

North East Link

Eastern Freeway Upgrades UDLP Submission

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Introduction

This submission document highlights the major concerns with the UDLP North East Link Project design, and provides reasonably practicable resolutions to these concerns.

These concerns fall into the four categories of Noise, Transport, Air Pollution and Layout.

#1 Noise

The noise attenuation of the NELP reference design is stated as being based on the 63dBA VicRoads noise policy. This method of noise regulation is appropriate for relatively static background noise such as the droning noise of a freeway. However, it largely ignores brief spikes in noise caused by truck exhaust braking.

The elevated ramp interchange at North Balwyn will result in frequent truck braking and acceleration noises. This truck noise is deep, low frequency noise that travels far in all directions. Residents are left effectively unprotected from this noise. The proposed noise barriers on the interchange are 4m Perspex. This is of minimal value as the exhaust pipes of large trucks are often 4m high.

This is made worse by the elevated nature of the noise. The elevated ramps are up to 15m above the existing freeway surface level. *None of the NELP proposed noise barriers are of this height.*

NELP also proposes to increase the surface level of the Eastern Freeway by around 1m in many places. This reduces the effective height of noise barriers by that same 1m amount. This is of particular concern around the Orion St area, where the existing and proposed noise walls are of the same 8m height. This would result in a reduction in noise protection for residents.

A reasonably practicable resolution to this is to construct all noise walls adjacent to the interchange at a minimum 10m height. Where overshadowing is of concern, opaque Perspex may be used.

As an alternative, a sound tube style arrangement may be used, similar to the one installed on the Bolte Bridge in Flemington.

