



Coffs Harbour bypass

Transport for NSW

Fact Sheet

Tunnelling | December 2023

The Australian and NSW Governments are funding the \$2.2 billion, 14-kilometre Coffs Harbour bypass project. The bypass will boost the regional economy and improve connectivity, road transport efficiency and safety for all local and interstate motorists.

The Coffs Harbour bypass will include three tunnels at Roberts Hill, Shephards Lane and Gatelys Road. Relatively short when compared to tunnels which are part of Sydney's road network, our tunnels will be:

- Roberts Hill – about 160 metres long
- Shephards Lane – about 320 metres long
- Gatelys Road – about 410 metres long.

Why are we building tunnels

Following significant community feedback in 2016, Transport for NSW decided to progress planning and approvals for the three tunnels for the bypass.

This means the bypass will tunnel through hills rather than cutting into the landscape. The benefits include better outcomes for fauna connectivity, existing native vegetation, and Aboriginal cultural heritage sites in these areas.

What will the tunnels look like?

Each tunnel will have two tubes separating the north and southbound carriageways with two lanes in each direction. Additionally, the tunnels will have a shoulder which can be used by cyclists wishing to ride along the bypass.

The tunnels will be fitted out with safety, lighting and ventilation systems. Given the length of the tunnels, air quality towers will not be required.

The tunnels will also include cross passages which are used in emergencies to provide a safe exit for road users if there is a blockage, fire or similar situation that requires motorists to evacuate. Truck parking bays and height detection monitors will be placed before the entry to each tunnel. The vehicle clearance height in the tunnels will be 5.3 metres.



Artist impression of the Shephards Lane tunnel

How we will build the tunnels

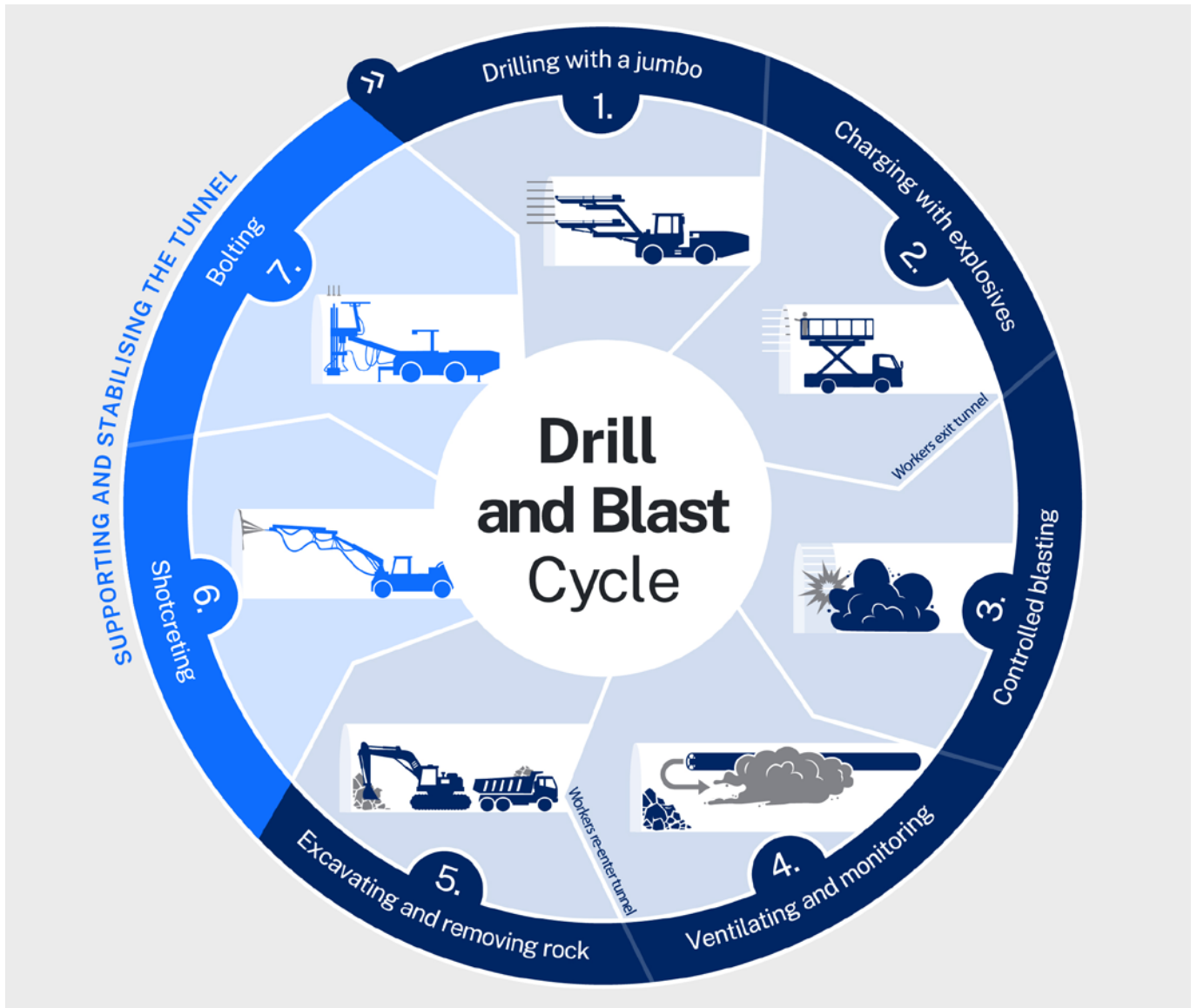
The tunnels will be excavated using controlled blasting. Before we start controlled blasting of the tunnels, we:

- Establish the site including compound offices, water treatment plants, material laydown areas and parking for plant and workforce vehicles
- Stabilise the top exterior of the tunnel portals with bolts and shotcrete
- Excavate the entrance to the tunnel portals using controlled blasting, bulldozers and excavators.

