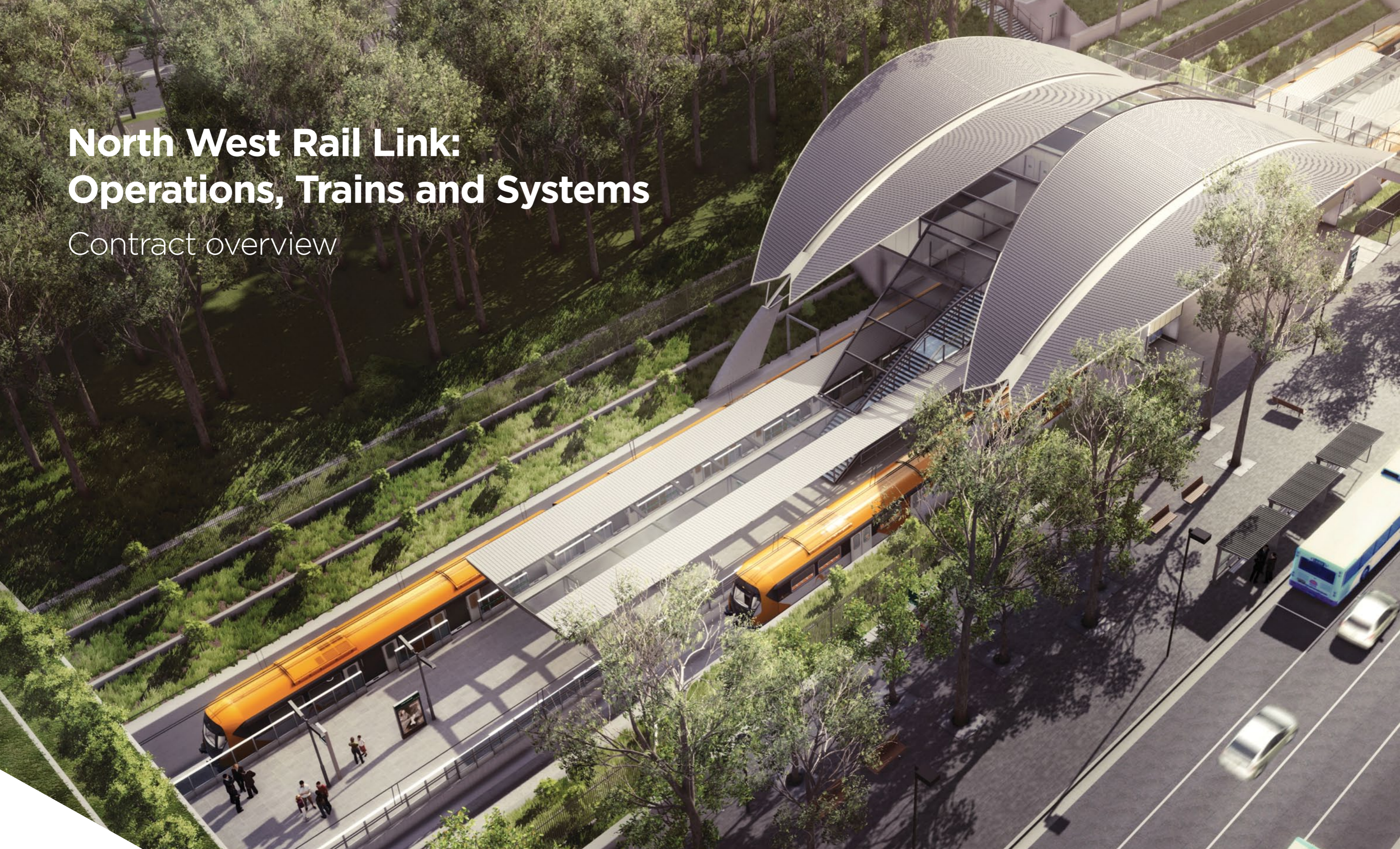


# North West Rail Link: Operations, Trains and Systems

Contract overview



# About this document

The \$8.3 billion North West Rail Link is Australia's biggest public transport project currently under construction.

Rapid transit services will start in the first half of 2019 with a train every four minutes in the peak. The project includes eight new railway stations, 4,000 commuter car parking spaces and the upgrade of five existing stations to rapid transit standards.

This document summarises the customer benefits of the Operations, Trains and Systems contract – a \$3.7 billion Public Private Partnership awarded by the NSW Government in September 2014 to the Northwest Rapid Transit consortium.

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Artist's impression: aerial perspective of the new Kellyville Railway Station on the skytrain.



The landmark new railway bridge over Windsor Road, Rouse Hill.

## Premier's message

A train every four minutes in the peak.

No need for a timetable - just turn up and go.

A rail system that can move more people, more quickly than any other form of transport Sydney has ever seen.

These are just some of the features of the largest Public Private Partnership ever awarded in NSW - a contract which has proudly been awarded by the NSW Government on behalf of the people of NSW.

The North West Rail Link's operations contract outlines how Northwest Rapid Transit will deliver this critical infrastructure investment by the first half of 2019, and will operate the new rapid transit system for 15 years.

This contract sets strict conditions to lock in the highest level of customer service.

As the first stage of the new Sydney Rapid Transit network, the North West Rail Link is the start of a great success story for the travelling public.

The good news for public transport in our global city will continue as the NSW Government plans for Sydney Rapid Transit, the next exciting chapter beyond the North West Rail Link, under Sydney Harbour and onto Bankstown.

The NSW Government is proud to be delivering Australia's largest public transport project, the North West Rail Link - a transformational project for our global city.

**Mike Baird MP**  
PREMIER OF NEW SOUTH WALES  
MINISTER FOR INFRASTRUCTURE AND  
MINISTER FOR WESTERN SYDNEY

## Minister's message

The NSW Government is putting the customer at the centre of everything we do in public transport.

This is evident in the North West Rail Link operations contract, which was awarded in September 2014.

The project, and the contract, will transform and modernise public transport in Sydney forever.

With three massive tunnel boring machines already hard at work, the NSW Government is well and truly delivering on its promise to build a world class railway for a global city.

This document tells the North West Rail Link story from a customer perspective.

It shows just how Australia's first new fully automated trains will look and operate, and the customer experience the new stations will provide.

Much work lies ahead to deliver Australia's biggest public transport project - on time and on budget.

This document outlines how the North West Rail Link's landmark Operations, Trains and Systems contract will deliver rapid transit to Sydney - and grow with the city, for generations to come.

**Gladys Berejiklian MP**  
MINISTER FOR TRANSPORT



NSW Premier Mike Baird and Transport Minister Gladys Berejiklian awarding the Operations, Trains and Systems contract on September 16, 2014.

# Bringing rapid transit to Sydney

The North West Rail Link is the first stage of Sydney's new rapid transit network.

It is a priority project for the NSW Government and Australia's single biggest public transport infrastructure project.

As an integral part of *Sydney's Rail Future*, the project features a new generation of reliable, safe, automated state-of-the-art rapid transit trains for Sydney.

The technologies used in rapid transit are an Australian first.

Customers will benefit from a train every four minutes in peak times, or 15 trains an hour. There will be no need for a timetable - just turn up and go.

