

CHATSWOOD TO SYDENHAM

VICTORIA CROSS AND ARTARMON SUBSTATION

Modification report summary - June 2017



CONTENTS

About Sydney Metro	4
Sydney Metro experience	6
Changes to Artarmon substation	8
Changes to Victoria Cross	12
Have your say	16

About this modification

Transport for NSW is delivering a world-class metro system for Sydney.

The Chatswood to Sydenham section of the Sydney Metro City & Southwest project received planning approval in January 2017.

Following community and stakeholder feedback, Transport for NSW has been working to refine the project to maximise the benefits for customers and the community. These modifications represent better outcomes for the community, with the changes providing improved social and environmental solutions.

Planning modifications will be lodged with the NSW Department of Planning and Environment for assessment for the following changes to the project:

- ▶ Victoria Cross services building and new station entrance: following further investigation works, a new location for the services building will reduce the impact on local stakeholders and provide a larger, more connected station
- ▶ Artarmon substation: as a result of community feedback a new location within the Artarmon Industrial Area will reduce the impact on the local community
- ▶ Central Walk: a new underground concourse to provide better connections to Sydney Metro platforms, light rail and throughout Central Station following consultation with the community

- ▶ Sydenham Station and Sydney Metro Trains Facility South: to allow work to start sooner on this major part of the project
- ▶ Martin Place: to facilitate the fully integrated station and over station development solution proposed by the Macquarie Group Limited, if their unsolicited proposal to the NSW Government is successful.

The community has the opportunity to review the proposed modifications and have their say during the exhibition period.

This book is intended to be an overview of the Modification Report to the Chatswood to Sydenham State Significant Infrastructure Approval (SSI 15_7400).

For further details, please see the Modification Report and supporting documents available on the Department of Planning and Environment website www.planning.nsw.gov.au.

The Sydenham to Bankstown component of the Project is subject to a separate environmental assessment process.

Contact us

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

- o community information line: **1800 171 386**
- o project email: sydneymetro@transport.nsw.gov.au



Cover: Artist's impression of Victoria Cross Station
This page: Artist's impression of Barangaroo Station

About Sydney Metro

Sydney Metro is Australia's largest public transport Project. A new standalone railway, this 21st century network will deliver 31 metro stations and 66 kilometres of new metro rail for Australia's biggest city – revolutionising the way Sydney travels.

Sydney's new metro railway will have a target capacity of about 40,000 customers per hour, similar to other metro systems worldwide. Sydney's current suburban system can reliably carry 24,000 people an hour per line.

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

Sydney Metro has two core components:

Stage 1: Sydney Metro Northwest

Formerly the 36-kilometre North West Rail Link, this \$8.3 billion Project is now under construction. Tunnelling has finished and construction is progressing rapidly.

Services start in the first half of 2019 using Sydney's new-generation of fully-automated metro trains, with a metro train every four minutes in the peak.

Customers won't need a timetable when Sydney Metro opens – they'll just turn up and go.

Stage 2: Sydney Metro City & Southwest

From Sydney's booming North West region, a new 30-kilometre metro line will extend metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown.

Features will include:

- ▶ 16.5 kilometres of new metro line between Chatswood and Sydenham
- ▶ 15.5 kilometres of new twin rail tunnels
- ▶ 13.5-kilometre upgrade and conversion of the T3 Bankstown Line to metro standards.

It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney – a level of service never before seen in Sydney.



