Western Harbour Tunnel Stage 2
Community information session: Ridge Street – tunnelling update

Hosted and presented by ACCIONA and Transport for NSW

Thursday, 30 May 2024
transport.nsw.gov.au

Acknowledgement of Country

We acknowledge the Traditional Custodians of the Country on which Western Harbour Tunnel Stage 2 is being constructed, including the Gadigal, Cammeraygal, and Wangal peoples, as well as the Aboriginal peoples of Emu Plains.

We pay our respects to Elders past and present, and recognise & celebrate the diversity of Aboriginal peoples, and their ongoing cultures & connections to the lands and waters of NSW.

Welcome to our session

Panel members:

- **Candice Camacho** – Operational Services Director from ACCIONA
- **Simon Pigozzo** – Environment and Sustainability Manager from Transport for NSW
- **Sam Harrison** – Project Manager from ACCIONA
- **Tori Colls** – Senior Project Manager, Property from Transport for NSW

Aerial image of Ridge Street site.

Agenda

1. Project overview
2. Tunnel engineering
3. Ridge Street site activities
4. Noise and vibration
5. Property
6. Subsurface acquisition
7. Working with the community
8. Q and A

Aerial view of the off ramp portal at Ridge Street.

Our focus today is tunnelling so if we don’t address your question in today’s session, we will compile an FAQ document which will be posted on our website.

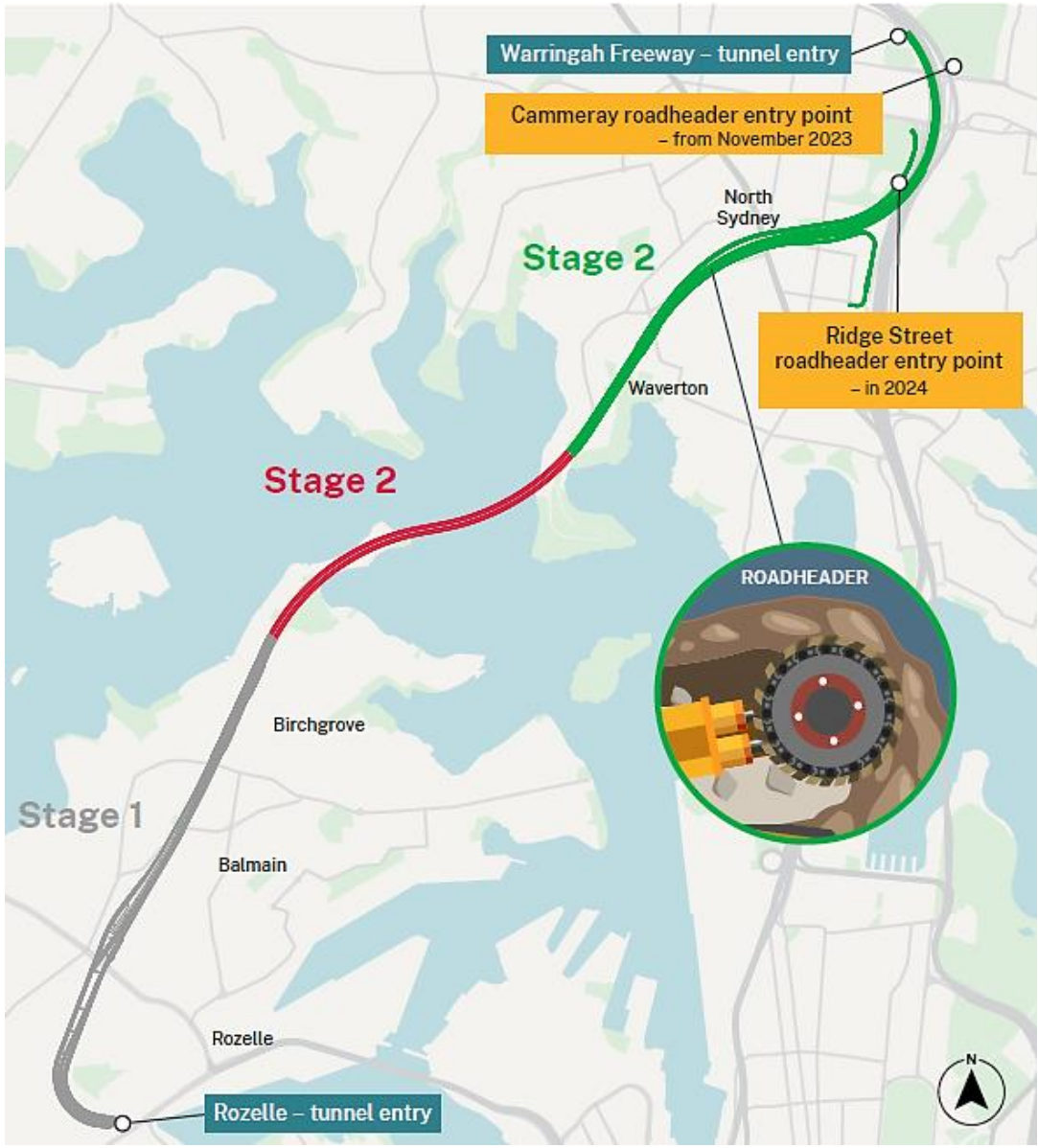
01 Project overview

Western Harbour Tunnel

Twin 6.5-kilometre motorway tunnels with three lanes in each direction:

- **Stage 1 (1.7 km)** – from Rozelle to Birchgrove. Started mid-2022, expected completion mid-2025. Delivered by a joint venture between John Holland and CPB Contractors

- **Stage 2 (4.8 km)** – from the end of Stage 1 in Birchgrove, under Sydney Harbour, connecting to Warringah Freeway, North Sydney and complete tunnel fit-out. Delivered by ACCIONA.



Map is not to scale. Stage 2 tunnel alignment is subject to detailed design.