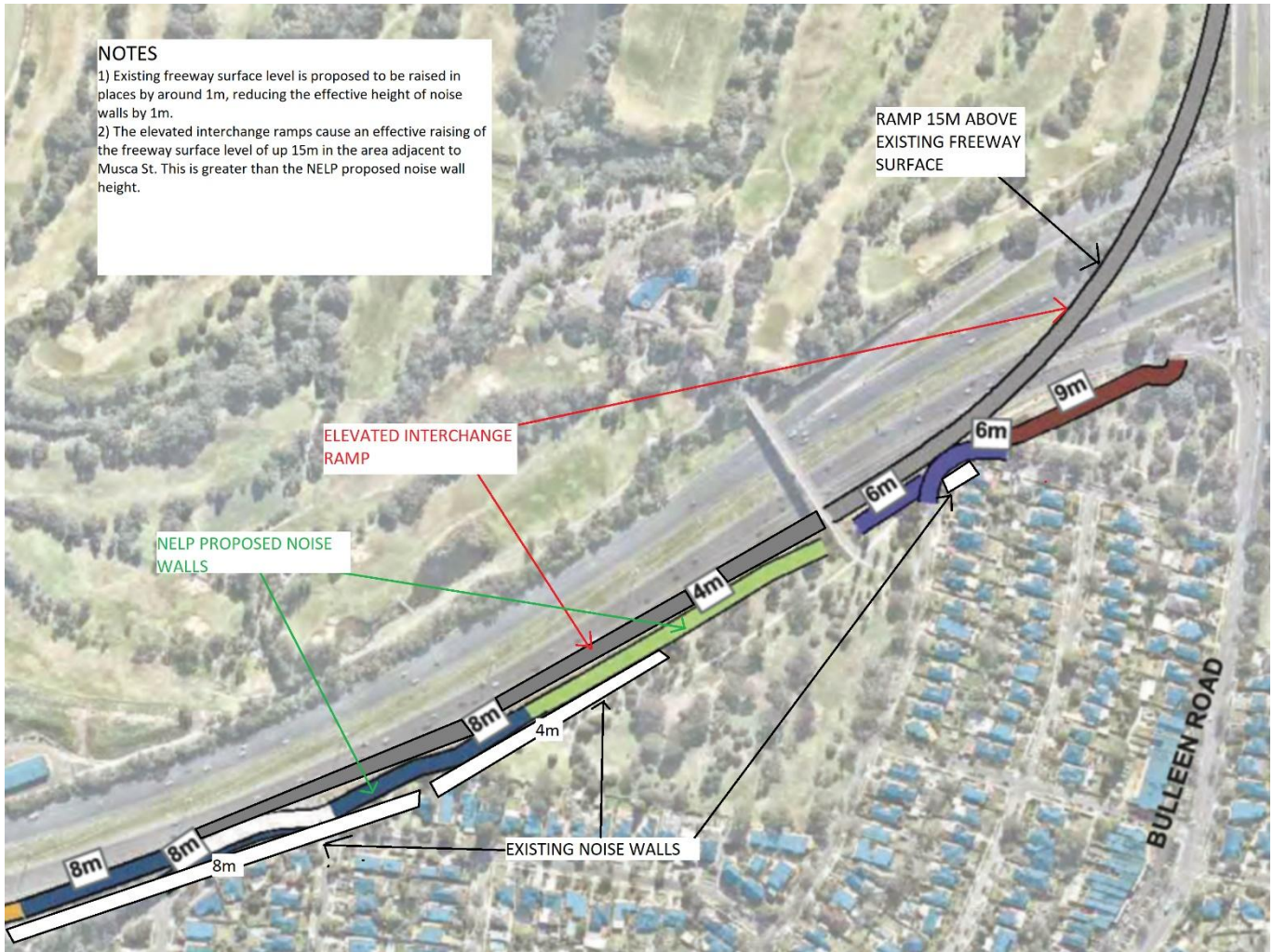


Figure 4. Existing and NELP proposed noise wall heights.



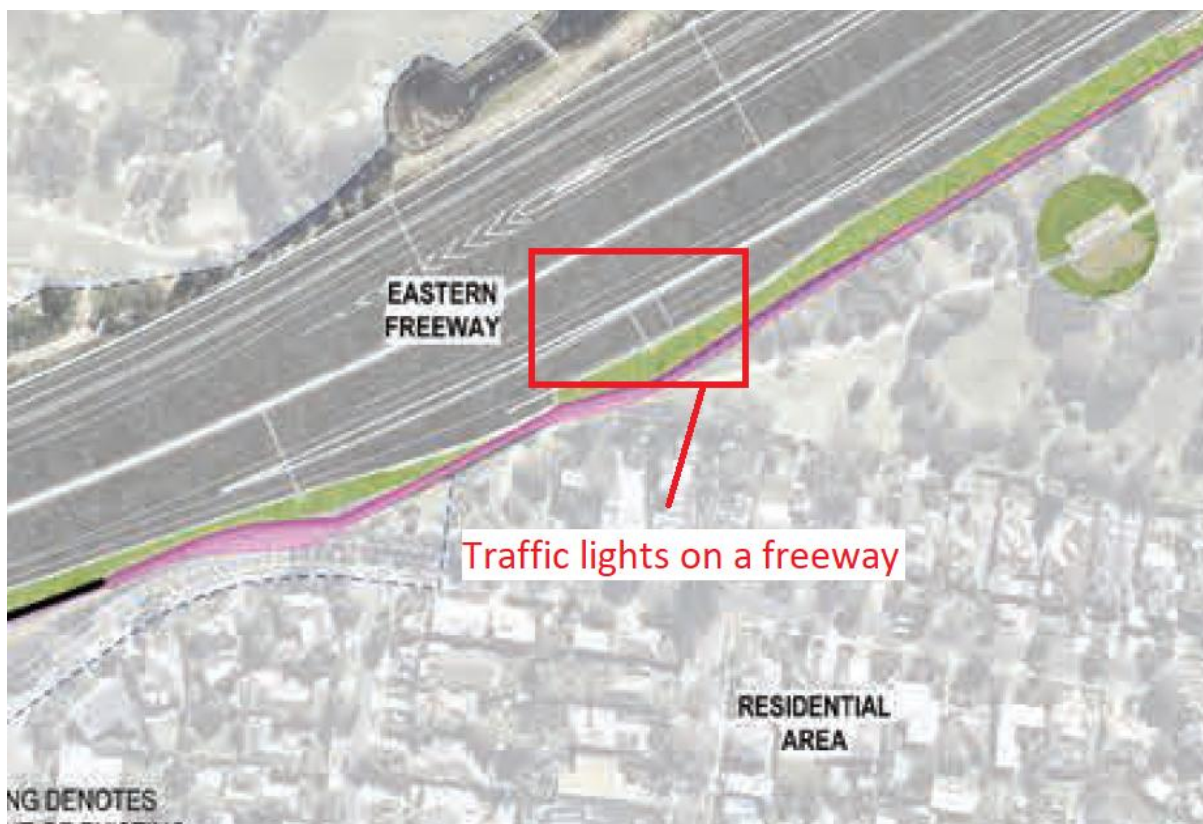
Figure 5. Bolte Bridge sound tube

EPR NV14

EPR code NV14¹ requires that “Opportunities to encourage heavy vehicle drivers to reduce use of engine brakes must be considered, where practicable.” As it is clearly practicable to remove the traffic lights on the NELP/Eastern Fwy citybound ramp and manage freeway traffic volumes at the local road onramps (as is already included in the NELP design), NV14 requires that this be done.

