



Dual crane lift positioning the girders into place for the A'Beckett's Creek bridge.

# Major construction at Clyde

The NSW Government is delivering Sydney Metro West—a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, linking 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.

Gamuda Australia and Laing O'Rourke Consortium (GLC) has been awarded the contract to deliver the Western Tunnelling Package which involves nine kilometres of twin metro rail tunnels between Westmead and Sydney Olympic Park, excavation for two new metro stations, a stabling and maintenance facility at Clyde and a precast facility at Eastern Creek.

## Unwin Street and A'Becketts Creek overbridges underway

Major construction continues at the Clyde stabling and maintenance facility, the future operations control centre for Sydney Metro West, with the final diversion of A'Becketts Creek and backfilling of the old creek now complete. The Unwin Street overpass bridge and the A'Beckett's Creek bridge commenced construction in mid 2024 and is due for completion in early 2025. The overpass bridges will provide access over A'Becketts Creek and the rail corridor.

Concrete girders are used in the bridge structures to provide greater foundational support to the bridge and reinforce the strength of smaller beams to ensure that the structure has a greater load-bearing capacity and can support more concentrated loads. The installation work involved the use of 650 tonne and 450 tonne cranes, which lifted the girders into position on the bridge supports. In the early stages of construction, the girders will be visible from Unwin Street. As the bridge is formed, they will become increasingly less visible as the girders are built upon.

Girder delivery and installation was completed in August 2024, with the next stages of bridge construction to include the installation of temporary walkways and pouring of the concrete deck slabs.

## Final roadheader breakthrough at Clyde in major project milestone

In a significant milestone all roadheader excavation is now complete following the final roadheader breakthrough at Clyde in early September. Over the last 12 months three roadheaders have completed the excavation of the two service tunnels and junction caverns at Clyde.



Rhonda the Roadheader has successfully completed the breakthrough at Clyde.

Each of the 12-tonne roadheaders, named Charlotte, Ivory and Rhonda, excavated around 350 tonnes of material per day, the equivalent of 70 African elephants. Collectively, the machines excavated over 200,000 tonnes of material.

Following roadheader excavation, concreting and waterproofing is continuing prior to the installation of permanent lining in the tunnels. The tunnels will be lined with 3,600 precast concrete segments which have been manufactured at the purpose-built Sydney Metro West precast facility at Eastern Creek.

### What are service tunnels and junction caverns?

The service tunnels and junction caverns will connect the twin Metro tunnels to the Clyde Stabling and Maintenance facility. The junction caverns are the location where the service tunnels meet the main Metro tunnels.

Trains will arrive and depart from the Metro tunnels via the junction caverns and travel through the service tunnels to the portal where the Metro line transitions from below ground to the surface. The service tunnels enable the Metro trains to travel to and from the above ground stabling and maintenance facility.

The service tunnels are each approximately 700 metres long. The junction caverns vary in size and at the largest point are 155 metres long, 15 metres wide and 12 metres high.



TBM Dorothy completes the first phase of tunnelling at Sydney Olympic Park.

### Tunnel boring machines Betty and Dorothy breakthrough at Sydney Olympic Park

Two tunnel boring machines (TBMs) constructing the nine kilometre tunnels between Westmead and Sydney Olympic Park have arrived at the future Sydney Olympic Park Metro Station site.

TBMs Betty and Dorothy have each built around 4.6-kilometres of metro tunnels between the Clyde launch site and Sydney Olympic Park. They are the first of four TBMs to arrive at the Sydney Olympic Park site for the Sydney Metro West project, and the first two autonomous TBMs (A-TBMs) to be used in Australia.

TBM Betty broke through into the Sydney Olympic Park Station box in late June and TBM Dorothy arrived in late July. Both machines have been retrieved from the station box and returned to Clyde to be relaunched towards Westmead to commence their final 4.4-kilometre journey.



A different kind of face lift! TBM Betty's cutterhead has successfully been retrieved from Sydney Olympic Park metro station site.

### What's next for TBMs Betty and Dorothy?

While building the tunnels between Clyde and Sydney Olympic Park, TBMs Betty and Dorothy excavated a combined total of 857,500 tonnes of material and installed over 32,600 concrete precast segments to line the tunnels as they passed through.

Following the breakthroughs at Sydney Olympic Park, Betty and Dorothy were disassembled and retrieved using a 600 tonne crane that lifted sections of the TBMs out of the station box. Each section was then loaded onto a truck and returned to the Clyde launch site.

The transport of each TBM consisted of over 60 heavy vehicle loads, the largest of which was the TBM gripper shields, each weighing 210 tonnes and measuring 7.2-metres wide, 5.2-metres high and 4.6-metres long. Transporting these machines required extensive planning, stakeholder management and communication.

Once at Clyde the TBM segments are lowered back into the launch box to be reassembled, and the mechanical and electrical connections completed. The TBMs are then powered on, and following testing and commissioning they will be relaunched towards Westmead TBM Betty has successfully relaunched, with TBM Dorothy expected to recommence tunnelling in the coming weeks.

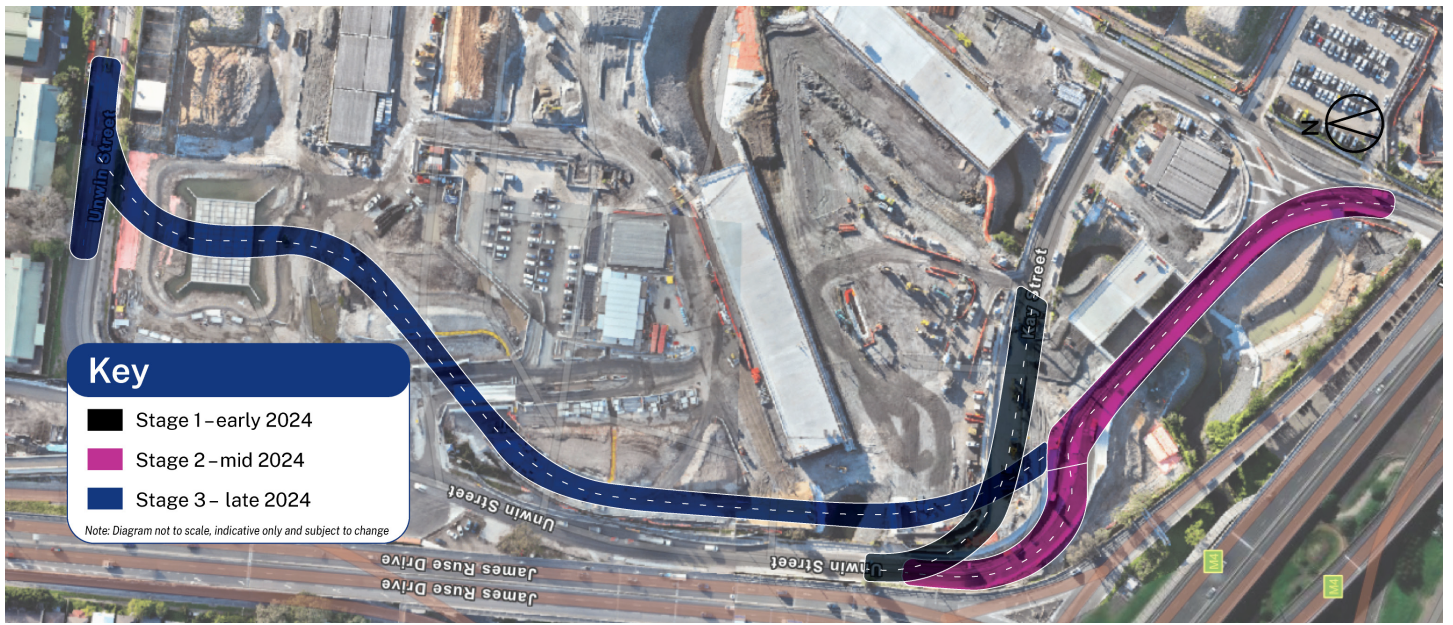
Once TBMs Betty and Dorothy have completed tunnelling they will again be disassembled and retrieved ready to be reused on future tunnelling projects.



You spin me right round – TBM Betty's gripper shield, a cover of the internal mechanisms of the machine, retrieved and rotated ahead of its transportation back to Clyde.

### Indicative construction timeline

2022	2022 to 2023	Early 2023 to mid 2024	We are here	→	2032
Site investigations and demolition	Site establishment	Construction of connecting tunnels and caverns	Relaunch of TBMs and construction of twin metro tunnels		Sydney Metro West opens



Map of Unwin Street realignment work.

## Unwin Street realignment - Stage 3 - October to December 2024

The Unwin Street realignment work is continuing, The first and second stages of work were completed in early 2024 and mid-2024, respectively.

installation to connect to the current road network. Once these work activities are complete, the new road alignment will be finished, and traffic will be diverted onto the new permanent Unwin Street.

Stage three will commence in December 2024 and consist of utility work, asphaltting and pavement

Six-month construction look ahead and out-of-hours work activities							
Activity	Noise impact	October 2024	November 2024	December 2024	January 2025	February 2025	March 2025
Constructing a retaining wall	Low	● (pink) ● (green)	● (pink) ● (green)				
Earthworks	Low	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)
Unwin Street realignment	Low	● (pink) ● (blue)	● (pink)	● (pink) ● (blue)			
Tunnelling and removing of excavated material	Low	● (blue)	● (blue)	● (blue)	● (blue)	● (blue)	● (blue)
Utility upgrades and investigations	Low to medium	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)	● (pink) ● (green)
Delivery of machinery, materials, and equipment	Low	● (blue)	● (blue)	● (blue)	● (blue)	● (blue)	● (blue)

● (pink) Standard construction hours ● (blue) 24 hour work activities ● (green) Out-of-hours work

### Contact us

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