NORTH EASTLINK PROJECT

Noise walls on the Eastern Freeway

Noise, vibration, air quality and human health

Fact sheet April 2019

An Environment Effects Statement (EES) has been released for the North East Link Project and is now open for public submissions. The EES includes information on how the project could affect the environment during construction and operation and how adverse impacts would be managed.

We know that traffic noise, air quality and human health are important to the community. Surface Noise and Vibration, Air Quality and Human Health are three of 18 study areas in the EES.

Over the past year, technical specialists have conducted extensive studies for the EES, collecting information and using modelling to assess how North East Link could change existing noise conditions and air quality – positively or negatively.

Noise monitoring and modelling

Noise monitoring at more than 60 locations across the project area has informed noise modelling for the design of North East Link. Qualified specialists have recorded noise levels at homes, schools, sports fields and other sensitive locations across the project area.

Air quality monitoring and modelling

The EES studies for North East Link assessed and modelled air quality in and around the project area. Our specialists used information about existing air quality conditions from the EPA Victoria monitoring station at Alphington. The assessment has evaluated the project against a 'no project' scenario and EPA Victoria's air quality requirements.

Setting Environmental Performance Requirements

Stringent air quality, noise and vibration standards will apply to North East Link, protecting the health and wellbeing of residents, the local community and road users.

Environmental Performance Requirements (EPRs) have been developed that set the minimum environmental objectives and outcomes the project must achieve across design, construction and operation - irrespective of the final design selected for the project.

See Chapter 27 – Environmental Management Framework in the EES for more details on the EPRs.

VICTORIA'S BIG BUILD

VICTORIA State Government

Noise and vibration

North East Link is being planned to achieve a noise objective of 63 decibels – reducing noise levels for most residents once it is in place.

Extensive noise monitoring along the project corridor has helped us map existing noise conditions and model what future conditions would be with and without the North East Link noise objective in place.

With the North East Link noise objective in place, most residents along the project corridor, including the upgrades planned for the M80 Ring Road and the Eastern Freeway, would experience a reduction in noise.

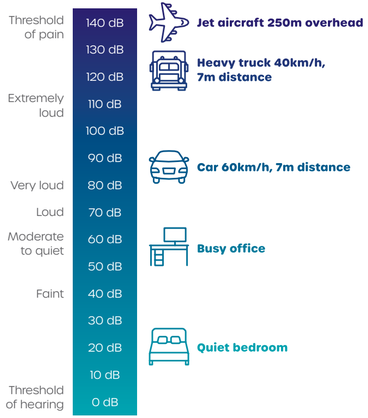
Most properties would be protected by upgrading existing noise walls, building new high-quality noise walls and applying other approaches such as low-noise road surfaces.

Based on the reference project assessed for the EES, a small number of properties – around 160 – may need additional at property noise mitigation to achieve the noise objective. Many of these are located near the Eastern Freeway, east of Bulleen Road. The remainder are located south of the M80 interchange and along the Eastern Freeway west of Bulleen Road.

Once a builder is appointed, they would complete further noise modelling based on the final project design. If it is found that additional at-property mitigation measures are still needed, they would be offered to homes that exceed the project noise objective. We'll also work closely with residents on installation of improved noise walls. See the EES for more information or chat to one of our specialists at our community drop-in sessions in April and May 2019 for more details.

Measuring noise

Noise is measured on a scale of units called decibels, or dB for short. Noise measurements are usually adjusted to reflect how noise is perceived by the human ear. This adjustment is called 'A' weighted decibels or dB(A).



High quality noise walls

To meet the North East Link noise objective, we'll be adding and upgrading noise walls along the project corridor. These noise walls would be installed ahead of construction works where possible. The noise walls would be built to a high standard, in accordance with our Environmental Performance Requirements (EPRs) and Urban Design Strategy. For more details on the potential locations of noise walls see the EES Map Book or read the Surface Noise and Vibration and Landscape and Visual reports of the EES.

High quality noise walls on the M80 Ring Road interchange. Artist impression. Subject to change.

North East Link noise objective

From speaking with communities we know that noise is a key priority.

Applies to all residential areas along North East Link as well as the planned upgrades to the Eastern Freeway and M80 Ring Road

In response to community feedback we'll be building high-quality noise walls to meet a noise objective of 63 dB(A). The noise objective for North East Link is consistent with the noise standard introduced for the West Gate Tunnel Project and:

Will provide better protection from noise for residents along the Eastern Freeway where a noise standard of 68 dB(A) currently applies

Managing noise and vibration during construction

In a project of this size, noise and vibration from construction is inevitable. Noise and vibration can be caused by excavators and graders, trucks and alarms, rock breakers, hydraulic hammers and other construction equipment.