The clear scenario of having a long downhill ramp to a set of traffic lights is that trucks will conduct long, noisy engine braking. They will then accelerate away, noisily changing gears, with a plume of black smoke with each gear change. As the three lanes merge into one, the ‘dragstrip’ effect will occur, with cars accelerating to beat each other to the merge. Motorbikes in particular will be very noisy here.

NELP must provide clear evidence that this localised increase in noise and air pollution was taken into account as a part of the relevant published EES documentation.



Noise walls Overshadowing

The overshadowing assessment² shows clearly that no residence is affected by overshadowing from noise walls. The assessment uses 10m walls as the ‘worst case’ scenario and it still produces acceptable results.

The overwhelming majority of shadowed area is parkland at the freeway reserve boundary. This area is not used or rarely used by the public. To use overshadowing as a reason not to construct noise walls giving the best possible protection to residents is to make a mockery of the design process.

¹ NELP EES Technical report C Surface noise and vibration. P177.

² Attachment 4 Urban Design Overshadowing Assessment. P15

The 10m noise walls are required as a reasonably practicable noise protection for residents from the well established detrimental health impacts of noise, and not as a 'worst case'.

In the few areas where a utilised space is directly adjacent to a noise wall (such as the bicycle path adjacent to Orion Street), street lighting already exists and can be augmented if required.

Scope Gap

Drawing NEL-CNT-WMI-2990-UUD-DRG-0131³ shows a gap between the western boundary of the southern interface zone and the extent of the noise walls. This needs to be rectified, with new noise walls constructed in this location.



SOUTHERN INTERFACE PLAN

The North East Link Project (NELP) has failed to comply with the EES Road Traffic Night Noise Scoping Requirements. NELP is also falling well short of NSW Road Traffic Night Noise Policy (RTNNP).

The thing to remember here, is that WHO say night noise above 55 dB(A) is likely to cause adverse health. NELP's failings are described as follows:

- NEL Scoping Requirements: WHO 2009 calls for night-time noise attenuation to be 40 dB. The Planning Minister has approved 55 dB(A) free field at **ground floor only**. NELP have changed this to 58 dB(A) façade corrected at **ground floor only**. NSW Policy says, not to add for façade correction at exiting residences. NSW Policy specifies 55 dB(A) night-time **at the**

³ Attachment 1 Urban Design and Architecture. P83.

1st floor level. NELP Scoping Requirements WHO 2009 says "night noise above 55 dBA (including the 1st floor level) is likely to cause adverse health...including cardiovascular disease". Day-time noise attenuation of 63 dB(A) L10 18 hr will be breached at 155 properties according to the EES. It is a crime under Law to knowingly and wilfully harm people.

- No monitoring of traffic noise on local roads within 100 m of intersections (Middleborough Rd and others), required by EPR NV1(b), has been done.
- Downwind road traffic noise impacts caused by the opposite side vertical sound reflective concrete walls on the Eastern Freeway have been ignored by NELP.
- EES monitored wind data has been adopted at 63% of data from a generic site, namely the EPA Viewbank Weather Station. All noise monitoring should measure site specific wind data without discounting. Much of the EES road noise monitoring done exceeds the wind limit of 3 m/sec.
- The Eastern Freeway is in a valley. Vertical sound reflective concrete walls should be replaced by tapered or curved acoustic walls (Figure 5-5 below). The Eastern Freeway traffic lanes and traffic volumes are proposed to be increased massively, centre median acoustic walls will also be essential to preserve liveability and sleep.
- Open grade sound absorptive asphalt has a diminishing acoustic life effect of – 2.5 dB(A).

