

HOW WE'LL BUILD THE RAIL BRIDGE



Rail bridge under construction at the Preston Level Crossing Removal Project

We're removing the dangerous and congested level crossings at McGregor Road, Main Street and Racecourse Road by building a rail bridge over the roads.

The Victorian Government has fast tracked these level crossings for removal, with 22 level crossings being removed on the Pakenham Line to make it boom gate free by 2025.

Around 63,000 vehicles pass through these level crossings each day, with the boom gates down for up to 30 per cent of the morning peak.

Elevating the rail line over the road will improve safety, reduce congestion and allow more trains to run more often.

As part of these works we're building new stations at Pakenham and East Pakenham, open in 2024.

Construction is underway to build the 2.5 kilometre rail bridge over the roads. At Pakenham we will use the innovative 'monopiling' technique to build the new rail bridge.

Read on for more information on how we'll build the rail bridge and what to expect.

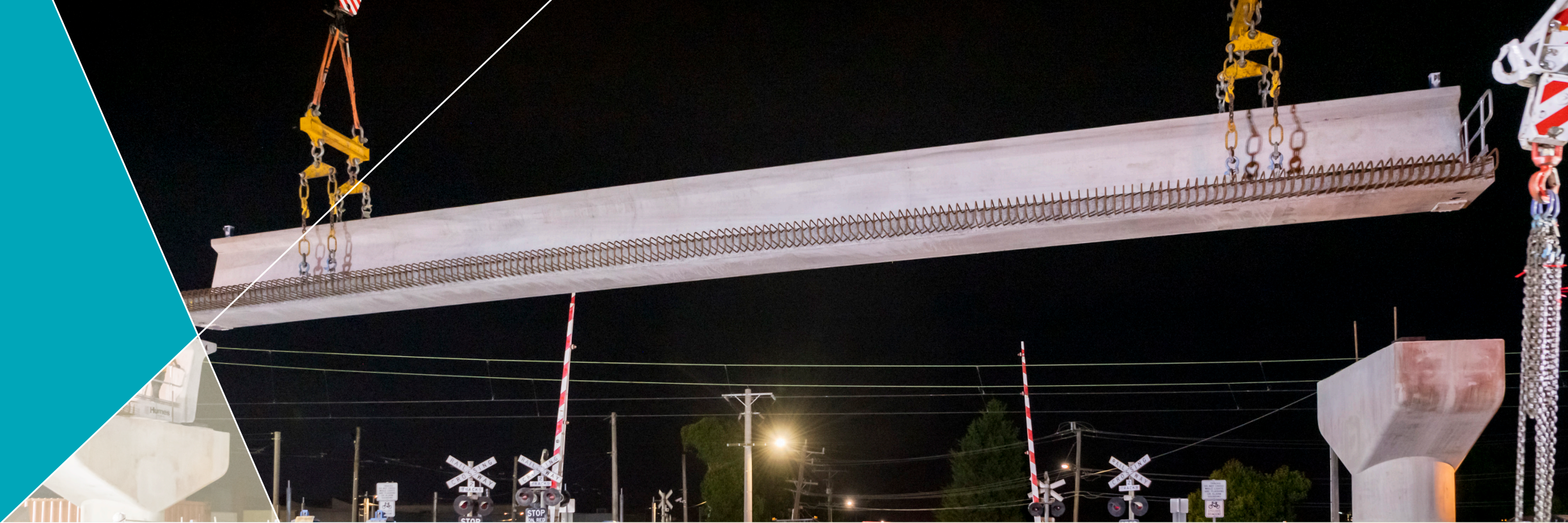
Did you know?

By building the rail bridge over the roads we are creating more than six MCG's worth of new open space for the community to enjoy.



Pedestrians and bike riders will benefit from the north-south connectivity across the rail corridor.

BUILDING THE BRIDGE



L-beam installation on the Preston Level Crossing Removal Project

Piles

Piling is the technique used for drilling the foundations.

Traditional rail bridge foundations consist of a cluster of small diameter piles below the ground, topped with a larger concrete ‘pile cap’ to support each bridge column. Monopiling is a single larger pile with no pile cap, and is ideal for the ground conditions in Pakenham.

There are two different types of monopiles to be installed for the rail bridge foundations at Pakenham:

- 60 monopiles at 2.7 metres in diameter
- 14 monopiles at 2.1 metres in diameter

Abutments

The bridge has an abutment at each end. An abutment ramps the bridge back to ground level. A different piling technique known as Continuous Flight Auger (CFA) piling will be used to form the retaining wall structures at the western and eastern abutments.

We will install eight CFA piles at the western abutment located at McGregor Road and 12 CFA piles at the eastern abutment located at Racecourse Road. Each pile is 1.2 metres in diameter and 15 metres deep. They play an integral role in ensuring the walls surrounding the rail infrastructure are solid and secure.

Once piling is complete, the rest of the bridge and elevated station structure will take shape above ground for everyone to see.

Piers

Bridge piers are the upright supports for a elevated structure. At Pakenham you will see 67 piers installed to support the structure of the rail bridge.