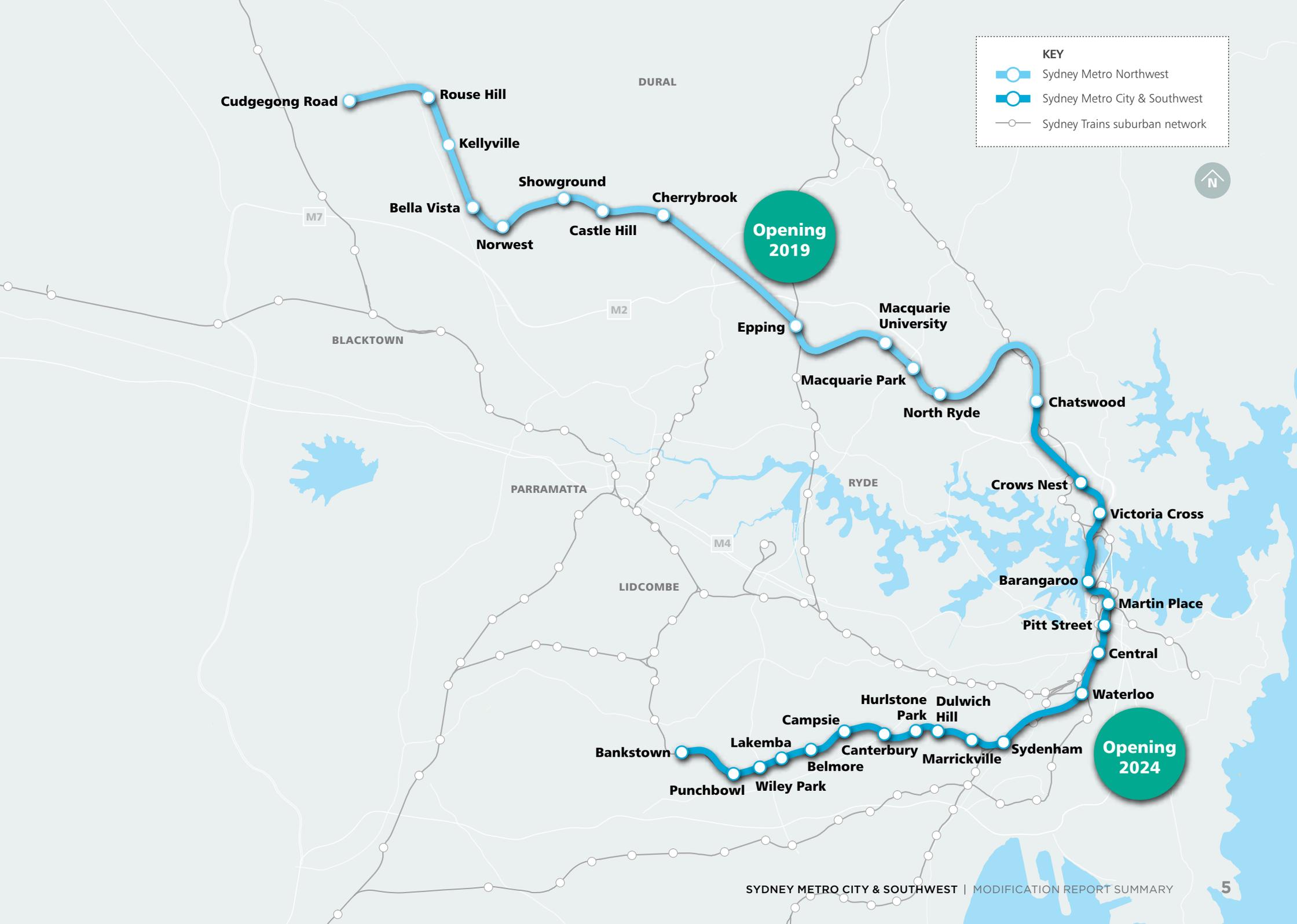
Sydney Metro West

In November 2016, the NSW Government announced a new underground metro railway line will be built between Parramatta and the Sydney CBD to help cater for Sydney's growth.

Four key precincts to be serviced have initially been identified at Parramatta, Sydney Olympic Park, The Bays Precinct and the Sydney CBD.

Transport for NSW will begin engaging with community, industry and key stakeholders later this year to get feedback on the Project.





KEY

- Sydney Metro Northwest
- Sydney Metro City & Southwest
- Sydney Trains suburban network

**Opening
2019**

**Opening
2024**

Sydney Metro experience

Australia's biggest public transport project will deliver an easy door-to-door experience, integrating Sydney's new-generation metro trains with state-of-the-art stations and 21st century technology.

Sydney Metro will make it easy for customers to get where they need to go. New metro services will be integrated with other transport modes, including interchanges with the existing Sydney railway network as well as buses, light rail and ferries.

Customers are at the centre of Sydney Metro's 21st century design, including the development of Sydney's new metro train, new metro railway stations, interchanges and precincts.

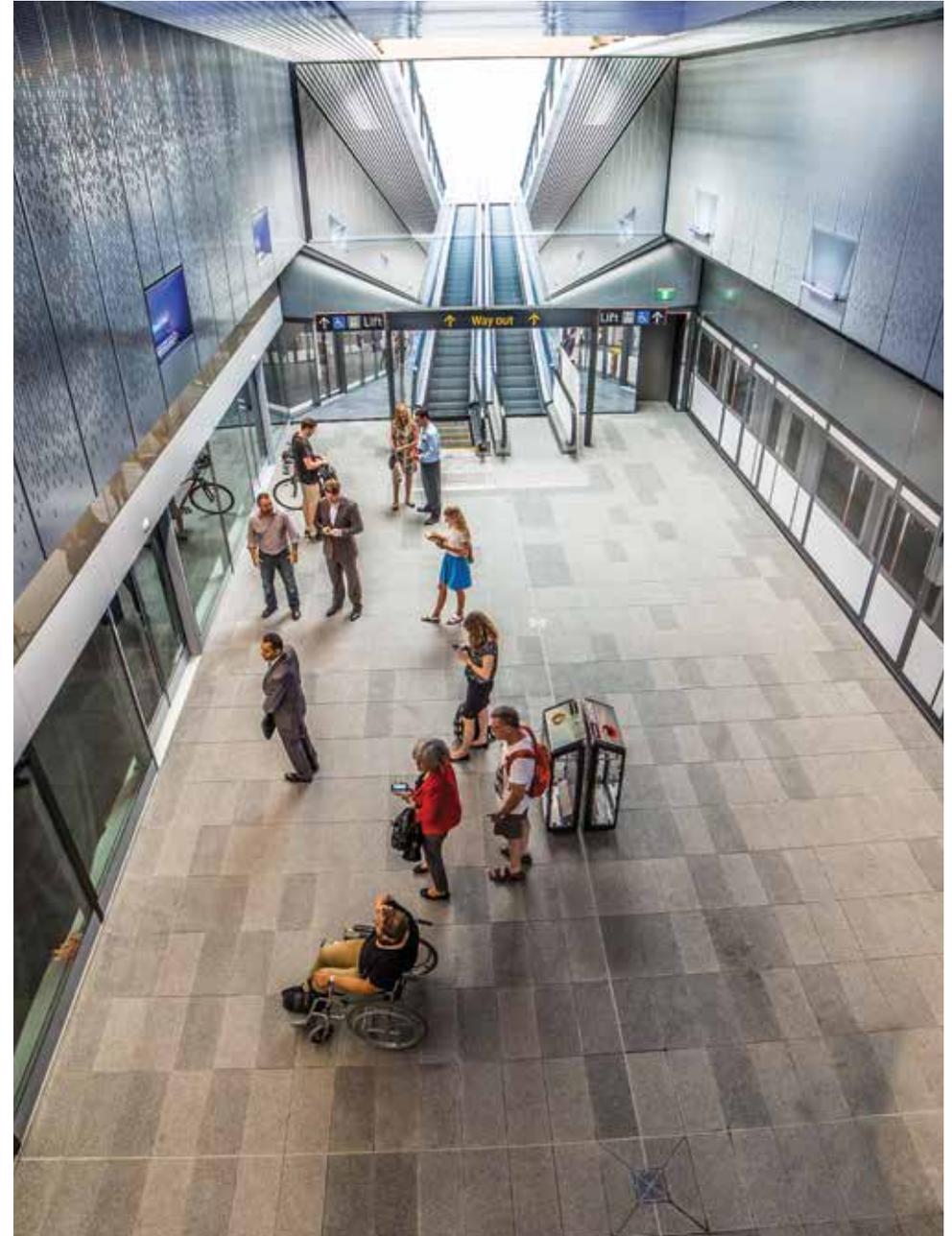
State-of-the-art technology will keep customers connected at all stages of their journey, from smart phone travel apps, to real-time journey information at metro stations and on-board trains.

This door-to-door approach will help customers achieve their daily tasks, whether it's getting to work, meetings, school or education, sport, a day out or running errands – and, of course, getting home. Making it easy for customers at each stage of their journey will be integral in the successful delivery of Sydney Metro.

Linking communities, schools, hospitals, key destinations and businesses with the new metro railway network is key in attracting and keeping customers as well as meeting broader transport and land use objectives.