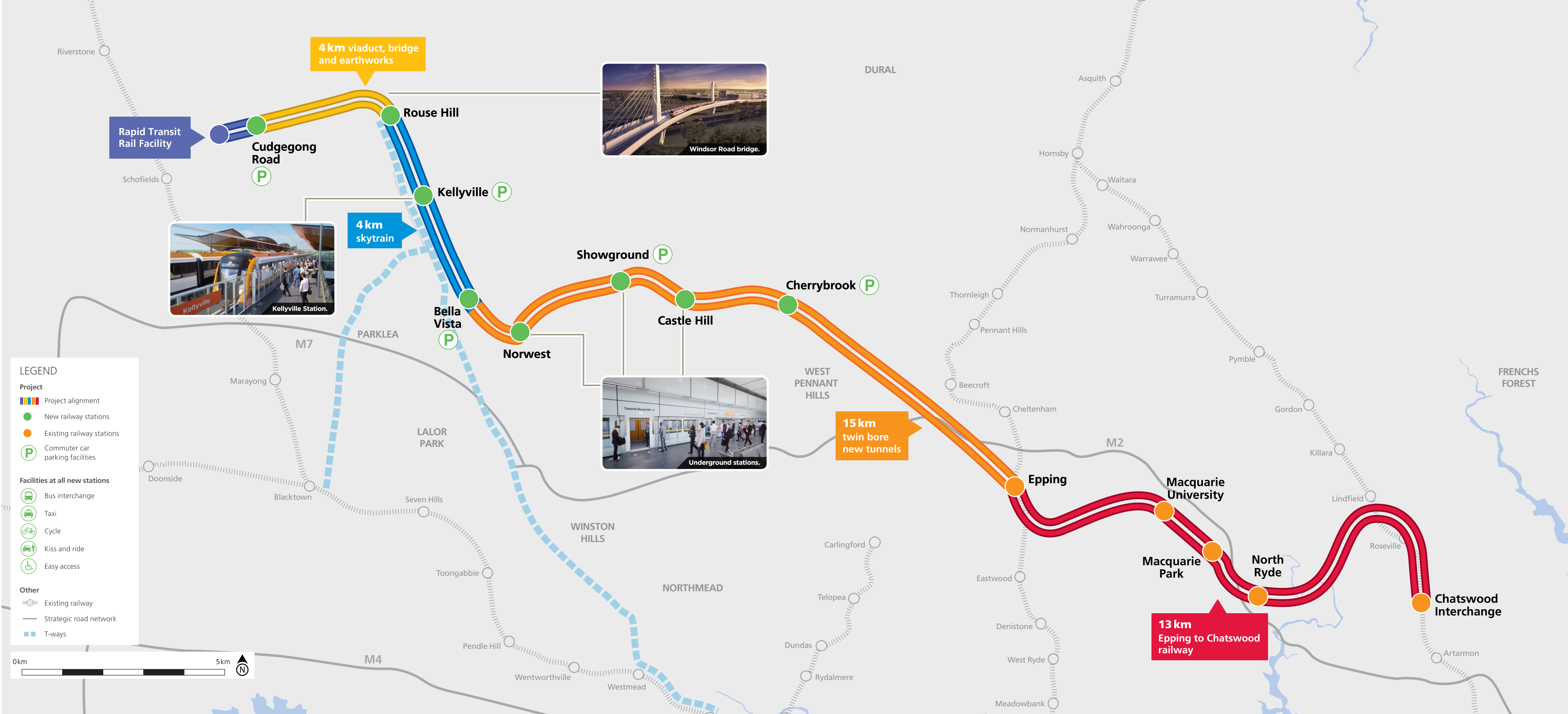
The North West Rail Link will deliver a new high frequency rapid transit railway between Rouse Hill and Chatswood, serving a rapidly growing region that has increasing importance to the city's future economic development.

The NSW Government has also announced plans to expand the North West Rail Link through Sydney Rapid Transit to also take rapid transit trains beyond Chatswood, under Sydney Harbour and into the city and beyond.

The project has been designed to meet the current and emerging transport needs of Sydney's rapidly growing North West and requires:

- Construction of 23km of new electrified, twin track, rapid transit railway between Tallawong Road, Rouse Hill and Epping
- Upgrading the existing 13km Epping to Chatswood railway to rapid transit standards, including the existing stations at Epping (lower level), Macquarie University, Macquarie Park, North Ryde and Chatswood (rapid transit platforms)
- Australia's longest rail tunnels - 15km long and up to 58m below ground at their deepest point
- Between Bella Vista and Rouse Hill, a 4km elevated skytrain is being built, followed by 4km of bridges, embankments and surface tracks to the terminus
- A Rapid Transit Rail Facility to allow trains to be cleaned, maintained and parked at night and off peak is being built at Tallawong Road, Rouse Hill.

The North West Rail Link will, for the first time, deliver a reliable heavy rail public transport service to a region that has the highest car ownership levels per household in Australia.



**LEGEND**

**Project**

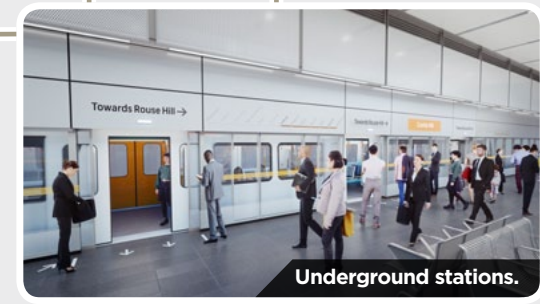
- Project alignment
- New railway stations
- Existing railway stations
- Commuter car parking facilities

**Facilities at all new stations**

- Bus interchange
- Taxi
- Cycle
- Kiss and ride
- Easy access

**Other**

- Existing railway
- Strategic road network
- T-ways



# The Operations, Trains and Systems contract

The NSW Government has awarded the \$3.7 billion Operations, Trains and Systems contract to Northwest Rapid Transit.

Northwest Rapid Transit (NRT) comprises MTR Corporation (Australia), John Holland, Leighton Contractors, UGL Rail Services and Plenary Group.

Next generation rapid transit trains on the North West Rail Link will start in the first half of 2019 with 15 trains an hour during the peak and 98 per cent on-time running.

This project will transform and modernise public transport in Sydney forever.

The North West Rail Link will be Australia's first fully-automated rapid transit rail network, delivering eight new railway stations, 4,000 new commuter car parking spaces and five existing railway stations upgraded to rapid transit status.

The Public Private Partnership is the largest ever awarded in NSW and will see the Northwest Rapid Transit consortium deliver the North West Rail Link by the first half of 2019 and operate and maintain it for the next 15 years.

Sydney's new trains will be built by international train supplier Alstom, which makes rapid transit trains operating around the world in cities like Singapore, Hong Kong, Milan and Amsterdam.

The new railway is being built with significant room to grow as the North West's population increases over coming decades, allowing the frequency of services to increase over time to meet demand.

At the start of operations, the North West Rail Link will use six-carriage trains, however more carriages and trains can be added as demand increases, with the platforms to be built long enough for eight-carriage trains.

## MTR Corporation

MTR Corporation is one of the world's leading railway operators.

In 2013, MTR carried more than 3.1 billion passengers on railway networks around the world including in Hong Kong, Sweden, London, China and Australia.

In Hong Kong, MTR's services run to 99.9 per cent on-time performance, making it one of the most reliable in the world.

The North West Rail Link will open in 2019 with 15 trains an hour during the peak initially - that's one train every four minutes.

Australia's biggest public transport project includes eight new railway stations, five upgraded stations and 4,000 new commuter car parking spaces.

