

# Tunnel Boring Machine

## Western Harbour Tunnel Stage 2

December 2022



The Western Harbour Tunnel is a key part of our vision to create an integrated road and public transport network, balancing the needs of commuters and local communities. Western Harbour Tunnel will transform the way people and goods move around our great city by creating a western bypass of the Sydney CBD and take pressure off the Sydney Harbour Bridge, Sydney Harbour Tunnel, Anzac Bridge and Western Distributor.

Stage 2 of Western Harbour Tunnel (WHT) includes the crossing of Sydney Harbour, and we will be using two specialised Tunnel Boring Machines (TBM) to connect the northern and southern section of the project.



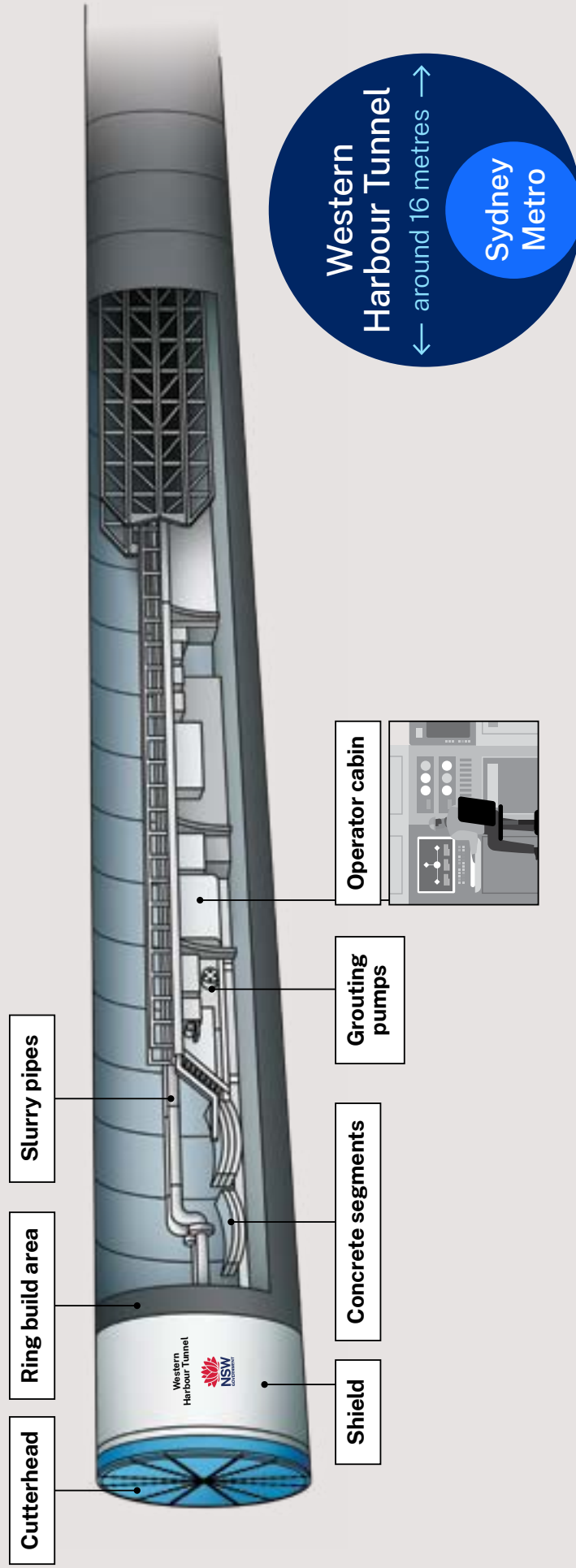
### Why are we using a TBM?

TBM's are used worldwide and in NSW as a tunnelling solution. Using a TBM significantly reduces our surface impacts. By launching the TBM completely underground, it removes the need for construction sites and cofferdams at Birchgrove and Waverton. It also removes the need for dredging in Sydney Harbour.