Transport for NSW is working across government and with the community to get customers to and from new metro services easily and, when traveling on the new trains, to ensure they are safe and comfortable.

Sydney Metro is being designed to deliver safe, clean, comfortable services which will run on time and be convenient, efficient, accessible and easy for customers to use.



Sydney Metro prototype underground station

Sydney's new metro trains

All trains on Sydney Metro will be modern, single-deck trains. The trains will deliver a fast, safe and reliable journey for customers, operating at speeds of up to 100 kilometres per hour both in the tunnels and above ground.

KEY FACTS

- 2019**
Stage 1 Northwest Opens 2019
- 2024**
Stage 2 City & Southwest Opens 2024
- 66 kilometres**
New metro rail for Sydney
- 31 M**
31 metro stations State-of-the-art, fully accessible
- 98%**
On-time Running reliability
- 00:04**
In peak Train every four minutes
- 00:10**
Off peak Train every ten minutes
- 00:02**
Ultimate capacity a train every two minutes each way under the CBD
- Connected**
Continuous mobile phone coverage through network
- No timetable**
Customers will just turn up and go
- Opal**
Opal ticketing

TRAIN FEATURES

- Three double doors per carriage for faster loading and unloading
Level access between platform and train
- Two multi-purpose areas per train for prams, luggage and bicycles
- Wheelchair spaces, separate priority seating and emergency intercoms
- Real-time travel information and live electronic route maps
- 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
- Heating and air conditioning
- 170-metre long platforms - longer than most of Sydney
- Customer service assistants at every station and moving through the network during the day and night

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**
More than 230 tunnel cameras on Sydney Metro Northwest alone
- Signalling and communications systems**
Control the trains, tunnels, platforms and skytrain to deliver a safe and reliable journey
- 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

Changes to Artarmon substation



The Artarmon substation will be relocated from Butchers Lane, Artarmon to 98-104 Reserve Road, Artarmon, within the Artarmon Industrial Area.

The substation will supply traction power to the metro trains. The site will include an above-ground building for the substation and electrical equipment, and a shaft for the cables and maintenance access to the tunnels below.



Artist's impression of Artarmon substation

Final arrangements

Feature	Description
Location	98-104 Reserve Road, Artarmon
Operational access	Whiting Street with parking for 2-3 vehicles
Main features	Traction substation
Maintenance access	Fortnightly: light vehicles for visual inspections Quarterly: light and utility vehicles for replacement of consumables Yearly: heavy rigid trucks and cranes for major maintenance and replacement of large plant items
Finishing works	Landscaping along Whiting Street

Electric and magnetic fields

Transport for NSW will meet relevant health standards for electric and magnetic fields (EMF), which are found wherever electricity is present. This includes home and office appliances, substations and electrical cables.

The Draft Radiation Standard - Exposure Limits for Magnetic Fields (Australian Radiation Protection and Nuclear Safety Agency, 2006) provides exposure limits that are typically applied when considering electric and magnetic fields from new developments.

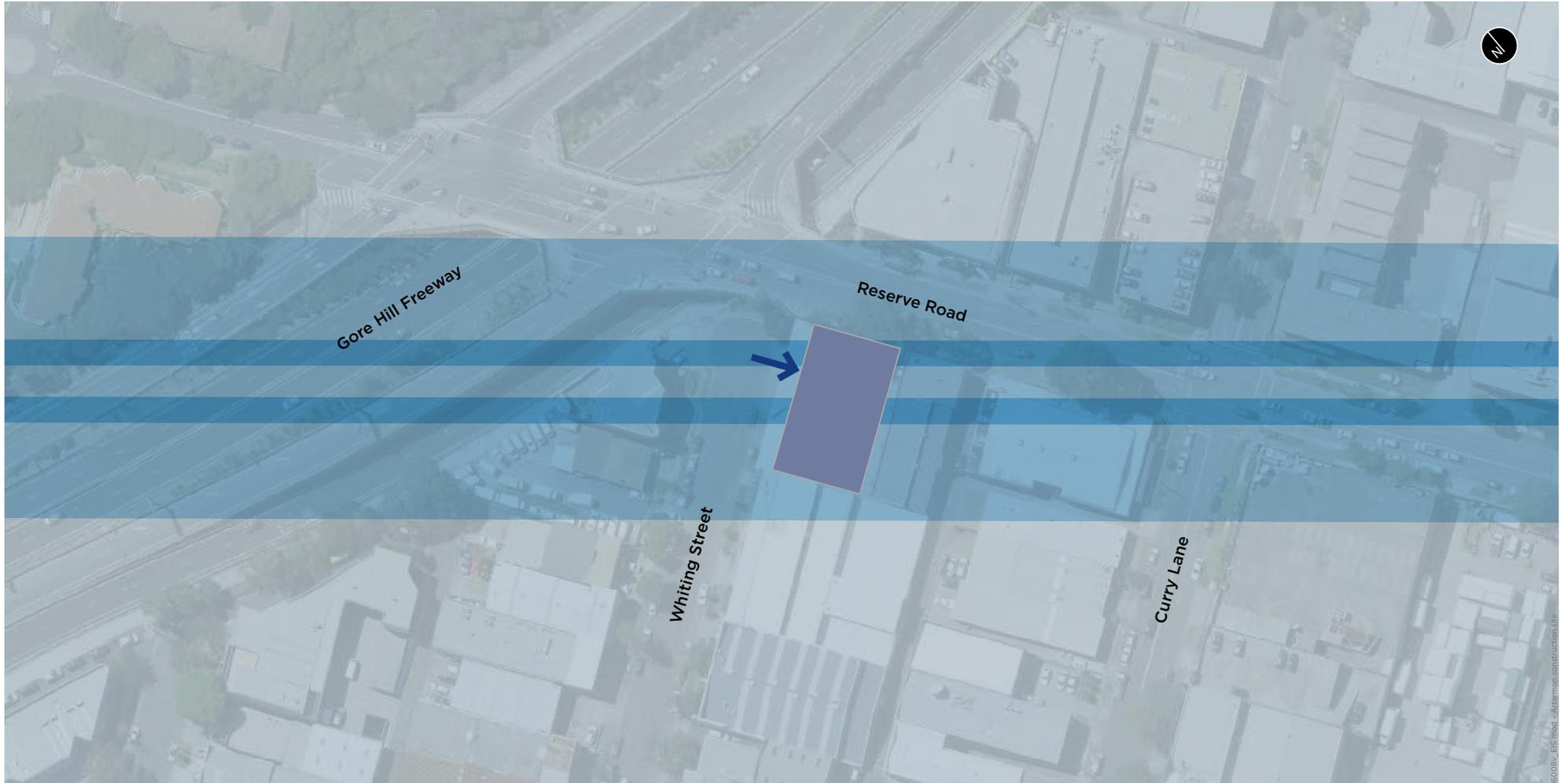
The detailed design of electrical infrastructure will ensure that the exposure limits for the local community suggested by the Draft Radiation Standard will not be exceeded within public areas.

