



Burwood North crossover cavern.

Bulk excavation complete at Burwood North Station site

February 2024

The NSW Government is delivering Sydney Metro West – a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, link new communities to rail services and support employment growth and housing supply.

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.

Two potential station locations are being investigated west of Sydney Olympic Park, including one at Rosehill Gardens which could support a significant increase in housing.

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 Burwood North Station.

Burwood North construction update

Major excavation has been completed at the Burwood North Station site after nearly 15 months, during which time almost 200,000 cubic metres of excavated material has been removed from the site. This is equivalent to approximately 200 Olympic swimming pools and includes material from the excavated station box, the southern shaft, the crossover cavern at the western end of the station box, the underground pedestrian walkway under Parramatta Road and the nozzles at the eastern end of the station box.

The crossover cavern has been designed to allow trains to change to the other track so maintenance work can be carried out with minimal interruption to services. It is 145 metres long and 25 metres wide and is one of three crossover caverns on the Metro West line.

The Burwood North Station site is now preparing for the arrival of two tunnel boring machines (TBMs) that started tunnelling from The Bays Station site in Rozelle in April last year and reached the Five Dock Station site in late 2023.



Burwood North site before major excavation started (August 2022).



Excavated station box at Burwood North site (December 2023).

Tunnelling progress

With major excavation complete, the Burwood North Metro Station site is preparing for the arrival of the TBMs during the second quarter of 2024.

The two double-shield, hard rock TBMs were specially built for Sydney's geology to cut through the hard sandstone. These two TBMs include some refurbished components from the TBMs used on the Sydney Metro City & Southwest project, that carved out the metro tunnels from Chatswood to Blues Point.

Tunnelling is carried out 24 hours a day, seven days a week. All material excavated by the TBMs is transferred via conveyor belts to a storage shed at The Bays site and then removed by trucks for reuse at various other sites across greater Sydney. The TBMs excavate up to 200 metres of tunnel per week and are expected to complete their journey to Sydney Olympic Park in the second half of 2024.

Cross passages

A cross passage is a short tunnel that connects the two main metro tunnels and are located around every 240 metres along the tunnel alignment. Cross passages are an important safety feature that allow people to move from one tunnel to the other in the unlikely event of an emergency.

Construction of cross passages will occur below ground within the mainline tunnels after the tunnel boring machines have passed through the area. A remote controlled excavator with a rock breaking hammer will be used to excavate the passages.

Construction timeline

We are here					
Late 2021	Early to late 2022	Late 2022 to late 2023	Late 2023 to mid-2024	Early to late 2024	2025
Site investigations	Site establishment and demolition	Shaft, station box and crossover cavern excavation	Waterproofing and lining work	Site transition to tunnelling	Site handover

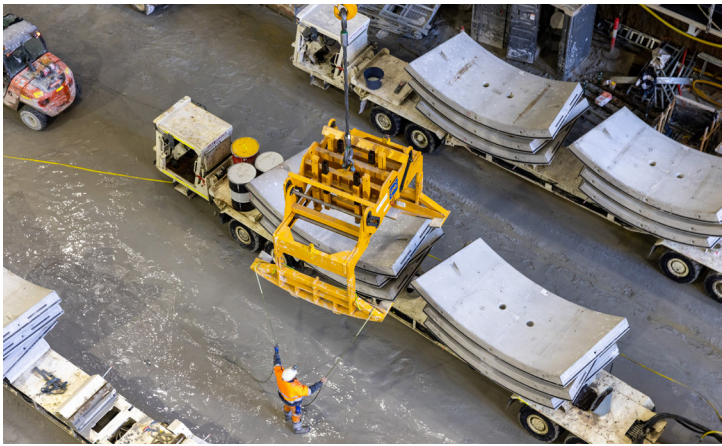
Ground-borne noise

Tunnelling work may cause some ground-borne noise. Ground-borne noise results from vibration being transmitted through the ground and “regenerated” as noise into a building. It typically has a low frequency “rumbling” sound due to the low frequency of the vibrations. Like vibration, ground-borne noise is more noticeable when the TBM is closest to a property, increasing on approach and reducing as it moves away. It usually takes about two days for a TBM to pass under a property. Ground-borne noise is likely to be heard at night when background noise levels are lower and is not expected to cause disturbance during the day.

Residents will be notified ahead of the TBMs approaching their property for each of the tunnels and then again before cross passage excavation starts. AFJV has undertaken extensive noise and vibration modelling to predict the likely impacts of tunnelling and ensure they are within acceptable limits. Regular monitoring will continue throughout the project to ensure noise and vibration is within the expected levels.



A cross passage connecting the two metro tunnels under Rozelle.



