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.

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.

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North East Link is being planned to achieve a noise objective of 63 dB, 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 levels.

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 surfacing. Based on the reference project assessed for the EIS, a small number of properties - around 80 - may need additional noise mitigation measures. Most 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 booster is installed, high-quality noise walls would be built to complete the noise management plan.

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). The design of the tunnel beneath this surface is shallower. People and places directly above or close to tunnels 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 tunnels 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.

Measuring noise
Noise is measured on a scale of units called decibels, or dB for short. Noise levels are shown as a number followed by the symbol dB (A, B, C, or D). Different scales give different impressions of the same sound—engine speeds and musical notes sound quite different on different scales. The ‘A’ weighted decibels or dB(A) is used for most environmental noise applications because it reflects how the human ear perceives sounds.

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.

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

- Temporary noise walls and acoustic sheds
- Providing advance notice of planned noisy activities to nearby residents
- Scheduling noise works at less sensitive times
- Providing maps and fact sheets from very noisy works
- Reckoning hours of operation
- Vibration monitoring and trials
- Using quieter machinery where possible
- Making adjustments to construction equipment.

Air quality

The health of the community in relation to air quality is a 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 major roads with reduced traffic volumes. Based on the current reference design in the EIS, there are some locations where air quality would improve and/or increased traffic volumes; however, it would not impact the health of the community. Based on the current reference design, these areas are new to the M80 Ring Road, deserts, highways and inner congestion.

The tunnel would monitor air quality after North East Link opens and agreed with EPA Victoria.

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 Plan and Monitoring Plan. This plan would set out measures to minimise air pollution impacts on air quality during construction. These measures include controls to dust, fumes, odours such as watering unsealed roads, and monitoring and trials to schedule dust and odor-generating activities during favourable weather conditions and vegetation disturbed surfaces as soon as possible.

Air quality once North East Link opens

Once North East Link opens, air quality would improve along major roads with reduced traffic volumes. Based on the current reference design in the EIS, there are some locations where air quality would improve and/or increased traffic volumes; however, it would not impact the health of the community. Based on the current reference design, these areas are new to the M80 Ring Road, deserts, highways and inner congestion.

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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 Plan and Monitoring Plan. This plan would set out measures to minimise air pollution impacts on air quality during construction. These measures include controls to dust, fumes, odours such as watering unsealed roads, and monitoring and trials to schedule dust and odor-generating activities during favourable weather conditions and vegetation disturbed surfaces as soon as possible.
Air is drawn into tunnel

Ventilation structure
Fans push air up, out and high

Jet fans
Air drawn through tunnel by vehicle movement and jet fans.

Air is drawn into tunnel

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.

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.

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.

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.

Fresh air is drawn into tunnel

Jet fans
Air drawn through tunnel by vehicle movement and jet fans.

Ventilation structure
Fans push air up, out and high

Air is drawn into tunnel

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