



Artist's impression of North Strathfield metro station.

Excavation starts at North Strathfield

June 2023

The NSW Government is delivering Sydney Metro West, a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, with a target travel time of about 20 minutes between the two centres.

Sydney Metro West stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

Sydney Metro has been granted planning approval to construct twin underground rail tunnels between Westmead and Hunter Street in the Sydney CBD for Sydney Metro West.

Acciona Ferroviaria Joint Venture (AFJV) has been awarded the contract to deliver 11 kilometres of twin metro rail tunnels between The Bays and Sydney Olympic Park and excavate five new metro stations including North Strathfield metro station.

North Strathfield construction site

The North Strathfield metro station site sits adjacent to the existing Sydney Trains station to provide an easy interchange with the T9 Northern Line.

Site establishment continues at the North Strathfield metro station site, with the successful relocation of overhead high voltage cables and ongoing utilities relocations along Queen Street. The final hoarding around the site will be completed by the end of June 2023.

Piling and capping beam work for the station box is now complete and some minor excavation work is underway. Three excavator platform decks will be installed before major excavation starts in July.

A smaller southern construction site contains site sheds and amenities in the area used to support the existing North Strathfield Station and rail lines.



North Strathfield construction site.

Station box excavation and excavator platforms

Major excavation of the North Strathfield metro station box is due to start in July 2023. The station box is 182 metres long, 27 metres wide and between 17 and 21 metres deep. Around 95,000 cubic metres of material will be excavated from this site.

Excavated material will be removed using a combination of excavators with hammers and a dozer. Three excavator platforms will be installed along the eastern side of the station box to provide working width that allows trucks to access the designated loading area alongside Queen Street. The excavator platforms will hold either an excavator with a clamshell attachment or a crane.

Construction look ahead	Jun	Jul	Aug	Sep	Oct	Nov
Road slab and hoarding installation	●					
Installation of excavation platforms	●					
Station box excavation	●	●	●	●	●	●

Construction activity (subject to change) ●

Construction timeline

		We are here	
November 2021 to mid 2022	Mid 2022 to mid 2023	Mid 2023 to early 2024	Early 2025
Site investigations	Site establishment	Station box excavation	Site handover for station construction

Ground anchors and shotcrete

Ground anchoring is a term applied to an engineered system that mechanically fixes a retaining structure to the ground. Ground support can be active or passive action and increases the strength of the rock by reinforcing.

At North Strathfield, 224 active ground anchors will be installed as part of the station design. Around 1830 linear metres of anchors, will be drilled and installed around North Strathfield metro station box.

Shotcrete is another type of ground support used for station box construction. The shotcrete is a cement or polymer mix with reinforcing fibres of various materials embedded in the mix, which will be sprayed into the station box walls.

Traffic, pedestrian and bus stop changes

As the North Strathfield metro station is being constructed next to the existing North Strathfield Station, some traffic and parking changes had to be implemented to allow enough space for safe excavation of the station box.

Some of the recently implemented changes include:

- Relocation of the bus stop on the western side of Queen Street to the southern side of Wellbank Street.
- Installation of a new temporary level pedestrian crossing on Queen Street, south of Wellbank Street.
- Installation of a second level pedestrian crossing on Queen Street, south of Pomeroy Street.
- Closure of the western footpath on Queen Street in front of the construction site and diversion of pedestrians to the eastern footpath.

Additional traffic changes are planned to be implemented however timing has not yet been confirmed. This will include:

- The installation of new traffic lights at the intersection of Wellbank and Queen Street. These lights once installed will replace the existing pedestrian crossings at that intersection.
- Minor modification of the roundabout at the intersection of Queen Street and Pomeroy Street to assist with truck movements.

Piling now complete

AFJV recently completed the final pile on the Central Tunnelling Package at North Strathfield metro station.

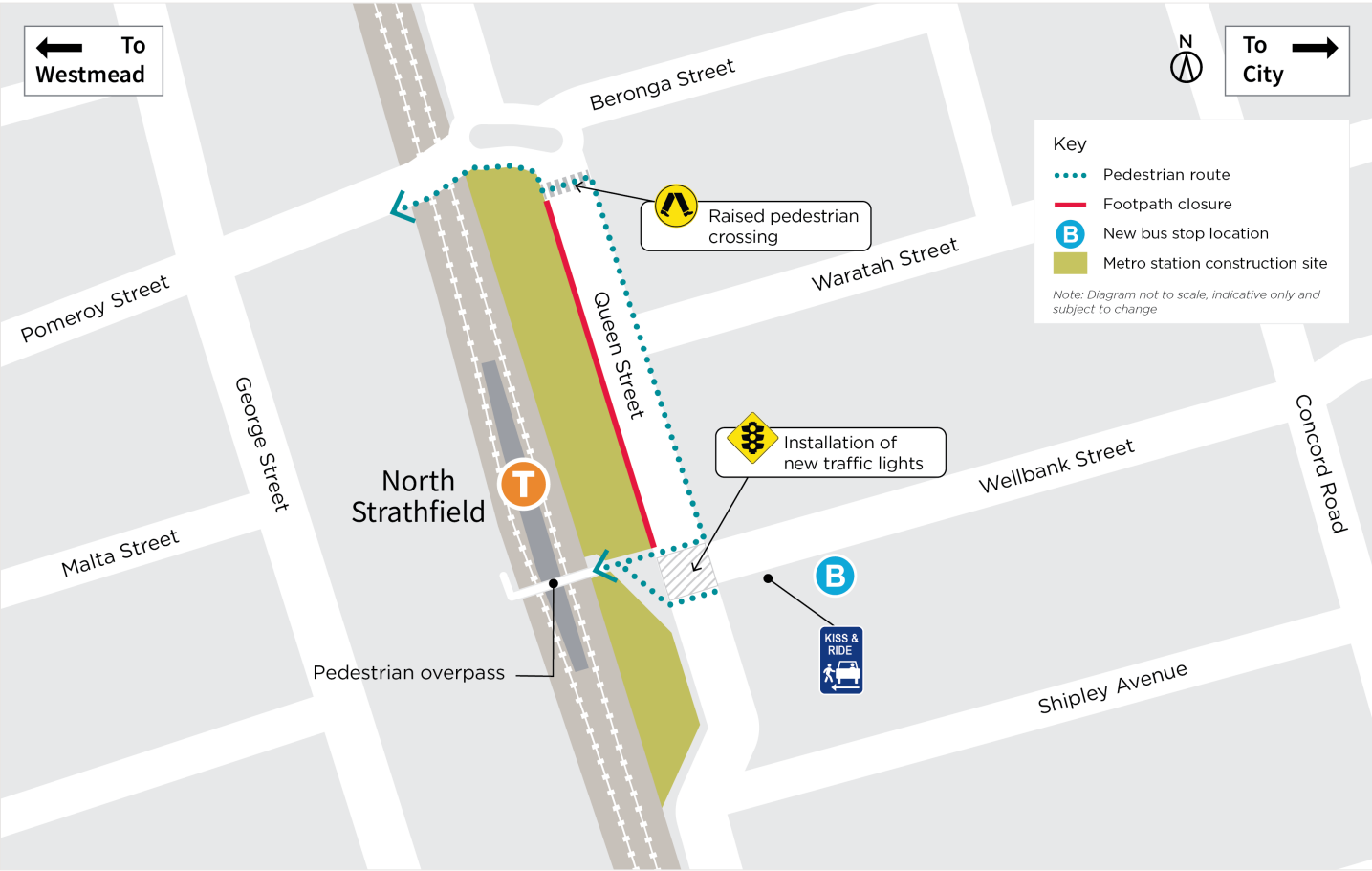
Having started piling operations in early 2022, the team has invested over 250,000 hours across 15 months to build the geotechnical components of five station sites.

The construction utilised eight piling rigs and thirteen drilling rigs for the following tasks:

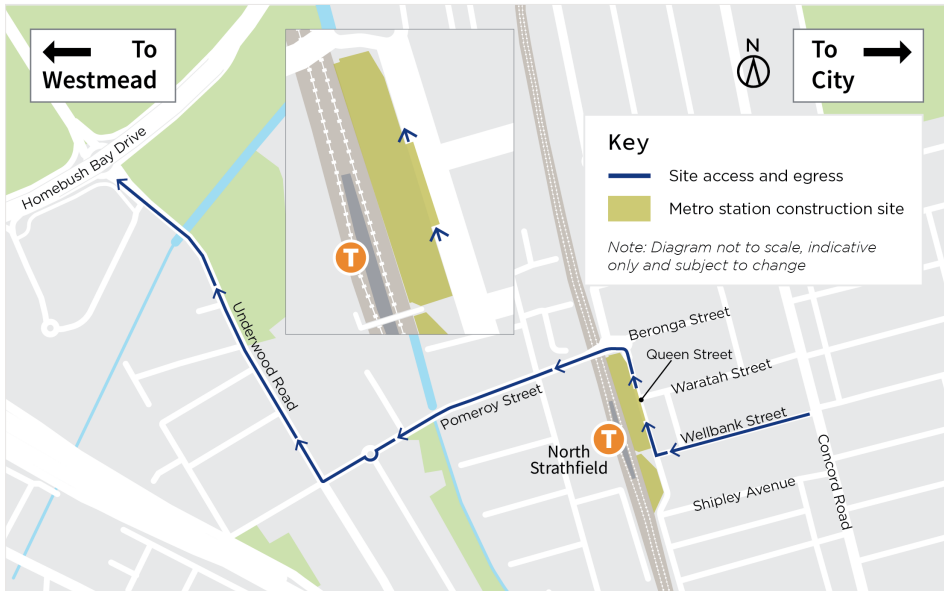
- A total of 1,958 piles for foundations
- A total of 31,283 metres of drilling for the installation of 895 ground anchors



A piling rig at the North Strathfield metro station site.



Final pedestrian arrangement.



North Strathfield site access and egress.

The Central Tunnelling Package virtual engagement room for Sydney Metro West is now live.

To learn more about important aspects of the project visit caportal.com.au/afjv/ctp/virtual or scan the QR code.



Tunnel boring machines

The two double-shield, hard rock TBMs were specially built by world-leading TBM manufacturers Herrenknecht for Sydney's geology to cut through the hard sandstone.

What makes these two TBMs unique is that they include refurbished cutterheads, front shields and gripper shields from the mega boring machines used on the Sydney Metro City & Southwest project.

Each TBM is expected to excavate around 200 metres of tunnel each week and arrive at the North Strathfield metro station site by late 2024.

TBM fast facts:

- Each TBM weighs almost 1,300 tonnes, equivalent to three Boeing 747 jets
- 165 metres long, longer than two Airbus A380s
- Approximately seven metres in diameter
- 38 disc cutters per cutterhead, each more than 48 centimetres in diameter
- Heaviest pieces of the TBM are the front shield and gripper shield which weigh approximately 280 tonnes each.

Travel times from North Strathfield metro station

- 8 minutes to Parramatta
- 2 minutes to Sydney Olympic Park
- 13 minutes to Hunter Street



Assembly of the first tunnel boring machine inside the station box at The Bays.

Have your say

If you have any questions or would like more information please contact our project team:

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Translating and interpreting service

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