Appliance measurements were taken at typical distances experienced by users.

Common EMF Sources	Range of measurements (Milligauss)
PC	2-20
Refrigerator	2-5
Substation	1-8 (at substation fence)

Source ARPANSA

Operational map



KEY

-  Approved Metro tunnels and corridor (indicative)
-  Traction substation
-  Maintenance access

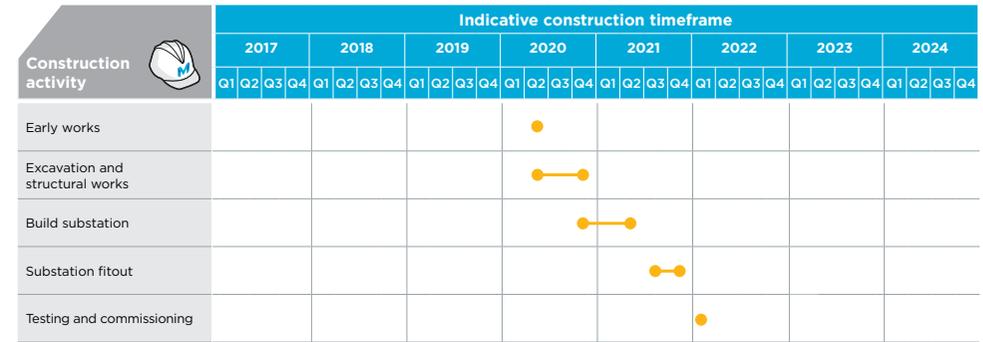
Changes to Artarmon substation

Construction of the Artarmon substation will involve:

- ▶ removing existing buildings
- ▶ excavating a vertical shaft to the tunnels below. This is likely to be carried out using a large diameter piling rig or raise bore. Drill and blast or penetrating cone fracture techniques may also be used
- ▶ lining and reinforcing the shaft
- ▶ building above-ground components
- ▶ installing electrical equipment.

