



TBM Eileen was the first TBM to break through at Bradfield late May 2024.

# Tunnel Boring Machines triumph

Sydney Metro – Western Sydney Airport (SM-WSA) has reached a historic milestone, with the project's four mega tunnel boring machines (TBMs) completing the 9.8 kilometres of twin-tunnelling needed for the new metro railway line in Western Sydney.

The city-shaping project from St Marys to Bradfield via the new Western Sydney International (Nancy-Bird Walton) Airport, includes two sections of twin tunnels at both ends of the alignment: 4.3 kilometres of twin tunnels from Orchard Hills to St Marys, and 5.5 kilometres of twin tunnels from Airport Business Park to Bradfield.

TBM Catherine was the first of the TBMs to break through when she arrived through a wall of rock at the St Marys Metro Station site in mid-May. The TBM took 10 months to complete her journey from Orchard Hills to St Marys. Catherine's breakthrough was followed by TBMs Eileen and Peggy breaking through at Bradfield, and Marlene reaching St Marys.

*For more on the amazing journeys of our TBMs, see Page 2*



TBM Catherine was the first machine to finish tunnelling.



## Tunnel Boring Machines triumph

*(Continued from front page)*

The TBMs worked around the clock, up to seven days a week, to excavate more than 1.86 million tonnes of material (enough to fill almost 300 Olympic pools) and install nearly 70,000 concrete segments, which now line the new tunnel walls. All tunnelling was completed within a 13-month period – a great achievement for Sydney Metro and our Station Boxes and Tunnelling (SBT) delivery partner, CPB Contractors Ghella.

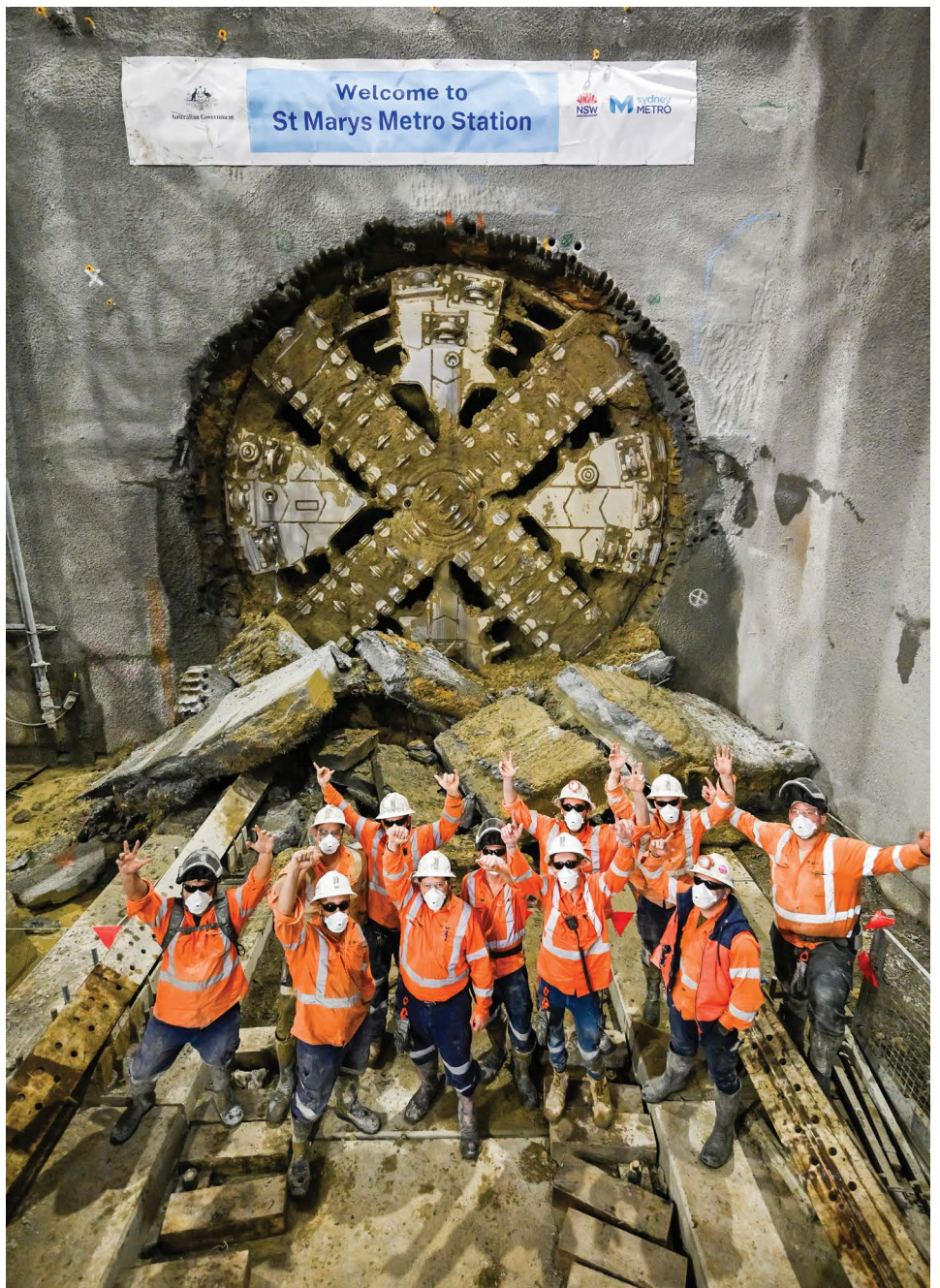
TBM Eileen was the second TBM to complete tunnelling, when she broke through at the Bradfield Station site in late May. Eileen launched in April 2023 at Airport Business Park, and tunneled 5.5-kilometres via the Airport Terminal Station box and temporary tunnelling support shaft, and the Bringelly services facility before reaching the Bradfield Station site.