02 Tunnel engineering

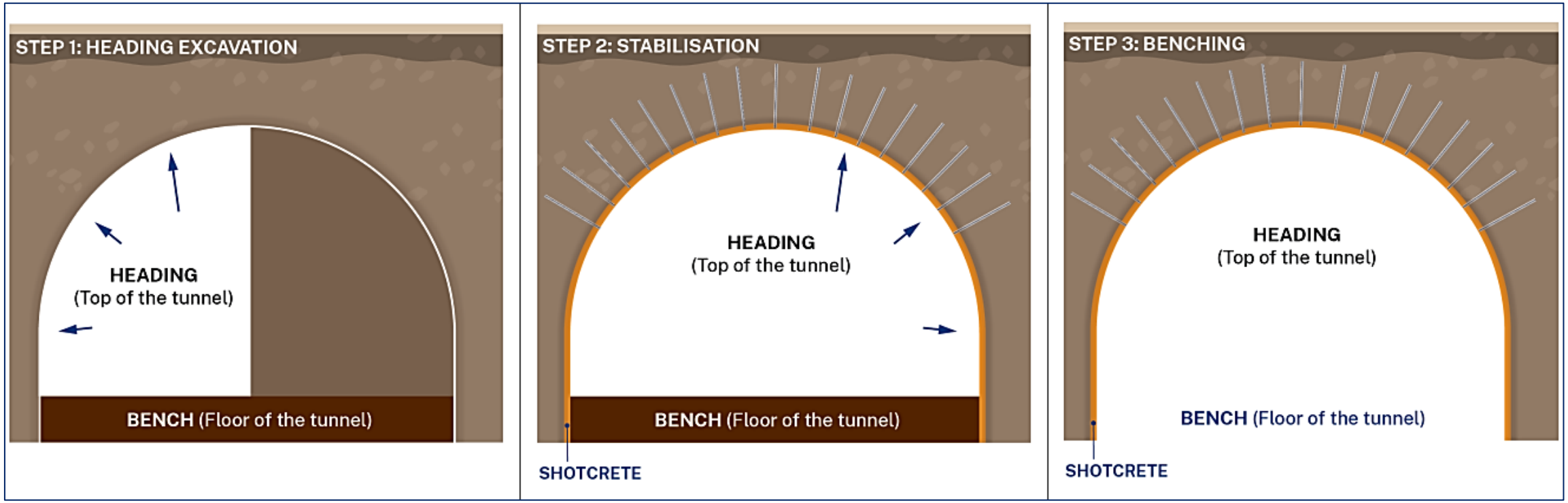
Types of tunnels we will be excavating

- Traffic tunnels
- Ventilation tunnels
- Substation tunnels
- Cross passages
- Temporary access tunnels

Image of a roadheader in operation.

Tunnel excavation methodology

- Excavation will start with roadheaders using a split heading methodology.
- Roadheader excavation is done in three stages.
- Roadheaders can excavate up to 20-25 metres of rock per week (depending on ground conditions).