Additional Road Traffic Noise Actions Needed:

- **Best practice acoustic curved noise walls near the road verge & acoustic median walls are required to best protect health. This may also preserve and possibly return public parkland space.**
- **Compliance with NELP Scoping Requirements for Night-Noise or at least NSW Night Noise 55 dB(A) at the 1st floor level must apply to NELP to protect health.**
- **Reduce speed to 80 kph at night. This will reduce noise and be safer for night driving.**
- **Noise Monitoring near overpasses & ramps must be done. This has not been done to date.**
- **Where line of sight to opposite vertical wall exists, downwind (worst) noise levels must be included.**
- **20 year road traffic noise compliance is required as per the Planning Minister's approval and must take into account the diminishing acoustic effect of open grade asphalt and +2.5% pa increase in traffic volumes.**
- **In response to the vastly increased traffic volumes caused by the NEL, Traffic Noise Cameras (whereby vehicles exceeding EPA noise limits are photographed and the**

registered owners fined) need to be installed at relevant locations (such as the NEL and Eastern Freeway on and off ramps).

#2 Transport

North Balwyn will suffer a significant loss of access to the SMART bus service on the Eastern Freeway. Notably, walk-up access to bus stops will cease to exist in any practical sense. This is due to the removal of the existing bus stops (including notably the existing city-bound bus stop on the Bulleen Road/ Eastern Freeway on-ramp) and replacement with a 'Busway' and 'Park and ride' on the northern side of the Eastern Freeway.

Distance

Many North Balwyn residents access the 905 SMART bus (supplemented by the 305 at peak times) at the Bulleen Road/ Eastern Freeway city bound on-ramp which is an 800m walk away in the example below.

In this area, the trip home from the city is either by the very slow and meandering 200 bus or a 1,200m walk from the stop on Thompsons rd. This is due to no corresponding outbound bus stop existing at the Bulleen Rd/Eastern Fwy offramp. At 800m this is already verging on being so distant as to be unworkable, yet despite this it is a well-used bus stop (presumably due to the lack of any workable alternative) with an average daily boarding of 213 passengers which is more than double the ridership of the existing Kiss and Ride bus stop (adjacent to the proposed Bulleen Park and Ride), despite the Kiss and Ride stop catering for more bus routes than the Bulleen Rd/Eastern Fwy onramp bus stop⁴.

The proposed location of the Bulleen Park and ride makes this even worse, with both trips at around the 1500m mark. This is clearly not a feasible transport option, particularly for the young or elderly.

⁴ <https://public.tableau.com/profile/philipmallis#!/vizhome/2018-19BusStopPatronageMelbourne/Map>