U-troughs

The bridge sections, known as U-troughs, are made up of two L-shaped beams. The two beams are joined together with concrete to form a U-shape and installed on top of the headstocks. Headstocks sit on top of the piers and support the horizontal bridge sections, transferring the bridge load to the pier below. At Pakenham, 272 L-beams will be joined to form 136 U-troughs. This will become the base where we lay the train tracks and ballast. The graphic on the next page shows how we will build the rail bridge.

What to expect

- Excavation and construction machinery on site
- An increase in noise, dust and vibration in the area
- Lane and road closures
- Detours in the area
- Traffic management

To view our disruptions online visit levelcrossings.vic.gov.au/disruptions



Piling rig at Preston rail bridge works.

Bridge construction at Pakenham

- 1

Pilling rigs drill holes up to 35 metres deep and up to 2.7m in diameter.
- 2

A cylindrical, steel reinforcement cage is inserted into the hole.
- 3

The hole is filled with concrete to form a pile.
- 4

A steel reinforcement cage is placed on top of the pile.
- 5

A steel mould is placed around the cage.
- 6

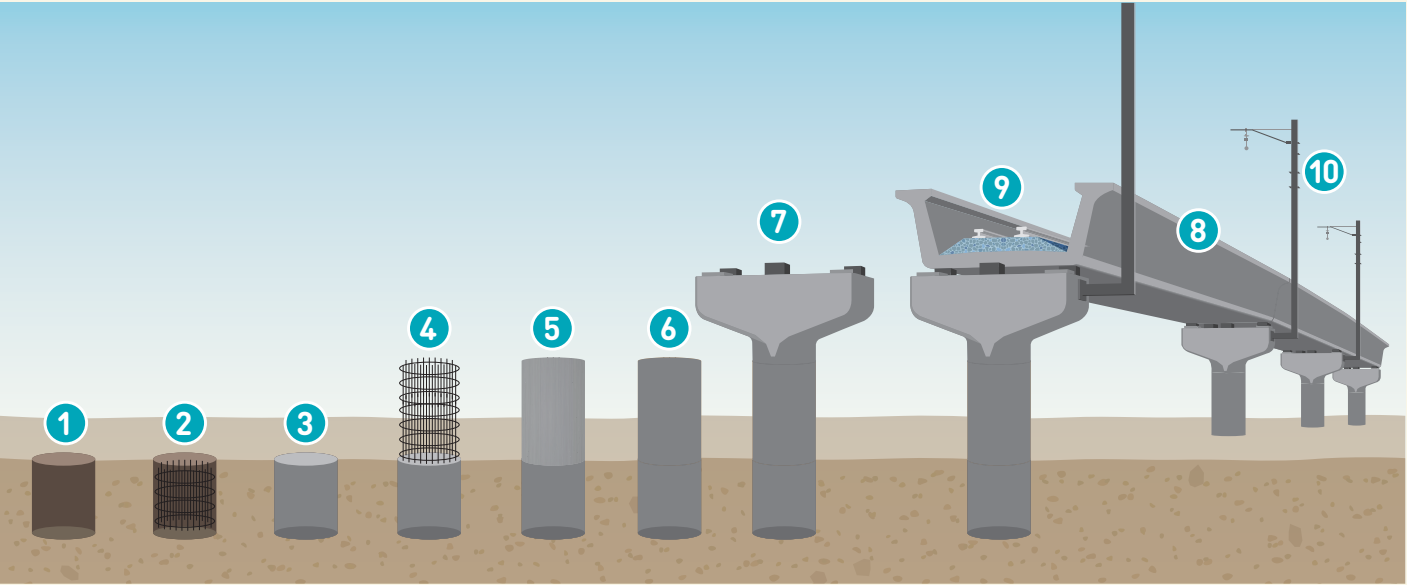
Concrete is poured into the mould and cured to create a pier.
- 7

Pre-cast headstocks are delivered to site and installed on top of each pier.
- 8

U-troughs made up of two L- beams are installed on top of the headstocks.
- 9

Ballast and train tracks are laid.
- 10

Signalling, communications and overhead power equipment is installed.



FAQS

How high will the rail bridge be from ground to the base of the rail bridge at McGregor Road, Main Street, Racecourse Road and Pakenham Station?

The rail bridge will be approximately six metres high at McGregor Road, Main Street, Racecourse Road and Pakenham Station.

Will the works be noisy?

To build the rail bridge, specialised machinery is needed. As with any major construction, this can result in noise and vibration.

The project team monitors noise and vibration levels to make sure they are within the Environment Protection Authority noise control guidelines.

Will there be 24 hours works during construction?

Piling works will take place during the day between 7am to 6pm, Monday to Friday and 7am to 3pm Saturday. However, at times during construction we'll need to work during the night. When 24-hour work is anticipated, we'll provide you with plenty of notice.

What are the respite and relocation options during night works?

Our relocation team will work individually with impacted residents to provide detailed information about the relocation process and to discuss their needs.

If you believe the works are too noisy and affecting your ability to sleep, please call a member of the project team on 1800 105 105.

Will the Pakenham Line be closed during construction?

We are building the rail bridge offline. This means that trains can continue running while we work. However, at times we will close sections of the Pakenham Line, with buses replacing trains. We'll provide you with plenty of notice before any closures.

*The new rail bridge at Racecourse Road, Pakenham.
Artist impression,
subject to change*



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