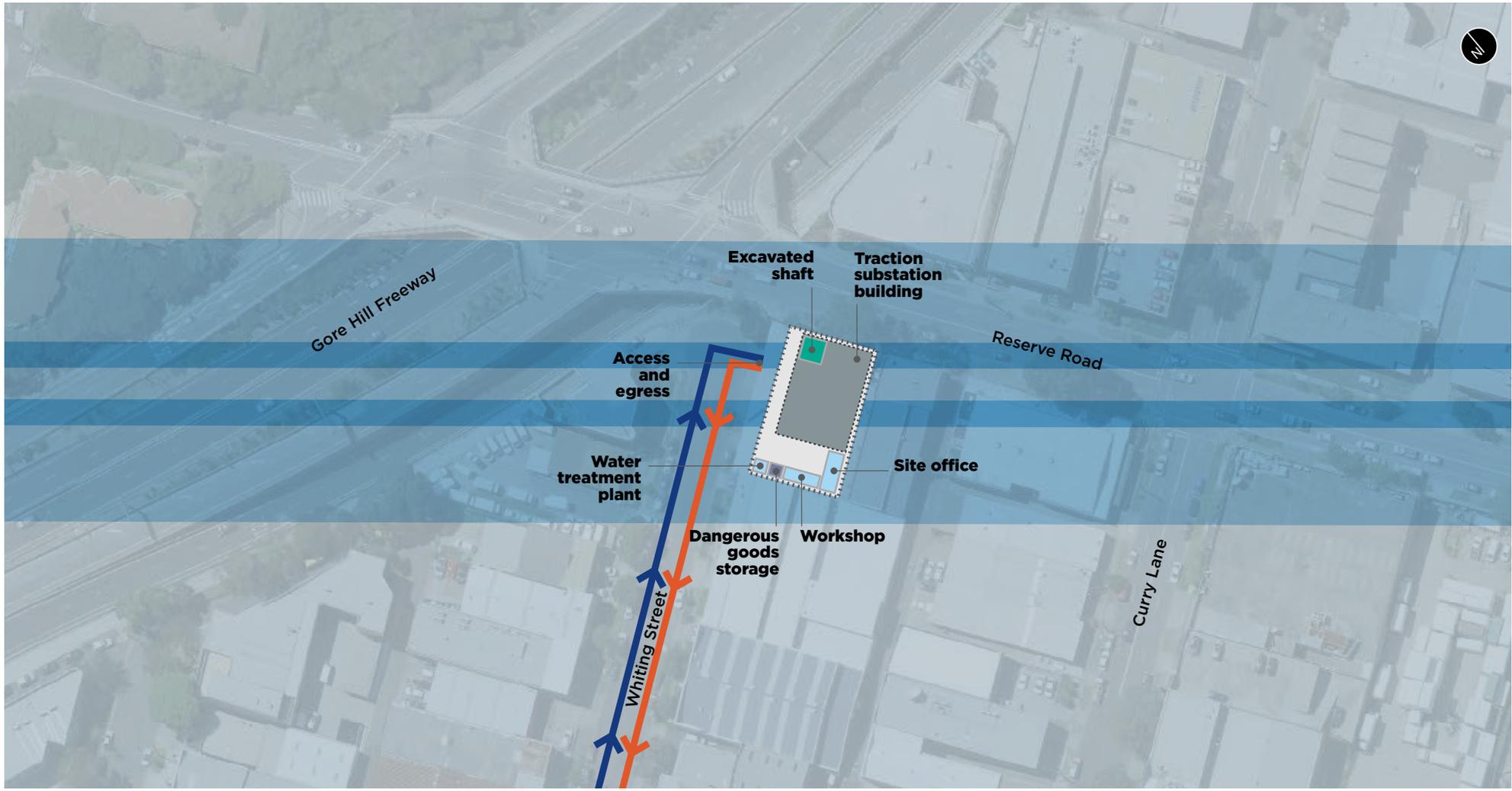
Construction at a glance

Feature	Description
Size	1060 square metres (m ²)
Site access	Whiting Street
Construction hours	Monday to Friday 7am–6pm and Saturday 8am–1pm. Underground excavation work and construction traffic will occur 24 hours a day, seven days a week
Truck movements	Site establishment: Trucks 54 per day and light vehicles 78 per day Excavation: Trucks 54 per day and light vehicles 78 per day Fit out: Trucks 42 per day and light vehicles 78 per day
Demolition	Two industrial/commercial buildings
Landscape	Shrubs will be removed from the site
Excavation	Vertical shaft
Spoil removal	2000 cubic metres (m ³) of mostly sandstone by truck
Activities	Spoil removal Ancillary infrastructure construction
Staff facilities	Offices, lunch rooms and amenities
Staff parking	Consistent with approved EIS
Utility and power supply	Power, water, sewer and telecommunications



Feature	Description
Major utility impacts	Nil
Plant and equipment	Piling rig Two bobcats Six compressors Drilling jumbo Mobile crane Two concrete pumps Two excavators Truck-mounted crane Water treatment plant Front-end loader Six generators Water cart
Traffic changes	Temporary changes may be required
Public transport changes	Nil
Street parking changes	Nil
Noise management	There will be noise and vibration impacts at this site Management practices to minimise impacts include a noise barrier or hoarding built around the site
Pedestrian and cyclist changes	Nil
Other major projects in the area	Sydney Metro Northwest 33kV cable

Construction site map



KEY

- Approved Metro tunnels and corridor (indicative)
- Construction area
- Site access - in
- Site access - out

Changes to Victoria Cross

An additional new entrance to Victoria Cross Station will boost access to the station for customers via McLaren Street, and provide a location for the new services building.

The EIS identified impacts associated with the Victoria Cross northern services building at 194-196A Miller Street, including noise impacts to nearby sensitive receivers. As part of the Chatswood to Sydenham planning approval, the Minister for Planning instructed Transport for NSW to investigate alternative locations.

Transport for NSW has identified and assessed alternative sites and found a preferred location at 50 McLaren Street, North Sydney. This location allows a new lift-only station entry to be incorporated within the northern services building. The northern services building will be three storeys high, with an underground pedestrian walkway connecting to the Victoria Cross metro platforms. The building design will consider the character of the existing area.

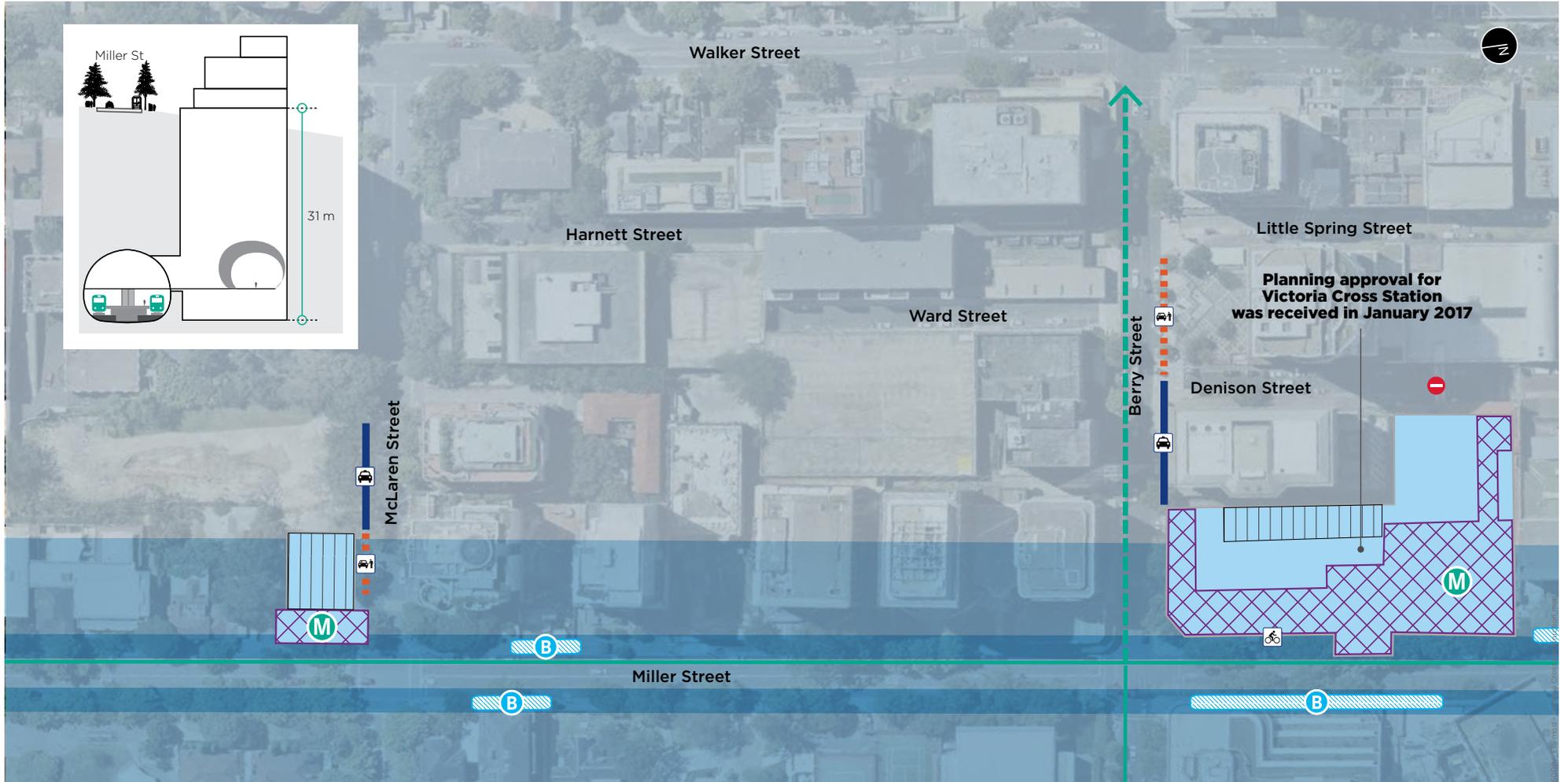
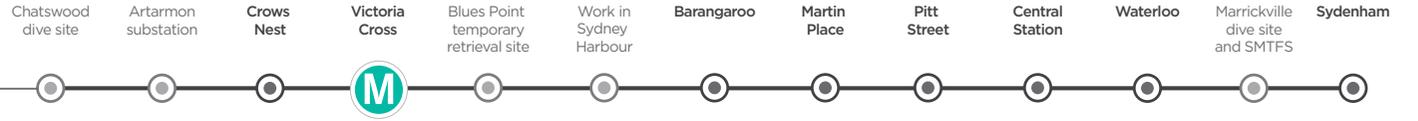