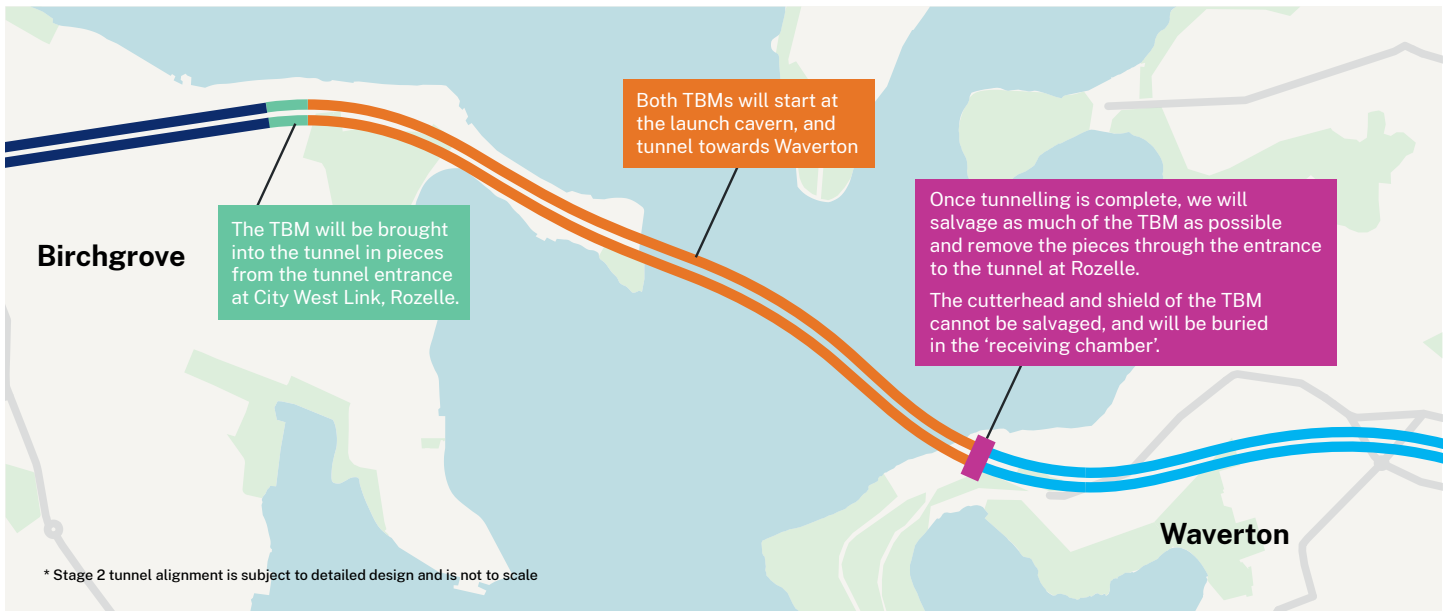
### What type of TBM are you using?

Following a rigorous assessment of the local ground conditions during the Environmental Impact Statement (EIS) and WHT early work, a Mixshield TBM has been selected as the safest and most appropriate type of TBM for WHT.

## Fast facts



- 1 underground launch cavern
- 2 Tunnel Boring Machines (TBMs)
- Each TBM is large, at around 16 metres in diameter
- 20 people working on each TBM at any one time
- Each TBM is manned 24 hours a day, 7 days a week. It's like working inside a large engine, with facilities for staff allowing the machine to continuously work
- 55 metres of tunnel cut every week, on average per machine
- 83% boring through Sydney sandstone, the rest Marine Clay
- 270 Olympic swimming pools or 1.7 million tonnes of crushed rock
- 1300 concrete segments will line the tunnels



