

WEST GATE TUNNEL PROJECT

FEBRUARY 2019

Construction overview Tunnels

The West Gate Tunnel Project will be built over five years, opening in 2022 to provide a vital alternative to the West Gate Bridge, quicker and safer journeys and remove over 9000 trucks from residential streets in the inner west.

The project is a partnership between the Victorian Government and Transurban and will be built by a joint venture between CPB Contractors and John Holland.

The Western Distributor Authority is managing the project on behalf of the Victorian Government. There are three construction precincts: West Gate Freeway, Tunnels and Port to City.

In the Tunnels precinct we are building:

- **Twin tunnels under Yarraville** between the West Gate Freeway and the Maribyrnong River
- **Entry and exit portals** where the tunnels connect with surface roads
- **Ventilation structures** at each tunnel exit to remove air from inside the tunnels
- **Walking and cycling paths** on Hyde Street, Harris Street, Maribyrnong Street and bridges over Whitehall Street, Williamstown Road, Stony Creek and the West Gate Freeway
- **New landscaped open space** in Altona North and Footscray
- **Freeway Management System** to support good traffic flow and safety
- **Tunnel safety features** for smooth operation of the tunnel, including automatic detection for over-height trucks, fire systems and emergency access and exits.

5

year
construction period

2

Tunnel Boring Machines
operating up to 24 hours a day
to construct the twin tunnels

15

million cubic metres of
rock and soil removed for
tunnel construction



Northern tunnel portal, Footscray

Key works – Tunnels precinct

A tunnel allows a freeway connection to be built in established residential and commercial areas with far fewer impacts and many benefits including:

- moving through traffic away from homes
- reducing traffic noise on local streets
- reducing trucks on local streets
- reducing disruption during construction as much of the work happens below ground
- supporting urban redevelopment opportunities by protecting land on the surface.

Working hours

Tunnelling operations will take place 24 hours a day, seven days a week. The TBMs will work around the clock, and the main tunnelling construction compound at Whitehall Street will be busy both day and night.



Construction compounds

Timing: Set up 2018-2019 and operating until 2022

Construction compounds provide a base for workers, equipment and machinery. We will:

- Meet all requirements for managing noise, dust, traffic, and other Environmental Performance Requirements
- Give our neighbours advanced notice about what to expect during works
- Reinstate or improve compound areas after construction
- Provide parking for workers.

The main base for tunnel construction is at the northern portal on Whitehall Street, Footscray. The TBMs will be launched here and a spoil management facility set up to manage earth and water generated by tunnelling. To minimise disruption we are:

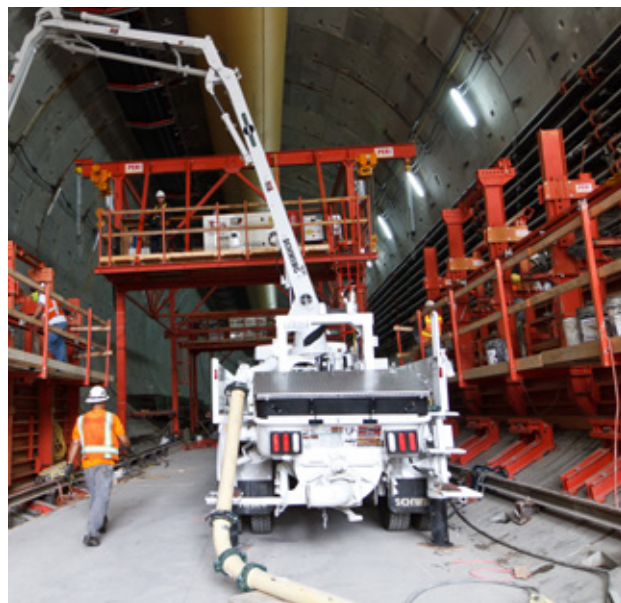
- Fitting noise covers to noisy machinery and equipment
- Using covered conveyors, sheds and trucks to reduce dust
- Fencing and screening the site for safety
- Reducing traffic in and out at peak times to limit traffic disruption.



