

WestConnex is part of the Australian and NSW governments' vision for supporting Sydney's growing population and keeping our economy strong. The M4-M5 Link is the third stage of WestConnex. It will link the New M4 Motorway at Haberfield to the New M5 Motorway at St Peters.



Roadheader tunnelling machine

Tunnelling is a safe and frequently used construction technique that significantly reduces impacts on local properties while still enabling major infrastructure to be delivered in built-up residential areas. During construction of the M4-M5 Link tunnels, strict safety requirements would be adhered to in the design, construction and operation of the tunnels and every effort would be made to minimise impacts within local areas.

Constructing the M4-M5 Link Tunnels would involve excavation of two mainline tunnels, each 7.5 kilometres long, as well as tunnels providing connections, ventilation and temporary access for construction.

At their deepest point, tunnels would be up to 55-metres below ground-level, with shallower sections approaching the interchanges and portals (tunnel entries and exits).

Keeping you informed

We are committed to keeping you informed and will provide regular information on the M4-M5 Link Tunnels through direct mail and email notifications, community updates, local papers and face-to-face activities.

You can also contact the WestConnex info line on **1800 660 248**, email info@m4-m5linktunnels.com.au or visit westconnex.com.au/roads-projects/m4-m5-link-tunnels/ for more information.

We speak your language



Need an interpreter? Call the Translating and Interpreting Service on **131 450**.



