NORTH EAST LINK PROJECT

Air quality

FACT SHEET
APRIL 2018

Assessing air quality is an important part of planning approvals for North East Link.

At the moment, our specialists are reviewing available monitoring data to understand existing air quality and meteorology conditions in the project area.

We'll then model the likely changes to air quality conditions to determine how the project could meet strict air quality guidelines set by the Victorian Environmental Protection Authority.

The modelling will also help inform the location, height and design of tunnel ventilation structures.

How do you determine existing air conditions?

The Victorian Environment Protection Authority (EPA Victoria) monitors background air quality throughout the eastern and north-eastern suburbs of Melbourne. The closest, most representative EPA Victoria monitoring station is at Alphington.

Later this year we will also install electronic monitors to continuously measure air quality along the North East Link project corridor. Results from this local monitoring will be used to confirm the suitability of the Alphington monitoring station data.

How do you model changes to air quality conditions?

Air quality modelling for North East Link will be comprehensive and consider a range of factors. Important inputs for the modelling include:

- Number of vehicles and speed (idling or free-flowing)
- Types of vehicles (cars or trucks) and fuel used (petrol or diesel)
- The distance between the road and people likely to be affected by changes in air quality
- Surrounding terrain, like hills or valleys and weather patterns that could influence how air is dispersed.

Our assessments will use:

- A conservative approach and assume that the number of vehicles will increase with time and vehicle performance and emissions will generally improve based on improvements in regulated emissions standards
- Nationally and internationally accepted methodologies for vehicle emissions estimation and modelling assessment
- Local meteorology conditions (temperature and wind speed and direction), to ensure modelling is representative of local conditions.

The air quality modelling will add emissions from new ventilation structures to existing background levels to assess the cumulative impact against Victoria's strict air quality guidelines.

Image: ventilation structure for the EastLink Mullum Mullum tunnels.

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NORTH EAST LINK AUTHORITY

VICTORIA State Government

Air quality and tunnel ventilation

Tunnels can help reduce air pollution by moving traffic off surface roads near where people live and work and putting traffic underground where emissions can be collected and dispersed more effectively high above ground level.

Tunnel ventilation for North East Link will be designed to:

- Meet Victoria's strict air quality requirements
- Ensure air quality is maintained to a high standard inside the tunnel
- Manage emissions from project opening and future traffic volumes.

How tunnel ventilation works

Well designed ventilation outlets are proven to be very effective at safely dispersing vehicle emissions from tunnels high into the atmosphere.

They work by drawing fresh air from the tunnel entry, which is then pushed through the tunnel by the movement of vehicles (piston effect) and jet fans.

Before the tunnel exit, air is pushed out of the tunnel and up into ventilation structures and dispersed to the atmosphere where it mixes with fresh air which dilutes the emissions to very low levels.

Where will the ventilation structures be located?

Ventilation structures are generally:

- Most effective when located near tunnel portals
- Designed to fit with the surrounding landscape and local character.

Ventilation structures for other tunnels in Melbourne are typically 30–45 metres tall.

To determine the location, height and design of the ventilation structures for North East Link we'll use an air dispersion model, as approved by EPA Victoria. The model takes into account existing air quality, local weather and topography and conservative assumptions about vehicle emissions and types.

The modelling will be based on worst case scenarios to ensure the ventilation system is effective in even the most unlikely circumstances, such as continuously congested traffic.

More information about locations and heights of the ventilation structures will be available after the modelling has been completed later this year.

Air quality monitoring

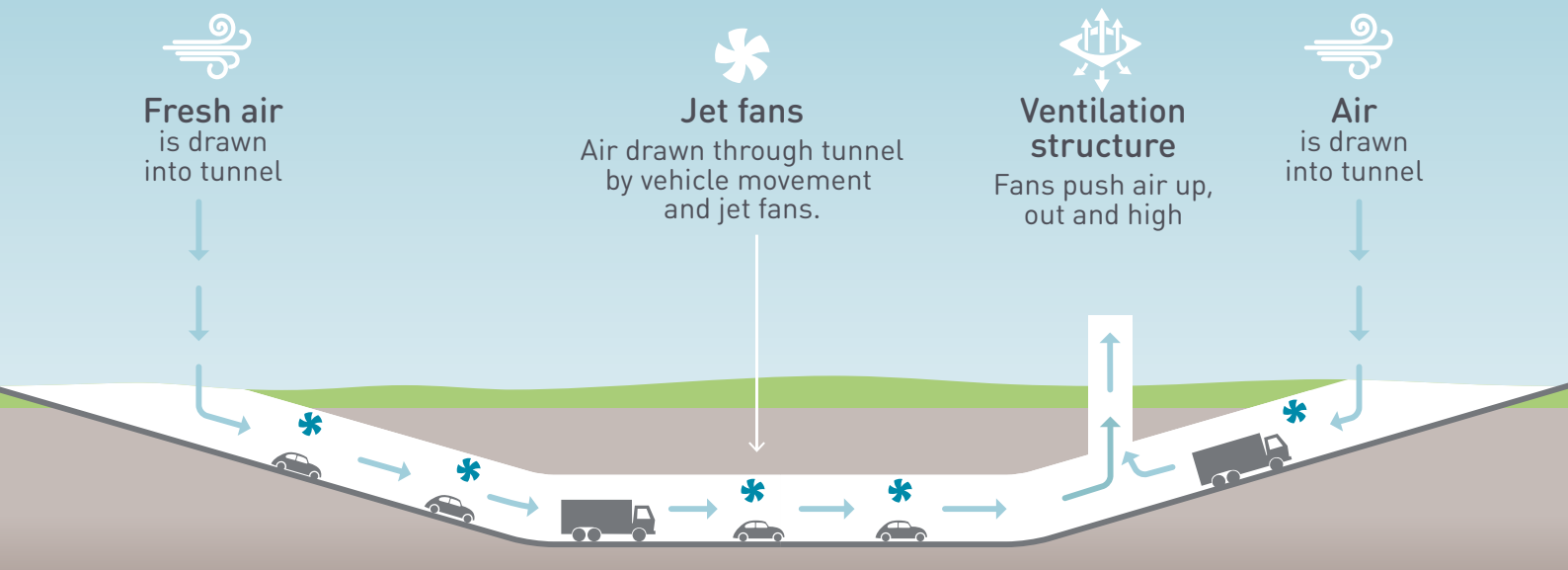
Once the North East Link tunnels are operating, regular air quality monitoring and reporting will take place.

Did you know?

Victoria's air quality standards are consistent with World Health Organisation guidelines and are among the highest in the world.

Air quality in Victoria is managed by State Environment Protection Policies. You can read more on the EPA Victoria website.

Tunnel ventilation



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