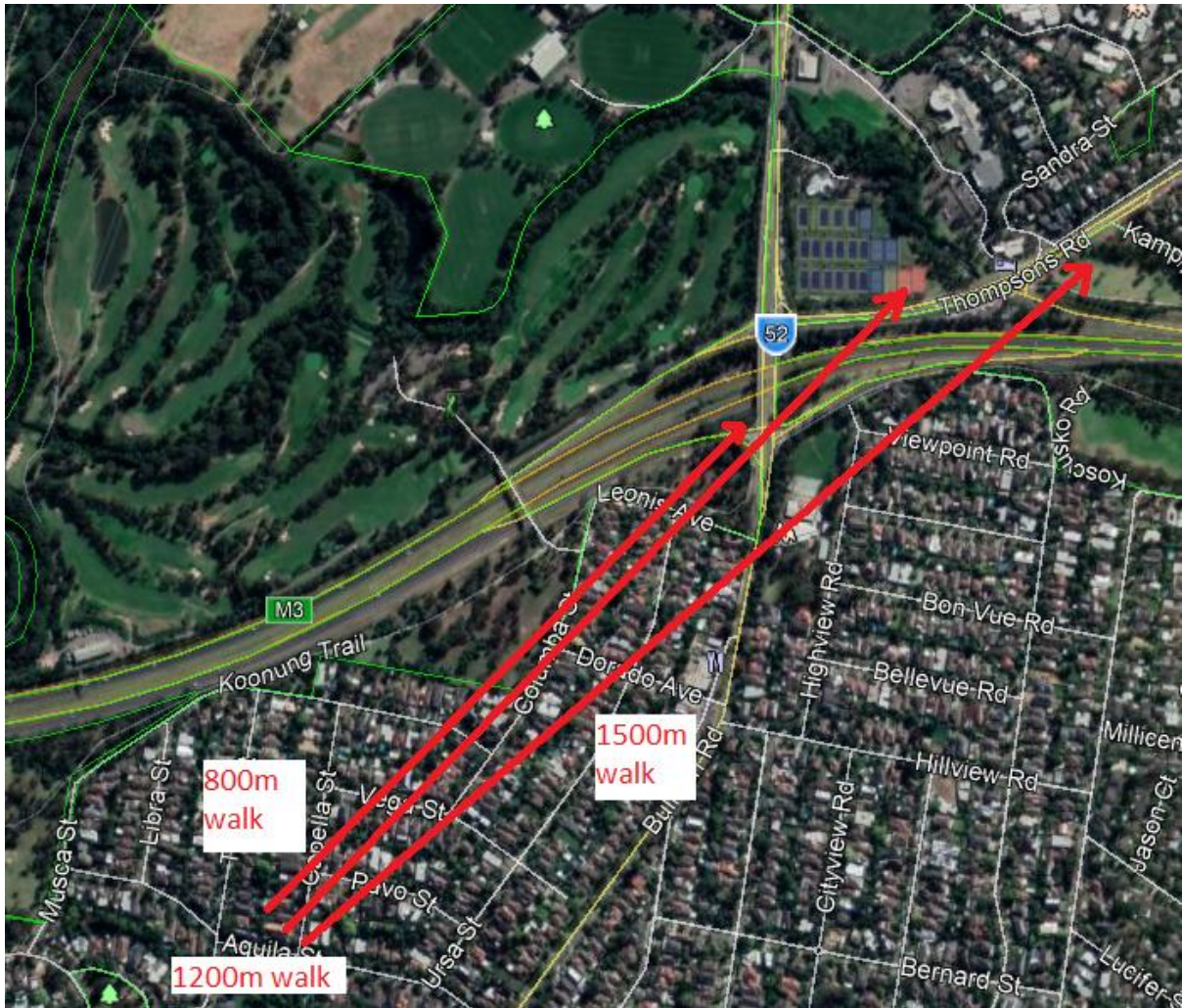


Figure 1: Relative walking distances

On the other side, having the Park and Ride closer to residences in Bulleen is of no gain to Bulleen residents due to pedestrian access to the 905/305 at many stops along Thompsons Rd already existing. It is not credible to claim that commuters would ignore the bus on Thompsons Road, then travel to the Bulleen Park and Ride to catch the same bus.

The design of the immensely wide Eastern Fwy/NEL interchange in the UDLP contributes to the reduction in utility of the Bulleen Park and Ride. It has been greatly criticised and this is another reason that it must be reduced in size.

Pedestrian Access Mitigating Measure

1) Burke Rd Stop for Busway

Assuming that the decision to move the park and ride to a location largely unfeasible for pedestrian access from North Balwyn has already been taken and that the suggested underpass is being rejected due to the size of the interchange that NEL wishes to impose on North Balwyn, an alternate bus stop must be provided.

The most sensible and practical location for this is at the Burke Rd overpass on the north side of the Eastern Fwy. There is room here for a regular bus stop along the busway. Good pedestrian and

cycling access already exists in this location. In addition to this, it would allow connection to the 548 bus service. This is crucial as there is no 'North East Link' for public transport in the project so far. This connection of the north-south 548 bus with the Busway would provide the sorely lacking connectivity and increase usage of both the busway and 548 bus.

Though out of scope of this project, it would be logical to extend the 72 tram north to the Busway to provide a connection to the eastern suburbs tram network. This would provide further connectivity and justification for the Burke Rd Busway stop.

Space permitting, a stop could also be built at Chandler Hwy.

It is worth noting that the cause of a loss of public transport access is the NELP southern interchange UDL design and the proposed solution would exist outside of this area. This will need to be coordinated by NELP.

