

Tunnel construction in Watsonia & Macleod

Fact Sheet
April 2023



Aerial shot of Watsonia, north of Simpson Barracks

Two major work sites in Watsonia and Macleod have been established to support North East Link tunnelling works.

We're preparing to build Victoria's longest road tunnels. Once complete, the North East Link tunnels will take traffic and trucks under our suburbs and give local roads back to the local community. As a result of community feedback, we've extended the North East Link Tunnels to Watsonia.

In 2023, we're focused on preparing for the arrival of the tunnel boring machines (TBMs) late this year. To ensure the TBM launch site at Watsonia is ready, there will be two purpose-built facilities constructed.

An acoustic shed will be built on Winsor Reserve ready to store and remove dirt and rock excavated from the tunnels. At Watsonia, we will build a tunnel segment storage shed to house the pre-cast concrete segments that will become the tunnel walls.

We're working closely with nearby residents to ensure construction disruptions are minimised wherever possible. Read on for more information on how these sites will be set-up this year and how they'll be used to support tunnelling from 2024.

6.5km

longer tunnel from Watsonia to Bulleen

Two TBMs

working 24/7 excavating up to 15m per day

Acoustic shed

at Winsor Reserve to manage dirt and rock from tunnelling

TBM launch site

near Lenola Street, Watsonia

2024–2026

Major excavation and tunnelling

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How Tunnel Boring Machines (TBMs) work

Once the TBMs start working deep underground, they will move up to 15 metres each day. The huge cutter head on the front of the TBM rotates, with hydraulic cylinders pushing it forward. Hardened cutter discs mounted on the cutting head do the actual work of breaking away the soil and rock.

Conveyor belts and pipes inside the TBMs will take the rock and soil to the end of the machine and then to the surface. From here, the dirt and rock will be carried along an enclosed conveyor belt over Greensborough Road, where it will be loaded onto trucks and taken off-site to be re-purposed or disposed of.

There are strict Environmental Performance Requirements to manage noise and vibration from tunnelling. The project must meet these requirements, ensuring that people can continue to enjoy their homes as they do now while the TBMs pass through.

Watsonia TBM launch box site

The massive TBMs need a lot of space and equipment to launch and get to work below ground.

The site at Watsonia is the only area near the tunnel entrance big enough to house all the equipment needed to dig out and remove the dirt and rock as we build the tunnels.

The site also provides more direct access to arterial roads, meaning fewer construction vehicles on local roads.

There will be more than 1000 deliveries of equipment and TBM sections, as we get ready to assemble the two massive tunnelling machines on-site before they are launched below ground.

Once the TBMs start working deep underground, each TBM will work 24/7 throughout the year and move up to 15 metres each day.

Gantry crane

To the north of Winsor Reserve, on the east side of Greensborough Road, we'll also be building a 550-tonne gantry crane to lower the TBMs into the launch box.

The gantry crane is over 30m high and will span the full width of the launch box which is almost 50m.

The main gantry beams will be delivered in two pieces before being welded and assembled on-site. The gantry crane will be in place by late-2023 ahead of major tunnelling works from early 2024. It will be taken down in late 2025.

The massive TBMs are transported from the Port of Melbourne in segments. Once on site, they are joined together and placed on a temporary platform ('cradle') before being lowered in and launched. Assembly will take around 6 months.