Tunnel portals

Timing: 2018-2021

The start and end of each tunnel will be built using the 'cut and cover' method. This involves excavating a trench then covering it with a concrete deck to form a roof. This is where the TBMs start and end their journey.



Tunnel under construction in Washington State, USA (courtesy Washington State Department of Transport)



North Yarra Main Sewer works

Timing: 2018-2019

The North Yarra Main Sewer is a very old and large brick sewerage pipeline that runs under Whitehall Street. Before work on the tunnel can begin, the section of sewer between Youell Street and Somerville Road needs to be diverted.

This is a big job and will take around one year to complete. Disruption to traffic on Whitehall Street is expected for several months while this work is completed.



Cycling and walking bridge

Timing: 2022

A bridge over Whitehall Street will provide a safer route for cyclists and pedestrians.



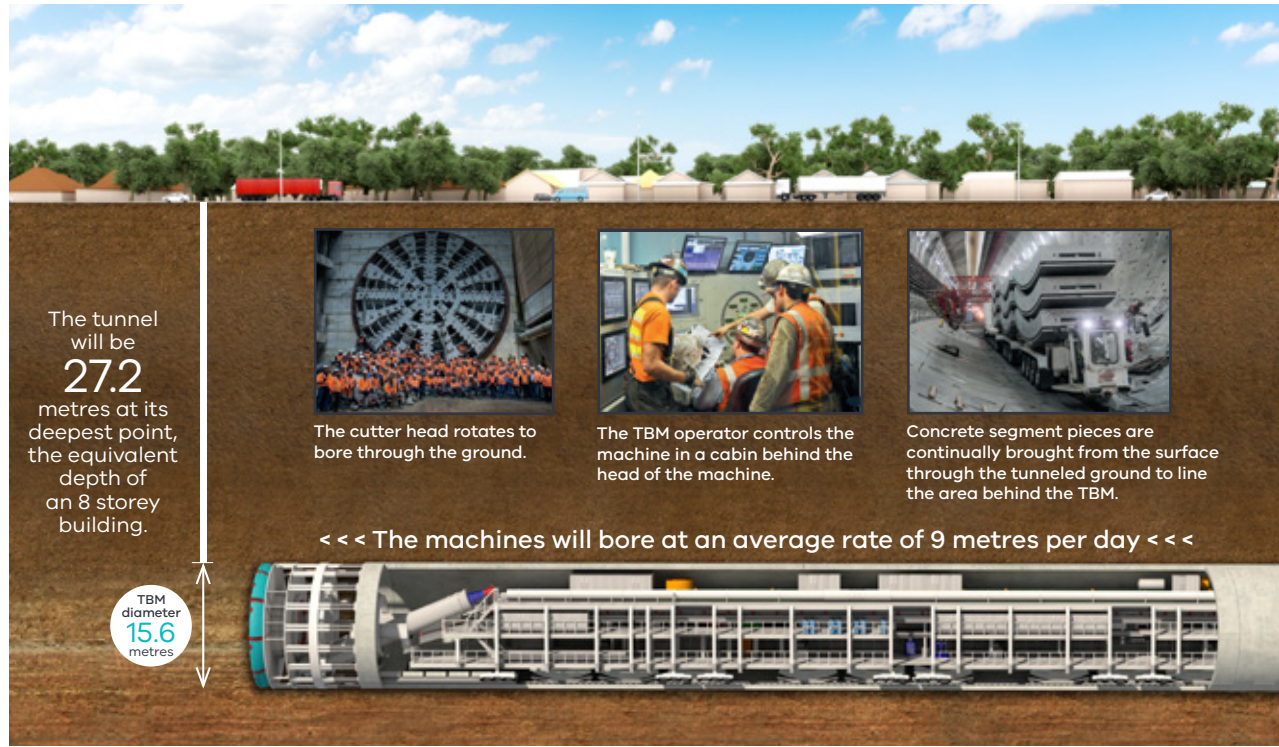
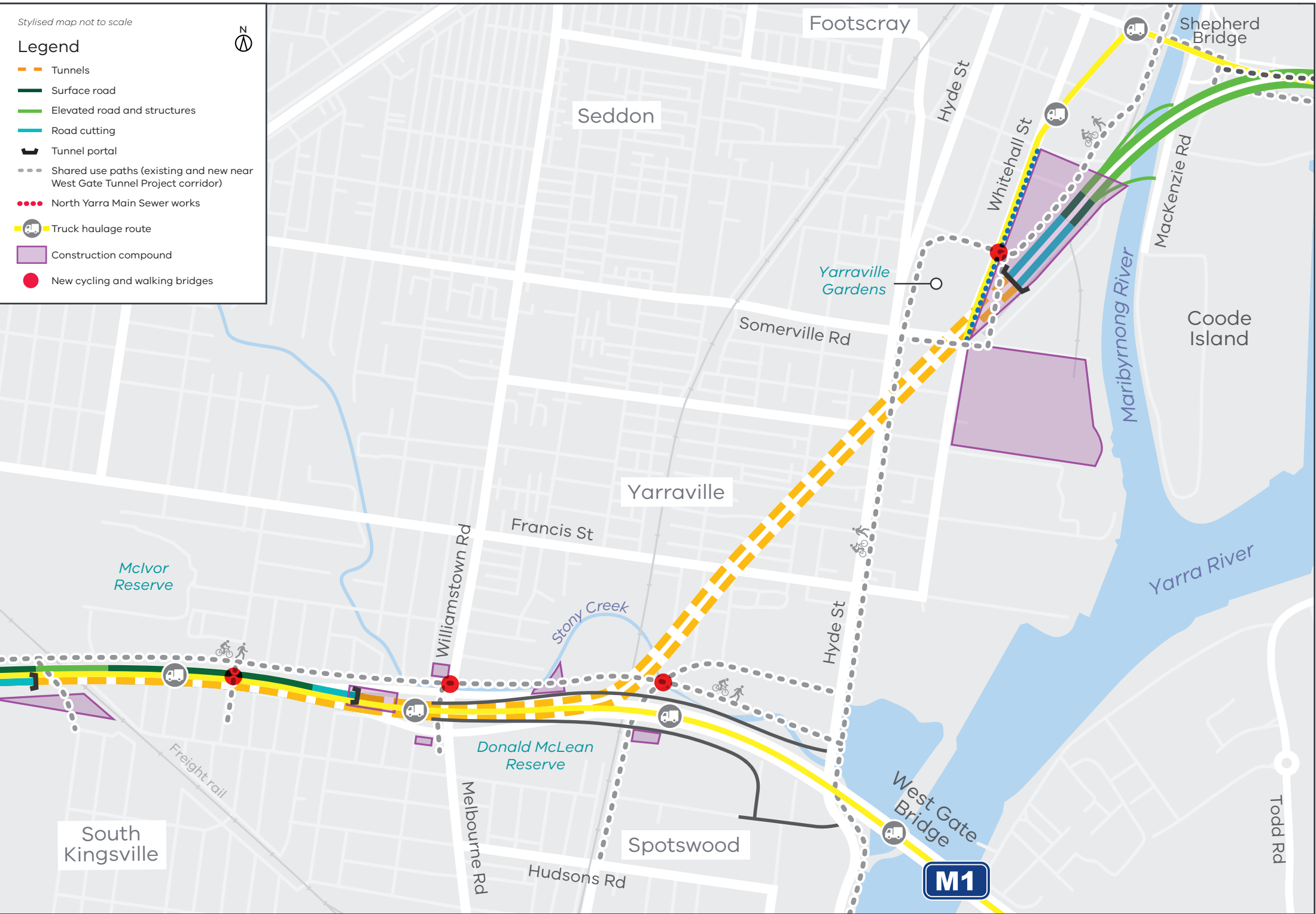
Tunnelling

Timing: 2019-2021

Two state-of-the-art tunnel boring machines (TBMs) will build the twin tunnels. These machines use the latest tunnelling technology and are custom designed and built to suit ground conditions in Melbourne's west.