Multi service vehicles moving concrete segments.



Grout batching plant at The Bays.

Tunnelling support activities

The northern construction site currently has facilities for spoil storage and removal, water supply, water treatment and disposal, material storage as well as office facilities.

Once the TBMs pass through the Burwood North Station site, the northern construction site will take on some tunnelling support activities.

A grout batching plant will be installed inside the large acoustic shed and will be used to mix the concrete supplied to the two TBMs. It will include two silos approximately 17 metres high, two silos approximately 12 metres high, two shipping containers with pumps and other supporting equipment.

The precast concrete lining segments will be delivered to the northern site and stored inside the acoustic shed and floor of the station box.

The existing gantry crane will be used to move segments within the acoustic shed and a forklift will be used to handle segments in the station box.

Multi service vehicles (MSVs) will be used to transport the segments to the TBMs.

These tunnelling support activities are approved to operate twenty four hours a day. Deliveries to support tunnelling works will be via Parramatta Road between 10pm and 7am. The gate on Burton Street may also be used between 7am and 10pm.

A copy of the consistency assessment for these tunnelling support activities is available in the document library on the Sydney Metro website.

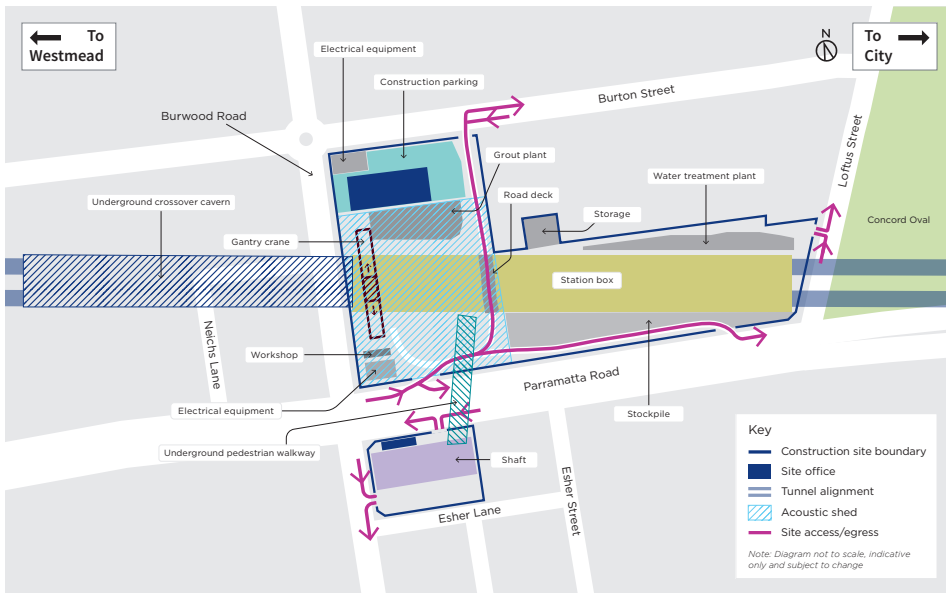


Concrete segment delivery from Eastern Creek Precast Facility.

Construction look ahead

Activity (subject to change)	Feb	Mar	Apr	May	Jun	Jul
Preparation for the TBM including traverse track	●	●				
Utility investigations, relocations and driveway construction	●	●	●			
Tunnel boring machine maintenance and traversal			●	●		
Construction of the plenum structure				●	●	●
Cross passage ramp delivery and assembly				●	●	
Segment delivery and tunnel support operations			●	●	●	●

Construction activity ●



Burwood North Station site layout.

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 machine traverse

The TBMs will break through into the Burwood North station box from the east, traverse the 340 metre length of the station box and underground cavern, before re-commencing tunnelling again on their westward journey to Sydney Olympic Park.

Raised steel rails (modules) will be installed for the TBM to 'skate' along using hydraulic rams for propulsion.

Conveyor structures and service pipes will be progressively installed behind the TBMs to remove the excavated material and send in needed air, water, grout and power for tunnelling operations.

An extendable tunnel conveyor system has been installed to transport excavated material from each TBM to a storage shed located at The Bays Station site. The material is then loaded onto trucks and transported to other sites around Sydney. The conveyor system can move up to 828 tonnes of excavated material per hour.

Property condition surveys for eligible properties

To give peace of mind to local residents and businesses, all properties 15 metres from the outer edge of the underground tunnels will be offered a free property condition survey before and after tunnelling work occurs in the area. A letter of offer is sent to eligible property owners around three months before the first TBM is expected to arrive.



Conveyor structures and service pipes.

BE TRUCK AWARE

**Look out
before you
step out**



Contact us

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

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