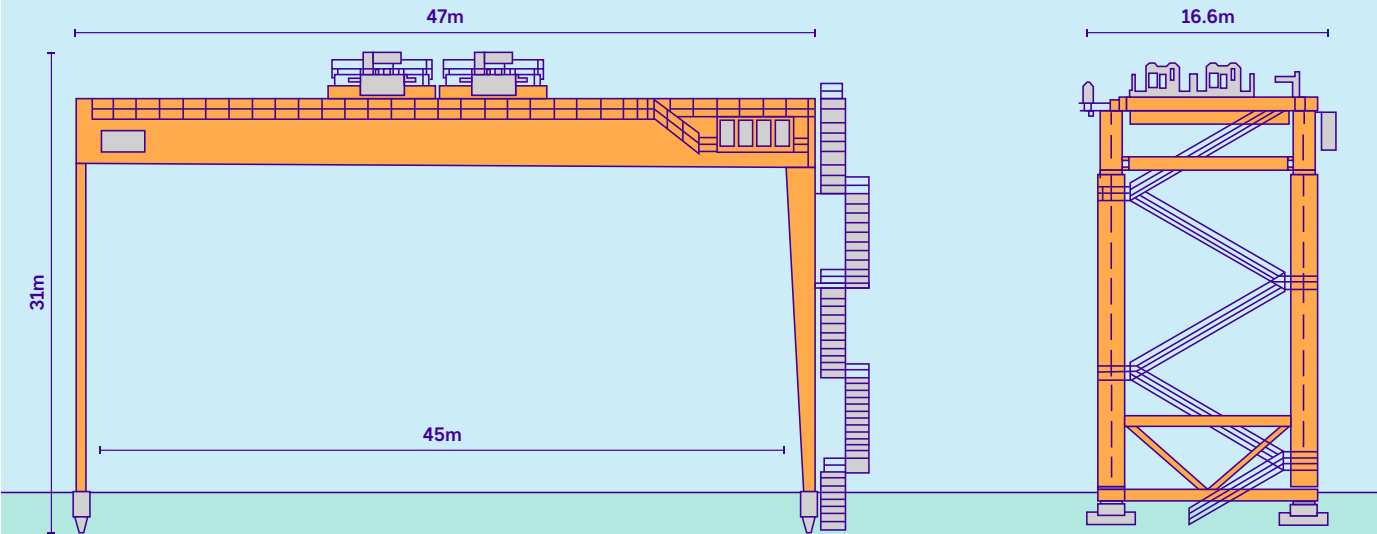
Pre-cast concrete segment storage shed

A large shed is needed at the TBM launch site to store the pre-cast concrete segments that make up the tunnel walls.

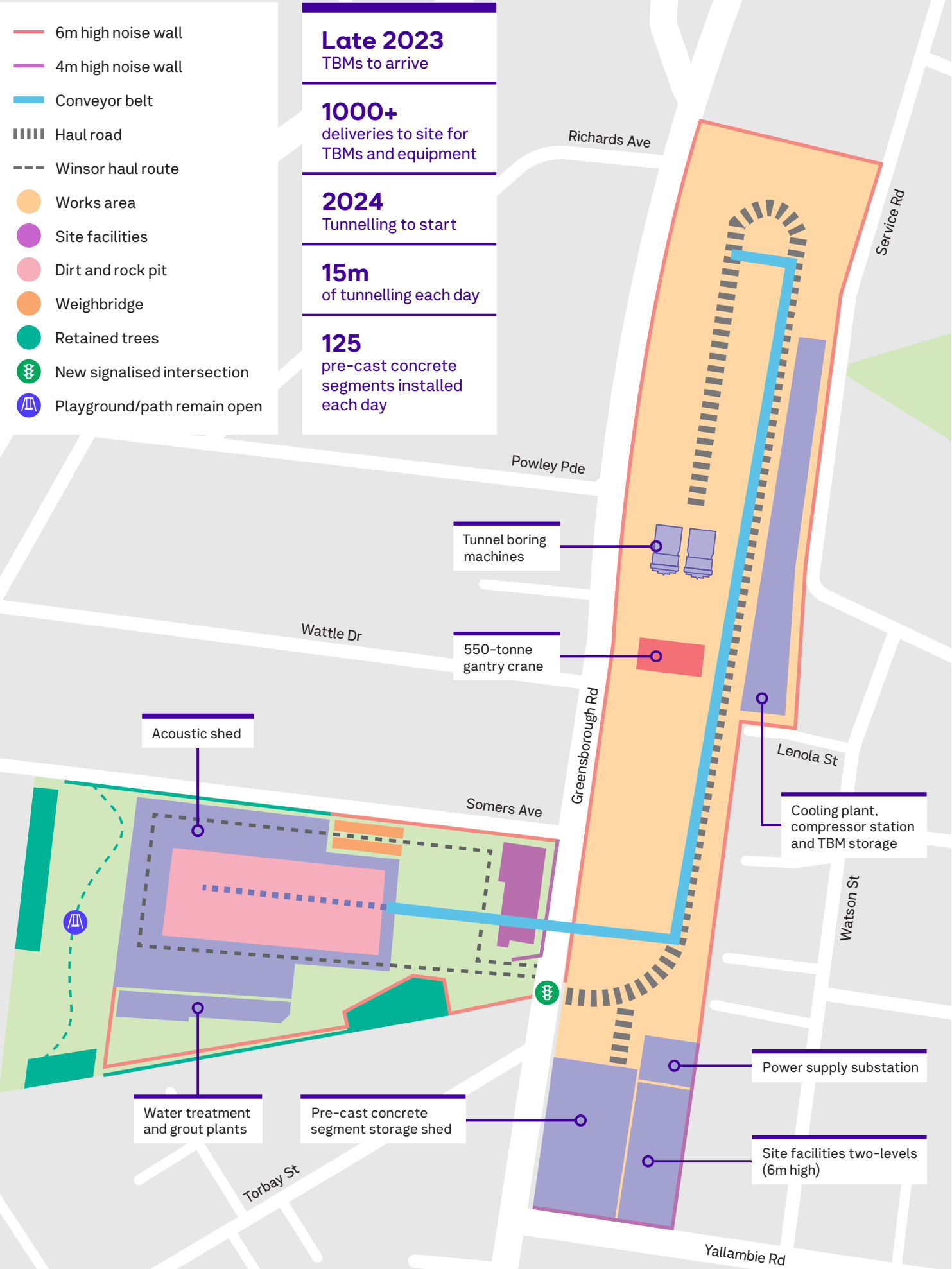
We'll install around 125 pre-cast concrete segments as our TBMs tunnel each day. The TBM places these curved wall segments along the dug path, ensuring the tunnel is supported and watertight.