The TBMs start their journey at the northern portal and move south-west towards the southern portals in the West Gate Freeway. Work will start on the 4 kilometre outbound tunnel first, closely followed by the 2.8 kilometre inbound tunnel. The longer tunnel will take around 18 months to bore.

While the TBM bores through the earth, a mobile factory within it installs a concrete lining – forming the walls, roof and base of the tunnel. Behind the TBM, crews work to build the road surface and install electrics, ventilation and safety systems.



Ground conditions we will be working in

	Man-made fill – The top layer on the surface, which is man made, is used to change the elevation or gradient of the surface and easy to tunnel through
	Strong upper basalt rock – Younger basalt rocks, normally one of the strongest rocks and will need special disc cutters to break through
	Sediments – Soft ground made up of sand and clay soil, much easier to tunnel through than basalt
	Lower basalt rock – Much older rock that has a mix of hard and soft ground types, requires both disc cutters and soft ground tools to excavate through

Managing construction impacts

Vibration and ground movement

Thousands of tunnels are constructed and operate safely in cities around the world, including the CityLink and EastLink tunnels in Melbourne. Tunnel boring machines are very good at reducing vibration so people living and working above the tunnel may not notice construction happening underground. We will:

- Inspect properties before and after construction
- Monitor ground movement and vibration levels at all times
- Meet strict targets set to manage vibration, minimise disruption, and avoid damage to buildings.



Noise from above and below ground

Strict controls are in place to make sure construction noise is well managed and complies with EPA Victoria guidelines. We will:

- Use noise enclosures to reduce noise from major activities at construction compounds, as well as an acoustic shed at 221 Whitehall Street
- Plan noisy works at times when they will cause the least inconvenience where possible and provide advanced notice
- Monitor noise levels and take action to reduce noise.

Dust

We try to avoid creating dust, but if it can't be avoided we will take action to reduce dust and stop it blowing around. We will:

- Cover dirt and rock when it is being moved
- Spray water on open stockpiles and roads to keep dust down
- Monitor dust levels at key locations and take action to suppress dust if it's too windy
- Landscape areas as soon as possible so dirt isn't left exposed.

Contaminated soil

Most of the soil and rock we're digging out of the ground is natural fill material. Because heavy industry and rubbish tips have operated in this area over many years, we expect to find some contaminated soil and will manage it safely. We will:

- Carry out detailed studies to identify areas with contamination
- Manage any contaminated materials in accordance with EPA Victoria requirements, environmental laws and regulations
- Test soil and separate contaminated materials from clean fill
- Use facilities licenced by EPA Victoria to treat and dispose of contaminated soil or re-use fill according to approved guidelines.

Construction traffic

There will be changes on some roads, detours and a lot of trucks travelling to and from the site office on Whitehall Street. We will keep traffic moving by:

- Developing and following plans for how vehicles, cyclists and pedestrians move around work areas, public transport, speed limits, safety and property access
- Making sure any detours are safe, clearly signed and avoid residential areas where possible
- Reducing the construction traffic at peak times
- Keeping construction traffic on major roads, freeways and haulage routes.





Tunnel entrance night view

Artist's impression only - does not include detailed design

Keeping you informed

We will keep people informed and work together to make things easier during construction.

You can expect to see regular information from us about construction activities happening in your area, including:

- Newsletters to keep you up-to-date
- Works notifications in your letterbox
- Door knocks or street meetings before major works
- Information on the website
- News and updates on social media.

We have a team that is dedicated to working with the community. They are available 24 hours a day, seven days a week to answer any questions or concerns.

Our West Gate Tunnel Project Visitor Information Centre will open in 2018, providing a one-stop shop for project information and enquiries.

Contact us

Do you have a question about the project? If you need more information or would like to provide feedback, please get in touch.



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