Noise and vibration impacts during construction would be managed in accordance with EPA Guidelines and a Construction Noise and Vibration Management Plan. Where Victoria has no specific guidelines for noise and vibration, accepted interstate practices or international standards and guidelines would be adopted.

Examples of some ways the builder may manage noise and vibration include:

- Temporary noise walls and acoustic sheds
- Providing advanced notice of planned noisy activities to nearby areas
- Scheduling noise works at less sensitive times
- Providing respite periods from very noise works
- Restricting hours of operation
- Vibration monitoring and trials
- Using quieter machinery where possible
- Making adjustments to construction equipment.

Tunnel vibration

The design of the North East Link tunnels would minimise vibration and regenerated noise impacts. The EES impact assessment found that relatively minor levels of perceptible vibration and audible regenerated noise would occur during construction of the tunnels, portals and cross passages, particularly where the depth of the tunnel beneath the surface is shallower. People and places directly above or close to tunnelling excavation would experience these impacts for relatively short periods of time (up to three weeks). See Chapter 12 - Tunnel Vibration for more information on tunnel vibration.

Ground movement

A small amount of ground movement is expected on any project involving excavation and tunnelling. Our assessment and geotechnical studies as part of the EES has found that ground movement due to tunnelling, excavation, drilling and increases in load and changes to groundwater levels would be very low.

Before construction starts, condition surveys would be undertaken at homes where there is a potential for minor damage from ground movement. See chapter 21 - Ground movement for more information.

Noise and vibration impacts during construction would be managed in accordance with EPA Guidelines and a Construction Noise and Vibration Management Plan.

Mullum Mullum tunnel ventilation structure

Air quality

Air quality once North East Link opens

The health of the community in relation to air quality is a major priority. Our assessment indicates that there would be no significant or measurable impacts on the health of the community.

Once North East Link opens, air quality would improve along many major roads with reduced traffic volumes. Based on the current reference design in the EES, there are some locations where air quality would be lower as a result of increased traffic volumes, however it would not impact the health of communities. Based on the current reference design, these areas are next to the M80 Ring Road, Greensborough Highway and Eastern Freeway.

The builder would monitor air quality after North East Link opens, as agreed with EPA Victoria.

It's also important to note that the EES takes a conservative or 'worst case' approach, for example it does not consider predicted shifts towards hybrid and electric vehicles. One of the most effective ways to improve air quality is improved emission standards for vehicles – history has shown improvements in air quality over the last 20-30 years due to reduced motor vehicle emissions and EPA Victoria has indicated that there will continue to be a reduction in exhaust emission impacts.

Air quality during construction

Construction activities for the North East Link would generate dust and other air emissions. These activities would be managed in accordance with EPA Victoria guidelines and a Dust and Air Quality Management and Monitoring Plan. This plan would set out measures to minimise and monitor impacts on air quality during construction. These may include measures to control dust, fumes, odours such as watering unsealed surfaces, erecting screens and windbreaks at worksites, scheduling known dust and odour generating activities during favourable weather conditions and revegetating disturbed surfaces as soon as possible.

Did you know? Improvements in vehicle technology and tighter regulations mean that even with more people living in Melbourne and more cars and trucks on the road, traffic pollution across Melbourne is expected to decrease by 2030.

Ventilation structures next to Bulleen Road, Bulleen.

Artist impression only and subject to change. The builders appointed to build North East Link would develop design concepts for the tunnel ventilation structures and be guided by an Urban Design Strategy developed for the project

Tunnel ventilation

The tunnel ventilation system for North East Link would be designed to meet stringent air quality standards to protect the health of communities and drivers using the tunnels.