These wall segments are poured off-site and stored in a shed until they are ready to be installed. The shed will be located north of Yallambie Road.

TBM gantry crane diagram



Watsonia TBM launch box site and Winsor Reserve site compound



Winsor Reserve in 2023

Winsor Reserve will be used to support tunnelling from Watsonia to Bulleen. A large acoustic shed will be used to store and remove dirt from the tunnel.

When the TBMs start tunnelling in 2024, the excavated dirt will come to the surface on a continuous enclosed conveyor system. The conveyor will carry the dirt over Greensborough Road to the large acoustic shed.

Trucks will enter the shed and be loaded with the dirt and rock, before being covered and driven away. The acoustic shed will operate 24/7 and be big enough for more than 10 trucks.

You will notice an increase in trucks in the Watsonia area as they continuously move in and out of the shed. The new signalised intersection on Greensborough Road will give trucks dedicated, safe access and turning space to keep other traffic moving.

Both the shed and the conveyor belt will be acoustically treated and enclosed to contain noise, light and dust impacts to nearby residents.

The shed will be approximately 140 metres long, 80 metres wide and 18 metres high, with trucks using the new traffic lights on Greensborough Road only.

Winsor Reserve during and after construction

We know this is a big change for the local area while we build the North East Link Tunnels.

Based on community feedback, we have increased hoarding heights and moved equipment and worker facilities further away from residences.

