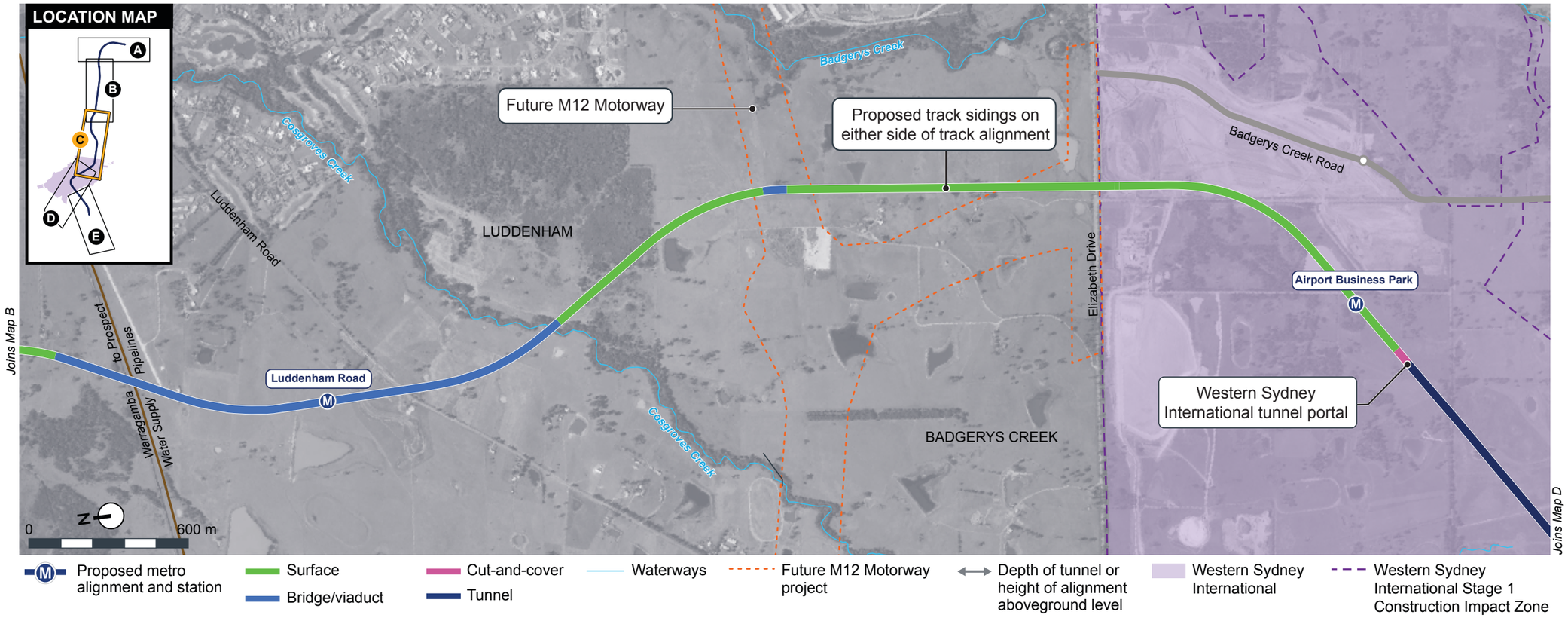
Depth of tunnel or height of alignment aboveground level