Tunnel excavation methodology

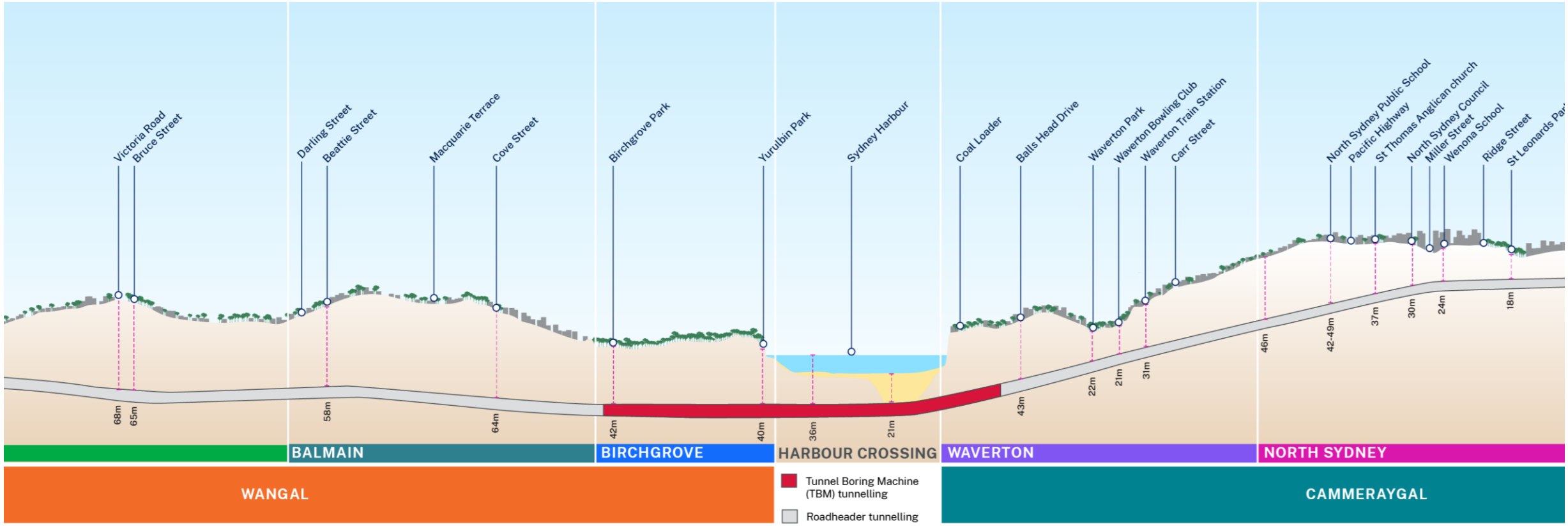
Roadheader

Rock bolting

Shotcreting

Benching

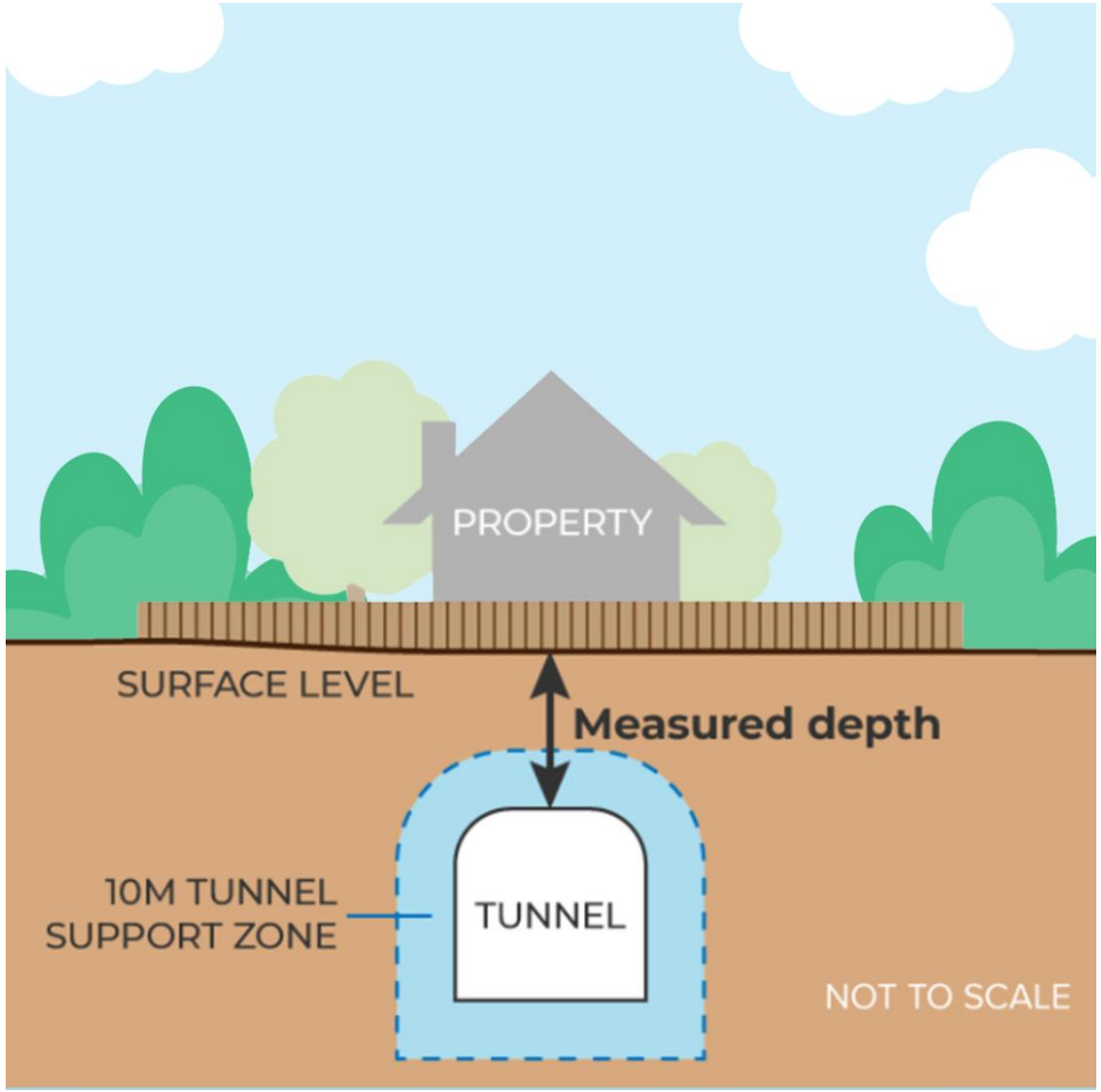
Tunnel depth



Tunnel depth shown is indicative and may vary due to ground conditions and detailed design (illustration only).

Tunnel depth

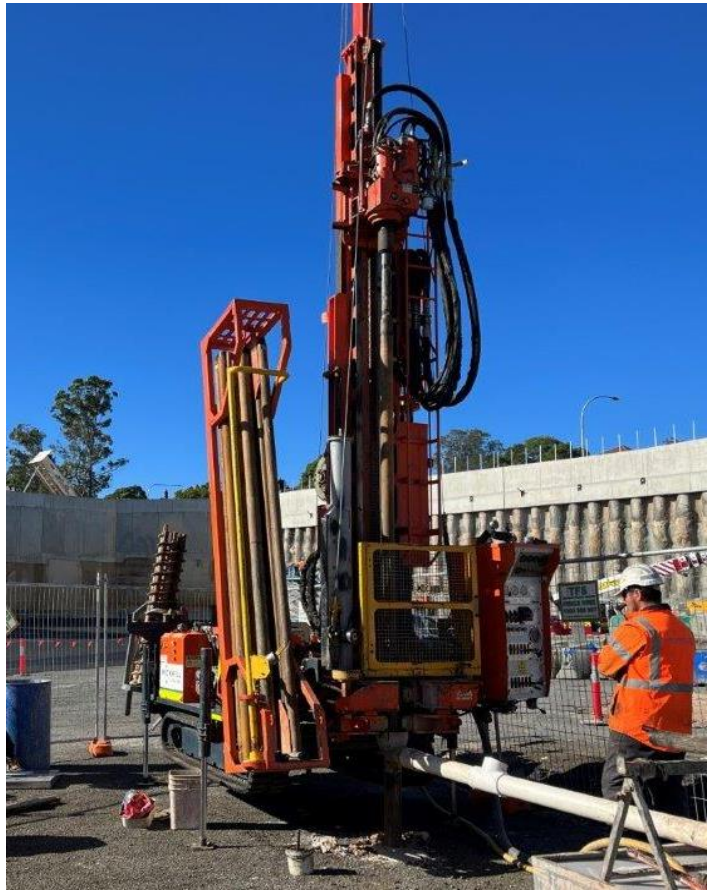
- Tunnel depth is the measurement from the property boundary to the tunnel roof.
- A construction zone of up to 10 metres exists around the main line tunnels to allow for services and other tunnel support facilities.



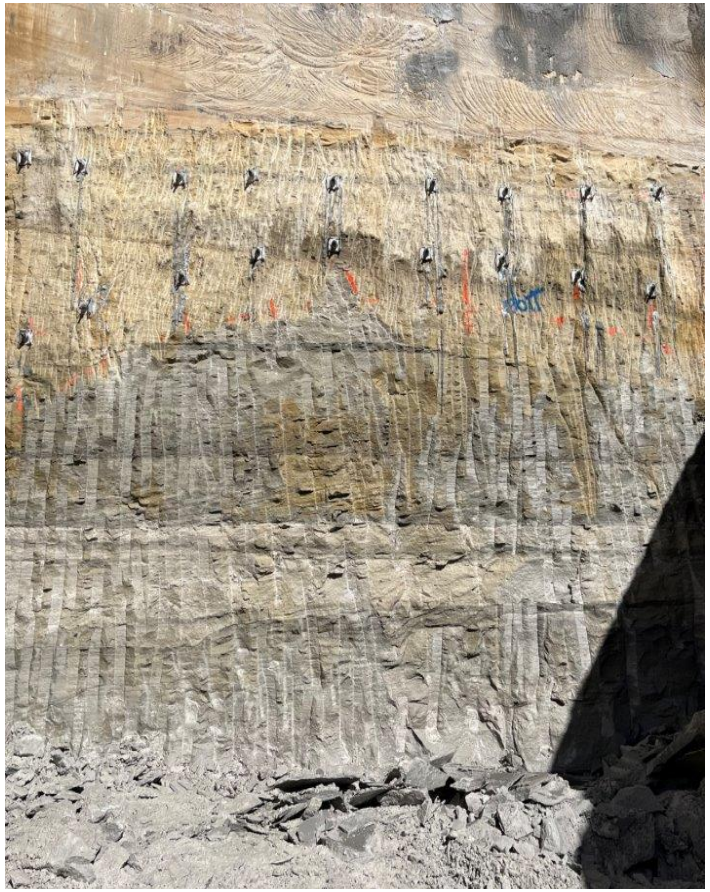
Depth shown is indicative only. Depth may vary due to ground conditions and subject to detailed design.

