

Construction

EES study update | September 2018



Image courtesy of Linking Melbourne Authority

**EES STUDY AREAS
INCLUDED IN THIS FACTSHEET:**
Transport; Noise; Air quality; and Vibration



Upgrade works on the West Gate Freeway, image courtesy of West Gate Tunnel Project



Subject to planning approvals and procurement, construction for North East Link is expected to start in early 2020. Construction is expected to take around seven years with the road opening to traffic in 2027.

We're working on how to best split the project up into different packages to stagger and align works over the seven year period.

This means that some parts of the project could start and be finished before others.

North East Link will be one of Victoria's biggest ever transport projects and we know communities are interested to know more about how disruptions during construction will be managed.

Planning approvals for North East Link will be informed by an Environment Effects Statement (EES) – our state's most stringent impact assessment process.

Construction impacts are considered in each of the 18 study areas covered in the EES. Studies focus particularly on potential traffic, air quality, noise and vibration effects as these are key issues of concern for communities.

Our specialists are:

- Using modelling and other studies to assess impacts during construction
- Working closely with our project engineers to refine the design to improve outcomes
- Developing a set of standards to minimise or manage impacts during construction. These standards are called Environmental Performance Requirements (EPRs).

This fact sheet provides answers to some of the most frequently asked questions about how we would manage impacts during construction.

The EES reports, including all the draft environmental performance requirements that would apply during construction and operation will be on display early next year.



The contractors appointed to build North East Link will need to



Follow government legislation, policy and guidelines for construction noise



Develop a Traffic Management Plan for all modes of transport



Develop a Construction Noise and Vibration Management Plan



Develop a Dust Management Plan that meets EPA Guidelines



Survey buildings before tunnelling starts to provide assurance that damage is avoided



What we've heard so far

Feedback received about construction disruptions from communities so far includes:

- Consider how access to homes and places like schools, sports fields, shops and businesses would be maintained
- Keep freeways and main roads operating
- Minimise travel delays
- Consider disruptions to public transport, pedestrians and cyclists as well as traffic
- Carefully consider noise for local residents, particularly at night
- Consider dust from work sites
- Consider truck movements
- Consult communities about disruptions.

Transport disruptions

With major road projects like the CityLink Tulla widening and Monash Freeway upgrade successfully being completed while keeping traffic moving we know that with careful planning transport disruptions can be minimised.

The key transport disruptions associated with construction of North East Link are:

- Changed road conditions, traffic flows and travel times
- Trucks delivering construction materials or removing soil excavated to build the tunnels and trench.

The contractors appointed to build North East Link will be required to develop a **Traffic Management Plan** to minimise and manage disruptions during construction.

The Traffic Management Plan would address:

- How access to current properties and community facilities would be maintained

- How minimum levels of service for key roads and intersections would be maintained
- How equivalent levels of parking would be maintained
- How existing pedestrian and cycling routes would be maintained or temporary alternatives provided.

The contractors would be required to consult with councils and VicRoads on the Traffic Management Plans and notify residents of any changes to local roads and paths.

More information about the draft environmental performance requirements and the requirements for a Traffic Management Plan will be included in the EES when it goes on public display for comment next year.

Noise

Noise and vibration are an unavoidable part of constructing a project like North East Link, but steps can be taken to minimise impacts for residents and communities.

Noise on construction sites for North East Link would need to comply with government policies, legislation and guidelines. These cover conditions such as reasonable hours of work and recommended approaches to minimise noise such as muffling machinery.

Some of the key noise guidelines contractors appointed to build North East Link would need to follow are:

- **EPA** – Noise Control Guidelines Publication 1254, 2008
- **EPA** – Environmental Management – Environmental Guidelines for Major Construction Sites. February 1996.

The contractors would also need to manage vibration in accordance with relevant Australian and international standards.

Our specialists are modelling both predicted noise and vibration and developing draft environmental performance requirements to reduce and manage impacts.