Australian Government

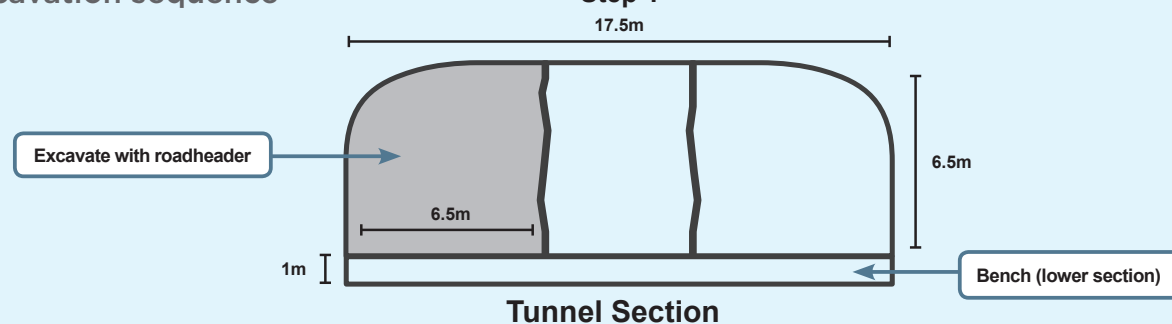
BUILDING OUR FUTURE



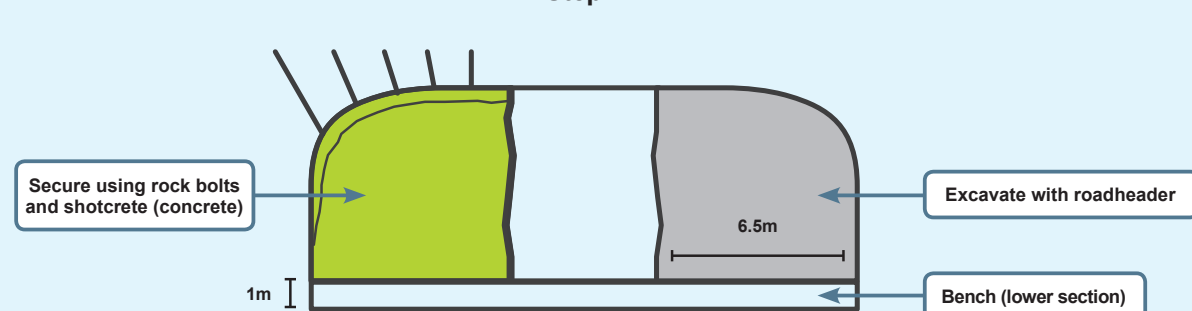
Constructed by

Excavation sequence

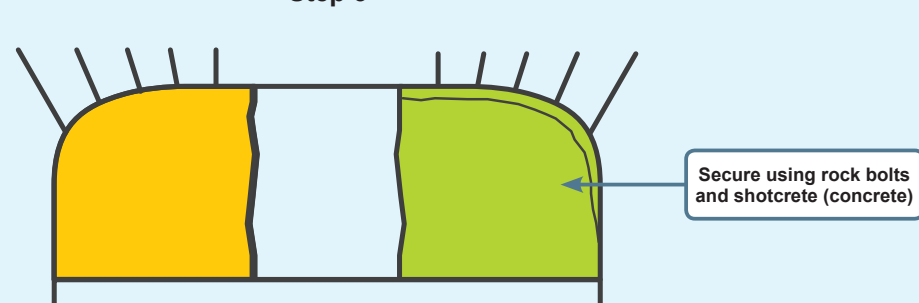
Step 1



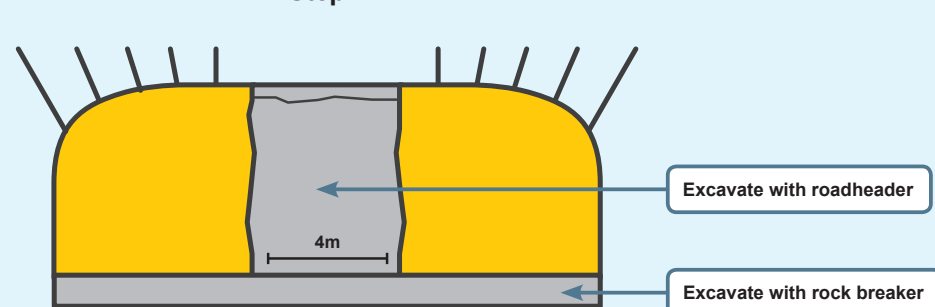
Step 2



Step 3



Step 4



Excavation with roadheader

Rock bolt and shotcrete

Completed tunnel excavation

Most construction work would take place underground, with tunnelling activity taking place 24-hours a day, seven-days a week.

Building tunnels

WestConnex motorway tunnels are designed to be wider, flatter and higher than most other tunnels in Sydney, resulting in a smoother journey and fewer vehicle emissions – including greenhouse gases.

The tunnels would be mainly constructed in good quality Hawkesbury sandstone, with short sections near portals constructed in Ashfield shale.

There are three stages to the construction sequence.

Stage 1: Excavation

Tunnels would be excavated using a heading-and-bench technique. Excavation of the heading (top section of the tunnel) would be carried out using roadheaders – specially-designed excavation machines with rotary cutters positioned on bulldozer-style tracks. Around 20-25 metres of tunnel is expected to be excavated per week.

The bench (lower section of the tunnel) in the mainline tunnels would also be excavated using a roadheader.

Rock-bolting (to stabilise the tunnel interior), shotcrete (a method of concreting), and the tunnel-lining would be installed progressively as excavation advances.

Stage 2: Finishing works

Finishing works would begin once tunnel excavation is complete. This would include the installation of stormwater and groundwater drainage systems; pavement construction and linemarking; painting; and installation of electrical pipes, road signage, street lighting and electrical panels.

Stage 3: Fitout

Following excavation and finishing works, tunnels would be fitted-out with operational infrastructure. This would include power; lighting; and systems to support ventilation, fire safety, tolling and traffic controls.

The tunnel would go through an extensive testing process before it opens, to ensure it is fully operational and integrated into the broader road network.

What to expect during construction

Tunnelling activities would operate continuously, 24-hours a day, seven-days a week. The impact on properties above the tunnel is expected to be minimal and temporary.

Vibration and noise levels would depend on ground conditions, building types, existing background noise levels and the quality of the existing building (older buildings were built to different standards than newer buildings). It also depends on how far away you are from the tunnel.

Residents could notice some vibration and noise impacts at night for a short period usually only for a few days where activities are directly below or nearby their property.

In most cases, ground-borne noise generated by tunnelling activities would be less than 35 decibels (dBA), which is equivalent to a 'quiet' environment. As a comparison, it would be less than that of a refrigerator. The noise in a library is generally around 40 dBA.

Once the M4-M5 Link is operational, residents above the tunnels are unlikely to be able to hear or feel any vibration from vehicles using the motorway.

Subsurface acquisition

Roads and Maritime Services manages all property acquisitions for the project and would need to compulsorily acquire 'subsurface' land in order to create a path for the tunnel. This includes some land passing directly under properties. The surface area and any dwellings or other structures on your land would not be affected by subsurface acquisition, and in most circumstances no compensation is payable.

Roads and Maritime Services will send letters to impacted property owners to confirm subsurface property acquisition is required. The letters are sent progressively, according to the construction schedule and when access to the subsurface land is required.

Protecting property

To give further peace of mind to local residents and businesses, all properties within a zone on the surface equal to 50 metres from the outer edge of the underground tunnels will be offered a property condition survey both before and after construction. This will ensure there is a clear record of the property's condition. Any damage attributed to the project will be repaired at no cost to the property owner. The contractor for the project will be in touch with residents progressively before tunnelling is due to commence in their area to offer a property condition survey.

Figure 1. Example excavation sequence. Subject to tunnel size and ground conditions.

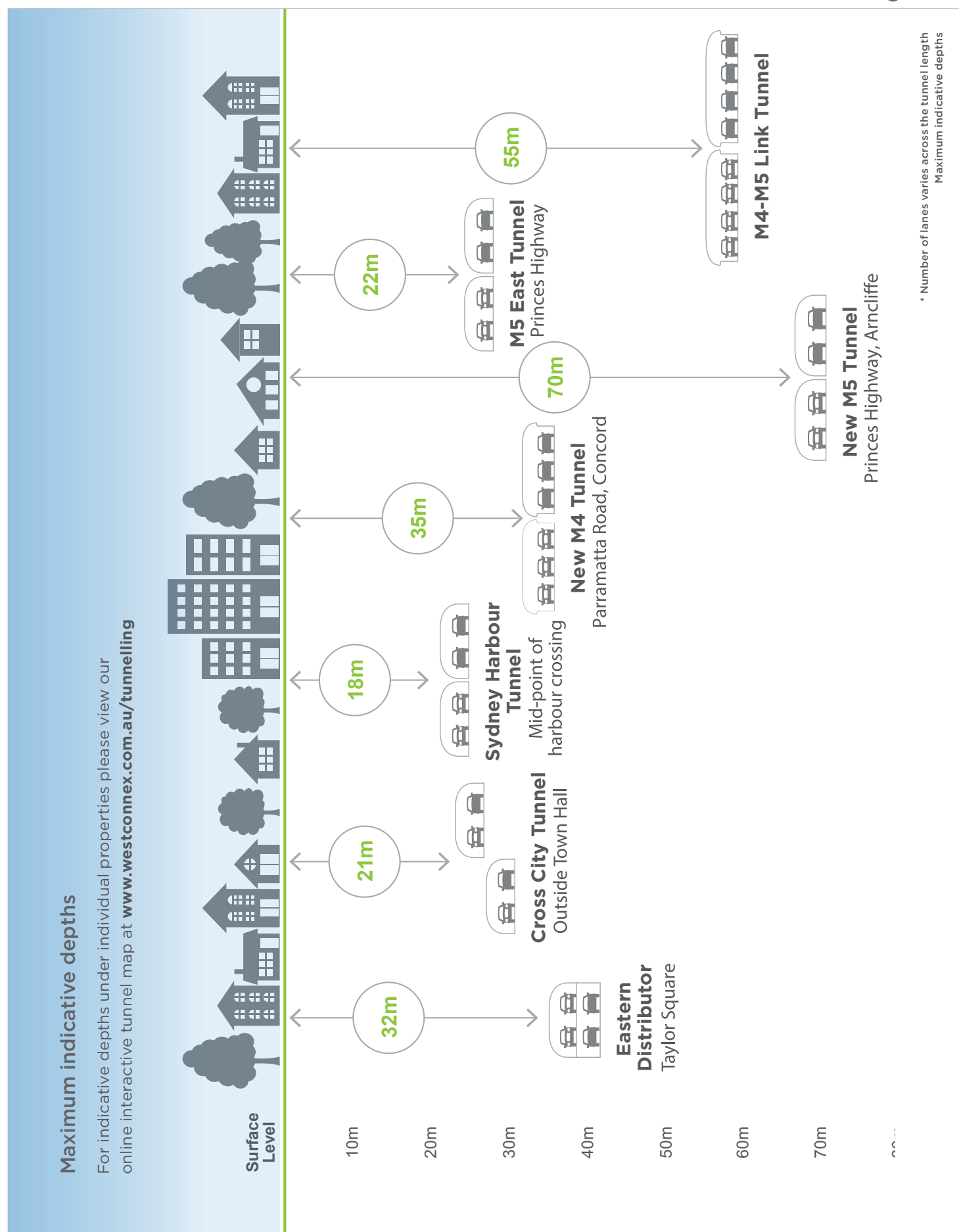


Figure 2. Indicative tunnel depths subject to change