Ground conditions

- Predominately Hawkesbury Sandstone

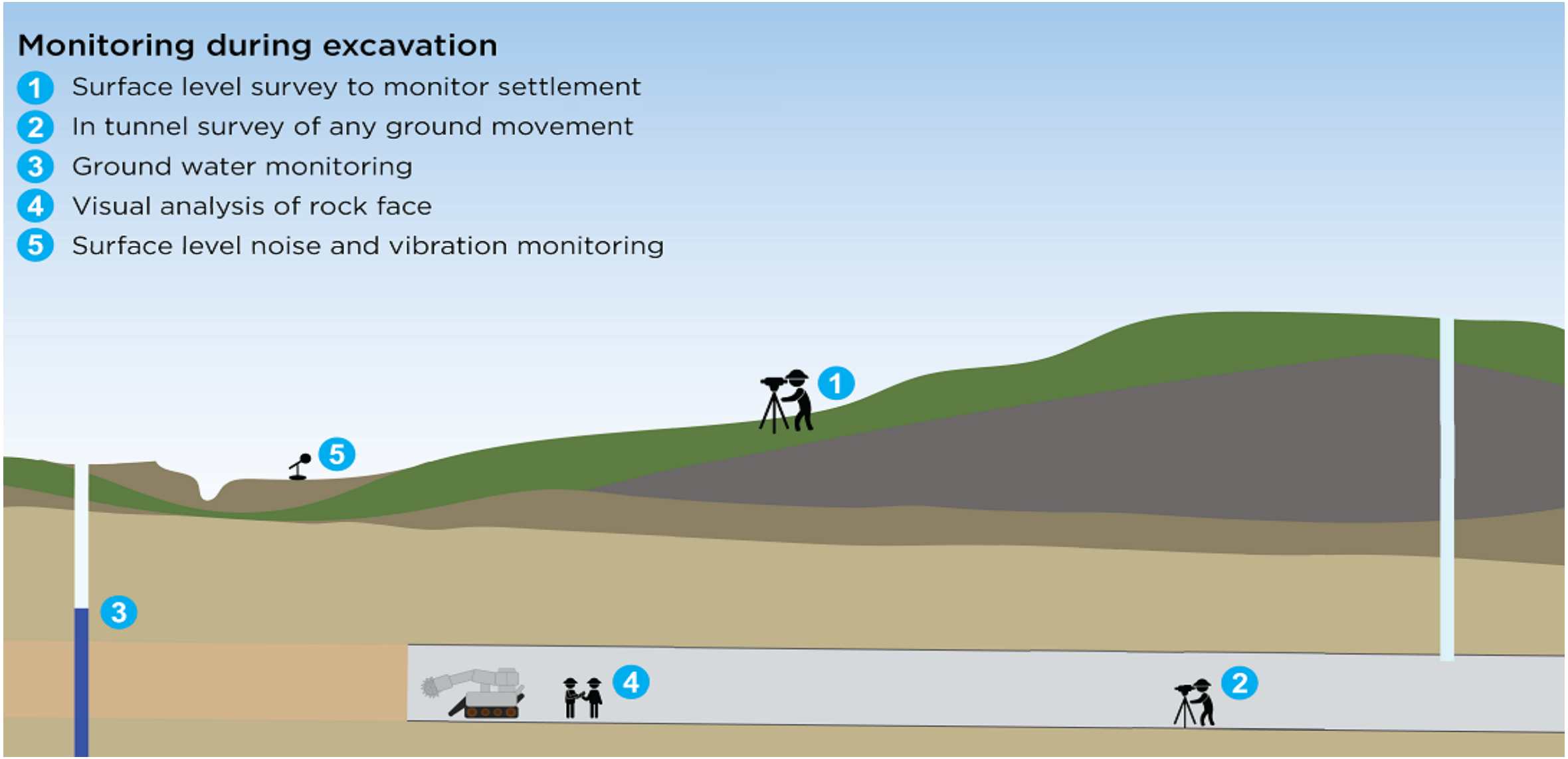


A geotechnical rig at the Cammeray temporary construction site.



Hawkesbury Sandstone rockface at the Cammeray temporary construction site.

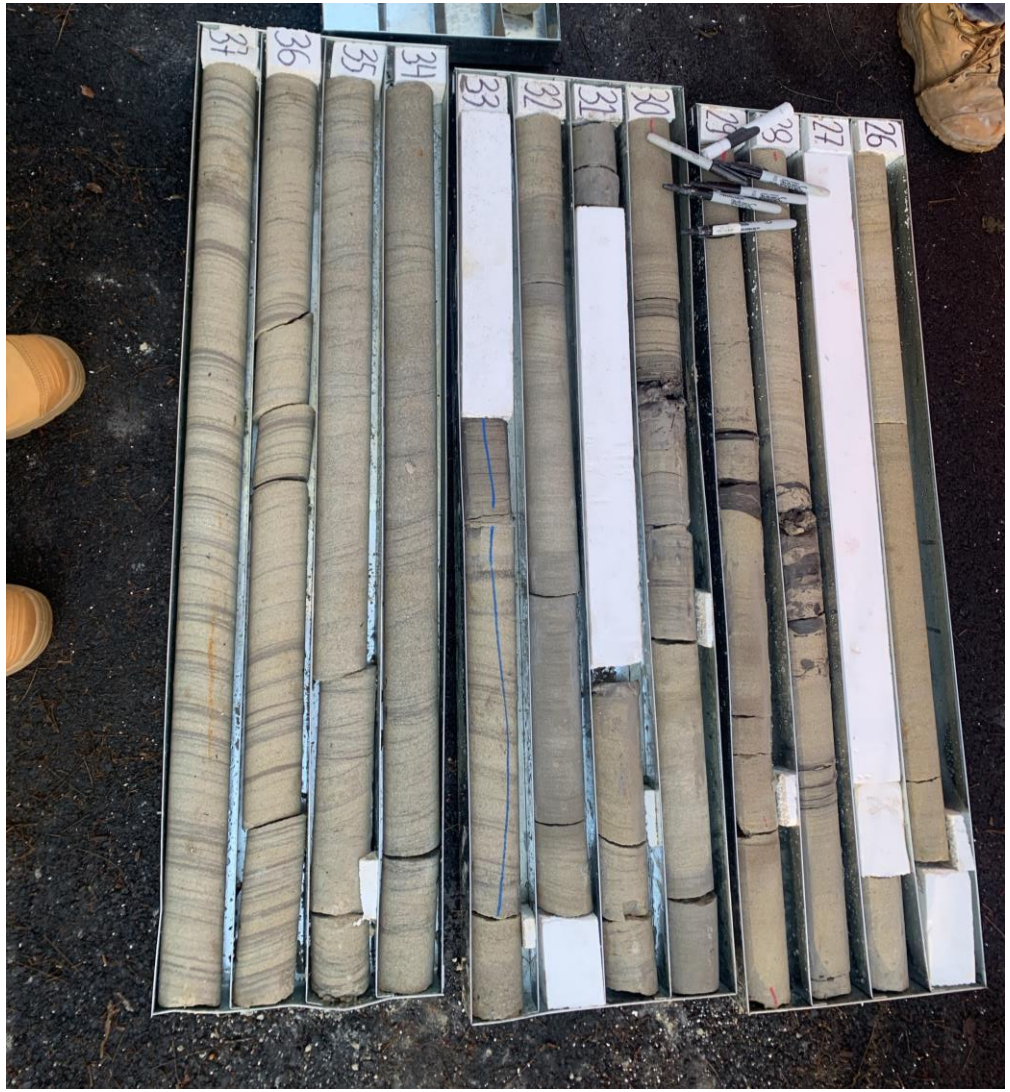
Monitoring during excavation



Ground movement

- Ground movement can be caused by many different factors, such as seasonal climate variations, vegetation and a natural process known as shrink-swell.