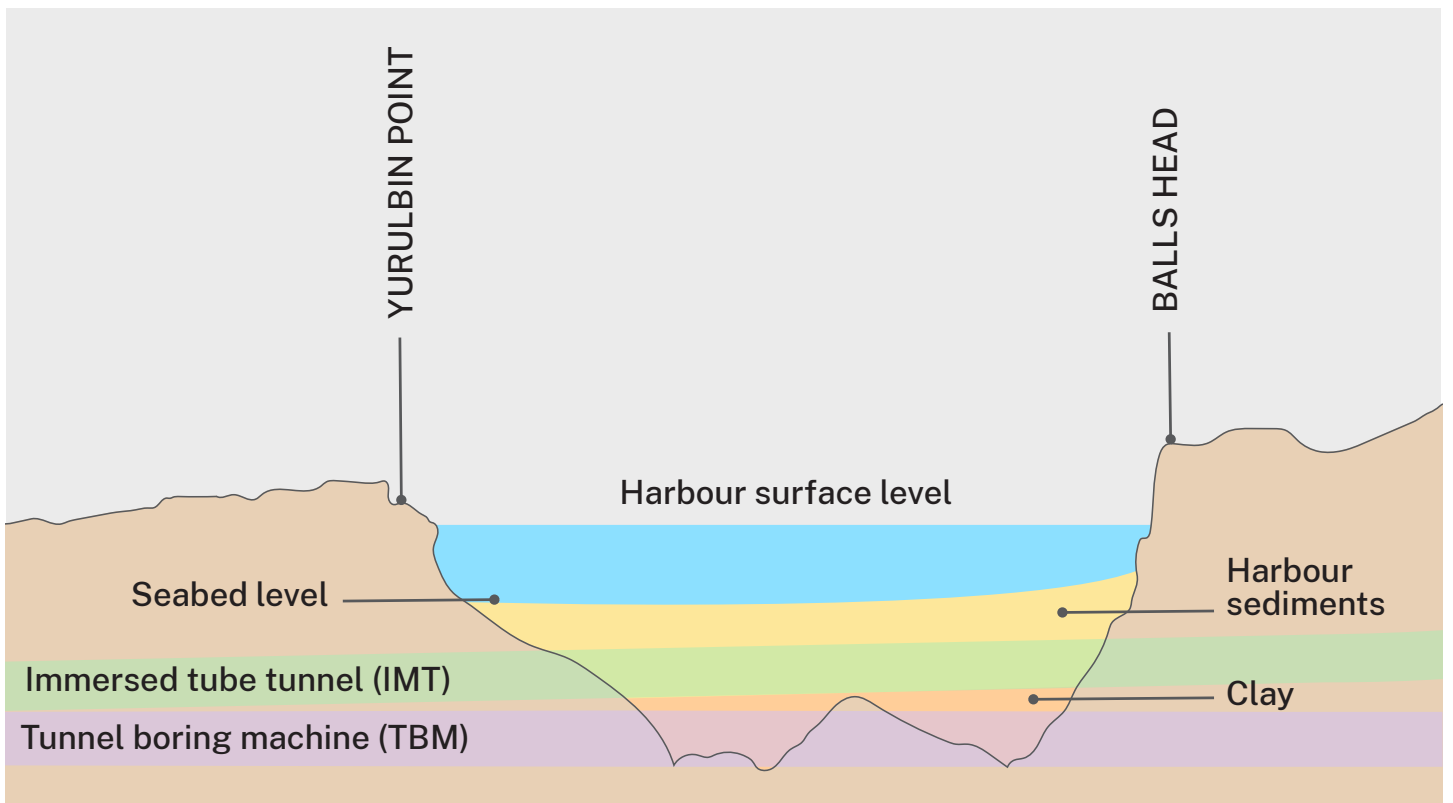
### How does the TBM work?

At the front of the TBM is a cutter head which excavates the ground using positive face pressure. As the tunnel advances, precast concrete segments are installed to line and support the sides of the tunnel.

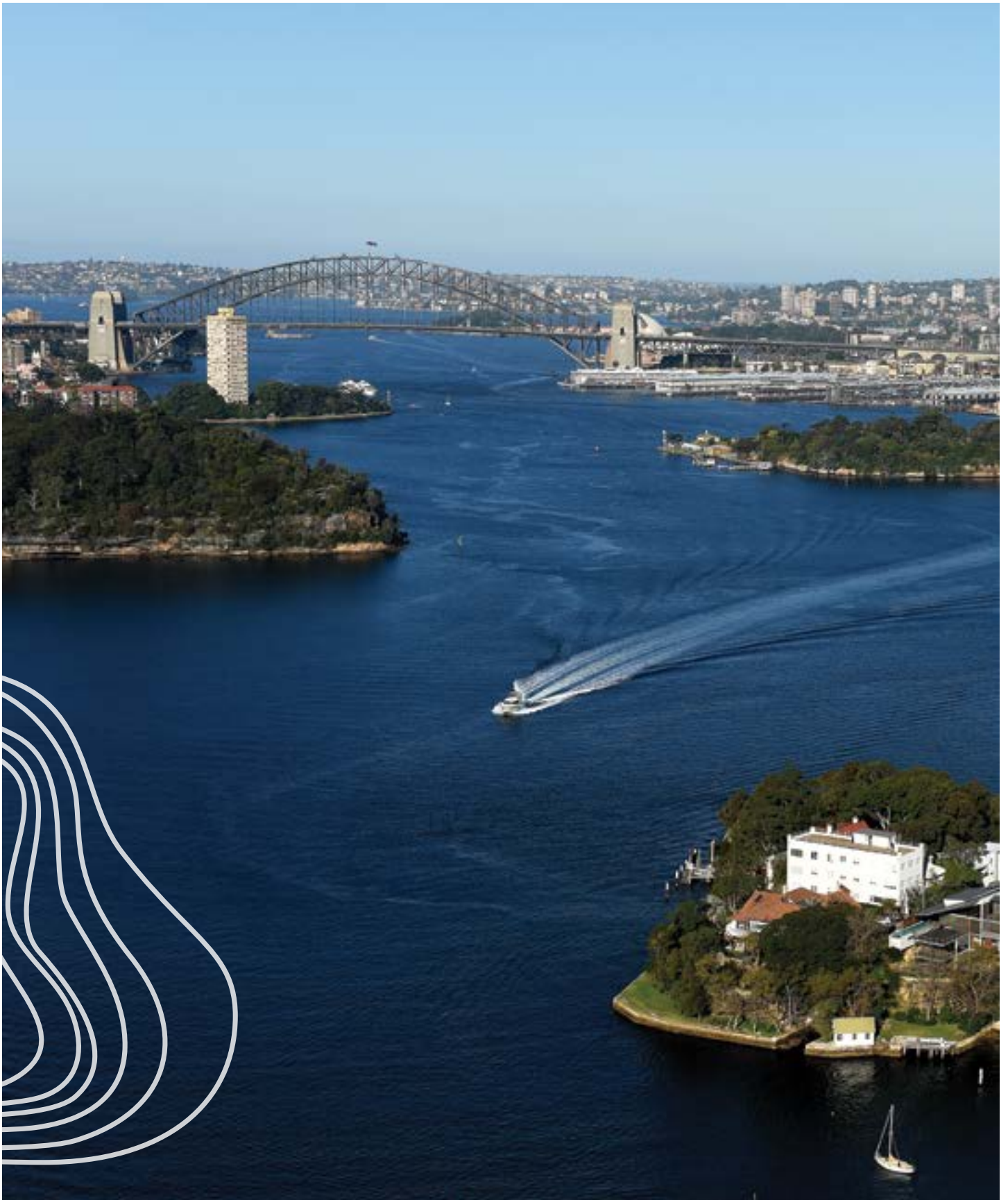
### How will our TBMs cross Sydney Harbour?

The TBM will arrive by boat in oversized pieces and will be transported to the WHT entry, which has already excavated by the Rozelle Interchange during enabling works, and driven to the underground 'launch cavern'. This is a large area underground, where the TBM will be assembled to start tunnelling under Birchgrove towards Waverton.

### How the TBM will cross the harbour compared to the Immersed Tube Tunnel methodology




Stage 2 tunnel alignment is subject to detailed design and is not to scale



### Contact us

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

 1800 931 189

 [whtbl@transport.nsw.gov.au](mailto:whtbl@transport.nsw.gov.au)

 [nswroads.work/wht-stage2](https://nswroads.work/wht-stage2)



### Translating and interpreting service

If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 931 189.



Scan the QR code to subscribe for email updates about the project or go to [nswroads.work/whtportal-subscribe](https://nswroads.work/whtportal-subscribe)