15

trains an hour in peak

A train every

4

minutes

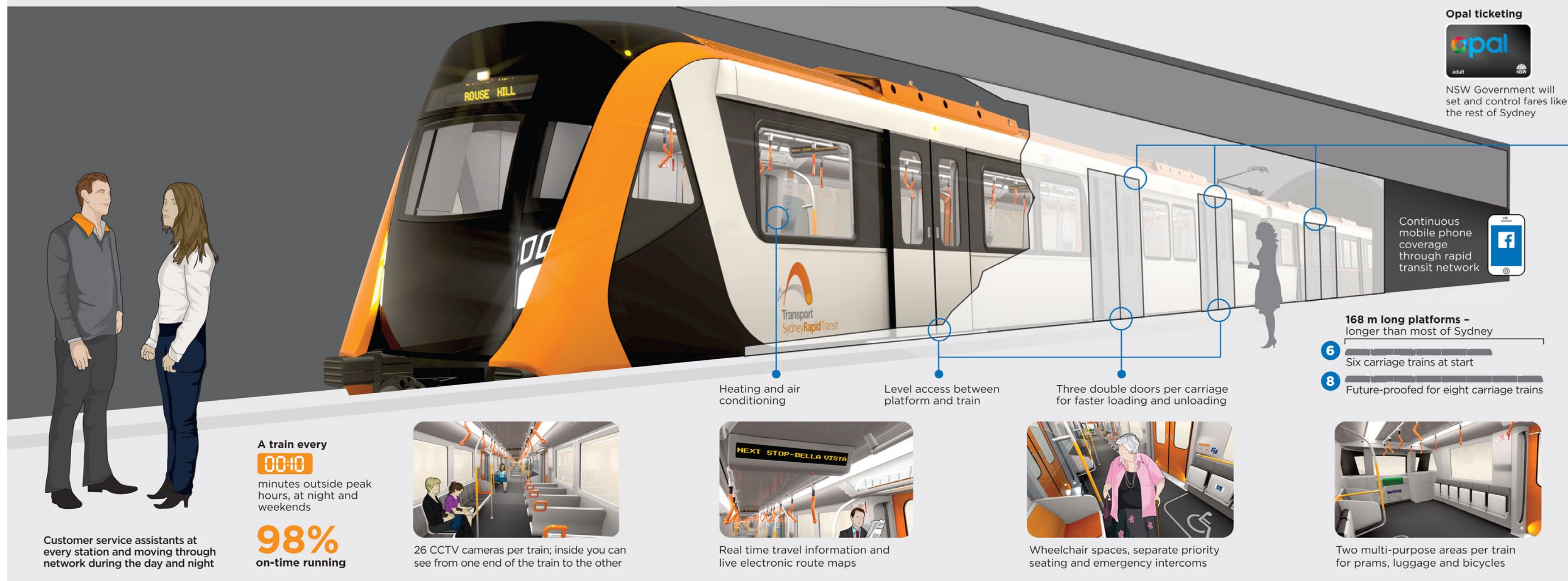


no timetable - just turn up and go

Opal ticketing



NSW Government will set and control fares like the rest of Sydney



Customer service assistants at every station and moving through network during the day and night



26 CCTV cameras per train; inside you can see from one end of the train to the other



Real time travel information and live electronic route maps



Wheelchair spaces, separate priority seating and emergency intercoms

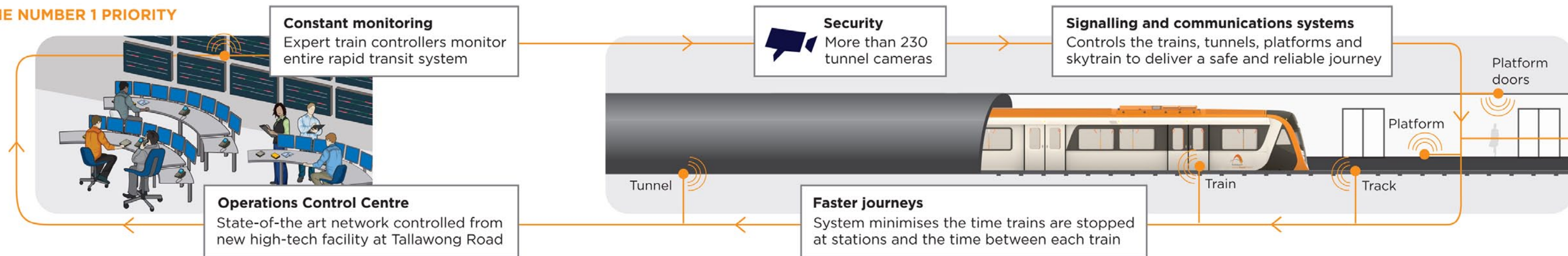


Two multi-purpose areas per train for prams, luggage and bicycles

## CUSTOMER SAFETY THE NUMBER 1 PRIORITY

The North West Rail Link is Australia's first fully-automated rapid transit rail network.

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



## Safety doors

Platform screen doors 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.



## Evacuation

When directed, customers can get out of trains through the doors or the wide built-in ramps which fold out from the front and back of the trains.

These ramps make it easier for people in wheelchairs and parents with prams.



## Operations Control Centre

The nerve centre of the new rapid transit network will control and monitor all aspects of the new fully-automated system.

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



# The trains

**Sydney's new rapid transit trains will run every four minutes in the peak – or 15 an hour.**

At the start of operations, 15 rapid transit trains an hour in the peak will move at least 17,280 people in each direction – with plenty of room to grow in the future.

Trains are required to operate at 98 per cent running.

There will be a train every 10 minutes outside peak hours, at night and weekends.

The internal layout of the trains is being fine-tuned but it is expected there will be between 5,500 and 6,000 seats in each direction per hour when operations start.

The North West Rail Link is a brand new railway network and is being designed to be fully accessible to allow customers to access the system as independently as possible.

There will be level access between the train and platform, with the gap complying with disability standards for public transport.

Each train will have dedicated wheelchair spaces and separate priority seating.

There will also be two large multi-purpose areas per train for prams, luggage and bicycles.

The new rapid transit trains will be designed, built and operated to the highest safety standards, with more than 300 Australian and international safety standards clearly stipulated in the North West Rail Link operations contract for the rapid transit trains and the equipment on the trains.

In the event of an emergency, customers can leave the train when directed by using either the tunnel walkways or the wide built-in ramps which fold out from the front and back of the trains.

More than 30 million customer trips a year are expected on the rapid transit system between Cudgegong Road and Chatswood within seven years of opening.

The North West Rail Link will reduce car trips by 14 million a year. That's 12,000 fewer car trips in an average two-hour weekday morning peak.



Kellyville

Artist's impression: The new Kellyville Station, showing platform screen doors creating a physical barrier from the train to improve reliability and safety.

Sydney's new rapid transit trains will be built by international train supplier Alstom and based on the Metropolis model currently used on other rapid transit systems in global cities including Singapore, Barcelona and Amsterdam.

These trains are "off the shelf" - this means they are proven technology fine-tuned for Sydney, similar to buying a brand new car and then adding personalised extras.

Sydney will have our own specific seating configuration as well as multi-purpose areas for prams and luggage and passenger information technology like live route maps and emergency intercoms.

Each train will have 26 CCTV security cameras, and inside customers can see from one end of the train to the other.

The North West Rail Link will start with 22 trains and each will have six carriages - but the platforms will be long enough for eight carriage trains like the rest of Sydney.

Steps have been taken to safeguard for future growth - the ability to make the trains longer as well as add more trains to services as demand increase.

The supply and delivery of the new rapid transit trains is the responsibility of NRT.

Components of Sydney's new trains will be manufactured around the world, including:

- Motors and bogies - France
- Body shell - France and Brazil
- Power systems - Belgium
- Passenger information systems - Canada
- Assembly and testing - India.

About a quarter of all rapid transit trains in operation around the world are made by Alstom.

Alstom make rapid transit trains operating in cities like Toronto, Milan, Singapore and Hong Kong.

Sydney's new trains will be stabled at the brand new Rapid Transit Rail Facility at Tallawong Road.