- Prior to construction:
  - ground investigations
  - modelling
  - assessment.



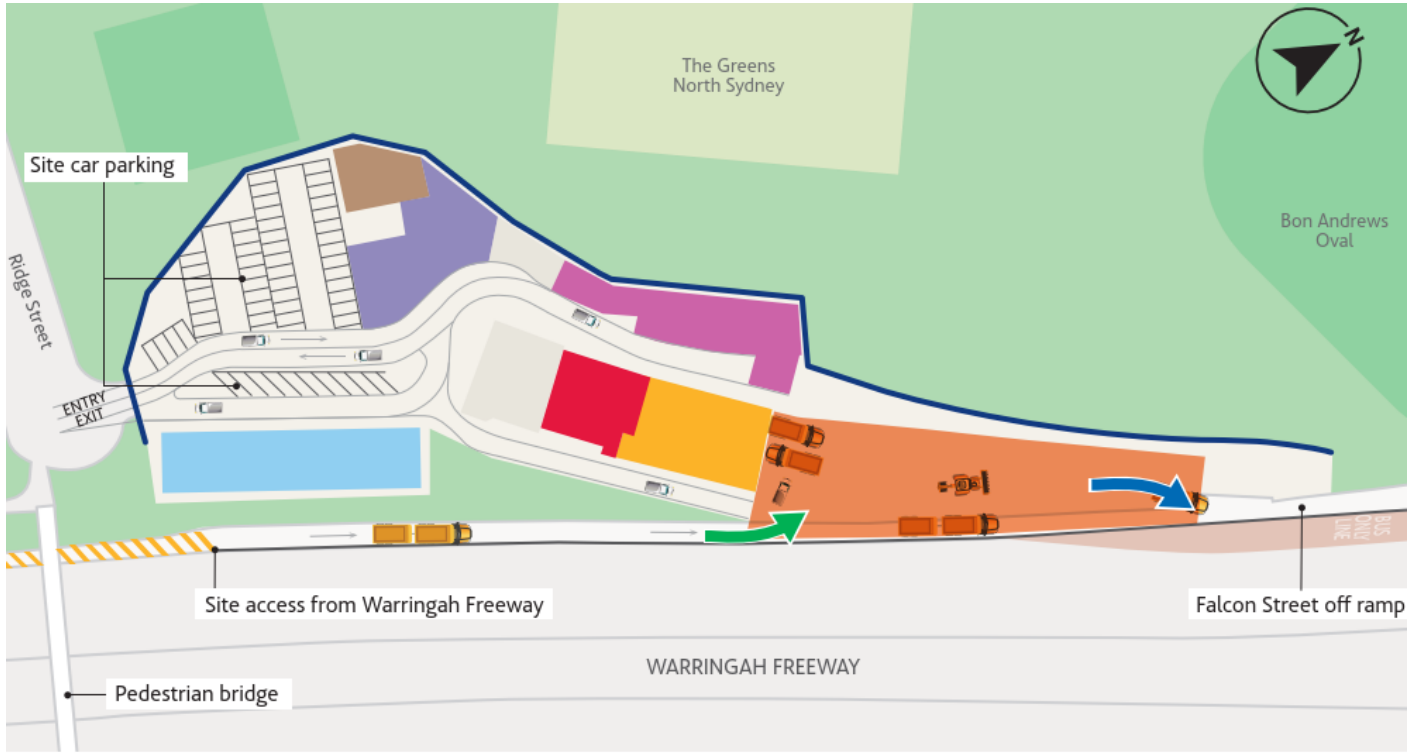
Ground investigation samples.

03

Ridge Street temporary construction site

Vehicle access to site

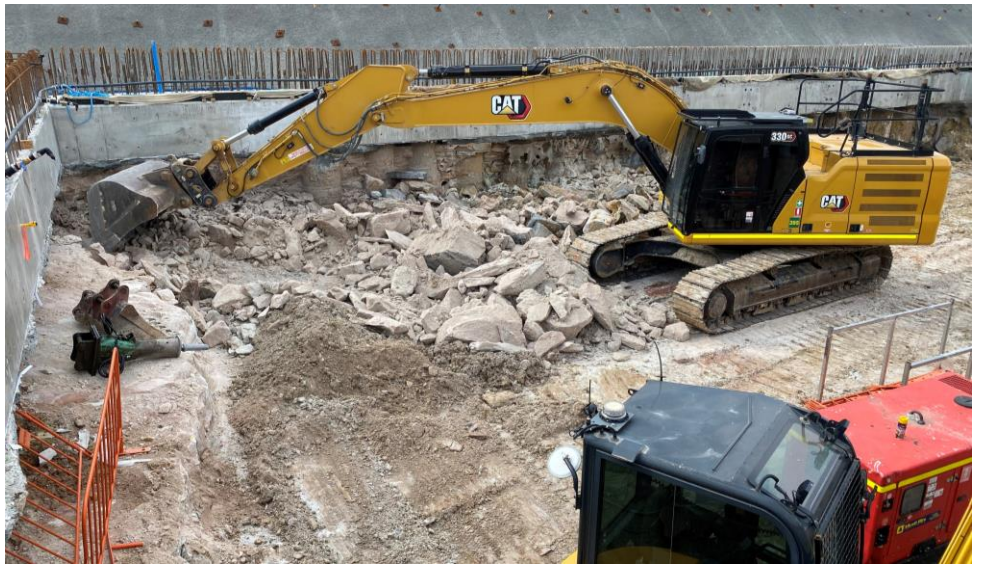
- Heavy vehicles and spoil haulage trucks will access via Warringah Freeway
- Light vehicles will enter and exit the site from the Ridge Street access
- There may be occasions where our heavy vehicles may also need to use Ridge St access
- Trucks will minimise idling on surrounding roads.



Access route for the Ridge Street temporary construction site.

Ridge Street site activities

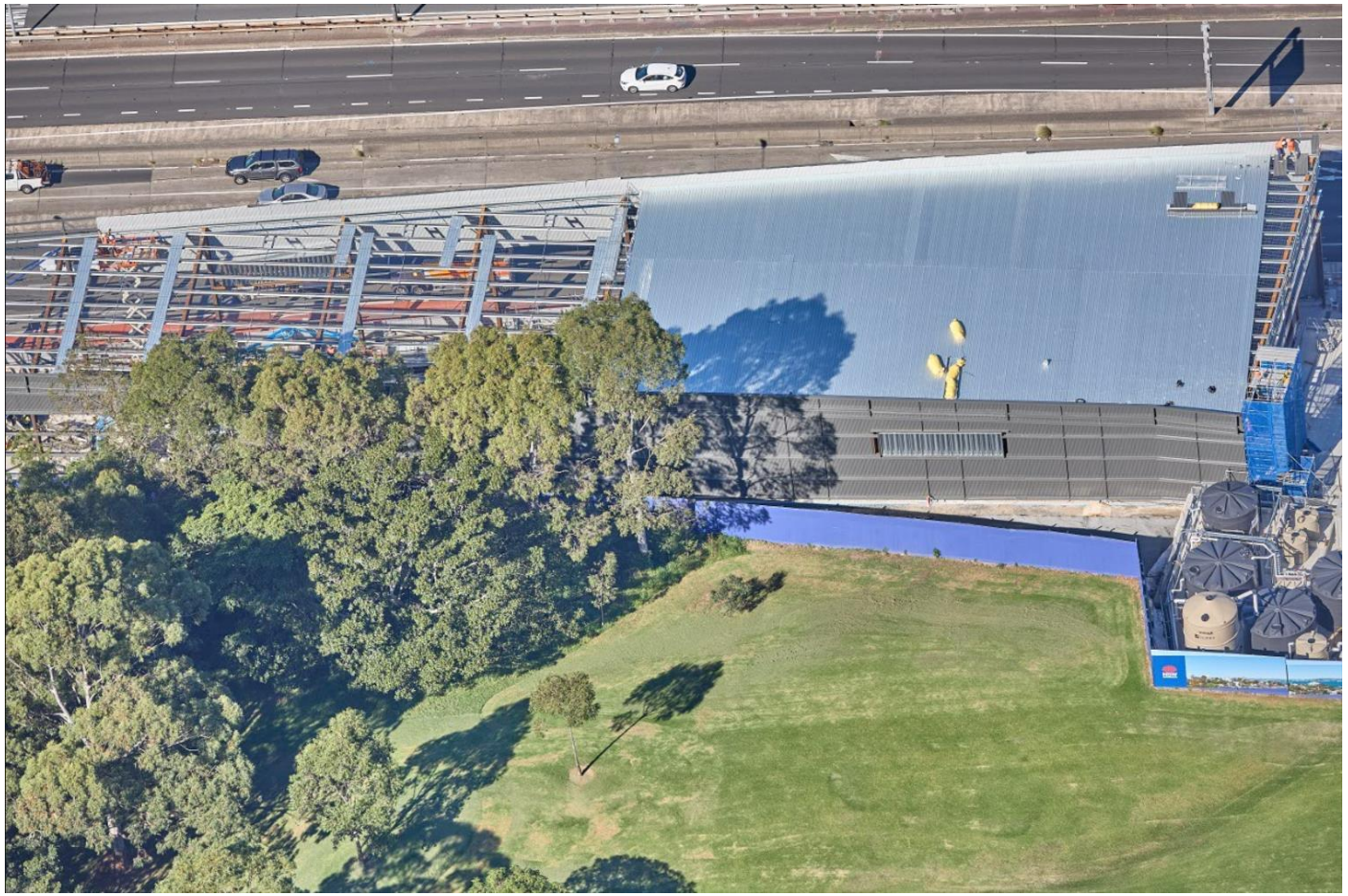
- Started in July 2023, working alongside the Warringah Freeway Upgrade project
- Preparing site for tunnelling – installing power, sewer, site drainage facilities, site offices and carparking for workers
- Building the ‘decline’ where the roadheaders will be deployed.



Excavation of the cut and cover decline at the Ridge Street construction site

Acoustic shed

- Enables 24/7 tunnelling
- Help to manage noise, dust and light impacts from tunnelling
- Storage of tunnel spoil (excavated material generated from tunnelling activities)
- Dismantled at the end of the project.