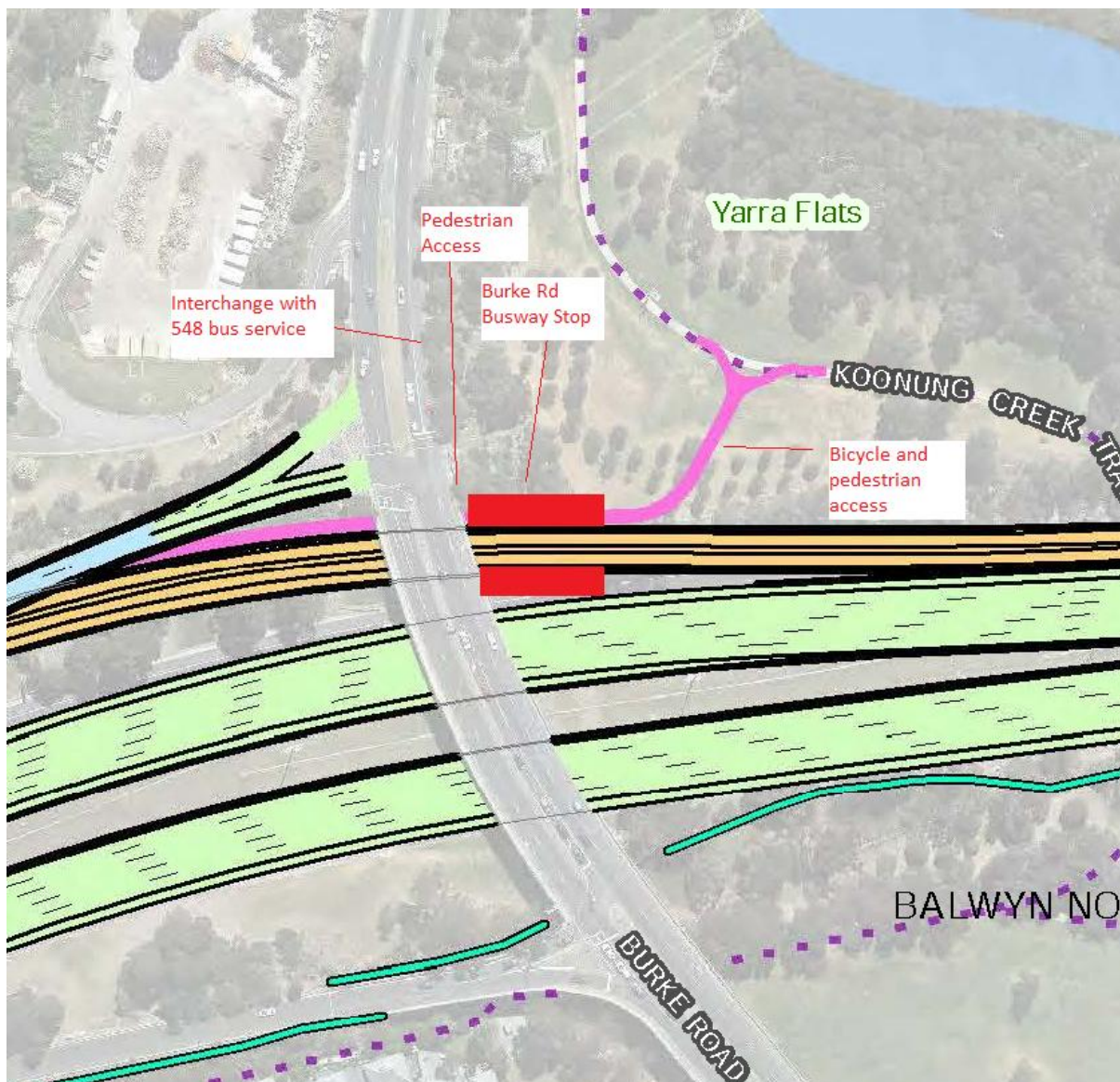


Figure 2. Burke Rd Bus Stop on NEL Busway.



Figure 3. Distance to Burke Rd Bus Stop on NEL Busway.

#3 AIR POLLUTION

At present, the NELP reference design does not include filters on the tunnel exhaust stacks, but requires the exhaust stacks to allow for future installation of filters. The Bulleen area already regularly exceeds EPA air pollution standards.

It is reasonably practicable to insist that these filters be installed prior to the opening of the NELP tunnels to traffic.

The expected amount of emissions from the Bulleen exhaust stack will increase with the extended tunnel in the northern part of the project. This emissions figure must be updated and released to the public in a revision to the Technical report B Air quality document that was released as a part of the Environmental Effects Statement. Technical report B Air quality already includes several non-compliances in relation to air pollution. This would be expected to worsen further with the exhaust from a longer tunnel being discharged at Bulleen.

The **UDLP Air Quality Fact Sheet** says the NELP Air Quality “*traffic movements will not have any measurable effect on community health*”. This statement is in clear contradiction of the EES **Figure 10-8 from Chapter 10 Air Quality**. Our Victorian Government cannot be allowed to cause harm to human beings via a flawed advice process.

- The ***EES Figure 10-8 from Chapter 10 Air Quality*** shows many PM2.5 breaches of State Environmental Protection Policy (SEPP). The Independent Advisory Panel ignored this and so did the Planning Minister. Pollution from vehicles kills more people than car accidents in Australia. Diesel fuel is the biggest problem and electric cars will not solve the problem caused by diesel trucks on surface freeways. Table 85 from the EES same chapter, shows a 136% increase in PM2.5 on the Eastern Freeway with a functional NELP in 2026/ 2036 caused by vehicles.
- Unfiltered tunnel vent stacks are proposed at this point in time. Zero emissions cannot be achieved whilst emitting pollutants via chimney stacks. Also, technology will not eliminate rubber tyre and brake dust.
- Nitrogen Dioxide (NO2) shown in the table below, offers more accurate health estimates related to traffic emissions and childhood asthma (particularly given Australia's high prevalence of childhood asthma). The table below shows the various concentration response functions for traffic related air pollution (using pollutants PM2.5 and also NO2 - which is more specific for traffic) with the references below. T

Study	Outcome	Pollutant	Exposure increase	Asthma risk increase with
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				95% CI
Meta-analyses of cohort studies				
HEI 2022 <i>12 studies included</i>	Asthma onset (incidence rate)	NO ₂	per 10 µg/m ³ (5.32ppb)	Relative risk 1.05 (0.99 – 1.12)
HEI 2022 <i>12 studies included</i>	Active asthma (prevalence of asthma in the past year)	NO ₂	per 10 µg/m ³ (5.32ppb)	Relative risk 1.12 (95% CI: 1.02–1.23)
HEI 2022 <i>21 studies included</i>	Asthma ever (lifetime prevalence)	NO ₂	per 10 µg/m ³ (5.32ppb)	Relative risk 1.09 (1.01 – 1.18)
Khreis et al., 2017 <i>20 studies included</i>	Incidence over childhood (birth – 18 years)	NO ₂	per 4 µg/m ³ (2.13 ppb)	Odds ratio 1.05 (1.02, 1.07)
Khreis et al., 2017 <i>10 studies included</i>	Incidence over childhood (birth – 18 years)	PM _{2.5}	per 1 µg/m ³	Odd ratio 1.03 (1.01, 1.05)
Australian Cross Sectional study				
Knibbs et al., 2018	Current asthma	NO ₂	Annual IQR of 7.52µg/m ³ (4ppb)	OR 1.24 (95% CI: 1.08, 1.43) with fixed site monitor measurements OR 1.54 (1.26, 1.87) with land use regression modelling (LUR)

References:

Boogaard, H., Patton, A.P., Atkinson, R.W., Brook, J.R., Chang, H.H., Crouse, D.L., Fussell, J.C., Hoek, G., Hoffmann, B., Kappeler, R. and Joss, M.K., 2022. Long-term exposure to traffic-related air pollution and selected health outcomes: A systematic review and meta-analysis. *Environment international*, 164, p.107262.

Khreis, H., Kelly, C., Tate, J., Parslow, R., Lucas, K. and Nieuwenhuijsen, M., 2017. Exposure to traffic-related air pollution and risk of development of childhood asthma: a systematic review and meta-analysis. *Environment international*, 100, pp.1-31.

Health Effects Institute, HEI. (2022). Systematic Review and Meta-analysis of Selected Health Effects of Long-Term Exposure to Traffic-Related Air Pollution. Special Report 23. Boston, MA, Health Effects Institute. ISSN 2688-6553 (online)

Knibbs, L.D., de Waterman, A.M.C., Toelle, B.G., Guo, Y., Denison, L., Jalaludin, B., Marks, G.B. and Williams, G.M., 2018. The Australian Child Health and Air Pollution Study (ACHAPS): A national population-based cross-sectional study of long-term exposure to outdoor air pollution, asthma, and lung function. *Environment international*, 120, pp.394-403.

Air Quality Actions Required:

- **The NELP reference design must include filters on the tunnel exhaust stacks.**
- **The EPA should warn the community about high pollution “breaches of limits” days when they are predicted. Our EPA can do this.**
- **Schools and other outdoor activities should be banned on high PM2.5 days.**
- **Diesel vehicles should be requested to reschedule their commute on these days.**
- **A PM2.5 digital illuminated pole display would be useful at schools and sporting precincts to warn of unsafe pollution, bearing in mind, WHO say the only safe level is zero.**

#4 LAYOUT

The NELP reference design shows all four ramps of the NELP southern interchange as being overhead. The alternate O’Brien design places three of these in a trench (no tunnel extension required), significantly reducing noise and visual impact of the interchange. The O’Brien design fits within the existing NELP defined project area.

At the NEL Community Liaison Group (Southern) meetings, NELP was queried if the NEL early works (asset relocation) would allow for the O’Brien design to be built. NELP responded that they do allow for this.

In their final report to the Environmental Effects Statement hearings, the Independent Advisory Committee recommended that alternate designs (such as O’Brien) be considered for the project.