# The tunnels

**The North West Rail Link's twin 15 km tunnels are the longest railway tunnels ever built in Australia.**

They stretch 15 km from Bella Vista to Epping and then link into the existing 13 km railway tunnels between Epping and Chatswood, which will be upgraded to rapid transit standards.

Tunnelling started in early September, 2014 – four months ahead of schedule.

The North West Rail Link is the first transport infrastructure project in Australian history to use four tunnel boring machines (TBMs) at the one time.

As of mid-November, 2014, three of these mega machines are in the ground and tunnelling.

The first TBM, Elizabeth, passed the 1km tunnelling milestone on November 18, 2014.

The twin tunnels are, on average, 26 m deep and 58 m at their deepest point beneath Thompson's Corner at West Pennant Hills.

A \$1.15 billion contract to deliver the tunnels was awarded in June, 2013, to the Thiess John Holland Dragados joint venture.

The tunnel contract is expected to be completed in 2017.





Artist's impression: The new Cherrybrook station, with a design influenced by the local environment.

## The operator

Northwest Rapid Transit (NRT) is made up of:

- **MTR Corporation** – a world class rapid transit operator who operates railways around the world
- **John Holland and Leighton Contractors** – major contractors in Australia and overseas with extensive delivery experience
- **UGL Rail Services** – leading provider and maintainer of rail infrastructure and systems
- **Plenary Group** – financial sponsor, equity investor and capital arranger.

NRT has been awarded a Public Private Partnership to:

- Build the eight new railway stations
- Deliver the 4,000 commuter car parking spaces
- Supply Sydney's new generation rapid transit trains
- Install tracks, signalling, mechanical and electrical systems
- Build and operate the Rapid Transit Rail Facility at Tallawong Road
- Upgrade and convert the railway between Epping to Chatswood to rapid transit status
- Operate the North West Rail Link – including all maintenance work.

NRT has to meet strict performance targets including 98 per cent on-time running and having trains available 99.5 per cent of the time.

Northwest Rapid Transit will not get paid for the number of people who use the North West Rail Link.

To get paid, it will need to meet important customer service contract requirements like running trains on time and making sure trains and stations are kept clean.

If these customer service standards are not met, financial penalties have been written into the operating contract.

The North West Rail Link infrastructure like the stations, trains and railway line are owned by the NSW Government but will be operated by NRT for 15 years.

Provisions have been made in the operations contract for the extension of rapid transit beyond Chatswood and how that would happen in relation to North West Rail Link.

The NSW Government will have full flexibility to procure and deliver the extension to Sydney Rapid Transit network as it deems appropriate and to achieve the best outcome for the people of NSW.



Artist's impression: Inside Sydney's new rapid transit train as it travels on the skytrain viaduct.

## The journey

The North West Rail Link is the first stage of the new Sydney Rapid Transit network.

While the second harbour crossing and western extension is being built, customers will interchange at Chatswood to suburban services.

The journey time from Cudgegong Road to Chatswood will be 37 minutes – consistent with the travel time forecast during the planning process in 2012.

Customer service assistants will be at each station during operating hours as well as moving through the network during the day and night.

The North West Rail Link will have similar operational hours to Sydney Trains' North Shore Line services, to ensure seamless interchange at Chatswood between rapid transit and suburban services.

The first train of the day on weekdays will start early morning – around 4am – and the last train of the day will end after midnight.

Services will operate longer hours on Friday and Saturday nights and during major events like New Year's Eve.

Opal ticketing will be used on the rapid transit network – and fares will be set and controlled by the NSW Government, not the operator.

The state-of-the-art signalling and communications system will control the trains, tunnels, platforms and skytrain to deliver a safe and reliable journey.

To cater for the future, including the expanded Sydney Rapid Transit network, the brand new signalling and train control system will be able to reliably operate 30 trains an hour in each direction.

There will be continuous mobile phone coverage through the new rapid transit network.

The NSW Police Transport Command and Transport Officers will patrol the rapid transit network the same as they do the suburban network.

### Indicative travel times to key destinations

Station	Travel time to			
	Macquarie Park	Chatswood	North Sydney <small>Includes interchange</small>	Wynyard <small>Includes interchange</small>
Cudgegong Road	28	37	51	57
Rouse Hill	26	35	49	55
Kellyville	24	33	47	53
Showground	17	26	40	46
Castle Hill	15	24	38	44
Cherrybrook	12	21	35	41



## Customer safety

**Safety is the Number One priority for the design, construction and operation of the North West Rail Link.**

The North West Rail Link is Australia's first fully-automated rapid transit rail network.

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

Before passenger services start, the operator of the North West Rail Link will have to be accredited by the national rail safety regulator.

### **Platform screen doors**

Platform screen doors 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.

### **Constant monitoring**

Expert train controllers will monitor the entire rapid transit system from a new state-of-the-art Operations Control Centre.

### **Constant security monitoring**

More than 230 tunnel cameras and 26 CCTV cameras per train.

### **Proven technologies**

Fully-automated rapid transit technology has been used around the world for more than 30 years.

### **Signalling and communications systems**

These control the trains, tunnels, platforms and skytrain to deliver a safe and reliable journey. Modern technologies will ensure that the trains stop in exactly the right spot at platforms, every time.

### **People in the right places**

Customer service assistants will be at every station and they will also move through the network during the day and night.

### **Emergency services**

The North West Rail Link is working closely with NSW Police and other emergency services in the detailed design and construction phase.

### **Evacuation**

When directed, customers can get out of trains through the doors or the wide built-in ramps which fold out from the front and back of the trains. These ramps make it easier for people in wheelchairs and parents with prams.

### **Keeping in touch**

Communications systems will keep customers fully aware of service updates or disruptions, and advise and direct customers on what to do in the event of an emergency.

### **Fire safety**

All stations will feature fire detection and safety systems. All trains and stations are being built with fire-resistant and suppressant materials.

### **Tunnel walkways**

The emergency walkways on the sides of the new tunnels will be the same as the existing walkways in the Epping to Chatswood tunnels.

### **Cross passages in tunnels**

Safety cross passages between the new twin tunnels are being built every 240m to allow passengers to evacuate in the event of an emergency.

### **Tunnel access**

At Cheltenham, a new surface services facility will provide emergency stair and lift access to the tunnels below.

### **High strength**

Trains will be built using high strength carbon steel with full wheel disc brakes.

### **Cleanliness**

Trains, stations and structures such as the skytrain are being designed and built to minimise the risk of vandalism and graffiti.



Inspecting the North West Rail Link's new tunnels, November 2014.

## Tunnel safety

Safety of customers is the Number 1 priority and tunnel safety measures include:

- Constant tunnel monitoring by the Operations Control Centre
- More than 230 cameras in the tunnels, including new cameras in the existing Epping to Chatswood tunnels where there are currently no cameras
- A walkway on the side of the new tunnels. It will be the same width and in the same position as the existing walkway in the Epping to Chatswood tunnels
- Cross passages will link the twin tunnels every 240m, allowing customers to quickly evacuate a tunnel in the event of an incident - and when directed to - for the safety of the adjoining tunnel
- The entry into cross passages will be wide enough for wheelchairs to turn into. The cross passages themselves will be wide enough for wheelchairs as well as for people to get around wheelchairs
- All cross passages will have self-closing sliding doors and provide refuge in the event of a fire
- At Cheltenham, a new surface services facility will provide emergency stair and lift access to the tunnels below. The lift will be big enough to evacuate people on stretchers.



Artist's impression. The platforms at Cherrybrook Station.

## The stations

The new stations along the North West Rail Link will become the focal points for the communities they serve.

Over the following pages, the initial artists' impressions developed by Northwest Rapid Transit as part of the Operations Trains and Systems contract start to tell the customer story.

The illustrations are based on the concepts for four types of stations:

- Cherrybrook (new station, open to the sky)
- Showground (new underground station)
- Kellyville (new skytrain station)
- Macquarie Park (upgraded station).

These new stations are being designed to reflect the character of the areas they serve – for example, Cherrybrook captures the essence of “a station in a forest”.

Wherever possible, environmentally friendly features such as natural lighting, solar panels and fresh air ventilation will be used.

Existing railway stations at Epping, Macquarie University, Macquarie Park, North Ryde and Chatswood will be converted and upgraded to rapid transit standards as part of the North West Rail Link project.

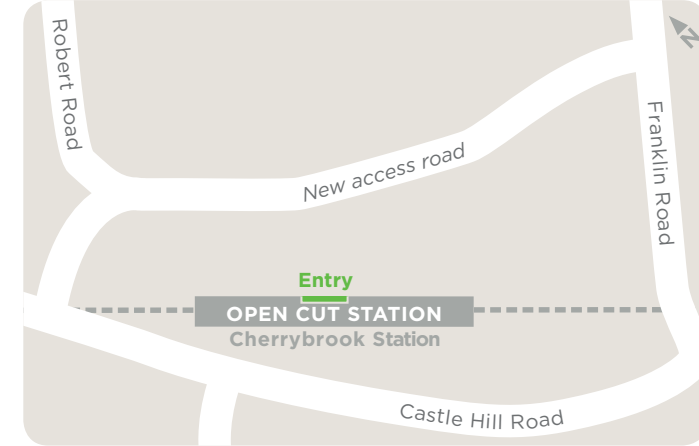
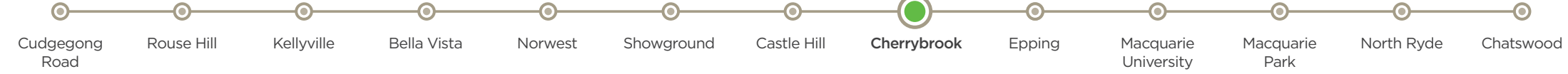
Transport for NSW will work closely with local councils and key NSW Government agencies such as Urban Growth to also develop broader “precinct designs” to ensure the new stations blend in with surrounding land uses.

### Ticketing

All North West Rail Link stations will use the new Opal ticketing system.

Fares will be set by the NSW Government on the same basis as applies to the broader Sydney rail network.

# Cherrybrook Station



## Location

Beside Castle Hill Road between Franklin and Robert roads.

## Station type

- Suburban village station
- Open cut station - that is, open to the sky, but about seven metres below street level. A canopy will cover a large part of the platform for shade.

## Station entrance

Via a new access road off Franklin Road and Castle Hill Road.

## Indicative travel time

Cherrybrook Station to Wynyard Station - approximately 41 minutes (including interchange).



## Key features

- New traffic lights and improved pedestrian safety at Glenhope Road and Castle Hill Road
- The current intersection of Castle Hill Road and Robert Road will be realigned to give priority access to the new station access road
- Intersection upgrade of Franklin and Castle Hill roads to allow left in/left out movements
- Widening of:
  - Castle Hill Road on northern side including right-turn bay at Robert Road
  - Franklin Road between Castle Hill Road and Kayla Way
  - Robert Road between Castle Hill Road and the new access road
- Footpath upgrades along Castle Hill, Robert and Franklin roads
- New intersection at Robert Road
- New access road on the northern side
- Access for emergency, delivery and maintenance vehicles
- Fencing, landscaping and public areas.

Located beside Castle Hill Road and between Franklin and Robert roads, Cherrybrook Station will service Cherrybrook, West Pennant Hills and Dural. As an established arterial road, Castle Hill Road provides excellent links east and west.

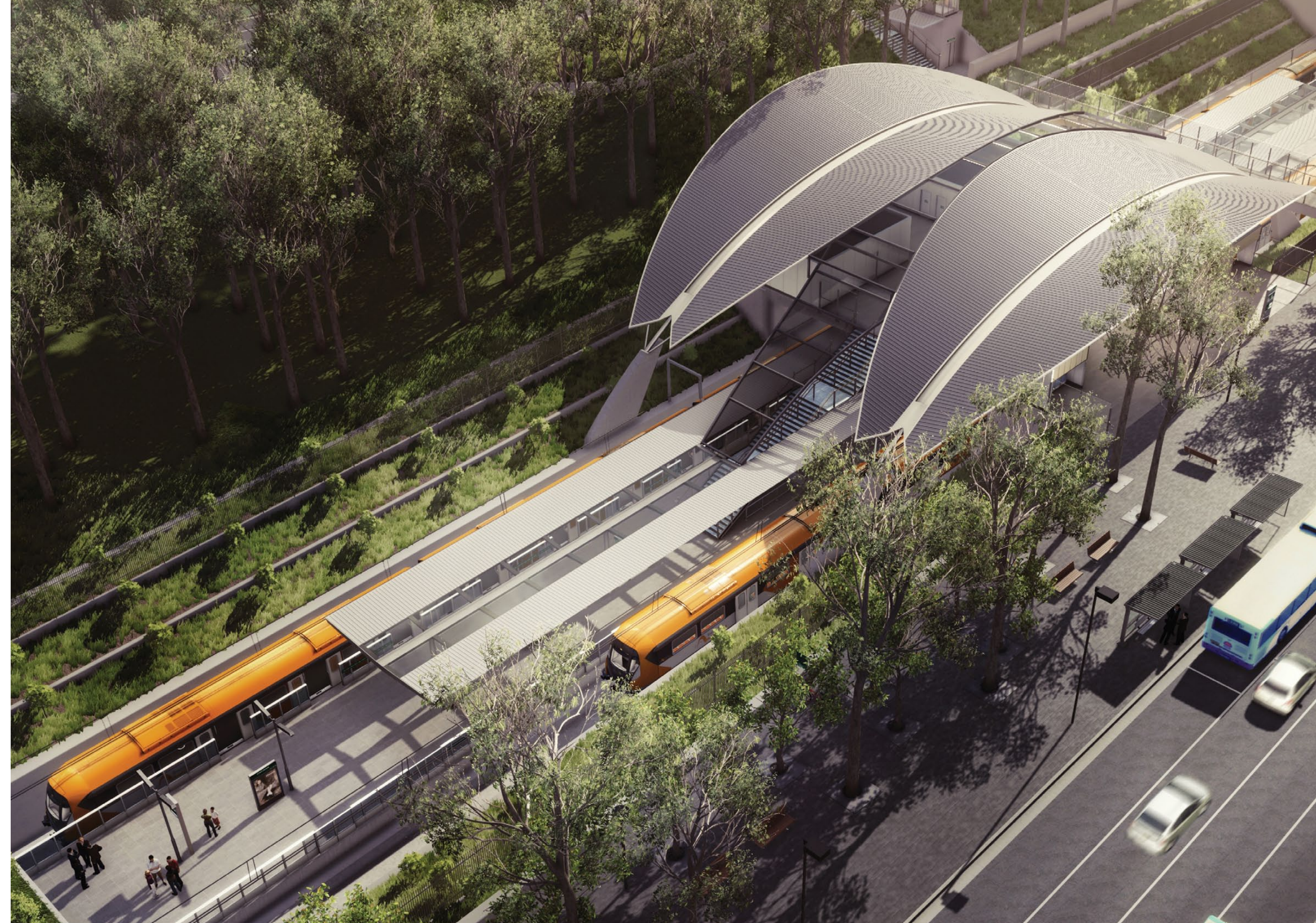
The station's location will allow designers to maximise the use of daylight and natural ventilation. New pedestrian and bicycle links will also be provided at the station.

Cherrybrook is a residential neighbourhood 23.5km north west of Sydney CBD.

**FAST FACTS**

Located beside Castle Hill Road between Franklin and Robert roads

- 400** commuter car parking spaces
- 6** spaces for buses
- 14** kiss-and-ride spaces
- 4** taxi spaces
- Parking and storage for **40** bicycles



# Showground Station



Servicing the heart of the Castle Hill Showground entertainment and community precinct, the new Showground Station will be located at the corner of Carrington Road and Doran Drive - right next to the historic Castle Hill Showground.

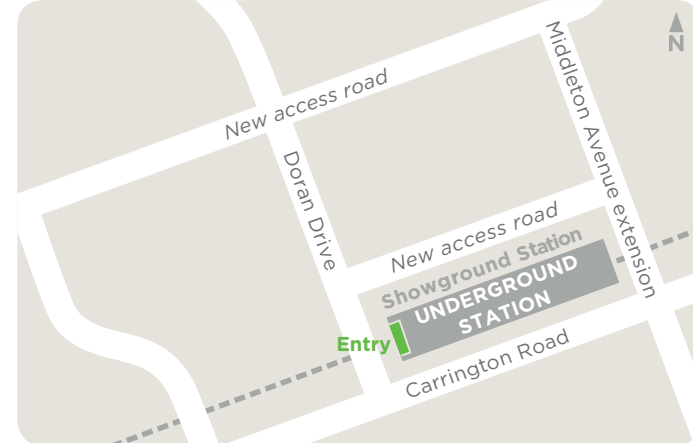
The planning of the North West Rail Link project secured the future of the showground, home to the annual Castle Hill Show - which has been running for more than 125 years - by moving the station away from the historic community facility.

The Showground Station will service the showground as well as providing direct rail access to existing residential development to the north and east and employment areas to the south and west. Space will be provided for buses on Doran Drive.

Showground Station is 28.5 kilometres north west of Sydney CBD.

**FAST FACTS**

- 600** commuter car parking spaces
- 2** spaces for buses
- 15** kiss-and-ride spaces
- 4** taxi spaces
- Parking and storage for **40** bicycles



## Location

Corner of Carrington Road and Doran Drive, next to Castle Hill Showground.

## Station type

- Suburban village station
- Underground station - about 20 to 25m below street level.

## Station entrance

Via a forecourt at the corner of Carrington Road and Doran Drive.

## Indicative travel time

Showground Station to Wynyard Station - approximately 46 minutes (including interchange).

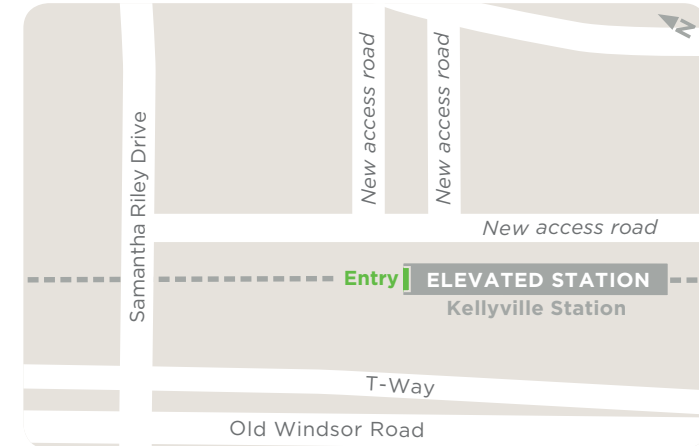
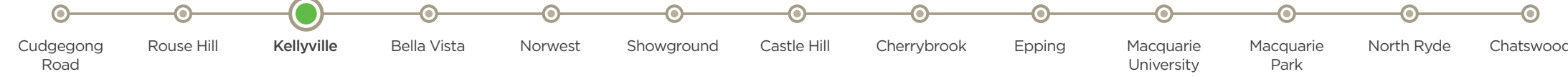


## Key features

- Public plaza and retail space
- New traffic lights at the intersection of Carrington Road and Doran Drive
- New access road between:
  - Carrington Road and Showground Road, with traffic lights at Showground Road
  - Doran Drive and Middleton Avenue
- Upgrade and widening of Doran Drive, to allow for two lanes of traffic
- Extension of Middleton Avenue and reconfiguration of roundabout at Carrington Road
- Footpath upgrades along Carrington Road (including towards Castle Hill Industrial Estate) and Doran Drive
- Pedestrian crossings on Middleton Avenue, Doran Drive and the new access road
- Access for emergency, delivery and maintenance vehicles
- Air control units to provide cool air in the warmer months.



# Kellyville Station



## Key features

- New access roads will be built and parts of surrounding roads and footpaths will be modified and upgraded
- Samantha Riley Drive widened to accommodate additional turning lanes
- Existing roundabout on Samantha Riley Drive removed
- New traffic lights at Samantha Riley Drive
- New pedestrian bridge across Old Windsor Road and the T-way at the intersection with Samantha Riley Drive and Newbury Avenue
- Access for emergency, delivery and maintenance vehicles.

## Location

Corner of Old Windsor Road and Samantha Riley Drive.

## Station type

- Suburban village station
- Elevated on the skytrain structure – about 13m above street level.

## Station entrance

Via a new access road off Samantha Riley Drive.

## Indicative travel time

Kellyville Station to Wynyard Station – approximately 53 minutes (including interchange).



An elevated station on the skytrain, Kellyville Station and the adjacent T-way will service the public transport needs of this growing residential area. Along with Rouse Hill Station, it is one of two stations located on the skytrain.

Kellyville Station will provide rail access and a public transport interchange for people living at Kellyville, Beaumont Hills and Stanhope Gardens.

The station will have the biggest commuter car park on the North West Rail Link, providing 1,200 new car spaces, plus an additional 160 T-way spots.

Kellyville Station will be located at the corner of Old Windsor Road and Samantha Riley Drive, east of the Riley T-way Station and car park.

Kellyville is 34km north west of Sydney CBD.

### FAST FACTS

Corner of Old Windsor Road and Samantha Riley Drive

**P** 1200 commuter car parking spaces

**4** spaces for buses

**10** kiss-and-ride spaces

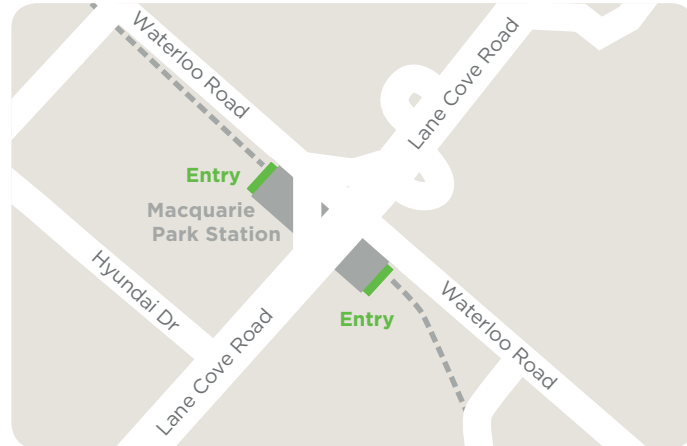
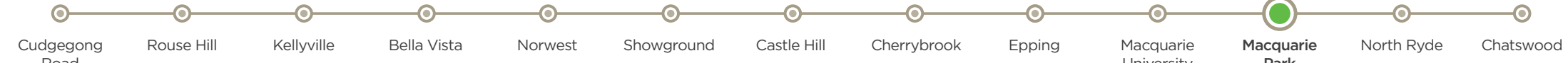
**4** taxi spaces

Parking and storage for **45** bicycles





# Macquarie Park Station



## Key features

- A train every four minutes in the peak – almost four times more than now
- New platform screen doors
- Improved seating and lighting
- Improved signage and customer information systems
- Air control units to provide cool air in the warmer months.

## Location

Corner of Lane Cove Road and Waterloo Road

## Station type

- Suburban train station in an established commercial / retail centre
- Underground station served by lifts, escalators and stairs.

## Station entrance

Either side of Lane Cove Road.

## Indicative travel time

Macquarie Park to Wynyard Station – approximately 29 minutes (including interchange).



Macquarie Park is an existing underground railway station that is integral to this important commercial and retail centre.

It is located at the key intersection of Lane Cove Road and Waterloo Road.

Originally built as part of the Epping to Chatswood railway, the station will be upgraded to modern rapid transit standards.

Existing railway stations at Epping, Macquarie University, Macquarie Park, North Ryde and Chatswood will be converted and upgraded to rapid transit standards as part of the North West Rail Link project.

**FAST FACTS**

Corner of Lane Cove Road and Waterloo Road

**10** spaces for buses close by

Service		7:56
Chatswood	Departs	Now
North Ryde	Departs	4 min
Chatswood	Departs	8 min





# Rapid Transit Rail Facility

Sydney's new rapid transit trains will be maintained at the purpose-built state-of-the-art Rapid Transit Rail Facility, to be built near the end of the North West Rail Link at Tallawong Road.

The rapid transit system will also be operated from here at a new state-of-the-art Operations Control Centre, the nerve centre of the new network.

At all times, a team of expert train controllers will monitor the system, making sure everything runs smoothly.

The Rapid Transit Rail Facility will have facilities for stabling, cleaning and washing trains as well as train maintenance.

The Rapid Transit Rail Facility will stable the entire fleet of 22 trains North West Rail Link rapid transit trains, as well as infrastructure maintenance vehicles.

The Rapid Transit Rail Facility is being future-proofed and can be extended to stable 46 eight-car rapid transit trains.



A rapid transit operations centre in action.

## Operations Control Centre

The nerve centre of the new rapid transit network will control and monitor all aspects of the new fully-automated system.

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

State-of-the-art: The new Rapid Transit Rail Facility at Tallawong Road will be the operation nerve centre of Sydney's new rapid transit network.

# Sydney Rapid Transit

In June 2014, NSW Premier Mike Baird and Minister for Transport Gladys Berejiklian announced plans to build SRT – Sydney Rapid Transit – the next big step in Sydney’s rail system.

Sydney Rapid Transit delivers a new rapid transit rail line under Sydney Harbour, through the CBD and to Bankstown – instantly providing a massive boost in the number of trains right across Sydney.

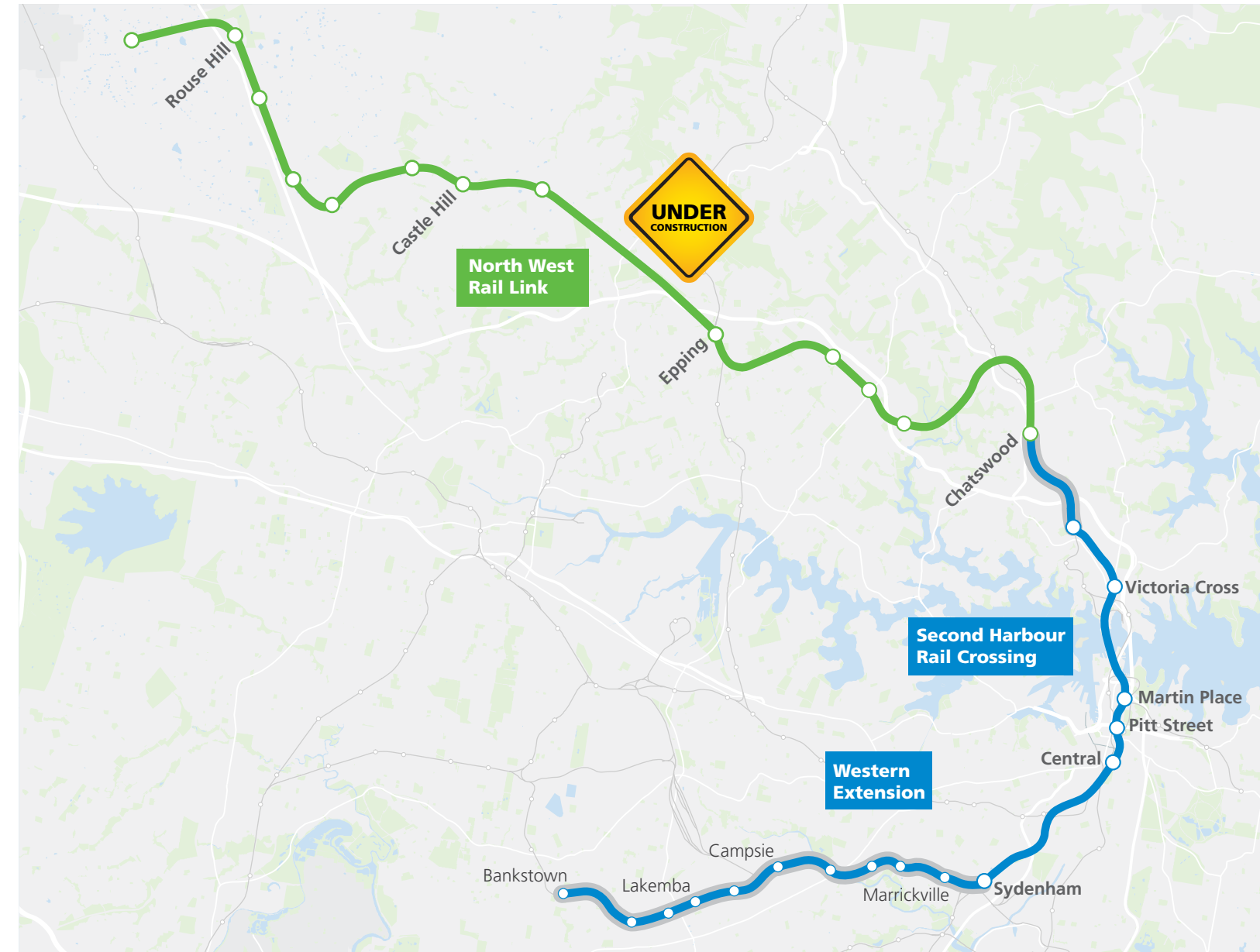
It will provide a 60 per cent increase in the number of trains in the peak and cater for an extra 100,000 customers per hour as well as providing faster, more frequent and more reliable services for Sydney and intercity train customers.

This is the next major rail project identified in *Sydney’s Rail Future*, a plan released by the NSW Government in 2012 which includes building the \$8.3 billion North West and \$2.1 billion South West Rail Links – both now under construction.

SRT will extend the North West Rail Link under Sydney Harbour, through the CBD and west to Bankstown, with capacity to run up to 30 trains per hour in each direction through the city on the new line.

Combined with enabling works including investment in infrastructure and signalling for the T1 Western Line, the benefits of SRT will include:

- The unblocking of a major bottleneck in the city to allow up to 60 per cent more trains every hour across the network, including from Western Sydney, South West Sydney, southern Sydney and northern Sydney
- More express trains from Penrith, Parramatta and Blacktown to the city
- Three new underground CBD railway stations on the new line, which will ease congestion at existing city stations such as Wynyard and Town Hall and consideration of other station locations such as Barangaroo
- Travel time savings and greater reliability across the network, including for intercity customers, because rapid transit will be separate from the rest of the network
- Modern, safe rapid transit trains which carry more customers per hour than double-deckers, reduce travel times and have more doors to make it easier to get on and off – providing a turn-up-and-go service.



Sydney Rapid Transit map.



Proposed stations.

## Sydney Rapid Transit key facts

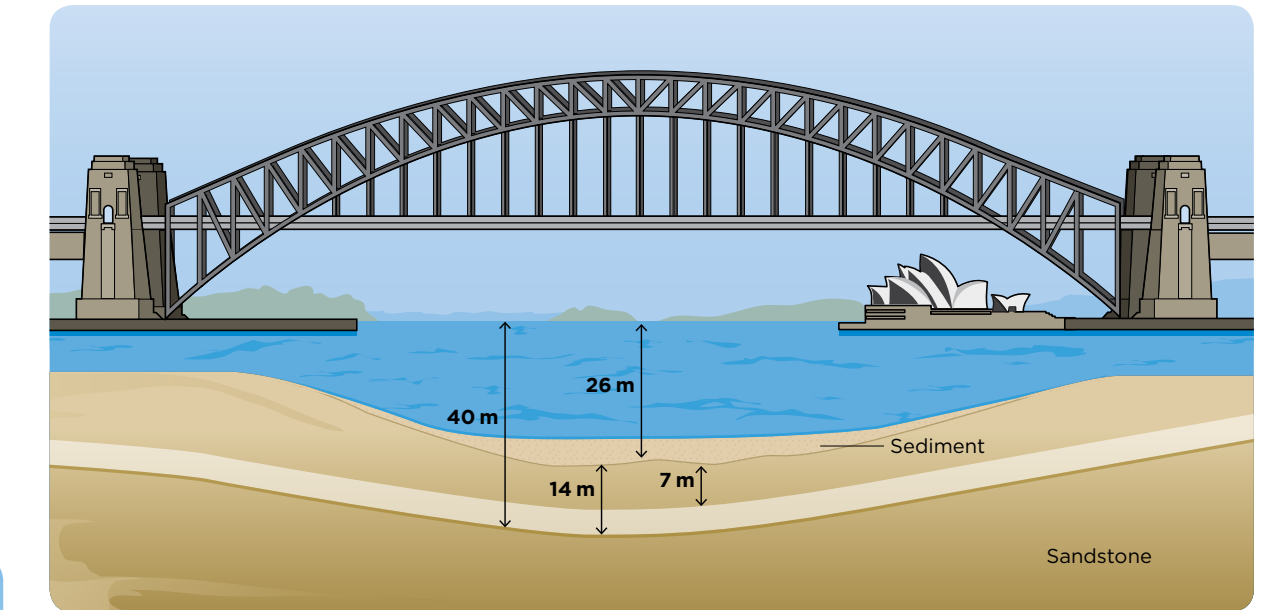
- A train every two minutes through the heart of the CBD
- Next generation trains
- Five new rapid transit stations at Central, Pitt Street, Martin Place, Victoria Cross and St Leonards / Crows Nest
- 11 existing stations upgraded to rapid transit
- Automated, fast, safe, frequent rapid transit
- Total route: 30km
- 3km extra tracks, Chatswood – St Leonards area
- 12.5km twin tunnels
- 13.4 km Western Extension, Sydenham to Bankstown. Conversion of existing line to rapid transit
- Dedicated line operating independently of the existing rail network, not subject to wider network delays
- Seamless interchanges with Sydney Trains, NSW Trains, buses and light rail
- No timetable – just turn up and go
- Consideration of other station locations such as Barangaroo.



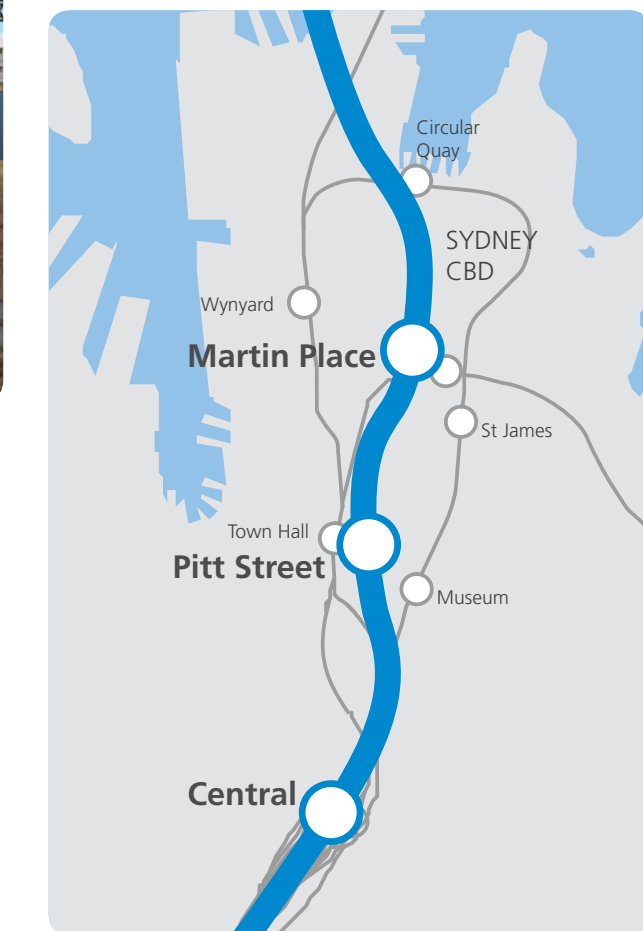
Rapid transit under Sydney Harbour.

## Rapid transit benefits

- Fast, frequent, safe
- More trains, more often
- Super reliable – 98 per cent on-time operations
- Faster acceleration – superior performance
- Just turn up and go – no need for timetables
- More doors make it quicker to get on and off – less stopping time at stations
- Minimal gap between platform and train – platform level with train doors
- Safe and secure – ability to see inside the entire length of the train – double deck trains have over 20 separate compartments
- Constant CCTV monitoring on board and at all stations
- Platform screen safety doors
- State of the art communications and control systems – automated rapid transit trains can travel more closely together
- Independent of the rest of the network – less chance of flow-on delays for both rapid transit and suburban trains
- Opal ticketing.



To build SRT, specialised tunnel boring machines will carve out twin tunnels through sandstone bedrock beneath Sydney Harbour.



## Capacity

The total number of people reliably carried on a train line in an hour is the true measure of rail capacity.

Other global cities around the world have single deck rapid transit trains that reliably carry around 40,000 or more people an hour.

London’s new Crossrail is planning for an initial capacity of 36,000 passengers.

Hong Kong’s cross-harbour Tsuen Wan line has capacity for up to 60,000 people per hour.

Sydney’s rapid transit target of about 40,000 per hour is comparable to the average hourly capacity of rapid transit trains world-wide and will have 98 per cent reliability.

Sydney’s current suburban trains can reliably carry 24,000 people an hour per line.

For further information about the North West Rail Link,  
or to make a comment or suggestion, you can:

Visit our website: [www.northwestrail.com.au](http://www.northwestrail.com.au)

Email us: [info@northwestrail.com.au](mailto:info@northwestrail.com.au)

Phone: 1800 019 989



Artist's impression: The new Showground station, with a design influenced by the local environment.

**northwest**raillink



Printed on environmentally responsible paper manufactured using Elemental Chlorine Free (ECF) pulp sourced from certified, well managed forests.

Information in this document has been prepared in good faith and is correct at the time of printing. Please refer to project website for updates. November 2014.