TBM Peggy took about 13 months to build the second southern tunnel, arriving at Bradfield in early June. Peggy and Eileen installed a combined 38,838 segments (6,473 rings) around their tunnel walls.

TBM Marlene marked the fourth and final break-through when she pushed through a rock wall into the station box at St Marys on June 20. Marlene and Catherine left behind two waterproof tunnels lined with 31,128 segments (5,188 rings).



TBM Eileen broke through at the Bradfield Station site in late May.



Proud team members celebrate TBM Marlene's breakthrough at St Marys in June 2024.



TBM Peggy's arrival at Bradfield completed the southern tunnels.



TBM Eileen's cutterhead is lifted off the front shield and out of the station box.

## Mega lifts

Following the triumphant completion of the TBMs' journeys, focus has shifted to safely retrieving the machines from the station boxes. The TBMs have been progressively pulled apart and the pieces washed. Tower cranes have been lifting the heavy pieces from the bottom of the station box to the surface.

The TBM parts are being loaded onto oversized trucks, which have been leaving the worksites overnight to minimise any impact on local roads. The parts are then transported back to the TBM manufacturer.

The series of heavy lifts is continuing throughout August 2024.



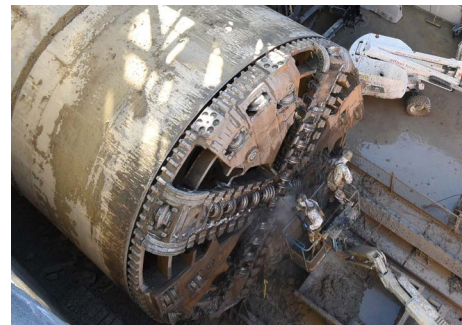
Middle shield from TBM Eileen's lifted out at Bradfield.

## Segment success

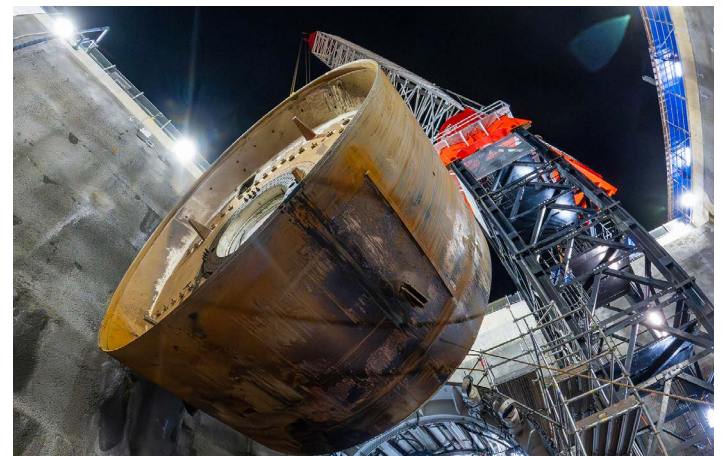
The final tunnelling segments were delivered to the Airport Terminal Station site in May 2024, supporting the Sydney Metro - Western Sydney Airport tunnelling.

