



Mined tunnel construction to build sections of the Metro Tunnel Project in Melbourne's CBD

Mined tunnelling in Bulleen

Community Update
July 2023



We're building the North East Link Tunnels from Watsonia to Bulleen, taking traffic and trucks under instead of through suburbs.

In Bulleen, we'll be using a technique called mined tunnelling for about half a kilometre.

Mining machinery will work in the rock layer deep underground, excavating the tunnels in sections and installing supports as we work.

This fact sheet explains how we'll build this section of the tunnels as people continue to live and work above, and key steps ahead of work starting in 2024.

Visit the project team
Watsonia Hub, 17 Watsonia Road

North East Link Tunnels in Bulleen



14,700

cars and trucks off
Bulleen Road a day



8.4km

of new and upgraded
walking and cycling
paths for Bulleen and
Balwyn North



1800m²

of new cultural
wetlands along the
Yarra River

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Designing the tunnels

The mined tunnels in Bulleen have been carefully designed to link to the Manningham Road interchange to the north and the Eastern Freeway interchange to the south.

- Improvements to both interchanges in response to community feedback have let us design a straighter route for the tunnels closer to Bulleen Road that links to:
 - Longer tunnel boring machine (TBM) tunnels under Manningham Road to protect Banksia Park
 - Better ramp locations to shift 14,700 cars and trucks a day off Bulleen Road
 - A Manningham Road interchange design with more space for new cultural wetlands and walking and cycling paths

Mined tunnel fast facts

- Up to 30 metres under homes
- 430 metres long
- 4 lanes wide each way
- 20 metres wide and 15 metres tall



The route for the section of tunnel from Bulleen to Watsonia to be built using tunnel boring machines (TBMs) is being confirmed now, and we'll be out talking to people in the area later this year.



Building the tunnels

To build the mined section of the North East Link Tunnels in Bulleen, large machines called road headers will chip away at the rock layer deep underground.

To support the tunnels as they're built, we'll be excavating the tunnels in sections. This is called a sequential excavation method (SEM) and is a common technique used to build mined tunnels.

As we work, concrete will be sprayed across the roof and sides of the tunnels (shotcrete) and supports will be drilled into the surrounding rock to reinforce the tunnel structure.