Artist's impression of Victoria Cross Station northern entrance

Final arrangements

Feature	Description																	
Location	Beneath Miller Street (to the north of the Pacific Highway) between McLaren Street and south of Berry Street																	
Station entry	North - Corner of Miller and McLaren streets South - Pedestrian plaza opening to Miller, Denison and Berry streets																	
Main features and traffic arrangements	Four lifts An underground pedestrian walkway about 38 metres long connecting to the northern end of the station via McLaren Street Maintenance vehicle access will be provided from the eastern side of the building																	
Station statistics	Depth - 31 metres Platform width - 10 metres	Platform length - 170 metres Overall station length - 220 metres																
Customers	Customers accessing the Mater Hospital and North Sydney Oval Customers accessing schools Customers accessing the station from Neutral Bay via the footbridge over the Warringah Freeway and local bus users on Miller Street Customers accessing the McLaren Street precinct of North Sydney																	
Local amenities	<table border="0"> <tr> <td>Australian Catholic University</td> <td>North Sydney Girls High School</td> </tr> <tr> <td>Cammeraygal High School</td> <td>North Sydney Oval</td> </tr> <tr> <td>Greenwood Shopping Centre</td> <td>North Sydney Train Station</td> </tr> <tr> <td>Marist College</td> <td>St Leonards Park</td> </tr> <tr> <td>Mater Hospital</td> <td>Sydney Church of England Grammar School (SHORE)</td> </tr> <tr> <td>Monte Sant' Angelo Mercy College</td> <td>Wenona School</td> </tr> <tr> <td>North Sydney Boys High School</td> <td></td> </tr> <tr> <td>North Sydney Council Chambers</td> <td></td> </tr> </table>		Australian Catholic University	North Sydney Girls High School	Cammeraygal High School	North Sydney Oval	Greenwood Shopping Centre	North Sydney Train Station	Marist College	St Leonards Park	Mater Hospital	Sydney Church of England Grammar School (SHORE)	Monte Sant' Angelo Mercy College	Wenona School	North Sydney Boys High School		North Sydney Council Chambers	
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Operational map



KEY

- Approved Metro tunnels and corridor (indicative)
- Metro entry
- Proposed kiss-and-ride
- Existing taxi rank
- Proposed cycle parking
- Existing cycle route
- Proposed cycle route
- Pedestrian bridge access closed
- Pedestrian plaza/station lobby
- Station services building
- Possible future over station development area
- Bus stop

Changes to Victoria Cross

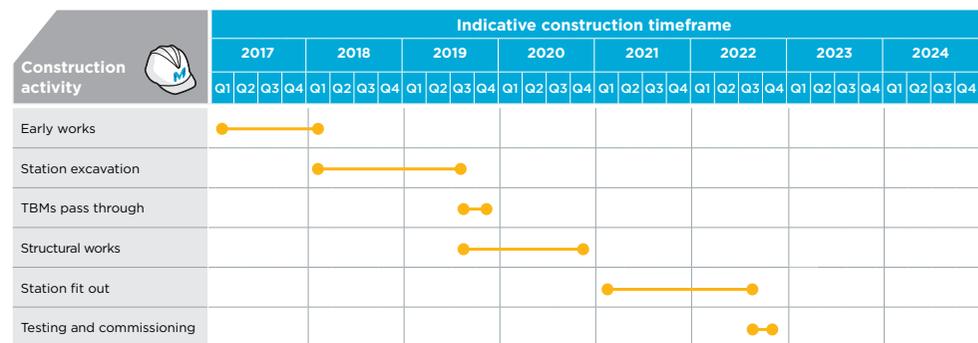
Construction of the northern services facility and station entrance will include:

- ▶ installing support poles
- ▶ excavating a vertical shaft
- ▶ building an acoustic shed
- ▶ excavating a horizontal shaft to link the vertical shaft to the station
- ▶ building the station entrance and services building
- ▶ internal fit out including four lifts.

Construction activities will mostly be consistent with the construction activities approved in the original EIS.