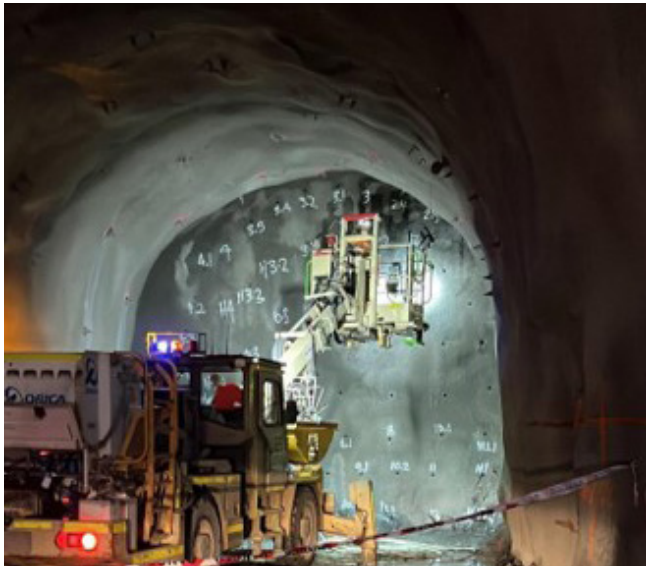
The tunnel tubes will be built in stages. First we will excavate the top of the tunnel tube, called the heading, and then we will come through again to excavate the base of the tunnel tube, known as the bench. This process is shown in the graphic and images below.



Drilling holes into the rock



Drill and blast cycle



Placing explosives into the rock



Excavating, hammering and removing rock from the floor and walls



Detonating the blast



Spraying shotcrete to the walls and ceiling helps to support and stabilise the tunnel tube



Ventilating the tunnel



Large bolts and steel arches are installed into the walls and ceiling to support and stabilise the tunnel tube

Given tunnel construction is carried out below ground, significant safety measures are in place including ventilation systems and regular air quality testing. In addition to standard personal protection equipment (PPE), our tunnel workforce also wears eye protection and masks and there is a tag in-tag out entry process. We will also have waste-water treatment plants in place for each of the tunnels.

Once we have completed the earthwork for each tube, we install drainage, build the pavement, then complete fit out of mechanical, electrical, fire, safety and intelligent transport systems. All systems are tested and commissioned before the tunnels are opened to traffic.

There will be equipment facilities buildings located near each of the tunnels. We are also building a Motorway Operations Maintenance Facility (MOMF) near the Shephards Lane Tunnel. This will be a dedicated facility to monitor and manage the Coffs Harbour bypass tunnel operations effectively.

When will we be building tunnels?

Tunnel construction is starting in late 2023 and is expected to be completed in 2026. Excavation and strengthening work for the tunnel tubes is expected to take about 24 months. The project will then build the pavement for about 3 months with fit-out of systems and the interior expected to take about 12 months. These activities will be carried out sequentially. Work will initially start on Gatelys Road Tunnel, then Shephards Lane Tunnel, and finally Roberts Hill Tunnel.

Under the project's Minister's Conditions of Approval, tunnel construction work can be carried out 24 hours a day, seven days a week. Our approved hours for controlled blasting in the tunnels are **Monday to Friday** between **7am and 6pm** and on **Saturdays** between **9am and 1pm**.

Acoustic barriers and control doors will be installed at the tunnel portals once the team has excavated about 30 metres into the tunnel.

Noise and vibration during construction

Noise typical to major construction activity will be generated throughout the building and fit-out of our tunnels. For more information on our approach to managing dust, noise and vibration during construction, read our fact sheets at pacifichighway.nsw.gov.au/coffsharbour.

Residents and businesses within approximately 200 metres of the tunnels may hear and feel the controlled blasts. The sound is similar to that of rumbling thunder and some slight vibration may be felt. The Minister's Conditions of Approval (MCoA) for the project sets strict limits on ground vibration and all blasts are modelled and monitored to ensure compliance. Our blasting limits are based on human comfort levels which are well below the levels at which damage would occur to even the closest structures and buildings. For more information about controlled blasting, read our fact sheet at pacifichighway.nsw.gov.au/coffsharbour.

Air and noise in tunnels after opening

Air within the tunnels will be monitored during operation to ensure that quality standards are maintained. Given the length of the tunnels, no ventilation facilities will be required as ventilation will occur through natural air flow and the movement of vehicles which will push the air toward the exits. Our tunnels have been designed to enclose noise sources. Noise from vehicles travelling through the tunnels will be largely mitigated by the tunnel structures as they provide a full enclosure. Additional noise mitigations may be installed at the tunnel entrances if determined to be required in the Operational Noise Review.

Wildlife connectivity and landscaping

The tunnels have been designed to blend into the surrounding landscape and to enhance and preserve areas of local heritage significance, including Aboriginal cultural heritage. Using tunnels instead of cuttings at the three locations reduced the project's vegetation removal footprint and preserved important fauna connectivity corridors.



Tunnel portal preparation work at Gatelys Road Tunnel southern portal

Contact us

If you have any enquiries and complaints, please contact the project team on 1800 550 621 or community@chbteam.com.au

Translation 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 550 621