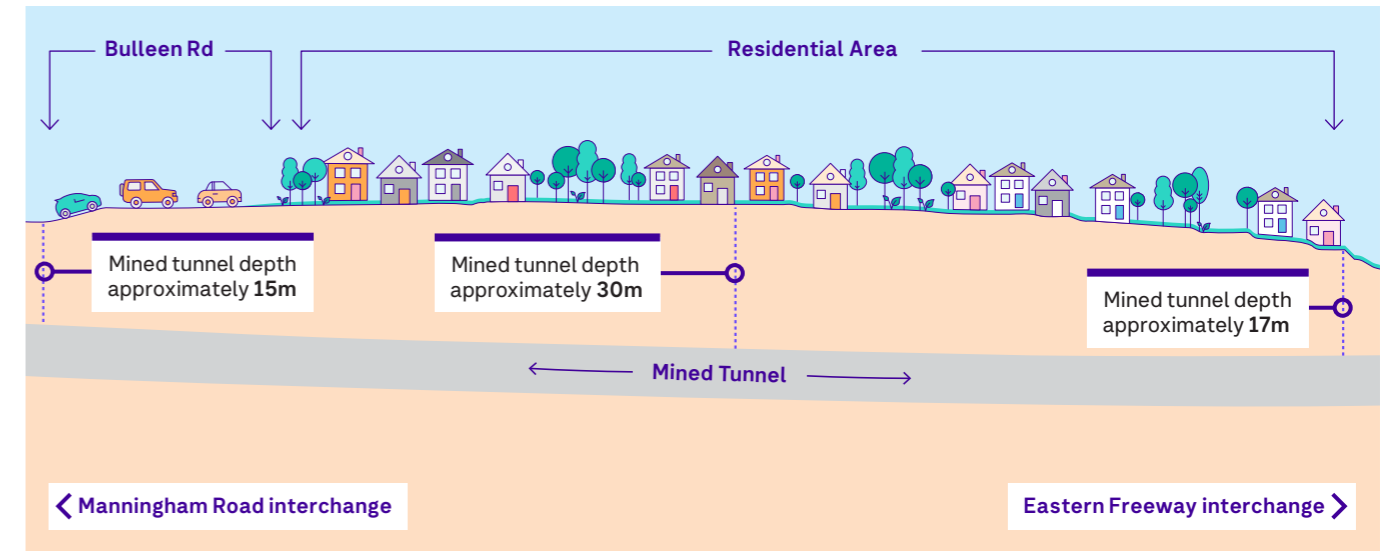
What to expect during construction

Some people and places directly above or very near where works are happening underground could experience minor levels of vibration, but we've done a lot of work to assess the likely impacts and it is unlikely to cause damage to properties.

Electronic monitors at the surface will be used during construction to help manage works underground. People near tunnelling works will also be offered a building condition survey before construction starts. In the unlikely event building damage does occur, this will assist with repairs.

How deep will the tunnels be?

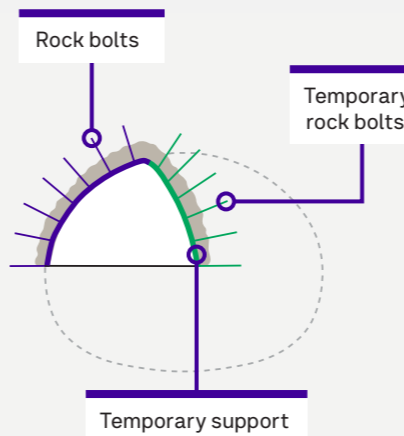
The top of the tunnels will be up to 30 metres at their deepest point. That's around the height of a 8–9 storey building.



The mined tunnels will be built in three sections, with concrete and steel supports installed across the roof and sides

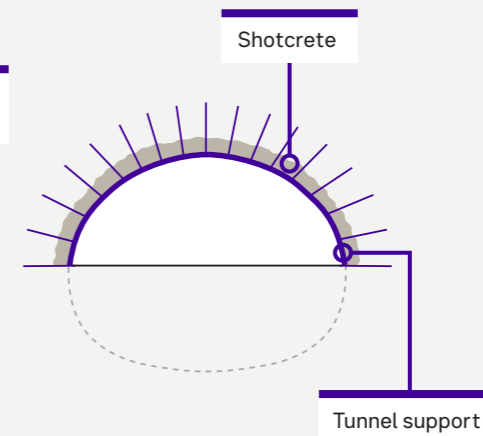
Stage 1

Around one quarter of the tunnel and supports are built.