It is reasonably practicable to insist that the O’Brien design be implemented as the design for NEL.

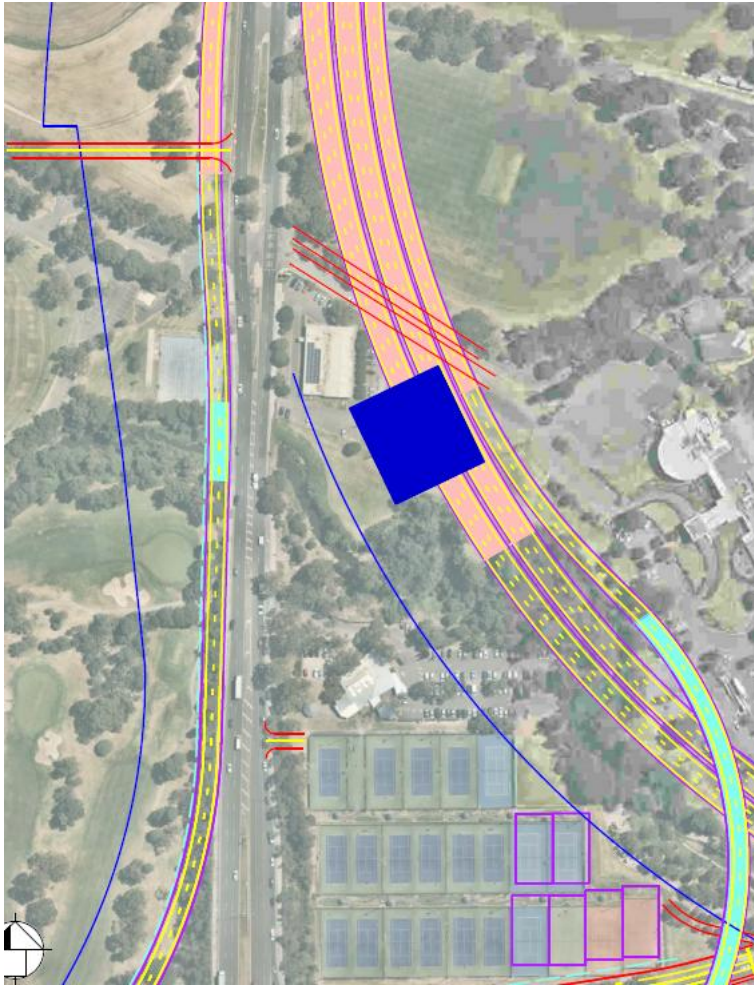


Figure 6A. O'Brien Design

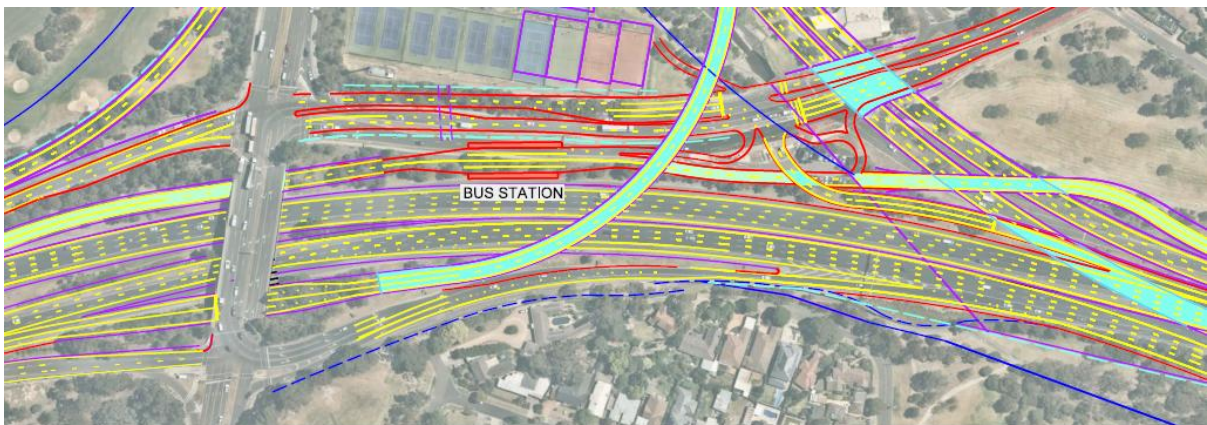


Figure 6B. O'Brien Design

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