Similar to the Traffic Management Plan, the contractors appointed to build North East Link will need to develop a **Construction Noise and Vibration Management Plan** that clearly defines how they will meet the environmental performance requirements.

Where noise levels are expected to be significant during construction key actions in the plan could include:

- Installing temporary noise barriers next to sensitive receptors such as homes, schools and aged care facilities
- Managing construction hours to provide respite periods for residents
- Developing specific management plans for out-of-hours work proposed
- Building new noise walls before existing noise walls are removed. In locations where this is not possible, temporary noise attenuation measures could be used to minimise construction and traffic noise during the changeover period.



Image courtesy of LXRA

The Construction Management Plan will need to cover all forms of transport including:

- Traffic
- Car parking
- Public transport (rail, tram and bus)
- Pedestrian and bicycle movements

Trucks delivering materials to construction sites and removing spoil would primarily use arterial roads and freeways during the day and at night. Possible truck routes will be identified in the EES together with an assessment of potential traffic, noise and air impacts.

Image courtesy of West Gate Tunnel Project



Tunnelling

The North East Link tunnels are proposed to be built using a combination of techniques including:

- Tunnel boring machines (TBMs) - large cylinder shaped machines that tunnel deep underground, progressively installing concrete linings to support the tunnel excavation
- Mined tunnelling - a machine with a rotating, cutting head on the front that chips away at rock underground
- 'Cut and cover' - the tunnel is built from top down then covered.

All of these techniques are common for tunnel construction in Australia.

Based on project design work so far the North East Link tunnels between Manningham Road and Lower Plenty Road would be built using TBMs.

Modelling is being undertaken to predict the levels of vibration that might be experienced at properties above the tunnel and to assess predicted levels against relevant Australian and international standards relating to amenity and structural integrity.



The North East Link tunnels would be between 15-40 metres under homes.

TBMs are very effective at reducing vibration and many people living and working above the tunnels may not notice construction happening underground.

Vibration may be felt in some areas while the TBMs pass beneath. The duration of the vibration will depend on how long it takes the TBM to move through the area.