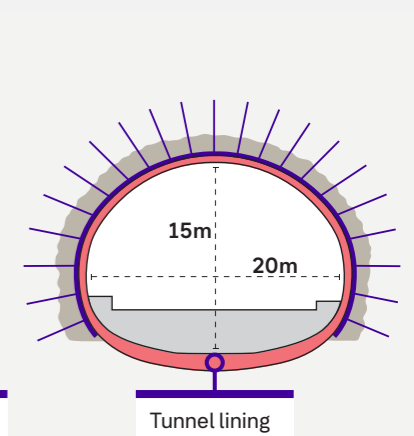
Stage 2

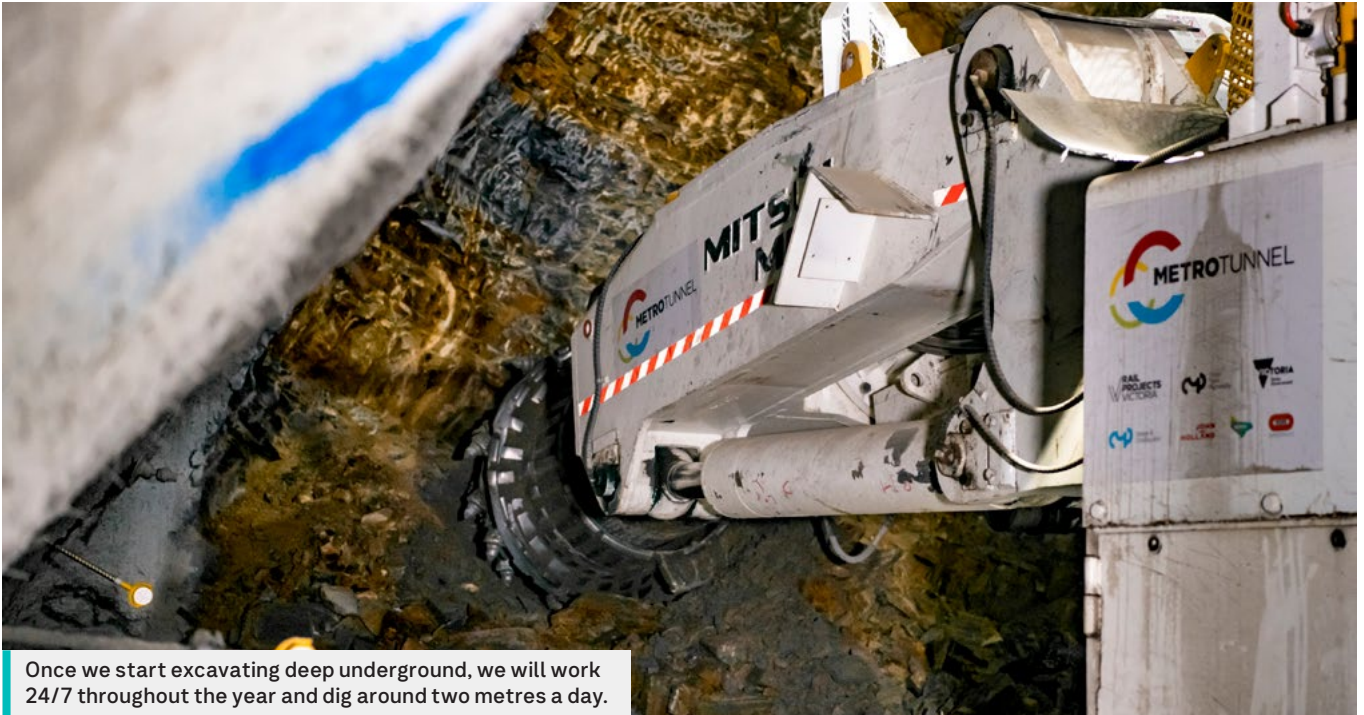
The next quarter of the tunnel and supports are built. Temporary supports are removed.



Stage 3

The final section of tunnel and supports are built and the road is installed.





Can I still build on my property?

If your property is above or near the North East Link tunnels, you will continue to use your land as you do now. If you are thinking about building on your property, an additional step in the planning permit process may be needed for certain works.

Protecting the tunnels from certain types of works above ground

If you plan to develop your property, the usual approvals through your local council would still apply, with a step to check what's planned won't affect the tunnels. Most general renovations, like adding an extra storey or pool will likely be able to go ahead. A major new development, like multi-level units with a significant basement car park structure would need extra consideration.

To include the extra step in the planning permit process, the area covered by Design Development Overlays in your local planning scheme will be adjusted to align with the new tunnel route.

The overlays protect the tunnels from potentially damaging works above ground and were approved in

December 2019 after the project's Environment Effects Statement (EES).

The area where the overlays apply will be updated to align with the new tunnel route. Once we have finalised the tunnel design, we'll be in touch with residents to confirm where the overlay is required.

If you're in the area where the tunnels will be built, are planning on building on your property and have questions now, please get in touch.

Acquiring land underground

With thousands of tunnels operating around the world and millions of people living above them with no impact on their daily lives, we know tunnels can be built safely and without affecting buildings and properties above ground.

Before we start work to build the mined tunnels, NELP needs to acquire land deep underground.

This is called strata acquisition and does not affect ownership of land at the surface.

Land at a depth of 15 metres below ground will start being acquired towards the end of 2023, ready for tunnelling to start in 2024.

If land beneath your property is required, we'll be in contact to let you know before the strata acquisition process starts. Strata acquisition will take place in accordance with the *Major Transport Projects Facilitation Act 2009*.

Where land is acquired at a depth of 15 metres or more below ground, compensation is not available. This is consistent with what we know about modern tunnelling, with people above tunnels being able to continue to use the land at the surface as they do now.

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