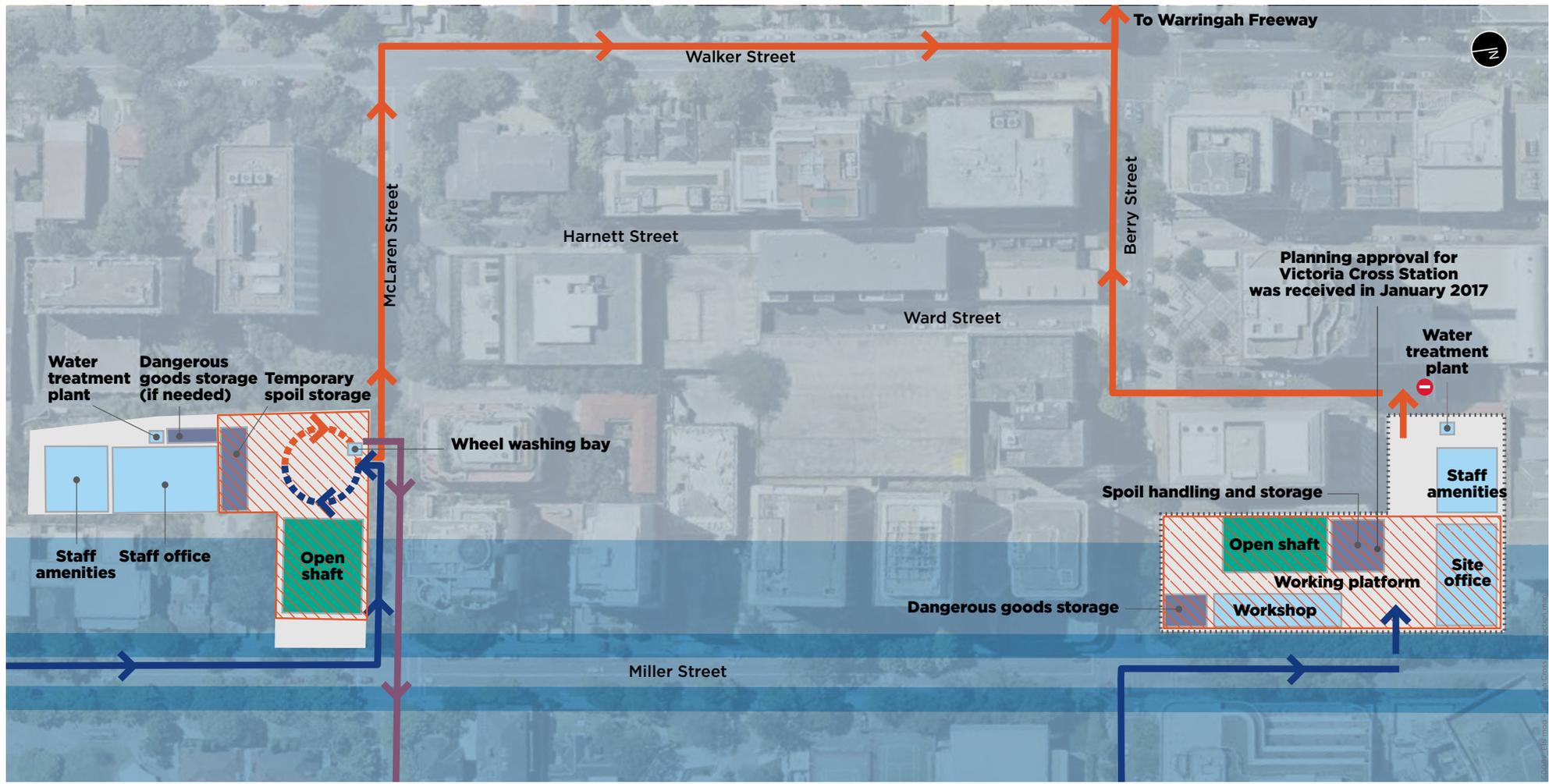
Construction at a glance (north site only)

Feature	Description
Size	50 McLaren - 1080 square metres (m ²)
Location	50 and 52 McLaren Street, North Sydney
Site access	52 McLaren Street - primary access (left-in and left-out) McLaren Street - right-turn limited during school drop-off and pick-up times Elliott Street - Secondary access 50 McLaren Street - Alternative access from McLaren and Miller street frontages
Construction hours	24 hours a day
Truck movements	6-10am & 3-7pm 6 trucks and 2 light vehicles per hour 10am-3pm 24 trucks and 10 light vehicles per hour 7pm-6am 24 trucks and 2 light vehicles per hour
Demolition	Nil
Landscape	Existing mature trees within the site and the surrounding streetscapes of Miller Street and McLaren Street will be retained where possible
Spoil removal	200,000 cubic metres (m ³) of mostly sandstone by truck



Feature	Description
Activities	Roadheader support Spoil removal Station entry and services building construction
Staff facilities	Offices, lunch rooms and amenities
Staff parking	Consistent with approved EIS
Plant and equipment	Consistent with approved EIS
Traffic changes	Consistent with approved EIS
Street parking changes	Consistent with approved EIS
Noise management	There will be noise and vibration impacts at this site. Management practices to minimise impacts include: <ul style="list-style-type: none"> ▶ a noise barrier or hoarding will be built around the site ▶ an acoustic shed will be constructed over the excavation to reduce noise impacts ▶ night-time heavy vehicle movements will be restricted to McLaren, Miller and Berry streets if compliance with noise criteria cannot be met.
Pedestrian and cyclist changes	Miller Street - footpaths adjacent to both sites will be narrowed to 2.4 metres in width

Construction site map



- KEY**
- Approved Metro tunnels and corridor (indicative)
 - Construction area
 - Acoustic shed
 - Pedestrian bridge access closed
 - Site access - in
 - Site access - out
 - Restricted traffic flow (limited use during school set-down/pick-up times)



The Modification Report is on public exhibition until Wednesday 5 July 2017.

The Modification Report, SSI Application, Environmental Impact Statement and other accompanying documents may be viewed on the Department of Planning and Environment's website (www.planning.nsw.gov.au).

At the time of publishing, the Minister for Planning has not directed that a public hearing should be held.

Submissions

Any person may make a written submission concerning the proposal during the exhibition period. If a submission is made by way of objection, the grounds of objection must be specified in the submission.

People wishing to make a submission should use the online form if possible. To find the online form go to the webpage for this proposal via www.majorprojects.planning.nsw.gov.au/page/on-exhibition.

Your submission must reach the Department of Planning and Environment by **Wednesday 5 July 2017**. Before making your submission, please read our Privacy Statement at www.planning.nsw.gov.au/privacy or telephone the number below for a copy.

The Department of Planning and Environment will publish your submission on its website in accordance with our privacy statement.

If you cannot lodge online you can write to the address below. If you want the Department of Planning and Environment to delete your personal information before publication, please make this clear at the top of your letter.

You need to include:

- ▶ your name and address, at the top of the letter only
- ▶ the name of the application and the application number **SSI 15_7400**
- ▶ a statement on whether you support or object to the proposal
- ▶ the reasons why you support or object to the proposal
- ▶ a declaration of any reportable political donations made in the previous two years.

To find out what is reportable, and for a disclosure form, go to www.planning.nsw.gov.au/DonationsandGiftDisclosure or phone the number below for a copy.

Phone: 1300 305 695

Address: Planning Services,
Department of Planning and Environment,
GPO Box 39, Sydney NSW 2001

Your submission should be marked,
Attention: Director – Transport Assessments

Where to view the modification

The Modification Report and its accompanying documents may be viewed on the NSW Department of Planning and Environment website: www.majorprojects.planning.nsw.gov.au and www.sydneymetro.info.

If you do not have a computer, please go to a NSW Service Centre near you or your local library to use their public computers.