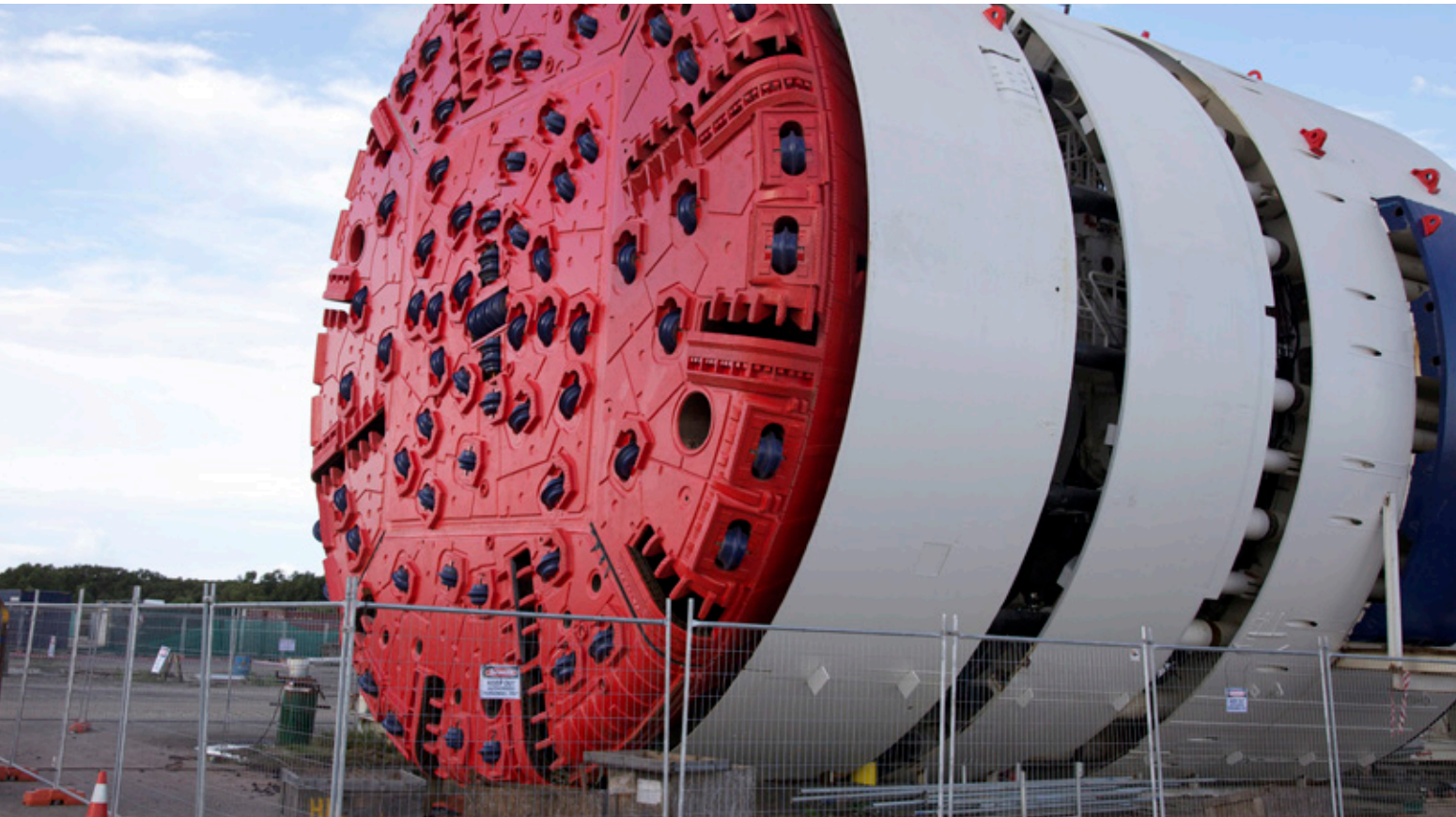
The rate TBMs can progress depends on a range of factors including ground conditions. This means the North East Link TBMs may pass under some areas

more quickly than others. They are expected to travel about 10 metres a day.

Vibration would be carefully managed and monitored during construction to minimise impacts to buildings above.

Specialists would also survey buildings predicted to be exposed to vibration before tunnelling. They would assess building conditions so that, if required, measures could be used to prevent damage. Building conditions would also be assessed after construction.

Tunnel boring machine





Wetting unsealed roads is one way dust from construction activities can be managed.

Dust

During construction, dust from exposed surfaces, unsealed roads and stockpiles could affect air quality in the local environment.

Dust can be a nuisance and cause visual impacts, while finer particles can also have health effects if not managed during construction.

Dust would be managed in accordance with Environment Protection Authority (EPA) Victoria guidelines for major construction sites and best practice measures will be implemented through a **Dust Management Plan**. Management measures specified in the plan may include:

- Engineering controls such as dust extraction systems
- Planning controls such as selecting appropriate locations for stockpiles
- Operation controls such as wetting unsealed roads and stockpiles to help stop dust from being produced.



Construction compounds

A number of temporary construction compounds will be needed to build North East Link.

These will be used for site offices, staff amenities, storing construction materials and parking construction and staff vehicles.

Where possible, we will locate construction compounds within the road reserve. Other compounds would need to be located on private land and within existing open space.

The locations of construction compounds will be decided in consultation with relevant land owners and tenants and other stakeholders including Councils.

We're working to minimise the number and size of construction compounds and will provide more information about proposed locations when the EES goes on display for public comment early next year.


Construction compounds and work sites would be secured to protect public safety. Hoardings and other screening would be used to minimise visual impacts.

Image courtesy of West Gate Tunnel Project

Contact us

- ☎ 1800 105 105
- @ community@northeastlink.vic.gov.au
- ✉ North East Link Authority
GPO Box 4509, Melbourne VIC 3001

Translation service

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Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne