WestConnex

M4-M5 Link Tunnels

Controlled Blasting Factsheet | 2020

WestConnex is part of the Australian and NSW Government's 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 WestConnex M8 at St Peters.



What is controlled blasting?

Controlled blasting is a tunnel excavation method commonly used to excavate rock using small charges that break up the rock. It involves pre-drilling a series of small diameter holes in the rock face, loading the holes with small charges and detonating them to break the rock into removable pieces.

Why is controlled blasting being used?

Tunnel excavation on the M4-M5 Link Tunnels Project has to date mainly been done with machines called roadheaders. Sometimes additional tunnelling methods such as rock-breaking, jack-hammering or controlled blasting are required to break up sections of harder rock. Controlled blasting can result in reduced duration of ground borne noise and vibration impacts for local communities as well as a reduction in the overall construction time in comparison to using rock-breakers and roadheaders alone.

Is controlled blasting safe?

Yes, controlled blasting is strictly regulated by the Environment Protection Authority (EPA), Department of Planning, Industry and Environment (DPIE) and SafeWork NSW. It is a common tunnel excavation methodology that has been safely used on many other Australian tunnel projects and was also included in the project's EIS as an option.

Every controlled blast is monitored to ensure vibration remains within allowable limits. The Project has engaged a specialist blasting expert to design, prepare and oversee each controlled blast in accordance with stringent Australian safety standards.









Constructed by



Keeping you informed

We are committed to keeping vou informed and will provide regular information on the M4-M5 Link Tunnels through direct mail and email notifications, community updates, 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-linktunnels/ for more information.



Visit westconnex.com.au. Need an interpreter? Call the Translating and Interpreting Service on 131 450.

When and where is blasting happening?

Following the trial blast in July 2020, it has been determined that controlled blasting is a viable excavation method for the project and may be used to excavate a section of the tunnels in Leichhardt between the 36th Battalion Park and Pioneers Memorial Park (refer to map).

A decision has not been made as to whether controlled blasting will be carried out in this location, however we want to engage the community as early as possible about the potential for this work occurring.

If controlled blasting proceeds, the project will carry out up to two blasts per tunnel, per day between 7:00am and 6:00pm Monday to Friday and 8:00am to 6:00pm on Saturdays. Typically, there will be a blast at the start and end of each day, with minimal impacts in between these times. Regular tunnelling activities such as rockbolting and shotcreting will continue.

Residents will be provided with further notification prior to a controlled blast taking place near their property.

What can I expect during blasting?

Residents close to the work area will experience some ground borne noise and vibration for around 15 seconds during each controlled blast. This would however replace the impacts from the current 24-hour roadheader excavation.

Is my property at risk of damage?

Controlled blasting is designed so as not to cause vibration at a level that would cause property damage. Properties close to the proposed controlled blasting work area have already been offered a pre-construction property condition survey. Should residents have concerns regarding the impact to their property or possible damage, they can contact the Project on 1800 660 248 at any time to discuss this.

Approximate location where controlled blasting may be used



Potential controlled blast location

Will vibration levels be monitored?

Vibration will be monitored at several locations while controlled blasting is taking place to ensure vibration levels remain within allowable limits.

The maximum vibration limits are determined by the EPA and are based on human comfort recommendations of both the Australian Standard AS2187.2 and the ANZEC Guideline.

The internationally used German standard DIN 4150 has been adopted to ensure no adverse impacts to properties from vibration work including controlled blasting.

Controlled blasting is designed to generate a maximum vibration level of 10mm/s at the nearest residential property at a frequency that does not present a risk of damage to properties.

Examples of controlled blasting on Australian infrastructure projects

- WestConnex M8, NSW between 15 and 45 metres under residential areas in Kingsgrove, Sydenham and Tempe
- Sydney Metro City and Southwest, NSW shaft excavation of Victoria Cross station near residential and commercial areas in North Sydney
- NorthConnex, NSW excavation of tunnel shafts near residential areas of Pennant Hills, Thornleigh and Wahroonga
- Clem 7 in Brisbane, QLD under urban residential areas at a depth range of between 9 and 54 metres
- Airport Link Brisbane, QLD excavation of a cut and cover tunnel in Toombul as well as production blasting in a residential area and within 100m of a school

Contact us

If you have an enquiry or complaint or you want to provide feedback about this work, please contact the M4-M5 Link Tunnels team on toll free 1800 660 248, email info@m4-m5linktunnels.com.au or write to PO Box 63, Mascot, NSW 1460.

For more information drop into the Community Information Centre at 201-205 Parramatta Road, corner of Alt Street, Haberfield 9.00am to 5.00pm Monday, Wednesday and Friday or by appointment on Tuesday and Thursday (excluding public holidays and the period between Christmas Day and New Year's Day).

1800 660 248

info@m4-m5linktunnels.com.au

westconnex.com.au