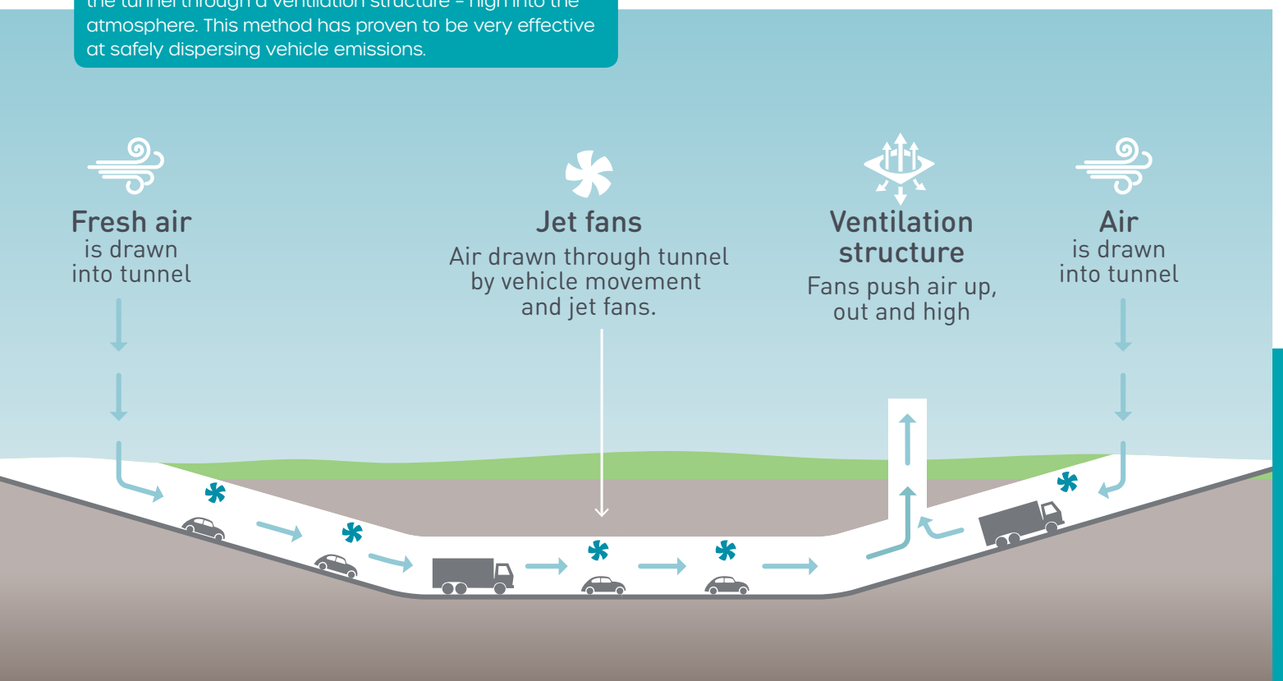
North East Link includes twin road tunnels between Bulleen and Yallambie. Tunnels can help reduce pollution on residential streets by moving traffic underground, where vehicle emissions can be controlled and dispersed more effectively, with monitoring in place to ensure standards are met.

North East Link would incorporate a state-of-the-art tunnel ventilation system designed to ensure the health and safety of motorists using the tunnels, meet relevant air quality criteria inside and outside the tunnels, reduce energy consumption and minimise visual impacts from ventilation structures.

The tunnel ventilation system would include two ventilation structures, each approximately 40 metres high. Based on the reference design in the EES, the structures would be located near Blamey Road (on land currently owned by Simpson Barracks) at the northern tunnel portal and near the southern tunnel portal at Bulleen Oval (west of Bulleen Road).

The tunnel ventilation systems would be designed to meet EPA Victoria's air quality requirements. See chapter 10 - Air Quality Technical report B - Air Quality or technical report B for more detail.

Well-designed tunnel ventilation outlets draw fresh air from the tunnel entry, push the air through the tunnel via vehicles and jet fans and then push the air further out of the tunnel through a ventilation structure – high into the atmosphere. This method has proven to be very effective at safely dispersing vehicle emissions.



Human health

Impacts on health

The human health impact assessment looked at the potential effects of the project on the health and wellbeing of residents, the local community and road users. The assessment included consideration of changes in noise and vibration levels, air quality and social impacts.

The health of our communities is a major priority – all our work shows that there would be no significant or measurable impacts on the health of the community, with the implementation of the EPRs.

See Chapter 18 - Human health and Technical report J - Human health for more detail.

Have your say on the Environment Effects Statement

This fact sheet is based on the Air quality, Surface noise and vibration and Human Health chapters and technical reports in the Environment Effects Statement (EES) for North East Link.

An EES is the state's most rigorous impact assessment process. It gives decision makers such as the Minister for Planning and EPA Victoria the information they need to determine whether approvals should be granted and what conditions should apply.

The EES for North East Link includes information on how the project could affect the environment during construction and operation and how adverse impacts would be managed.

The EES will be on public display and open for public comment from 10 April to Friday 7 June 2019. There are seven community information sessions from 27 April where you can learn more and chat to our technical specialists.

See the **EES Summary report** for an overview of air quality, noise and human health effects.

For more detail read:

- **Air quality** – Chapter 10 and Technical Report B
- **Surface noise and vibration** – Chapter 11 and Technical Report C
- **Human Health** – Chapter 18 and Technical Report J

You can find more details and read the EES on our website or see a hard copy at a display location near you. For more information call 1800 105 105 or visit:

northeastlink.vic.gov.au/ees

Contact us

community@northeastlink.vic.gov.au
1800 105 105
northeastlink.vic.gov.au
North East Link Project
GPO Box 4509, Melbourne VIC 3001

Translation service –
For languages other than English, please call 9679 9896

Please contact us if you would like this information in an accessible format.

If you need assistance because of a hearing or speech impairment, please visit relayservice.gov.au

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

NELP0009