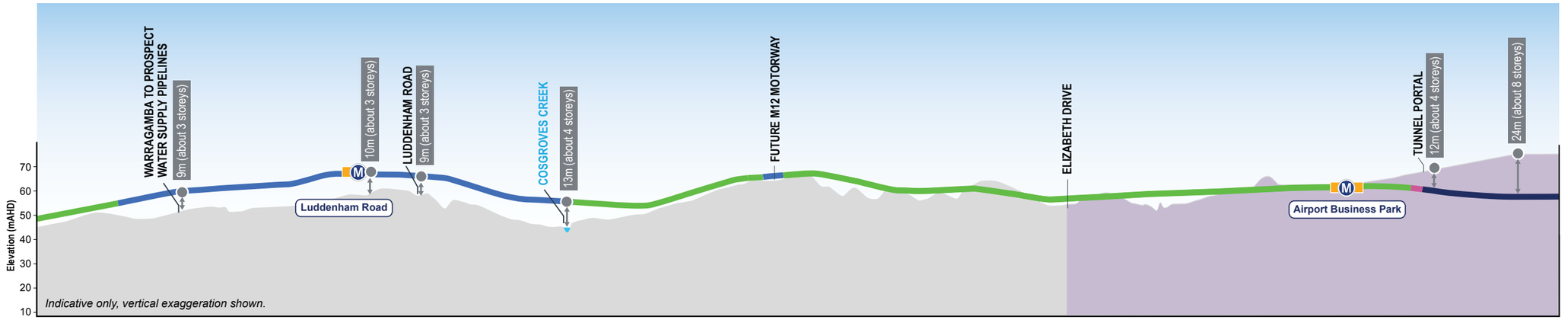
Proposed permanent power supply corridor (indicative alignment)

Proposed stabling and maintenance facility

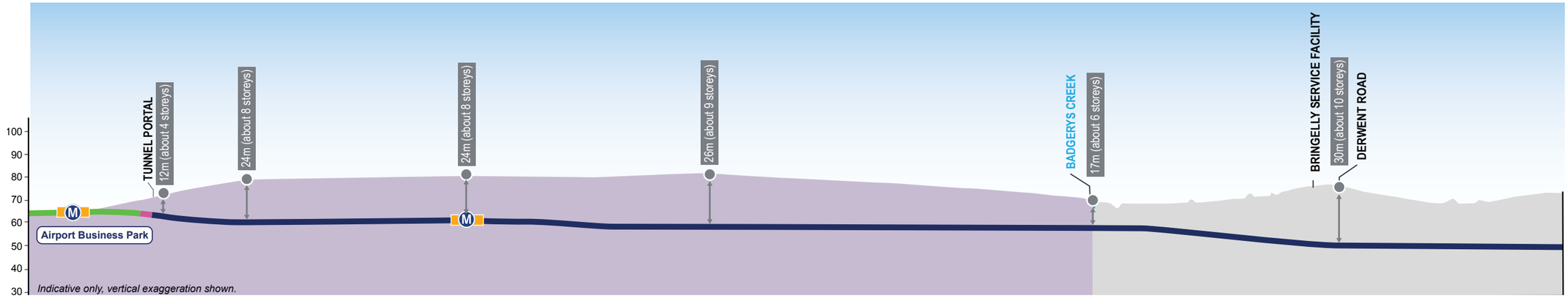


Luddenham to Airport Business Park corridor alignment

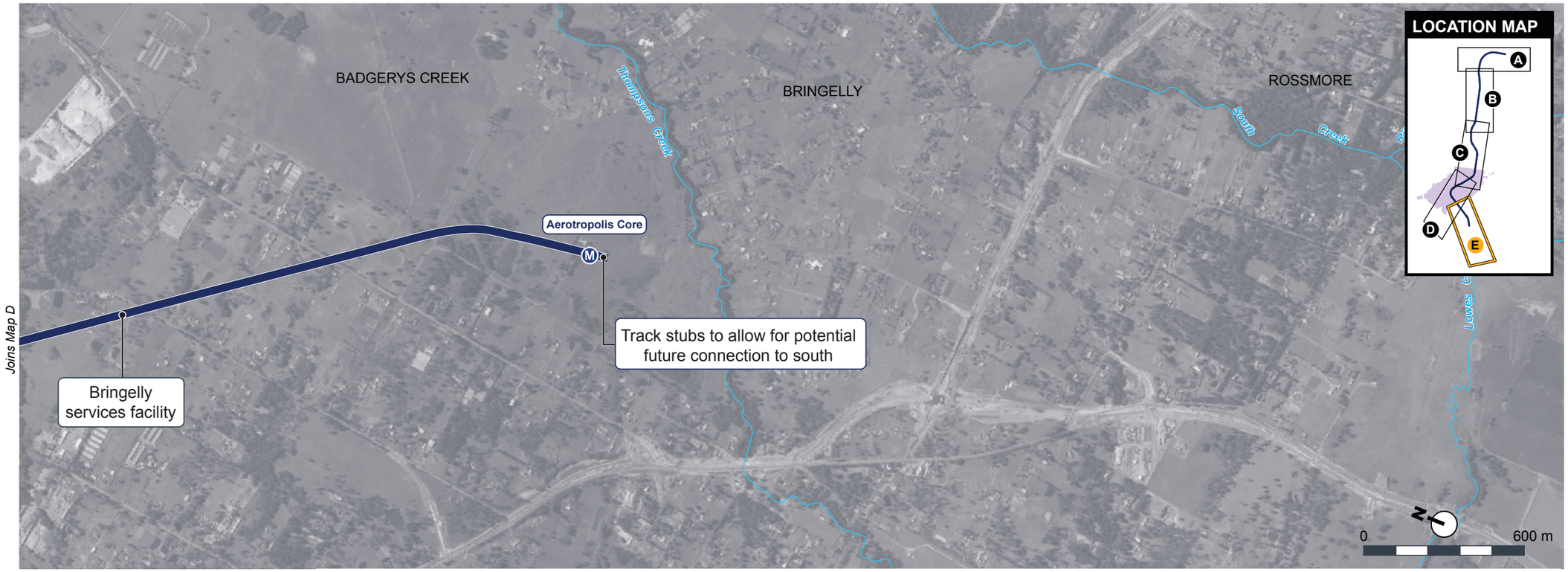


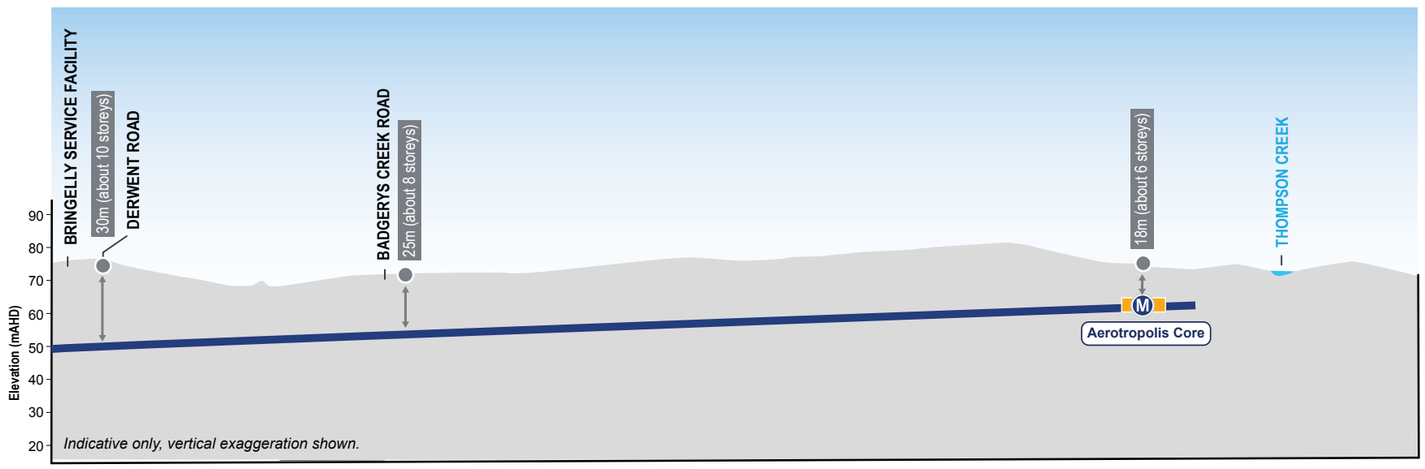


Airport Business Park to Bringelly corridor alignment



Bringelly to Aerotropolis corridor alignment





An artist's impression of CSIRO.