You can also view the documents at:

• Willoughby Council

- Customer Service Centre:
Level 4, 31 Victor Street, Chatswood
- Chatswood Library on The Concourse:
409 Victoria Avenue, Chatswood
- Artarmon Library: 139 Artarmon Road,
Artarmon

• North Sydney Council

- Customer Service Centre:
200 Miller Street, North Sydney
- Stanton Library:
234 Miller Street, North Sydney

• Lane Cove Council

- Customer Service Centre:
48 Longueville Road, Lane Cove

Community information sessions

The Project team has organised a series of community information sessions where displays and information about the modification will be available.

You are invited to attend these sessions and meet expert members of the Project team who will be there to answer any questions you may have.

There is no need to make a booking.

Date and time	Location
17 June, 10am-1pm	Fred Hutley Hall, 200 Miller Street, North Sydney
20 June, 3-7pm	Fred Hutley Hall, 200 Miller Street, North Sydney
22 June, 4-7pm	Freeway Hotel, 115 Reserve Road, Artarmon



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 171 386**. The interpreter will then assist you with translation.

আপনার, একজন দোভাষার (হন্টারপ্রচার) সেবা-সাহায্য আবশ্যিক হলে, অনুগ্রহ করে **১৩১ ৪৫০ নং এ ট্রান্সলেটিং এন্ড ইন্টারপ্রেটিং সার্ভিস** এর সাথে যোগাযোগ করুন, এবং **১৮০০ ১৭১ ৩৮৬ 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 171 386 给悉尼地铁, 翻译员然后将帮助您进行翻译。

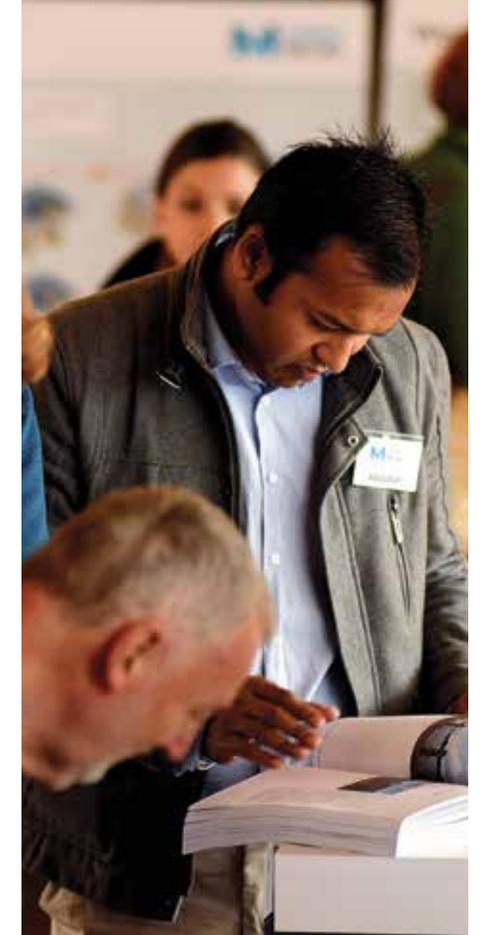
Εάν χρειάζεστε τις υπηρεσίες διερμηνέα, παρακαλείσθε να επικοινωνήσετε με την Υπηρεσία Μεταφραστών και Διερμηνέων στο 131 450 και ζητήστε τους να καλέσουν το Sydney Metro στο 1800 171 386. Ο διερμηνέας θα σας βοηθήσει στη μετάφραση.

통역서비스가 필요하시면, 번역 및 통역 서비스 (Translating and Interpreting Service) 전화 Translating and Interpreting Service on 131 450 에 연락하시어 Sydney Metro 전화 1800 171 386 에 연결해달라고 요청하십시오. 통역관이 통역을 도와 드릴 것입니다.

إذا كنتم بحاجة إلى خدمات مترجم, يرجى الاتصال بخدمة الترجمة الكتابية والشفهية على الرقم 131 450 واطلبوا منهم الاتصال بمترو سيدني على الرقم 1800 171 386. وبعد ذلك سيقوم المترجم بمساعدتكم في الترجمة.

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 171 386. Sẽ có thông dịch viên giúp cho quý vị việc thông dịch.

यदि आपको दुभाषिए की सेवाओं की जरूरत है, तो कृपया अनुवाद एवं दुभाषिया सेवा (Translating and Interpreting Service) से 131 450 पर संपर्क करें और उन्हें सिडनी मेट्रो 1800 171 386 पर को फोन करने का निवेदन करें। फिर दुभाषिया अनुवाद में आपकी मदद करेगा।



City & Southwest EIS Community Consultation

Place Managers

Sydney Metro has dedicated community relations specialists called Place Managers. Their role is to act as the single, direct contact between directly affected members of the community and the Project team. They can be contacted on the community information line **1800 171 386**, or via the Project email **sydneymetro@transport.nsw.gov.au**

Next steps

	Northwest	Chatswood to Sydenham	Sydenham to Bankstown
Prepare State Significant Infrastructure Planning Report	✓	✓	✓
Lodge State Significant Infrastructure Planning Report	✓	✓	✓
Secretary's environmental assessment requirements (SEARs) issued	✓	✓	WE ARE HERE
Exhibit Environmental Impact Statement - minimum 30 days	✓	✓	mid-2017
Prepare Submissions and Preferred Infrastructure Report	✓	✓	
Issue Submissions and Preferred Infrastructure Report	✓	✓	
Receive Project approval	✓	✓	
Lodge modification reports		WE ARE HERE	
Lodge submission reports		late 2017	
Modification approval		late 2017	
Start major construction	✓	mid-2017	2018
Launch tunnel boring machines	✓	2018	
Open to passengers	2019	2024	

Keeping in touch

For more information visit our website **sydneymetro.info** or contact us via:

 **1800 171 386** 24-hour community information line

 **sydneymetro@transport.nsw.gov.au**

 **facebook.com/SydneyMetro**

 Sydney Metro, PO Box K659, Haymarket, NSW 1240

 If you need an interpreter, call TIS National on **131 450** and ask them to call **1800 171 386**



Artarmon substation

Crows Nest Station

Parramatta Cross Station

Work at Blues

Further information

Web sydneymetro.info | Phone **1800 171 386** | Email sydneymetro@transport.nsw.gov.au

To subscribe to community updates or work notifications in your area visit sydneymetro.info

[Facebook.com/sydneymetro](https://www.facebook.com/sydneymetro)



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, June 2017.
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