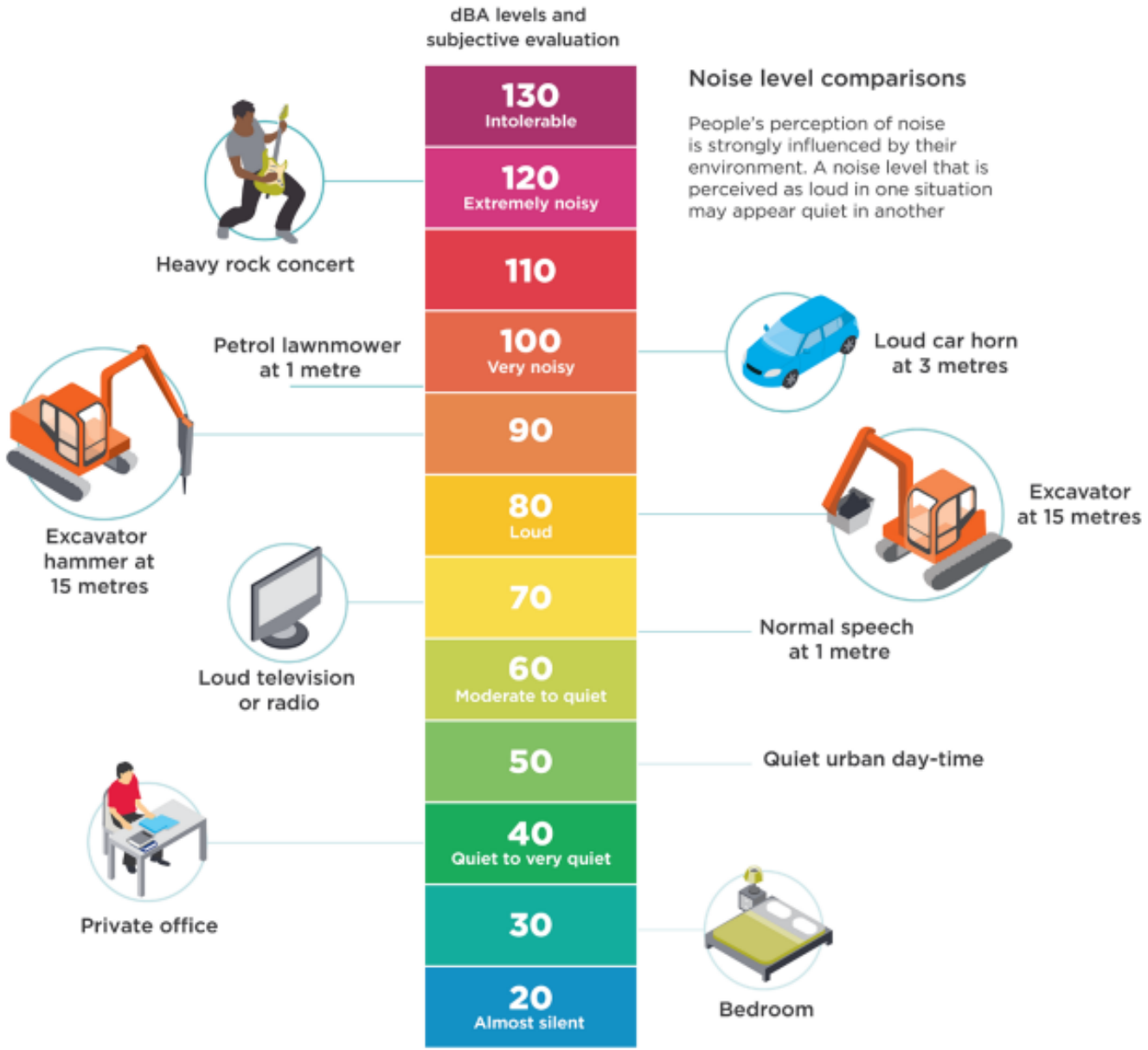


Ridge Street acoustic shed under construction in April 2024.

04 Noise and vibration

Noise and vibration

- The deeper the tunnel, the less likely you are to hear excavation
- The project predicts noise impacts along the alignment and uses a model called ‘KnowNoise’
- Independent Acoustic Auditor reviews project modelling, predictions and noise management
- Vibration from tunnelling is modelled to be substantially below conservative standards
- Vibration thresholds are based on the German DIN Standard for heritage structures and British Standard BS7385 for standard structures which are very conservative.



Noise level comparison.

05 Property

Property Condition Surveys

- Photographic record of the property's condition
- Properties within 50 metres of the tunnel alignment will be eligible
- Pre- and Post-construction condition surveys are free for eligible properties
- A copy of the report will be provided electronically or as a hard copy (at your request).

Map of property condition survey across our tunnel alignment.

Property Damage Claim Process

1. Notify the Project Team as soon as you notice changes at your property.

2. All property damage claims are unique and are treated as such.

   The Property Team will supply you with a Property Damage Form which must be completed.

3. The project will provide a written determination including summary of the assessment leading to the outcome.

4. If you're unhappy with the determination, you will be encouraged to contact the project team to further explain the outcome of your property damage claim.

5. If you still do not agree with the determination and would like your claim escalated, you may request a review by the Independent Property Impact Assessment Panel (IPIAP) through Transport for NSW.

06

Subsurface acquisition

Subsurface acquisition

- Involves compulsory acquisition of land underneath properties to create tunnel path
- Managed by Transport for NSW
- Standard process for tunnelling projects across Sydney
- Stage 2 subsurface acquisition commenced in September 2023 and will continue progressively along alignment. Approximately **312** properties will have their subsurface acquired.

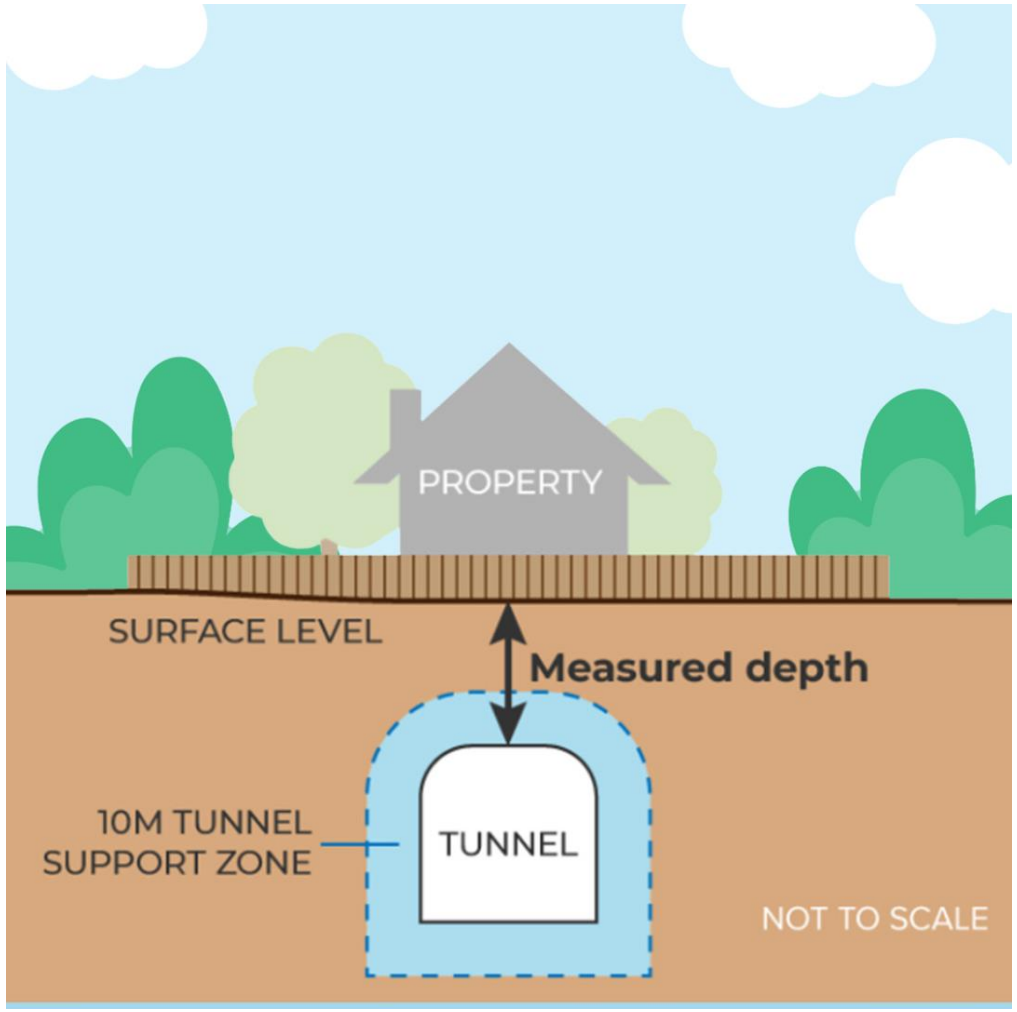


Image indicates area of subsurface acquisition (illustration only).

Subsurface acquisition process – communications

1. Transport for NSW (Transport) will issue a Communications Letter via door knocking (houses), via strata managers (apartment blocks) or via email (businesses and organisations).

2. A month later, Transport property teams will issue a Property Letter to inform of the next stage of the process, which includes the sketch of the indicative subsurface footprint.

3. A Proposed Acquisition Notice (PAN) is then sent via registered mail, one month after the Property Letter

   The PAN includes a Deposited Plan (an image that defines the legal boundaries of the land) indicating the subsurface land to be acquired.

In most cases:

- subsurface acquisition and tunnel construction underground will not affect the future use of your property
- it will still be possible to carry out property improvements, such as installing a swimming pool or adding a storey to the building (via approval through your local council).

Compensation

- The Land Acquisition (Just Terms Compensation) Act 1991 (NSW) explains that property owners are not eligible for compensation for subsurface land unless specific circumstances apply.

- Section 62 of the Land Acquisition Act states that compensation is only payable if:

  A. the surface of the overlying soil is disturbed, or
  B. the support of that surface is destroyed or injuriously affected by the construction of the tunnel, or
  C. any mines or underground working in or adjacent to the land are thereby rendered unworkable or are injuriously affected.

- As such, Transport considers that compensation is not payable for the compulsory acquisition of the subsurface beneath properties for Western Harbour Tunnel.

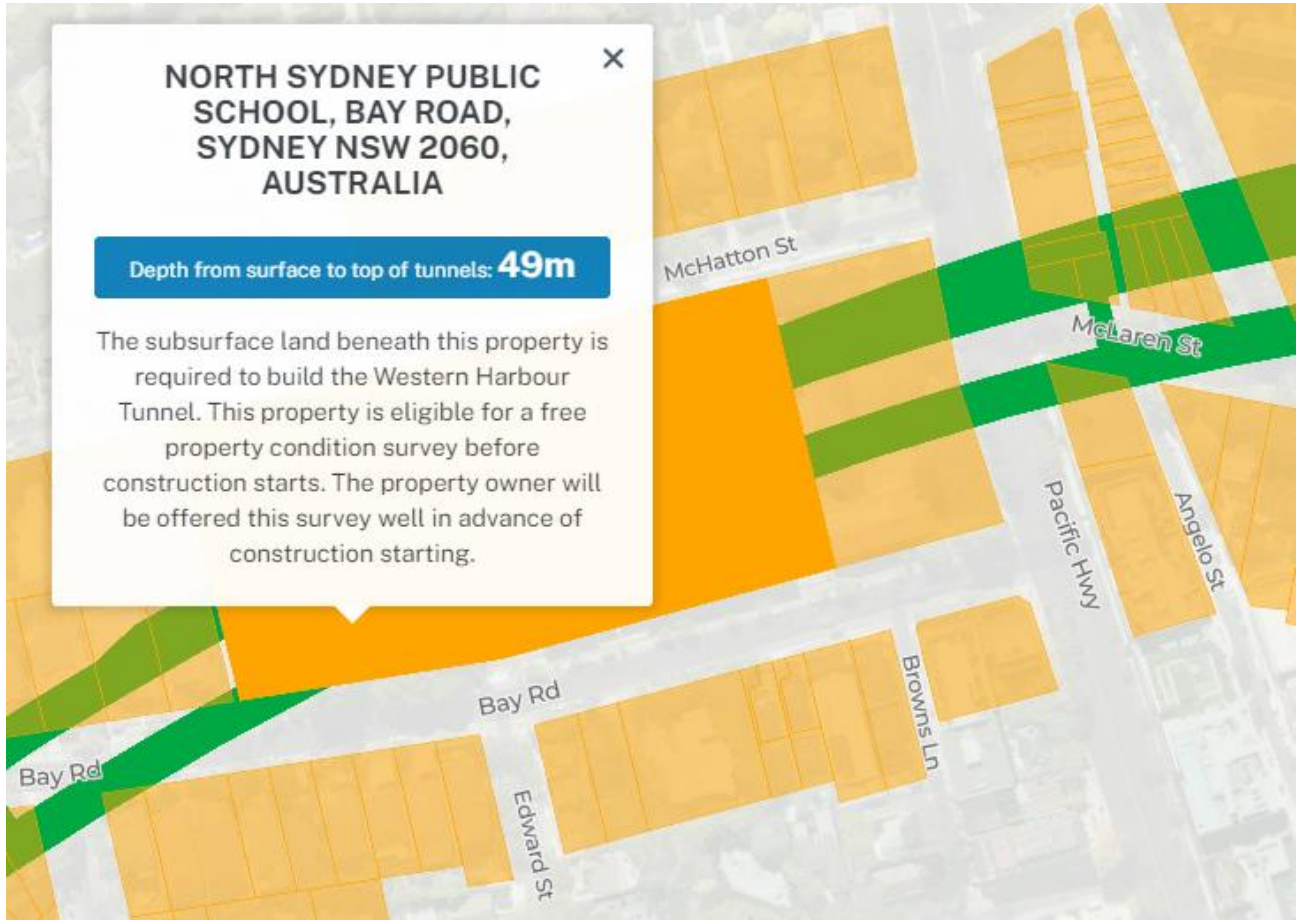
- The value of compensation is determined by the Valuer General, independently of Transport.

- The Valuer General determines compensation payable through the application of section 62 of the Land Acquisition (Just Terms Compensation) Act 1991.

Western Harbour Tunnel tunnel tool

- This tunnel tool shows the final tunnel alignment for the project
- The **Stage 1** tunnel alignment has been finalised, and includes tunnels between Emily Street, Rozelle to Cove Street, Birchgrove
- The **Stage 2** tunnel alignment includes tunnels between Cove Street, Birchgrove and Cammeray.

An example is shown to the right using North Sydney Public School.



07

Working with the community

Keeping you updated

We hold both online and in person community information sessions as the project progresses.

Information can also be found on our online portal:

- Map of work activities
- Fact sheets and FAQs
- Project news and milestones

- Work notifications as required
- Quarterly project updates
- Subscribe to receive email updates.

08

Q and A

Please note, our focus today is tunnelling so if we don’t address your question in today’s session, we will compile an FAQ document which will be posted on our website.

Contact us

If you have any questions or would like more information, please use the contact details below:

Phone: 1800 931 189 ask for (Western Harbour Tunnel Stage 2)

Email: whtbl@transport.nsw.gov.au

Website: nswroads.work/whtportal

Community Information Centre:
Visit us at our Community Information Centre at Level 9, 60 Miller Street, North Sydney.
Opening hours: **Monday to Friday** from **9am – 5pm**, or by **appointment**.

Scan QR code to register for project updates.

Thank you