CSIRO

Working with the community and stakeholders

A Sydney Metro community event.

Working with the community and stakeholders

Early consultation has already occurred on the city-shaping Sydney Metro – Western Sydney Airport project.

Community surveys

In February 2020 and July 2020, members of the community were invited to participate in online surveys about the Sydney Metro – Western Sydney Airport project. About 1700 people responded to the survey in February to share their priorities for public transport in Greater Western Sydney and to provide feedback on future station precincts. About 320 people responded to the survey in July, sharing their views on how they expect to use the new service, and how they would like to be updated about potential construction impacts.

During early engagement

1700 **surveys** were completed

320+ **submissions** and comments were received

Community survey feedback

In February 2020, community members were invited to share their views to help shape future metro station precincts in Greater Western Sydney

Survey participants

Males **60.9%**

Females **38.6%**

Other **0.5%**

Aged

35–44 **43%**

25–34 **24%**

45–54 **15%**

You live in

Marsden Park
Claremont Meadows
Ropes Crossing
Schofields
St Marys
Orchard Hills
Kingswood

You speak

English
Hindi
Gujarati
Tagalog

You value

Access to public transport
Parks and recreation spaces
A sense of community
Natural environment

How you get around

46% 43% 6%

Public transport use

41% use daily
17% 3–6 days per week
19% once a month
14% don't use

The benefits of a metro station in your community

Metro connections with other public transport
Reduced travel on roads
Improved connections
Jobs created close to new metro stations
Local areas revitalised with cafes, restaurants and shops

Retail and services which are important to your community

Retail

42% Supermarket
27% Pharmacy
14% Gym

Community facilities

35% Community space
28% Government services
22% Child care

Public spaces

38% Tables/seating
34% Grass/landscaping
24% Playgrounds

Top transport priorities

New public transport routes
Connecting bus services to new metro stations
More accessible public transport connections
Reducing road congestion

Public transport barriers

Infrequent or unreliable
Safety and security
Lack of pedestrian infrastructure
Not easily accessible

What else we heard from you

- ✓ You support a growing Western Sydney
- ✓ You support job creation for your local areas
- ✓ You would like future connectivity with other modes of transport
- ✓ Less time commuting means more time with family

Place managers

Sydney Metro has dedicated community relations specialists called place managers who can be contacted for further information about the project. Their role is to act as a single, direct contact between members of the community and the project team. They can be contacted on a 24-hour community toll-free information line **1800 717 703** or via the project email **sydneymetrowsa@transport.nsw.gov.au**

NSW planning process for Sydney Metro – Western Sydney Airport

A Sydney Metro community event.

How we connected with you

- Delivered project information to letterboxes
- Project advertisements in local and culturally and linguistically diverse newspapers
- Sent email updates to our registered database
- Posted information on social media
- Undertook surveys seeking feedback
- Provided information on the project website

What you have told us

Having jobs closer to home means I get more time with my family

The character of local areas and landscaping needs to be considered in the designs

I would like to see future connections, like to Western Sydney Airport

Potential impacts to the rural lifestyle in some areas is important to consider

Local impacts like parking and traffic are important to me

I would like to understand more about construction impacts and further consultation

There should be sufficient infrastructure to support the metro

I would like to see future connections to other metro lines

It will link people to more jobs, services and businesses

Stations should include ample car parking

Interchanges with other transport modes and connections to stations are important to consider

Stations should be fully accessible

Sydney's new Tallawong Station.


2 Tallawong
Metro to
2 Tallawong

lia's biggest public transport project

Sydney's new metro train

KEY FACTS

TRAIN FEATURES

SAFETY

West

sydneymetro.info
1800 012 575
sydneymetrowest@transport.nsw.gov.au

NSW

sydney METRO

Have your say

Community engagement event for Sydney Metro West.

More about the Environmental Impact Statement

This document is a summary of the Sydney Metro – Western Sydney Airport project Environmental Impact Statement (the EIS).

Sydney Metro is making the EIS and supporting materials as easy to access as possible.

Visit **planningportal.nsw.gov.au/major-projects** to view the full EIS.

Visit **sydneymetro.info** to learn more about Sydney Metro and sign up for email alerts.

Visit **sydneymetro.info/wsa** to view an interactive map of the project, find out what you can expect in your area and learn from expert members of the project team.

Call us on **1800 717 703** to talk to one of our dedicated place managers.

Email your queries to **sydneymetrowsa@transport.nsw.gov.au** and we'll get back to you.

The Sydney Metro team, including our team of project experts, is available to provide you with information about Sydney Metro, and to help you find out more about the EIS. If you are having difficulty accessing any of the information available please contact us and we'll make arrangements to assist you.

Where to view the Environmental Impact Statement

The EIS and its accompanying documents may be viewed on the NSW Department of Planning, Industry and Environment website: **planningportal.nsw.gov.au/major-projects** and **sydneymetro.info**

Interactive portal

We aim to provide you with project information that is easy to access and simple to navigate.

An interactive portal is available through the Sydney Metro website: **sydneymetro.info/wsa**, where you can access planning documents and find out what you can expect from your area.

The portal also includes information to support your understanding of the planning process, an interactive map of the project and videos from our team of project experts.

The Sydney Metro team is available to answer any questions you may have.

Have your say

The Environmental Impact Statement

The Environmental Impact Statement is on public exhibition until **Wednesday, 2 December 2020**.

Anyone can make a submission in any language, about the Environmental Impact Statement to the Department of Planning, Industry and Environment.

The Department will then collate submissions and publish them on their website. Sydney Metro will review all the submissions and prepare a Submissions Report to respond to issues raised.

If changes are required as a result of the issues raised, an Amendment Report or Preferred Infrastructure Report may also be prepared. Approval from the Minister for Planning and Public Spaces is required before Sydney Metro can proceed with the project.

Your submission much reach the Department by Wednesday, 2 December 2020.

How to make a submission

Online: visit **planningportal.nsw.gov.au/major-projects** and follow the 'on exhibition' links

Write a letter to:

Planning and Assessment
Department of Planning, Industry and Environment
Locked Bag 5022
Parramatta NSW 2124

Your letter must include:

1. Your name and address, at the top of the letter only
2. The name of the application and the application number (SSI-10051)
3. A statement on whether you support or object to the proposal
4. The reasons why you support or object to the proposal
5. A declaration of any reportable political donations made in the previous two years.

If you have any questions about this process you can contact the NSW Department of Planning, Industry and Environment.

Call: **1300 305 695**

Email: **majorprojectssupport@planning.nsw.gov.au**

The Department may publish any personal information you have included in your submission on a proposal. Do not include any personal information in your submission that you do not want published.

For more information, view the Department's Privacy Statement at: **planning.nsw.gov.au/privacy**

Commonwealth draft environmental assessments – on-airport land (Airports Act) and off-airport land (EPBC Act)

Assessment under the Commonwealth Environment Protection and Biodiversity Conservation Act is required as some areas of the project are within Commonwealth land (including the airport) and the project may affect matters of national environmental significance.

Information about the on-airport and off-airport draft environmental assessments can be accessed on the interactive portal through the Sydney Metro website: **sydneymetro.info/wsa.**

Submissions can be made in relation to the off-airport components of the project in accordance with the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the on-airport components of the project in accordance with the *Commonwealth Airports Act 1996.*

Submissions for the Commonwealth processes close on Wednesday, 18 November 2020.

How to make a submission

Write a letter to:

Sydney Metro
Attn: Associate Director, Planning Approvals
Level 43, 680 George Street
Sydney NSW 2000

Email: **sydneymetrosubmissions@transport.nsw.gov.au**

Translating and Interpreting Service

If you require the services of an interpreter, please contact the **Translating and Interpreting Service** on **131 450** and ask them to call **Sydney Metro** on **1800 717 703**. The interpreter will then assist you with translation.

Se avete bisogno dell'ausilio di un interprete, vi preghiamo di contattare il **Servizio di Traduzione ed Interpretariato** al numero **131 450** e chiedere di chiamare **Sydney Metro** al numero **1800 717 703**. L'interprete vi assisterà nella traduzione.

আপনার, একজন দোভাষীর (ইন্টারপ্রেটার) সেবা-সাহায্য আবশ্যক হলে, অনুগ্রহ করে **131 450** নং এ **ট্রান্সলেটিং এন্ড ইন্টারপ্রেটিং সার্ভিস** এর সাথে যোগাযোগ করুন, এবং **1800 717 703** নং এ **সিডনী মেট্রো** কে কল করতে তাদের বলুন। তখন অনুবাদ/ভাষান্তরে, দোভাষী আপনাকে সাহায্য করবে।

如果您需要翻译服务，请致电**131 450** 翻译和口译服务，让他们打 **1800 717 703** 给 悉尼地铁， 翻译员然后将帮助您进行翻译。

إذا كنتم بحاجة إلى خدمات مترجم، يرجى **الاتصال بخدمة الترجمة الكتابية والشفهية** على الرقم **131 450** واطلبوا منهم الاتصال **بمترو سيدني على الرقم 1800 717 703**. وبعد ذلك سيقوم المترجم بمساعدتكم في الترجمة.

Εάν χρειάζεστε τις υπηρεσίες διερμηνέα, παρακαλείστε να επικοινωνήσετε με την **Υπηρεσία Μεταφραστών και Διερμηνέων** στο **131 450** και ζητήστε τους να καλέσουν το **Sydney Metro** στο **1800 717 703**. Ο διερμηνέας θα σας βοηθήσει στη μετάφραση.

통역서비스가 필요하시면, 번역 및 통역 서비스 **(Translating and Interpreting Service)** 전화 **131 450** 에 연락하시어 **Sydney Metro** 전화 **1800 717 703** 에 연결해달라고 요청하십시오. 통역관이 통역을 도와 드릴 것입니다.

Nếu quý vị cần dịch vụ thông dịch viên, xin liên lạc **Dịch vụ Thông Phiên Dịch (Translating and Interpreting)** ở số **131 450** và yêu cầu gọi **Sydney Metro** ở số **1800 717 703.** Sẽ có thông dịch viên giúp cho quý vị việc thông dịch.

यदि आपको दुभाषिए की सेवाओं की ज़रूरत है, तो कृपया अनुवाद एवं दुभाषिया सेवा **(Translating and Interpreting Service)** से **131 450** पर संपर्क करें और उन्हें सिडनी मेट्रो **1800 717 703** पर को फोन करने का निवेदन करें। फिर दुभाषिया अनुवाद में आपकी मदद करेगा।

如果您需要口譯員的服務，請致電**131 450**聯絡翻譯和口譯服務，要求他們致電 **1800 717 703**給悉尼地鐵 **(Sydney Metro)**。然後口譯員將會協助您翻譯。

Jekk għandek bżonn ta' interpretu, ikkuntattja **TIS National** fuq **131 450** u staqsihom biex iċemplu **1800 717 703**.

Kung kailangan mo ng mga serbisyo ng isang interpreter, mangyaring kontakin ang **Translating and Interpreting Service** sa **131 450** at hilingin sa kanila na tawagan ang **Sydney Metro** sa **1800 717 703**. Ang interpreter ay tutulong sa iyo sa pagsasaling-wika.