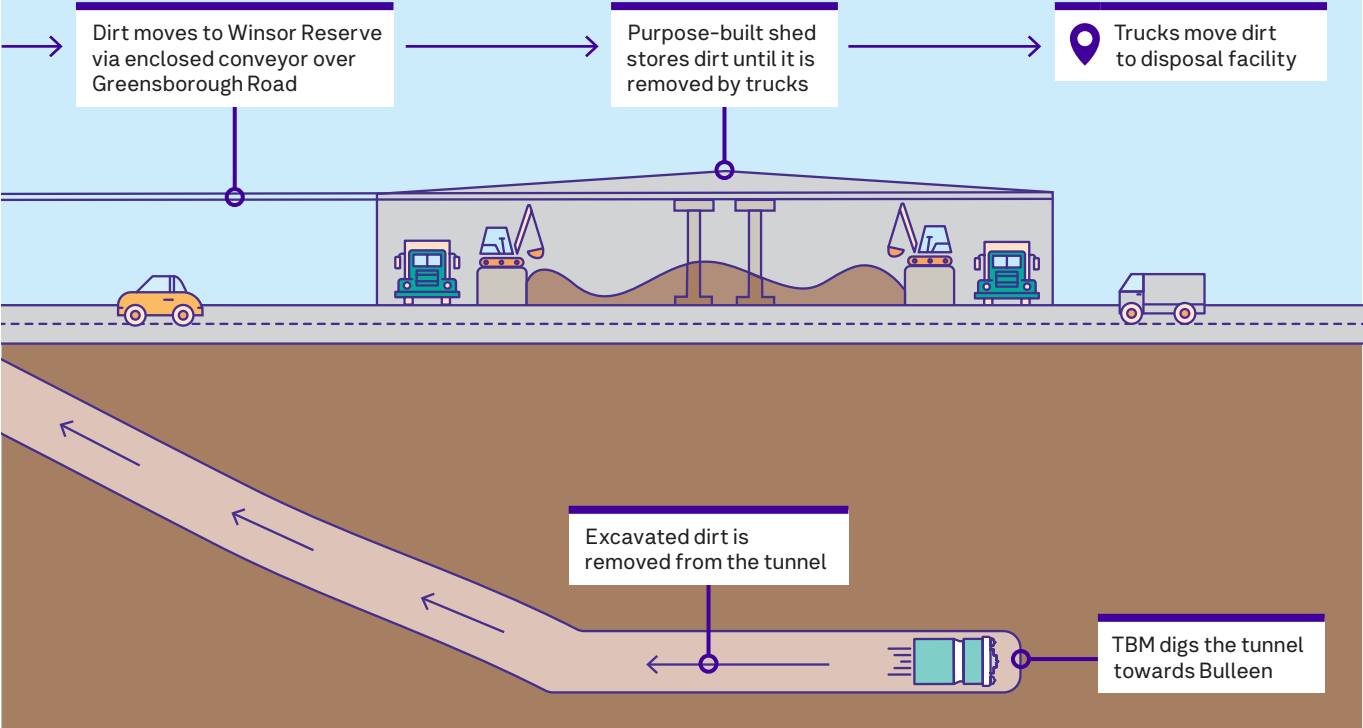
We have retained around a quarter of Winsor Reserve as public open space during construction.

The playground at the western side of Winsor Reserve and the path through to Tuckfield Court will remain open for local use. We've also kept as many of the large established trees on the south and west side of the reserve as possible.

We'll be speaking to local residents soon about what they would like to see on the shed once it is built – including potential artwork.

Once North East Link is built, Winsor Reserve will be reinstated and returned to the community.

Removing dirt from the tunnel



Construction timeline



Earthworks at the Watsonia TBM launch box site



Piling works at the Watsonia TBM launch box site

Managing impacts

We acknowledge that we're working in residential areas and remain committed to supporting our neighbours and minimising the impact of construction works wherever we can.

While some of our sites will eventually operate around-the-clock, they will do so in accordance with the program's Environmental Performance Requirements (EPRs) determined through our extensive Environmental Effects Statement (EES) process. These include requirements around noise, dust, air quality, vibration, truck movements and maintaining local access.

Mitigation measures will be put in place to manage dust, construction lighting and noise. Temporary timber panels, called hoarding, will minimise these disruptions and keep residents and workers safe by clearly defining the construction areas.

We'll be out talking to local residents throughout the year and giving regular updates on construction.

Voluntary Purchase Scheme

A Voluntary Purchase Scheme is available to property owners most impacted by both construction and final design of North East Link. Any decision to sell your home to the State Government is entirely voluntary and we are available to speak with eligible residents about this.

This information is current at the time of publication, however, changes may occur. Please visit our website for the latest updates.

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