A total of 69,912 concrete segments made their way from the precast facility in Brisbane to the tunnelling sites in Western Sydney, to feed the tunnel boring machines as they built the metro tunnels.

Each segment weighs about four tonnes and it takes six of these segments to form one tunnel ring.



TBM Catherine's cutterhead is washed after her breakthrough.



A tower crane lifts TBM Catherine's front shield off the front of the machine before raising it to ground level.

# Tunnelling lesson

Year 10 STEM students and teachers from Glenmore Park High School recently visited the Claremont Meadows site to find out what a career in construction can look like.

CPB Contractors Ghella project engineers, Cansu and Kerry, led the tour with Cansu enthraling the five female students with her inspirational discussion on opportunities for women to work in construction and her journey to a successful engineering career.

Visitor feedback included, 'It's mind blowing to see how the tunnel is being built' and 'the tour made me realise how many talented people work in construction'. Four students left expressing a keen desire to join the engineering profession, so mission accomplished!

The students enjoyed the chance to walk in a tunnel.



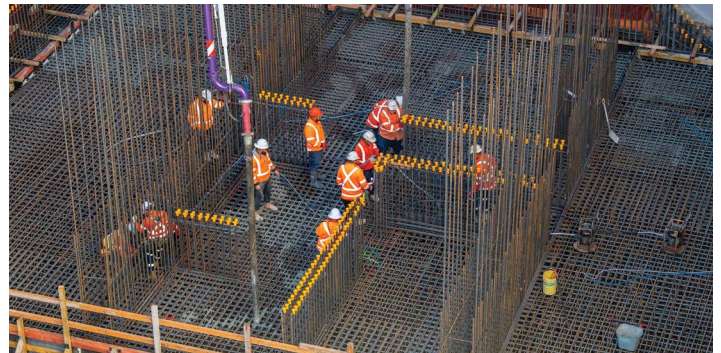
# Major construction starts at St Marys Metro Station

The future St Marys Metro Station is a hive of activity with the Parklife Metro team completing the initial two large base slab foundation pours, forming part of the 350 metre long x 22 metre wide station footprint.

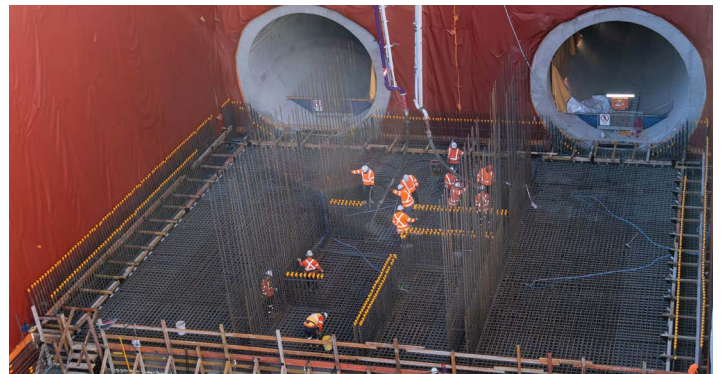
Parklife Metro are delivering the Stations, Systems, Operations, Trains and Maintenance (SSTOM) package for the Sydney Metro – Western Sydney Airport project.

In preparation for the base slab pours, 156 concrete columns, called 'piles' were drilled deep into the ground to support the station structure and above ground buildings. The base slab will be constructed in its entirety over 19 pours, with each section requiring an average of 52 square metres of formwork, 200 tonnes of steel reinforcement and an average concrete pour of approximately 470 cubic metres.

The concrete pours pave the way for the station box fit out, which over the coming months will see the start of station walls and other permanent works.

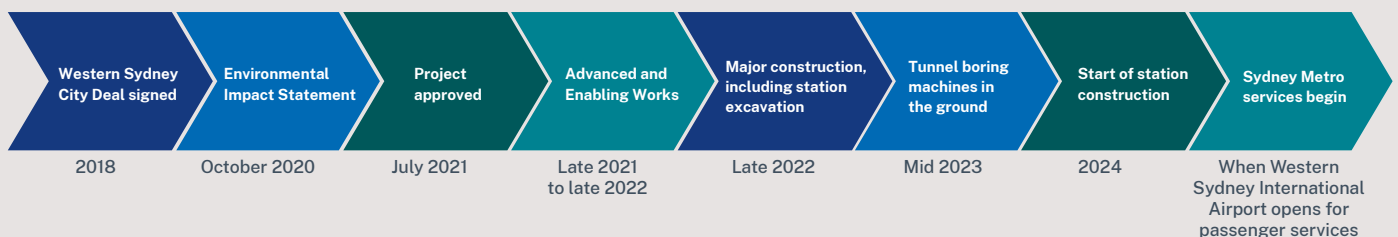


St Marys concrete pour in action.



The crew checking the formwork and steel reinforcements before the concrete pour starts.

## Sydney Metro – Western Sydney Airport project timeline



## Major milestones achieved in delivery of the elevated viaducts

Several key milestones have recently been reached on the Surface and Civil Alignment Works (SCAW) section of the new metro railway line. Viaducts will carry the new metro from Orchard Hills to the new Western Sydney Airport, transforming the local skyline and serving as a backbone for regional transportation.

SCAW contractor CPBUI JV has successfully finished all substructure works, including all piers and capitals, that will support the elevated viaducts. Progress on the elevated viaducts also continues apace, with more than 80 per cent of the 1,101 colossal concrete segments for the viaducts manufactured and delivered. More than 50 per cent of these segments have already been erected.

The project's scale, encompassing the casting and delivery of segments and the construction of three elevated viaducts, is immense. The progress made underscores the team's commitment to meeting construction deadlines and advancing the region's infrastructure.

Once completed, this superstructure will provide a modern, efficient metro system for local residents and visitors. Spanning key areas such as Blaxland Creek, the Warragamba pipelines, and Luddenham Road, the viaducts are part of a 23-kilometre metro railway line.

Viaduct construction is expected to be completed and ready for track installation early next year.

## St Marys Station footbridge

Transport for NSW in partnership with Laing O'Rourke is delivering a new footbridge and northern plaza on Harris Street at St Marys Station as part of Sydney Metro –Western Sydney Airport project. The fully accessible footbridge will allow commuters to easily switch between the new metro platforms and suburban trains on the T1 Western Line.

The addition of a new pedestrian plaza and entry on the northern side of the existing station will allow quick and easy access to the station and improve connectivity at St Marys.

Throughout May, the project installed temporary hoardings on the existing station platforms to create safe work areas. Behind the hoardings, work is underway to excavate and install piles to support the new footbridge.



Construction hoardings on the platforms at St Marys Station.

## Station names announced

On May 10, 2024, the NSW Government announced the final station names for a number of the Sydney Metro –Western Sydney Airport line. These include Orchard Hills Railway Station, Luddenham Railway Station, and Bradfield Railway Station (previously known as Aerotropolis).

Bradfield Metro Station is named in tribute to Dr John Job Crew Bradfield, renowned for his pivotal role in the construction of the Sydney Harbour Bridge from 1913 to 1932. Situated in the heart of Western Sydney's emerging Bradfield City Centre, the station is expected to generate numerous job opportunities and will be located adjacent to the new Western Sydney International (Nancy-Bird Walton) Airport.

Bradfield Metro Station will serve the Western Sydney International (Nancy-Bird Walton) Airport, once constructed.

For more details about Bradfield Metro Station, please refer to the stations and site information under Bradfield Metro Station.

Sydney Metro is working with Transport for NSW and Western Sydney Airport to develop final station names for Airport Business Park and Airport Terminal. St Marys station will be named St Marys, and will be an interchange station with Sydney Trains services and buses

An artist's impression of the Sydney Metro station at Bradfield (subject to change).





## Name the crane competition!

Sydney Metro–Western Sydney Airport project is reaching new heights of excitement as local pre-school and primary school students are invited to name one of the six tower cranes that is being used to shape the future of public transportation in Western Sydney.

The six cranes range from 42-90 metres tall and are being used to help build the new Metro stations with two tower cranes each at St Marys, Airport Terminal and Airport

The Marr 2480D at St Marys is one of the world’s largest tower cranes.

Business Park stations. Three of the six cranes are the largest tower cranes in the world.

Students can unleash their creativity by suggesting a name for the crane that captures its spirit and significance. Entry forms have been provided to schools along the project alignment so that every young visionary has the chance to leave an enduring mark on the landscape of Western Sydney.

## Cultural connection

Orchard Hills Public School saw a burst of creativity as around 40 students engaged in a collaborative art project to create an Aboriginal artwork reflecting the school colours, through a cultural painting session with the local Indigenous company, Dalmarri.

Under the guidance of the Dalmarri team, students learned to paint using Aboriginal cultural themes and shapes. They enthusiastically took turns contributing to the school’s collective masterpiece while gaining insights into Aboriginal culture. Additionally, they explored a giant puzzle featuring local Indigenous words for animals and numbers.

Orchard Hills and another five local schools won cultural painting sessions by submitted entries last year to name ‘Marlene’ –one of the four Tunnel Boring Machines used on the Sydney Metro –Western Sydney Airport project.

The workshop was fantastic.  
The students really enjoyed it.  
The organisers/teachers were great too.  
**Daniel McMahon** Principal | Orchard Hills Public School



Orchard Hills students contributing to the school’s artwork.

## Students celebrate National Reconciliation Week with immersive cultural workshops

Local students from Glenmore Park High School and Jamison High School had the unique opportunity to attend a series of cultural immersion workshops during National Reconciliation Week (NRW). The workshops, facilitated by Indigenous artist Peter Jensen (PJ), were part of a program hosted by CPBUI JV, in recognition of NRW, observed from May 27 to June 3, 2024.

PJ, a Tjungundji man with deep roots in the Atherton Tablelands in Queensland and Western Sydney, guided the students through activities such as creating ochre artworks inspired by traditional themes, learning about fire-making techniques, and delving into Dreamtime stories. This immersive experience provided students with a valuable opportunity to connect with Indigenous culture and heritage.

The success of these workshops highlighted the enthusiasm and engagement from all participants, making it a meaningful NRW, enabling students to connect with Indigenous culture and deepen their understanding of our shared heritage, reinforcing the importance of reconciliation in our community.



Glenmore Park and Jamison students learning about fire-making techniques.

# Engaging with our community

## Western Sydney International Open Day

The Sydney Metro –Western Sydney Airport project communications team and our delivery partners attended the Western Sydney International Airport Open Day held on June 22, 2024

Around 1,600 people attended the event for a behind-the-scenes look at the airport, and to find out more about important interfaces for the new airport, including our metro line, the M12 and flightpaths. The Sydney Metro –Western Sydney Airport stall engaged with more than a third of those people attending the day, recording more than 600 interactions. As always, we received an overwhelmingly positive response from the community on the day, with everyone keen to know when they'll be able to start using the new metro line.

So far this year, we've spoken to more than 5,000 community members across more than 20 local engagement events. We appreciate the time people have taken to stop by and talk to us and about the benefits the new metro line will bring to Western Sydney and beyond.



## Coming up

We are excited to announce that the team will be participating in the **Penrith Show on August 24 and 25**, and we will also be celebrating the **St Marys Spring Festival on September 7**.

We look forward to seeing you at our upcoming community engagement events.

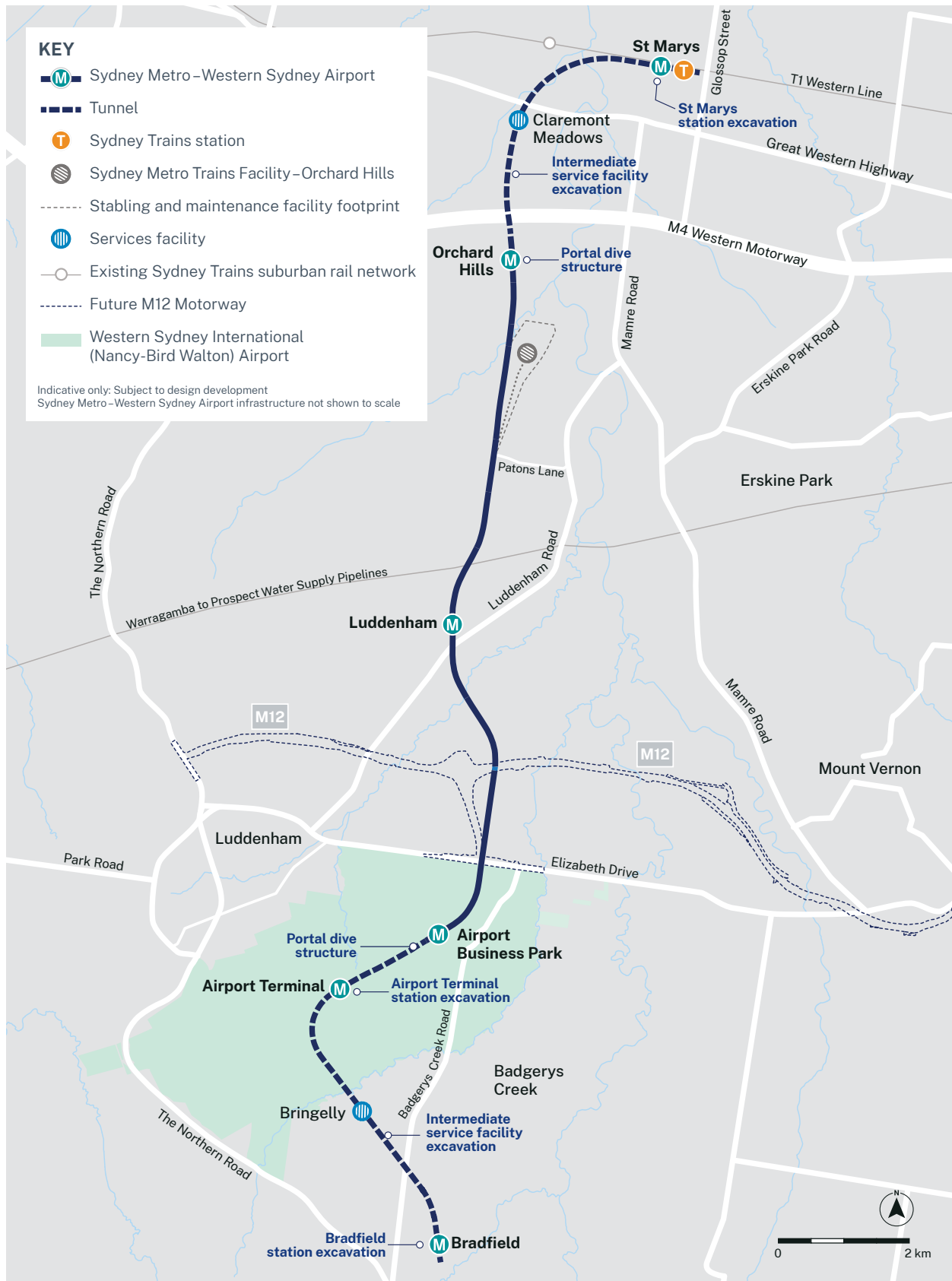


## Have your Say

The following Place, Urban Design, and Corridor Landscape Plans (PUDCLPs) will be on public exhibition in the coming weeks:

- St Marys Footbridge PUDCLP (in partnership with Transport for NSW), which will provide commuters with an easy way to switch between the metro platform and suburban trains on the T1 Western Line, and
- Stations, Systems, Operations, Trains and Maintenance (SSTOM) Stage 2, covering station and precincts at St Marys, Orchard Hills and Bradfield, the precinct at Luddenham station, as well as the corridor and landscaping.

We will keep you updated for further details on how you can have your say on these plans.



Sydney Metro – Western Sydney Airport alignment map.

**Contact us**

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

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